CARL ROTH
since 1879
2019
Progress
Constant self-renewal
leads to daily growth.
means choice
Labware | Life Science | Chemicals

You can contact us directly

Or get in touch with your local distributor!

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

minus 52% CO_2

Your partner for high-quality performance

With 5 plus points to your advantage:

Quality

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

Logistics

Direct dispatch! Delivery fast, simple and reliable!

Special rates & Discount

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

Customer advice

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

Returned & Take-Back Goods

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

A private enterprise with tradition

Best service for 140 years

1879

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

1891

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

1899

ROTH publishes its first sales and mailorder catalogue.

1907

CARL ROTH operates the first delivery van in Karlsruhe.

Quality, Environment, Safety

We take responsibility

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

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

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

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

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

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

RESPONSIBLE CARE®
OUR COMMITMENT TO SUSTAINABILITY

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

Sekuroka®
For select safety and work protection products.

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

1928
The laboratory chemicals department opens.

1945
The highly efficient manufacturing and bottling department enters service.

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

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

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

Plastics – Technical data / Key to symbols

What about the packaging material?

We are making our contribution to the environment:

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

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

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

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

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

Sterilizing plastics – Autoclaving

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

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

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

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

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

1990

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

1993

Construction of a modern high-bay warehouse.

1995

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

2005

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

Standard abbreviations for plastics

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

Temperature in ( ) short-term

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

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

Article numbers

Our Article numbers assemble themselves as follows:

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

(before .1 .2 .3 etc.)

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

Key to symbols

NEW — News and Programme extensions

Programme extension!

A 121 °C — All autoclavable products in our catalogue are identified by this symbol. Please also note any additional instructions when autoclaving.

Temperature Resistance:

❄ — Safe to freeze (approx. -10/-20 °C)

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

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

See catalogue text for detailed information.

ready-to-use — Ready-to-use products and reagents

S — Sterile products

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

2013

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

2014

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

2014

Participation in the Responsible Care® programme.

2015

Relaunch of the new ROTH Online Shop.

2016

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

Chemical resistance of plastics

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

● resistent
❍ conditionally resistent
– not resistent

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

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Laboratory Glass, Vessels, Consumables & Application-specific Products

Vessels and Glass Bottles

Autosampler vials, glass vials 64
Beakers 10
Desiccators 56
Erlenmeyer flasks 16
Glass bottles and accessories 32
Large containers (barrels, canisters) 94
Plastic and metal bottles 100
Stainless steel bins, safety lab vessels 91
Stirring bars, wipers 75
Stoppers 83
Test tubes and centrifuge tubes 80
Tins and sample vessels 114
Tubs, bowls and buckets 125
Volumetric flasks and cylinders 20

Laboratory Glass, Porcelain and Ground Glass Joint Equipment

Büchner funnels, filter crucibles 172
Chromatography columns 164
Coolers 157
Crucibles 190
Distillation 152
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Laboratory jacks 214
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Embedding cassettes and accessoires 315
Microscope slides 300
Microscopy accessories 304
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DUMONT®-tweezers 317
Micro scissors 338
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DURAN
WHEATON
KIMBLE
Excellence in your hands

DURAN Group is now DWK Life Sciences

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

The material of glass

General properties

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

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

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

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

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

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

Comparison of DURAN® and soda-lime glass

Chemical properties:

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

Physical properties:

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

Usage instructions:

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

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

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

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

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

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

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

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

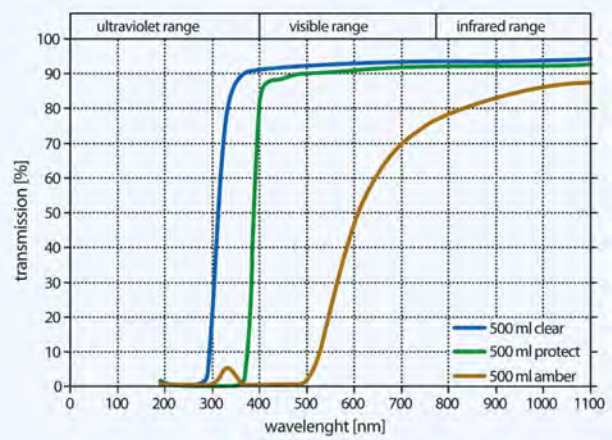
Use in the microwave
DURAN® laboratory glassware is suitable for use in microwaves. This also applies to plastic coated DURAN® products.

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

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

DURAN
WHEATON
KIMBLE
Excellence in your hands

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



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

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

Glass beakers

121 °C

Rotilabo®-glass beakers

Made of borosilicate glass 3.3. Graduated, has spout.
In acc. with DIN 12331, ISO 3819. Autoclavable.

*Without graduation. **Without graduation and not in acc. with DIN

Low form

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
5*	22	30	**X685.1**	10	26,80
10*	26	35	**X686.1**	10	29,35
25*	34	50	**X687.1**	10	32,05
50	42	60	**X688.1**	10	23,60
100	50	70	**X689.1**	10	20,35
150	60	80	**X690.1**	10	22,40
250	70	95	**X691.1**	10	24,75
400	80	110	**X692.1**	10	28,30
600	90	125	**X693.1**	10	38,60
800	100	135	**X694.1**	10	46,80
1000	105	145	**X695.1**	10	49,25
2000	130	185	**X696.2**	1	9,50
3000	150	210	**X697.1**	1	31,10
5000	170	270	**X698.1**	1	39,70
10000**	217	350	**ACK7.1**	1	78,50

High form

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
25*	30	55	**X700.1**	10	29,00
50	38	70	**X701.1**	10	21,30
100	48	80	**X702.1**	10	22,50
150	54	95	**X703.1**	10	24,75
250	60	120	**X704.1**	10	25,75
400	70	130	**X705.1**	10	27,35
600	80	150	**X706.1**	10	33,15
800	90	175	**X707.1**	10	50,10
1000	95	180	**X708.1**	10	54,30
2000	120	240	**X709.2**	1	9,80
3000	135	280	**X710.2**	1	28,70

DURAN WHEATON KIMBLE
Material DURAN®
121 °C

Glass beakers

Made of DURAN®. Graduated, has spout.
In acc. with DIN 12331, ISO 3819. With retrace code. Autoclavable.

*Without graduation. **Without graduation and not in acc. with DIN

Low form

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
5*	22	30	**C108.1**	10	48,60
10*	26	35	**C109.1**	10	55,00
25	34	50	**C110.1**	10	47,20
50	42	60	**C111.1**	10	45,10
100	50	70	**C112.1**	10	44,90
150	60	80	**C113.1**	10	47,30
250	70	95	**C114.1**	10	48,80
400	80	110	**C115.1**	10	58,70
600	90	125	**C116.1**	10	72,75
800	100	135	**C117.1**	10	100,00
1000	105	145	**C118.1**	1	12,20
2000	132	185	**C119.1**	1	20,95
3000	152	210	**C120.1**	1	37,40
5000	170	270	**C121.1**	1	63,55
10000**	217	350	**C122.1**	1	177,00

High form

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	38	70	**C123.1**	10	45,50
100	48	80	**C124.1**	10	46,00
150	54	95	**C125.1**	10	48,90
250	60	120	**C126.1**	10	51,65
400	70	130	**C127.1**	10	61,75
600	80	150	**C128.1**	10	75,65
800	90	175	**C129.1**	10	107,00
1000	95	180	**C130.1**	1	12,40
2000	120	240	**C131.1**	1	22,20
3000	135	280	**C132.1**	1	46,50

- ▶ Autoclaving instructions see page 5
- ▶ Weight rings for beakers and Erlenmeyer flask see page 226
- ▶ Beakers made of plastic see page 118
- ▶ RBS-Liquid concentrates - special standard cleaners for labware see page 1135
- ▶ Watch glasses for covering beakers see page 181

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

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

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

Beakers

Material DURAN®
121 °C

DURAN®-Super Duty glass beakers

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

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

DURAN®-Super Duty glass beakers, low form

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
150	60	80	**PC33.1**	10	56,35
250	70	95	**PC34.1**	10	56,35
400	80	110	**PC35.1**	10	74,30
600	90	125	**PC36.1**	10	86,40
1000	105	145	**PC37.1**	10	137,00
2000	132	185	**PC38.1**	10	240,00
5000	170	270	**PC39.1**	1	134,00

DURAN®-Super Duty glass beakers, tall form

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
150	54	95	**CHL2.1**	10	57,95
250	60	120	**CHL3.1**	10	59,00
600	80	150	**CHL4.1**	10	89,50

121 °C

Rotilabo®-beakers

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

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

Material DURAN®
121 °C

Beakers without spout

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

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
50	38 x 70	**CCK5.1**	10	45,50
100	48 x 80	**CCK6.1**	10	46,00
150	54 x 95	**CCK7.1**	10	48,90
250	60 x 120	**CCK8.1**	10	51,65
400	70 x 130	**CCK9.1**	10	61,75
600	80 x 150	**CCL0.1**	10	75,65
1000	95 x 180	**CCL1.1**	10	121,00

Rotilabo®-beakers, PTFE

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

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
1	13	18	**T643.1**	1	8,05
5	20	26	**T645.1**	1	9,15
10	24	33	**T646.1**	1	10,05
25	32	47	**T647.1**	1	12,85
50	43	60	**1183.1**	1	15,00
100	54	68	**1184.1**	1	17,15
150	59	69	**T648.1**	1	22,45
250	66	97	**1185.1**	1	26,80
400	80	106	**T649.1**	1	41,75
500	80	125	**T650.1**	1	42,85
600	90	125	**T651.1**	1	58,80
1000	100	155	**1187.1**	1	82,25
2000	120	210	**T652.1**	1	149,45
5000	170	280	**T653.1**	1	278,45

Rotilabo®-beakers

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

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
100	60	50	**HT90.1**	1	73,85
250	85	65	**HT91.1**	1	77,00
500	110	80	**HT92.1**	1	103,00
1000	130	100	**HT93.1**	1	124,70
2000	180	120	**HT94.1**	1	177,40
3000	180	150	**HT95.1**	1	211,80
5000	210	180	**HT96.1**	1	280,60

Rotilabo®-cup

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

Volume (ml)	Height (mm)	Top inside ∅ (mm)	Art. No.	Pack Qty.	€
75	50	50	**YX59.1**	1	6,35
125	60	60	**YX60.1**	1	6,70
150	65	65	**YX61.1**	1	7,35
250	100	75	**YX58.1**	1	6,25

Rotilabo®-beakers

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

Short

Volume (ml)	Height (mm)	Top ∅ (mm)	Art. No.	Pack Qty.	€
275	85	70	**XX35.1**	1	11,75
400	99	80	**XX36.1**	1	13,80
620	116	90	**XX37.1**	1	15,95
860	129	100	**XX38.1**	1	20,40
950	100	123	**XX39.1**	1	26,25

Tall

Volume (ml)	Height (mm)	Top ∅ (mm)	Art. No.	Pack Qty.	€
170	90	52	**XX40.1**	1	9,65
225	106	57	**XX41.1**	1	10,50
450	143	70	**XX42.1**	1	13,05
1100	157	101	**XX43.1**	1	20,35

Measuring beakers

121 °C

Griffin beakers

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

Volume (ml)	Graduations (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
10	2	30 x 36	**2870.1**	1	1,90
25	5	38 x 50	**2871.1**	1	1,90
50	10	47 x 60	**2872.1**	1	2,00
100	10	55 x 70	**2873.1**	1	2,10
150	20	66 x 80	**2874.1**	1	2,30
250	25	77 x 95	**2875.1**	1	2,55
400	50	87 x 112	**2876.1**	1	3,10
500	50	94 x 118	**HX26.1**	1	3,40
600	50	100 x 127	**2877.1**	1	3,40
1000	100	120 x 147	**2879.1**	1	4,90
2000	200	149 x 187	**P804.1**	1	8,40
3000	250	170 x 212	**P805.1**	1	16,40
5000	500	203 x 247	**P806.1**	1	21,45

Griffin beaker set

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

Art. No.	Pack Qty. (assortment)	€
2880.1	1	23,45

121 °C

Griffin beakers

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

Volume (ml)	Graduations (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
10	2	30 x 36	**2890.1**	1	2,10
25	5	38 x 50	**2891.1**	1	2,30
50	10	47 x 60	**2892.1**	1	2,55
100	10	55 x 70	**2893.1**	1	2,80
150	20	66 x 80	**2894.1**	1	3,60
250	25	77 x 95	**2895.1**	1	3,80
400	50	87 x 112	**2896.1**	1	4,85
500	50	94 x 118	**HX27.1**	1	5,65
600	50	100 x 127	**2897.1**	1	6,40
1000	100	120 x 147	**2899.1**	1	8,85
2000	200	149 x 187	**P807.1**	1	14,50
3000	250	170 x 212	**P808.1**	1	25,55
5000	500	203 x 247	**P809.1**	1	34,35

Griffin beaker set

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

Art. No.	Pack Qty. (assortment)	€
2900.1	1	37,65

121 °C

Griffin beakers

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

*Variant supplementary to ISO 7056

Volume (ml)	Graduations (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
25	5	38 x 50	**CKK4.1**	1	1,80
50	10	47 x 60	**CKK5.1**	1	2,05
100	10	55 x 70	**CKK6.1**	1	2,10
150*	20	66 x 80	**CKK7.1**	1	2,30
250	25	77 x 95	**CKK8.1**	1	2,50
400*	50	87 x 111,5	**CKK9.1**	1	3,10
500	50	94 x 117,5	**CKL0.1**	1	3,40
600*	50	100 x 126,5	**CKL1.1**	1	3,60
1000	100	120 x 147	**CKL2.1**	1	4,80
2000	200	149 x 187	**CKL3.1**	1	8,25
3000	250	170 x 212	**CKL4.1**	1	16,35
5000	500	203 x 247	**CKL5.1**	1	21,45

121 °C

Rotilabo®-Griffin beakers

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

Volume (ml)	Graduations (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
25	5	32 x 50	**A862.1**	1	19,85
50	10	39 x 59	**A863.1**	1	25,05
100	20	50 x 72	**A864.1**	1	34,95
250	50	67 x 96	**A865.1**	1	59,10
500	100	88 x 122	**A866.1**	1	91,40
1000	100	105 x 143	**A867.1**	1	160,20

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

Measuring beakers

A 121 °C

Griffin beakers

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

Volume (ml)	Graduations (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
25	5	32 x 50	**2881.1**	1	11,60
50	10	39 x 59	**2882.1**	1	11,95
100	20	50 x 72	**2883.1**	1	17,65
250	50	67 x 96	**2884.1**	1	30,10
400	50	77 x 109	**2885.1**	1	41,80
500	100	88 x 122	**HX28.1**	1	49,25
600	100	91 x 125	**2886.1**	1	56,65
1000	100	105 x 143	**2887.1**	1	80,65

A 121 °C

Rotilabo®-sample beakers

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

Volume (ml)	Graduation (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
50	5	49 x 57	**HT84.1**	100	42,80
100	10	58 x 72	**HT85.1**	100	47,85
250	10	76 x 90	**HT86.1**	100	62,55
400	20	85 x 108	**HT87.1**	100	67,60
800	50	107 x 133	**HT88.1**	100	105,85
1000	50	115 x 145	**HT89.1**	100	107,20

▶ Sample beaker with a volume of 30 ml and more see page 121

A 121 °C

Rotilabo® measuring beakers

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

Volume (ml)	Graduations (ml)	Height (mm)	Top ∅ (mm)	Art. No.	Pack Qty.	€
50	2	70	40	**YA29.1**	1	1,95
100	2	80	50	**YA30.1**	1	2,15
250	5	120	70	**YA31.1**	1	3,25
500	10	133	91	**0757.1**	1	3,80
1000	10	170	116	**0758.1**	1	5,15
2000	20	215	150	**0768.1**	1	9,10
3000	50	242	170	**0779.1**	1	12,00
5000	100	270	210	**0780.1**	1	17,35

Rotilabo®-measuring beakers set

Set of 5 beakers, capacity 500 to 5000 ml.

Art. No.	Pack Qty. (assortment)	€
0859.1	1	40,00

A 121 °C

Measuring beakers

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

Volume (ml)	Graduations (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
50	2	40 x 70	**CKL6.1**	1	2,10
100	2	50 x 80	**CKL7.1**	1	2,15
250	5	70 x 120	**CKL8.1**	1	3,35
500	10	91 x 133	**CKL9.1**	1	3,80
1000	20	116 x 170	**CKN0.1**	1	5,20
2000	50	150 x 215	**CKN1.1**	1	9,25
3000	50	170 x 242	**CKN2.1**	1	12,55
5000	100	210 x 270	**CKN3.1**	1	17,60

Measuring beakers

Measuring beakers

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

Volume (ml)	Colour	Art. No.	Pack Qty.	€
500	blue	**APH6.1**	1	4,10
500	yellow	**APH7.1**	1	3,80
500	red	**APH8.1**	1	3,80
500	green	**APH9.1**	1	3,80

Measuring beaker assortment

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

Art. No.	Pack Qty. (assortment)	€
APK0.1	1	14,65

A 121 °C

Rotilabo® measuring beakers

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

Volume (ml)	Graduations (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
250	5	75 x 115	**XY21.1**	1	3,20
500	10	100 x 140	**P800.1**	1	3,80
1000	10	125 x 167	**P801.1**	1	5,00
2000	20	148 x 212	**P802.1**	1	9,15
3000	50	170 x 242	**P803.1**	1	12,45

Measuring beakers

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

Volume (ml)	Graduations (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
250	5	70 x 120	**CKN4.1**	1	4,05
500	10	91 x 133	**CKN5.1**	1	5,50
1000	10	116 x 170	**CKN6.1**	1	6,75
2000	20	150 x 215	**CKN7.1**	1	11,20
3000	50	170 x 242	**CKN8.1**	1	14,20

A 121 °C

Measuring jugs

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

Volume (ml)	Graduations (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
1000	10	117 x 165	**EKE7.1**	1	6,70
2000	20	151 x 206	**EKE8.1**	1	12,50

Lid for measuring jugs

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

A 121 °C

Measuring beakers 51

By Haldenwanger. Made of glazed porcelain, with the exception of the outer bottom surface. Graduated. Temperature stable up to 400 °C. Autoclavable.

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

Erlenmeyer flasks

A 121 °C

Rotilabo®-measuring beakers

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

Volume (l)	Subdivisions (l)	∅ x H (mm)	Art. No.	Pack Qty.	€
0,7	0,1	100 x 100	**9472.1**	1	30,65
1,3	0,1	120 x 120	**9473.1**	1	38,70
2,1	0,2	140 x 140	**9475.1**	1	50,65
3,2	0,2	160 x 160	**9476.1**	1	65,60
4,0	0,5	180 x 180	**9478.1**	1	82,15
5,0	1,0	200 x 200	**9479.1**	1	96,65

A 121 °C

Rotilabo®-measuring beakers with handle

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

Volume (ml)	Graduation (ml)	Height (mm)	Art. No.	Pack Qty.	€
100	50	50	**YY00.1**	1	4,85
250	50	70	**YY01.1**	1	5,70
500	100	110	**YY02.1**	1	10,40
1000	500	135	**YY03.1**	1	13,90
2000	500	195	**YY04.1**	1	23,05

A 121 °C

Rotilabo®-measuring beakers

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

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
30	50 x 25	**LT24.1**	5	17,60
50	53 x 45	**LT25.1**	5	22,90

A 121 °C

Rotilabo®-wide neck Erlenmeyer flasks

Made of borosilicate glass 3.3. Graduated.
In acc. with DIN ISO 24450. Autoclavable.

*In acc. with DIN.

Volume (ml)	Flask outer ∅ (mm)	Height (mm)	Outer neck ∅ (mm)	Art. No.	Pack Qty.	€
25*	42	70	32	**X734.1**	10	42,40
50	51	85	34	**X735.1**	10	42,40
100	64	105	34	**X736.1**	10	24,20
200	79	131	50	**X737.1**	10	29,25
250	85	135	50	**X738.1**	10	31,40
300*	87	156	50	**X739.1**	10	36,45
500	105	170	50	**X740.1**	10	39,25
1000	131	215	50	**X741.1**	10	44,55
2000*	153	280	72	**X742.2**	6	56,90

Rotilabo®-narrow neck Erlenmeyer flasks

Made of borosilicate glass 3.3. Graduated. Autoclavable.

*In acc. with DIN-ISO.

Volume (ml)	Flask outer ∅ (mm)	Height (mm)	Outer neck ∅ (mm)	Art. No.	Pack Qty.	€
25	42	70	22	**X745.1**	10	42,40
50	51	85	22	**X746.1**	10	42,40
100	64	105	22	**X747.1**	10	21,65
200*	79	131	34	**X748.1**	10	27,55
250	85	140	34	**X749.1**	10	29,70
300*	87	156	34	**X750.1**	10	36,05
500	105	175	34	**X751.1**	10	38,60
1000	131	220	42	**X752.1**	10	55,15
2000	166	280	50	**X753.2**	6	50,00
3000	187	310	50	**X754.1**	1	27,65
5000	220	365	50	**X755.1**	1	42,40

- Erlenmeyer flasks sterile see page 279
- Weighting rings for glass beakers an Erlenmeyer flasks see page 226

Erlenmeyer flasks

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Wide-neck Erlenmeyer flasks

Made of DURAN®, graduated. With labelling field.
In acc. with DIN ISO 24450. With retrace code. Flasks up to 2000 ml graduated. Autoclavable.

* Not in acc. with DIN. ** Not graduated

Volume (ml)	Outer neck ∅ (mm)	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
25 *	31	43	70	**C144.1**	10	51,85
50	34	51	85	**C145.1**	10	52,00
100	34	64	105	**C146.1**	10	50,80
200	50	79	131	**C147.1**	10	55,25
250	50	85	140	**C148.1**	10	57,00
300	50	87	156	**C149.1**	10	67,20
500	50	105	175	**C150.1**	10	78,90
1000	50	131	220	**C151.2**	1	12,80
2000 *	72	153	276	**C152.2**	1	23,35
3000 **	106	190	285	**AAA3.1**	1	76,45
5000 **	108	220	322	**AAA4.1**	1	98,90
10000 **	147	285	420	**AAA5.1**	1	191,00

Narrow-neck Erlenmeyer flasks

Made of DURAN®, graduated.
In acc. with ISO 1773. With retrace code. Autoclavable.

*Not in acc. with ISO.

Volume (ml)	Outer neck ∅ (mm)	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
25	22	42	75	**C133.1**	10	51,65
50	22	51	90	**C134.1**	10	51,85
100	22	64	105	**C135.1**	10	49,20
125*	28	67	112	**PY97.1**	10	49,55
150	28	74	118	**XT07.1**	10	50,40
200*	34	79	131	**C136.1**	10	51,85
250	34	85	145	**C137.1**	10	52,45
300*	34	87	156	**C138.1**	10	60,50
500	34	105	180	**C139.1**	10	67,70
800*	42	120	200	**XT08.1**	10	86,75
1000	42	131	220	**C140.2**	1	11,65
2000	50	166	280	**C141.2**	1	21,90
3000	52	187	310	**C142.2**	1	40,90
5000	52	220	365	**C143.1**	1	61,15

▶ Watch glasses for covering beakers
see page 181

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

DURAN®-Super Duty narrow neck Erlenmeyer flasks

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

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

DURAN®-Super Duty narrow neck Erlenmeyer flasks

Volume (ml)	Outer neck ∅ (mm)	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
25	22	42	75	**PC40.1**	10	93,80
50	22	51	90	**PC41.1**	10	95,40
100	22	64	105	**PC42.1**	10	87,65
250	34	85	145	**PC43.1**	10	76,20
500	34	105	180	**PC44.1**	10	90,85
1000	42	131	220	**PC45.1**	10	143,00
2000	50	166	280	**PC46.1**	10	266,00
5000	52	220	365	**PC47.1**	1	127,00

DURAN®-Super Duty wide neck Erlenmeyer flasks

Volume (ml)	Outer neck ∅ (mm)	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	34	64	105	**PC48.1**	10	69,45
250	50	85	140	**PC49.1**	10	76,20
500	50	105	175	**PC50.1**	10	90,85
1000	50	131	220	**PC51.1**	10	143,00

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

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

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

Erlenmeyer flasks

A 121 °C

Rotilabo®-Erlenmeyer flasks

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

Volume (ml)	Ground glass joint	Largest outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
25	14/23	42	70	**Y643.1**	10	79,05
25	19/26	42	70	**NT33.1**	10	72,05
50	14/23	51	85	**Y644.1**	10	112,90
50	29/32	51	85	**X769.1**	10	91,95
100	19/26	51	105	**X770.1**	10	126,85
100	29/32	64	105	**X771.1**	10	105,65
200	29/32	79	130	**NT34.1**	10	125,25
250	29/32	85	135	**X773.1**	10	98,80
250	45/40	85	135	**X774.1**	10	148,35
250	14/23	85	140	**NT35.1**	10	125,80
500	29/32	105	170	**X776.1**	10	117,20
500	45/50	105	175	**NT36.1**	10	156,95
1000	29/32	131	215	**X778.1**	10	188,15
1000	45/40	131	215	**X779.1**	10	199,95
2000	29/32	166	275	**Y684.1**	6	138,70
2000	45/50	166	275	**NT37.1**	6	149,45

Material DURAN®

A 121 °C

① Iodine determination flasks

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

Volume (ml)	Art. No.	Pack Qty.	€
100	**E535.1**	1	14,35
250	**E536.1**	1	15,80
300	**EPY7.1**	1	19,35
500	**E537.1**	1	18,60
1000	**EPY8.1**	1	31,90

② Iodine determination flasks with neck

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

Volume (ml)	Largest outer ∅ (mm)	Height approx. (mm)	Art. No.	Pack Qty.	€
100	60	135	**TK12.1**	1	66,95
250	81	170	**TK13.1**	1	70,65
500	101	205	**TK14.1**	1	77,65

Material DURAN®

A 121 °C

Erlenmeyer flasks

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

*In acc. with DIN. **Tolerance: ±4 mm

Volume (ml)	Ground glass joint	Largest outer ∅ (mm)	Height* * (mm)	Art. No.	Pack Qty.	€
10*	14/23	30	60	**KX15.1**	10	71,80
25	14/23	42	70	**KT59.1**	10	84,85
25	19/26	42	70	**KT98.1**	10	89,25
50	14/23	51	85	**KT60.1**	10	85,75
50	19/26	51	85	**KT99.1**	10	90,60
50*	24/29	51	85	**KX17.1**	10	91,40
50	29/32	51	85	**KT62.1**	10	90,25
100	14/23	64	105	**KT97.1**	10	92,20
100	19/26	64	105	**KT61.1**	10	95,15
100*	24/29	64	100	**KX18.1**	10	97,45
100	29/32	64	105	**KT63.1**	10	81,20
250*	19/26	85	145	**KX16.1**	10	169,85
250*	24/29	85	140	**KX19.1**	10	110,75
250	29/32	85	139	**KT64.1**	10	91,15
250	45/40	85	128	**KT68.1**	10	161,25
300*	29/32	87	150	**KX00.1**	10	98,60
500	29/32	105	170	**KT65.1**	10	112,90
500	45/40	105	165	**KX01.1**	10	196,75
1000	29/32	131	223	**KT66.1**	10	175,25
1000	45/40	131	208	**KT69.1**	1	30,55
2000*	29/32	166	284	**KT67.1**	1	45,70
5000*	45/40	220	360	**KX20.1**	1	170,95

A 121 °C

Rotilabo®-Erlenmeyer flask

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

Volume (ml)	Thread	Outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	GL 25	64	100	**NY86.1**	1	8,75
250	GL 32	85	140	**NY87.1**	1	10,45
500	GL 32	105	175	**NY88.1**	1	12,50
1000	GL 32	131	215	**NY89.1**	1	14,30

▶ Standard ground glass joint stoppers see page 142

Erlenmeyer flasks

Material
DURAN®
A 121 °C

Erlenmeyer flasks

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

Volume (ml)	Largest outer ∅ (mm)	Thread	Height (mm)	Art. No.	Pack Qty.	€
100	64	GL 25	109	**E531.1**	1	27,35
250	85	GL 32	149	**E532.1**	1	28,35
500	105	GL 32	180	**E533.1**	1	29,55
1000	131	GL 32	225	**E534.1**	1	43,70

A 121 °C

PFA Erlenmeyer flasks

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

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

Volume (ml)	Height (mm)	Neck ∅ (mm)	Art. No.	Pack Qty.	€
100	97	18	**YY57.1**	1	73,00
200	123	23	**YY58.1**	1	127,95
300	130	23	**YY59.1**	1	162,35

▶ Erlenmeyer flasks sterile see page 279

▶ Weighting rings for glass beakers an Erlenmeyer flasks see page 226

A 121 °C

Rotilabo®-wide neck Erlenmeyer flasks

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

Volume (ml)	Graduations (ml)	Thread	Standard ground glass joint	Art. No.	Pack Qty.	€
50	10	GL 40	34	**8338.1**	1	4,45
100	20	GL 40	34	**8339.1**	1	5,00
250	50	GL 52	45	**8341.1**	1	7,00
500	100	GL 52	45	**8342.1**	1	7,90
1000	200	GL 52	45	**8344.1**	1	10,60

A 121 °C

Disposable Erlenmeyer flask

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

Width (mm)	Depth (mm)	Height (mm)	Art. No.	Pack Qty.	€
55	55	105	**AYP4.1**	500	167,70

Accessories:

Snap-on lid for disposable Erlenmeyer flasks, ∅ 46 mm	**AYP5.1**	2000	137,60

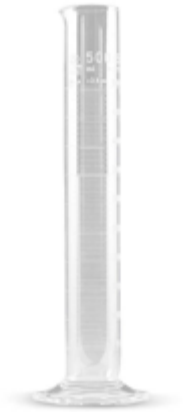
A 121 °C

Erlenmeyer flasks

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

Volume (ml)	Standard ground glass joint	Height (mm)	Outer ∅ (mm)	Art. No.	Pack Qty.	€
50	19/26	86	54	**NP91.1**	1	165,55
100	19/26	128	63	**NP92.1**	1	174,15
250	29/32	144	85	**NP93.1**	1	237,60
500	29/32	190	107	**NP94.1**	1	421,40

Measuring cylinders



A 121 °C

Class A measuring cylinders, blue markings

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

Volume (ml)	Graduations (ml)	Error (±ml)	Height (mm)	Ø (mm)	Art. No.	Pack Qty.	€
5	0,1	0,05	115	13	**Y303.1**	2	13,95
10	0,2	0,10	135	16	**Y304.1**	2	14,65
25	0,5	0,25	160	21	**Y305.1**	2	16,05
50	1,0	0,50	195	26	**Y306.1**	2	17,65
100	1,0	0,50	240	31	**Y307.1**	2	18,55
250	2,0	1,00	320	41	**Y308.1**	2	29,75
500	5,0	2,50	380	53	**Y309.1**	2	38,50
1000	10,0	5,00	465	65	**Y310.1**	2	59,15
2000	20,0	10,00	500	84	**Y311.1**	1	56,90

Material DURAN®

A 121 °C

Class A measuring cylinders, amber markings

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

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Height (mm)	Ø (mm)	Art. No.	Pack Qty.	€
5	0,1	0,05	115	13	**AN01.1**	2	21,25
10	0,2	0,10	140	14	**AN02.1**	2	21,25
25	0,5	0,25	170	21	**AN03.1**	2	21,90
50	1,0	0,50	200	25	**AN04.1**	2	22,35
100	1,0	0,50	260	29	**AN05.1**	2	23,45
250	2,0	1,00	335	39	**AN06.1**	2	40,60
500	5,0	2,50	390	53	**AN07.1**	2	70,50
1000	10,0	5,00	470	65	**AN08.1**	1	52,65
2000	20,0	10,00	500	85	**AN09.1**	1	91,75

Material DURAN®

A 121 °C

Class A measuring cylinders, blue graduated

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

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Height (mm)	Ø (mm)	Art. No.	Pack Qty.	€
5	0,1	0,05	115	13	**Y568.1**	2	21,75
10	0,2	0,10	140	14	**Y569.1**	2	20,65
25	0,5	0,25	170	21	**Y570.1**	2	21,35
50	1,0	0,50	200	25	**Y571.1**	2	22,45
100	1,0	0,50	260	29	**Y572.1**	2	23,45
250	2,0	1,00	335	39	**Y573.1**	2	41,40
500	5,0	2,50	390	53	**Y574.1**	2	69,70
1000	10,0	5,00	470	65	**Y575.2**	1	55,90
2000	20,0	10,00	500	85	**Y576.1**	1	95,70

Material DURAN®

A 121 °C

Measuring cylinder class A, blue graduated

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

Volume (ml)	Graduations (ml)	Tolerance (±ml)	Height (mm)	Art. No.	Pack Qty.	€
5	0,1	0,05	115	**CNX1.1**	2	25,75
10	0,2	0,1	140	**CNX2.1**	2	24,20
25	0,5	0,25	170	**CNX3.1**	2	25,30
50	1	0,5	200	**CNX4.1**	2	26,45
100	1	0,5	260	**CNX5.1**	2	33,35
250	2	1	335	**CNX6.1**	2	52,60
500	5	2,5	390	**CNX7.1**	2	88,15
1000	10	5	470	**CNX8.1**	1	59,05
2000	20	10	500	**CNX9.1**	1	112,90

Measuring cylinders

Material
DURAN®
A 121 °C

Class A measuring cylinders, blue markings

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

Volume (ml)	Graduations (ml)	Error (±ml)	Height (mm)	Ø (mm)	Art. No.	Pack Qty.	€
10	0,2	0,1	140	14	**CX74.1**	2	16,80
25	0,5	0,25	170	21	**CX75.1**	2	17,15
50	1	0,5	200	25	**CX76.1**	2	20,10
100	1	0,5	260	29	**CX77.1**	2	22,20
250	2	1,0	335	39	**CX78.1**	2	38,65
500	5	2,5	390	53	**CX79.1**	2	62,20
1000	10	5,0	470	65	**CX80.1**	1	49,40

DURAN WHEATON KIMBLE

Material
DURAN®
A 121 °C

DURAN®-measuring cylinders

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

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

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Height (mm)	Ø (mm)	Art. No.	Pack Qty.	€
5	0,1	0,05	112	13	**AKA2.1**	2	18,45
10	0,2	0,10	137	14	**AKA3.1**	2	18,25
25	0,5	0,25	167	21	**AKA4.1**	2	19,35
50	1	0,50	196	25	**AKA5.1**	2	20,70
100	1	0,50	256	29	**AKA6.1**	2	22,10
250	2	1,00	331	39	**AKA7.1**	2	42,70
500	5	2,50	360	53	**AKA8.1**	2	71,60
1000	10	5,00	460	65	**AKA9.1**	1	55,20
2000	20	10,00	500	85	**AKC0.1**	1	96,60

Class B with white graduations

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Height (mm)	Ø (mm)	Art. No.	Pack Qty.	€
5	0,1	0,1	112	13	**AKC1.1**	2	17,80
10	0,2	0,2	137	14	**AKC2.1**	2	19,10
25	0,5	0,5	167	21	**AKC3.1**	2	19,80
50	1	1	196	25	**AKC4.1**	2	20,50
100	1	1	256	29	**AKC5.1**	2	23,55
250	2	2	331	39	**AKC6.1**	2	32,15
500	5	5	360	53	**AKC7.1**	2	50,10
1000	10	10	460	65	**AKC8.1**	1	48,80
2000	20	20	500	85	**AKC9.1**	1	81,00

Material
DURAN®
A 121 °C

Class B measuring cylinders, blue markings

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

Volume (ml)	Graduations (ml)	Height (mm)	Ø (mm)	Art. No.	Pack Qty.	€
5	0,1	115	13	**C173.2**	2	17,15
10	0,2	140	14	**C174.2**	2	16,80
25	0,5	170	21	**C175.2**	2	17,20
50	1,0	200	25	**C176.2**	2	18,10
100	1,0	260	29	**C177.2**	2	19,75
250	2,0	335	39	**C178.2**	2	35,25
500	5,0	390	53	**C179.2**	2	56,95
1000	10,0	470	65	**C180.1**	1	46,10
2000	20,0	500	85	**C181.1**	1	81,55

Material
DURAN®
A 121 °C

Class B measuring cylinders, amber markings

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

Volume (ml)	Graduations (ml)	Height (mm)	Ø (mm)	Art. No.	Pack Qty.	€
5	0,1	115	13	**AN10.1**	2	17,90
10	0,2	140	14	**AN11.1**	2	17,15
25	0,5	170	21	**AN12.1**	2	17,50
50	1,0	200	25	**AN13.1**	2	17,90
100	1,0	260	29	**AN14.1**	2	19,30
250	2,0	335	39	**AN15.1**	2	35,40
500	5,0	390	53	**AN16.1**	2	57,35
1000	10,0	470	65	**AN17.1**	1	46,10
2000	20,0	500	85	**AN18.1**	1	79,85

Measuring cylinders

Material
DURAN®
A 121 °C

Class B measuring cylinders, blue markings

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

Volume (ml)	Graduations (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
10	0,2	140	14	**CX81.1**	2	13,10
25	0,5	170	21	**CX82.1**	2	14,60
50	1,0	200	25	**CX83.1**	2	15,55
100	1,0	260	29	**CX84.1**	2	19,15
250	2,0	335	39	**CX85.1**	2	30,65
500	5,0	390	53	**CX86.1**	2	48,85
1000	10,0	470	65	**CX87.1**	1	41,70

DURAN WHEATON KIMBLE
Material
DURAN®
A 121 °C

DURAN® Super Duty measuring cylinders, Class B

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

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

Volume (ml)	Graduations (ml)	Limit of error (ml)	Outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	2	1	39	168	**HKL1.1**	2	73,40
250	5	2	54	205	**HKL2.1**	2	95,00
500	10	5	66	253	**HKL3.1**	2	119,00
1000	20	10	85	290	**HKL4.1**	2	175,00

A 121 °C

Class B measuring cylinders

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

Volume (ml)	Height (mm)	∅ (mm)	Graduations (ml)	Art. No.	Pack Qty.	€
10	100	21	1	**K255.2**	2	16,45
25	125	25	1	**K256.2**	2	16,40
50	150	29	2	**K257.2**	2	17,15
100	170	39	2	**K258.2**	2	19,95
250	220	54	5	**K259.2**	2	34,35
500	255	65	10	**K260.2**	2	55,85
1000	295	85	20	**K261.1**	1	45,75
2000	345	105	50	**K262.1**	1	78,40

Nessler cylinders

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

Low form

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
50	175	26	**TX37.1**	1	16,35
100	200	32	**TX38.1**	1	17,75

High form

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
50	265	21	**TX39.1**	1	15,00
100	320	26	**TX40.1**	1	15,60

▶ Aerometer see page 845

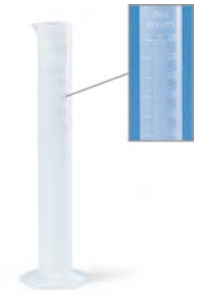
Measuring cylinders

121 °C

Rotilabo®-short measuring cylinders made of PP

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

Volume (ml)	Height (mm)	∅ (mm)	Graduations (ml)	Art. No.	Pack Qty.	€
10	88	16	0,25	**K846.1**	1	3,70
25	107	22	1,0	**K847.1**	1	3,95
50	143	29	2,5	**K848.1**	1	4,20
100	178	34	5,0	**K849.1**	1	4,80
250	264	45,5	10,0	**K850.1**	1	8,45
500	305	55,5	10,0	**K851.1**	1	9,95
1000	332	70	25,0	**K852.1**	1	12,70
2000	370	92	50,0	**K853.1**	1	17,65



Rotilabo®-tall measuring cylinders made of PP

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

Volume (ml)	Height (mm)	∅ (mm)	Graduations (ml)	Tolerance (±ml)	Art. No.	Pack Qty.	€
10	145	15	0,2	0,2	**8357.1**	1	2,65
25	170	22	0,5	0,5	**8359.1**	1	3,15
50	200	27	1,0	1,0	**1666.1**	1	3,35
100	250	33	1,0	1,0	**1667.1**	1	4,15
250	315	44	2,0	2,0	**8362.1**	1	6,35
500	360	58	5,0	5,0	**1668.1**	1	8,35
1000	440	68	10,0	10,0	**1669.1**	1	11,10
2000	482	97	20,0	20,0	**8363.1**	1	25,45

121 °C

Measuring cylinders with handle

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

Volume (ml)	Graduations (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
1000	10	64 x 439	**YC27.1**	1	40,75
2000	20	89 x 490	**YC28.1**	1	71,85

121 °C

Measuring cylinders

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

Volume (ml)	Height (mm)	∅ (mm)	Graduations (ml)	Tolerance (±ml)	Art. No.	Pack Qty.	€
25	170	22	0,5	0,25	**P148.1**	2	15,00
50	200	27	1,0	0,5	**P149.1**	2	15,80
100	250	33	1,0	0,5	**P150.1**	2	21,30
250	315	44	2,0	1,0	**P151.1**	2	33,35
500	360	58	5,0	2,5	**P152.1**	1	25,55
1000	440	69	10,0	5,0	**P153.1**	1	36,30
2000	482	97	20,0	10,0	**P154.1**	1	60,15

121 °C

PFA measuring cylinders

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

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

Volume (ml)	Height (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
30	165,9	17,8	**YY72.1**	1	367,65
50	216,7	20,0	**YY73.1**	1	399,90
100	231,8	25,7	**YY74.1**	1	470,85
200	281,8	33,6	**YY75.1**	1	568,70

Mixing cylinders

Material
DURAN®

Class A mixing cylinders

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

Volume (ml)	Gradua-tions (ml)	Limit of error (±ml)	Ground glass joint	Height (mm)	Art. No.	Pack Qty.	€
10	0,2	0,1	10/19	160	**Y585.1**	2	41,80
25	0,5	0,25	14/23	193	**Y586.1**	2	44,40
50	1,0	0,5	19/26	226	**Y587.1**	2	49,40
100	1,0	0,5	24/29	290	**Y588.1**	2	53,70
250	2,0	1,0	29/32	367	**Y589.1**	2	80,00
500	5,0	2,5	34/35	425	**Y590.1**	2	113,95
1000	10,0	5,0	45/40	510	**Y591.2**	1	98,70
2000	20,0	10,0	45/40	540	**Y592.1**	1	165,55

Material
DURAN®

Class B mixing cylinders

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

Volume (ml)	Graduations (ml)	Ground glass joint	Height (mm)	Art. No.	Pack Qty.	€
10	0,2	10/19	160	**Y577.1**	2	36,05
25	0,5	14/23	193	**Y578.1**	2	36,15
50	1,0	19/26	226	**Y579.1**	2	40,45
100	1,0	24/29	290	**Y580.1**	2	42,95
250	2,0	29/32	367	**Y581.1**	2	64,45
500	5,0	34/35	425	**Y582.1**	2	101,05
1000	10,0	45/40	510	**Y583.2**	1	78,25
2000	20,0	45/40	540	**Y584.1**	1	144,05

DURAN WHEATON KIMBLE

Material
DURAN®

A 121 °C

DURAN®-mixing cylinders

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

Delivery incl. PE stopper.

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

Volume (ml)	Gradua-tions (ml)	Limit of error (±ml)	Ground glass joint	Height (mm)	Art. No.	Pack Qty.	€
10	0.2	0,10	10/19	156	**AKE0.1**	2	40,15
25	0.5	0,25	14/23	190	**AKE1.1**	2	42,50
50	1	0,50	19/26	222	**AKE2.1**	2	48,00
100	1	0,50	24/29	287	**AKE3.1**	2	53,15
250	2	1,00	29/32	363	**AKE4.1**	2	77,30
500	5	2,50	34/35	398	**AKE5.1**	2	109,00
1000	10	5,00	45/40	500	**AKE6.1**	1	97,55
2000	20	10,00	45/40	540	**AKE7.1**	1	167,00

Class B with white graduations

Volume (ml)	Gradua-tions (ml)	Limit of error (±ml)	Ground glass joint	Height (mm)	Art. No.	Pack Qty.	€
10	0.2	0,2	10/19	156	**AKE8.1**	2	35,80
25	0.5	0,5	14/23	190	**AKE9.1**	2	37,00
50	1	1	19/26	222	**AKH0.1**	2	41,45
100	1	1	24/29	287	**AKH1.1**	2	44,00
250	2	2	29/32	363	**AKH2.1**	2	66,35
500	5	5	34/35	398	**AKH3.1**	2	105,00
1000	10	10	45/40	500	**AKH4.1**	1	76,80
2000	20	20	45/40	540	**AKH5.1**	1	151,00

DURAN WHEATON KIMBLE

Standard ground glass joint stoppers

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

Standard taper (NS)	Colour	Art. No.	Pack Qty.	€
7/16	blue	**AKH6.1**	10	7,75
10/19	green	**AKH7.1**	10	9,90
12/21	violet	**AKH8.1**	10	11,85
14/23	yellow	**AKH9.1**	10	8,35
19/26	blue	**AKK0.1**	10	9,55
24/29	green	**AKK1.1**	10	11,20
29/32	red	**AKK2.1**	10	13,50
34/35	orange	**AKK3.1**	1	2,95
45/40	brown	**AKK4.1**	1	3,35

Volumetric flasks

Volumetric flasks, borosilicate glass

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

Transparent glass. Graduated with blue markings.

*Wide neck

Volume (ml)	Error (±ml)	Standard ground joint	Art. No.	Pack Qty.	€
5	0,025	10/19*	**Y274.1**	2	13,20
10	0,025	7/16	**Y275.1**	2	13,85
10	0,025	10/19*	**Y276.1**	2	14,25
20	0,040	10/19	**Y277.1**	2	14,50
25	0,040	10/19	**Y278.1**	2	15,35
50	0,060	12/21	**Y279.1**	2	16,35
50	0,060	14/23*	**Y280.1**	2	17,60
100	0,100	12/21	**Y281.1**	2	17,50
100	0,100	14/23*	**Y282.1**	2	18,95
200	0,150	14/23	**Y283.1**	2	23,55
250	0,150	14/23	**Y284.1**	2	24,00
500	0,250	19/26	**Y285.1**	2	30,05
1000	0,400	24/29	**Y286.1**	2	49,90
2000	0,600	29/32	**Y287.1**	2	83,55
5000	1,200	34/35	**Y288.1**	1	95,95

Amber glass. Graduated with white markings.

*Wide neck

Volume (ml)	Error (±ml)	Standard ground joint	Art. No.	Pack Qty.	€
5	0,025	10/19*	**Y290.1**	2	19,90
10	0,025	10/19*	**Y292.1**	2	19,90
20	0,040	10/19	**Y293.1**	2	21,40
25	0,040	10/19	**Y294.1**	2	22,25
50	0,060	12/21	**Y295.1**	2	24,60
50	0,060	14/23*	**Y296.1**	2	24,65
100	0,100	12/21	**Y297.1**	2	28,15
100	0,100	14/23*	**Y298.1**	2	28,70
200	0,150	14/23	**Y299.1**	2	42,40
250	0,150	14/23	**Y300.1**	2	45,45
500	0,250	19/26	**Y301.1**	2	61,20
1000	0,400	24/29	**Y302.1**	2	78,10

- Glass-stoppers see page 142
- Stoppers made of natural rubber see page 83

Material DURAN®

Volumetric flasks, DURAN®

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

Transparent glass. Graduated with blue markings.

*Wide neck

Volume (ml)	Error (±ml)	Standard ground joint	Art. No.	Pack Qty.	€
5	0,025	7/16	**Y231.1**	2	27,55
5	0,04	10/19*	**Y232.1**	2	27,55
10	0,025	7/16	**C162.1**	2	26,85
10	0,04	10/19*	**Y233.1**	2	27,55
20	0,04	10/19	**C163.1**	2	26,85
25	0,04	10/19	**C164.1**	2	26,85
25	0,06	12/21*	**Y234.1**	2	28,50
50	0,06	12/21	**C165.1**	2	29,70
50	0,08	14/23*	**Y235.1**	2	28,85
100	0,1	12/21	**C166.1**	2	30,85
100	0,1	14/23*	**Y236.1**	2	29,70
200	0,15	14/23	**C167.1**	2	38,70
250	0,15	14/23	**C168.1**	2	41,95
500	0,25	19/26	**C169.1**	2	48,75
1000	0,4	24/29	**C170.1**	2	78,45
1000	0,6	29/32*	**Y237.1**	2	94,50
2000	0,6	29/32	**C171.1**	2	118,25
5000	1,2	34/35	**C172.1**	1	135,45

Trapezoid. Graduated with blue markings.

Volume (ml)	Error (±ml)	Standard ground joint	Art. No.	Pack Qty.	€
1	0,025	7/16	**Y239.2**	2	33,55
2	0,025	7/16	**Y240.2**	2	33,55
5	0,04	10/19	**Y241.1**	2	34,05
10	0,04	10/19	**Y242.1**	2	34,05
20	0,04	10/19	**Y243.1**	2	34,05
25	0,04	10/19	**Y244.1**	2	34,05
50	0,06	12/21	**Y245.1**	2	34,05

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

1) Not in acc. with DIN *Wide neck

Volume (ml)	Error (±ml)	Standard ground joint	Art. No.	Pack Qty.	€
5	0,04	10/19	**L450.2**	2	47,20
10	0,04	10/19	**L452.2**	2	47,20
20[1)]	0,04	10/19	**L453.2**	2	47,20
25	0,04	10/19	**L454.2**	2	47,20
50	0,06	12/21	**L455.2**	2	49,35
50	0,08	14/23*	**L456.2**	2	50,35
100	0,1	12/21	**L457.2**	2	51,55
100	0,1	14/23*	**L458.2**	2	53,25
200	0,15	14/23	**L459.2**	2	59,85
250	0,15	14/23	**L460.2**	2	64,10
500	0,25	19/26	**L461.2**	2	83,85
1000	0,4	24/29	**L462.1**	1	62,35
2000	0,6	29/32	**L463.1**	1	94,20

DURAN WHEATON KIMBLE
Material DURAN®

DURAN®-volumetric flasks

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

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

Volume (ml)	Error (±ml)	Standard ground glass joint	Overall height (mm)	Art. No.	Pack Qty.	€
1	0.025	7/16	65	**AHL8.1**	2	52,40
2	0.025	7/16	70	**AHL9.1**	2	52,40
5	0.04	10/19	70	**AHN0.1**	2	29,45
10	0.04	10/19	90	**AHN1.1**	2	29,65
20	0.04	10/19	110	**AHN2.1**	2	30,50
25	0.04	10/19	110	**AHN3.1**	2	30,50
50	0.06	12/21	140	**AHN4.1**	2	33,30
100	0.1	12/21	170	**AHN5.1**	2	37,10
100	0.1	14/23	170	**AHN6.1**	2	37,35
200	0.15	14/23	210	**AHN7.1**	2	42,50
250	0.15	14/23	220	**AHN8.1**	2	44,00
500	0.25	19/26	260	**AHN9.1**	2	52,00
1000	0.4	24/29	300	**AHP0.2**	2	91,00
1000	0.6	29/32	300	**AHP1.2**	2	100,00
2000	0.6	29/32	370	**AHP2.2**	2	124,00
5000	1.2	34/35	475	**AHP3.1**	1	124,30

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

Volume (ml)	Error (±ml)	Standard ground glass joint	Overall height (mm)	Art. No.	Pack Qty.	€
1	0.025	7/16	65	**AHP4.1**	2	102,50
2	0.025	7/16	70	**AHP5.1**	2	102,50
5	0.04	10/19	70	**AHP6.1**	2	72,20
10	0.04	10/19	90	**AHP7.1**	2	72,50
20	0.04	10/19	110	**AHP8.1**	2	73,30
25	0.04	10/19	110	**AHP9.1**	2	73,30
50	0.06	12/21	140	**AHT0.1**	2	76,00
100	0.1	12/21	170	**AHT1.1**	2	79,90
100	0.1	14/23	170	**AHT2.1**	2	80,30
200	0.15	14/23	210	**AHT3.1**	2	85,15
250	0.15	14/23	220	**AHT4.1**	2	86,65
500	0.25	19/26	260	**AHT5.1**	2	95,00
1000	0.4	24/29	300	**AHT6.2**	2	133,80
1000	0.6	29/32	300	**AHT7.2**	2	143,20
2000	0.6	29/32	370	**AHT8.2**	2	166,60
5000	1.2	34/35	475	**AHT9.1**	1	145,60

Class B with white graduations and white ring mark.

Volume (ml)	Error (±ml)	Standard ground glass joint	Overall height (mm)	Art. No.	Pack Qty.	€
5	0.08	10/19	70	**AHX0.1**	2	24,85
10	0.08	10/19	90	**AHX1.1**	2	25,35
20	0.08	10/19	110	**AHX2.1**	2	26,10
25	0.08	10/19	110	**AHX3.1**	2	26,10
50	0.12	12/21	140	**AHX4.1**	2	30,20
100	0.2	14/23	170	**AHX5.1**	2	33,70
200	0.3	14/23	210	**AHX6.1**	2	37,45
250	0.3	14/23	220	**AHX7.1**	2	39,40
500	0.5	19/26	260	**AHX8.1**	2	47,70
1000	0.8	24/29	300	**AHX9.2**	2	79,90
2000	1.2	29/32	370	**AHY0.2**	2	111,00
5000	2.4	34/35	475	**AHY1.1**	1	118,00

DURAN WHEATON KIMBLE
Material DURAN®

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

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

Volume (ml)	Error (±ml)	Standard ground glass joint	Overall height (mm)	Art. No.	Pack Qty.	€
5	0,02	10/19	70	**AHY2.1**	2	75,80
10	0,02	10/19	90	**AHY3.1**	2	75,95
25	0,03	10/19	110	**AHY4.1**	2	76,95
50	0,05	12/21	140	**AHY5.1**	2	79,90
100	0,08	14/23	170	**AHY6.1**	2	84,20
200	0,1	14/23	210	**AHY7.1**	2	89,50
250	0,12	14/23	220	**AHY8.1**	2	91,20
500	0,15	19/26	260	**AHY9.1**	2	99,60
1000	0,3	24/29	300	**AKA0.2**	2	140,00
2000	0,5	29/32	370	**AKA1.2**	2	175,00

Volumetric flasks

Volumetric flask with glass stopper

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

Clear glass. Blue graduations.

*Wide mouth

Volume (ml)	Tolerance (±ml)	Standard ground glass joint	Height (mm)	Art. No.	Pack Qty.	€
5	0,025	7/16	70	**CNY0.1**	2	34,15
5	0,04	10/19*	70	**CNY1.1**	2	34,15
10	0,025	7/16	90	**CNY2.1**	2	34,15
10	0,04	10/19*	90	**CNY3.1**	2	34,15
20	0,04	10/19	110	**CNY4.1**	2	34,15
20	0,06	12/21*	105	**CNY5.1**	2	39,35
25	0,04	10/19	110	**CNY6.1**	2	33,35
25	0,06	12/21*	110	**CNY7.1**	2	33,65
50	0,06	12/21	140	**CNY8.1**	2	33,35
50	0,08	14/23*	140	**CNY9.1**	2	34,75
100	0,1	12/21	170	**CPA0.1**	2	34,75
100	0,1	14/23	170	**CPA1.1**	2	35,70
200	0,15	14/23	210	**CPA2.1**	2	45,70
250	0,15	14/23	220	**CPA3.1**	2	48,05
500	0,25	19/26	260	**CPA4.1**	2	59,00
1000	0,6	19/32*	300	**CPA5.1**	1	53,70
1000	0,4	24/29	300	**CPA6.1**	1	46,20
2000	0,6	29/32	370	**CPA7.1**	1	65,60
5000	1,2	34/35	470	**CPA8.1**	1	145,15
10000	2,0	45/40	570	**CPA9.1**	1	275,20

Trapezoidal shape. Blue graduations.

*Wide mouth

Volume (ml)	Tolerance (±ml)	Standard ground glass joint	Height (mm)	Art. No.	Pack Qty.	€
1	0,025	7/16	60	**CPC0.1**	2	41,50
2	0,025	7/16	70	**CPC1.1**	2	41,50
5	0,025	7/16	70	**CPC2.1**	2	41,50
5	0,04	10/19*	70	**CPC3.1**	2	41,50
10	0,025	7/16	90	**CPC4.1**	2	41,50
10	0,04	10/19*	90	**CPC5.1**	2	41,50
20	0,04	10/19	110	**CPC6.1**	2	41,50
25	0,04	10/19	110	**CPC7.1**	2	41,50
50	0,06	12/21	140	**CPC8.1**	2	41,50

Brown glass. White graduations.

*Wide mouth

Volume (ml)	Tolerance (±ml)	Standard ground glass joint	Height (mm)	Art. No.	Pack Qty.	€
5	0,025	7/16	70	**CPC9.1**	2	71,80
5	0,04	10/19*	70	**CPE0.1**	2	60,75
10	0,025	7/16	90	**CPE1.1**	2	71,80
10	0,04	10/19*	90	**CPE2.1**	2	60,75
20	0,04	10/19	110	**CPE3.1**	2	60,75
20	0,04	12/21*	110	**CPE4.1**	2	60,75
25	0,04	10/19	110	**CPE5.1**	2	60,75
25	0,06	12/21*	110	**CPE6.1**	2	60,75
50	0,06	12/21	140	**CPE7.1**	2	60,75
50	0,08	14/23*	140	**CPE8.1**	2	60,75
100	0,1	12/21	170	**CPE9.1**	2	60,75
100	0,1	14/23	170	**CPH0.1**	2	60,75
200	0,15	14/23	210	**CPH1.1**	2	70,40
250	0,15	14/23	220	**CPH2.1**	2	77,15
500	0,25	19/26	260	**CPH3.1**	2	99,05
1000	0,4	24/29	300	**CPH4.1**	1	70,10
2000	0,6	29/32	370	**CPH5.1**	1	108,60

A 121 °C

Volumetric flasks with screw cap, class A

Individually ring-marked IN. Tolerance class A in accordance with DIN EN ISO 1042. Autoclavable.

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

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

Volume (ml)	Tolerance (±ml)	Thread GL	Height (mm)	Art. No.	Pack Qty.	€
10	0,04	18	90	**XY51.1**	1	131,15
25	0,04	18	115	**XY52.1**	1	134,40
50	0,06	18	150	**XY53.1**	1	136,55
100	0,10	18	180	**XY54.1**	1	170,95
250	0,15	25	235	**XY55.1**	1	213,95
500	0,25	25	270	**XY56.1**	1	246,20

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

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

Volumetric flasks with stopper, class A

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

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

① **Transparent.**

Volume (ml)	Tolerance (±ml)	Standard ground glass joint	Height (mm)	Art. No.	Pack Qty.	€
10	0,04	10/19	90	**XY30.1**	1	10,65
25	0,04	10/19	115	**XY31.1**	1	10,70
50	0,06	12/21	150	**XY32.1**	1	14,20
100	0,10	14/23	180	**XY33.1**	1	16,10
250	0,15	19/26	235	**XY34.1**	1	20,10
500	0,25	19/26	270	**XY35.1**	1	20,95
1000	0,40	24/29	310	**XY36.1**	1	24,10

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

Volume (ml)	Tolerance (±ml)	Standard ground glass joint	Height (mm)	Art. No.	Pack Qty.	€
10	0,04	10/19	90	**XY37.1**	1	19,15
25	0,04	10/19	115	**XY38.1**	1	20,35
50	0,06	12/21	150	**XY39.1**	1	22,35
100	0,10	14/23	180	**XY40.1**	1	24,00
250	0,15	19/26	235	**XY41.1**	1	28,95
500	0,25	19/26	270	**XY42.1**	1	33,90
1000	0,40	24/29	310	**XY43.1**	1	59,65

Volumetric flasks with stopper, class B

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

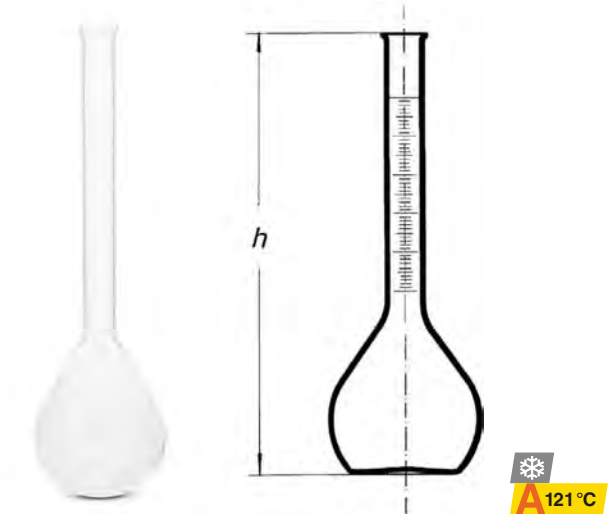
Please note:
Temperatures up to 60 °C cause no permanent exceeding of tolerance limit.

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

Volume (ml)	Tolerance (±ml)	Standard ground glass joint	Height (mm)	Art. No.	Pack Qty.	€
25	0,08	10/19	115	**8374.1**	1	9,05
50	0,12	12/21	150	**8375.1**	1	11,70
100	0,20	14/23	180	**8377.1**	1	13,25
250	0,30	19/26	235	**8378.1**	1	16,90
500	0,50	19/26	270	**8380.1**	1	17,70
1000	0,80	24/29	310	**8381.1**	1	20,35

④ Made of **PP**.

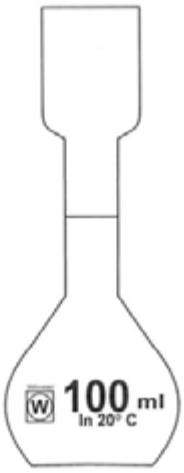
Volume (ml)	Tolerance (±ml)	Standard ground glass joint	Height (mm)	Art. No.	Pack Qty.	€
25	0,08	10/19	115	**8364.1**	1	7,80
50	0,12	12/21	150	**8365.1**	1	9,95
100	0,20	14/23	180	**8366.1**	1	10,65
250	0,30	19/26	235	**8368.1**	1	13,25
500	0,50	19/26	270	**8370.1**	1	13,95
1000	0,80	24/29	310	**8372.1**	1	16,10



Rotilabo®-flasks with graduated neck

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

Volume vessel (ml)	Neck volume (ml)	Graduations (ml)	Height (mm)	Art. No.	Pack Qty.	€
50	+5	0.2	155	**ACA7.1**	1	17,20
100	+10	0.2	205	**ACA8.1**	1	18,30
200	+20	0.2	245	**ACA9.1**	1	24,70
250	+25	0.5	280	**ACC0.1**	1	32,05
500	+50	1.0	320	**ACC1.1**	1	31,50
1000	+100	1.0	400	**ACC2.1**	1	42,25



Rotilabo®-Kohlrausch flasks, class A

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

Volume (ml)	Art. No.	Pack Qty.	€
100	**AAN3.1**	1	25,75
200	**AAN4.1**	1	31,75

Measuring vessels

Material
DURAN®
A 121 °C

① Iodine determination flasks

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

Volume (ml)	Art. No.	Pack Qty.	€
100	**E535.1**	1	14,35
250	**E536.1**	1	15,80
300	**EPY7.1**	1	19,35
500	**E537.1**	1	18,60
1000	**EPY8.1**	1	31,90

② Iodine determination flasks with neck

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

Volume (ml)	Largest outer ∅ (mm)	Height approx. (mm)	Art. No.	Pack Qty.	€
100	60	135	**TK12.1**	1	66,95
250	81	170	**TK13.1**	1	70,65
500	101	205	**TK14.1**	1	77,65

Gay-Lussac pycnometers

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

Volume (ml)	Art. No.	Pack Qty.	€
1	**P224.1**	1	32,20
2	**P225.1**	1	34,55
5	**P226.1**	1	34,20
10	**P227.1**	1	35,50
25	**P228.1**	1	36,55
50	**P229.1**	1	40,85
100	**P230.1**	1	47,30

Pycnometer acc. to Gay-Lussac

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

*In addition to DIN.

Volume (ml)	Art. No.	Pack Qty.	€
10	**EXP7.1**	1	170,95
25	**EXP8.1**	1	173,10
50	**EXP9.1**	1	177,40
100*	**EXY0.1**	1	182,75

Rotilabo®-pycnometers

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

Volume (ml)	NS	Art. No.	Pack Qty.	€
500	45/40	**AAN8.1**	1	89,35
1000	60/46	**AAN9.1**	1	112,90
2000	60/46	**AAP0.1**	1	130,10

Rotilabo®-Reischauer pycnometers

Made of borosilicate glass 3.3. With graduations in neck and ground glass joint 10/13. In acc. with ISO 3507.

Volume (ml)	Height (mm)	Art. No.	Pack Qty.	€
25	105	**TP46.1**	1	30,05
50	115	**TP47.1**	1	32,70

A 121 °C

Einhorn fermentation saccharometer

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

Art. No.	Pack Qty.	€
CKY9.1	1	21,45

DURAN WHEATON KIMBLE

BOD-bottles

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

Uncoated

Volume (ml)	∅ x H (mm)	Stopper type	Art. No.	Pack Qty.	€
60	43 x 115	Pennyhead	**EXT8.1**	1	25,50
60	43 x 115	Robotic	**EXT9.1**	1	25,50
300	69 x 165	Pennyhead	**EXX0.1**	1	15,20
300	69 x 165	Robotic	**EXX1.1**	1	15,20

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

Volume (ml)	∅ x H (mm)	Stopper type	Art. No.	Pack Qty.	€
300	73 x 167	Robotic	**EXX2.1**	1	23,90

DURAN WHEATON KIMBLE

Racks for BOD-bottles

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

For bottle ∅ (mm)	Slots	Art. No.	Pack Qty.	€
43	20	**EXX3.1**	1	86,40
69	12	**EXX4.1**	1	68,70

Stoppers for BOD-bottles

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

Art. No.	Pack Qty.	€
EXX5.1	50	56,85

Stopper safety clip for BOD-bottles

Made of rubber.

Art. No.	Pack Qty.	€
EXX6.1	25	25,65

Replacement stopper for BOD-bottles

Type	Art. No.	Pack Qty.	€
Pennyhead	**EXX7.1**	12	57,45
Robotic	**EXX8.1**	12	55,40

Measuring vessels

Oxygen bottles

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

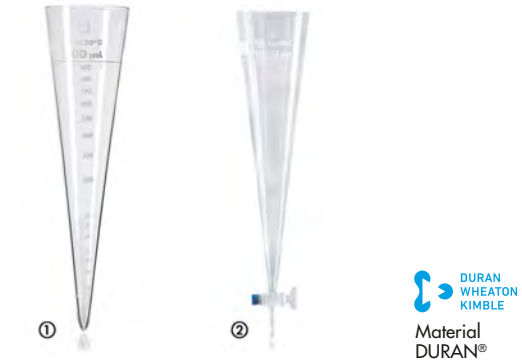
Volume (ml)	NS	Art. No.	Pack Qty.	€
100-150	14/23	**AAP3.1**	1	18,95
100-150	29/22	**AAP4.1**	1	21,30
250-300	19/26	**AAP5.1**	1	20,00

Winkler oxygen bottles

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

Volume (ml)	Standard ground glass joint	Art. No.	Pack Qty.	€
100-150	14/23	**HH78.1**	1	26,85
250-300	19/26	**HH79.1**	1	29,70

- ▶ Spring clips for Winkler oxygen bottles, see page 144
- ▶ For autoclaving information see page 5
- ▶ Additional funnel racks see page 172



① Imhoff Sedimentation cone

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

Art. No.	Pack Qty.	€
K618.1	1	83,85

② Imhoff Sedimentation cone with stop cock

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

Art. No.	Pack Qty.	€
AK68.1	1	169,85

Rotilabo®-Imhoff sedimentation cone

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

Art. No.	Pack Qty.	€
9144.1	1	29,50

Stand for 2 Imhoff sedimentation cones

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

Art. No.	Pack Qty.	€
9147.1	1	87,35

Stands for Imhoff funnels

Made of epoxy-coated wire.

Design	L x W x H (mm)	Art. No.	Pack Qty.	€
For 3 Imhoff funnels	45 x 17 x 41	**YA75.1**	1	96,70
For 4 Imhoff funnels	58 x 17 x 41	**YA76.1**	1	107,10

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

DURAN®-settling bottles

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

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

Volume (ml)	∅ x H (mm)	Bottom tube NS	Neck NS	Art. No.	Pack Qty.	€
500	86 x 164	19/26	24/29	**CCN4.1**	1	109,50
1000	107 x 200	19/26	29/32	**CCN5.1**	1	113,00
2000	134 x 249	19/26	29/32	**CCN6.1**	1	147,00
5000	182 x 320	29/32	45/40	**CCN7.1**	1	203,00
10000	228 x 398	29/32	60/46	**CCN8.1**	1	280,00
20000	289 x 492	29/32	60/46	**CCN9.1**	1	449,00

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

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
1000	101 x 225	**CCP0.1**	1	115,00
2000	136 x 260	**CCP1.1**	1	141,00
5000	182 x 330	**CCP2.1**	1	196,00
10000	230 x 410	**CCP3.1**	1	299,00

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Levelling bottles

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

Volume (ml)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
250	73	131	**PK81.1**	1	33,30
500	89	162	**PK82.1**	1	40,20
1000	111	200	**PK83.1**	1	53,95

Twist-off wide-necked jars

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

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
210	69.5 x 74,5	**AYC0.1**	12	21,45
380	75.5 x 112	**AYC1.1**	12	39,25

Accessories: twist-off caps

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

Art. No.	Pack Qty.	€
AYC2.1	12	13,90

Programme extension!

Wide-necked jars with screw cap

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

Clear glass

Volume (ml)	∅ x H (mm)	Thread	Art. No.	Pack Qty.	€
30	36 x 68	GL 32	**KAY3.1**	120	116,10
125	54 x 98	GL 40	**AYC3.1**	80	117,20
250	70 x 113	GL 55	**AYC4.1**	48	103,75
500	84 x 154	GL 55	**AYC5.1**	20	68,80
1000	103,5 x 180,5	GL 68	**AYC6.1**	18	98,90

Brown glass

Volume (ml)	∅ x H (mm)	Thread	Art. No.	Pack Qty.	€
30	36 x 68	GL 32	**KAY4.1**	126	130,10
125	54 x 98	GL 40	**AYC7.1**	84	138,70
250	70 x 113	GL 55	**AYC8.2**	30	67,75
500	84 x 154	GL 55	**AYC9.1**	20	72,60
1000	103,5 x 180,5	GL 68	**AYE0.1**	12	85,90

▶ Rotilabo®-cleaning brushes from page 1166

Glass bottles

Wide-neck jars

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

Volume (ml)	∅ x H (mm)	Thread	Art. No.	Pack Qty.	€
60	55 x 48	53-400	**ETN7.1**	24	65,15
125	60 x 68	58-400	**ETN8.1**	24	65,95
250	73 x 88	70-400	**ETN9.1**	12	45,05
500	91 x 95	89-400	**ETP0.1**	12	68,50
1000	95 x 170	89-400	**ETP1.1**	12	73,80

Wide-neck vials

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

Volume (ml)	∅ x H (mm)	Thread	Art. No.	Pack Qty.	€
30	34 x 70	33-400	**ETL6.1**	48	74,50
60	42 x 85	38-400	**ETL7.1**	48	84,30
125	51 x 104	48-400	**ETL8.1**	24	68,70
250	62 x 129	58-400	**ETL9.1**	24	71,30
500	76 x 147	70-400	**ETN0.1**	24	80,50

Standard wide-neck bottles

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

Volume (ml)	∅ x H (mm)	Thread	Art. No.	Pack Qty.	€
125	52 x 86	48-400	**ETK7.1**	24	52,50
250	63 x 112	58-400	**ETK8.1**	24	77,70
500	79 x 135	63-400	**ETK9.1**	24	87,90
2000	122 x 215	83-400	**ETL0.1**	6	44,35
4000	157 x 258	89-400	**ETL1.1**	4	39,70

Wide-neck vials, amber glass

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

Volume (ml)	∅ x H (mm)	Thread	Art. No.	Pack Qty.	€
30	37 x 65	28-400	**ETN1.1**	24	32,65
60	44 x 75	33-400	**ETN2.1**	24	37,85
125	54 x 95	38-400	**ETN3.1**	24	45,35
250	66 x 119	45-400	**ETN4.1**	24	57,35
500	80 x 146	53-400	**ETN5.1**	12	39,80
1000	99 x 178	53-400	**ETN6.1**	12	49,30

Glass bottles

DURAN WHEATON KIMBLE

Dropper bottles, with rubber sucker

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

Clear glass

Volume (ml)	Height (mm)	Art. No.	Pack Qty.	€
50	79	**T930.1**	10	80,75
100	105	**T931.1**	10	89,85

Brown glass

Volume (ml)	Height (mm)	Art. No.	Pack Qty.	€
50	79	**T932.1**	10	84,20
100	105	**T933.1**	10	97,30

Spare parts for glass dropper bottles

Type	Art. No.	Pack Qty.	€
Spare pipettes for 50 ml bottles	**T934.1**	10	39,60
Spare pipettes for 100 ml bottles	**T935.1**	10	41,40
Spare rubber sucker	**T936.1**	10	6,95

DURAN WHEATON KIMBLE

Dropper bottles

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

Clear glass

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
50	45 x 95	**ETL2.1**	1	17,95
100	56 x 120	**ETL3.1**	1	20,20

Brown glass

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
50	45 x 95	**ETL4.1**	1	17,95
100	56 x 120	**ETL5.1**	1	20,30

DURAN WHEATON KIMBLE

Material DURAN®

A 121 °C

Narrow neck storage bottles, DURAN®

Made of DURAN®. In acc. with ISO 4796-2. With ground glass joint glass stoppers, solid glass (NS 10 to 24) or semi-hollow (in NS 29 or larger). With retrace code. Autoclavable.

Clear glass

Volume (ml)	Ground glass joint	Largest outer ∅ (mm)	Height without stopper (mm)	Art. No.	Pack Qty.	€
25	12/21	36	64	**CCT1.1**	1	25,40
50	14/15	42	80	**Y622.1**	1	22,65
100	14/15	52	96	**Y623.1**	1	22,65
250	19/26	70	130	**Y624.1**	1	25,15
500	24/29	86	164	**Y625.1**	1	32,20
1000	29/32	107	200	**Y626.1**	1	36,45
2000	29/32	134	248	**Y835.1**	1	52,75
5000	45/40	182	323	**CCT2.1**	1	161,00
10000	60/46	227	398	**CCT3.1**	1	244,00
20000	60/46	288	492	**CCT4.1**	1	459,00

Brown glass

Volume (ml)	Ground glass joint	Largest outer ∅ (mm)	Height without stopper (mm)	Art. No.	Pack Qty.	€
25	12/21	36	64	**CCT5.1**	1	47,95
50	14/15	42	80	**Y627.1**	1	35,45
100	14/15	52	96	**Y628.1**	1	36,20
250	19/26	70	130	**Y629.1**	1	48,00
500	24/29	86	164	**Y630.1**	1	56,50
1000	29/32	107	200	**Y631.1**	1	67,00
2000	29/32	134	248	**Y836.1**	1	109,00
5000	45/40	182	323	**CCT6.1**	1	240,00
10000	60/46	227	398	**CCT7.1**	1	354,00
20000	60/46	288	492	**CCT8.1**	1	667,00

Glass bottles

DURAN WHEATON KIMBLE

Narrow neck storage bottles

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

Narrow neck, clear glass

Volume (ml)	Standard ground glass joint	Largest outer Ø (mm)	Height without stopper (mm)	Art. No.	Pack Qty.	€
100	14/15	52	96	**H055.1**	10	76,35
250	19/26	72	130	**H056.1**	10	92,30
500	24/29	89	165	**H057.1**	10	115,00
1000	29/32	110	200	**H058.1**	1	14,55

Narrow neck, amber glass

Volume (ml)	Standard ground glass joint	Largest outer Ø (mm)	Height without stopper (mm)	Art. No.	Pack Qty.	€
50	14/15	42	80	**H060.1**	10	111,00
100	14/15	52	96	**H061.1**	10	113,00
250	19/26	72	130	**CCX3.1**	10	118,00
500	24/29	89	165	**H063.1**	10	150,00
1000	29/32	110	200	**H064.1**	1	17,45

DURAN WHEATON KIMBLE

Material DURAN®

A 121 °C

Glass stoppers

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

Type	Standard taper (NS)	Art. No.	Pack Qty.	€
Solid	14/23	**E652.1**	10	44,50
Solid	19/26	**E653.1**	10	63,50
Semi-hollow	29/32	**E654.1**	10	71,70
Semi-hollow	45/40	**E655.1**	1	12,40

Brown glass stoppers

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

Type	Standard taper (NS)	Art. No.	Pack Qty.	€
SBW glass, solid	14/23	**LK28.1**	10	64,40
SBW glass, solid	19/26	**LK29.1**	10	77,40
DURAN®, solid	24/29	**LK30.1**	10	96,00
DURAN®, semi-hollow	29/32	**LK32.1**	10	95,30
DURAN®, semi-hollow	45/40	**LK33.1**	1	17,40

DURAN WHEATON KIMBLE

Material DURAN®

A 121 °C

Wide neck storage bottles, DURAN®

Made of DURAN®. In acc. with ISO 4796-2. With ground glass joint glass stoppers, solid glass (NS 24) or semi-hollow (NS 29 or larger). With retrace code. Autoclavable.

Wide neck storage bottles, clear glass

Volume (ml)	Ground glass joint	Largest outer Ø (mm)	Height without stopper (mm)	Art. No.	Pack Qty.	€
50	24/20	44	79	**Y612.1**	1	26,70
100	29/22	52	97	**Y613.1**	1	28,20
250	34/35	70	133	**Y614.1**	1	37,75
500	45/40	86	163	**Y615.1**	1	46,50
1000	60/46	107	201	**Y616.1**	1	62,55
2000	60/46	133	247	**Y833.1**	1	74,85
5000	85/55	182	358	**CCP4.1**	1	201,00
10000	85/55	229	443	**CCP5.1**	1	297,00
20000	85/55	290	570	**CCP6.1**	1	515,00

Wide neck storage bottles, brown glass

Volume (ml)	Ground glass joint	Largest outer Ø (mm)	Height without stopper (mm)	Art. No.	Pack Qty.	€
50	24/20	44	79	**Y617.1**	1	47,00
100	29/22	52	97	**Y618.1**	1	41,00
250	34/35	70	133	**Y619.1**	1	66,80
500	45/40	86	163	**Y620.1**	1	78,95
1000	60/46	107	201	**Y621.1**	1	100,00
2000	60/46	133	247	**Y834.1**	1	145,00
5000	85/55	182	358	**CCP7.1**	1	305,00
10000	85/55	229	443	**CCP8.1**	1	408,00
20000	85/55	290	570	**CCP9.1**	1	763,00

DURAN WHEATON KIMBLE

Wide neck storage bottles

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

Wide neck, clear glass

Volume (ml)	Standard ground glass joint	Largest outer ∅ (mm)	Height without stopper (mm)	Art. No.	Pack Qty.	€
50	24/20	44	79	**H044.1**	10	95,00
100	29/22	52	97	**H045.1**	10	104,00
250	34/24	71	129	**H046.1**	1	16,45
500	45/40	86	164	**H047.1**	1	19,40
1000	60/46	107	200	**H048.1**	1	25,60

Wide neck, amber glass

Volume (ml)	Standard ground glass joint	Largest outer ∅ (mm)	Height without stopper (mm)	Art. No.	Pack Qty.	€
100	29/22	52	97	**H050.1**	10	134,00
250	34/24	71	129	**H051.1**	1	20,45
500	45/27	86	164	**H052.1**	1	23,30
1000	60/46	107	200	**H053.1**	1	30,90

DURAN WHEATON KIMBLE

Material DURAN®

A 121 °C

Acid bottles with cap

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

Clear glass

Volume (ml)	∅ x H (mm)	Standard ground glass joint	Art. No.	Pack Qty.	€
100	55 x 145	19/17	**CCL6.1**	1	62,50
250	75 x 180	19/17	**CCL7.1**	1	75,85
500	82 x 220	24/20	**CCL8.1**	1	84,45
1000	109 x 260	29/32	**CCL9.1**	1	119,00

Brown glass

Volume (ml)	∅ x H (mm)	Standard ground glass joint	Art. No.	Pack Qty.	€
100	55 x 145	19/v17	**CCN0.1**	1	83,40
250	75 x 180	19/17	**CCN1.1**	1	97,90
500	82 x 220	24/20	**CCN2.1**	1	110,00
1000	109 x 260	29/32	**CCN3.1**	1	147,50

DURAN WHEATON KIMBLE

Square narrow-mouth bottles

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

Clear glass

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

Amber glass

Delivery incl. pouring ring and dust protection cap.

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

Tamper-evident screw cap closures for narrow-mouth bottles

Made of **PP**, blue.

Thread	∅ x H (mm)	Art. No.	Pack Qty.	€
32, high form	45 x 32	**EEL6.1**	10	11,95
45, high form	60 x 35	**EEL7.1**	10	12,95

Safety screw cap closures for narrow-mouth bottles

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

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

Pouring rings for narrow-mouth bottles made of clear glass

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

Glass bottles

Square wide-mouth bottles

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

Clear glass

Volume (ml)	∅ x H (mm)	Thread	Art. No.	Pack Qty.	€
50	48 x 70	32, short form	**EEN2.1**	10	17,95
100	49 x 111	32, short form	**EEN3.1**	10	22,95
250	64 x 146	45, short form	**EEN4.1**	10	41,25
500	76 x 173	54, short form	**EEN5.1**	10	50,40
1000	97 x 213	60, short form	**EEN6.1**	10	77,15

Brown glass

Volume (ml)	∅ x H (mm)	Thread	Art. No.	Pack Qty.	€
100	49 x 111	32, short form	**EEN7.1**	10	21,00
250	64 x 146	45, short form	**EEN8.1**	10	36,05
500	76 x 173	54, short form	**EEN9.1**	10	38,70
1000	97 x 213	54, short form	**EEP0.1**	10	45,05

Tamper-evident screw cap closures for wide-mouth bottles

Made of **PP**, blue.

Thread	∅ x H (mm)	Art. No.	Pack Qty.	€
32, short form	44 x 23	**EEP1.1**	10	8,65
45, short form	58 x 27	**EEP2.1**	10	12,30
54, short form	69 x 29	**EEP3.1**	10	13,95
60, short form	78 x 29	**EEP4.1**	10	13,60

Rotilabo®-narrow neck bottles for chemicals

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

Volume (ml)	Thread	Height (mm)	Design	Art. No.	Pack Qty.	€
250	32	160	square	**0328.1**	6	26,85
500	32	180	square	**0329.1**	4	19,90
1000	45	230	square	**0330.1**	2	16,05
2500	45	270	round	**A849.1**	1	10,65

▶ Plastic bottles see page 100

Screw neck bottles Rotilabo®, clear glass

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

Volume (ml)	Thread	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	32	46	91	**ANP4.1**	10	48,60
100	45	56	105	**X712.1**	10	37,10
250	45	70	143	**X713.1**	10	42,80
500	45	86	182	**X714.1**	10	48,50
1000	45	101	230	**X715.1**	10	77,75
2000	45	136	265	**X716.1**	10	156,95
5000	45	186	355	**Y682.1**	1	74,50
10 000	45	234	435	**Y683.1**	1	150,00
20 000	45	299	505	**TK83.1**	1	209,65

Rotilabo®-square laboratory bottles GL 80

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

Clear glass

Volume (ml)	Side length (mm)	Height (mm)	Art. No.	Pack Qty.	€
500	94	141	**APK8.1**	10	98,90
1000	105	187	**APK9.1**	10	115,05
2000	115	260	**APL0.1**	1	20,00
5000	160	357	**APL1.1**	1	110,75

Brown glass

Volume (ml)	Side length (mm)	Height (mm)	Art. No.	Pack Qty.	€
500	94	141	**APL2.1**	10	295,65
1000	105	187	**APL3.1**	10	342,95
2000	115	260	**APL4.1**	1	56,55
5000	160	357	**APL5.1**	1	226,85

Rotilabo®-screw top bottles, brown glass

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

Volume (ml)	Thread	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	32	46	91	**ANP3.1**	10	115,05
100	45	56	100	**NY57.1**	10	109,65
250	45	70	138	**NY58.1**	10	134,40
500	45	86	176	**NY59.1**	10	192,45
1000	45	101	225	**NY60.1**	10	224,70
2000	45	136	260	**NY61.1**	10	287,05
5000	45	186	330	**NY62.1**	1	119,35
10 000	45	234	410	**NY63.1**	1	210,70
20 000	45	299	505	**NY64.1**	1	259,10

Replacement screw cap and pouring rings for GL 80 threaded bottles

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

Type	Art. No.	Pack Qty.	€
Replacement screw caps	**APL6.1**	10	14,85
Replacement pouring rings	**APL7.1**	10	6,45

▶ For vacuum and compression proof screw neck bottles, see page 40

▶ Technical information on DURAN® and laboratory glassware see page 8

Glass bottles

DURAN WHEATON KIMBLE
Material DURAN®
121 °C

Screw neck bottles, clear glass

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

With pouring ring and screw cap made of PP

Volume (ml)	Thread	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
10	25	36	50	**AAA9.1**	10	83,70
25	25	36	74	**A356.1**	10	66,60
50	32	46	91	**A357.1**	10	71,00
100	45	56	105	**A358.1**	10	61,15
150	45	62	110	**PC79.1**	10	65,40
250	45	70	143	**A359.1**	10	69,35
500	45	86	181	**A360.1**	10	84,70
750	45	95	203	**PC80.1**	10	106,00
1000	45	101	230	**A361.1**	10	120,00
2000	45	136	265	**A362.1**	1	28,90
3500	45	160	295	**PC81.1**	1	89,90
5000	45	182	335	**A363.1**	1	123,00
10000	45	227	415	**A364.1**	1	200,00
20000	45	288	510	**A365.1**	1	435,00

Without pouring ring and screw cap

Volume (ml)	Thread	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
10	25	36	50	**AAC0.1**	10	64,85
25	25	36	70	**T424.1**	10	48,20
50	32	46	87	**T425.1**	10	48,20
100	45	56	100	**T426.1**	10	38,90
150	45	62	110	**PC82.1**	10	44,10
250	45	70	138	**T427.1**	10	46,60
500	45	86	176	**T428.1**	10	63,45
750	45	95	203	**PC83.1**	10	84,80
1000	45	101	225	**T429.1**	10	101,00
2000	45	136	260	**T430.1**	1	25,95
3500	45	160	295	**PC84.1**	1	87,55
5000	45	182	330	**T431.1**	1	121,00
10000	45	227	410	**T432.1**	1	198,00
15000	45	268	445	**T433.1**	1	248,00
20000	45	288	505	**T434.1**	1	431,00

DURAN WHEATON KIMBLE
Material DURAN®
121 °C

Screw neck bottles, brown glass

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

With pouring ring and screw cap made of PP

Volume (ml)	Thread	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
10	25	36	50	**AAC1.1**	10	189,00
25	25	36	74	**A366.1**	10	173,00
50	32	46	91	**A367.1**	10	179,00
100	45	56	105	**A368.1**	10	197,00
150	45	62	110	**PC85.1**	10	240,00
250	45	70	143	**A369.1**	1	27,95
500	45	86	181	**A370.1**	1	35,85
750	45	95	203	**PC86.1**	10	396,00
1000	45	101	230	**A371.1**	1	44,20
2000	45	136	265	**A372.1**	1	68,55
3500	45	160	295	**PC87.1**	1	147,00
5000	45	182	335	**A373.1**	1	199,00
10000	45	227	415	**A374.1**	1	287,00

Without pouring ring and screw cap made of PP

Volume (ml)	Thread	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
20000	45	288	510	**A375.1**	1	506,00

DURAN WHEATON KIMBLE
Material DURAN®
121 °C

Square bottles

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

With pouring ring and screw cap made of PP

Vol. (ml)	Thread	Side length (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	32	50	109	**P770.1**	10	64,40
250	45	64	143	**P771.1**	10	72,00
500	45	78	181	**P772.1**	10	90,40
1000	45	94	222	**P773.1**	10	128,00

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

DURAN®-Protect screw neck bottles

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

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

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

Volume (ml)	Thread	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	45	56	100	**1076.1**	10	154,00
150	45	62	110	**PC88.1**	10	159,00
250	45	70	138	**A378.1**	10	163,00
500	45	86	176	**1077.1**	1	19,25
750	45	95	203	**PC89.1**	10	232,00
1000	45	101	225	**1078.1**	1	26,70
2000	45	136	260	**A379.1**	1	49,30
3500	45	160	295	**PC90.1**	1	186,00
5000	45	182	330	**A380.1**	1	249,00

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

Volume (ml)	Thread	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
10	25	36	50	**AAA6.1**	10	158,00
25	25	36	70	**AAA7.1**	10	140,00
50	32	46	87	**AAA8.1**	10	142,00
10000	45	227	410	**AKN0.1**	1	382,00
15000	45	268	445	**AKN1.1**	1	624,00
20000	45	288	505	**AKN2.1**	1	831,00

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

Volume (ml)	Thread	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
25	25	36	70	**AKK5.1**	10	276,00
50	32	46	87	**AKK6.1**	10	277,00
100	45	56	100	**AKK7.1**	10	277,00
250	45	70	138	**AKK8.1**	10	362,00
500	45	86	176	**AKK9.1**	10	449,00
1000	45	101	225	**AKL0.1**	10	583,00
2000	45	136	260	**AKL1.1**	10	900,00
5000	45	182	330	**AKL2.1**	1	325,00

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

DURAN®-pressure plus screw neck bottles

Made of DURAN®. **Vacuum- and compression-proof** within a range of -1 to +1.5 bar (under pressure, the max. usage temperature is 140 °C and thermal shock resistant is 30 K).
With graduation and labelling field, burned-in and thus permanent print image. Thread GL 45. With retrace code. Autoclavable.
Delivery without screw cap and pouring ring.

Clear glass

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	56	100	**EXK1.1**	1	8,30
250	70	138	**CK34.1**	1	8,95
500	86	176	**CK35.1**	1	12,00
1000	101	225	**H995.1**	1	14,30

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

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	56	100	**EXK2.1**	1	21,70
250	70	138	**CK36.1**	1	30,80
500	86	176	**CK37.1**	1	38,00
1000	101	225	**CK38.1**	1	45,90

DURAN®-pressure plus Protect screw neck bottles

Made of DURAN®, **vacuum and pressure-resistant** in the range from -1 to +1.5 bar (in the case of pressure relief, the max. service temperature is 140 °C and the thermal shock resistance is 30 K). With graduation and labelling field, burned-in and thus permanent print image. Thread GL 45. The plastic casing protects against mechanical damage (scratch protection), minimises loss of fluid in the event of glass breakage (leak and splash protection), prevents scattering of glass shards and provides light protection up to a wavelength of 380 nm. With Retrace-Code. Autoclavable.
Delivery without screw cap and pouring ring.

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	56	100	**EXK3.1**	1	14,50
250	70	138	**CCX5.1**	1	17,35
500	86	176	**CCX6.1**	1	21,80
1000	101	225	**CCX7.1**	1	28,25

- For autoclaving information see page 5
- Screw caps see page 46
- Technical information on DURAN® and laboratory glassware see page 8

Glass bottles

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

DURAN® premium bottles

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

DURAN® Premium bottles

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	56	100	**HL99.1**	1	17,50
250	70	138	**HT00.1**	1	17,95
500	86	176	**HT01.1**	1	19,60
1000	101	225	**HT02.1**	1	22,90

DURAN® Premium bottles, delivery incl. batch certificate

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	56	100	**HL99.2**	10	159,00
250	70	138	**HT00.2**	10	165,00
500	86	176	**HT01.2**	10	183,00
1000	101	225	**HT02.2**	10	218,00

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

DURAN® PURE screw top bottles

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

Clear glass

Volume (ml)	Thread	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
25	25	36	70	**HNK3.1**	10	76,10
100	45	56	100	**HNK4.1**	10	69,20
250	45	70	138	**HNK5.1**	10	78,00
500	45	86	176	**HNK6.1**	10	94,70
1000	45	101	225	**HNK7.1**	10	136,00
2000	45	136	260	**HNK8.1**	10	310,00
5000	45	182	330	**HNK9.1**	1	131,00
10000	45	227	410	**HNL0.1**	1	214,00
20000	45	288	505	**HNL1.1**	1	464,00

Brown glass

Volume (ml)	Thread	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
25	25	36	70	**HNL2.1**	10	192,00
100	45	56	100	**HNL3.1**	10	222,00
250	45	70	138	**HNL4.1**	10	316,00
500	45	86	176	**HNL5.1**	10	393,00
1000	45	101	225	**HNL6.1**	10	497,00
2000	45	136	260	**HNL7.1**	10	746,00
5000	45	182	330	**HNL8.1**	1	209,00
10000	45	227	410	**HNL9.1**	1	302,00
20000	45	288	505	**HNN0.1**	1	536,00

- Premium screw caps see page 47
- PURE screw caps see page 47

DURAN WHEATON KIMBLE
Material DURAN®
121 °C

DURAN® YOUTILITY laboratory bottles

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

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

DURAN® YOUTILITY bottles, clear glass

Volume (ml)	Thread GL	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
125	45	55	124	**AEY2.1**	4	28,70
250	45	66	158	**AEY3.1**	4	30,85
500	45	78	193	**AEY4.1**	4	38,00
1000	45	93	253	**AEY5.1**	4	53,85

DURAN® YOUTILITY bottles, brown glass

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

Volume (ml)	Thread GL	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
125	45	55	124	**CCT9.1**	4	88,90
250	45	66	158	**CCX0.1**	4	123,00
500	45	78	193	**CCX1.1**	4	159,00
1000	45	93	253	**CCX2.1**	4	195,00

Accessories:

Replacement DURAN® YOUTILITY screw caps	**AEY7.1**	10	16,50
Replacement DURAN® YOUTILITY pouring rings	**AEY8.1**	16	8,95
DURAN® bottle tags made of silicone, eight colours	**AEY9.1**	16	23,60

NEW
DURAN WHEATON KIMBLE

DURAN® YOUTILITY labels, printable

Made of polyester. High adhesive strength, easy to remove again. Can be printed on with office printers or photocopiers and can be written on with most laboratory pens. High resistance to disinfectants and solvents. Suitable for use in refrigerators, freezers, autoclaves, incubators and water baths. Web app for customised design available at www.duranlabels.com. Dimensions: 36 x 70 mm. Temperature-stable from -40 to +150 °C. Supplied in resealable packaging on DIN A4 sheets (5 sheets with 20 labels each).

Art. No.	Pack Qty.	€
KCT0.1	100	16,95

DURAN WHEATON KIMBLE

Hybridisation vials

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

Uncoated, temperature stable up to 135 °C

∅ inner x height (mm)	Thread	Art. No.	Pack Qty.	€
35 x 75	45	**ETH4.1**	1	57,75
35 x 100	45	**ETH5.1**	1	61,75
35 x 150	45	**ETH6.1**	1	63,65
35 x 300	45	**ETH7.1**	1	67,30
70 x 300	70-400	**ETH8.1**	1	85,85

PVC-coated, temperature stable up to 121 °C

∅ inner x height (mm)	Thread	Art. No.	Pack Qty.	€
35 x 75	45	**ETH9.1**	1	74,75
35 x 100	45	**ETK0.1**	1	78,50
35 x 150	45	**ETK1.1**	1	81,20
35 x 300	45	**ETK2.1**	1	84,20
70 x 300	70-400	**ETK3.1**	1	113,55

Material DURAN®

121 °C

Wide-neck screw thread bottles

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

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

Clear glass

Volume (ml)	Outside ∅ (mm)	Height (mm)	Height including cap (mm)	Art. No.	Pack Qty.	€
250	95	105	109	**XT02.1**	10	97,70
500	101	148	152	**ET99.1**	10	131,00
1000	101	218	222	**EX00.1**	10	171,00
2000	136	248	252	**EX01.1**	1	33,30
3500	160	271	275	**PY89.1**	1	98,60
5000	182	310	314	**EX02.1**	1	135,00
10000	227	385	389	**EX03.1**	1	221,00
20000	288	480	484	**EX04.1**	1	478,00

Brown glass

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

Volume (ml)	Outside ∅ (mm)	Height (mm)	Height including cap (mm)	Art. No.	Pack Qty.	€
250	95	105	109	**XT03.1**	1	39,60
500	101	148	152	**HT11.1**	1	42,80
1000	101	218	222	**HT12.1**	1	51,85
2000	136	248	252	**HT13.1**	1	74,60
3500	160	271	275	**PY91.1**	1	158,00
5000	182	310	314	**HT14.1**	1	231,00
10000	227	385	389	**HT15.1**	1	316,00
20000	288	480	484	**HT16.1**	1	518,00

Wide-neck screw thread bottles DURAN®-Protect

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

Attention: Do not expose DURAN®-Protect bottles to an open flame and do not heat directly. Max. thermal stress 135 °C. Avoid exposure to thermal stress for longer than 30 min.

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

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
250	95	105	**XT04.1**	10	196,00
500	101	152	**LC00.1**	10	226,00
1000	101	222	**KY97.1**	10	299,00
2000	136	252	**KY98.1**	10	499,00
3500	160	275	**PY90.1**	1	206,00
5000	182	314	**KY99.1**	1	247,00

Material DURAN®

121 °C

Wide neck baffled flasks

Made of DURAN®, clear glass, thread GLS 80. With graduation and retrace code and three vertical baffles at the inside walls. The baffles increase the vertical circulation and produce a much more efficient and homogeneous mix. Autoclavable.

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

Volume (ml)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
250	95	105	**EXK4.1**	1	19,45
500	101	152	**EXK5.1**	1	25,70
1000	101	222	**EXK6.1**	1	33,80

Material DURAN®

121 °C

Double-wall, wide-neck bottles GLS 80

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

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

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

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
500	110 x 170	**ETP2.1**	1	332,00
1000	110 x 270	**ETP3.1**	1	415,00

NEW

DURAN WHEATON KIMBLE

A 121 °C

DURAN® GL 45 laboratory glass bottles with high-temperature stoppers

Made of DURAN® (borosilicate glass 3.3, corresponds to USP/EP type I). Outstanding thermal performance and high chemical resistance. With easy-to-read volume scale and labelling field made of durable white enamel. With retrace code. Autoclavable at 121 or 134 °C, suitable for hot air sterilisation up to 180 °C.
Delivery incl. red high-temperature screw cap (glass fibre reinforced PBT with PTFE-coated silicone seal) and ETFE pouring ring.

Volume (ml)	Outside ∅ (mm)	Height with lid (mm)	Art. No.	Pack Qty.	€
100	56	105	**KCN6.1**	10	110,00
250	70	143	**KCN7.1**	10	118,00
500	86	181	**KCN8.1**	10	135,00
1000	101	230	**KCN9.1**	10	170,00
2000	136	265	**KCP0.1**	10	332,00
5000	182	335	**KCP1.1**	1	128,00
10 000	227	415	**KCP2.1**	1	205,00

NEW

DURAN WHEATON KIMBLE

A 121 °C

DURAN® GL 45 HPLC reservoir bottles

Made of borosilicate glass 3.3. Outstanding chemical resistance, extremely low profile of extractable inorganic ions; free from organic extractable substances. Safe and practical alternative to media bottles with a flat bottom. The central cavity in the base of the bottle enables mobile phases and solvents to be dispensed without having to tilt the bottle. The side opening on the base of the bottle prevents the bottle from floating during degassing in an ultrasonic bath and enables water to drain away after cleaning. GL 45 thread.
With retrace code. Autoclavable at 121 or 134 °C.
Delivery without lock.

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
1000	110	295	**KCP3.1**	1	161,00
2000	145	309	**KCP4.1**	1	203,00
5000	190	386	**KCP5.1**	1	333,00
10 000	235	481	**KCP6.1**	1	1038,00

Accessories:

GL 45 HPLC connection cap with three threaded connections ¼"-28 for ETFE tubes with outer ∅ of 3.2 mm, rounded off by three ¼"-28 ETFE stoppers and O-ring made of TFE/propylene	**KCP7.1**	1	58,45
Replacement ETFE dummy stopper¼"-28 thread for HPLC connection cap ¼"	**KCP8.1**	1	5,10

NEW

DURAN WHEATON KIMBLE

A 121 °C

DURAN® breather screw caps with ePTFE membrane

Made of PP with welded-in PTFE membrane. The membrane, made of expanded PTFE with a pore size of 0.2 µm, enables sterile gas exchange and prevents aqueous liquids with high surface tension from passing through it.
During the autoclaving process, the caps can be securely screwed on to the laboratory glass bottles. Autoclavable at 121 °C (20 minutes) or 134 °C (3 minutes).

Applications:

- Pressure compensation during steam sterilisation/autoclaving of media or buffer solutions in bottles up to a volume of 5 litres
- Sterile gas exchange for aerobic microorganism, shaken and suspended cell cultures
- Short-term storage of sterilised media
- Storage of gas-forming substances

Thread	Colour	Art. No.	Pack Qty.	€
GL 25	blue	**KCL9.1**	5	25,15
GL 32	blue	**KCN0.1**	5	25,20
GL 45	blue	**CK81.1**	5	21,90
GL 45	cyan	**KCN2.1**	5	25,65
GL 56	white	**KCN3.1**	5	28,85
GLS 80	blue	**KCN4.1**	2	17,45

NEW

DURAN WHEATON KIMBLE

A 121 °C

DURAN® GL 45 bottle stopper

Made of bromobutyl rubber. Can be used with all DURAN® laboratory glass bottles with GL 45 thread. Can additionally be secured by a screw cap with hole (only recommended for applications not involving pressure).
Low permeability to air, gases and moisture.
Top with seven numbered semicircular indentations for piercing with needles, good self-sealing when pierced several times.
Temperature-stable from -50 to +121 °C, autoclavable.

Applications:

- Storage of oxygen-sensitive materials
- Applications which require gas flushing or samples to be decanted using a syringe
- Cultures with anaerobic microorganisms (the use of pressure-resistant bottles is recommended)
- Storage of anaerobic culture media (the use of brown glass bottles is recommended)
- Investigation of aerobic methane oxidation (MOx)

Type	Art. No.	Pack Qty.	€
DURAN® GL 45 bottle stopper	**KCN5.1**	10	21,65

Accessories:

GL 45 replacement screw cap with hole	**L994.1**	1	4,50

NEW

DURAN WHEATON KIMBLE

A 121 °C

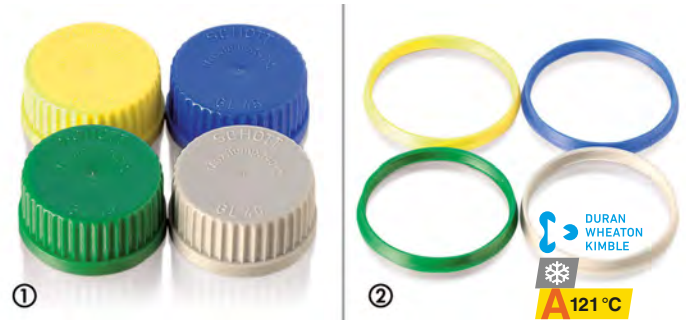
DURAN® connector system with stainless steel connectors

PBT screw cap with silicone seal (platinum-catalysed, USP <88> Class VI) and connections and centre part made of stainless steel (type 316L and 1.4404/S31603).
Robust hose connection system for laboratory bottles with GL 45 thread for the transfer of liquids in closed or sterile systems. Connections for flexible hoses with inner ∅ of 8 mm.
Freely rotating centre part enables bottles to be replaced without twisting the hoses. Temperature stable up to +180 °C, autoclavable.
With retrace code.

Type	Art. No.	Pack Qty.	€
GL 45 connector system with one stainless steel connector	**KCL5.1**	1	185,00
GL 45 connector system with two stainless steel connectors	**KCL6.1**	1	185,00
GL 45 connector system with three stainless steel connectors	**KCL7.1**	1	185,00

Accessories:

Replacement silicone seal (outer ∅ 40.5 mm, inner ∅ 27.5 mm, thickness 3 mm)	**KCL8.1**	10	29,90
GL 45 replacement screw cap with hole	**L994.1**	1	4,50



Screw caps and pouring rings, PP

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

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

Thread	Colour	Art. No.	Pack Qty.	€
GL 25	blue	**E752.1**	10	12,65
GL 32	blue	**E753.1**	10	12,30
GL 45	blue	**E754.1**	10	14,55
GL 45	yellow	**CK22.1**	10	14,55
GL 45	grey	**CK23.1**	10	14,55
GL 45	green	**CK24.1**	10	14,55
GLS 80	blue	**KY95.1**	10	23,70

② **Pouring rings**

Thread	Colour	Art. No.	Pack Qty.	€
GL 32	blue	**K752.1**	10	4,30
GL 45	blue	**K753.1**	10	5,40
GL 45	yellow	**CK25.1**	10	4,95
GL 45	grey	**CK26.1**	10	4,95
GL 45	green	**CK27.1**	10	4,95
GLS 80	blue	**KY96.1**	10	15,30

Screw caps and pouring rings

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

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

Thread	∅ x H (mm)	Art. No.	Pack Qty.	€
GL 14	20 x 17	**TX90.1**	10	17,40
GL 18	23 x 20	**TX91.1**	10	20,30
GL 25	33 x 23	**TX92.1**	10	25,00
GL 32	42 x 26	**TX93.1**	10	38,00
GL 45	54 x 28	**TX94.1**	10	57,80

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

Thread	∅ x H (mm)	Art. No.	Pack Qty.	€
GL 32		**N542.1**	10	11,50
GL 45		**N543.1**	10	12,65

Replacement gaskets for screw caps

Made of PTFE-coated silicone rubber.

for screw caps	Art. No.	Pack Qty.	€
GL 14	**AKL5.1**	10	4,80
GL 18	**AKL6.1**	10	6,90
GL 25	**AKL7.1**	10	10,55
GL 32	**AKL8.1**	10	15,00
GL 45	**AKL9.1**	10	24,75

Selection list for screw caps

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

Screw caps

Screw caps, PBT

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

Thread GL	Art. No.	Pack Qty.	€
14	**E695.1**	10	20,35
18	**E696.1**	10	24,40
25	**E692.1**	10	29,20
32	**E693.1**	10	44,00
45	**E694.1**	10	67,00

Premium screw caps and pouring rings

Made of **TPCh260** (similar to PFA), without colour additives.
Temperature resistant from -196 to +200 °C, high resistant to chemicals.
For laboratory bottles with DIN standard thread. Characteristics ideal for application in pharmaceutical industry, for storing aggressive media as well as for demanding sterilisation procedures. FDA and USP-compliant.
Autoclavable, hot-air and dry-sterilisable and capable of depyrogenation.
With retrace code, batch certificates available.

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

Thread	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
GL 25	32	22	**PY85.1**	5	25,45
GL 45	51	26	**CK79.1**	5	51,10

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

Art. No.	Pack Qty.	€
CK80.1	5	12,40

Screw caps, PPS

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

Thread	Art. No.	Pack Qty.	€
GL 14	**NT01.1**	10	26,15
GL 18	**NT02.1**	10	23,50
GL 25	**NT03.1**	10	37,80
GL 32	**NT04.1**	10	38,90
S 40	**NT05.1**	5	30,70
GL 45	**NT06.1**	5	35,40

Gaskets

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

Thread	∅ (mm)	Art. No.	Pack Qty.	€
GL 14	13	**NT13.1**	25	13,40
GL 18	16,8	**NT14.1**	25	20,70
GL 25	23,5	**NT15.1**	25	41,10
GL 32	30.2	**NT16.1**	5	12,00
S40	38	**NT17.1**	5	10,30
GL 45	43,2	**NT18.1**	5	14,30

PURE screw caps

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

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

Thread	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
GL 45	52,0	27,5	**EEE3.1**	5	66,20

DURAN WHEATON KIMBLE
121 °C

DURAN® PURE Premium screw caps

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

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

Type	Thread GL	∅ x H (mm)	Art. No.	Pack Qty.	€
Standard packaging	25	32 x 22	**HNN1.1**	5	26,95
Standard packaging	45	51 x 26	**HNN2.1**	5	52,40
STERICLIN® packaging	25	32 x 22	**XT05.1**	20 (4 x 5)	121,00
STERICLIN® packaging	45	51 x 26	**XT06.1**	20 (4 x 5)	242,00

DURAN WHEATON KIMBLE
121 °C

Quick-release closures GLS 80

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

∅ x H (mm)	Art. No.	Pack Qty.	€
86 x 40	**PC52.1**	5	102,00

Pouring rings GLS 80

② **Pouring rings** made of **PTFE**.

Height (mm)	Art. No.	Pack Qty.	€
6,85	**PC53.1**	5	66,70

Accessories:

Replacement sealing discs for screw caps, PTFE coated on both sides	**AKN3.1**	5	28,55

DURAN WHEATON KIMBLE
121 °C

Original seal

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

Type	Art. No.	Pack Qty.	€
Red tamper-proof ring with lip seal	**AH99.1**	10	15,80
Yellow tamper-proof ring with PTFE coated silicone seal	**KE51.1**	10	48,20

121 °C

Screw caps GLS 80

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

Art. No.	Pack Qty.	€
NY56.1	1	43,75

Screw caps and olives

① Screw caps with borehole

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

Thread GL	Hole ∅ (mm)	Art. No.	Pack Qty.	€
14	9,5	**L993.1**	2	3,60
18	11	**EL61.1**	1	2,90
25	15	**LL40.1**	5	9,50
32	20	**H396.1**	1	2,60
45	34	**L994.1**	1	4,50

② Gaskets for screw caps with borehole

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

Thread GL	for pipe ∅ (mm)	Art. No.	Pack Qty.	€
14	5.5-6.5	**AK96.1**	1	4,25
18	5.5-6.5	**AK97.1**	1	4,80
18	7.5-9.0	**AK98.1**	1	4,80
18	9.0-11.0	**AK99.1**	1	4,80
25	7.5-9.0	**LL92.1**	2	10,25
25	9.0-11.0	**LL93.1**	2	10,25
25	11.0-13.0	**LL94.1**	2	10,25
32	9.0-11.0	**LL95.1**	2	14,90
32	11.0-13.0	**H397.1**	1	7,20
32	13.0-15.0	**LL96.1**	2	14,80
32	15.0-17.0	**LL97.1**	2	13,90
32	17.0-19.0	**LL98.1**	2	14,25
45	25.0-27.0	**LL99.1**	1	13,65
45	31.0-33.0	**LN00.1**	1	13,00

③ Septa for screw caps with borehole

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

Thread GL	∅ (mm)	Thickness (mm)	Art. No.	Pack Qty.	€
14	12	2	**LL48.1**	20	13,35
18	16	2	**LL49.1**	20	14,50
25	22	2	**LL50.1**	10	10,30
32	29	2	**LL51.1**	10	10,75
45	42	3	**LL52.1**	5	15,10

NEW
DURAN WHEATON KIMBLE
A 121 °C

GL 45 septa with DURAN® PTFE coating

Material: Silicone rubber with PTFE coating. For use with GL 45 screw caps with hole (Art. No. L994.1). Easy to pierce, reliable resealing. Temperature-stable from -50 to +180 °C. Autoclavable at 121 °C for 15 minutes or sterilisable up to 180 °C in dry heat.

Art. No.	Pack Qty.	€
KCP9.1	10	49,10

Olives

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

Design	Thread GL	Outer ∅ (mm)	Inner ∅ (mm)	Art. No.	Pack Qty.	€
Straight	14	8,6	5,0	**L992.1**	2	3,35
Bent	14	8,6	4,0	**LL46.1**	2	3,70
Straight	18	10,8	6,8	**EL60.1**	1	6,40
Bent	18	10,8	6,8	**LL45.1**	2	11,45

Accessories:

Spare sealing gaskets for olives GL 14	**LK26.1**	20	12,20

Olives

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

Design	Thread GL	Outer ∅ (mm)	Inner ∅ (mm)	Art. No.	Pack Qty.	€
Straight	14	9,0	5,0	**LK72.1**	2	11,60
Bent	14	9,0	5,0	**LK74.1**	2	15,50
Straight	18	10,5	7,5	**LK73.1**	2	13,15
Bent	18	10,5	7,5	**LK75.1**	2	18,30
Straight	25	13,0	10,0	**LN34.1**	2	23,00

Accessories:

Spare sealing gaskets for olives GL 14	**LK26.1**	20	12,20

Screw caps and olives

Screw caps with hole

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

Thread	Hole ∅ (mm)	Art. No.	Pack Qty.	€
GL 14	9,2	**NT07.1**	10	14,00
GL 18	11	**NT08.1**	10	17,00
GL 25	15	**NT09.1**	10	26,65
GL 32	20	**NT10.1**	10	36,90
S40	28	**NT11.1**	10	66,35
GL 45	34	**NT12.1**	10	33,10

Gaskets

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

Thread	∅ (mm)	Art. No.	Pack Qty.	€
GL 14	13	**NT13.1**	25	13,40
GL 18	16,8	**NT14.1**	25	20,70
GL 25	23,5	**NT15.1**	25	41,10
GL 32	30.2	**NT16.1**	5	12,00
S40	38	**NT17.1**	5	10,30
GL 45	43,2	**NT18.1**	5	14,30

Connectors

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

PFA

Design	Thread GL	Outer ∅ (mm)	Inner ∅ (mm)	Art. No.	Pack Qty.	€
straight	14	8,7	6,0	**NY33.1**	2	13,05
curved	14	8,7	6,0	**NY34.1**	2	16,25
straight	18	10,4	7,0	**NY35.1**	2	25,80
curved	18	10,4	7,0	**NY36.1**	2	25,10

PTFE

Design	Thread GL	Outer ∅ (mm)	Inner ∅ (mm)	Art. No.	Pack Qty.	€
straight	25	16,0	10,0	**NY37.1**	2	29,85
straight	32	21,0	16,0	**NY38.1**	2	57,60

Pressure equalisation sets

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

Technical specifications:

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

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

Replacement membranes for pressure equalisation sets

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

Dispenser GL 45

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

Delivery incl. PTFE septum cap for sealing the outlet.

Outlet ∅ (mm)	Stopcock bore ∅	Art. No.	Pack Qty.	€
4	4	**NT22.1**	1	131,15

DURAN WHEATON KIMBLE
A 121 °C

Screw cap GL 45 with connectors

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

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

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

Art. No.	Pack Qty.	€
PY86.1	2	46,00

Filter attachment for pressure equalisation

Art. No.	Pack Qty.	€
PY87.1	2	41,90

Flex distributors with GL 45 thread

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

Number of connections	Hose inner ∅ (mm)	Connector port (mm)	Art. No.	Pack Qty.	€
2	7-11	7	**NP98.1**	1	40,05
3	6-9	6	**NP99.1**	1	53,25

DURAN WHEATON KIMBLE
A 121 °C

Multiport connection system GL 25

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

Number of connections	Art. No.	Pack Qty.	€
2	**EXK7.1**	1	41,70
3	**EXK8.1**	1	43,20
4	**EXK9.1**	1	44,50

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

HPLC-bottles

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

Type	Art. No.	Pack Qty.	€
HPLC-bottle 500 ml	**KY94.1**	2	83,95
HPLC-bottle 1000 ml	**KY93.1**	2	88,20
Accessories:			
Screw cap GL 45 with 4 threaded necks and hose connection set	**HE24.1**	2	50,00
Spare hose connection set	**HE26.1**	1	19,35
Spare membrane filter pore size 0.2 µm	**HE27.1**	2	11,60
Pressure compensation set (Screw cap with olive, hose made of tygon, membrane filter)	**HE25.1**	1	20,30
DURAN®-pressure plus-screw thread bottle, 500 ml	**CK35.1**	1	12,00
DURAN®-pressure plus-screw thread bottle, 1000 ml	**H995.1**	1	14,30

A 121 °C

Rotilabo®-FEP-tubes

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

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
0,8 (1/32″)	1,58 (1/16″)	0,4	**C022.1**	10	20,90
1,58 (1/16″)	3,18 (1/8″)	0,8	**Y504.1**	5	32,15
2,0	4,0	1,0	**C023.1**	10	51,55
3,96 (5/32″)	6,35 (1/4″)	1,2	**Y505.1**	5	52,90
4,0	6,0	1,0	**C024.1**	10	81,20
4,35 (11/64″)	6,35 (1/4″)	1,0	**Y506.1**	5	45,70
6,0	8,0	1,0	**C025.1**	5	55,85
6,35 (1/4″)	9,52 (3/8″)	1,59	**Y507.1**	5	105,90
8,0	10,0	1,0	**C026.1**	5	70,85
9,52 (3/8″)	12,7 (1/2″)	1,59	**Y508.1**	5	132,25
10,0	12,0	1,0	**C027.1**	5	85,90

Bottle multi-dispensers

Bottle multi-dispensers

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

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

Design	Art. No.	Pack Qty.	€
2-way dispenser	**HX84.1**	2	43,60
3-way dispenser	**HX85.1**	2	46,80

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

Design	Art. No.	Pack Qty.	€
2-way dispenser made of PFA	**K094.1**	1	101,05
3-way dispenser made of PTFE	**K095.1**	1	134,40

Laboratory screw joints for 2- and 3-way dispensers

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

for hose with outer ∅ (mm)	Art. No.	Pack Qty.	€
1,6	**HX86.1**	2	25,35
3,0	**HX87.1**	2	25,35
3,2	**HX88.1**	2	25,35
6,0	**HX89.1**	2	25,35

Accessories:

Pressure compensation-set (screw cap with olive, Tygon tube, membrane filter)	**HX90.1**	1	20,30
DURAN®-pressure plus-screw thread bottle, 500 ml	**CK35.1**	1	12,00
DURAN®-pressure plus-screw thread bottle, 1000 ml	**H995.1**	1	14,30
Spare membrane filter pore size 0.2 µm	**HE27.1**	2	11,60
Flat gasket GL 45 made of EPDM	**AKL4.1**	5	5,95

Thread reducing adapter

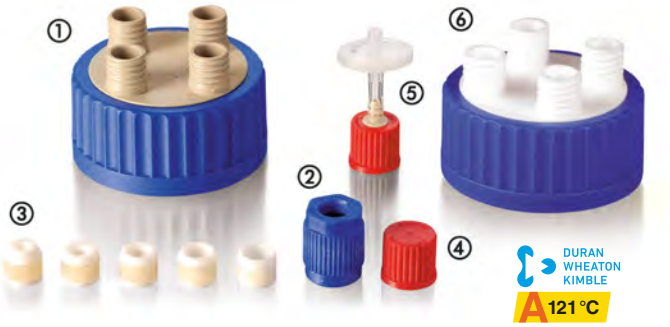
Suitable for vials with GL 40 thread, and for use with adapters with thread GL 45.

Material	Art. No.	Pack Qty.	€
Fluororubber	**P321.1**	1	21,45

Thread reducing adapter

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

Art. No.	Pack Qty.	€
KY68.1	1	55,70



GLS 80 bottle multi-dispensers

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

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

Art. No.	Pack Qty.	€
KE52.1	1	55,25

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

Art. No.	Pack Qty.	€
NY20.1	1	97,20

Lab screw fittings

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

for hose with outer ∅ (mm)	Art. No.	Pack Qty.	€
3,2	**KE53.1**	2	31,50
6,0	**KE54.1**	2	31,50
8,0	**KE55.1**	2	32,00
10,0	**KE56.1**	2	32,00
12,0	**KE57.1**	2	31,50

Accessories:

④ Screw cap PBT GL 18	**E696.1**	10	24,40
Wide-neck screw thread bottles GLS 80 500 ml	**ET99.1**	10	131,00
Wide-neck screw thread bottles GLS 80 1000 ml	**EX00.1**	10	171,00
⑤ Pressure compensation set (Screw cap GL 18 with olive, Tygon tube, membrane filter)	**KE58.1**	1	20,65
Spare membrane filter pore size 0.2 µm	**HE27.1**	2	11,60
Flat gasket GLS 80 made of EPDM, 78 x 63.5 x 1.5 mm	**AKL3.1**	5	7,95

HPLC connector caps with GL 45 thread

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

Delivery without connecting hoses, please order separately.

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

Design	Art. No.	Pack Qty.	€
2 connections	**NX21.1**	1	51,50
4 connections	**NX22.1**	1	59,60
2 connections with shutoff valve	**NX23.1**	1	107,25
3 connections with shutoff valve	**NX24.1**	1	120,40

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

Design	Art. No.	Pack Qty.	€
2 connections	**NX25.1**	1	49,40
4 connections	**NX26.1**	1	60,70
2 connections with shutoff valve	**NX27.1**	1	72,95
3 connections with shutoff valve	**NX28.1**	1	108,60

HPLC connecting hoses

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

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

Total length (mm)	Art. No.	Pack Qty.	€
100	**NX29.1**	1	15,50
250	**NX30.1**	1	16,05
500	**NX31.1**	1	17,10
750	**NX32.1**	1	20,10
1000	**NX33.1**	1	17,95

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

Total length (mm)	Art. No.	Pack Qty.	€
100	**NX34.1**	1	13,50
250	**NX35.1**	1	14,10
500	**NX36.1**	1	14,95
750	**NX37.1**	1	16,45
1000	**NX38.1**	1	16,95

HPLC screws

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

For hose inner ∅ x outer ∅ (mm)	Colour	Art. No.	Pack Qty.	€
0.8 x 1.6	white	**NX39.1**	10	48,95
1.6 x 3.2	white	**NX40.1**	10	49,85

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

For hose inner ∅ x outer ∅ (mm)	Colour	Art. No.	Pack Qty.	€
0.8 x 1.6	white	**NX41.1**	10	56,05
1.6 x 3.2	white	**NX42.1**	10	56,40

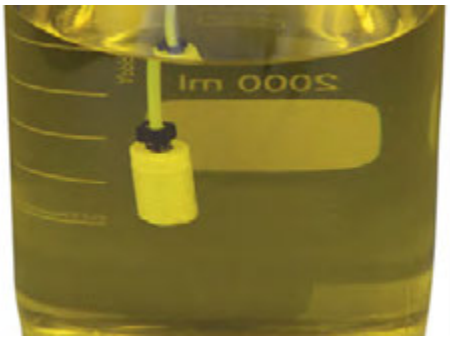
③ **Banjo screws made of PP** with UNF 1/4″ 28G external thread.
Temperature stable from -10 to +100 °C.
Delivery incl. pressure discs made of PA.

For hose inner ∅ x outer ∅ (mm)	Colour	Art. No.	Pack Qty.	€
0.8 x 1.6	black	**NX43.1**	10	29,75
0.8 x 1.6	white	**NX44.1**	10	14,75
0.8 x 1.6	red	**NX45.1**	10	13,40
1.6 x 3.2	black	**NX46.1**	10	13,30
1.6 x 3.2	white	**NX47.1**	10	13,85
1.6 x 3.2	red	**NX48.1**	10	13,25

HPLC screw couplings

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

Type	Connections	For hose inner ∅ x outer ∅ (mm)	Art. No.	Pack Qty.	€
① straight	2	0.8 x 1.6	**NX49.1**	1	8,95
① straight	2	1.6 x 3.2	**NX50.1**	1	8,95
② T-type	3	0.8 x 1.6	**NX51.1**	1	32,05
② T-type	3	1.6 x 3.2	**NX52.1**	1	33,30
③ X-type	4	0.8 x 1.6	**NX53.1**	1	41,75
③ X-type	4	1.6 x 3.2	**NX54.1**	1	41,60



HPLC intake filters

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

Pore size (µm)	For hose with inner ∅ (mm)	Art. No.	Pack Qty.	€
2	(1/32″) - 0.8	**NX55.1**	1	75,45
2	(1/16″) - 1.6	**NX56.1**	1	77,45
10	(1/32″) - 0.8	**NX57.1**	1	58,40
10	(1/16″) - 1.6	**NX58.1**	1	61,75

HPLC replacement filter cartridges

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

Pore size (µm)	Art. No.	Pack Qty.	€
2	**NX59.1**	1	48,65
10	**NX60.1**	1	32,90

DURAN WHEATON KIMBLE

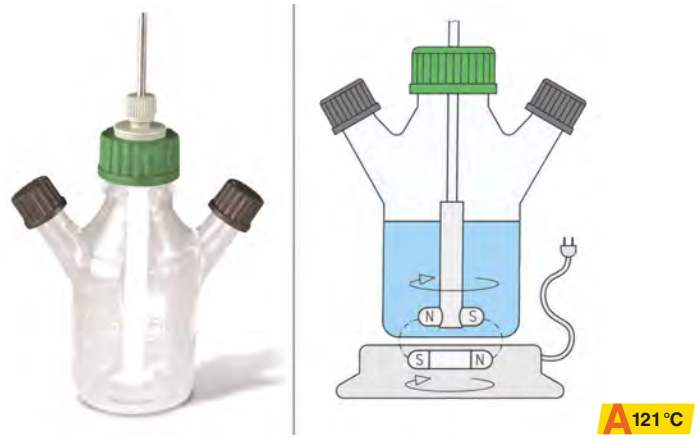
A 121 °C

Screw couplings

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

Thread	Art. No.	Pack Qty.	€
GL 14	**LL41.1**	1	16,80
GL 18	**LL42.1**	1	18,70
GL 25	**LL43.1**	1	22,40
GL 32	**LL44.1**	1	26,60
GL 45	**PY98.1**	1	37,85

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



A 121 °C

Triple neck culture bottles

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

Usable volume (ml)	Thread, side necks	Art. No.	Pack Qty.	€
50	GL 14	**NY29.1**	1	160,20
125	GL 18	**NY30.1**	1	163,40

A 121 °C

Stirring magnet fish-clip® holders

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

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

Delivery incl. magnetic follower.

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

Accessories for magnetic follower holders fish-clip®

Type	Art. No.	Pack Qty.	€
Clamp stopper made of silicone for NS 19/26	**Y901.1**	1	4,85
Clamped joint GL 25	**Y903.1**	1	10,45
Clamped joint GL 32 with NS-adapter 29/32	**Y906.1**	1	35,45

Stirrer reactors

Stirrer reactor sets

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

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

① **GL 45 stirrer reactors**

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

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

Type	Art. No.	Pack Qty.	€
GL 45 stirrer reactor set, 500 ml	**PK85.1**	1	226,00
GL 45 stirrer reactor set, 1000 ml	**PK86.1**	1	238,00

② **GLS 80 stirrer reactors**

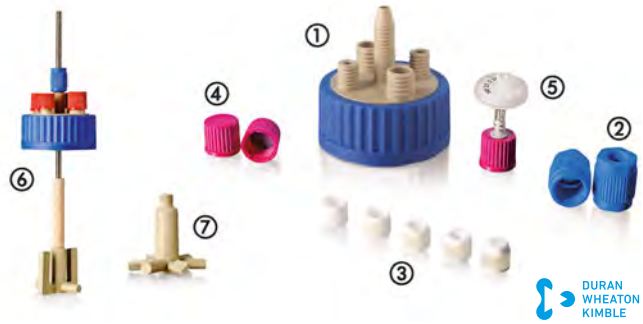
- 4 connections: 2 x GL 18, 2 x GL 14
- Variable stirrer shaft, fits 1000 ml and 2000 ml DURAN® GLS 80 wide-neck threaded bottles
- Interchangeable stirrer element (anchor stirrer is standard, impeller stirrer is optional)
- Compatible with the DURAN® connector system
- Suitable for hoses with diameters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

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

Type	Art. No.	Pack Qty.	€
GLS 80 stirrer reactor set, 1000 ml	**PK87.1**	1	257,00
GLS 80 stirrer reactor set, 2000 ml	**PK88.1**	1	270,00

▶ Magnetic stirrer and stirring rods from page 1025

▶ Double-wall, wide-mouth bottles see page 43



Accessories for GL 45 stirrer reactors

Replacement stirrer shaft, magnetic, suitable for GL 45 stirrer reactor, incl. shaft

Art. No.	Pack Qty.	€
PK89.1	1	176,00

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

Art. No.	Pack Qty.	€
PK90.1	1	48,30

Accessories for GLS 80 stirrer reactors

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

Art. No.	Pack Qty.	€
PK91.1	1	232,00

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

Art. No.	Pack Qty.	€
PK92.1	1	167,00

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

Art. No.	Pack Qty.	€
PK93.1	1	167,00

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

Art. No.	Pack Qty.	€
PK94.1	1	64,30

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

Art. No.	Pack Qty.	€
PK95.1	1	40,60

Accessories for stirrer reactor sets

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

Product	for hose with outer ∅ (mm)	Art. No.	Pack Qty.	€
② + ③ GL 14 laboratory screw joint	1,6	**HX86.1**	2	25,35
② + ③ GL 14 laboratory screw joint	3,0	**HX87.1**	2	25,35
② + ③ GL 14 laboratory screw joint	3,2	**HX88.1**	2	25,35
② + ③ GL 14 laboratory screw joint	6,0	**HX89.1**	2	25,35
② + ③ GL 18 laboratory screw joint	3,2	**KE53.1**	2	31,50
② + ③ GL 18 laboratory screw joint	6,0	**KE54.1**	2	31,50
② + ③ GL 18 laboratory screw joint	8,0	**KE55.1**	2	32,00
② + ③ GL 18 laboratory screw joint	10,0	**KE56.1**	2	32,00
② + ③ GL 18 laboratory screw joint	12,0	**KE57.1**	2	31,50
④ GL 14 screw cap		**E695.1**	10	20,35
④ GL 18 screw cap		**E696.1**	10	24,40
⑤ GL 14 pressure equaliser set		**HX90.1**	1	20,30
⑤ GL 18 pressure equaliser set		**KE58.1**	1	20,65
Replacement membrane filter 0.2 µm		**HE27.1**	2	11,60

Rotilabo®-glass desiccators

Made of borosilicate glass 3.3. Vacuum resistant.

Delivery incl. glass stopcock, plastic cap with hole (9 mm) and matching porcelain plate with hole.

Type	approx. volume (l)	Outside ∅ (mm)	Overall height (mm)	Base ∅ (mm)	Art. No.	Pack Qty.	€
100	0,6	151	169	90	**NX07.1**	1	83,65
150	1,5	210	201	140	**NX08.1**	1	111,80
200	4,0	269	269	190	**NX09.1**	1	116,10
250	8,0	329	320	240	**NX10.1**	1	162,35
300	12,5	392	341	290	**NX11.1**	1	220,40

Replacement stopcock for Rotilabo®-glass desiccators

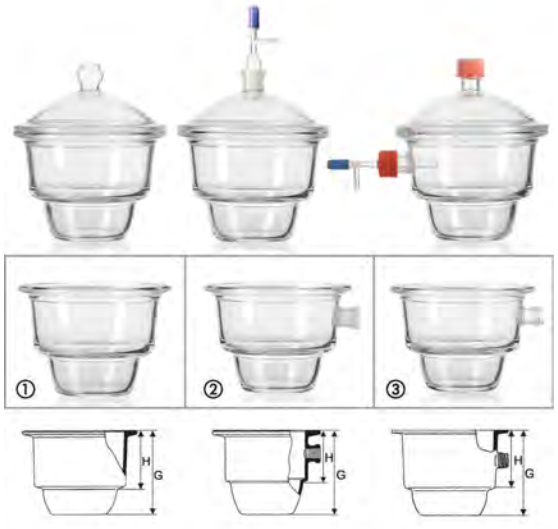
Made of borosilicate glass 3.3. ∅ 8 x L 100 mm.

Art. No.	Pack Qty.	€
NX12.1	1	44,10

Replacement plastic caps for Rotilabo®-glass desiccators

Made of **PP**.

Type	Art. No.	Pack Qty.	€
Without hole	**NX13.1**	1	3,35
With hole, 9 mm	**NX14.1**	1	4,25



DURAN WHEATON KIMBLE
Material DURAN®

Desiccator bases

Made of DURAN® glass with ground flange. Without coating. The precision workmanship allows parts such as covers, bases, stopcocks and closures to be replaced and interchanged between all DURAN®-desiccators of similar type and size. By combining individual parts, the DURAN®-system enables the user to be flexible and work according to his individual needs.

DURAN®-desiccators are excellent for a wide range of applications: e.g. for drying and keeping substances dry; for culturing plants, bacteria, cell cultures; for vacuum manipulation; as mini clean-rooms for storage of sensitive substrates, components, high-purity metals; in the development or manufacture of semiconductors; in material and environmental research; in chip technology, etc. Designed for use up to the maximum technically possible vacuum (0 mbar).

DN = Nominal diameter

① Without connector

DN	Overall height (mm)	Height (mm)	Outside ∅ (mm)	Innner ∅ (mm)	Vol. (l)	Art. No.	Pack Qty.	€
100	112	58	153 ±2	118,5	~0,7	**H356.1**	1	56,90
150	154	81	215 ±2	172	~2,4	**H357.1**	1	61,25
200	202	115	270 ±2	224	~5,8	**H358.1**	1	101,00
250	235	120	320 ±2	274	~10,5	**H359.1**	1	184,00
300	283	150	380 ±2	332	~18,5	**H360.1**	1	295,00

② With 24/29 socket, Novus

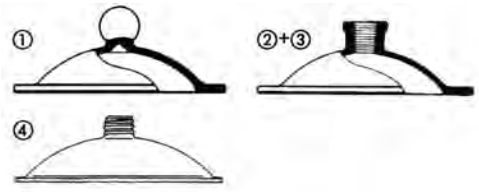
DN	Overall height (mm)	Height (mm)	Outside ∅ (mm)	Innner ∅ (mm)	Vol. (l)	Art. No.	Pack Qty.	€
100	112	58	153 ±2	118,5	~0,7	**H361.1**	1	103,00
150	154	81	215 ±2	172	~2,4	**H362.1**	1	105,00
200	202	115	270 ±2	224	~5,8	**H363.1**	1	151,00
250	235	120	320 ±2	274	~10,5	**H364.1**	1	273,00
300	283	150	380 ±2	332	~18,5	**H365.1**	1	414,00

③ Thread size 32, Mobilex

DN	Overall height (mm)	Height (mm)	Outside ∅ (mm)	Innner ∅ (mm)	Vol. (l)	Art. No.	Pack Qty.	€
150	154	81	215 ±2	172	~2,4	**H366.1**	1	99,50
200	202	115	270 ±2	224	~5,8	**H367.1**	1	135,00
250	235	120	320 ±2	274	~10,5	**H368.1**	1	227,00
300	283	150	380 ±2	332	~18,5	**H369.1**	1	352,00

▶ Lubricating grease see page 1171

▶ For drying agent see the Chromatography Chapter.



DURAN WHEATON KIMBLE
Material DURAN®

Desiccator lids

Made of DURAN® glass with ground flange.

DN = Nominal diameter

① With knob

DN	Outside ∅ (mm)	Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	153 ± 2	118,5	75	**H371.1**	1	58,00
150	215 ± 2	172	98	**H372.1**	1	74,55
200	270 ± 2	224	107	**H373.1**	1	73,85
250	320 ± 2	274	122	**H374.1**	1	77,45
300	380 ± 2	332	150	**H375.1**	1	102,00

② With 24/29 socket, Novus

DN	Outside ∅ (mm)	Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	153 ± 2	118,5	62	**H376.1**	1	67,60
150	215 ± 2	172	85	**H377.1**	1	75,50
200	270 ± 2	224	94	**H378.1**	1	81,85
250	320 ± 2	274	109	**H379.1**	1	101,00
300	380 ± 2	332	137	**H380.1**	1	144,00

③ With special 24/29 socket, Wertex

DN	Outside ∅ (mm)	Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
150	215 ± 2	172	85	**H382.1**	1	85,15
250	320 ± 2	274	109	**H384.1**	1	113,00

④ With screw thread 32, Mobilex

DN	Outside ∅ (mm)	Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
150	215 ± 2	172	85	**H386.1**	1	71,60
200	270 ± 2	224	94	**H387.1**	1	72,15
250	320 ± 2	274	109	**H388.1**	1	75,70
300	380 ± 2	332	137	**H389.1**	1	102,00

DURAN WHEATON KIMBLE

Desiccator plates

Made of porcelain in acc. with DIN 12911 and metal in acc. with DIN EN 10142. For all DURAN® desiccators with equivalent nominal diameter (DN).

DN = Nominal diameter

① Porcelain. Hole-∅ 5 mm.

DN	∅ (mm)	Art. No.	Pack Qty.	€
100	90	**H403.1**	1	25,40
150	140	**H404.1**	1	39,20
200	185	**H405.1**	1	76,65
250	235	**H406.1**	1	105,50
300	280	**H407.1**	1	143,00

② Metal zinc coated. Hole-∅ 3 mm

DN	∅ (mm)	Art. No.	Pack Qty.	€
100	90	**H408.1**	1	7,40
150	140	**H409.1**	1	13,90
200	185	**H410.1**	1	18,45
250	235	**H411.1**	1	23,60
300	280	**H412.1**	1	30,30

DURAN WHEATON KIMBLE

Accessories for desiccators, type Novus

Stopcock with PTFE spindle

Image	Tube	Ground glass joint	Length (mm)	Olives-∅ (mm)	Art. No.	Pack Qty.	€
①	Side socket	24/29	108	8	**H399.1**	1	32,20
②	Cover socket	24/29	124	8	**H400.1**	1	36,85

DURAN WHEATON KIMBLE

Accessories for desiccators, type Mobilex

Image	Type	Art. No.	Pack Qty.	€
①	Stopcock (Length 160, olive ∅ 8 mm)	**H401.1**	1	26,80
②	Screw cap GL 32 with bore hole ∅ 20 mm	**H396.1**	1	2,60
③	Gasket with hole ∅ 12 mm	**H397.1**	1	7,20
④	Cap, thread size 32 with gasket	**H398.1**	1	4,25

DURAN WHEATON KIMBLE

Accessories for desiccators, type Wertex

Stoppers

Ground glass joint	Length (mm)	Height (mm)	Art. No.	Pack Qty.	€
24/29	70	76	**H402.1**	1	40,40

Desiccator grease white

Pharmacy quality.

Art. No.	Pack Qty. (kg)	€
1477.1	1 kg	18,50

Desiccators

Desiccator sets

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

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

DN	approx. volume (l)	Height (mm)	Flange ID (mm)	Flange OD (mm)	Art. No.	Pack Qty.	€
100	0,7	187	118,5	153 ±2	**AHK8.1**	1	111,00
150	2,4	252	172	215 ±2	**AHK9.1**	1	131,00
200	5,8	209	222	270 ±2	**AHL0.1**	1	155,00
250	10,5	357	272	320 ±2	**AHL1.1**	1	243,00
300	18,5	433	332	380 ±2	**AHL2.1**	1	368,00

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

DN	approx. volume (l)	Height (mm)	Flange ID (mm)	Flange OD (mm)	Art. No.	Pack Qty.	€
100	0,7	174	118,5	153 ±2	**AHL3.1**	1	165,00
150	2,4	239	172	215 ±2	**AHL4.1**	1	177,00
200	5,8	296	222	270 ±2	**AHL5.1**	1	210,00
250	10,5	344	272	320 ±2	**AHL6.1**	1	314,00
300	18,5	420	332	380 ±2	**AHL7.1**	1	448,00

Dessicator sets

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

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

DN	approx. volume (l)	Height without stopcock (mm)	Flange ID (mm)	Flange OD (mm)	Art. No.	Pack Qty.	€
150	2,4	239	172	215 ±2	**ETP4.1**	1	207,00
200	5,8	296	222	270 ±2	**ETP5.1**	1	272,00
250	10,5	344	272	320 ±2	**ETP6.1**	1	399,00
300	18,5	420	332	380 ±2	**ETP7.1**	1	571,00

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

DN	approx. volume (l)	Height without stopcock (mm)	Flange ID (mm)	Flange OD (mm)	Art. No.	Pack Qty.	€
150	2,4	239	172	215 ±2	**ETP8.1**	1	193,00
200	5,8	296	222	270 ±2	**ETP9.1**	1	265,00
250	10,5	344	272	320 ±2	**ETT0.1**	1	379,00
300	18,5	420	332	380 ±2	**ETT1.1**	1	536,00

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

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

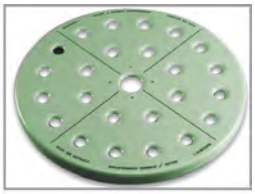
To avoid mechanical stress in the glass, evacuated vessels and/or vessels under pressure may not be heated on one side only or with a naked flame.

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

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

- Lubricating grease see page 1171
- For drying agents, e.g. silica agents etc., see the Chromatography Chapter!

Desiccators



Polycarbonate dessicator

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

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

Outer ∅ x H (mm)	Inner ∅ (mm)	Usable height (mm)	Art. No.	Pack Qty.	€
280 x 329	251	195	**PK30.1**	1	104,20

Accessories:

Spare dessicator valve made of PP	**PK34.1**	1	30,75

Desiccator plate for polycarbonate desiccator

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

∅ (mm)	Art. No.	Pack Qty.	€
230	**PK31.1**	1	67,65

Rotilabo®-desiccators

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

Volume (l)	Innner ∅ (mm)	Usable height (mm)	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
2,15	150	135	190	ca. 520	**1008.1**	1	63,40
4,35	200	175	230	ca. 825	**1827.1**	1	96,65
9,20	250	225	300	ca. 1250	**1009.1**	1	119,35

① Spare desiccator plates

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

For	∅ (mm)	Art. No.	Pack Qty.	€
Desiccator 1008.1	140,5	**N955.1**	1	6,15
Desiccator 1009.1	238	**N957.1**	1	9,65
Desiccator 1827.1	189	**N956.1**	1	9,05

② Spare vacuum stopcock

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

Art. No.	Pack Qty.	€
N958.1	1	12,55

Vacuum bells

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

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

Nominal capacity (l)	∅ x H of bell (mm)	Outer ∅ of plate (mm)	Art. No.	Pack Qty.	€
4,7	170 x 237	191	**ATL5.1**	1	127,95

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

Nominal capacity (l)	∅ x H of bell (mm)	Outer ∅ of plate (mm)	Art. No.	Pack Qty.	€
8,3	222 x 254	330	**ATL6.1**	1	256,95
18,9	305 x 305	330	**ATL7.1**	1	427,85

Spare rubber joint gaskets

Made of neoprene.

For	Art. No.	Pack Qty.	€
Desiccator 1008.1	**N959.1**	5	13,90
Desiccator 1827.1	**N960.1**	5	19,20
Desiccator 1009.1	**N961.1**	5	25,70

Desiccators

Basic and Premium mini desiccators

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

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

Technical specifications:

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

① **Basic mini desiccators**

Type	Art. No.	Pack Qty.	€
Mini 1 Basic	**NT23.1**	1	140,85
Mini 2 Basic	**NT24.1**	1	298,85
Mini 3 Basic	**NT25.1**	1	453,65

② **Premium mini desiccators**

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

Type	Art. No.	Pack Qty.	€
Mini 1 Premium	**NT26.1**	1	144,05
Mini 2 Premium	**NT27.1**	1	275,20
Mini 3 Premium	**NT28.1**	1	405,30

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

Star desiccators

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

Technical specifications:

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

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

Model	Art. No.	Pack Qty.	€
Star dessicator	**CT04.1**	1	794,45
Horizontal star desiccator	**NX18.1**	1	1001,90

Rotilabo®-drying cabinets

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

L x W x H (mm)	Art. No.	Pack Qty.	€
230 x 175 x 175	**6121.1**	1	320,35
410 x 305 x 175	**6123.1**	1	396,70

Desiccators

Star Vitrum desiccator

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

Technical specifications:

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

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

Art. No.	Pack Qty.	€
NX19.1	1	1138,45

Super Star inert gas desiccator

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

Technical specifications:

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

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

Art. No.	Pack Qty.	€
NX20.1	1	1051,35

Desiccators/drying cabinets

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

Auto-Star desiccator

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

Technical specifications:

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

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

Art. No.	Pack Qty.	€
NP95.1	1	1503,95

Vacuum desiccators

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

Technical specifications:

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

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

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

Ampoules

Ampoules, pre-scored

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

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

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
1	10,5 x 67	**ETE6.1**	144	46,40
2	12 x 75	**ETE7.1**	144	46,40
5	16,5 x 84	**ETE8.1**	144	71,70
10	19 x 107	**ETE9.1**	144	97,45
20	22,5 x 130	**ETH0.1**	144	144,05

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

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
1	10,5 x 67	**ETH1.1**	144	52,15
2	12 x 75	**ETH2.1**	144	52,15
5	16,5 x 84	**ETH3.1**	144	105,35

Ampoules Cryule®, pre-scored

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

Volume (ml)	∅ x H (mm)	Outer neck ∅ (mm)	Art. No.	Pack Qty.	€
1,2	11,8 x 58	5	**ETE4.1**	144	87,65
2	11,5 x 70	5	**ETE5.1**	144	100,00

Disposable ampoule openers

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

Art. No.	Pack Qty.	€
EPN8.1	144	22,05

Ampoule opener

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

Art. No.	Pack Qty.	€
CXT2.1	1	53,25

Sample vials/Autosamplervials

S

PET-bottles

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

Volume (ml)	∅ x H (mm)	Cap size (mm)	Art. No.	Pack Qty.	€
5	22,5 x 46	20-415	**ATK0.1**	100	192,45
10	24 x 57	20-415	**ATK1.1**	100	196,75
20	30 x 65	20-415	**ATK2.1**	100	211,80

Sample vials for pathology

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

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

NEW

S

Multipurpose tubes

By Greiner Bio-One. Made of **PS**, transparent, liquid-tight, with conical base. White screw cap made of **HDPE**. Usable in centrifuges up to 3500 x g. Temperature stable from -20 °C to 60 °C.
For universal laboratory use for non-human and non-medical samples.

Nominal capacity (ml)	Working capacity (ml)	Design	∅ x H (mm)	Art. No.	Pack Qty.	€
30	23	non-sterile	24 x 90	**HYL2.1**	400	97,60
30	23	**sterile**	24 x 90	**HYL3.1**	400	139,75

Rotilabo®-storage vials

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

Volume (ml)	Type	Thread	∅ x H (mm)	Art. No.	Pack Qty.	€
5	Clear glass	ND15	17 x 61	**XC37.1**	100	29,00
5	Brown glass	ND15	17 x 61	**XC38.1**	100	31,40
10	Clear glass	ND15	19 x 66	**XC39.1**	100	30,10
10	Brown glass	ND15	19 x 66	**XC40.1**	100	32,20
15	Clear glass	ND18	21 x 71	**XC41.1**	100	34,55
20	Clear glass	ND20	23 x 86	**XC42.1**	100	38,30

Caps for storage vials

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

Thread	Sealing material	Art. No.	Pack Qty.	€
ND15	Natural rubber red orange / TEF transparent	**XC43.1**	100	23,45
ND15	Butyl red / PTFE grey	**XC44.1**	100	24,95
ND18	Butyl red / PTFE grey	**XC45.1**	100	33,45
ND20	Butyl red / PTFE grey	**XC46.1**	100	34,55

Rotilabo®-sample vials

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

Volume (ml)	Height (mm)	∅ (mm)	Material	Art. No.	Pack Qty.	€
0,7	40	8	PP	**H992.1**	100	21,45
1	40	8	glass, clear	**H300.1**	200	34,40
1	40	8	glass, amber	**H301.1**	200	41,95
1	40	8	PP	**H302.1**	200	39,25
2	32	12	glass, clear	**H303.1**	100	26,35
2	32	12	glass, amber	**H304.1**	100	28,85
2	32	12	PP	**H305.1**	100	27,95
4	45	15	glass, clear	**H306.1**	100	27,95
4	45	15	glass, amber	**H307.1**	100	29,60
4	45	15	PP	**H308.1**	100	28,60

▶ Additional sample vials and accessories see page 70

▶ Tongs for welt rim vials see page 72

Sample vials/Autosamplervials

Rotilabo®-sample vials 0,1 ml

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

Art. No.	Pack Qty.	€
C518.1	200	42,50

Rotilabo®-sample vials 2 ml

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

Design	Art. No.	Pack Qty.	€
clear	**E159.1**	200	38,20
brown	**E160.1**	200	39,60

Rotilabo®-inserts 100 µl

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

Art. No.	Pack Qty.	€
C516.1	100	47,15

Caps and septa

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

Type	Art. No.	Pack Qty.	€
Screw cap with hole	**E161.1**	200	15,00
Screw cap without hole	**E162.1**	200	17,00
Septum PTFE, ∅ 8 mm	**E163.1**	1000	45,15
Septum silicone rubber/PTFE-coated, disposable	**E164.1**	200	32,05
Septum silicone white/PTFE red, can be pierced several times	**E165.1**	200	36,55

Rotilabo®-sample vials 4 ml

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

Type	Art. No.	Pack Qty.	€
Sample vials 4 ml, clear	**E152.1**	200	36,20
Sample vials 4 ml, brown	**E153.1**	200	42,50
Screw cap with hole	**E154.1**	200	24,70
Screw cap without hole	**E155.1**	200	20,40
Septum PTFE, ∅ 12 mm	**E156.1**	1000	46,25
Septum silicone rubber/PTFE-coated, disposable	**E157.1**	200	39,75
Septum silicone white/PTFE red, can be pierced several times	**E158.1**	200	48,30

Rotilabo®-sample vials

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

Volume (ml)	∅ (mm)	Height (mm)	Neck outside ∅ (mm)	Art. No.	Pack Qty.	€
2	12	32	11	**C514.1**	200	36,50
4	15	45	13	**H511.1**	200	38,65
6	22	38	20	**H512.1**	200	69,90
10	23	46	20	**H513.1**	200	78,50
20	23	75	20	**H514.1**	200	83,85

Rotilabo®-aluminium caps with septum

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

for crimp vials with ∅ (mm)	Septum	Art. No.	Pack Qty.	€
11	PTFE/silicone rubber	**H522.1**	200	26,80
11	PTFE/silicone	**C515.1**	200	53,70
13	PTFE/silicone rubber	**H518.1**	200	62,35
13	PTFE/silicone	**H519.1**	200	73,10
20	PTFE/butyl	**H520.1**	200	160,20
20	PTFE/silicone	**H521.1**	200	118,25

Sample vials/Autosamplervials

Rotilabo®-screw neck ND8 vials

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

Type	Volume (ml)	Art. No.	Pack Qty.	€
Clear glass	1,5	**KE26.1**	100	13,60
Clear glass, with labelling area	1,5	**KE27.1**	100	14,60
Clear glass, conical base	1,1	**KE28.1**	100	54,70
Brown glass	1,5	**KE29.1**	100	14,60
Brown glass, with labelling area	1,5	**KE30.1**	100	15,95

Micro-inserts

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

Type	Volume (ml)	Dimensions L x ∅ (mm)	Art. No.	Pack Qty.	€
Conical 15 mm tip	0,1	31 x 5	**KE31.1**	100	25,80
With plastic spring	0,1	29 x 5	**KE32.1**	100	58,05
With metal spring	0,05	27,5 x 4	**KE33.1**	100	30,70

Screw caps closed

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
Natural rubber orange red / TEF transparent	1,3	60°	**TY72.1**	100	17,75
Butyl red / PTFE grey	1,3	55°	**TY73.1**	100	19,15
Silicone white / PTFE red UltraClean	1,3	45°	**NL96.1**	100	29,35

Screw caps with bore hole

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
PTFE red / silicone white / PTFE red	1,0	45°	**KE34.1**	100	37,90
Silicone white / PTFE red UltraClean	1,3	45°	**KE35.1**	100	28,85
Silicone cream / PTFE red UltraClean	1,5	55°	**KE36.1**	100	28,85
Natural rubber orange red / TEF transp.	1,3	60°	**KE37.1**	100	16,40
Butyl red / PTFE grey	1,3	55°	**KE38.1**	100	17,75
Silicone white / PTFE red, slotted	1,3	45°	**NL97.1**	100	42,55

Screw caps

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

Type	Art. No.	Pack Qty.	€
Without bore hole	**KE39.1**	100	6,60
With bore hole ∅ 5.5 mm	**KE40.1**	100	6,05

Septa ∅ 8 mm

Material	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
PTFE	0,25	53°	**KE41.1**	1000	32,70
Natural rubber orange red / TEF transp.	1,3	60°	**KE42.1**	1000	75,80
Butyl red / PTFE grey	1,3	55°	**KE43.1**	1000	93,05
Silicone white / PTFE red	1,3	45°	**KE44.1**	1000	198,90
Silicone white / PTFE blue, slotted	0,9	55°	**KE45.1**	1000	442,90

Rotilabo®-short thread ND9 vials

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

Type	Volume (ml)	Art. No.	Pack Qty.	€
Clear glass	1,5	**LC02.1**	100	14,55
Clear glass, with labelling area	1,5	**LC03.1**	100	15,00
Clear glass, with integrated micro-insert	0,2	**LC04.1**	100	104,30
Clear glass, with solid conical bottom	1,1	**LC05.1**	100	75,15
Amber, with labelling area	1,5	**LC06.1**	100	16,90
Transparent PP, with graduation	1,5	**NL98.1**	100	21,20
Brown PP, with graduation	1,5	**NL99.1**	100	22,15

Micro-inserts

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

Type	Volume (ml)	Dimensions L x ∅ (mm)	Art. No.	Pack Qty.	€
Tapered 15 mm tip	0,1	31 x 6	**LC07.1**	100	24,75
With plastic spring	0,1	29 x 5,7	**LC08.1**	100	66,90
Flat base	0,2	31 x 6	**LC09.1**	100	20,80

Screw caps closed

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
PTFE virginal	0,2	53°	**TY74.1**	100	18,50
Silicone white / PTFE red UltraClean	1,0	55°	**TY75.1**	100	33,35

Screw caps with bore hole

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
PTFE red / silicone white / PTFE red	1,0	45°	**LC10.1**	100	34,85
Silicone white / PTFE red UltraClean	1,0	55°	**LC11.1**	100	29,55
PTFE (*shore D)	0,2	53° *	**LC12.1**	100	15,35
Natural rubber orange-red/ TEF transp.	1,0	60°	**LC13.1**	100	18,15
Silicone white / PTFE blue, slotted	1,0	55°	**LC14.1**	100	42,55

UltraBond screw caps bore hole

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
Silicone beige / PTFE white, slotted	1,3	45°	**LC15.1**	100	50,30

Sample vials/Autosamplervials

Screw caps for LC/GC-MS

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

Art. No.	Pack Qty.	€
NN00.1	100	34,60

Magnetic screw caps with bore hole

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
Silicone white / PTFE red UltraClean	1,0	55°	**PT62.1**	100	49,85

Silanised ND9 short-thread screw top vials

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

Type	Volume (ml)	Art. No.	Pack Qty.	€
Clear glass	1,5	**XC47.1**	100	45,70
Clear glass, with solid conical base	1,1	**XC48.1**	100	104,10
Brown glass, with labelling space	1,5	**XC49.1**	100	46,50

Silanised micro inserts

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

Type	Volume (ml)	Dimensions L x ∅ (mm)	Art. No.	Pack Qty.	€
Tapered 15 mm tip	0,1	31 x 6	**XC50.1**	100	58,60
With plastic spring	0,1	29 x 5,7	**XC51.1**	100	89,15

Certified Vial Kits ND9

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

Type	Volume (ml)	Art. No.	Pack Qty. (set)	€
Clear glass, with labelling space	1,5	**XC64.1**	1	51,10
Brown glass, with labelling space	1,5	**XC65.1**	1	51,10

Rotilabo®-screw neck ND10 vials

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

Type	Volume (ml)	Art. No.	Pack Qty.	€
Clear glass	1,5	**LC16.1**	100	15,00
Clear glass, with labelling area	1,5	**NN01.1**	100	16,00
Brown glass, with labelling area	1,5	**LC17.1**	100	17,35

Micro-inserts

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

Type	Volume (ml)	Dimensions L x ∅ (mm)	Art. No.	Pack Qty.	€
Tapered 15 mm tip	0,1	31 x 6	**LC07.1**	100	24,75
With plastic spring	0,1	29 x 5,7	**LC08.1**	100	66,90
Flat base	0,2	31 x 6	**LC09.1**	100	20,80

Screw caps closed

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
Natural rubber orange red / TEF transparent	1,3	60°	**TY76.1**	100	25,10

Screw caps with bore hole

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
Silicone white / PTFE red UltraClean	1,3	45°	**LC18.1**	100	33,60
Silicone white / PTFE beige	1,5	45°	**LC19.1**	100	34,30
Natural rubber orange-red/ TEF transparent	1,3	60°	**LC20.1**	100	21,85
PTFE red / Silicone white / PTFE red	1,0	45°	**NN37.1**	100	42,20
Silicone white / PTFE blue, slotted	1,5	55°	**LC21.1**	100	48,20

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

ND11 Rotilabo®-welt rim vials

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

Type	Volume (ml)	Dimensions H x ∅ (mm)	Art. No.	Pack Qty.	€
Clear glass	1,5	32 x 11,6	**LC22.1**	100	12,65
Clear glass	2,5	41 x 11,6	**TY77.1**	100	20,60
Clear glass, with labelling area	1,5	32 x 11,6	**LC23.1**	100	13,75
Brown glass, with labelling area	1,5	32 x 11,6	**LC24.1**	100	15,35
TPX, with integrated glass-micro-insert	0,2	32 x 11,6	**LC25.1**	100	66,30

Micro inserts

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

Type	Volume (ml)	Dimensions L x ∅ (mm)	Art. No.	Pack Qty.	€
Tapered 15 mm tip	0,1	31 x 6	**LC07.1**	100	24,75
With plastic spring	0,1	29 x 5,7	**LC08.1**	100	66,90
Flat base	0,2	31 x 6	**LC09.1**	100	20,80

Flange caps with bore hole

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
PTFE red / silicone white / PTFE red	1,0	45°	**LC26.1**	100	36,20
Silicone white / PTFE red, UltraClean	1,3	45°	**LC27.1**	100	28,45
Natural rubber orange-red / butyl red / TEF transparent	1,0	45°	**LC28.1**	100	12,00
Natural rubber red-orange / TEF transparent, AGILENT-quality	1,0	60°	**LC29.1**	100	11,75
Butyl red / PTFE grey	1,3	55°	**LC30.1**	100	18,60
Silicone white / PTFE blue, slotted	1,5	55°	**NN02.1**	100	56,95

Magnetic flanged caps with bore hole

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
Silicone white / PTFE red UltraClean	1,3	45°	**PT63.1**	100	43,85
PTFE red / silicone white / PTFE red	1,0	45°	**PT64.1**	100	49,95

TPF crimp caps with bore hole

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

Septum materials	Thick-ness (mm)	Art. No.	Pack Qty.	€
Aluminium (with O-ring seal)	0,06	**NN03.1**	100	36,50

Rotilabo®-snap ring vials ND11

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

Type	Volume (ml)	Art. No.	Pack Qty.	€
Clear glass	1,5	**TY79.1**	100	14,15
Clear glass, with labelling space	1,5	**TY80.1**	100	15,45
Brown glass, with labelling space	1,5	**TY81.1**	100	16,45
TPX, with integrated glass-micro insert	0,2	**TY82.1**	100	65,40

Snap ring caps hard version

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
RedRubber / PTFE beige, AGILENT quality	1,0	45°	**TY83.1**	100	19,20
Natural rubber orange red / TEF transparent	1,0	60°	**TY84.1**	100	18,10

Snap ring caps soft version

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
RedRubber / PTFE beige, AGILENT quality	1,0	45°	**TY85.1**	100	20,75
Natural rubber orange red / TEF transparent	1,0	60°	**TY86.1**	100	19,55

Push-on caps

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

Art. No.	Pack Qty.	€
TY78.1	100	8,40

▶ Tongs for welt rim vials see page 72

Sample vials/Autosamplervials

Rotilabo®-screw thread ND13 vials

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

Type	Volume (ml)	Art. No.	Pack Qty.	€
Clear glass	4	**LC31.1**	100	17,55
Clear glass, with labelling area	4	**LC32.1**	100	19,00
Brown glass	4	**LC33.1**	100	18,60
Brown glass, with labelling area	4	**LC34.1**	100	20,05

Micro-insert

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

Type	Volume (ml)	Dimensions L x ∅ (mm)	Art. No.	Pack Qty.	€
Conical 15 mm tip, with metal spring	0,3	40 x 6	**LC35.1**	100	41,60

Screw caps closed

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
Natural rubber orange red / TEF transp.	1,3	60°	**TY88.1**	100	22,60
Butyl red / PTFE grey	1,3	55°	**TY89.1**	100	24,95
Silicone cream / PTFE red	1,5	55°	**NN04.1**	100	36,80

Screw caps with bore hole

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

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
PTFE red / silicone white / PTFE red	1,0	45°	**LC36.1**	100	48,25
Silicone cream / PTFE red	1,5	55°	**LC37.1**	100	38,40
Natural rubber orange-red / TEF transparent	1,3	60°	**LC38.1**	100	22,35
Butyl red / PTFE grey	1,3	55°	**LC39.1**	100	24,90
Silicone white / PTFE blue, slotted	1,5	55°	**NN05.1**	100	63,45

Screw caps

Made of **PP**, black. For screw thread ND13 vials.
Without septum, please order separately.

Type	Art. No.	Pack Qty.	€
Without bore hole	**LC40.1**	100	10,45
With bore hole ∅ 8.5 mm	**LC41.1**	100	9,35

Septa ∅ 12 mm

Material	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
PTFE (*shore D)	0,25	53° *	**LC42.1**	1000	41,00
Natural rubber orange-red/ TEF transparent	1,3	60°	**LC43.1**	1000	99,35
Butyl red / PTFE grey	1,3	55°	**LC44.1**	1000	137,60
Silicone blue transparent / PTFE white	1,3	45°	**LC45.1**	1000	263,40
Silicone cream / PTFE red	1,5	55°	**LC46.1**	1000	268,75

▶ Other boxes and stands for autosampler vials see page 228

Rotilabo®-fine screw thread ND18 vials

Made of borosilicate glass, hydrolytic Class 1. CleanPack, bottles packed in a clean room under class 10.000 conditions. Suitable for automatic samplers. Please order screw caps and septa separately.

Type	Volume (ml)	Dimensions L x ∅ (mm)	Art. No.	Pack Qty.	€
Clear glass	10	46 x 22,5	**LC47.1**	100	32,20
Brown glass	10	46 x 22,5	**LC48.1**	100	50,35
Clear glass	20	75,5 x 22,5	**LC49.1**	100	36,20
Brown glass	20	75,5 x 22,5	**LC50.1**	100	54,45

Magnetic screw caps closed

Magnetic, silver. Without hole. For fine pitch screw top vials ND18 (art. no. LC47.1-LC50.1).
Delivery incl. septum, assembled.

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
Butyl red / PTFE grey	1,6	55°	**TY90.1**	100	41,25

Magnetic screw caps with bore hole

Made of steel, magnetic, silver, bore hole ∅ 8 mm. For fine screw thread vials ND18 (Art. no. LC47.1 to LC50.1).
Delivery incl. septum, mounted.

Septum materials	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
Silicone blue transparent / PTFE white Ultra Clean	1,3	45°	**LC51.1**	100	70,10
Silicone white / PTFE red, slotted	1,5	55°	**NN06.1**	100	82,20
Silicone white / PTFE blue Ultra Clean	1,5	55°	**LC52.1**	100	84,25
Butyl red / PTFE grey	1,6	55°	**LC53.1**	100	42,60

Rotilabo®-stands for vials and micro inserts

Made of **acrylic**. Transparent material allows easy checking of the filling level of the vials in the stand. With silicon feet for stability and stackability.
Stand for micro inserts and vials in sizes from ND8 to ND11 (Art. no. TY95.1 and TY96.1) can also hold tapered base vials.

For autosampler vials	Hole ∅ (mm)	Slots	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
Micro inserts	8,5/3	5 x 10	173 x 95 x 20	**TY95.1**	1	70,00
ND8 to ND11	12	5 x 10	173 x 95 x 20	**TY96.1**	1	76,15
ND13	15,1	5 x 8	176 x 116 x 20	**TY97.1**	1	77,85
ND18, ND20 (up to 20 ml)	24	5 x 5	160 x 160 x 30	**TY98.1**	1	89,05

Sample vials/Autosamplervials

Rotilabo®-screw-neck ND18 vials

Made of borosilicate glass of hydrolytic class 1. Round base.
Dimensions: ∅ 23 x H 75.5 mm. CleanPack, bottles packed in a clean room under class 10.000 conditions. Suitable for automatic samplers.
Screw caps and septa please order separately.

Type	Volume (ml)	Art. No.	Pack Qty.	€
Clear glass	20	**LY52.1**	100	38,95

Screw caps with septum

Made of **PP**, black. **Suitable only for screw thread vials art. no. LY52.1**.
Septum material: butyl red / PTFE grey.
Delivery incl. septum, assembled.

Type	Thick-ness (mm)	Hardness (shore A)	Art. No.	Pack Qty.	€
Closed	1,6	55°	**TY91.1**	100	34,05
Hole ∅ 12.5 mm	1,6	55°	**TY92.1**	100	36,20

Screw caps

Made of **PP**, black. **Suitable only for screw thread vials art. no. LY52.1**.
Without septum, please order separately.

Type	Art. No.	Pack Qty.	€
Without bore hole	**LC54.1**	100	13,80
With bore hole ∅ 12 mm	**LC55.1**	100	13,80

Septa ∅ 16 mm

Material	Thick-ness (mm)	Hardness (shore A)	Art. No.	Pack Qty.	€
Butyl red / PTFE grey	1,3	55°	**LC56.1**	1000	189,20
Natural rubber orange-red / TEF transparent	1,3	60°	**LC57.1**	1000	189,20
Silicone blue transparent / PTFE white	1,7	45°	**LC58.1**	1000	426,80
PTFE red / silicone white / PTFE red	1,0	45°	**LC59.1**	1000	481,60

- For HPLC solvents and further accessories see the Chromatography chapter!
- Other boxes and stands for autosampler vials see page 228

ND20 Rotilabo® rolled-edge headspace vials

Made of hydrolytic class 1 borosilicate glass. Clear glass, wall thickness 1.2 mm. CleanPack, vials packed in a clean room under class 10 000 conditions. Suitable for automatic samplers. Please order crimp caps separately.

Round base

Type	Volume (ml)	Dimensions ∅ x H (mm)	Art. No.	Pack Qty.	€
Clear glass, bevelled head-space edge	5	22 x 38,2	**LC60.1**	100	28,60
Clear glass, bevelled head-space edge	20	23 x 75,5	**LC61.1**	100	30,80
Clear glass, DIN rolled edge	10	22,5 x 46	**LC62.1**	100	29,95
Brown glass, DIN rolled edge	10	22,5 x 46	**NN07.1**	100	33,45
Clear glass, DIN rolled edge, long neck	20	22,5 x 75,5	**LC63.1**	100	31,15
Clear glass with labelling space, bevelled headspace edge	20	23 x 75,5	**NN08.1**	100	32,40
Brown glass, DIN rolled edge, long neck	20	22,5 x 75,5	**NN09.1**	100	34,10

Flat headspace base

*not suitable for use under pressure.

Type	Volume (ml)	Dimensions ∅ x H (mm)	Art. No.	Pack Qty.	€
DIN rolled edge	5	20 x 38	**LC64.1**	100	28,70
DIN rolled edge	10	54,5 x 20	**NN10.1**	100	29,15
DIN rolled edge, long neck	10	22,5 x 46	**LC65.1**	100	30,60
DIN rolled edge, long neck	20	22,5 x 75,5	**LC66.1**	100	31,10
DIN rolled edge	50	31 x 101	**LC67.1**	100	61,30
DIN rolled edge	100*	51,6 x 94,5	**LC68.1**	88	51,90

Crimp caps with bore hole

Made of aluminium. Bore hole ∅ 10 mm.
For crimp neck Headspace ND20 vials.
Delivery incl. septum, mounted.

Septum materials	Thick-ness (mm)	Hardness (shore A)	Art. No.	Pack Qty.	€
Butyl, dark grey	3,0	50°	**LC69.1**	100	19,55
Butyl / PTFE, coated	3,0	50°	**LC70.1**	100	31,75
butyl / PTFE, partly coated	3,0	50°	**LC71.1**	100	44,20
Silicone blue transparent / PTFE white Ultra Clean	3,0	45°	**LC72.1**	100	58,40
Silicone white / PTFE beige (AGILENT HT quality)	3,25	45°	**LC73.1**	100	59,45

Headspace-caps with bore hole

Made of aluminium. Bore hole ∅ 8 mm. For crimp neck Headspace vials ND20. With predetermined breaking points which open at 3.0 ±0.5 bar to release excess pressure.
Delivery incl. septum, mounted.

Septum materials	Thickness (mm)	Hardness (shore A)	Art. No.	Pack Qty.	€
Butyl / PTFE, coated	3,0	50°	**LC74.1**	100	32,65
Butyl / PTFE, partly coated	3,0	50°	**LC75.1**	100	45,55
Silicone blue transparent / PTFE white Ultra Clean	3,0	45°	**LC76.1**	100	59,75
Silicone white / PTFE beige (AGILENT HT quality)	3,25	45°	**LC77.1**	100	61,30

Sample vials/Autosamplervials

Centre tear-off caps

Made of aluminium. For rolled-edge headspace vials ND20.
Delivery incl. septum, assembled.

Septum materials	Thickness (mm)	Hardness (shore A)	Art. No.	Pack Qty.	€
Dark grey butyl rubber	3,0	55°	**NN11.1**	100	20,35
Transparent blue silicone/ PTFE white UltraClean	3,0	45°	**NN12.1**	100	59,45

Complete tear-off caps

Made of aluminium. For rolled-edge headspace vials ND20.
Delivery incl. septum, assembled.

Septum materials	Thickness (mm)	Hardness (shore A)	Art. No.	Pack Qty.	€
Dark grey butyl rubber	3,0	55°	**NN13.1**	100	20,75
Transparent blue silicone/ PTFE white UltraClean	3,0	45°	**NN14.1**	100	60,00

Magnetic crimp caps with bore hole

Made of aluminium, gold coloured. For crimp neck Headspace vials.
Delivery incl. septum, mounted.

Septum materials	Hole ∅ (mm)	Thick-ness (mm)	Hard-ness (shore A)	Art. No.	Pack Qty.	€
Butyl / PTFE, grey	5	3,0	50°	**LC78.1**	100	35,50
Butyl / PTFE, grey	8	3,0	50°	**LC79.1**	100	35,50
Silicone blue transparent / PTFE white Ultra Clean	5	3,0	45°	**LC80.1**	100	61,30
Silicone blue transparent / PTFE white Ultra Clean	8	3,0	45°	**LC81.1**	100	61,30

Butyl hollow stoppers

Grey. Suitable for all ND20 crimp top headspace vials (Art. no. LC60.1 to LC68.1).

Art. No.	Pack Qty.	€
TY94.1	100	11,20

Rotilabo®-decappers

For removal of flanged aluminium caps 8, 11, 13 and 20 mm. Coloured handles.

Colour	for aluminium crimp caps	Art. No.	Pack Qty.	€
white	NW 8 mm	**C776.1**	1	60,10
red	NW 11 mm	**C777.1**	1	60,10
green	NW 13 mm	**C778.1**	1	60,10
blue	NW 20 mm	**C779.1**	1	60,10

Rotilabo®-screw neck ND24 vials (EPA)

Made of borosilicate glass, hydrolytic class 1. CleanPack, bottles packed in a clean room under class 10.000 conditions. Suitable for automatic samplers. Please order screw caps and septa separately.

Type	Volume (ml)	Dimensions ∅ x H (mm)	Art. No.	Pack Qty.	€
Clear glass	20	27,5 x 57	**LC88.1**	100	41,60
Amber	20	27,5 x 57	**LC89.1**	100	73,35
Clear glass	30	27,5 x 72,5	**LC90.1**	100	42,75
Amber	30	27,5 x 72,5	**LC91.1**	100	77,90
Clear glass	40	27,5 x 95	**LC92.1**	100	44,40
Amber	40	27,5 x 95	**LC93.1**	100	83,85
Clear glass	60	27,5 x 140	**LC94.1**	100	75,05
Amber	60	27,5 x 140	**LC95.1**	100	89,05

Screw caps

Made of **PP**, white. For screw neck ND24 vials.
Without septum, please order separately.

Type	Art. No.	Pack Qty.	€
closed	**LC96.1**	100	13,80
Bore hole ∅ 15 mm	**LC97.1**	100	13,10

Septa ∅ 22 mm

Septum materials	Thickness (mm)	Hardness (shore A)	Art. No.	Pack Qty.	€
Butyl red / PTFE grey	1,6	55°	**LC98.1**	1000	270,90
Butyl red / PTFE grey	2,5	55°	**LC99.1**	1000	282,75
Silicone natural / PTFE beige (EPA-quality)	3,2	45°	**LE00.1**	1000	452,60
Silicone white / PTFE blue, cross-slotted	1,5	55°	**LE01.1**	1000	757,90

Screw caps closed

Made of **PP**, white. Without bore hole. For screw neck ND24 vials.
Delivery incl. septum, mounted.

Septum materials	Thickness (mm)	Hardness (shore A)	Art. No.	Pack Qty.	€
Butyl red / PTFE grey	2,5	55°	**LE02.1**	100	47,85
Silicone natural / PTFE beige (EPA-quality)	3,2	45°	**LE03.1**	100	67,15

UltraBond™-screw caps

Made of **PP**, white. For screw neck ND24 vials. Joint cap and septum are a unit, septum cannot be pressed into bottle even when using thick or blunt needles.

Septum materials	Type	Thick-ness (mm)	Hardness (shore A)	Art. No.	Pack Qty.	€
Silicone natural / PTFE beige (EPA-quality)	closed	3,2	45°	**LE04.1**	100	68,45
Silicone natural / PTFE beige (EPA-quality)	Bore hole ∅ 15 mm	3,2	45°	**LE05.1**	100	67,15

Crimping tools for autosampler vials

Rotilabo®-closing and opening pliers

Made of hardened steel with chemical resistant special coating. For sealing and opening standard aluminium crimp caps with ND 8, 11, 13 or 20 mm.

- Special surface coating for excellent grip
- Effortless working thanks to resetting spring
- Adjusting screws in crimping head and handle for optimal sealing and reproducible crimping results

① Closing pliers

for aluminium crimp caps	Art. No.	Pack Qty.	€
ND 8 mm	**C780.1**	1	196,75
ND 11 mm	**C781.1**	1	196,75
ND 13 mm	**5001.1**	1	196,75
ND 20 mm	**C782.1**	1	196,75

② Opening pliers

For controlled opening of crimped sample vials without the danger of glass breakage.

for aluminium crimp caps	Art. No.	Pack Qty.	€
ND 8 mm	**ATN3.1**	1	196,75
ND 11 mm	**ATN4.1**	1	196,75
ND 13 mm	**ATN5.1**	1	196,75
ND 20 mm	**ATN6.1**	1	196,75

A 121 °C

Cleanroom crimping tongs

Made entirely of stainless steel, corrosion and heat resistant.
The tool is tolerant to repeated sterilisation for cleanroom use.
Free of lubricant and uncoated; no particles are released during use and therefore no increase in particle density occurs in the cleanroom.
Crimping pressure and height are adjustable for optimal crimping results, even when using different types of vial. Autoclavable.

Closing tongs

Type	Art. No.	Pack Qty.	€
ND 11	**XC66.1**	1	743,90
ND 13	**XC67.1**	1	743,90
ND 20	**XC68.1**	1	743,90

Opening tongs

Type	Art. No.	Pack Qty.	€
ND 11	**XC69.1**	1	743,90
ND 13	**XC70.1**	1	743,90
ND 20	**XC71.1**	1	743,90

ND11 and ND20 cordless crimping tools

By Macherey-Nagel. Mobile electronic crimping tools for 11 mm and 20 mm aluminium crimp caps (unsuitable for magnetic or bimetal crimp caps).

- Consistent and reproducible crimping results
- Control unit for crimping pressure adjustment
- Longlife lithium batteries

Delivery incl. charging station and connector set.

Closing tongs

For crimp vials	Art. No.	Pack Qty.	€
ND11	**APC4.1**	1	825,00
ND20	**APC5.1**	1	825,00

Opening tongs

For crimp vials	Art. No.	Pack Qty.	€
ND11	**APC6.1**	1	825,00
ND20	**APC7.1**	1	825,00

High performance crimping tool ND11 and ND20

By Macherey-Nagel. For secure and reproducible crimping and decapping of crimp caps on sampling bottles and autosampler vials.

- Also suitable for magnetic and bimetal crimp caps thanks to very powerful motor.
- Exchangeable crimping and decapping heads
- Digital LED display
- Memory function for different crimp settings
- A stand is optionally available for convenient and safe handling

Delivery incl. power supply (12 V) and cable.
Please order crimping and decapping heads separately.

Art. No.	Pack Qty.	€
APE8.1	1	1250,00

Accessories:

Crimping head for 11 mm crimp caps	**APE9.1**	1	375,00
Crimping head for 20 mm crimp caps	**APH0.1**	1	375,00
Decapping head for 11 mm crimp caps	**APH1.1**	1	375,00
Decapping head for 20 mm crimp caps	**APH2.1**	1	375,00
Stand for electronic crimping tools	**APH3.1**	1	190,00

Welted glasses

Glass vials with rolled rim

Made of soda-lime glass.
Delivery incl. LDPE snap-on lids.

Low form

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
2	11,5 x 36	**CLA0.1**	690	121,50
5	24 x 24	**CLA1.1**	154	45,35
8	24 x 34	**CLA2.1**	154	47,20
10	24 x 41	**CLA3.1**	154	42,95
15	26 x 48	**CLA4.1**	130	40,65
20	26 x 60	**CLA5.1**	130	44,20
30	28 x 72	**CLA6.1**	108	42,50
60	32 x 106	**CLA7.1**	84	61,75

High form

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
3	19 x 30	**CLA8.1**	200	42,95
5	19 x 40	**CLA9.1**	200	44,65
10	22 x 45	**CLC0.1**	200	47,10
25	30 x 50	**CLC1.1**	200	63,75
30	28 x 75	**CLC2.1**	200	67,20
40	30 x 80	**CLC3.1**	200	78,30
50	30 x 100	**CLC4.1**	200	82,60
100	34 x 145	**CLC5.1**	100	102,15

Brown glass, rolled-rim vials

Made of soda-lime glass.
Delivery incl. LDPE snap-on lid.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
3	19 x 30	**ENK0.1**	200	64,40
5	19 x 40	**ENK1.1**	200	64,40
10	22 x 45	**ENK2.1**	200	71,95
25	30 x 50	**ENK3.1**	200	100,85
30	28 x 75	**ENK4.1**	200	107,40
40	30 x 80	**ENK5.1**	200	132,25
50	30 x 100	**ENK6.1**	200	148,35
100	34 x 145	**ENK7.1**	100	126,85

Rotilabo®-snap-cap vials ND18 / ND22

Made of clear, Soda lime-glass, hydrolytic Class 3. Clear glass.
For storage of powders and solids. Please order lid separately.

Volume (ml)	Nominal ∅ (mm)	Neck inner ∅ (mm)	∅ x H (mm)	Art. No.	Pack Qty.	€
5	ND18	13,1	20 x 40	**LC82.1**	100	14,10
10	ND18	13,1	22 x 50	**LC83.1**	100	15,95
15	ND22	18,2	26 x 48	**LC84.1**	100	23,65
25	ND22	18,2	26 x 65	**LC85.1**	100	24,60

Snap-on lids

Made of **PE**, transparent, closed.

for nominal ∅	Art. No.	Pack Qty.	€
ND18	**LC86.1**	100	4,75
ND22	**LC87.1**	100	6,05

Welted glasses

Made of soda-lime glass. **Delivery incl.** press-on lid (PE), tightly closing.

Volume (ml)	Outside ∅ (mm)	Height (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
5	19	40	13	**X654.1**	200	47,25
10	22	45	17	**X655.1**	200	50,45
15	24	52	17	**X656.1**	200	57,85
20	25	70	17	**X657.1**	200	60,10
20	27	55	17	**X658.1**	200	62,30
25	29	50	22	**X659.1**	200	64,45
30	28	75	17	**X660.1**	200	82,25
35	28	65	22	**X661.1**	200	82,75
40	29	80	22	**X662.1**	200	83,75
50	29	100	22	**X663.1**	200	90,15

Rotilabo®-NMR-vials

Made of borosilicate glass 3.3. With lenticular-shaped based.
Ideal for applications with high operational capacity.

Technical specifications:

Length (mm)	178 ±0.5
∅ outer (mm)	4.95 ±0.05
∅ inner (mm)	4.15 ±0.05
Straightness (mm)	±0.07
Wall thickness (mm)	0.38
MHz	100-300

Delivery without cap, please order separately.

Type	Art. No.	Pack Qty.	€
Rotilabo®-NMR-vials	**HX58.1**	50	80,50

Accessories:

Caps made of EVA	**HX59.1**	1000	96,70

Rotilabo®-NMR-tube, brown

Made of type 3.3 borosilicate glass. Tinted brown with resistant silver diffusion dye. Specially designed for light-sensitive samples.
With lenticular base, fire polished rim.

Technical specifications:

Length	178 mm ±0.5
Outer ∅	4.97 mm +0.02, 4.97 mm -0.05
Inner ∅	4.15 mm ±0.05
Straightness	±0.07 mm
Wall thickness	0.38 mm
Megahertz	100-300 MHz

Delivery incl. sealing plug made of EVA.

Art. No.	Pack Qty.	€
ATP0.1	1	44,10

DURAN WHEATON KIMBLE

NMR-vials

Vials contain no paramagnetic substances. Outstanding straightness. Uniform wall thickness. Good regularity of diameter. Length 178 mm.
Two models available:

- **Economic:** made of DURAN®, with retrace code, for one-time use in fully automatic sample changers or for high throughput
- **Scientific:** made of borosilicate glass, for multiple use. Vials can be cleaned and sterilized. Optimal utilization of substance in extremely high-resolution range.

Technical specifications:

Model	Economic	Scientific
Length (mm)	178	178
∅ outer (mm)	4,95 ±0,05	4,97 ±0,013
∅ inner (mm)	4,20 ±0,05	4,20 ±0,013
Straightness (mm)	±0,07	0,013
MHz	300	500

Delivery incl. sealing plugs.

Type	Art. No.	Pack Qty.	€
Economic	**EP54.1**	250	499,00
Scientific	**EP55.1**	5	68,50

A 121 °C

Rack for NMR-test tubes

Made of **PP**. With 72 slots and 2 side handles for easy transportation.
Stability is provided by hemispherical holes in the lower level.
For NMR test tubes L 178 mm, outer ∅ 5 mm.
Dimensions: L 210 x W 110 x H 220 mm. Autoclavable.

Art. No.	Pack Qty.	€
YA94.1	1	60,95

▶ NMR solvents see chapter Chemicals!

Stirring staffs and wipers

Stirring spatula

Made of **PP**, white. For stirring different specimens.
Length 244 mm, rod ∅ 6 mm.

Art. No.	Pack Qty.	€
TT16.1	10	10,50

Stirring bars

Made of **PVC**. Rigid, ∅ 7.15 mm.

Length (mm)	Art. No.	Pack Qty.	€
250	**TT38.1**	10	25,80
300	**TT39.1**	10	25,80
350	**TT40.1**	10	28,95

A 121 °C

Rotilabo®-stirring rods

For stirring different types of samples.
Different models and dimensions available. Autoclavable.

Made of flexible PTFE. With spatulate ends. Rod-∅ 8 mm.

Length (mm)	Art. No.	Pack Qty.	€
150	**EX96.1**	1	5,15
200	**EX97.1**	1	5,85
250	**EX98.1**	1	6,60
300	**EX99.1**	1	7,65

Made of PTFE with stainless steel core.
Can be bent if required. Remains bent. Round ends. Rod-∅ 6 mm.

Length (mm)	Art. No.	Pack Qty.	€
150	**EY00.1**	1	7,15
200	**EY01.1**	1	7,85
250	**EY02.1**	1	8,25
300	**EY03.1**	1	10,60
350	**EY04.1**	1	12,10
400	**EY05.1**	1	13,35

Rotilabo®-glass rods

Made of borosilicate glass, both ends sealed. Extensively free of inclusions.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
150	6	**P210.1**	10	7,00
200	6	**P211.1**	10	8,10
250	7	**P212.1**	10	11,65
250	8	**P213.1**	10	12,85
300	8	**P214.1**	10	14,55

Rotilabo®-rubber wipers

Made of natural rubber. With fitting for glass rods: ∅ 5-6 mm.

Rod-shaped
Length 38 mm.

Colour	Art. No.	Pack Qty.	€
grey	**9548.1**	10	11,85
red	**9550.1**	10	11,85

Spade-shaped
Width: top 36 mm, bottom 25 mm. Length 32 mm. 2 mm thick.

Colour	Art. No.	Pack Qty.	€
grey	**9552.1**	10	11,85
red	**9553.1**	10	11,85

Rotilabo®-silicone wipers

With stainless steel handle. For removing or wiping objects clean of sticky substances and pastes media. Suitable for food.

Total length (mm)	Width (mm)	Colour	Art. No.	Pack Qty.	€
200	27,5	white	**HY10.1**	1	10,70
260	50	red	**HY11.1**	1	12,05

Analytical beakers and scintillation vessels

Sample vials for analysis systems

By Greiner Bio-One. Made of **PS**, transparent.
With conical base and vertical lip.

Volume (ml)	For model	Art. No.	Pack Qty.	€
0,3	Centrifichem	**EC62.1**	1000	34,95
0,5	Gemsaec	**EC63.1**	500	18,95
1,5	Technicon	**EC64.1**	500	13,20
4,0	Technicon	**EC65.1**	250	10,70

Scintillation vials

Made of **HDPE**.
① **Vial 20 ml** with white tight-closing screw cap.
For use in automatic analysers.
② **Mini Vial 5 ml** with clear screw cap, for putting into 20 ml carrier vial.

Type	Volume (ml)	Outer ∅ x H (mm)	Art. No.	Pack Qty.	€
① Vial	20	27 x 60	**HEN0.1**	1000	130,10
② Mini Vial	5	14 x 53	**5404.1**	2000	134,40

Sample vessels for cell counters

Made of **PS**. Optically clear, with parallel sides.
For use in analyser systems. Volume 25 ml. Outer ∅ 35 x H 56 mm.
Delivery incl. snap-on lid made of PE.

Art. No.	Pack Qty.	€
AYX2.1	1000	152,65

Scintillation vials

All-purpose vials for liquid and gamma scintillation counters or for sample storage. Cylindrical shape allows easy filling and residue-free drainage.
Leak-proof.

① **20 ml scintillation vials**
Made of transparent **PP**, closure made of **HDPE**.
Opening or inner ∅ 22 mm. Screw cap seals vial hermetically after 1/4 turn.

Volume (ml)	Outer ∅ x H (mm)	Vial/cap material	Art. No.	Pack Qty.	€
20	27 x 61	PP / HDPE	**AYX3.1**	500	102,25

② **6.5 ml scintillation vials**
Made of transparent **PP** or **HDPE**. Opening or inner ∅ 12 mm.
Special push-on cap for quick closing, can be opened again with a 1/4 turn.

Volume (ml)	Outer ∅ x H (mm)	Vial/cap material	Art. No.	Pack Qty.	€
6,5	16 x 57	HDPE / PP	**AYX4.1**	1000	110,75
6,5	16 x 57	PP / HDPE	**AYX5.1**	1000	110,75

Scintillation vials

Made of **HDPE**, closure made of **PP**.
Compatible with all conventional liquid scintillation counters Screw cap of the macro-tubes seals with as little as a quarter turn.

Type	Volume (ml)	Outer ∅ x H (mm)	Art. No.	Pack Qty.	€
Micro	4	14 x 54	**HEE8.1**	2000	107,40
Macro	20	27 x 61	**HEE9.1**	1000	139,75

▶ Scintillation cocktails see Life Science!
▶ Dispensers on page 407

Analytical beakers and scintillation vessels

DURAN WHEATON KIMBLE

Scintillation vials 6 ml

By Wheaton. Made of **HDPE**, caps made of **PP**, can be opened with a quarter turn. The extension on the cap can be used to suspend type-② vials in 20 ml scintillation vials with thread 22-400.
Delivery incl. caps, included.

Type	Cap type	Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
①	Standard	6	17 x 57	**EPA7.1**	1000	382,70
②	Suspendable	6	17 x 57	**EPA8.1**	1000	382,70

DURAN WHEATON KIMBLE

A 121 °C

Omni-Vial® scintillation vials

By Wheaton. Made of **PP.** Suitable for liquid, beta and gamma-scintillation counters, for RIA or for sample storage. Autoclavable.
Delivery incl. caps.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
4	13 x 57	**EXY7.1**	1000	220,40

DURAN WHEATON KIMBLE

Sampule® scintillation vials

By Wheaton. Made of borosilicate glass (in accordance with USP type I and ASTM E 438 type I, class A) or HDPE. Caps made of urea with seal made of aluminium-coated cellulose cardboard or PP.
Delivery incl. caps.

Vial material	Volume (ml)	∅ x H (mm)	Cap material	Art. No.	Pack Qty.	€
Glass	6	17 x 58	Urea / aluminium seal	**EXY8.1**	1000	437,55
HDPE	6	17 x 57	PP	**EXY9.1**	1000	219,30

DURAN WHEATON KIMBLE

Scintillation vials 20 ml

By Wheaton. Made of borosilicate glass (in accordance with USP type I and ASTM E 438 type I, class A), HDPE or PET. Caps made of PP with seals made of PE foam or aluminium-coated cellulose cardboard, assembled. Thread 22-400.

Caps made of PP with PE foam seal
Suitable for liquid, acid, alkaline or alcoholic solutions.

Vial material	∅ x H (mm)	Art. No.	Pack Qty.	€
Glass	28 x 61	**EXY1.1**	500	232,20
HDPE	27 x 61	**EXY2.1**	500	165,55
PET	27 x 61	**EXY3.1**	500	201,05

Caps made of PP with aluminium seal
Suitable for solvents, hydrocarbons, oils, ketones and alcohols.

Vial material	∅ x H (mm)	Art. No.	Pack Qty.	€
Glass	28 x 61	**EXY4.1**	500	234,35
HDPE	27 x 61	**EXY5.1**	500	165,55
PET	27 x 61	**EXY6.1**	500	203,20

A 121 °C

Rack for scintillation tubes

Made of **PP**, with 24 holes in 3 x 8 array. Hole-∅ 30 mm. Ideal for storing, transporting or as a rack on the laboratory bench. Dimensions: L 298 x W 127 x H 95 mm. Height to intermediate shelf 44 mm. Autoclavable.

Art. No.	Pack Qty.	€
K993.1	1	51,60

A 121 °C

Racks for sample vials

Made of **PP**. For 12 vials up to ∅ max. 32 mm. Suitable for the storage and transportation of glass bottles, vials and sample tubs.
Dimensions: L 267 x W 102 x H 53 mm. Autoclavable.

Art. No.	Pack Qty.	€
CXP7.1	1	35,40

Test tubes

Durham-tubes

Made of calcium soda glass. Wall thickness 0.7 mm. With round bottom and straight edge. For detecting gas production in micro-organisms.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
0,5	6 x 35	**TX27.1**	250	31,20
0,5	7 x 25	**TX28.1**	250	49,25
0,75	6 x 50	**TX29.1**	350	38,60

Rotilabo®-sample vials

Made of soda-lime glass. With flat bottom and fused rim. Thickness 0.6 mm.
Delivery incl. PE-stoppers.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
2,5	10 x 50	**0425.1**	496	94,50

Sample vials

Made of natural-coloured **PE**, with attached press-on lid.

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
1,0	9	32	**5862.1**	100	27,55
2,5	14	32	**5863.1**	100	29,40
5,0	15	50	**5866.1**	100	38,65
7,0	22	32	**5867.1**	100	42,75
8,0	17	58	**TT12.1**	100	42,90
20	25	75	**TT13.1**	100	48,40
25	31	53	**TT14.1**	50	38,65
35	31	75	**TT15.1**	50	42,90

Test tubes

Made of **PP**, transparent. Autoclavable.
Delivery without screw caps (please order separately).

Volume (ml)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
40	30	85	**PT32.1**	500	46,80
60	30	126	**PT33.1**	300	38,30
120	44	115	**PT34.1**	250	41,85

Screw caps for test tubes

Made of **PP**.

For containers	Art. No.	Pack Qty.	€
PT32.1	**PT35.1**	500	29,05
PT33.1	**PT36.1**	300	20,35
PT34.1	**PT38.1**	250	18,85

Test tubes with tamper-evident seal

Made of **PP**. Temperature-resistant from -90 to +121 °C. Autoclavable.

- Leak-proof tamper-evident seal
- Free-standing, conical base for optimal sample recovery
- Frosted label field
- Graduated in 1 ml increments

Volume (ml)	Dimensions, incl. lid (mm)	Vessel ∅ x H (mm)
5	24 x 59	16 x 57
10	24 x 96	15 x 94

Volume (ml)	Lid colour	Art. No.	Pack Qty.	€
5	pink	**X327.1**	250	81,95
5	blue	**X328.1**	250	81,95
5	white	**X329.1**	250	81,95
10	pink	**X330.1**	250	81,95
10	blue	**X331.1**	250	81,95
10	white	**X332.1**	250	81,95

Test tubes

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Culture tubes with screw caps

Made of DURAN®, with DIN-thread, screw caps made of PBT, gaskets PTFE-coated. Hot air sterilization to max. 180 °C. Autoclavable.

Volume (ml)	Outside ∅ (mm)	Length (mm)	Thread	Art. No.	Pack Qty.	€
6	12	100	GL 14	**K248.1**	50	162,00
9	13	100	GL 14	**PY94.1**	50	162,00
20	16	150	GL 18	**PY95.1**	50	162,00
20	16	160	GL 18	**K249.1**	50	210,00
34	20	150	GL 18	**PY96.1**	50	239,00
30	18	180	GL 18	**K250.1**	50	229,00

Made of **AR-GLAS®**, with DIN-thread, screw caps made of PP, white rubber gasket. Heat resistant to 140 °C. Autoclavable (repeated autoclaving can lead to glas corrosion).

Volume (ml)	Outside ∅ (mm)	Length (mm)	Thread	Art. No.	Pack Qty.	€
6	12	100	GL 14	**K251.1**	100	40,65
12	16	100	GL 18	**K252.1**	100	43,60
20	16	160	GL 18	**K253.1**	100	53,75
30	18	180	GL 18	**K254.1**	100	62,65

▶ For spare screw caps see page 46

DURAN WHEATON KIMBLE

Culture vials

By Wheaton. Made of borosilicate glass, in acc. with USP type I and ASTM E 438 type I, class B. With round base, suitable for use on shakers and tilt/roller mixers. Caps made of black phenoplastic with seals made of PTFE-coated rubber.

Volume (ml)	∅ x H (mm)	Thread	Art. No.	Pack Qty.	€
11	16 x 100	15-415	**ETK4.1**	144	233,30
14	16 x 125	15-415	**ETK5.1**	144	237,60
27	20 x 150	18-415	**ETK6.1**	144	476,25

Sterile culture vials with screw cap

Made of **PS**. Cap made of **HDPE**. **Sterile**. Centrifugable to 3000 x g. Coloured lid inserts for identification are optional (CK72.1ff). Volume 8 ml. Dimensions: ∅ 13 x L 100 mm. Pyrogen free.
Temperature resistant in the range -80 to +80 °C.

Art. No.	Pack Qty.	€
AEL3.1	1000 (8 x 125)	265,55

Sterile culture vials

- Made of transparent **PS** or translucent **PP**
- With two-position **PE** closure for anaerobic and aerobic bacteria cultures
- **Sterile**
- With or without graduations and labelling space
- Available in space-saving box or economy-priced bag

	PS vials	PP vials
Temperature stability	up to +70 °C	-190 to +121 °C
Centrifugable up to	1400 x g	3000 x g

Made of PS

Volume (ml)	∅ (mm)	Height (mm)	Gradua-tions	Packaging	Art. No.	Pack Qty.	€
4	12	75	yes	individual	**EA97.1**	500	143,30
4	12	75	yes	25/box	**EA98.1**	500	115,05
4	12	75	no	bulk-packed (bag)	**AEX8.1**	500	72,80
12	17	95	yes	individual	**EA99.1**	500	191,35
12	17	95	yes	25/box	**EC00.1**	500	145,15
12	17	95	no	bulk-packed (bag)	**AEX9.1**	500	87,45

Made of PP

Volume (ml)	∅ (mm)	Height (mm)	Gradua-tions	Packaging	Art. No.	Pack Qty.	€
4	12	75	yes	individual	**EC01.1**	500	143,00
4	12	75	yes	25/box	**EC02.1**	500	112,90
4	12	75	no	25/bag	**AEY0.1**	500	69,85
12	17	95	yes	individual	**EC03.1**	500	191,35
12	17	95	yes	25/box	**EC04.1**	500	145,15
12	17	95	no	25/bag	**AEY1.1**	500	106,70

Fluoroplastic test tubes

Made of **PFA**. Highly transparent. With or without ring mark, stopper joint made of PP or screw cap. Chemically inert to nearly all chemicals.

- Temperature resistant in the range -200 to +250 °C
- Hydrophobic and anti-adhesive, extremely smooth surfaces allow easy cleaning
- High purity, ideal for used in trace analysis and for storage of reference solutions
- No memory effect
- Autoclavable

Type	Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
With ring mark at 10 ml, with stopper joint made of PP	12	110	16	**YA25.1**	1	42,15
Without ring mark, without stopper joint	12	110	16	**YA26.1**	1	32,20
With ring mark at 10 ml, with screw cap GL 25	15	110	22	**YA27.1**	1	62,70
Without ring mark, with screw cap GL 25	15	110	22	**YA28.1**	1	51,60

PFA test tubes with plugs

Made of **PFA**. Highly transparent. Microwave safe. Autoclavable.

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

Volume (ml)	Outer ∅ x H (mm)	Inner ∅ (mm)	Art. No.	Pack Qty.	€
5	10 x 132	8	**YY79.1**	1	63,25
15	16 x 162	14	**YY81.1**	1	88,10
20	16 x 175	14	**YY82.1**	1	88,10
25	19 x 185	16	**YY83.1**	1	108,60
50	22 x 235	19	**YY84.1**	1	138,70
60	22 x 245	19	**YY85.1**	1	144,05

Test tubes, soda-lime glass

Made of soda-lime glass. With round bottom and straight edge.

Volume (ml)	Wall thickness (mm)	Outer ∅ x H (mm)	Art. No.	Pack Qty.	€
4	0,6	10 x 75	**TX18.1**	1000	64,30
6	0,6	12 x 75	**TX19.1**	500	24,75
9	0,6	12 x 100	**TX20.1**	500	37,75
14	0,8	16 x 100	**TX21.1**	310	31,75
20	0,8	16 x 130	**TX22.1**	100	15,95
23	0,8	16 x 150	**TX23.2**	100	16,15
25	0,8	16 x 160	**TX24.2**	100	17,00
35	1,0	18 x 180	**TX25.1**	100	28,95
75	1,2	25 x 200	**TX26.1**	63	43,65

Rotilabo®-test tubes

Made of soda-lime glass. Standard design L 160 x ∅ 16 x thickness 0.6 mm, with round base and straight rim, slightly narrowed at the top.

Art. No.	Pack Qty.	€
0486.2	250	27,90

Rotilabo®-test tube clamps

Wooden. Length 180 mm. For test tubes with ∅ 12-20 mm.

Art. No.	Pack Qty.	€
0645.1	12	9,65

Rotilabo®-test tube holder with finger grip

Manufactured from nickel-plated steel. For test tubes with max. 30 mm ∅. Length 130 mm.

Art. No.	Pack Qty.	€
X114.1	1	4,95

Test tubes

A 121 °C

Rotilabo®-test tubes

Made of borosilicate glass 3.3. Thick or thin walled.
Good thermal fatigue resistance. Autoclavable.

Straight rim

Volume (ml)	Outside ∅ (mm)	Length (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
4	10	75	0,8-1,0	**HA73.1**	100	26,85
5	10	100	0,8-1,0	**HA74.1**	100	29,80
6	12	75	0,8-1,0	**HA75.1**	100	27,90
8	12	100	0,8-1,0	**HA76.1**	100	30,05
16	14	130	1,0-1,2	**HA77.1**	100	38,70
17	16	130	1,0-1,2	**HA78.1**	100	45,05
21	16	160	1,0-1,2	**HA79.1**	100	49,45
32	18	180	1,0-1,2	**HA80.1**	100	62,35
34	20	150	1,0-1,2	**HA81.1**	100	57,85
40	20	180	1,0-1,2	**HA82.1**	100	58,40
55	25	150	1,0-1,2	**HA83.1**	50	32,20
70	25	200	1,0-1,2	**HA84.1**	50	44,65
100	30	200	1,0-1,4	**HA85.1**	50	50,80

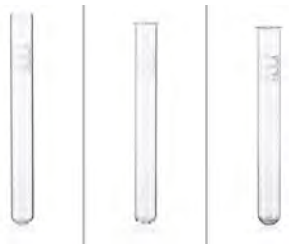
Beaded rim

Volume (ml)	Outside ∅ (mm)	Length (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
4	10	75	0,8-1,0	**HA87.1**	100	27,90
5	10	100	0,8-1,0	**HA88.1**	100	29,75
8	12	100	0,8-1,0	**HA90.1**	100	29,00
16	14	130	0,8-1,0	**HA91.1**	100	36,50
17	16	130	1,0-1,2	**HA92.1**	100	39,75
21	16	160	1,0-1,2	**HA93.1**	100	42,95
32	18	180	1,0-1,2	**HA94.1**	100	49,40
34	20	150	1,0-1,2	**HA95.1**	100	52,15
40	20	180	1,0-1,2	**HA96.1**	100	58,00
55	25	150	1,0-1,2	**HA97.1**	50	32,20
70	25	200	1,0-1,2	**HA98.1**	50	42,90
100	30	200	1,0-1,4	**HA99.1**	50	51,95

Made of borosilicate glass 5.1. Thin-walled.
Good thermal fatigue resistance. Autoclavable.

Beaded rim

Volume (ml)	Outside ∅ (mm)	Length (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
2	8	70	0,4-0,5	**HC00.1**	100	21,45
4	10	75	0,4-0,5	**HC01.1**	100	21,45
6	10	100	0,4-0,5	**HC02.1**	100	21,45
6,5	12	75	0,4-0,5	**HC03.1**	100	21,45
9	12	100	0,4-0,5	**HC04.1**	100	21,45
16	14	130	0,4-0,5	**HC05.1**	100	26,85
20	16	130	0,5-0,6	**HC06.1**	100	26,85
25	16	160	0,5-0,6	**HC07.1**	100	24,70
35	18	180	0,5-0,6	**HC08.1**	100	30,05
45	20	180	0,5-0,6	**HC10.1**	100	34,35
60	25	150	0,6-0,7	**HC11.1**	50	22,60
80	25	200	0,6-0,7	**HC12.1**	50	27,95
110	30	200	0,7-0,8	**HC13.1**	50	53,70



DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

DURAN®-test tubes

Made of DURAN®. Thick-walled and therefore mechanically stable.
Excellent thermal shock resistance. Autoclavable.

Straight rim

Volume (ml)	Outside ∅ (mm)	Length (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
2	8	70	0,8-1,0	**C182.1**	100	34,85
4	10	75	0,8-1,0	**C183.1**	100	37,70
5	10	100	0,8-1,0	**C184.1**	100	39,40
6	12	75	0,8-1,0	**C185.1**	100	41,10
8	12	100	0,8-1,0	**C186.1**	100	44,10
9	13	100	0,8-1,0	**PY93.1**	100	51,60
16	14	130	0,8-1,0	**C187.1**	100	56,65
17	16	130	1,0-1,2	**C188.1**	100	66,60
21	16	160	1,0-1,2	**C189.1**	100	67,60
32	18	180	1,0-1,2	**C190.1**	100	80,20
34	20	150	1,0-1,2	**C191.1**	100	81,50
40	20	180	1,0-1,2	**C192.1**	100	90,70
55	25	150	1,0-1,2	**C193.1**	50	61,45
70	25	200	1,0-1,2	**C194.1**	50	64,55
100	30	200	1,0-1,4	**C195.1**	50	101,50

Beaded rim

Volume (ml)	Outside ∅ (mm)	Length (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
2	8	70	0,8-1,0	**C196.1**	100	34,85
4	10	75	0,8-1,0	**C197.1**	100	37,70
5	10	100	0,8-1,0	**C198.1**	100	39,40
6	12	75	0,8-1,0	**C199.1**	100	41,00
8	12	100	0,8-1,0	**C205.1**	100	44,10
9	13	100	0,8-1,0	**PY92.1**	100	51,60
16	14	130	0,8-1,0	**C206.1**	100	56,65
17	16	130	1,0-1,2	**C207.1**	100	66,60
21	16	160	1,0-1,2	**C208.1**	100	67,60
32	18	180	1,0-1,2	**C209.1**	100	77,85
34	20	150	1,0-1,2	**C210.1**	100	81,45
40	20	180	1,0-1,2	**C211.1**	100	90,75
55	25	150	1,0-1,2	**C212.1**	50	61,45
70	25	200	1,0-1,2	**C213.1**	50	64,40
100	30	200	1,0-1,4	**C214.1**	50	101,50

FIOLAX®-test tubes

Made of borosilicate glass 4.9, with beaded rim.
Thin-walled, suited to rapid changes of temperature and localized heating.

Volume (ml)	Outside ∅ (mm)	Length (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
2	8	70	0,4-0,5	**K223.1**	100	18,75
4	10	75	0,4-0,5	**K224.1**	100	19,30
6	10	100	0,4-0,5	**K225.1**	100	19,30
6,5	12	75	0,4-0,5	**K226.1**	100	20,30
9	12	100	0,4-0,5	**K227.1**	100	21,35
16	14	130	0,4-0,5	**K228.1**	100	26,50
20	16	130	0,5-0,6	**K229.1**	100	30,80
25	16	160	0,5-0,6	**K230.1**	100	31,55
35	18	180	0,5-0,6	**K231.1**	100	36,60
39	20	150	0,5-0,6	**K232.1**	100	41,70
45	20	180	0,5-0,6	**K233.1**	100	42,00
60	25	150	0,6-0,7	**K234.1**	50	31,25
80	25	200	0,6-0,7	**K235.1**	50	35,55
110	30	200	0,7-0,8	**K236.1**	50	69,55

A 121 °C

Test tubes with standard ground joint

By Brand. Made of borosilicate glass 3.3. With NS socket and PP stopper. Wall thickness 1.2 mm, white graduations.

Volume (ml)	Graduations (ml)	Ground glass joint	∅ x L (mm)	Art. No.	Pack Qty.	€
10	0,1	12/21	15 x 165	**Y752.1**	1	10,70
20	0,2	14/23	17 x 200	**Y753.1**	1	13,05
25	0,2	14/23	17 x 220	**Y754.1**	1	15,00
30	0,5	14/23	19 x 220	**Y755.1**	1	16,35

Rotilabo®-test tubes

Made of **PS**. Thickness about 1 mm, with rounded base.

*conical

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
1	11,5	55	**K940.1**	1000	22,90
2	11	70	**K939.1**	1000	24,90
4	12	75	**K937.1**	1000	30,40
10	16	100	**K936.3**	100	5,75
10	16	100	**K936.2**	500	25,50
10*	16	105	**K935.1**	1000	53,65
15	16	150	**K938.1**	1000	107,45

A 121 °C

Test tubes including stoppers with standard ground joint

Made of borosilicate glass 3.3, with ground glass socket, ground glass stopper and white labelling space. Autoclavable.

Volume (ml)	Standard ground glass joint	∅ x L (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
10	12/21	16 x 150	1,8	**NY90.1**	1	16,15
20	14/23	18 x 180	1,8	**NY91.1**	1	16,15
30	19/26	22 x 150	1,8	**NY92.1**	1	16,15
50	19/26	22 x 200	1,8	**NY93.1**	1	16,15
100	29/32	34 x 200	2,0	**NY94.1**	1	19,35

Disposable test tubes with edge

Made of **PS** or **PP**. Capacity 10 ml, ∅ 16 x H 100 mm.

Type	Material	Art. No.	Pack Qty.	€
Cylindrical	PP	**TT73.1**	2000	103,50
Conical	PS	**TT74.1**	2000	127,95

- For autoclaving information see page 5
- Stoppers with standard ground joint made of glass and plastic, see page 142
- Brushes for test tubes see page 1166
- Accessories for test tubes see page 46

Stoppers

Rubber stoppers with turn-up lip

For tight sealing of glass, plastic and metals containers with or without a flanged rim or NS. Tight fit prevents unintentional opening.
The rubber stoppers can be pierced for removal of sample and remain watertight even after being perforated several times.
Temperature stable from -20 to +100 °C.

Model	Bottom ∅ (mm)	Top inside ∅ (mm)	for ground glass joints	Art. No.	Pack Qty.	€
7,1	4,5	7,5	5	**EC92.1**	100	42,95
10,2	9,8	10,7	10	**EC93.1**	50	25,55
12,7	12,3	13,3	12	**EC94.1**	50	37,10
14,9	14,2	15,5	14	**EC95.1**	20	20,00
15,9	14,5	16,5	14	**EC96.1**	20	48,30
19,4	15,8	17,8	19	**EC97.1**	20	25,60
23,7	21,2	24,4	24	**EC98.1**	10	35,60
30,7	28,0	31,4	29	**EC99.1**	5	23,25

Silicone stoppers with turn-up lip

Ideal for impervious closure of glass, plastic or metal vessels, with or without flanged rim or Ns. Tight fit prevents unintentional opening.
The silicone stoppers can be pierced for removal of sample yet remain watertight even after being perforated several times.
Temperature stable from -60 to +220 °C. Autoclavable.

Model	Bottom ∅ (mm)	Top inside ∅ (mm)	for ground glass joints	Art. No.	Pack Qty.	€
7,1	4,5	7,5	5	**EE00.1**	100	44,10
10,2	9,8	10,7	10	**EE01.1**	50	25,30
12,7	12,3	13,3	12	**EE02.1**	50	42,50
14,9	14,2	15,5	14	**EE03.1**	20	22,35
15,9	14,5	16,5	14	**EE04.1**	20	23,55
19,4	15,8	17,8	19	**EE05.1**	20	33,35
23,7	21,2	24,4	24	**EE06.1**	10	29,60
30,7	28,0	31,4	29	**EE07.1**	5	22,15

Rotilabo®-cork plugs

Made of natural cork. Pointed, conical shape.
Lightweight and robust, easy to drill through.

Bottom ∅ (mm)	Top ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
3	6	16	**PL40.1**	25	6,40
5	8	16	**PL41.1**	25	6,40
6	9	17	**PL42.1**	25	5,35
9	12	20	**PL43.1**	25	5,05
10	13	22	**PL44.1**	25	5,05
12	15	22	**PL45.1**	25	5,35
13	16	22	**PP70.1**	25	5,60
14	17	22	**PL46.1**	25	5,85
16	19	23	**PL47.1**	25	6,25
17	20	26	**PL48.1**	25	7,45
18	22	26	**PL49.1**	25	8,50
20	24	27	**PL50.1**	10	6,15
22	26	27	**PL51.1**	10	6,75
24	28	27	**PL52.1**	10	7,30
26	30	27	**PL53.1**	10	8,95
28	32	27	**PL54.1**	10	9,55
32	36	27	**PL55.1**	10	11,80

Rotilabo®-stoppers made of natural rubber

Colour red. Elastic. In acc. with DIN 12871. Hardness 40 Shore A.
Temperature stable from -35 to +70 °C. Silicone-free. Autoclavable.

Bottom ∅ (mm)	Top ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
3,5	6,5	15	**TL09.1**	100	12,90
5	9	20	**TL10.1**	100	16,00
8	12	20	**TL11.1**	100	21,00
10,5	14,5	20	**TL12.1**	25	7,55
12,5	16,5	20	**TL13.1**	25	8,55
14	18	20	**TL14.1**	25	8,95
17	22	25	**TL15.1**	25	14,25
18	24	30	**TL16.1**	25	16,60
21	27	30	**TL17.1**	25	21,45
23	29	30	**TL18.1**	25	26,80
26	32	30	**TL19.1**	25	32,20
29	35	30	**TL20.1**	25	36,45
31	38	35	**TL21.1**	25	48,85
36	44	40	**TL22.1**	25	58,20
41	49	40	**TL23.1**	25	76,70
47	55	40	**TL24.1**	5	22,70
50,5	59,5	45	**TL25.1**	5	28,40
56	65	45	**TL26.1**	5	33,80
60	70	50	**TL27.1**	5	41,70
64,5	75,5	55	**TL28.1**	5	47,10
71	83	60	**TL29.1**	1	13,45
79	92	65	**TL30.1**	1	18,65
87	100	65	**TL31.1**	1	21,50
94	107	65	**TL32.1**	1	23,40

121 °C

Rotilabo®-stoppers made of natural rubber

Elastic. Temperature stable from -35 to +70 °C (+120 °C for humid heat). Shore-hardness approx. 40. In acc. with DIN 12871. Silicone-free. Autoclavable.

Bottom ∅ (mm)	Top ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
3,5	6,5	15	**C367.2**	100	10,35
5	9	20	**C368.2**	100	12,85
8	12	20	**C377.2**	100	16,00
10,5	14,5	20	**C378.2**	25	5,35
14	18	20	**0395.2**	25	7,15
17	22	25	**C379.2**	25	11,80
18	24	30	**C380.2**	25	13,65
21	27	30	**C381.2**	25	17,85
26	32	30	**C382.2**	25	27,45
29	35	30	**C383.2**	25	33,30
31	38	35	**C384.1**	25	38,65
36	44	40	**C385.1**	25	49,40
41	49	40	**C386.1**	25	58,80
47	55	40	**EK04.1**	5	18,60
56	65	45	**Y843.1**	1	6,85
64,5	75,5	55	**Y844.1**	1	9,45
71	83	60	**TK97.1**	1	10,20
79	92	65	**TK98.1**	1	14,35
87	100	65	**TK99.1**	1	16,50
94	107	65	**TL00.1**	1	18,80

121 °C

Rotilabo®-stoppers made of silicone rubber

In acc. with DIN 12871. Shore-hardness approx. 50 A. Biologically inert. Resistant to ageing, ozone and repeated sterilization. Temperature stable from -60 to +180 °C (to +250 °C for short periods). Autoclavable.

Bottom ∅ (mm)	Top ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
3,5	6,5	15	**C388.1**	250	44,70
5	9	20	**C389.1**	250	47,00
8	12	20	**C390.1**	100	24,65
10,5	14,5	20	**C391.1**	100	29,00
14	18	20	**0396.1**	50	21,45
17	22	25	**C392.1**	50	37,55
18	24	30	**C393.1**	50	47,25
21	27	30	**C394.1**	25	31,10
26	32	30	**C395.1**	25	47,85
29	35	30	**C396.1**	5	16,10
31	38	35	**C397.1**	5	19,25
36	44	40	**C398.1**	5	25,50
41	49	40	**TL33.1**	5	30,00
47	55	40	**TL34.1**	5	37,65
50,5	59,5	45	**TL35.1**	1	10,70
56	65	45	**TL36.1**	1	13,85
60	70	50	**TL37.1**	1	19,90
64,5	75,5	55	**TL38.1**	1	23,15
71	83	60	**TL39.1**	1	27,45
79	92	65	**TL40.1**	1	37,85
87	100	65	**TL41.1**	1	51,50
94	107	65	**TL42.1**	1	67,55

121 °C

Rotilabo®-stoppers with hole

Made of elastic natural rubber. With hole. Hardness 40 Shore A. Silicone-free. Temperature stable from -35 to +70 °C. Autoclavable.

Bottom ∅ (mm)	Top ∅ (mm)	Height (mm)	Hole ∅ (mm)	Art. No.	Pack Qty.	€
10,5	14,5	20	3	**Y846.1**	25	5,85
12,5	16,5	20	3	**Y847.1**	25	6,95
14	18	20	3	**Y848.1**	25	7,90
17	22	25	4	**Y849.1**	25	12,60
18	24	30	4	**Y850.1**	25	13,45
21	27	30	5	**Y851.1**	10	8,90
23	29	30	5	**Y852.1**	10	11,70
26	32	30	6	**Y853.1**	10	12,90
29	35	30	6	**Y854.1**	10	14,95
31	38	35	7	**Y855.1**	10	19,25

Rotilabo®-stoppers with holes

Made of elastic natural rubber, with two holes, colour grey. In acc. with DIN 12871. Hardness 40 Shore A. Silicone-free. Temperature stable from -35 to +70 °C. Autoclavable.

Bottom ∅ (mm)	Top ∅ (mm)	Height (mm)	Hole ∅ (mm)	Art. No.	Pack Qty.	€
14	18	20	3	**TL01.1**	25	7,55
17	22	25	4	**TL02.1**	25	11,30
18	24	30	4	**TL03.1**	25	12,90
21	27	30	5	**TL04.1**	10	8,05
23	29	30	5	**TL05.1**	10	10,05
26	32	30	6	**TL06.1**	10	11,85
29	35	30	6	**TL07.1**	10	13,55
31	38	35	7	**TL08.1**	10	16,90

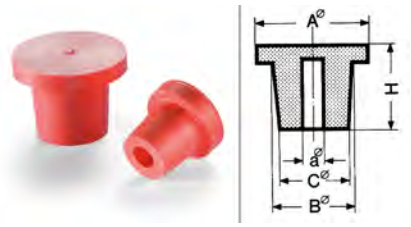
121 °C

Rotilabo®-stoppers made of silicone rubber

With hole. Transparent. In acc. with DIN 12871. Hardness 50 Shore A. Biologically inert. Resistant to ageing, ozone and repeated sterilisation. Temperature stable from -60 to +180 °C (+250 °C for a short time). Autoclavable.

Bottom ∅ (mm)	Top ∅ (mm)	Height (mm)	Hole ∅ (mm)	Art. No.	Pack Qty.	€
10,5	14,5	20	3	**TL49.1**	25	8,10
12,5	16,5	20	3	**TL50.1**	25	9,50
14	18	20	3	**TL51.1**	25	11,80
17	22	25	4	**TL52.1**	25	17,15
18	24	30	4	**TL53.1**	25	21,45
21	27	30	5	**TL54.1**	10	12,70
23	29	30	5	**TL55.1**	10	16,70
26	32	30	6	**TL56.1**	10	19,30
29	35	30	6	**TL57.1**	10	23,60
31	38	35	7	**TL58.1**	10	29,90

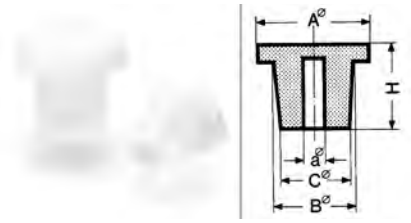
Centrifuge tubes



Rotilabo®-hollow stoppers made of natural rubber

Colour red. Elastic. In acc. with DIN 12871. Hardness Shore A.
Temperature stable from -35 to +70 °C. Autoclavable.

A-∅ (mm)	B-∅ (mm)	C-∅ (mm)	a-∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
19	14	12	6	18	**TL43.1**	10	7,00
21	16	14	8	19	**TL44.1**	10	7,75
27	19	17	10	20	**TL45.1**	10	8,05



Rotilabo®-hollow stoppers made of silicone rubber

In acc. with DIN 12871. Hardness 50 Shore A. Biologically inert.
Resistant to ageing, ozone and repeated sterilisation. Temperature stable from -60 to +180 °C (+250 °C for a short time). Autoclavable.

A-∅ (mm)	B-∅ (mm)	C-∅ (mm)	a-∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
19	14	12	6	18	**TL46.1**	10	11,65
21	16	14	8	19	**TL47.1**	10	12,75
27	19	17	10	20	**TL48.1**	10	13,45

Rotilabo®-lamella grip stoppers

Made of **LDPE**. Temperature stable from -50 to +80 °C.

For tubes with inner-∅ 9-11 mm (outer-∅ 12 mm)

Colour	Art. No.	Pack Qty.	€
natural	**E023.1**	1000	13,20
yellow	**E024.1**	1000	12,85
red	**E025.1**	1000	12,85
green	**E026.1**	1000	12,85
blue	**E027.1**	1000	12,85

For tubes with inner-∅ 13-14 mm (outer-∅ 16 mm)

Colour	Art. No.	Pack Qty.	€
natural	**E028.1**	1000	16,10
yellow	**E029.1**	1000	16,10
red	**E030.1**	1000	16,10
green	**E031.1**	1000	16,10
blue	**E032.1**	1000	16,10

Thick-walled centrifuge glasses

Made of soda-lime glass or 3.3 borosilicate glass. With straight rim, ungraduated.

Made of calcium soda glass. Pointed conical bottom, angle 30°.

Volume (ml)	∅ max. x H (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
10	17 x 98	1.2	**CKA2.1**	100	42,50

Made of 3.3 borosilicate glass, autoclavable. With conical bottom.

Volume (ml)	∅ max. x H (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
12	16 x 100	1.2	**CKA3.1**	100	84,85
50	34 x 100	2.8	**CKA4.1**	10	99,90

15 ml centrifuge glasses

Made of soda-lime glass or 3.3 borosilicate glass. Long conical.
With or without graduations (white, 0.1 ml resolution).
Wall thickness 1 mm.

Made of calcium soda glass. With straight rim.

∅ x H (mm)	Graduations	Art. No.	Pack Qty.	€
17 x 113	-	**CHY6.1**	100	39,70
17 x 113	1-15	**CHY7.1**	100	149,45

Made of calcium soda glass. With heavy duty rim.

∅ x H (mm)	Graduations	Art. No.	Pack Qty.	€
17 x 113	-	**CHY8.1**	100	39,70
17 x 113	1-10	**CHY9.1**	100	149,45
17 x 113	1-15	**CKA0.1**	100	149,45

Made of 3.3 borosilicate glass, autoclavable. With heavy duty rim.

∅ x H (mm)	Graduations	Art. No.	Pack Qty.	€
17 x 113	-	**CKA1.1**	100	152,65

Centrifuge glasses with screw caps

Made of calcium soda glass. With DIN 14 thread and PP screw cap.
Centrifugable up to max. 3000 x g. Autoclavable.

Type	Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
Conical	15	17 x 112	**CLC6.1**	100	75,15
Round bottom	15	17 x 98	**CLC7.1**	100	62,00

Centrifuge tubes

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Centrifuge glasses with round bottom

Made of DURAN®. In acc. with DIN 58970 (part 2) and approved for max. speed RZB = 4000 and filled up to capacity with contents having a max. density of 1.2 g/ml. Autoclavable.

*Not in acc. with DIN.

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
6	12	100	**C101.1**	50	169,00
12	16	100	**C102.1**	50	172,00
25	24	100	**C103.1**	10	50,75
50	34	100	**C104.1**	10	92,20
80	40*	115	**C105.1**	10	118,00
80	44	100	**C106.1**	10	118,00
250	56*	147	**C107.1**	10	206,00

Centrifuge glasses with conical bottom

Made of DURAN®. Height 100 mm. Autoclavable.

Volume (ml)	Angle	Outside ∅ (mm)	Art. No.	Pack Qty.	€
12	30°	16	**K211.1**	50	182,00
25	60°	24	**K212.1**	10	65,30
50	60°	34	**K222.1**	10	104,00

A 121 °C

Rotilabo®-centrifuge tubes

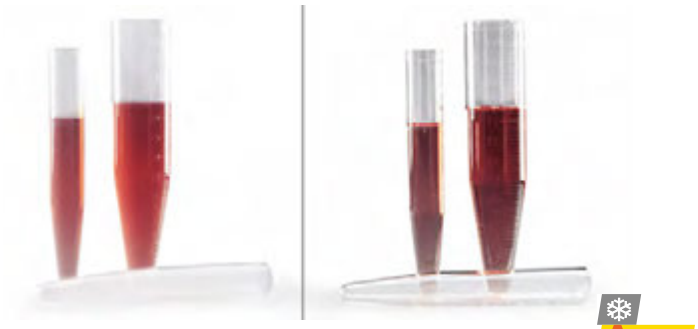
Made of **PP**. Transparent. Can be centrifuged up to 3500 x g. Autoclavable.

With rounded base

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
7	12	100	**K941.1**	100	44,10
16	17	100	**K943.1**	100	23,90
30	24	95	**K944.1**	25	34,05
50	30	100	**K945.1**	25	40,50
70	35	100	**K946.1**	20	42,90
110	40	120	**K947.1**	25	49,15

With pointed base

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
13	16	108	**K948.1**	100	21,05
16	17	120	**K949.1**	100	23,80



A 121 °C

Centrifuge tubes, conical

By Nalgene®. With tapered base and engraved graduations. For low speed centrifugation up to 6000 x g, bottles must be filled to at least 80 % of total capacity. Autoclavable.

Model 3103, made of **PPCO**. Transparent.

Volume (ml)	Outer ∅ x H (mm)	Art. No.	Pack Qty.	€
15	17 x 119	**ATL8.1**	10	36,50
50	28,5 x 133	**ATL9.1**	10	48,60

Model 3105, made of **PC**. Transparent.

Volume (ml)	Outer ∅ x H (mm)	Art. No.	Pack Qty.	€
15	17 x 120	**ATN0.1**	10	40,55
50	28,5 x 135	**ATN1.1**	10	53,70

Stopper

By Nalgene®. Made of **PP**, for centrifuge tube models 3103 and 3105. Autoclavable.

for tubes with outer ∅ (mm)	Art. No.	Pack Qty.	€
17	**ATN2.1**	20	31,85
28,5/29	**APP8.1**	20	41,85

① ②

A 121 °C

Centrifuge tubes, PMP or PP

Made of **PMP (TPX®)** or **PP**.
Conical, with graduation. Can be centrifuged up to 3000 x g. Autoclavable.

① Made of transparent **PMP (TPX®)**. Temperature stable up to +150 °C.

Volume (ml)	∅ (mm)	Graduations (ml)	Height (mm)	Art. No.	Pack Qty.	€
10	16	0.2 (to 1 ml 0.1)	107	**TT17.1**	50	39,40
15	18	0.2	118	**TT18.1**	50	42,90

② Made of **PP**. Temperature stable up to +120 °C.

Volume (ml)	∅ (mm)	Graduations (ml)	Height (mm)	Art. No.	Pack Qty.	€
10	16	0.2 (to 1 ml 0.1)	107	**TT19.1**	100	36,90
15	18	0.2	118	**TT20.1**	100	54,30

- ▶ Centrifuges for laboratorium see page 1110
- ▶ Brushes for test tubes see page 1166

Centrifuge tubes

Centrifuge tubes, round bottom

By Nalgene®. With round bottom. Centrifugable to 50 000 x g when at least 80 % full. Autoclavable.

① **Model 3110, made of PPCO. Transparent.**

Volume (ml)	Outer ∅ x H (mm)	Design	Art. No.	Pack Qty.	€
12	16 x 103	without rim	**APN1.1**	10	29,00
15	16 x 114	without rim	**APN2.1**	10	30,65
16	18 x 99	without rim	**APN3.1**	10	31,75
38	25 x 89	without rim	**APN4.1**	10	33,55
50	29 x 103	without rim	**APN5.1**	10	34,95
50	28,5 x 104	with rim	**APN6.1**	10	44,10
100	32 x 164	with rim	**APN7.1**	10	74,10

② **Model 3117, made of PC. Transparent.**

Volume (ml)	Outer ∅ x H (mm)	Design	Art. No.	Pack Qty.	€
12	16 x 104	without rim	**APN8.1**	10	34,00
15	16 x 114	without rim	**APN9.1**	10	36,05
16	18 x 101	without rim	**APP0.1**	10	36,50
38	26 x 89	without rim	**APP1.1**	10	38,65
50	29 x 104	without rim	**APP2.1**	10	39,75
50	28,5 x 106	with rim	**APP3.1**	10	42,65
100	32 x 165	with rim	**APP4.1**	10	85,80

③ Stopper

By Nalgene®. Made of **PP**, for centrifuge tube models 3110 and 3117. Autoclavable. Note: Only leak-tight to a limited degree during high speed centrifugation.

for tubes with outer ∅ (mm)	Art. No.	Pack Qty.	€
16	**APP5.1**	20	31,75
18	**APP6.1**	20	38,60
25/26	**APP7.1**	20	40,35
28,5/29	**APP8.1**	20	41,85
32	**APP9.1**	20	44,10

To calculate the number of revolutions: RCF = $1.118 \cdot 10^{-5}$ x $rpm^2 \cdot r$

15 ml centrifuge tubes

Made of **PS** or **PP**. Conical, with 0.25, 0.5, 1.0, 2.5, 5, 10, 12 and 15 ml graduations. Metal-free (< 100 ppm Sb, As, Ba, Cd, Cr, Pb).
Volume 15 ml.
Delivery without plug.

Made of optical clear PS. Centrifugable to 1200 x g. Temperature stable from 0 to 90 °C.

∅ x H (mm)	Art. No.	Pack Qty.	€
17 x 120	**AYX6.1**	1000	104,75

Made of transparent PP. Centrifugable to 3000 x g. Autoclavable.

∅ x H (mm)	Art. No.	Pack Qty.	€
17 x 120	**AYX7.1**	1000	104,75

Plugs for 15 ml centrifuge tubes

Made of **PE**. Temperature stable from 0 to 80 °C.

Colour	Art. No.	Pack Qty.	€
blue	**AYX8.1**	1000	51,60
green	**AYX9.1**	1000	51,60
colourless	**AYY0.1**	1000	51,60
red	**AYY1.1**	1000	51,60
white	**AYY2.1**	1000	51,60
yellow	**AYY3.1**	1000	51,60

Rotilabo®-centrifuge tubes, PTFE

Made of **PTFE**. Centrifugable up to 20 000 x g. Autoclavable, inert.
Delivery incl. screw cap.

Round bottom

Volume (ml)	Outer ∅ x H (mm)	∅ screw cap outside (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
8	12 x 100	22	1.0	**LT74.1**	1	19,15
17	18 x 100	24	1.5	**LT75.1**	1	21,45
50	25 x 140	31	2.0	**LT76.1**	1	35,40

Conical bottom

Volume (ml)	Outer ∅ x H (mm)	∅ screw cap outside (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
13	16 x 100	22	1.5	**LT77.1**	1	21,00
18	18 x 120	24	1.5	**LT78.1**	1	24,55
45	25 x 150	31	2.0	**LT79.1**	1	37,10

Rotilabo®-centrifuge tubes

Made of highly transparent **PP**. Lid made of PE. **Sterile** or non-sterile. With printed, black graduation. Certified free of nucleases, endotoxins and metals (<1 ppm). Not cytotoxic. Temperature stability: from -80 to +122 °C.

Without vertical lip, with white labelling area, centrifugable (fixed angle rotor) max. 17 000 x g (15 ml-vials) resp. 20 000 x g (50 ml-vials).

Volume (ml)	Design	∅ x H (mm)	Packaging	Art. No.	Pack Qty.	€
15	non-sterile	17 x 120	50 in a bag	**N458.1**	500	116,10
15	**sterile**	17 x 120	50 in a bag	**N459.1**	500	126,85
15	non-sterile	17 x 120	25 in a rack	**N460.1**	500	144,05
15	**sterile**	17 x 120	25 in a rack	**N461.1**	500	155,90
50	non-sterile	29 x 115	50 in a bag	**N462.1**	500	137,60
50	**sterile**	29 x 115	50 in a bag	**N463.1**	500	151,60
50	non-sterile	29 x 115	25 in a rack	**N464.1**	500	163,40
50	**sterile**	29 x 115	25 in a rack	**N465.1**	500	167,70

With vertical lip, with white labelling area, centrifugable up to 10 000 x g

Volume (ml)	Design	∅ x H (mm)	Packaging	Art. No.	Pack Qty.	€
50	non-sterile	29 x 117	50 in a bag	**X063.1**	500	164,50
50	**sterile**	29 x 117	50 in a bag	**X064.1**	500	192,45

Metal Free centrifuge tubes

Made of highly pure **PP**, with white labelling area. PE lid, fitted. **Sterile**. **Heavy metal content <1 ppb**, suitable for sample preparation and storage for trace analysis, ICP-MS and other applications which require an extremely low metal content.
Nuclease and endotoxin free, non-cytotoxic.
Temperature stable from -80 to +122 °C. Centrifugable to 12 500 x g.

Volume (ml)	∅ x H (mm)	Packaging	Art. No.	Pack Qty.	€
15	17 x 120	50 in bag	**XX96.1**	500	149,45
15	17 x 120	25 in rack	**XX97.1**	500	165,55
50	29 x 115	50 in bag	**XX98.1**	500	165,55
50	29 x 115	25 in rack	**XX99.1**	500	189,20

Centrifuge tubes Eco

Made of **PP**. With raised graduation marking. **Sterile:** with red lid, gamma sterilized or **non-sterile:** with blue lid. Can be centrifuged up to 3000 x g.

Without vertical lip

Volume (ml)	Design	∅ x H (mm)	Art. No.	Pack Qty.	€
15	non-sterile	17 x 120	**AN76.1**	150	33,90
15	**sterile**	17 x 120	**AN77.1**	150	39,60
50	non-sterile	29 x 115	**AN78.1**	100	27,90
50	**sterile**	29 x 115	**AN79.1**	100	32,20

With vertical lip

Volume (ml)	Design	∅ x H (mm)	Art. No.	Pack Qty.	€
50	non-sterile	29 x 115	**AN80.1**	100	32,20
50	**sterile**	29 x 115	**AN81.1**	100	34,35

Flip-cap centrifuge tubes

Made of **PP**, lid of **HDPE**. **Sterile**.

- Screw/snap-on lid enables single-handed opening and also complete removal
- RNase-/DNase free, pyrogen-free
- With white labelling space
- Temperature stable from -80 to +120 °C

Volume (ml)	**15**	**50**
Graduations	1 to 15 ml	5 to 50 ml
	Accuracy ±2 %	
Graduation cone	0.1 to 1 ml	0.5 to 3 ml
Max. centrifugability (x g)	9400	

Volume (ml)	Art. No.	Pack Qty.	€
15	**EKY1.1**	500 (20 x 25)	133,00
50	**EKY2.1**	500 (20 x 25)	165,00

▶ Racks for centrifuge tubes see page 227

Centrifuge tubes

CELLSTAR®-centrifuge tubes

By Greiner Bio-One.
Made of PP. Blue **HDPE** screw cap. **Sterile.**
Excellent thermal, mechanical and chemical stability. Conical base. Blue graduations and white labelling space. DNase/RNase and human DNA free, non-pyrogenic and non-cytotoxic. Temperature stable from -50 to +100 °C.

Type	Max. centrifugability (x g)	
	Fixed angle rotor	Oscillating rotor
15 ml tubes	15 000	4000
50 ml tubes	9000	3200
50 ml tubes with rim	11 500	2800

Transparent, without rim

Volume (ml)	∅ x H (mm)	Packaging	Art. No.	Pack Qty.	€
15	17 x 120	50 in rack	**XH97.1**	500	103,00
15	17 x 120	100 in bag	**XH97.2**	1000	168,80
50	29 x 115	20 in bag	**XH98.1**	500	94,55
50	29 x 115	25 in rack	**XH98.2**	300	80,45

Transparent, with rim

Volume (ml)	∅ x H (mm)	Packaging	Art. No.	Pack Qty.	€
50	29 x 115	25 in bag	**XH99.1**	450	109,65
50	29 x 115	25 in rack	**XH99.2**	300	84,85

Light Protection Tubes, brown, without rim

For light-sensitive substances and reactions.

Volume (ml)	∅ x H (mm)	Packaging	Art. No.	Pack Qty.	€
15	17 x 120	100 in bag	**KL46.1**	100	45,60
15	17 x 120	50 in rack	**KL46.2**	50	26,90
50	29 x 115	20 in bag	**KL47.1**	20	13,90
50	29 x 115	25 in rack	**KL47.2**	25	17,90

50 ml centrifuge tubes

Made of optically clear **PS**, screw cap made of HDPE. Graduated from 2.5 to 50 ml. Temperature stable from 0 to 90 °C. Centrifugable up to 1000 x g, sterile test tubes are also suitable for storage of biological samples.

Design	∅ x H (mm)	Art. No.	Pack Qty.	€
Non-sterile, lid colour yellow	29 x 118	**AYY4.1**	500	146,20
Sterile, lid colour green, in rack	29 x 118	**AYY5.1**	500 (20 x 25)	252,65

Oak Ridge centrifuge tubes

By Nalgene®. Made of **PC, PPCO, PSF** or **FEP**.
For **high speed centrifugation**.
For use in cooled or uncooled centrifuges up to 50 000 x g. Before centrifuging, the tubes must be at least 80 % full and FEP tubes 100 % full.
Please note: screw closures with a seal are necessary for centrifuging hazardous substances or for centrifugal forces exceeding 10 000 x g.
Autoclavable. Before autoclaving, please make sure you always unscrew the lid.

Type 3115. Made of **PSF**, transparent. Screw closure made of **PP** without seal.

Nominal capacity (ml)	Filling capacity (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
30	30	25,7 x 94,5	**ATC6.1**	10	79,15
50	43	29,0 x 107,7	**ATC7.1**	10	95,60

① Type 3118. Made of **PC**, transparent.
Screw closure made of **PP** without seal.

Nominal capacity (ml)	Filling capacity (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
10	10	16,1 x 81,7	**PH26.1**	10	62,15
28	28	25,4 x 101,8	**PH27.1**	10	66,15
30	30	25,7 x 94,5	**PH28.1**	10	66,15
50	43	28,8 x 107,0	**PH29.1**	10	76,35
85	81	38,2 x 105,7	**PH30.1**	10	87,10

② Type 3119. Made of **PPCO** (polypropylene copolymer), translucent.
Screw closure made of **PP** without seal.

Nominal capacity (ml)	Filling capacity (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
10	10	16,0 x 81,4	**PH36.1**	10	49,35
28	28	25,4 x 101,9	**PH37.1**	10	54,80
30	30	25,5 x 94,3	**PH38.1**	10	52,60
50	42	28,8 x 106,7	**PH39.1**	10	68,75

③ Type 3114. Made of **FEP**, screw closure made of **ETFE** without seal.
Resistant to acids, bases and solvents. Ideal for chloroform and phenol extractions.

Nominal capacity (ml)	Filling capacity (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
10	10	16,0 x 81,5	**PH40.1**	2	53,65
30	30	25,7 x 93,7	**PH41.1**	2	80,65
50	46	28,8 x 107,7	**PH42.1**	2	111,80

Leak-tight closures for Oak Ridge centrifuge tubes

Screw closures from **PP**, with silicon seal. These enclosures ensure leak-free use of Oak Ridge centrifuge tubes. Recommended for centrifugal forces of 10 000 x g or higher. Autoclavable.

Size (mm)	suitable for	Art. No.	Pack Qty.	€
20	PH27.1, PH28.1, PH37.1, PH38.1, PH98.1, PK02.1	**PH43.1**	2	22,45
24	PH29.1, PH39.1, PH99.1, PK03.1	**PH44.1**	2	25,30

Centrifuge bottles

A 121 °C

Oak Ridge centrifuge tubes with leak-tight closure

By Nalgene®. Made of **PC, PSF** or **PPCO**. Screw closures made of **PP** with silicon seal. For **high speed centrifugation. Leak-proof.** For use in cooled or uncooled centrifuges up to 50 000 x g. Before centrifuging, tubes must be at least 80 % full.
Autoclavable. Before autoclaving, please make sure you always unscrew the lid.

Type 3137. Made of **PSF**, transparent.

Nominal capacity (ml)	Filling capacity (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
50	42	29 x 115,3	**ATC5.1**	10	170,95

Type 3138. Made of **PC**, transparent.

Nominal capacity (ml)	Filling capacity (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
10	10	16,1 x 82,3	**PH96.1**	10	80,65
16	16	18,2 x 106,9	**PH97.1**	10	97,85
30	30	25,7 x 101,6	**PH98.1**	10	126,85
50	42	28,8 x 115,0	**PH99.1**	10	134,40

Type 3139. Made of **PPCO** (polypropylene copolymer), translucent.

Nominal capacity (ml)	Filling capacity (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
16	16	17,9 x 106,6	**PK01.1**	10	90,20
30	30	25,5 x 101,4	**PK02.1**	10	115,05
50	42	28,8 x 114,1	**PK03.1**	10	135,45

① ②

A 121 °C

Centrifuge bottles with leak-tight closure

By Nalgene®. Wide-neck centrifuge bottle made of **PC** or **PPCO**. Screw closure made of **PP** with silicon seal. Before centrifuging, bottles must be at least 80 % full. 250 ml bottle centrifugable up to 27 500 x g, 500 ml bottle centrifugable up to 13 700 x g.
Autoclavable. Before autoclaving, always remove the lid.

① Type 3140. Made of **PC**, transparent.

Nominal capacity (ml)	Filling capacity (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
250	250	61,5 x 135,1	**PH89.1**	4	87,10
500	450	69,5 x 160,0	**PH90.1**	4	107,00

② Type 3141. Made of **PPCO** (polypropylene copolymer), translucent.

Nominal capacity (ml)	Filling capacity (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
250	250	60,7 x 133,4	**PH91.1**	4	78,40
500	450	69,5 x 160,0	**PH92.1**	4	104,40

① ② ③

A 121 °C

Centrifuge bottles

By Nalgene®. Made of **PPCO**, **PC** or **FEP**. Before centrifuging, bottles must be at least 80 % full and FEP bottles 100 % full, with the exception of 500 ml bottle PH81.1 which should not be more than 75 % full.
Autoclavable. Before autoclaving, always remove the lid.

① Type 3120. Made of **PPCO** (polypropylene copolymer), translucent. Screw closure made of **PP** without seal.

*Max. 75 % fill **for IEC rotors

Volume (ml)	∅ x H (mm)	max. RCF (x g)	Art. No.	Pack Qty.	€
250	61,8 x 127,7	13 200	**PH79.1**	4	36,35
500	73,8 x 169,8	4800	**PH80.1**	4	43,85
500	69,5 x 170,2	4800	**PH81.1**	4	42,45
1000	97,5 x 184,5	7100	**PH82.1**	4	83,75
1000**	97,7 x 179,0	7100	**PH83.1**	4	84,85

② Type 3122. Made of **PC**, transparent. Screw closure made of **PP** without seal.

**for IEC rotors

Volume (ml)	∅ x H (mm)	max. RCF (x g)	Art. No.	Pack Qty.	€
250	61,8 x 127,6	27 500	**PH84.1**	4	51,55
500	69,5 x 169,6	13 700	**PH85.1**	4	82,25
1000	97,6 x 188,4	7100	**PH86.1**	4	107,00

③ Type 3127. Made of **FEP**. Screw closure made of **ETFE** without seal. Cooled centrifugation at 4 °C. Room temperature is not recommended.

Volume (ml)	∅ x H (mm)	max. RCF (x g)	Art. No.	Pack Qty.	€
250	60,0 x 128,8	4000	**PH88.1**	1	116,10

Accessories for centrifuge bottles

Leak-tight closures. Screw closures made of **PP** with silicon seal.

Size (mm)	suitable for	Art. No.	Pack Qty.	€
58	PH89.1, PH91.1	**PH93.1**	2	31,95
63	PH82.1, PH83.1, PH86.1, PH87.1, PH90.1, PH92.1	**PH94.1**	2	43,85

Centrifuge adapter for Sorvall GSA rotor.
Type DS 3125. Made of **LDPE**, white. For 250 ml centrifuge bottles.

Size (mm)	suitable for	Art. No.	Pack Qty.	€
∅ 61,5	PH79.1, PH84.1, PH88.1, PH89.1, PH91.1	**PH95.1**	6	76,55

To calculate the number of revolutions: $RCF = 1.118 \cdot 10^{-5} \times rpm^2 \cdot r$

Canisters

NEW

Safety barrels

Made of stainless steel 1.4571, seals made of PTFE. With removable flame protection made of stainless steel 1.4571 and 1.4301.
For safe storage transport or filling of flammable liquids.
Safety barrels with volumes 25 and 50 litres, stackable.

Safety barrels with screw cap and overpressure valve (opening pressure approx. 0.3 bar).

Volume (l)	Height (mm)	∅ (mm)	Weight (kg)	Art. No.	Pack Qty.	€
10	330	260	2,20	**HPN6.1** *	1	265,55
25	540	315	6,40	**HPN7.1** *	1	347,25
50	600	365	12,10	**HPN8.1** *	1	428,95

Safety transport barrels with UN-X approval acc. to GGVSEB, Air, ADR, RID, IMDG code and ICAO-TI. With screw cap (movable shaft protects against loss) and ventilation screw for manual supply of air.

Volume (l)	Height (mm)	∅ (mm)	Weight (kg)	Art. No.	Pack Qty.	€
10	330	260	2,25	**HPN9.1** *	1	320,35
25	530	300	6,40	**HPP0.1** *	1	379,50

Safety barrels with self-closing tap and ventilatable screw cap with overpressure valve (opening pressure approx. 0.3 bar).

Volume (l)	Height (mm)	∅ (mm)	Weight (kg)	Art. No.	Pack Qty.	€
10	330	260	2,48	**HPP1.1** *	1	485,90
25	540	315	6,54	**HPP2.1** *	1	600,95
50	600	365	12,20	**HPP3.1** *	1	654,70

Safety barrels with self-closing tap and filling level display made of PFA. With ventilatable screw cap and overpressure valve (opening pressure approx. 0.3 bar).

Volume (l)	Height (mm)	∅ (mm)	Weight (kg)	Art. No.	Pack Qty.	€
10	330	260	2,78	**HPP4.1** *	1	699,85
25	540	315	7,45	**HPP5.1** *	1	824,55
50	600	365	12,90	**HPP6.1** *	1	886,90

* Delivery times may apply to these products. Please check with our Sales Department.

Accessories for safety barrels

Spout 1½"

Made of stainless grades 1.4301 and 1.4305, seals made of PTFE. Rotatable, suitable for safety canisters and safety barrels up to a volume of 25 litres.

Art. No.	Pack Qty.	€
YE02.1	1	78,50

Plug-in funnel

Made of stainless steel 1.4571, staight. Wall thickness 0.6 mm. Funnel ∅ 120 mm, plug-in tube ∅ 34 mm, height 120 mm.

Art. No.	Pack Qty.	€
HPP7.1	1	74,90

Tap 1½″

Made of stainless steel 1.4305, seals made of PTFE. Closes automatically after use. Suitable for safety canisters with pressure compensation screw PC09.1 to PC12.1 and safety transport barrels HPN9.1 and HPP0.1.

Art. No.	Pack Qty.	€
YE00.1	1	107,50

Spare tap ¾″

Made of stainless steel 1.4305, seals made of PTFE. Closes automatically after use. Suitable for safety barrels with tap.

Art. No.	Pack Qty.	€
HPP8.1	1	150,00

Salzkotten safety lab canisters

Made of stainless steel 1.4571, flame arrester made of 1.4401, seals made of PTFE. With pressure control valve. Stackable.

Model 202, with screw cap. **1205.1 and 1206.1 UN-approved 1A1/X1.5/250.**

Volume (l)	Height (mm)	∅ (mm)	Weight (g)	Art. No.	Pack Qty.	€
10	280	300	3400	**1205.1**	1	337,55
25	500	300	5000	**1206.1**	1	388,10
50	570	380	7000	**T621.1** *	1	506,35

Model 213, with screw-cap and self-closing draincock ½″

Volume (l)	Height (mm)	∅ (mm)	Weight (g)	Art. No.	Pack Qty.	€
10	280	300	3600	**1207.1**	1	656,85
50	570	380	7200	**T624.1** *	1	856,80

Model 215, with screw cap, self-closing draincock ½″ and content indicator display

Volume (l)	Height (mm)	∅ (mm)	Weight (g)	Art. No.	Pack Qty.	€
15	340	300	5000	**T628.1** *	1	926,65
50	570	380	8200	**T630.1** *	1	1144,90

* Longer delivery times possible. Please check with our Sales Department.

▶ Safety systems for disposal see p. 722

Safety canisters

Made of stainless steel 1.4571, polished. 20-litre canister (Art. No. PC09.1), made of stainless steel 1.4301. Wall thickness 0.8 mm. Seals made of PTFE. For safe storage and decanting of flammable liquids. With removable flame arrestor in the filler. In models with a screw cap, the screw cap is secured against loss by a flexible shaft.

With screw cap and UN-X-approved
In compliance with GGVSEB, GGVSee, ADR, RID and IMDG Code requirements for transporting hazardous liquids. 20-litre canister (Art. No. PC09.1) also with venting screw for manual pressure relief.

Volume (l)	H x W x D (mm)	Weight (g)	UN approval	Art. No.	Pack Qty.	€
5	310 x 130 x 200	1650	3A1/X1.6/300	**PC07.1**	1	247,25
10	380 x 130 x 280	2500	3A1/X1.6/300	**PC08.1**	1	291,35
20	470 x 175 x 345	3700	3A1/X2.0/300	**PC09.1**	1	398,85

With self-closing stopcock
Suitable for horizontal storage, fits into most laboratory safety cabinets. With venting screw for manual pressure relief.

Volume (l)	H x W x D (mm)	Weight (g)	UN approval	Art. No.	Pack Qty.	€
5	310 x 130 x 200	1650	without	**PC10.1**	1	326,80
10	380 x 130 x 280	2500	without	**PC11.1**	1	360,15
20	470 x 175 x 345	3700	without	**PC12.1**	1	433,25

Accessories for safety canisters

Replacement tap 1½″
Made of stainless steel 1.4305, seals made of PTFE. Closes automatically after use. Suitable for safety canisters with pressure equalising screw PC09.1 to PC12.1.

Art. No.	Pack Qty.	€
YE00.1	1	107,50

Fine dispenser 1½″
Made of stainless steel 1.4305, seals made of PTFE. With vent. Suitable for safety canisters PC07.1 and PC08.1.

Art. No.	Pack Qty.	€
YE01.1	1	82,80

Spout 1½″
Made of stainless grades 1.4301 and 1.4305, seals made of PTFE. Rotatable, suitable for all safety canisters.

Art. No.	Pack Qty.	€
YE02.1	1	78,50

Replacement screw cap 1½″
Made of stainless steel 1.4305, seals made of PTFE. Suitable for safety canisters with UN approval PC07.1 to PC09.1.

Art. No.	Pack Qty.	€
YE03.1	1	50,55

Screw cap 1½″
Made of stainless steel 1.4305, seals made of PTFE. With pressure relief valve, suitable for safety canisters PC10.1 to PC12.1.

Art. No.	Pack Qty.	€
YE04.1	1	60,20

Funnel
Made of stainless steel 1.4571, angled, wall thickness 0.6 mm. Funnel-∅ 120 mm, stem-∅ 34 mm, height 120 mm, weight 350 g.

Art. No.	Pack Qty.	€
PC13.1	1	68,80

Salzkotten safety lab canisters

Made of stainless steel 1.4571, flame arresters made of 1.4401, seals made of PTFE. With pressure control valve.

With screw cap, UN-approved 3A1/X2.0/600

Volume (l)	H x W x D (mm)	Weight (g)	Art. No.	Pack Qty.	€
5	290 x 200 x 130	1600	**1221.1**	1	275,20
20	450 x 340 x 175	4500	**1223.1**	1	414,95

With fine dosing spout

Volume (l)	H x W x D (mm)	Weight (g)	Art. No.	Pack Qty.	€
5	330 x 200 x 130	1600	**0561.1**	1	331,10
10	400 x 280 x 130	2450	**0562.1**	1	369,80
20	500 x 340 x 175	4500	**1226.1**	1	468,70

Safety laboratory cans

Made of stainless steel 1.4571, polished or unpolished. Wall thickness 0.6 mm. Seals made of PTFE, grip made of powder-coated aluminium. With removable flame arrestor in the filler. In models with a screw cap, the screw cap is secured against loss by a flexible shaft.

Polished, with screw cap and overpressure valve

Volume (l)	Height (mm)	∅ (mm)	Weight (g)	Art. No.	Pack Qty.	€
1	235	111	650	**1192.1**	1	160,20
2	295	131	750	**1193.1**	1	175,25
5	400	165	1150	**1194.1**	1	211,80

Polished, with microdispenser and overpressure valve

Volume (l)	Height (mm)	∅ (mm)	Weight (g)	Art. No.	Pack Qty.	€
1	235	111	700	**5791.1**	1	198,90
2	295	131	800	**0544.1**	1	215,00
5	400	165	1200	**0157.1**	1	241,90

Unpolished, with screw cap and UN-approval 1A1/X2.0/400
In compliance with GGVSEB, GGVSee, ADR, RID and IMDG Code requirements for transporting hazardous liquids.

Volume (l)	Height (mm)	∅ (mm)	Weight (g)	Art. No.	Pack Qty.	€
1	235	111	650	**PC01.1**	1	156,95
2	305	131	750	**PC02.1**	1	172,00
5	400	165	1150	**PC03.1**	1	208,55

Accessories for safety laboratory cans

Fine dispenser 1¼″
Made of stainless steel 1.4305, seals made of PTFE. Self-closing. With pressure relief valve. Suitable for safety laboratory cans 1192.1 to 1194.1, 5791.1 to 0157.1 and PC01.1 to PC03.1.

Art. No.	Pack Qty.	€
YE05.1	1	74,20

Replacement screw cap 1¼″
Made of stainless steel 1.4305, seals made of PTFE.
Suitable for safety laboratory cans with UN approval PC01.1 to PC03.1.

Art. No.	Pack Qty.	€
YE06.1	1	45,15

Replacement screw cap 1¼″
Made of stainless steel 1.4305, seals made of PTFE. With pressure relief valve, suitable for safety laboratory cans 1192.1 to 0157.1.

Art. No.	Pack Qty.	€
YE07.1	1	50,55

Funnel
Made of stainless steel 1.4571, wall thickness 0.6 mm.
Funnel-∅ 120 mm, stem-∅ 23 mm, height 120 mm, weight 300 g.

Art. No.	Pack Qty.	€
PC04.1	1	62,35

Moistener with pump for safety laboratory cans
Made of stainless steel 1.4301. For economical soaking of cleaning cloths. Minimizes hazardous solvent vapours; liquid that is not required runs back into the can. Spring-mounted soaking tray.
Delivery without safety can, please order separately.

Type	Art. No.	Pack Qty.	€
Moistener for 1-litre safety laboratory cans	**PC05.1**	1	126,85
Moistener for 2-litre safety laboratory cans	**PC06.1**	1	129,00

Salzkotten safety laboratory cans

Made of stainless steel WN 1.4571, polished, wall thickness 0.8 mm, seals made of PTFE. Laboratory cans for collecting, storing and filling flammable liquids. With fire arrester (WN 1.4401) in the filler neck. With fuse, the fuse melts at temperatures above 60 °C allowing the gas pressure to escape. Type 101 and 102 with pressure relief valve (pressure equalisation from approx. 0.3 bar).

Type 100, with screw cap

Volume (l)	Height (mm)	∅ (mm)	Weight (g)	Art. No.	Pack Qty.	€
2	270	130	740	**ANL9.1**	1	188,15
5	385	175	1300	**ANN0.1**	1	223,60

Type 101 with screw cap, pressure relief valve and UN-X approval 1A1/X2.0/600.
Type-approved transport containers in acc. with GGVSE/GGVSee/ADR/RID/IMDG-Code/ICAO-TI.

Volume (l)	Height (mm)	∅ (mm)	Weight (g)	Art. No.	Pack Qty.	€
2	270	130	740	**ANN2.1**	1	195,65
5	385	175	1300	**ANN3.1**	1	235,45

Type 102, with precision metering device and pressure relief valve
Precision metering device rotatable through 360°, self-closing. With vent.

Volume (l)	Height (mm)	∅ (mm)	Weight (g)	Art. No.	Pack Qty.	€
2	290	130	770	**ANN5.1**	1	240,80
5	420	175	1400	**ANN6.1**	1	270,90

Safety flasks

Made of aluminium 99.5 %. With screw cap and self closing pouring and ventilation valve made of plastic. Inner sealing made of Viton®.
Can be used for petrol, oil, etc.

Volume (ml)	∅ x H (mm)	Weight (g)	Art. No.	Pack Qty.	€
500	60 x 225	130	**2984.1**	1	50,10
1000	75 x 275	190	**2985.1**	1	55,40

Rotilabo®-UN-wide neck barrels

Made of **HDPE**. UN-X-approved in compliance with GGVSE requirements for transporting solid materials with a density of at least 1.5 g/cm³. Coloured blue. Approved for foodstuffs.
Delivery incl. PE lid and galvanized tension ring. 30 l and 60 l barrels come with handles.

Volume (l)	∅ (mm)	Neck inner ∅ (mm)	Height (mm)	UN approval	Art. No.	Pack Qty.	€
30	313	251	518	1H2/X61/S	**T970.1**	1	39,60
60	398	325	620	1H2/X88/S	**T971.1**	1	51,50
120	503	393	791	1H2/X200/S	**T972.1**	1	77,40
150	503	393	965	1H2/X255/S	**T973.1**	1	88,15

▶ Chemical collection pans see page 728

Rotilabo®-mixing barrel

Made of **LDPE**, natural coulored. Capacity 30 l. With 120 mm wide neck thread opening. Screw-on lid with integral funnel. H 20 mm, inner ∅ 38 mm. Additional side opening at the bottom with same dimensions. Both top and side openings can be fitted with the supplied screw cap or 9 mm tap. Sealings made of rubber. Total height 520 mm, ∅ incl. handles 370 mm. Weight when empty 1800 g. Approved for foodstuffs.

Type	Art. No.	Pack Qty.	€
Rotilabo®-mixing barrel	**1089.1**	1	64,45
Spare lid incl. centering screw cap	**P774.1**	1	12,10
Spare stopcock, ∅ outer 12.5 mm, inner 10 mm	**P775.1**	1	9,15

Wide neck barrels

By CurTec. Made of **HDPE**, with rubber seal. UN-approval (X-approval) for storage and transport of solid materials and pastes. Approved for food, chemical and pharmaceutical products. Impermeable to air, water and water vapours. Art. No. CY90.1 to 5459.1 with handles.
Maximum filling temperature is 80 °C. Sealable.

Volume (l)	∅ (mm)	Neck inner ∅ (mm)	Height (mm)	UN approval	Art. No.	Pack Qty.	€
3,6	198	136	173	1H2/X12/S	**K280.1**	1	14,55
6,4	198	136	265	1H2/X20/S	**0788.1**	1	17,75
10,4	274	204	239	1H2/X22/S	**L958.1**	1	27,45
15,4	274	204	328	1H2/X22/S	**0789.1**	1	32,05
20	274	204	418	1H2/X27/S	**L959.1**	1	35,50
26	316	204	426	1H2/X33/S	**0790.1**	1	39,60
42	410	282	416	1H2/X51/S	**CY90.1**	1	56,55
55	410	282	518	1H2/X66/S	**CY91.1**	1	62,25
68,5	410	282	632	1H2/X81/S	**5459.1**	1	64,45

▶ Scoops see page 199

A 121 °C

Rotilabo®-storage drums

Made of 1.4541 stainless steel. Stackable. Relatively light. Brushed finish on the outside. Ground and brushed inside and out. Surfaces in contact with product Ra ≤0.6 µm. Lid with silicone seal and 1.4301 stainless steel tension ring. Autoclavable. Impervious to fluids.

Volume (l)	Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
1,5	170	85	**A859.1**	1	310,70
3	170	156	**A860.1**	1	321,45
5	250	145	**0489.1**	1	320,35
10	250	280	**0490.1**	1	407,45
30	315	425	**0491.1**	1	553,65

Canisters

Canisters

Made of **HDPE**, natural coloured. Ideal for storing, packing and transporting. Suitable for foodstuffs.
Delivery incl. screw cap. Drain cock please order separately.

Vol. (l)	UN approval	Neck inner ∅ (mm)	L x W x H (mm)	Thread DIN	Art. No.	Pack Qty.	€
2	3H1/Y1.9/150	34,5	145 x 109 x 181	45	**T391.1**	1	5,20
2,5	3H1/Y1.6/150	34,5	153 x 115 x 208	45	**T392.1**	1	6,05
3	3H1/Y1.6/150	34,5	153 x 115 x 240	45	**T393.1**	1	6,40
5	3H1/X1.9/250	43	190 x 145 x 251	51	**T394.1**	1	7,50
6	3H1/Y1.9/200	43	191 x 149 x 292	51	**T395.1**	1	8,10
8	-	34,5	230 x 190 x 270	45	**T396.1**	1	9,65
10	3H1/X1.9/250	43	230 x 190 x 310	51	**T397.1**	1	12,85
20	3H1/X1.9/250	48,5	290 x 246 x 385	61	**PY06.1**	1	22,40
30	3H1/X1.8/250	48,5	358 x 293 x 432	61	**HCC7.1**	1	32,15

Draincocks

Made of **PE**, with separate air vent canal. With variable speed regulation of flow. Sealing made of aveolite. Not suitable for glass threads.

Lock	Art. No.	Pack Qty.	€
DIN 45	**X530.1**	3	23,90
DIN 50	**X531.1**	3	29,00
DIN 51	**5665.1**	3	22,05
DIN 61	**5666.2**	4	29,60

Uritainer™-canisters

By Simport. Made of **HDPE**. Outer-∅ wide-neck opening 79 mm. Lid made of PP. Push-Pull valve enables simple, controlled and drip-proof pouring. Graduated, graduation 50 ml. **CE-marking in accordance with MPG.**

① **With vertical and horizontal graduation**

Volume (l)	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
3	115 x 245 x 160	**HT07.1**	1	4,25
4	115 x 245 x 201	**HT08.1**	1	4,25

② **With vertical graduation**

Volume (l)	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
2,5	133 x 133 x 232	**HT09.1**	1	4,25
3,5	133 x 133 x 295	**HT10.1**	1	4,25

Rotilabo®-canisters

Made of **HDPE**, natural color UV-stabilized.

① **Wide-neck canister**

Slanted wide neck opening (outer-∅ 88 mm, inner-∅ 85 mm) and additional drain nozzle (outer-∅ 18 mm, inner-∅ 13 mm), with screw caps.
With thread and stopper for cock connection on the narrow side.
Delivery without drain cock, please order separately.

Volume (l)	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
5	297 x 135 x 280	**C944.1**	1	24,55
10	302 x 140 x 397	**0572.1**	1	35,25
22	370 x 180 x 475	**EPK0.1**	1	38,60

② **Narrow-neck canister**

Narrow neck opening (outer-∅ 29 mm).
With drain pipe L 250 mm, ∅ drain 20 mm. **Without** cock connection.

Volume (l)	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
10	290 x 160 x 331,5	**1590.1**	1	10,70

Accessories for Rotilabo®-canisters

Drain cocks made of **HDPE** for wide-neck canisters C944.1, 0572.1 and EPK0.1. Inner-∅ spout 10 mm.
Connection possible for tubes with inner-∅ 12 mm.

Design	Art. No.	Pack Qty.	€
① straight	**0573.1**	1	16,10
② bent	**HA38.1**	1	13,45

▶ Plastic bottles with UN approval see page 106

Correct fit
To determine if the different stopcocks and adapters will fit your container, please check container thread type. Plastic barrels and containers have all sorts of thread types, e.g. standardized according to DIN or manufacturer-specific threads. We'll be delighted to assist you with any containers which you purchase from us. However we do ask you to understand that we are unable to give you any information with regard to them fitting containers from other suppliers. Information on the size of the diameter is unfortunately not sufficient.

Metal fuel canister

Made of powder-coated steel with inner coating, wall thickness 0.9 mm. With safety cap, prevents unintentional opening of the canister. UN approval 3A1/Y/100/... for transporting petrol, diesel, E10 and other hazardous goods.

Model Classic

Volume (l)	L x W x H (mm)	Weight (g)	Art. No.	Pack Qty.	€
5	230 x 120 x 310	1850	**EPL8.1**	1	38,60
10	350 x 165 x 283	3000	**EPL9.1**	1	39,75
20	343 x 165 x 469	4280	**EPN0.1**	1	44,10

Model EXPLO-SAFE
With aluminium mesh filling to reduce the risk of explosion.

Volume (l)	L x W x H (mm)	Weight (g)	Art. No.	Pack Qty.	€
5	230 x 120 x 310	1980	**EPN1.1**	1	60,35
10	350 x 165 x 283	3260	**EPN2.1**	1	73,75
20	343 x 165 x 469	4790	**EPN3.1**	1	92,15

Space-saving canisters

By Bürkle. Made of transparent **PP**. Capacity 5 l. Many liquids can be stored and filled even in a very confined area. Suitable for foodstuffs. Autoclavable at +121 °C without cock. With litre scale. ∅ of opening 41 mm. Dimensions: W 65 x D 335 x H 335 mm. Weight 800 g.
Delivery without stop-cock and screw cap for threaded connection, please order separately.

Design	Art. No.	Pack Qty.	€
With thread connection ¾″	**9267.1**	1	34,40
Without thread connection	**T974.1**	1	32,20

Accessories to space saving canisters

By Bürkle.

Type	Art. No.	Pack Qty.	€
Draincock ¾″ made of PP (not autoclavable)	**2683.1**	1	24,20
Draincock compact ¾″ (not autoclavable)	**PE42.1**	1	15,00
Cap ¾″ for valve connection (not autoclavable)	**9275.1**	1	6,40
Safety holder for 3 canisters	**9270.1**	1	24,55

Fuel cans

Made of **HDPE**, black. Heavy-duty, industrial quality. With UN-approval. Incl. spout and attached screw cap.

*Not UN-approved.

Vol. (l)	L x W x H (mm)	Neck inner ∅ (mm)	UN approval	Art. No.	Pack Qty.	€
2	147 x 80 x 270	18	without	**EY69.1**	1	9,65
3	215 x 100 x 205	29	3H1/X1.0 Y1.0 Z1.0/250	**EY70.1**	1	10,70
5	265 x 147 x 247	29	3H1/Y1.0/250	**EY71.1**	1	8,20
10	333 x 164 x 324	29	3H1/Y1.2/200	**EY72.1**	1	11,80
20	365 x 178 x 435	29	3H1/Y/150	**EY73.1**	1	17,55

Flat-top canisters

By Nalgene®. With draincock and screw cap made of **PP**. Excellent for storing and dispensing reagents, titrating solutions and distilled water. The flat design fits easily into tight spaces and refrigerators. Up to 3 canisters can be stacked. With practical integral handgrip for safe and easy transport. Thread 63 mm. **Leakproof**.

Made of **HDPE**. Type 2323.

Volume (l)	H x W x D (mm)	Art. No.	Pack Qty.	€
8	165 x 368 x 305	**E193.1**	1	127,95

Made of **PP**. Type 2324. **Autoclavable**.

Volume (l)	H x W x D (mm)	Art. No.	Pack Qty.	€
8	165 x 368 x 305	**E195.1**	1	166,65

Spare stopcocks

Suitable for square canisters, flat-top canisters, carboys and fluorinated canisters. For tubes with inner-∅ 6.5-7.9 mm. **Autoclavable**.

Material	Art. No.	Pack Qty.	€
PP	**E727.1**	1	34,35
ETFE	**E728.1**	1	88,05

Rotilabo®-canisters

Made of **PE**. Folding. Robust with resistant, flexible walls. Sturdy integral handles for easy transport. Economical and space-saving, as canisters can be folded when empty. Smooth walls and rounded corners allow optimal emptying of canister. Fine dosing is possible without air admission. Handles and canister made of PE, recycable. Tap connection possible. Outer-∅ spout 11 mm. Connecting nozzle 30 mm with screw cap.

Volume (l)	L x W x H (mm)	Design	Art. No.	Pack Qty.	€
10	230 x 230 x 230	1 handle	**N369.1**	1	6,40
20	280 x 280 x 280	2 handles	**N370.1**	1	7,50

Accessories:

Stopcock	**N371.1**	1	3,55

Square canisters

By Nalgene®. With screw cap thread 100 mm and draincock made of **PP**. Robust, graduated, space-saving model with stainless steel handle. Wide neck opening of ∅ 90 mm enables easy filling and cleaning. **Leakproof**.

Made of HDPE. Type 2211 (without stopcock) or 2320 (with stopcock).

Type	Volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
without stopcock	9	216 x 146 x 356	**K646.1**	1	73,05
without stopcock	20	318 x 219 x 381	**K647.1**	1	106,35
with stopcock	9	216 x 146 x 356	**K648.1**	1	117,20
with stopcock	20	318 x 219 x 381	**K649.1**	1	152,65

Made of PP. Autoclavable. Type 2212 (without stopcock) or 2321 (with stopcock).

Type	Volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
without stopcock	9	216 x 146 x 356	**K644.1**	1	102,15
without stopcock	20	318 x 219 x 381	**K645.1**	1	138,70
with stopcock	9	216 x 146 x 356	**E191.1**	1	137,60
with stopcock	20	318 x 219 x 381	**E192.1**	1	173,10

Made of PC. Type DS 2213 (without stopcock) or 2322 (with stopcock). Transparent. Excellent for developing nutrient and culture media when light or transparency is required. Ideal for use in cooling rooms. **Autoclavable.**

Type	Volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
without stopcock	9	216 x 146 x 356	**K651.1**	1	154,80
without stopcock	20	318 x 219 x 381	**K652.1**	1	224,70
with stopcock	9	216 x 146 x 356	**K653.1**	1	181,70
with stopcock	20	318 x 219 x 381	**K654.1**	1	218,25

Fluorinated canisters with draincock

By Nalgene®. Type DS 2327. Made of fluorinated **HDPE**, stopcock made of ETFE, screw cap made of fluorinated PP, thread 100 mm. Ideal for the safe storage and dispensing of solvents or distilled water. Comes in a rectangular, space-saving design. Transparent. The fluorinated outer and inner surfaces improve the barrier properties and reduce solvent absorption and permeation. **Leakproof**. With graduation, and stainless steel handle. The 20 l-container additionally has robust handles.

Volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
9	216 x 146 x 343	**E189.1**	1	188,15
20	318 x 219 x 381	**E190.1**	1	219,30

Fluorinated canisters

By Nalgene®. Type 2242. Made of **HDPE**, fluorinated inside and out, screw cap made of fluorinated PP. Provides good barrier properties, high resistance to chemicals and reduces solvent diffusion and penetration. Very robust. Excellent for working under extreme conditions with acids and aggressive solvents. With wide base for extra stability. Long spout and integral handgrip in base enable easy pouring. Graduated in litres and gallons. **Leakproof**. Thread 53 B.

Volume (l)	Subdivisions (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
10	2	191 x 229 x 368	**E187.1**	1	68,80
20	4	229 x 305 x 445	**E188.1**	1	103,15

A 121 °C

Carboys

Made of **HDPE**, natural coloured. With 50 mm funnel neck, thread S 65. Alternatively available without tap connection or with tap connection and stopcock.

With tap connection and stopcock

Volume (l)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
5	167	330	**K980.1**	1	52,60
10	206	427	**5645.1**	1	56,95
25	278	580	**5646.1**	1	98,90
60	346	823	**5651.1**	1	150,30

Without tap connection

Volume (l)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
5	167	330	**K981.1**	1	35,95
10	206	427	**K982.1**	1	38,65
25	278	580	**K983.1**	1	83,55
60	346	823	**K984.1**	1	140,85

Stopcock, blue. Offset spout, ∅ 15.5 mm. Length 25 mm, inner ∅ 10 mm.

Art. No.	Pack Qty.	€
5652.1	1	20,90

Fluorinated carboys

By Nalgene®. Type 2097. Made of fluorinated **HDPE** with screw cap made of PP, thread 83 B. Excellent for storing and transporting aggressive chemicals. The fluorinated inner and outer surface reduces diffusion and penetration of solvents and enhances long-term storage with minimal evaporation loss. Extremely resistant to cracks and puncturing. Suitable for most acids, alkalis and aggressive organic solvents. **Leakproof.**

Volume (l)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
10	249 x 389	64	**C476.1**	1	91,20
20	287 x 628	64	**C477.1**	1	131,15

Carboys

By Nalgene®. Thread narrow neck 83B. Wide neck 100 mm. Ideal for storing chemicals, standard solutions, nutrient media, distilled water and liquids. Also good for storing large amounts of powder or other solids. Graduated in 1 gal and 5 litres styles. **Leakproof**.

Made of **LDPE**, screw cap made of PP. Type 2210 (narrow neck) or 2234 (wide neck). Wide handles enable easy transport and pouring.

Type	Volume (l)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
Narrow neck	10	249 x 389	64	**K633.1**	1	52,65
Narrow neck	15	287 x 432	64	**K634.1**	1	78,40
Narrow neck	20	287 x 528	64	**K635.1**	1	87,10
Narrow neck	25	287 x 597	64	**K636.1**	1	92,70
Narrow neck	50	376 x 673	64	**K637.1**	1	203,20
Wide neck	10	249 x 338	88	**K638.1**	1	49,40
Wide neck	15	287 x 389	88	**K639.1**	1	72,25
Wide neck	20	287 x 483	88	**K640.1**	1	94,55

Made of **PP**, wide handles enable easy transport and pouring. Type 2250 (narrow neck) or 2235 (wide neck). **Autoclavable**.

Type	Volume (l)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
Narrow neck	10	249 x 389	64	**C478.1**	1	77,40
Narrow neck	20	287 x 521	64	**C479.1**	1	130,10
Narrow neck	50	376 x 673	64	**C480.1**	1	213,95
Wide neck	10	249 x 343	88	**K642.1**	1	73,05
Wide neck	20	287 x 483	88	**K643.1**	1	120,40

Made of **PC**, crystal clear. With screw cap made of PP, type 2251. Excellent for developing large amounts of nutrient media, especially where light is required. Can also be used at temperatures below 0 °C. **Autoclavable**.

Type	Volume (l)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
Narrow neck	10	249 x 389	64	**C469.1**	1	125,80
Narrow neck	20	287 x 521	64	**C470.1**	1	178,45

▶ For autoclaving information see page 5

Carboys

Carboys with stopcock

By Nalgene®. Graduated. Ideal for storing distilled water, reagents, nutrient media. **Leakproof**. For extra stability and sealing, the draincock thread has been integrated and not welded into the bottle.

Made of LDPE, type 2318. Thread 83 B (K655.1: 38-430).

Volume (l)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
4	152 x 328	28	**K655.1**	1	51,50
10	249 x 389	64	**K656.1**	1	85,95
20	287 x 521	64	**K657.1**	1	121,50
25	287 x 597	64	**K658.1**	1	144,05
50	376 x 673	64	**K659.1**	1	213,95

Made of PP, type 2319. **Autoclavable**. Thread 83 B.

Volume (l)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
10	249 x 389	64	**K660.1**	1	133,30
20	287 x 521	64	**K661.1**	1	163,40
50	376 x 673	64	**K662.1**	1	288,10

Made of PC, type 2317. Transparent, **autoclavable**. Thread 83 B.

Volume (l)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
10	249 x 389	64	**K663.1**	1	186,00
20	287 x 521	64	**K664.1**	1	246,20

Spare stopcocks

Suitable for square canisters, flat-top canisters, carboys and fluorinated canisters. For tubes with inner-∅ 6.5-7.9 mm. **Autoclavable**.

Material	Art. No.	Pack Qty.	€
PP	**E727.1**	1	34,35
ETFE	**E728.1**	1	88,05

▶ PTFE thread tape see page 1177

▶ Tubes from page 385

A 121 °C

Accessories: filling/vent caps

By Nalgene®. Made of **PP**, white, with 3 connections. For sterile liquid transfer of nutrient media, biological reagents, pure water and chemicals. Usable with vacuum bottles and belly bottles with cap sizes of 53 or 83 mm. **Autoclavable**.

Delivery incl. TPE seals, 2 platinum-coated silicone suction and dispensing hoses, filling splash guard and 3 dummy plugs.

∅ x H (mm)	Closure size (mm)	Connections for hoses with internal ∅ (mm)	Art. No.	Pack Qty.	€
66.7 x 68,6	53 B	6,3	**PK44.1**	1	30,65
102 x 98	83 B	6,3	**PK45.1**	1	35,30
102 x 98	83 B	12,7	**PK46.1**	1	38,60

A 121 °C

Dual tubing olive assembly sets

For upgrading Nalgene® vacuum bottles (PK40.1 f.) or carboys with 53 mm or 83 mm screw caps.
For this purpose, two holes (∅ 10 mm for PP13.1 or ∅ 16 mm for PP14.1) must be drilled in the screw cap and those connectors fitted. Autoclavable.
For tubes with ∅ inside 6 mm or 13 mm.
53 mm screw caps only be used with 6 mm tubing olives;
83 mm screw caps with 6 mm and/or 13 mm tubing olives.

Delivery incl. tube connections made of **PP**, nuts made of **azetal**, **silicone** seals, caps made of **TPE**. (**Delivery without** screw caps).

For hose with inner ∅ (mm)	Art. No.	Pack Qty.	€
6	**PP13.1**	2	16,50
13	**PP14.1**	2	17,10

Plastic bottles, LDPE

Narrow-mouth bottles LaboPlast® Bio

By Bürkle. Made of **Green LDPE**. Made of renewable raw material and fully recyclable. The seal-tight screw-cap closure, transparent.
Suitable for foodstuffs.

Volume (ml)	∅ x H (mm)	Neck inner ∅ (mm)	Thread	Art. No.	Pack Qty.	€
10	26 x 47	9	14	**HEN6.1**	10	10,70
20	32 x 58	9	14	**HEN7.1**	10	12,40
50	40 x 86	13	18	**HEN8.1**	10	16,10
100	45 x 106	13	18	**HEN9.1**	10	17,00
250	60 x 140	18	25	**HEP0.1**	10	23,80
500	75 x 173	18	25	**HEP1.1**	5	19,30
1000	95 x 213	21	28	**HEP2.1**	5	28,15

LDPE narrow neck bottles

By Nalgene®. Model 2003. Bottle made of **LDPE**, screw cap made of **PP**. Higher transparency, flexibility and impact strength than HDPE bottles. LDPE has a low trace element content and, therefore, is suitable for use in trace analysis after appropriate cleaning. **Leak-proof**.

Volume (ml)	∅ x H (mm)	Cap size (mm)	Art. No.	Pack Qty.	€
8	25 x 45	20	**ATH1.1**	12	10,55
15	25 x 58	20	**ATH2.1**	12	11,30
30	34 x 63	20	**ATH3.1**	12	12,10
60	39 x 86	20	**ATH4.1**	12	14,20
125	50 x 101	24	**ATH5.1**	12	17,00
250	61 x 133	24	**ATH6.1**	12	23,15
500	73 x 170	28	**ATH7.1**	12	33,35
500	73 x 168	38-430	**ATH8.1**	12	50,75
1000	91 x 199	38-430	**ATH9.1**	6	27,90

Narrow neck bottles

Made of **LDPE**, transparent. In acc. with DIN 168 and 13316.
Comes with screw cap and is graduated.

Volume (ml)	Graduation (ml)	∅ x H (mm)	Thread	Art. No.	Pack Qty.	€
50	10	38 x 92	GL 18	**A207.1**	6	9,05
100	20	48 x 108	GL 18	**A751.1**	6	10,55
250	25	60 x 150	GL 25	**A208.1**	4	10,50
500	100	75 x 182	GL 25	**A752.1**	4	11,80
1000	100	95 x 224	GL 32	**A209.1**	4	18,30

Wide neck bottles

Made of **LDPE**, transparent. With thread in acc. with DIN 168. Wide neck opening for easy filling of solids and liquids. Come with screw cap and is graduated. Approved for foodstuffs.

Volume (ml)	Graduation (ml)	∅ x H (mm)	Thread	Art. No.	Pack Qty.	€
50	10	38 x 88	GL 32	**E217.1**	12	20,65
100	20	48 x 105	GL 32	**E218.1**	12	22,90
250	25	60 x 140	GL 45	**E219.1**	6	13,95
500	100	75 x 170	GL 45	**E220.1**	6	19,50
1000	100	95 x 206	GL 63	**E221.1**	6	27,20
2000	100	120 x 252	GL 63	**PE88.1**	5	26,85

Wide neck bottles, brown

Made of **LDPE**. Ideal for protecting light-sensitive samples from UV-radiation. With screw-on cap.

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
50	77	39	**T508.1**	10	16,00
100	93,5	48	**T509.1**	10	19,25
250	120	64	**T510.1**	10	24,05
500	154	77	**T511.1**	10	37,55
1000	205	95	**T512.1**	4	25,05

▶ For autoclaving information see page 5

Plastic bottles, HDPE

HDPE narrow neck bottles

By Nalgene®. Type 2002. Bottle made of **HDPE**, screw cap made of **PP**. Suitable for general laboratory applications.
Good chemical resistance to many acids and alkalis. **Leakproof**.

Volume (ml)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
4	16 x 41	8	**PX58.1**	12	9,35
8	25 x 45	14	**PX59.1**	12	9,35
15	25 x 58	14	**PX60.1**	12	9,65
30	34 x 61	14	**PX61.1**	12	10,70
60	37 x 85	14	**PX62.1**	12	12,85
125	50 x 101	18	**PX63.1**	12	15,00
250	61 x 133	18	**PX64.1**	12	20,75
500	73 x 170	21	**PX65.1**	12	29,00
1000	91 x 216	27	**PX66.1**	6	24,55

Narrow neck bottles, brown

By Nalgene®. Type 2004. Made of **HDPE**. Ideal for protecting light-sensitive samples from UV-radiation. With screw-on cap. **Leakproof**.

Volume (ml)	Connector-∅ (mm)	Art. No.	Pack Qty.	€
4	13	**APK6.1**	12	16,65
8	20	**APK7.1**	12	16,60
15	20	**AN71.1**	12	17,15
30	20	**AK57.1**	12	22,45
60	20	**AK58.1**	12	23,15
125	24	**AK59.1**	12	28,85
250	24	**AK60.1**	12	38,50
500	28	**AK61.1**	12	53,70
1000	38	**AK62.1**	6	48,30

Rotilabo®-narrow neck bottles SafeGrip

Made of **HDPE**. Original cap with PTFE-sealing. Square-shaped form for easy handling. Thread GL 32. Neck ∅ inner 18.6 mm.

Volume (ml)	L x W x H (mm)	Art. No.	Pack Qty.	€
50	40 x 40 x 79	**HH14.1**	10	26,20
100	46 x 46 x 108	**HH15.1**	10	29,60
250	60 x 60 x 136	**HH16.1**	10	35,30
500	75 x 75 x 169	**HH17.1**	10	37,45

Fluorinated narrow neck bottles

By Nalgene®. Type 2097. Made of fluorinated **HDPE.** With PP screw cap. Excellent for storing and transporting aggressive chemicals. The fluorinated inner and outer surface reduces diffusion and penetration of solvents and enhances long-term storage with minimal evaporation loss. Extremely resistant to cracks and puncturing. Suitable for most acids and aggressive organic solvents. **Leakproof.**

Volume (ml)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
250	61 x 133	17	**C471.1**	12	41,90
500	73 x 171	21	**C472.1**	12	59,15
1000	92 x 216	27	**C473.1**	6	50,55
2000	122 x 246	27	**C474.1**	2	53,70
4000	153 x 334	27	**C475.1**	1	37,10

Plastic bottles, HDPE

Wide-neck bottles

By Nalgene®. Bottle made of **HDPE**, screw cap made of **PP**. Durable all-purpose bottles, universally applicable in the laboratory and in sampling applications. Wide neck opening allows easy filling of dry matter and liquids. **Leak-proof.**

① Type 2104, transparent

Volume (ml)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
30	34 x 63	21	**PX93.1**	12	12,60
60	39 x 86	21	**PX94.1**	12	14,60
125	50 x 99	28	**PX95.1**	12	19,60
250	61 x 131	33	**PX96.1**	12	24,30
500	73 x 168	44	**PX97.1**	12	40,75
1000	91 x 199	53	**PX98.1**	6	27,85

② Type 2106, brown

Brown coloration protects light-sensitive substances during shipment or storage.

Volume (ml)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
30	34 x 63	21	**ATE1.1**	12	28,50
60	39 x 86	21	**ATE2.1**	12	30,05
125	50 x 99	28	**ATE3.1**	12	33,30
250	61 x 131	33	**ATE4.1**	12	49,85
500	73 x 168	44	**ATE5.1**	12	60,85
1000	91 x 199	53	**ATE6.1**	6	56,15

Sealable wide-mouth bottles

By Bürkle. Made of **HDPE**. Robust wide-mouth bottles with sealing eyelets on the screw cap and bottle. Impervious to fluids. Suitable for storing and shipping specimens. Specifically designed for viscous media, powders, granulates and pastes. Protective seals must be ordered separately.

Volume (ml)	Neck inner ∅ (mm)	∅ x H (mm)	Art. No.	Pack Qty.	€
250	26,5	64 x 118	**PK54.1**	25	61,85
500	40	78 x 147	**PK55.1**	10	26,70
1000	50	100 x 186	**PK56.1**	10	49,35
2000	50	120 x 230	**PK57.1**	1	7,85

Protective seals

By Bürkle. Made of **PP**, red. For sealable wide-mouth bottles. Uniquely identifiable by a continuous 9-digit number. The ring lock is secured in the locking chamber by a metal insert made of a stainless steel spring. With disposable pull mechanism for protection against manipulation. Dimensions: length 260 mm, ∅ band 2 mm.

Art. No.	Pack Qty.	€
PK58.1	10	10,70

Wide-necked bottles, sterile or non-sterile

Made of **HDPE**, transparent. **Sterile** or non-sterile. For sampling, packing and storage of liquid, solid and pasty media. Heavy metal free to EC/94/62. Temperature stable from -80 to +110 °C.

Delivery incl. fitted HDPE screw cap with PE seal. **Leakproof**.

Non-sterile

Volume (ml)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
50	36 x 77	27	**CCY4.1**	600	427,85
100	51 x 80	37	**CCY5.1**	335	220,40
250	60 x 125	37	**CCY6.1**	145	104,85
500	80 x 136	58	**CCY7.1**	140	120,40
1000	101 x 174	58	**CCY8.1**	68	85,95
2000	121 x 220	57	**CCY9.1**	25	98,80

Sterile (ionising radiation, SAL^{-3})

Volume (ml)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
100	51 x 80	37	**CEA0.1**	335	267,70
250	60 x 125	37	**CEA1.1**	145	123,10
500	80 x 136	58	**CEA2.1**	140	162,35
1000	101 x 174	58	**CEA3.1**	68	104,85

- Glass bottles from page 32
- Screw caps see page 45
- Wide-neck cans see page 115

Plastic bottles, HDPE

Rotilabo®-narrow neck bottles

Made of **HDPE**. Rectangular. Ideal for storing, packing and sampling chemicals. With tamper evident screw cap. Thread GL 32.

Volume (ml)	Lid colour	Art. No.	Pack Qty.	€
100	blue	**5698.1**	10	14,75
250	blue	**5706.1**	10	17,55
500	blue	**5713.1**	10	15,60
1000	blue	**5717.1**	10	22,40

Wide neck-rectangular bottles

Made of **HDPE**. With push-in stopper and screw-on cap made of PP. Graduated. **Can be leaded.**

Volume (ml)	Graduation (ml)	L x W x H (mm)	Inner-∅ opening (mm)	Art. No.	Pack Qty.	€
25	5	34 x 32 x 50	18	**K811.1**	10	7,70
50	10	39 x 37 x 70	24	**K812.1**	10	8,85
100	20	48 x 42 x 90	34	**K813.1**	10	12,05
250	50	60 x 57 x 110	34	**K814.1**	10	13,10
500	100	80 x 70 x 140	44	**K815.1**	1	2,40
1000	100	103 x 80 x 175	58	**K816.1**	1	2,90
2000	100	135 x 100 x 210	58	**K817.1**	1	4,95

Rotilabo®-dispenser bottles

Made of **HDPE**, with **PP** screw cap. With DIN 25 thread. ∅ neck inside 20 mm. Suitable for Sekuroka®-soap and disinfectant dispensers plus Art. No. TE53.1 f.

Volume (ml)	H x W x D (mm)	Art. No.	Pack Qty.	€
500	165 x 71 x 57	**KA39.1**	6	8,00
1000	210 x 87 x 71	**KA40.1**	6	9,65

① Wide neck-rectangular bottles

By Nalgene®. Type 2007. Made of **HDPE**. With PP screw cap. Sturdy wall construction, very robust. Wide neck opening for easy filling. Ideal for efficient storage and transport of liquids and solids. **Leakproof.**

Volume (ml)	H x W x D (mm)	Cap ∅ (mm)	Art. No.	Pack Qty.	€
125	102 x 64 x 38	28	**C488.1**	12	24,70
250	114 x 76 x 48	38	**C489.1**	12	37,10
500	140 x 94 x 58	48	**C490.1**	12	57,85
1000	180 x 125 x 71	53	**C491.1**	6	66,65
2000	239 x 152 x 81	63	**C492.1**	4	70,95

② Wide neck-rectangular bottles, brown

By Nalgene®. Type 2009. Made of **HDPE**. With PE screw cap. Robust and space-efficient design. Ideal for protecting light-sensitive samples from UV-radiation. **Leakproof.**

Volume (ml)	H x W x D (mm)	Cap ∅ (mm)	Art. No.	Pack Qty.	€
125	102 x 64 x 38	28	**C459.1**	12	37,65
250	114 x 76 x 48	38	**C460.1**	12	51,60
500	140 x 94 x 58	48	**C461.1**	12	72,60
1000	180 x 125 x 71	53	**C462.1**	6	84,40
2000	239 x 152 x 81	63	**C463.1**	4	82,80

Plastic bottles, PP

A 121 °C

Bottles for demanding applications

By Nalgene®. Type 2126. **Vacuum bottles** made of **PP**, thick-walled. Screw cap made of PP, white with TPE seal. Highly robust, evacuable wide-mouth bottle. Vacuum-tight over 24 hours at 20 °C. **Leak-proof.** Suitable as vacuum trap or as storage bottle for analytical or dispensing apparatus. Vacuum-resistant to 0.1 mbar. Autoclavable.

Volume (ml)	∅ x H (mm)	Closure size (mm)	Art. No.	Pack Qty.	€
1000	93 x 226	53 B	**PK40.1**	1	27,90
2000	119 x 260	53 B	**PK41.1**	1	32,25
4000	155 x 338	83 B	**PK42.1**	1	53,75
5000	156 x 414	83 B	**PK43.1**	1	80,55

A 121 °C

Narrow neck bottles

By Nalgene®. Type 2006. Bottle and screw cap made of **PP**. Suitable for general laboratory applications. Good chemical resistance. **Leak-proof.** Autoclavable.

Volume (ml)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
4	16 x 41	8	**PT86.1**	12	11,80
8	25 x 45	14	**PT87.1**	12	10,25
15	25 x 58	14	**PT88.1**	12	10,65
30	34 x 61	14	**PT89.1**	12	11,50
60	37 x 85	14	**PT90.1**	12	11,85
125	50 x 101	18	**PT91.1**	12	14,65
250	61 x 133	18	**PT92.1**	12	21,45
500	73 x 170	21	**PT93.1**	12	34,95
1000	91 x 216	27	**PT94.1**	6	24,65

▶ For autoclaving information see page 5

A 121 °C

Wide-mouth bottles

By Nalgene®. Type 2105. Bottle and screw cap made of **PP**. Suitable for general laboratory applications. Good chemical resistance. **Leak-proof**. Autoclavable.

Volume (ml)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
30	34 x 63	21	**PY08.1**	12	13,55
60	39 x 86	21	**PY09.1**	12	15,95
125	50 x 99	28	**PY10.1**	12	23,55
250	61 x 131	33	**PY11.1**	12	30,45
500	73 x 168	44	**PY12.1**	12	49,45
1000	91 x 199	53	**PY13.1**	6	30,35

A 121 °C

Wide neck

Made of **PP**. Natural coloured. Ideal for pastes, granulates and for the decanting of hot products. Autoclavable.

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
100	94	48,5	**T486.1**	10	20,65
250	121	64,5	**T487.1**	10	26,70
500	155	77,5	**T488.1**	10	41,10
1000	206	96,0	**T489.1**	4	26,20

A 121 °C

High breast bottles GL 45

Made of **PP**. Flexible, transparent. Chemically (formalin, ethanol) and radiation sterilizable (β rays, 25kGy), microwave safe. Autoclavable. Art. No. PY05.1 with handle.
Delivery incl. PP screw cap.

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
250	132	73	**PY01.1**	1	3,60
500	172	87	**PY02.1**	1	4,45
1000	197	105	**PY03.1**	1	7,50
2000	241	131	**PY04.1**	1	9,35
5000	315	178	**PY05.1**	1	16,10

Plastic bottles, PFA/PTFE

Narrow neck bottles

Made of highly pure **PFA**. With ETFE screw cap and special lip seal for tight sealing.

For trace analysis and long-term storage of highly pure oxidants, acids and alkalis, as well as hydrocarbons, solvents and standards.

- High thermal stability from -200 to +260 °C, autoclavable
- Chemically inert and resistant to virtually all chemicals
- Good transparency and dimensional stability
- Entrainment and cross-contamination are practically eliminated by highly hydrophobic, anti-adhesive and smooth surfaces
- Long shelf life of low concentration reference solutions in PFA vessels
- Easy to clean
- No memory effect

Volume (ml)	∅ x H (mm)	Thread	Art. No.	Pack Qty.	€
50	37 x 90	GL 18	**9718.1**	1	35,40
100	45 x 114	GL 18	**9719.1**	1	47,00
250	61 x 157	GL 25	**9720.1**	1	77,20
500	76 x 189	GL 25	**9721.1**	1	110,75
1000	96 x 233	GL 32	**9723.1**	1	151,60

Wide neck bottles

Made of highly pure **PFA**. With tight closing PFA screw cap.

For trace analysis and long-term storage of highly pure oxidants, acids and alkalis, as well as hydrocarbons, solvents and standards.

- High thermal stability from -200 to +260 °C, autoclavable
- Chemically inert and resistant to virtually all chemicals
- Good transparency and dimensional stability
- Entrainment and cross-contamination are practically eliminated by highly hydrophobic, anti-adhesive and smooth surfaces
- Long shelf life of low concentration reference solutions in PFA vessels
- Easy to clean
- No memory effect

Volume (ml)	∅ x H (mm)	Thread	Art. No.	Pack Qty.	€
50	37 x 86	S 28	**9702.1**	1	63,20
100	45 x 120	S 28	**9703.1**	1	96,25
250	61 x 150	S 40	**9704.1**	1	113,95
500	76 x 179	S 40	**9705.1**	1	159,10
1000	96 x 217	S 40	**9706.1**	1	220,40

▶ Screw caps made of PFA see page 47

PFA bottles

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

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

Narrow neck

Volume (ml)	Height (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
100	100,8	16,7	**YY60.1**	1	69,85
250	133,7	16,5	**YY61.1**	1	113,95
500	165,1	17,0	**YY62.1**	1	144,05
1000	202,4	25,3	**YY63.1**	1	254,80
2000	235	33	**YY64.1**	1	736,40
3000	269,9	36,6	**YY65.1**	1	776,15

Wide neck

Volume (ml)	Height (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
20	60,3	16,4	**YY67.1**	1	39,35
100	106,5	25,7	**YY68.1**	1	99,80
250	136,8	25,7	**YY69.1**	1	141,90
500	173,8	33,9	**YY70.1**	1	220,40
1000	207,2	36,8	**YY71.1**	1	360,15

Rotilabo®-narrow neck bottles

Made of **PTFE**. With screw cap. Chemically inert. Temperature stable from -200 to +260 °C. Low gas permeability. Anti-adhesive. Autoclavable.

Volume (ml)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
1	16 x 27	10	**T633.1**	1	15,95
5	22 x 35	10	**T635.1**	1	19,15
10	26 x 50	12	**T636.1**	1	21,30
25	33 x 61	19	**T637.1**	1	28,50
50	43 x 76	25	**T638.1**	1	37,65
100	52 x 88	35	**T639.1**	1	50,00
150	60 x 90	35	**T640.1**	1	53,35
250	67 x 115	42	**1181.1**	1	63,35
500	80 x 150	52	**T641.1**	1	103,75
1000	100 x 185	57	**1182.1**	1	146,20
2000	120 x 240	60	**T642.1**	1	256,95

Rotilabo®-wide neck bottles, UN-approved

Made of **HDPE**, natural coloured rectangular. With sunken area for labels and UN approval for solid materials. With tamper evident screw cap made of PP with PE-foam insert.

Volume (ml)	L x W x H (mm)	UN approval	Art. No.	Pack Qty.	€
50	36 x 36 x 88,5	none	**T474.1**	10	16,80
100	45 x 45 x 101	3H1/X0.3/S	**T475.1**	10	19,15
250	59 x 59 x 128	3H1/X0.8/S	**T476.1**	10	24,20
500	75 x 75 x 161	3H1/X1.5/S	**T477.1**	10	32,80
1000	85 x 85 x 212	3H1/X2.5/S	**T478.1**	9	34,35
1500	111 x 111 x 209	3H1/X4/S	**T479.1**	6	33,90
2500	122 x 122 x 258	3H1/X5/S	**T480.1**	3	19,90
4000	142 x 142 x 294	3H1/X5.5/S	**T481.1**	1	11,35

Rotilabo®-narrow neck bottles, UN-approved

Made of **HDPE**, natural coloured. With a tamper evident screw cap made of PE with PTFE-insert. GL 45. Ideal for storing and transporting liquids.

Type 1: square. Dimensions: L 97 x W 97 x H 219 mm.

Type 2: round. Dimensions: ∅ 132 x H 293 mm. With robust handle.

Type	Volume (ml)	UN approval	Art. No.	Pack Qty.	€
Typ 1	1000	3H1/X1.9/250	**T502.1**	6	17,75
Typ 2	2500	1H1/X1.3 Y1.9/250	**T503.1**	2	8,55

Rotilabo®-wide neck bottles, UN-approved

Made of **HDPE**. Natural coloured. Square. With black plastic cap made of PP with PE foam insert 1,5 mm. Wide neck enables easy filling.
With UN-X approval for solid materials.

Volume (ml)	Side length (mm)	Neck inner ∅ (mm)	Height without cap (mm)	UN approval	Art. No.	Pack Qty.	€
50	36	21,0	88,5	none	**H333.1**	35	53,70
100	45	24,0	101	3H1/X0.3/S	**H334.1**	30	51,25
250	59	35,0	128	3H1/X0.8/S	**H335.1**	20	51,50
350	60	35,0	164	none	**H336.1**	10	26,35
500	75	42,5	161	3H1/X1.5/S	**H337.1**	10	30,00
750	85	42,5	185	3H1/X2.5/S	**H338.1**	10	36,55
1000	85	42,5	212	3H1/X2.5/S	**H339.1**	9	34,20
1500	111	68,5	209	3H1/X4/S	**H340.1**	7	35,05
2500	122	68,5	258	3H1/X5/S	**H341.1**	3	19,30
4000	142	68,5	294	3H1/X5.5/S	**H342.1**	1	10,70

- Canisters with UN approval see page 92
- Wide neck barrels with UN approval see page 94

UN-bottles

Stainless steel bottles with GL 45 thread

Made of stainless steel 1.4404. With smooth inner surface (in acc. with IIIc DIN 17441) and rounded inside edges for complete drainage and easy cleaning. Temperature stable up to +500 °C, autoclavable.

- Shatterproof
- Light-impermeable
- Chemical resistant (except halogen-containing media)

① **UN approved transport bottle 1A1/X2.0/1000**

For safe transportation of hazardous and flammable liquids, for storage of high-quality materials such as fine chemicals, pharmaceuticals or cosmetic products as well as light-sensitive materials.
No additional outer packaging required, as UN-approved. Approved for the conveyance of liquids with a relative density of up to 2.0 classified into UN packaging group I, II or III as hazardous goods.

Delivery incl. screw cap made of stainless steel with PTFE gasket.

Volume (ml)	Art. No.	Pack Qty.	€
1500	**AAC4.1**	1	463,00

② **Non-UN-approved storage bottle**

For the storage of aggressive media, high-purity fine chemicals, pharmaceuticals and cosmetic products as well as light-sensitive materials.

Delivery without cap. Please order separately.

Volume (ml)	Art. No.	Pack Qty.	€
1500	**AAC5.1**	1	418,00

Accessories:

Stainless steel cap with GL 45 thread and PTFE gasket	**AAC6.1**	1	116,00

Rotilabo®-aluminium bottles

Made of 99.5 % pure aluminium, seamlessly manufactured. For the storage and transportation of substances and retained samples. Bottles with a volume of more than 60 ml have **UN approval 1B1/X/250.** Fully drainable. Neutral odour, impervious to light, rustproof and shatterproof. Screw cap made of PP with aluminium inner gasket and tamper evident closure.

* without UN approval

Volume (ml)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
30*	35	70	**XY65.1**	10	17,45
60	40	88	**P791.1**	10	19,30
120	57	97	**P792.1**	10	22,80
300	57	160	**P793.1**	10	32,90
600	74	192	**P794.1**	5	20,40
1200	88	248	**P795.1**	5	23,15

Spare tamper-evident caps for Rotilabo®-aluminium bottles

Made from **PP**, features an aluminium inner seal.

Type	Art. No.	Pack Qty.	€
For 30 ml bottles	**EEE8.1**	10	8,05
For 60-1200 ml bottles	**EEE9.1**	10	8,05

UN aluminium bottles

Made of 99.5 % pure aluminium. Screw cap with FKM gasket, **leak-proof**. **UN approval 1B1/X/250**, suitable for transportation and storage of hazardous substances. Sealable, impervious to light.

Volume (ml)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
125	50	105	**XY66.1**	1	19,90
250	65	140	**XY67.1**	1	23,25
500	80	145	**XY68.1**	1	27,80
1250	100	205	**XY69.1**	1	30,00

Wash bottles

121 °C

Rotilabo®-glass wash bottles

Made of borosilicate glass 3.3. Complete wash bottle consisting of flat bottom flask with NS 29/32 socket and wash bottle adapter. Autoclavable.

Volume (ml)	Art. No.	Pack Qty.	€
250	**ACK8.1**	1	36,50
500	**ACK9.1**	1	38,50
1000	**ACL0.1**	1	42,90

Replacement adapter for NS 29/32 glass wash bottles

Art. No.	Pack Qty.	€
ACL1.1	1	17,55

Accessories:

Pipette bulbs PVC, suck. vol. 85 ml	**H619.1**	2	14,20
Pipette bulbs PVC, suck. vol. 140 ml	**H620.1**	2	19,35
Pipette bulbs PVC, suck. vol. 220 ml	**H621.1**	2	24,10

Rotilabo®-wide neck wash bottles

Made of **LDPE**. Comes with contents label printed in three languages, danger identification mark in accordance with the GHS. Screw cap colour-coded. Non-scratch ink. Movable suction tube enables total emptying.
Note: The chemical resistance of the spray bottles is limited when aggressive filling media are used. The bottles should therefore be replaced regularly and not used for analytical or critical applications.

Label	Volume (ml)	Art. No.	Pack Qty.	€
Acetone	250	**T398.1**	1	5,75
Acetone	500	**T399.1**	1	7,15
Ethanol	250	**T400.1**	1	5,75
Ethanol	500	**T401.1**	1	7,15
Isopropanol	250	**T402.1**	1	5,75
Isopropanol	500	**T403.1**	1	7,15
Methanol	250	**T404.1**	1	5,75
Methanol	500	**T405.1**	1	7,15
Dist. water	250	**T406.1**	1	5,75
Dist. water	500	**T407.1**	1	7,15

Rotilabo®-safety wash bottles

Bottle made of **LDPE** or **PP**, screw cap and spray tube made of PP. A pressure relief valve in the screw cap stops discharge, dripping or leakage of liquid through the spray tube, e.g. due to temperature fluctuations. With indelible contents label in four languages (German, English, French and Spanish) and hazard warning label in accordance with GHS.
Note: The chemical resistance of the spray bottles is limited when aggressive filling media are used. The bottles should therefore be replaced regularly and not used for analytical or critical applications.

500 ml, thread GL 25

Label	Material	Art. No.	Pack Qty.	€
Acetone	PP	**HL51.1**	1	8,25
Dist. water	LDPE	**HL52.1**	1	8,25
Ethanol	LDPE	**HL54.1**	1	8,25
Isopropanol	LDPE	**HL55.1**	1	8,25
Methyl ethyl ketone (MEK)	PP	**PY44.1**	1	8,35

1000 ml, thread GL 32

Label	Material	Art. No.	Pack Qty.	€
Acetone	PP	**HL57.1**	1	9,95
Dist. water	LDPE	**HL58.1**	1	9,95
Ethanol	LDPE	**HL59.1**	1	9,95
Isopropanol	LDPE	**HL61.1**	1	9,65

Wash bottles

Wash bottles

Made of **LDPE**, transparent. Screw cap and spray tube with elongated tip made of **PP**.

Volume (ml)	Thread GL	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
50	18	73	37	**XY89.1**	1	3,90
100	18	95	43	**XY90.1**	1	4,10
250	25	135	58	**XY91.1**	1	4,50
250	45	146	58	**XY92.1**	1	4,95
500	25	180	74	**XY93.1**	1	5,90
500	45	166	76	**XY94.1**	1	6,25
1000	32	221	92	**XY95.1**	1	6,95
1000	63	226	91	**XY96.1**	1	8,25

A 121 °C

Screw caps

With integrated lip seal, leak-proof. Autoclavable.

Made of **PP**

Thread	Art. No.	Pack Qty.	€
GL 18	**YA32.1**	24	14,55
GL 25	**YA33.1**	12	7,30
GL 32	**YA34.1**	12	8,55
GL 40	**YA35.1**	12	14,55
GL 45	**YA36.1**	12	14,60
GL 52	**YA37.1**	12	15,45
GL 56	**YA38.1**	12	15,70
GL 63	**YA39.1**	12	16,65

Made of **PFA**

Thread	Art. No.	Pack Qty.	€
GL 18	**YA40.1**	1	5,50
GL 25	**YA41.1**	1	9,90
S 28	**YA42.1**	1	24,55
S 40	**YA43.1**	1	29,20

Rotilabo®-wash bottles

Made of **LDPE**. Natural coloured.

Volume (ml)	Height without suction (mm)	∅ (mm)	Art. No.	Pack Qty.	€
250	145	60	**5330.1**	1	4,65
500	180	75	**5331.1**	1	5,35
1000	230	100	**5332.1**	1	7,00

Rotilabo®-wash bottles-set

Three wash bottles. Volumes 250, 500 and 1000 ml.

Art. No.	Pack Qty. (assortment)	€
5333.1	1	13,45

Rotilabo®-wash bottles

Made of **LDPE**, coloured. Screw cap and spray tube made of **PP**. GL 25 thread. Precision jet and optimised medium backflow through fine tip of spray tube. Easy identification thanks to selection of differently coloured bottled.

Volume 250 ml, outer ∅ 58 mm, bottle height 135 mm.

Colour	Art. No.	Pack Qty.	€
red	**APK1.1**	1	5,60
green	**APK2.1**	1	5,60
yellow	**APK3.1**	1	5,60
blue	**APK4.1**	1	5,60

Volume 500 ml, outer ∅ 75 mm, bottle height 180 mm.

Colour	Art. No.	Pack Qty.	€
red	**6530.1**	1	5,90
green	**6533.1**	1	5,90
yellow	**6536.1**	1	5,90
blue	**6539.1**	1	5,90

Rotilabo®-wash bottle assortment

Consisting of 4 wash bottles **volume 500 ml** in red, green, yellow and blue.

Art. No.	Pack Qty. (assortment)	€
APK5.1	1	21,45

Wash bottles

Wash bottles

By Nalgene®. Type 2422. Made of **LDPE**. Srew cap and suction made of PP. Coloured caps enable easy identification of contents.
Leakproof, because the cap and suction tube were moulded in one piece. Capacity 500 ml.

Colour	Art. No.	Pack Qty.	€
yellow	**K665.1**	1	8,05
green	**K667.1**	1	8,05
red	**K668.1**	1	8,05
blue	**K666.1**	1	8,05

Wide neck wash bottles

By Nalgene®. Type 2402 (transparent) or DS 2408 (red). Made of **LDPE**. With PP screw cap. Wide neck opening for fast and easy filling. Intergrated nozzle to ensure total emptying of bottle. With leakproof top.

Colour	Volume (ml)	Cap ∅ (mm)	Art. No.	Pack Qty.	€
transparent	125	24	**C464.1**	6	26,80
transparent	250	38	**C465.1**	4	21,40
transparent	500	38	**C466.1**	4	24,70
transparent	750	38	**C467.1**	4	35,45
transparent	1000	43	**C468.1**	2	19,25
red	250	38	**K669.1**	1	13,45
red	500	38	**K670.1**	1	21,35

Wash bottles

Made of **PE**, with bent ascending pipe and removable spray nozzle.

Volume (ml)	∅ (mm)	Art. No.	Pack Qty.	€
50	35	**Y767.1**	1	2,65
100	43	**Y768.1**	1	2,65
250	60	**Y769.1**	1	3,55
500	75	**Y770.1**	1	3,90
1000	95	**Y771.1**	1	5,20

A 121 °C

FEP-wash bottles

By Nalgene®. Type 2403. Made of **FEP**. Suction tube and screw cap made of ETFE. Excellent chemical resistance. Enable contamination-free working during trace element analysis. **Leakproof**, because the cap and suction tube were moulded in one piece. Free from phthalate. Autoclavable.

Volume (ml)	Art. No.	Pack Qty.	€
125	**K671.1**	1	91,40
250	**K672.1**	1	141,90
500	**K673.1**	1	173,10
1000	**K674.1**	1	227,90

Rotilabo®-wash bottles

Made of **PE**. The intergrated nozzle is robust and moulded in one piece. Removeable screw cap. Bottle can be emptied completely.

Volume (ml)	L x W x H (mm)	Art. No.	Pack Qty.	€
250	90 x 60 x 140	**Y801.1**	1	4,65
500	96 x 65 x 178	**Y802.1**	1	5,05

▶ Chemical Resistance of Plastics, table see page 6

Dropper bottles

DURAN WHEATON KIMBLE

Dropper bottles, with rubber sucker

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

Clear glass

Volume (ml)	Height (mm)	Art. No.	Pack Qty.	€
50	79	**T930.1**	10	80,75
100	105	**T931.1**	10	89,85

Brown glass

Volume (ml)	Height (mm)	Art. No.	Pack Qty.	€
50	79	**T932.1**	10	84,20
100	105	**T933.1**	10	97,30

Spare parts for glass dropper bottles

Type	Art. No.	Pack Qty.	€
Spare pipettes for 50 ml bottles	**T934.1**	10	39,60
Spare pipettes for 100 ml bottles	**T935.1**	10	41,40
Spare rubber sucker	**T936.1**	10	6,95

High breast bottles with pipette

Made of clear or brown glass. Complete with clear glass pipette, suction cup with PP stopper with standard ground joint.

Clear glass

Volume (ml)	Height (mm)	NS	Art. No.	Pack Qty.	€
50	77	14/15	**TT98.1**	10	102,15
100	103	14/23	**TT99.1**	6	93,55
250	131	19/26	**TX00.1**	10	138,70

Brown glass

Volume (ml)	Height (mm)	NS	Art. No.	Pack Qty.	€
50	77	14/15	**TX01.1**	10	117,20
100	103	14/23	**TX02.1**	6	99,90
250	131	19/26	**TX03.1**	10	164,50

Dropper bottles, LDPE

By Nalgene®. Made of **LDPE**, stopper made of **PP**, dropper tip made of **LDPE**. Good chemical resistance. Ideal for small culture volumes. Precise single drop release. Drop size 40 µl (aqua dest). **Leakproof.**

① **Type 2751, white bottles and lids.** Suitable for UV-sensitive samples.

Volume (ml)	Height (mm)	Art. No.	Pack Qty.	€
4	41	**HX22.1**	25	41,10
8	52	**HX23.1**	25	42,50
15	62	**HX24.1**	25	42,95

② **Type 2752, transparent bottles, colour-coded lids** (white, red, green, blue, yellow).

Volume (ml)	Height (mm)	Art. No.	Pack Qty.	€
4	41	**PP10.1**	25	37,45
8	52	**PP11.1**	25	39,05
15	62	**PP12.1**	25	41,00

Dropper bottles, LDPE

Made of **LDPE**, transparent. Supplied with dropping closure.

Volume (ml)	Thread	Art. No.	Pack Qty.	€
50	GL 18	**6541.1**	6	10,35
100	GL 18	**6542.1**	6	11,50
250	GL 25	**6544.1**	4	11,80
500	GL 25	**6545.1**	4	13,45
1000	GL 32	**6548.1**	4	17,55

Spare dropper lids

Made of **HDPE**.

Thread	Art. No.	Pack Qty.	€
GL 18	**YA52.1**	24	29,15
GL 25	**YA53.1**	12	17,65
GL 32	**YA54.1**	12	18,25

▶ Dropper bottles made of PTFE see page 120

Dropper bottles

Dropper bottles, PE

Made of **PE**, translucent, with red screw cap, dropper pipette and suction cup.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
50	35 x 96	**TT69.1**	10	28,95
100	43 x 115	**TT70.1**	10	33,35
250	60 x 140	**TT71.1**	10	37,10
500	75 x 180	**TT72.1**	10	40,85

A 121 °C

Dropper bottles, Typ DS2420

By Nalgene®. Model DS2420. Bottle made of **polypropylene copolymer**, dropper cap and cap made of **PP**. For dispensing sterile aqueous media. Also autoclavable when full with tip open. Tip sealing cap is combined with the screw cap and therefore cannot be lost. Autoclavable.

Volume (ml)	Art. No.	Pack Qty.	€
125	**ATL3.1**	6	44,85
250	**ATL4.1**	6	48,40

Narrow-neck, four-edged bottles

By Bürkle. Made of **HDPE**, screw cap made of LDPE. With labelling area. For packing and storing liquids.

With screw cap, leakproof

Volume (ml)	Dimensions L x W x H (mm)	Thread (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
100	41 x 34 x 113	18	13	**KA91.1**	10	8,85
250	51 x 44 x 160	25	17,5	**KA92.1**	10	11,80
500	68 x 53 x 182	25	17,5	**KA93.1**	10	14,45
1000	90 x 64 x 230	25	17,5	**KA94.1**	10	21,40

With dropper-lid made of PVC

Volume (ml)	Dimensions L x W x H (mm)	Thread (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
100	41 x 34 x 113	18	13	**KA95.1**	10	9,15
250	51 x 44 x 160	25	17,5	**KA96.1**	10	12,40
500	68 x 53 x 182	25	17,5	**KA97.1**	10	14,85
1000	90 x 64 x 230	25	17,5	**KA98.1**	10	23,45

Dosing bottles

Made of **PE** with PMP measuring cup. Adjustable measurement units, graduated from 5 to 50 ml. Accurate to within 2 %. Measuring cup filled by putting pressure on bottle. Surplus amounts flow back automatically. Filling tube can be sealed.

Volume (ml)	Art. No.	Pack Qty.	€
250	**6996.1**	1	11,80
500	**7009.1**	1	12,40
1000	**7024.1**	1	14,65

▶ Pasteur pipettes see page 427

Spray bottles

Spray diffusers

By Rixius. Made of brown glass. Volume approx. 20 ml, ∅ 29 mm, overall height with spray nozzle 98 mm. With GL 18 thread. Spray nozzle complete with cap and tube made of PE. Approx. 0.05 ml spray volume per pump action.

Art. No.	Pack Qty.	€
N145.1	3	8,55

Pump spray flasks

Made of **PP**. Trigger-operated, with adjustable spray jet. Colour white.

Volume (ml)	Art. No.	Pack Qty.	€
400	**0499.1**	1	8,80
850	**0500.1**	1	9,25

Spray bottle Turn'n'Spray

By Bürkle. Made of **LDPE**, parts in contact with media are made of PP, PE, silicon and stainless steel. Allows uninterrupted spraying from all positions, including overhead. Nozzle is continuously adjustable, nozzle ∅ 0.6 mm. Spray quantity per stroke: 1.2 ml ±0.1.

Volume (ml)	Height including cap (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
250	220	18	**PX90.1**	1	8,55
500	240	18	**PX91.1**	1	9,05
1000	295	21	**PX92.1**	1	9,65

Pressure sprayer

By Bürkle. With short spray nozzle. The hand pump can generate a pressure of up to 4 bar inside the container.
Then simply press the button to spray.

Ideal for following applications: disinfecting, cleaning, plant protection, thin-layer chromatography, technical and sanitary needs.

- Parts in contact with media: PP, PE, PA glass fiber reinforced, V2A, FKM
- Nozzles-∅ 0.6 mm, infinitely adjustable
- Spray lance (length 30 cm) are optionally available

Volume (ml)	Bottle ∅ (mm)	Height including cap (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
1500	142	315	45	**EP63.1**	1	38,20

Accessories:

Spray lance, length 30 cm	**EP64.1**	1	24,00

Spray bottles

Bottle made of **PE**, pump spray nozzle made of **PP**, transparent.
The protective cap stops the pump from being pressed accidentally and also acts as a dust protection cap.

Volume (ml)	Bottle ∅ (mm)	Height with protective cap (mm)	Art. No.	Pack Qty.	€
50	35	110	**EP66.1**	5	11,00
100	37	161	**EP67.1**	2	4,15
250	50	202	**EP68.1**	2	4,25

- ▶ TLC spray flasks see page 549
- ▶ TLC atomisers made of glass see page 549
- ▶ TLC finished plates and SPE columns see chapter Chromatography!
- ▶ UV-lamps see page 802
- ▶ Disposable capillary pipettes see page 426

Rotilabo®-deep freeze boxes

Made of natural-coloured **PE**, (box HDPE, lid LDPE). Temperature stable from -40 to +95 °C. Polished. Rectangular, slightly conical.
With notched lid. Stackable, matching. Suitable for foodstuffs.

Volume (ml)	L x W x H (mm)	Art. No.	Pack Qty.	€
500	103 x 103 x 64	**1597.1**	5	12,50
1000	208 x 103 x 64	**1598.1**	5	20,40
1000	103 x 103 x 127	**1599.1**	5	17,75
1500	208 x 103 x 94	**A272.1**	5	26,20
2000	208 x 208 x 64	**A274.1**	5	34,85
2000	255 x 103 x 94	**A273.1**	5	30,75
3300	208 x 208 x 94	**A275.1**	5	37,45

Rotilabo® shaker jars

Made of **PP**, translucent, solid design. Blue clip-on lid made of LDPE with integrated lid opening (∅ 44 mm) and flip-top closure.
Temperature resistant from -40 bis +95 °C.
Dishwasher and microwave safe. Suitable for foodstuffs.

Volume (ml)	L x W x H (mm)	Art. No.	Pack Qty.	€
1200	170 x 95 x 145	**HEL8.1**	5	38,50
1800	170 x 95 x 205	**HEL9.1**	4	35,30

Rotilabo®-preservation jars

Made of **PP**, translucent and dimensionally stable.
With blue snap-on lid made of LDPE. For storing granulates, powders and paste-like substances. Temperature stable from -40 to +85 °C.
Dishwasher and microwave safe. Suitable for foodstuffs.

Volume (ml)	L x W x H (mm)	Art. No.	Pack Qty.	€
300	110 x 110 x 44	**HEK2.1**	10	17,10
500	150 x 100 x 50	**HEK3.1**	10	23,90
500	230 x 140 x 32	**HEK4.1**	10	40,15
1000	180 x 120 x 65	**HEK6.1**	10	31,75
1000	235 x 140 x 52	**HEK7.1**	10	47,10
1500	230 x 150 x 65	**HEK8.1**	10	51,10
2000	280 x 180 x 65	**HEK9.1**	5	41,15
2500	250 x 158 x 92	**HEL0.1**	5	31,90
3000	280 x 180 x 80	**HEL1.1**	5	46,90
4000	280 x 180 x 115	**HEL2.1**	5	48,30

Multi-purpose containers

By Nalgene®. Type 5700. Made of **SAN.** Lid made of PE. Stackable.
Lid with safety catch. The rounded edges make cleaning easier. Excellent for storing granulates, powders and small parts. The shape of the 500-ml-container makes it ideal for electrophoresis gels. Not dishwasher safe.

Volume (ml)	L x W x H (mm)	Art. No.	Pack Qty.	€
325	129 x 75 x 59	**K677.1**	4	48,30
500	191 x 156 x 37	**K678.1**	2	40,35
1000	127 x 73 x 175	**K680.1**	2	38,70
2000	191 x 154 x 94	**K681.1**	1	28,30

Rotilabo®-storage containers

With lid. Made of 18/10 stainless steel. Ideal for storing solid and liquid substances. Suitable for foodstuffs. 7.5 l containers have folding handles on 2 sides.

Volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
0,46	80 x 80 x 80	**9502.1**	1	38,95
2,5	140 x 140 x 140	**9506.1**	1	79,05
7,5	200 x 200 x 200	**9509.1**	1	138,70

Rotilabo®-stainless steel deep-freeze boxes

Made of 18/10 stainless steel, matt polished, stackable.
Suitable for foodstuffs. Autoclavable.
Supplied without lid. Please order separately.

Volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
0,5	95 x 95 x 60	**YH09.1**	1	17,60
1	195 x 95 x 60	**YH10.1**	1	24,80
2	195 x 195 x 60	**YH11.1**	1	32,80

Lid for Rotilabo®-stainless steel deep-freeze boxes

For deep-freeze boxes	Art. No.	Pack Qty.	€
YH09.1	**YH12.1**	1	9,35
YH10.1	**YH13.1**	1	11,70
YH11.1	**YH14.1**	1	16,60

Rotilabo®-storage tins

Made of stainless steel 18/10, high-gloss. Odour and moisture proof. Suitable for foodstuffs.

With hinged lid made of acrylic glass and silicon seal, **leak-proof**.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
700	125 x 95	**YX66.1**	1	15,25
1000	125 x 125	**YX67.1**	1	17,75
1250	125 x 155	**YX68.1**	1	19,65
1700	125 x 195	**YX69.1**	1	21,45

With slip lid made of stainless steel with acrylic glass window.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
500	80 x 110	**YX70.1**	1	10,70
800	90 x 125	**YX71.1**	1	11,85
2000	125 x 170	**YX72.1**	1	18,20
4500	175 x 210	**YX73.1**	1	19,50

Rotilabo®-wide-neck cans

Made of **HDPE.** With press-in plugs and screw cap. Ideal for storing powders or granulated substances. Large wide-neck opening enables easy filling and cleaning. Suitable for foodstuffs.

Volume (ml)	Neck inner ∅ (mm)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
70	36	50	60	**HT55.1**	100	96,55
120	36	56	71	**HT56.1**	100	104,30
250	50	69	94	**HT57.1**	50	51,85
500	70	86	107	**HT58.1**	50	67,30
1000	85	111	128	**HT59.1**	20	36,70
2000	87	111	235	**HT60.1**	10	26,25

- ▶ Stainless steel beaker see page 12
- ▶ Stainless steel measuring beaker see page 16

Wide neck containers

By Nalgene®. Top made of **PP**. Large wide neck opening for easy filling. No rims where material can accumulate.

- Cans 125 ml to 1000 ml have a recess in the lid and are therefore stackable
- Sizes 125 ml and 250 ml are suitable for mixers with a Mason-thread

Do not use for the shipment of liquids. Autoclavable.

PC. Clear, shock-proof, non-toxic. Excellent for storage in refrigerators and cooling chambers.
Temperature stable from -135 to +130 °C.

Volume (ml)	∅ (mm)	Cap ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
15	32	38	46	**K682.1**	4	13,95
30	36	43	48	**K683.1**	4	17,10
60	48	53	48	**K684.1**	4	19,25
125	69	70	74	**K685.1**	4	32,15
250	66	70	119	**K686.1**	4	36,50
500	117	120	86	**K687.1**	4	57,00
1000	112	120	142	**K688.1**	4	67,55

PMP. Transparent. Good chemical resistance.
Especially ideal for permanent storage. Formaldehyde loss is only approx. 2 % per year. Suitable for foodstuffs.

Volume (ml)	∅ (mm)	Cap ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
60	48	53	48	**K693.1**	4	17,75
125	69	70	74	**K694.1**	4	30,05
250	66	70	119	**K695.1**	4	34,35
500	117	120	86	**K696.1**	4	55,90
1000	117	120	145	**K697.1**	4	64,45

PP. Transparent. Good chemical resistance. Suitable for foodstuffs.
Temperature stable from 0 to +130 °C.

Volume (ml)	∅ (mm)	Cap ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
15	32	38	46	**K698.1**	12	24,65
30	36	43	48	**K699.1**	12	25,75
60	48	53	48	**K700.1**	12	27,55
125	64	70	74	**K701.1**	12	42,70
250	66	70	119	**K702.1**	6	27,60
500	117	120	86	**K703.1**	6	38,65
1000	117	120	145	**K704.1**	6	56,25

▶ Chemical Resistance of Plastics, table see page 6

▶ For autoclaving information see page 5

Rotilabo®-wide neck cans

Made of **hard PVC,** clear or amber or clear **PETG**. Square. Screw-on cap made of PP with PE-foam insert. Excellent for packing and storing liquids and solids. Wide neck enables easy filling. Suitable for foodstuffs.

PVC clear

Volume (ml)	Side length (mm)	Neck inner ∅ (mm)	Height without cap (mm)	Art. No.	Pack Qty.	€
50	38	23	60,5	**H312.1**	25	20,35
100	46	31	71	**H313.1**	24	22,60
200	59,5	41	88,5	**H314.1**	14	20,40
300	67,5	41	95	**H315.1**	15	22,15
500	80,5	54	108	**H316.1**	10	22,60
750	91,5	69	120	**H317.1**	10	26,35
1000	97,5	69	144	**H318.1**	8	23,25
2000	122	69	187	**H319.1**	4	16,70

PVC amber

Volume (ml)	Side length (mm)	Neck inner ∅ (mm)	Height without cap (mm)	Art. No.	Pack Qty.	€
50	38	23	60,5	**H320.1**	25	22,40
100	46	31	71	**H321.1**	24	23,15
200	59,5	41	88,5	**H322.1**	14	23,15
300	67,5	41	95	**H323.1**	15	24,50
500	80,5	54	108	**H324.1**	10	24,95
750	91,5	69	120	**H325.1**	10	28,60
1000	97,5	69	144	**H326.1**	8	24,95
2000	122	69	187	**H327.1**	4	19,90

PETG

Volume (ml)	Side length (mm)	Neck inner ∅ (mm)	Height without cap (mm)	Art. No.	Pack Qty.	€
50	38	23	60,5	**H328.1**	25	25,30
100	46	31	71	**H329.1**	24	27,85
200	59,5	41	88,5	**H330.1**	14	28,50
500	80,5	54	108	**H331.1**	10	29,55
1000	97,5	69	144	**H332.1**	8	31,10
2000	122	69	187	**T408.1**	4	23,65

▶ Wide-necked jars see page 32

Sample tubs

By Nalgene®. Made of **LDPE**, transparent. With friction-fit, snap closure. Versatile - can be used as sample containers, beakers for pH measurements, weighing tubs etc. Temperature stable from -100 to +80 °C.

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
5	23,6	24,9	**ATK3.1**	12	10,05
12	27,1	35,6	**ATK4.1**	12	10,65
18	27,1	52,6	**ATK5.1**	12	13,95
28	27,1	84,6,	**ATK6.1**	12	17,55
50	37,3	70,9	**ATK7.1**	12	20,40
75	37,3	107,3	**ATK8.1**	12	26,85

Sample tins

Made of **PP**. With screw cap made of **PP**.
For sampling, transporting and storing samples. Suitable for foodstuffs.

Volume (ml)	Thread GL	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
30	40	54	38	**YA17.1**	10	49,20
60	40	90	38	**YA18.1**	10	63,35
90	56	62	54	**YA19.1**	10	77,35
180	56	112	54	**YA20.1**	10	91,15

Rotilabo®-screw cap bottles

Made of **HDPE**. Leakproof. Ideal for storing liquids or solids.
Extremely thick-walled.

Volume (ml)	Outside ∅ (mm)	Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
5	21	17	30	**K760.1**	10	21,30
10	21	17	52	**K761.1**	10	24,20
30	35	31	53	**K762.1**	10	27,35
60	35	31	92	**K763.1**	10	31,30
90	55	50	62	**K764.1**	5	20,45
180	55	50	108	**K765.1**	5	24,85

Rotilabo®-sample tins with snap-on lid

Made of **PP**, with attached lid. Lid can be affixed vertically.
Sterile (γ-sterilized) or non-sterile. Has labelling area and is graduated by 10 ml steps (except Art. No. EP22.1). Leakproof.
Temperature stable from -20 to +121 °C. Autoclavable with open lid.

Non-sterile

Volume (ml)	Design	Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
45	non-sterile	29	85	**EP22.1**	650	92,35
50	non-sterile	31	78	**EP24.1**	650	97,85
90	non-sterile	43	80	**EP26.1**	350	75,15
300	non-sterile	75	88	**EP28.1**	240	113,95

Sterile

Volume (ml)	Design	Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	sterile	31	78	**EP25.1**	650	112,90
90	sterile	43	80	**EP27.1**	350	91,35
300	sterile	75	88	**EP29.1**	240	128,80

Rotilabo®-round containers

Lid of **PE**. For powders, pastes, granulates and other bulk materials.
With tamper evident lid. HDPE tubs with snap-on lid, PP tubs with slip-on lid.
Suitable for foodstuffs.

Volume (ml)	∅ (mm)	Height (mm)	Material	Art. No.	Pack Qty.	€
30	35	54	HDPE	**5553.1**	10	4,90
75	45	67	HDPE	**5602.1**	10	6,05
150	64	67	HDPE	**5623.1**	10	10,25
300	64	110	HDPE	**5642.1**	10	12,15
750	108	96	PP	**5657.1**	10	30,65
1250	108	155	PP	**5694.1**	5	19,25

Screw cap containers

Made of **PP**. Cap made of **PE**. For storing solid samples.
Temperature stable from 0 to +100 °C.
Free of undercuts, fully drainable.

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
250	104	50	**XY70.1**	1	4,60
500	104	100	**XY71.1**	1	5,70
1000	126	126	**XY72.1**	1	8,10

SpecTainer™-sample vials

Made of highly transparent **PP**, screw cap made of **PE**.
Sterile or non-sterile. For storage or transportation of liquids, pasty and solid samples. Shatterproof, stackable and leakproof.
Tamper evident closure guarantees the safety of the contents: a security tab breaks when unscrewing the cap, indicating that the container has been opened.

Temperature stable from -90 to +100 °C. Contains no plasticisers, release agents and latex. CE marking in accordance with IVD.

Non-sterile, lid colour yellow

Volume (ml)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
60	48	62	**AYT6.1**	500	124,70
90	58	62	**AYT7.1**	400	116,10
120	58	78	**AYT8.1**	300	95,75

Sterile, lid colour turquois

Volume (ml)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
60	48	62	**AYT9.1**	500	134,40
90	58	62	**AYX0.1**	400	123,65
120	58	78	**AYX1.1**	300	100,30

Lid inserts

Made of **PP**. For colour-coded, easy identification of reaction vials (Art. No. CK47.1 ff, CK57.1 ff and ATC4.1) or microscope slide tubs with tamper evident closure (Art. No. KL89.1), as well as sample tubs (Art. No. AYT6.1ff und HYE7.1ff).

Colour	Art. No.	Pack Qty.	€
blue	**CK72.1**	500	14,65
yellow	**CK73.1**	500	14,65
red	**CK74.1**	500	14,65
white	**CK75.1**	500	14,65
green	**CK76.1**	500	14,65
assorted colours	**CK77.1**	500	14,65

SecurTainer™ III sample tubs

Made from transparent PP with screw cap made from PE. For storage or transportation of liquids, paste-like and solid samples. Shatterproof, stackable and leakproof.
Temperature stable from -90 to +100 °C. CE marking according to IVD.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
20	35 x 54	**HYE7.1**	500	97,35
40	48 x 54	**HYE8.1**	500	112,90
60	48 x 64	**HYE9.1**	500	118,25
90	56 x 63	**HYH0.1**	400	97,30
120	56 x 78	**HYH1.1**	300	92,10

Multipurpose beakers with screw cap

Made of **PP**. Transparent. **With CE identification in acc. with 98/79/EC**.

Non-sterile

Volume (ml)	∅ x H (mm)	Graduations (ml)	Art. No.	Pack Qty.	€
30	43 x 46	-	**YP04.1**	1000	89,80
60	43 x 65	10	**YP05.1**	600	58,60
120	56 x 72	25	**YP06.1**	500	52,25
200	64 x 81	-	**YP07.1**	200	77,40

Sterile, individually packed

Volume (ml)	∅ x H (mm)	Graduations (ml)	Art. No.	Pack Qty.	€
30	43 x 46	-	**YP08.1**	1000	117,20
60	43 x 65	10	**YP09.1**	500	64,45
120	56 x 72	25	**YP10.1**	250	63,40
200	64 x 81	-	**YP11.1**	150	63,40

Cryo tins with screw cap

By Nalgene®. Type 5005. **Sterile.** Made of **PP**, lid made of **HDPE**.
Volume 15 ml.
For storing solid samples. Use in freezers and/or deep freezers. Pyrogen-free and noncytotoxic. CE marking in acc. with IVD Guideline 98/79/EC.
Dimensions: ∅ 33 x H 47 mm.

Art. No.	Pack Qty.	€
PP19.1	75	99,90

Multipurpose tins

By Greiner Bio-One. **Sterile.** Made of **PS**, transparent and liquid-tight.
White screw cap made of **HDPE**. Temperature stable from -20 °C to +60 °C.
For universal laboratory use and use for non-human and non-medical samples.

Nominal capacity (ml)	Working capacity (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
60	50	40 x 60	**HYH7.1**	300	126,85

Glass jars

Made of DURAN®. High temperature and chemical resistance.
Autoclavable.
Delivery incl. lid.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
75	60 x 40	**CCL2.1**	1	32,20
175	80 x 50	**CCL3.1**	1	38,80
325	100 x 60	**CCL4.1**	1	48,40
1000	150 x 80	**CCL5.1**	1	88,30

Multipurpose tins

By Greiner Bio-One. Made of **PS**, transparent, liquid-tight.
Screw cap made of metal. Temperature stable from -20 °C to +60 °C.
For universal laboratory use for non-human and non-medical samples.

Nominal capacity (ml)	Working capacity (ml)	Design	∅ x H (mm)	Art. No.	Pack Qty.	€
100	80	non-sterile	45 x 77	**HYK0.1**	8 x 20	108,60
175	150	non-sterile	49 x 107	**HYK1.1**	6 x 20	127,95
175	150	**sterile**	49 x 107	**HYK2.1**	6 x 20	151,60
290	260	non-sterile	58 x 121	**HYK3.1**	4 x 12	47,25

Rotilabo®-aluminium cans

Made of 99.5 % pure aluminium, uncoated. Screw-on lids have integral rubber seal. Can be deep-frozen to max. -196 °C. Autoclavable.

Filling capacity (ml)	Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
2	3	23	14,5	**1083.1**	100	107,00
10	15	29	30,0	**1084.1**	100	164,50

Rotilabo®-sample vials

Made of **PTFE**. Autoclavable, inert. Temperature stable from -200 to +260 °C. Thick-walled version with conical base.
Delivery incl. closures.

Dropper bottles

Volume (ml)	Outer ∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
25	80 x 33	25	**LT80.1**	1	42,60
50	100 x 43	25	**LT81.1**	1	48,40

Vials

Volume (ml)	Outer ∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
25	64 x 33	25	**LT82.1**	1	66,65
50	78 x 43	31	**LT83.1**	1	80,65

Rotilabo®-wide neck bottles

Made of **PTFE**. Autoclavable, inert. Temperature stable from -200 to +260 °C.Thick-walled version, stackable.

Volume (ml)	∅ x H (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
15	34 x 34	26,0	**LT85.1**	1	25,55
30	34 x 62	26,0	**LT86.1**	1	31,75
60	60 x 46	47,0	**LT87.1**	1	39,60
120	72 x 62	54,0	**LT88.1**	1	53,25
240	72 x 100	60,0	**LT89.1**	1	64,30
360	90 x 95	73,0	**LT90.1**	1	91,95
480	90 x 125	73,0	**LT91.1**	1	106,35
1000	110 x 160	92,0	**LT92.1**	1	160,20
2200	134 x 260	110,6	**LT93.1**	1	310,70

PFA tins

Made of **PFA**, highly transparent. With labelling space and seal, leak-proof. Cryo and microwave safe. Autoclavable.

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

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
60	46,8	50,8	**YY50.1**	1	63,40
120	53,2	66,0	**YY51.1**	1	98,90
240	96	75,4	**YY52.1**	1	131,15
360	90,4	95	**YY53.1**	1	174,15
480	94,3	65,2	**YY54.1**	1	209,65
1000	150,0	106,7	**YY55.1**	1	387,00

Fluoroplastic sample tins

Made of **PFA**. Highly transparent, with screw cap.

- For sampling, transportation and storage
- Chemically inert to nearly all chemicals
- Hydrophobic and anti-adhesive, extremely smooth surfaces allow easy cleaning
- High purity, ideal for used in trace analysis and for storage of reference solutions
- No memory effect
- Temperature resistant in the range -200 to +250 °C
- Autoclavable

Volume (ml)	Thread GL	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
30	40	54	38	**YA21.1**	1	41,05
60	40	90	38	**YA22.1**	1	50,00
90	56	62	54	**YA23.1**	1	53,55
180	56	112	54	**YA24.1**	1	68,75

Sample beakers

Sample bottles

Made of **PP**, transparent. With snap-on lid made of **LDPE**.
Suitable for foodstuffs.

Volume (ml)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
5	20	25	**YA12.1**	25	25,60
18	22	57	**YA14.1**	25	34,30
50	30	97	**YA15.1**	10	18,15
160	50	110	**YA16.1**	10	21,25

Medical beakers

Made of **PP**. Highly transparent, shatterproof, graduated, 1 ml graduations (from 3 ml upwards). Dimensions: ∅ bottom 27 mm, height 42 mm.
Physiologically safe, biologically inert, heavy metal free.
Delivery without snap-on lid (please order separately).

Volume (ml)	Colour	Art. No.	Pack Qty.	€
30	natural	**PT13.1**	75	3,20
30	blue	**PT14.1**	75	3,20
30	red	**PT15.1**	75	3,20
30	yellow	**PT16.1**	75	3,20
30	green	**PT17.1**	75	3,20

Snap-on lid for medical beakers

Made of **LDPE**, white, ∅ 39 mm.

Art. No.	Pack Qty.	€
PT18.1	75	3,20

NEW

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Multipurpose tubes

By Greiner Bio-One. Made of **PS**, transparent, liquid-tight, with conical base. White screw cap made of **HDPE**. Usable in centrifuges up to 3500 x g. Temperature stable from -20 °C to 60 °C.
For universal laboratory use for non-human and non-medical samples.

Nominal capacity (ml)	Working capacity (ml)	Design	∅ x H (mm)	Art. No.	Pack Qty.	€
30	23	non-sterile	24 x 90	**HYL2.1**	400	97,60
30	23	**sterile**	24 x 90	**HYL3.1**	400	139,75

Rotilabo®-disposable sample beakers

Made of **PP**. Volume 100 ml. With indented graduation on the side for 20, 40, 60, 80 and 100 ml. Dimensions: H 50 mm x ∅ 72 mm (including 5 mm pad). With self-adhesive paper lid.

Art. No.	Pack Qty.	€
5195.1	100	19,50

Sample beakers

Rotilabo®-sample beakers

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

Volume (ml)	Graduation (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
50	5	49 x 57	**HT84.1**	100	42,80
100	10	58 x 72	**HT85.1**	100	47,85
250	10	76 x 90	**HT86.1**	100	62,55
400	20	85 x 108	**HT87.1**	100	67,60
800	50	107 x 133	**HT88.1**	100	105,85
1000	50	115 x 145	**HT89.1**	100	107,20

Multipurpose beakers

By Greiner Bio-One. Beakers made of **PP**, transparent, graduated with writing space, liquid-tight and shatter-proof. Screw cap made of **HDPE**, with tamper-evident band. When the cap is unscrewed, the break-away band is broken, making it obvious that the container has been opened. Temperature stable from -50 °C to +100 °C. For universal laboratory use for non-human and non-medical samples.

Volume (ml)	Design	∅ x H (mm)	Art. No.	Pack Qty.	€
100	non-sterile	61 x 71	**HYH8.1**	300	85,45
100	**sterile**	61 x 71	**HYH9.1**	300	105,85

Multipurpose beakers with screw cap

Made of **PP**. Transparent. **With CE identification in acc. with 98/79/EC.**

Non-sterile

Volume (ml)	∅ x H (mm)	Graduations (ml)	Art. No.	Pack Qty.	€
30	43 x 46	-	**YP04.1**	1000	89,80
60	43 x 65	10	**YP05.1**	600	58,60
120	56 x 72	25	**YP06.1**	500	52,25
200	64 x 81	-	**YP07.1**	200	77,40

Sterile, individually packed

Volume (ml)	∅ x H (mm)	Graduations (ml)	Art. No.	Pack Qty.	€
30	43 x 46	-	**YP08.1**	1000	117,20
60	43 x 65	10	**YP09.1**	500	64,45
120	56 x 72	25	**YP10.1**	250	63,40
200	64 x 81	-	**YP11.1**	150	63,40

Sample beakers

Beakers made of **PP**. Highly transparent, graduated, shatterproof. **Sterile** (assembled, individually packed) or non-sterile (lid enclosed). Physiologically safe, biologically inert, heavy metal free. With labelling area and liquid-impermeable lid.

With snap-on lid
Made of **LDPE**. ∅ 67 x H 69 mm, 25 ml graduations.

Volume (ml)	Lid colour	Design	Art. No.	Pack Qty.	€
125	blue	non-sterile	**PT07.1**	500	52,15
125	red, with spout	non-sterile	**PT08.1**	500	41,40
125	yellow	**sterile**	**PT09.1**	150	69,90

With screw cap
Made of **HDPE**. ∅ 64 x H 70 mm, 20 ml graduations. **Leakproof.**

Volume (ml)	Lid colour	Design	Art. No.	Pack Qty.	€
100	green	non-sterile	**PT10.1**	500	64,10
100	green	non-sterile	**PT11.1**	100	15,95
100	yellow	**sterile**	**PT12.1**	150	47,25

Sample- and shipping containers

Test tubes

With wide mouth spoon for bean-sized samples. Physiologically safe, biologically inert, heavy metal free. Supplied assembled.

With stopper plug
Made of **PS**, cap with sample spoon made of HDPE.
Transparent tube, without graduations.

Volume (ml)	∅ x H (mm)	Design	Art. No.	Pack Qty.	€
16	22 x 75	Flat base, non-sterile	**PT22.1**	1000	100,00

With screw cap
Made of **PP**, cap made of HDPE, spoon made of HIPS. **Radiation sterile** or non-sterile. Transparent tube, without graduations. Overlapping screw cap ensures optimal hygiene when opening, impervious to fluids.

Volume (ml)	∅ x H (mm)	Design	Art. No.	Pack Qty.	€
13	16 x 100	Round base, non-sterile	**PT24.1**	1000	120,40
15	20 x 76	Rim, non-sterile	**PT23.1**	1000	140,85
30	25 x 107	Rim, non-sterile	**PT25.1**	500	91,40
13	16 x 100	Round base, **sterile**	**PT27.1**	100	16,10
15	20 x 76	Rim, **sterile**	**PT26.1**	100	18,85
30	25 x 107	Rim, **sterile**	**PT28.1**	100	24,75

Protective and shipping containers

Made of **PP**, with absorbent pad and print. Secondary packaging for test and stool tubes, optimal protection against external forces. Sample vessels and absorbent pads are easily removable, absorbent pad encloses the sample container and provides additional protection. Autoclavable. Protective containers ∅ 30 mm fit into standard letter boxes with 35 mm slot, protective container PT31.1 is also suitable for shipping standard agar carriers (e.g. Uricult®). Protective container PT30.1 with cap PT37.1 is suitable for Port-a-Cul™-tubes.
Delivery without screw caps (please order separately).

Volume (ml)	∅ x H (mm)	for stool tubes	With caps	Art. No.	Pack Qty.	€
40	30 x 85	PT22.1 PT23.1 PT19.1	PT35.1 or PT36.1 PT35.1 for container ∅ 30 mm	**PT29.1**	500	134,40
60	30 x 126	PT24.1	for container ∅ 30 mm	**PT30.1**	300	96,65
120	44 x 115	PT25.1	PT38.1	**PT31.1**	250	111,80

Screw cap for protective and shipping containers

Made of **PP**.

For containers ∅ (mm)	Type	Art. No.	Pack Qty.	€
30	Standard	**PT35.1**	500	29,05
30	With base for tube ∅ 16 mm	**PT36.1**	300	20,35
30	With inner attachment ∅ 16 mm	**PT37.1**	300	24,35
44	With base for tube ∅ 25 mm	**PT38.1**	250	18,85

Sputum containers

Made of **PS**, cap made of HDPE. Transparent vessel, without graduations. Flat base. Physiologically safe, biologically inert, heavy metal free.

Sputum tube with stopper plug
Supplied assembled.

Volume (ml)	∅ x H (mm)	Design	Art. No.	Pack Qty.	€
16	22 x 62	non-sterile	**PT19.1**	1000	97,85

Sputum tub with screw cap
Delivery assembled, **sterile** or non-sterile.

Volume (ml)	∅ x H (mm)	Design	Art. No.	Pack Qty.	€
24	70 x 23	non-sterile	**PT20.1**	200	49,35
24	70 x 23	**sterile**	**PT21.1**	200	63,25

Shipping containers for sputum container

Made of **HDPE**.

Art. No.	Pack Qty.	€
PT39.1	100	38,70

Uritainer™-canisters

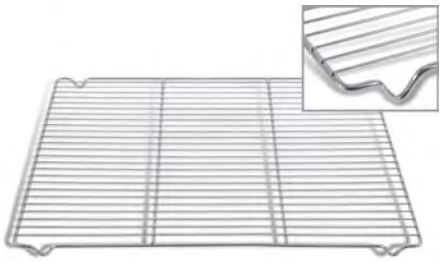
By Simport. Made of **HDPE**. Outer-∅ wide-neck opening 79 mm. Lid made of PP. Push-Pull valve enables simple, controlled and drip-proof pouring. Graduated, graduation 50 ml. **CE-marking in accordance with MPG.**

① **With vertical and horizontal graduation**

Volume (l)	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
3	115 x 245 x 160	**HT07.1**	1	4,25
4	115 x 245 x 201	**HT08.1**	1	4,25

② **With vertical graduation**

Volume (l)	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
2,5	133 x 133 x 232	**HT09.1**	1	4,25
3,5	133 x 133 x 295	**HT10.1**	1	4,25



A 121 °C

Rotilabo®-draining grid

Made of stainless steel 18/10, wire thickness 2.5 mm, frame wire 6 mm, heavy duty. Autoclavable.

L x W x H (mm)	Art. No.	Pack Qty.	€
440 x 310 x 20	**YX63.1**	1	28,95
470 x 310 x 22	**YX64.1**	1	31,10
590 x 390 x 26	**YX65.1**	1	38,50

A 121 °C

Rotilabo®-draining mat

Made of **PP**, black, variable assembly, hole size: 2 x 2 cm, 4 mm surface clearance allows unobstructed drainage of drip water.
Rugged quality. Weight 57 g. Autoclavable.

L x W x H (mm)	Art. No.	Pack Qty.	€
315 x 210 x 8	**YX62.1**	1	3,15

Lab sink mat

Made of soft **PVC** to prevent glass breakage when washing. Round profile prevents splashing of running water. The smooth surface prevents dirt from settling. Weight of mat is sufficient to insure secure position in flowing water. An additional advantage: Magnetic rods do not slip through mesh easily into drain pipe. Dimensions: L 750 x W 450 x H 15 mm.
Width of profile 8 mm. Width of web 40 mm.

Art. No.	Pack Qty.	€
C374.1	1	64,40

Rotilabo®-drying racks

Made of **PE** coated metal. Can be attached to wall or used as a stand. Come with 20 mm high drip tray and plastic caps on base feet.
Dimensions: W 420 x D 170 mm.

Design	Height (mm)	Art. No.	Pack Qty.	€
12 pins and 11 arched pins	300	**N144.1**	1	71,95
24 pins and 20 arched pins	610	**N143.1**	1	92,45
51 pins (s. pic.)	610	**0516.1**	1	89,25
60 pins and 5 arched pins	610	**N142.1**	1	89,25
Spare drip tray	20	**C593.1**	1	11,80

Draining racks

Made of **PVC**, slot-in pegs made of **PP**. For use on table or bench, usable on both sides. Sturdy and shatterproof. With removable collecting tray.
Delivery incl. slot-in pegs and wrenches.

W x H (mm)	Number of 60 mm pegs	Number of 100 mm pegs	Number of 150 mm pegs	Art. No.	Pack Qty.	€
400 x 400	5	26	2	**XY74.1**	1	181,70
500 x 500	10	39	4	**XY75.1**	1	210,70
600 x 600	15	56	6	**XY76.1**	1	237,60

Replacement slot-in pegs

Made of **PP**. Suitable for 1841.1ff draining boards and XY74.1ff draining racks.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
60	6	**XY77.1**	50	58,95
100	10	**XY78.1**	56	59,70
150	12	**XY79.1**	50	76,00

Lab dishes and tubs

Draining rack

Made of **PS**, with 72 slot-in pegs (∅ 15 x L 95 mm) which can be inserted randomly. The peg slots are sealed at the back and therefore leakproof. With drainage channel and tube (L 300 mm, outer ∅ 12 mm).
For wall mounting. Dimensions: L 630 x W 450 x D 110 mm.
Delivery incl. slot-in pegs and fixing hardware.

Art. No.	Pack Qty.	€
CT39.1	1	91,40

Accessories for draining rack

Slot-in pegs made of **PS**.

Type	Bar-∅ x L (mm)	Art. No.	Pack Qty.	€
For small ∅ vessels	6 x 95	**CT40.1**	11	12,70
Standard	15 x 95	**TT76.1**	72	38,25

Rotilabo®-lab dishes, PP

Made of **PP**. White. Rugged design. Approved for foodstuffs.

Dimensions base, L x W x H (mm)	Outer dimensions edge L x W (mm)	Volume (l)	Art. No.	Pack Qty.	€
190 x 140 x 42	230 x 180	0,5	**1722.1**	1	6,25
250 x 190 x 65	310 x 250	1,5	**1724.1**	1	9,65
310 x 250 x 75	370 x 310	3,0	**0772.1**	1	15,00
410 x 310 x 120	520 x 420	10,0	**0778.1**	1	24,85
530 x 430 x 140	634 x 534	21,0	**0782.1**	1	41,90
720 x 520 x 160	846 x 648	39,0	**0799.1**	1	64,40

Rotilabo®-lab dishes set, PP

Type	Art. No.	Pack Qty. (assortment)	€
Assortment (set of six)	**0938.1**	1	136,55

Drying boards

By Bürkle. Made of **PVC**, with robust, drying rods of different lengths (60, 100 and 150 mm), rods made of **PP**, which can be inserted and locked in place when needed. Is water-repellent, hygienic and breakproof.
Also features draining rim and hose. For wall mounting.
Delivery incl. wall mounting kit and key for slot-in pegs.

Length (mm)	Width (mm)	Number of 60 mm pegs	Number of 100 mm pegs	Number of 150 mm pegs	Art. No.	Pack Qty.	€
400	400	5	26	2	**1841.1**	1	184,90
500	500	10	39	4	**K715.1**	1	220,40
600	600	15	56	6	**K716.1**	1	251,55

Rotilabo®-lab dishes, hard-PVC

Made of **hard-PVC**. White. Excellent for acids.

Dimensions base, L x W x H (mm)	Outer dimensions top L x W (mm)	Art. No.	Pack Qty.	€
200 x 150 x 45	245 x 195	**7032.1**	1	13,95
250 x 200 x 60	305 x 250	**7034.1**	1	18,25
320 x 260 x 70	385 x 325	**7035.1**	1	28,60
350 x 300 x 80	420 x 375	**7038.1**	1	38,10
430 x 330 x 90	505 x 405	**7041.1**	1	49,05
520 x 420 x 90	600 x 495	**7043.1**	1	69,90
675 x 530 x 100	765 x 620	**7045.1**	1	111,80
540 x 420 x 180	635 x 515	**7047.1**	1	122,55

- ▶ Detergents see page 1152
- ▶ Intensive cleaners for laboratory dishwashers see page 1138
- ▶ Disposable sample bowls see page 180

Rotilabo®-lab dishes, PVC

Made of breakproof **PVC**. Temperature stable to +70 °C. The tray with ridges on its base is ideal for use as developing tray or for staining electrophoresis gels. Ridges prevent gels from sticking to bottom. Liquids can be poured out easily over edges of tray. The tray without ridges is ideal for general lab and storage purposes, especially when colour coding is required.

With ridges

Colour	Height (mm)	Dimensions top L x W (cm)	Dimensions base L x W (cm)	Art. No.	Pack Qty.	€
white	40	18 x 23	14 x 19	**C030.1**	1	10,00
white	50	24 x 32	19 x 26	**C031.1**	1	13,95
white	50	32 x 37	26 x 32	**C032.1**	1	22,05
white	105	43 x 53	31 x 41	**C033.1**	1	46,15
white	110	52 x 61	42 x 51	**C034.1**	1	79,45
white	110	63 x 73	51 x 61	**C035.1**	1	112,90
red	40	18 x 23	14 x 19	**C037.1**	1	10,00
red	50	24 x 32	19 x 26	**C038.1**	1	13,80
red	50	32 x 37	26 x 32	**C039.1**	1	22,05
red	105	43 x 53	31 x 41	**C040.1**	1	46,20
red	110	52 x 61	42 x 51	**C041.1**	1	79,50
black	50	24 x 32	19 x 26	**C045.1**	1	13,95
black	50	32 x 37	26 x 32	**C046.1**	1	22,05
black	110	52 x 61	42 x 51	**C048.1**	1	79,50
black	110	63 x 73	51 x 61	**C049.1**	1	112,90

Without ridges

Colour	Height (mm)	Dimensions top L x W (cm)	Dimensions base L x W (cm)	Art. No.	Pack Qty.	€
white	30	15 x 20	11 x 16	**C050.1**	1	7,85
white	40	18 x 23	14 x 19	**C051.1**	1	10,15
white	50	24 x 32	19 x 26	**C052.1**	1	13,95
white	50	32 x 37	26 x 32	**C053.1**	1	22,15
white	105	43 x 53	31 x 41	**C054.1**	1	46,20
white	110	52 x 61	42 x 51	**C055.1**	1	79,50
white	110	63 x 73	51 x 61	**C056.1**	1	112,90
red	30	15 x 20	11 x 16	**C057.1**	1	7,85
red	40	18 x 23	14 x 19	**C058.1**	1	10,15
red	50	24 x 32	19 x 26	**C059.1**	1	13,95
red	50	32 x 37	26 x 32	**C060.1**	1	22,15
red	105	43 x 53	31 x 41	**C061.1**	1	46,20
red	110	52 x 61	42 x 51	**C062.1**	1	79,50
red	110	63 x 73	51 x 61	**C063.1**	1	112,90
black	30	15 x 20	11 x 16	**C064.1**	1	7,85
black	40	18 x 23	14 x 19	**C065.1**	1	10,15
black	50	24 x 32	19 x 26	**C066.1**	1	13,95
black	50	32 x 37	26 x 32	**C067.1**	1	22,15
black	105	43 x 53	31 x 41	**C068.1**	1	46,20
black	110	52 x 61	42 x 51	**C069.1**	1	79,50
black	110	63 x 73	51 x 61	**C070.1**	1	112,90

Rotilabo®-lab dishes, melamin

Made of **MF**. Temperature stable from -40 to +110 °C.

* No cover available.

Volume (ml)	Length, top (mm)	Width, top (mm)	Height (mm)	Art. No.	Pack Qty.	€
700	190	150	40	**8449.1**	1	10,45
1000	290	160	35	**8453.1**	1	13,85
1900	290	160	60	**8454.1**	1	18,25
2200	350*	250	40	**8455.1**	1	27,25
6000	340	245	100	**8457.1**	1	35,45

Rotilabo®-lids

Made of **PS**. Suitable for Rotilabo®-melamin laboratory bowls. Art. No. P165.1 with stackable recessed handle lid.

Length, top (mm)	Width, top (mm)	For	Art. No.	Pack Qty.	€
190	150	8449.1	**P163.1**	1	12,30
290	160	8453.1/8454.1	**P164.1**	1	13,90
340	245	8457.1	**P165.1**	1	20,80

A 121 °C

Rotilabo®-dishes

Made of stainless steel 18/10, polished. Deep-drawn with smooth edge. Suitable for foodstuffs. Autoclavable.

Type	Volume (ml)	L x W x H (mm)	Art. No.	Pack Qty.	€
①	600	190 x 120 x 40	**YH70.1**	1	19,85
①	1200	240 x 170 x 40	**YH71.1**	1	25,95
①	2000	300 x 205 x 55	**YH72.1**	1	35,85
②	3000	340 x 210 x 60	**YH73.1**	1	27,85

Lab dishes and tubs

Laboratory trays

By Nalgene®. Made of **PP**. Suitable storing and sterilising instruments and small laboratory items. Heavy duty design with reinforced edges for maximum stability. Autoclavable.

Volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
2	260 x 159 x 64	**ATE7.1**	1	24,70
2,8	260 x 159 x 105	**ATE8.1**	1	30,05
3,1	324 x 260 x 70	**ATE9.1**	1	39,40
5	324 x 257 x 108	**ATH0.1**	1	43,65

Rotilabo®-spillage tubs

Made of 18/10 stainless steel. Specified dimensions refer to the base. Autoclavable. Suitable for foodstuffs.

L x W x H (mm)	Weight (g)	Art. No.	Pack Qty.	€
350 x 250 x 50	1150	**0375.1**	1	49,45
450 x 300 x 50	1450	**0376.1**	1	54,85
550 x 350 x 50	1750	**Y756.1**	1	70,95
650 x 400 x 50	2485	**YH48.1**	1	96,25

Rotilabo®-spillage trays

Made of 18/10 stainless steel. Thickness 0.8 mm. Autoclavable. Suitable for foodstuffs.

Outer dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
210 x 145 x 20	**9492.1**	1	28,65
290 x 210 x 20	**9493.1**	1	24,75
580 x 210 x 20	**9494.1**	1	41,30
580 x 400 x 20	**9495.1**	1	66,55

Rotilabo®-work surface

Made of stainless steel 18/10, thickness 1.1 mm. Easy to clean and disinfect. Dimensions: L 600 x W 400 x H 7 mm. Suitable for foodstuffs. Autoclavable.

Art. No.	Pack Qty.	€
YH28.1	1	64,00

Rotilabo®-spillage tub

Made of stainless steel 18/10. With slanting sides and an inlaid perforated plate on 7 mm ridges. Dimensions bottom: L 500 x W 350 x H 60 mm, top: L 435 x W 285 mm. Setting depth approx. 50 mm. Weight 1800 g. Autoclavable. Suitable for foodstuffs.

Art. No.	Pack Qty.	€
0377.1	1	90,30

Rotilabo®-drip pans

Made of 18/8 stainless steel. With removable grid.
Hole gauge 19 mm, hole ∅ 12 mm. Centre hole ∅ 19 mm. Autoclavable.

Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
310	125	30	**X103.1**	1	91,35
320	200	27	**X104.1**	1	99,95
560	200	27	**X105.1**	1	140,85
440	270	27	**X111.1**	1	133,30

Lab dishes and tubs

A 121 °C

Rotilabo®-tubs

Made of 18/10 chrome-nickel stainless steel. Rectangular. With folding handles on two sides. Autoclavable. Suitable for foodstuffs.

L x W x H (mm)	Art. No.	Pack Qty.	€
365 x 270 x 75	**8103.1**	1	85,95
470 x 325 x 90	**8104.1**	1	138,70
520 x 325 x 90	**8105.1**	1	163,40
630 x 450 x 90	**8106.1**	1	256,95

Laboratory pots

Made of aluminium. For use as water or oil bath, can be used in conjunction with hotplates or magnetic stirrers. Max. usage temperature 280 °C.

Delivery incl. cover.

Note: do not fill the pots above the level of the handle mounting as liquid can exit here.

Volume (l)	Height (mm)	∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
1,5	100	160	1,2	**AEN7.1**	1	33,55
3,0	120	200	1,5	**AEN8.1**	1	37,60
5,2	140	240	1,3	**AEN9.1**	1	43,55

A 121 °C

Stainless steel pots

Made of high-grade 18/10 steel. With sandwich base and handles. Suitable for use on hot plates and induction hobs, not usable on magnetic stirrers. Suitable lids please order separately. Autoclavable.

Volume (l)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
2,5	160	130	**EE93.1**	1	25,25
3,5	200	110	**EE94.1**	1	32,15
4	200	150	**EE95.1**	1	35,05
5	240	120	**EE96.1**	1	41,50
9	240	210	**EE97.1**	1	55,65

Lids

For stainless steel pans. Made of high-grade 18/10 steel. Welded handles.

∅ (mm)	Art. No.	Pack Qty.	€
160	**EE98.1**	1	8,90
200	**EE99.1**	1	12,10
240	**EH00.1**	1	14,60

Rotilabo®-water baths

Made of 18/10 stainless steel, matt polished.
Heavy duty, with two side handles. Suitable for foodstuffs.
Supplied without lid. Please order separately.

Volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
0,5	155 x 105 x 55	**YY42.1**	1	35,85
1	155 x 105 x 75	**YY43.1**	1	40,40
2,5	155 x 105 x 160	**YY44.1**	1	52,20
5	155 x 155 x 235	**YY45.1**	1	64,45
13	240 x 240 x 235	**YY46.1**	1	112,90

Lids for Rotilabo®-water baths

Made of 18/10 stainless steel, matt polished.

L x W (mm)	For water baths	Art. No.	Pack Qty.	€
155 x 105	0,5-2,5 l	**YY47.1**	1	17,75
155 x 155	5 l	**YY48.1**	1	19,30
240 x 240	13 l	**YY49.1**	1	23,60

Information on the care of stainless steel
Stainless steel is rustproof, durable, hygienic and non-toxic. Stainless steel generally has a higher resistance to corrosive media than mild steel.

Care: stainless steel is easy to maintain and can be cleaned either by machine or manually using mild detergents. Extraneous rust can easily be removed using a stainless steel cleaner, while lime scale deposits can be removed using acidic products (e.g. descaling agent). Do not use steel wool and avoid shock cooling after heating. Concentrated disinfectants and bleaches or diluted agents of this kind can attack stainless steel if allowed to react for a lengthy period of time. After contact with aggressive media or solids such as salts, the stainless steel must be cleaned thoroughly.

Extraneous rost: the passive protective layer of the stainless steel can be destroyed by base metal particles if they adhere to the surface of the stainless product. The chemically active particles can cause the entire steel to corrode. For this reason, do not clean, use or store stainless steel together with steel or iron particles (particularly steel wool pads).

Caution: stainless steel is not resistant to prolonged contact with chlorides and acids.

Instrument dishes and trays

121 °C

Glass instrument trays

Made of soda-lime glass with stainless steel lid. Autoclavable and hot air sterilisable up to +180 °C. **Note:** do not expose glass trays to abrupt changes of temperature. Trays must be heated and cooled slowly as soda-lime glass has limited thermal shock resistance.
Do not sterilise with lid attached.

L x W x H (mm)	Art. No.	Pack Qty.	€
120 x 60 x 40	**CYY9.1**	1	34,40
170 x 90 x 45	**EAA0.1**	1	40,10
200 x 100 x 50	**EAA1.1**	1	43,75
220 x 150 x 55	**EAA2.1**	1	51,50
275 x 150 x 60	**EAA3.1**	1	59,15
350 x 220 x 70	**EAA4.1**	1	118,25
200 x 100 x 100	**EAA5.1**	1	51,50

121 °C

Rotilabo®-instrument trays

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

With lid with knob

L x W x H (mm)	Art. No.	Pack Qty.	€
100 x 60 x 40	**YX87.1**	1	63,45
160 x 100 x 30	**YX88.1**	1	53,65
200 x 100 x 50	**YX89.1**	1	55,00
300 x 200 x 50	**YX90.1**	1	82,60
400 x 200 x 80	**YX91.1**	1	112,90

With flat lid, deep-drawn with rounded edges

L x W x H (mm)	Art. No.	Pack Qty.	€
180 x 80 x 50	**YX92.1**	1	20,40
200 x 90 x 50	**YX93.1**	1	22,60
250 x 100 x 50	**YX94.1**	1	35,30
300 x 125 x 60	**YX95.1**	1	37,00

121 °C

Rotilabo®-instruments trays with lid

Made of 18/10 stainless steel. Tray is moulded in one piece. Special lid with handle. Tray is moulded in one piece for easy cleaning and disinfection. Stackable. Autoclavable.

L x W x H outer (mm)	L x W x H inner (mm)	Art. No.	Pack Qty.	€
230 x 133 x 55	210 x 120 x 45	**C849.1**	1	48,75
315 x 215 x 65	295 x 195 x 55	**C850.1**	1	74,30

121 °C

Kidney dish

Made of **PP**, white. Capacity approx. 850 ml. Dimensions: L 260 x H 55 mm. Autoclavable.

Art. No.	Pack Qty.	€
TT75.1	1	9,15

121 °C

Rotilabo®-kidney pans

Made of stainless steel 18/10, high-gloss. Suitable for foodstuffs. Autoclavable.

Volume (ml)	Dimensions L x W (mm)	Art. No.	Pack Qty.	€
250	170 x 40	**YT76.1**	1	8,45
350	205 x 40	**YT77.1**	1	11,30
500	250 x 40	**YT78.1**	1	11,65
750	275 x 45	**YT79.1**	1	12,80

Rotilabo®-trays

Made of **PP**, with stacking notches. Good chemical resistance. Dishwasher-proof up to +80 °C. Suitable for foodstuffs.

L x W x H (mm)	Art. No.	Pack Qty.	€
350 x 265 x 20	**YH74.1**	1	4,85
400 x 300 x 20	**YH75.1**	1	6,40
450 x 350 x 20	**YH76.1**	1	7,50

A 121 °C

Rotilabo®-instrument trays, round

Made of stainless steel, high-gloss finish. Suitable for foodstuffs. Autoclavable.

∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
300	20	**YH66.1**	1	8,25
350	20	**YH67.1**	1	10,70
400	22	**YH68.1**	1	15,00
500	22	**YH69.1**	1	23,25

Rotilabo®-instrument trays

Made of polished Melamin **(MF)**. With adhesive safety base.

L x W x H (mm)	Art. No.	Pack Qty.	€
190 x 150 x 17	**P159.1**	2	17,95
240 x 180 x 17	**P160.1**	2	22,10
268 x 208 x 17	**P161.1**	2	25,45
355 x 240 x 17	**P162.1**	2	42,80
428 x 288 x 17	**0824.1**	2	69,70

A 121 °C

Rotilabo®-carrier buckets

Made of **PP**. Extremely robust with wide grip rim. Stackable. Autoclavable at 121 °C. Suitable for foodstuffs.

Volume (l)	Outside ∅ (mm)	Height (mm)	Weight (g)	Art. No.	Pack Qty.	€
0,8	160	70	60	**H289.1**	1	2,55
1,7	200	80	80	**H290.1**	1	3,35
2,8	240	100	120	**H291.1**	1	4,70
4,5	280	120	220	**H292.1**	1	6,30
6,5	320	130	240	**H293.1**	1	8,80
10	360	150	360	**H294.1**	1	9,65
13	400	180	460	**H295.1**	1	13,95

A 121 °C

Rotilabo®-instrument trays, square

Made of 18/10 stainless steel, high-gloss finish. Suitable for foodstuffs. Autoclavable.

L x W x H (mm)	Art. No.	Pack Qty.	€
220 x 170 x 10	**YH57.1**	1	17,50
260 x 200 x 20	**YH58.1**	1	23,15
310 x 240 x 20	**YH59.1**	1	26,85
340 x 260 x 20	**YH60.1**	1	30,05
365 x 280 x 20	**YH61.1**	1	32,15
420 x 320 x 20	**YH62.1**	1	39,25
470 x 365 x 20	**YH63.1**	1	45,05
520 x 400 x 20	**YH64.1**	1	54,85
600 x 470 x 24	**YH65.1**	1	75,15

Rotilabo®-mixing bowls

Made of **PP**, transparent-white. Stackable. Microwave safe.

Volume (l)	Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
1	160	80	**YE47.1**	1	4,25
2,5	200	110	**YE48.1**	1	7,50
4,5	240	130	**YE49.1**	1	8,90
6	280	145	**YE50.1**	1	10,65
9	320	160	**YE51.1**	1	13,85
13	360	180	**YE52.1**	1	18,55

A 121 °C

Rotilabo®-stainless steel bowls, bulbous

Made of stainless steel 18/10, high-gloss. Extra heavy duty.
With flanged, non-slip rim. Suitable for foodstuffs. Autoclavable.

Volume (l)	Top ∅ (mm)	Bottom ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
0,75	145	90	60	**YH49.1**	1	17,55
1	160	115	70	**YH50.1**	1	18,20
1,5	180	130	80	**YH51.1**	1	23,80
2,5	210	160	90	**YH52.1**	1	27,20
4	245	180	105	**YH53.1**	1	32,75
6	280	205	125	**YH54.1**	1	43,00
9	325	240	140	**YH55.1**	1	48,30
12	350	260	150	**YH56.1**	1	56,95
17	410	270	160	**YT62.1**	1	63,45

A 121 °C

Stainless steel carrier bowls

Made of 18/10 stainless steel. Heavy duty with flanged edge and smooth base. Excellent durability, stability and grip. Stackable. Autoclavable. Suitable for foodstuffs.

Volume (l)	Top inside ∅ (mm)	Bottom ∅ (mm)	Height (mm)	Weight (g)	Art. No.	Pack Qty.	€
1	160	110	65	230	**L938.1**	1	19,30
1,5	180	120	78	300	**L939.1**	1	22,55
2	200	140	88	350	**L940.1**	1	24,20
3,5	240	160	105	510	**L941.1**	1	28,95
5,6	280	180	120	660	**L942.1**	1	36,50
8,3	320	200	130	880	**L943.1**	1	48,40

Stainless steel carrier bowls set

Set of six stainless steel bowls. Capacity 1 l to 8.3 l.

Art. No.	Pack Qty. (set)	€
0073.1	1	156,95

A 121 °C

Rotilabo®-stainless steel bowls, conical

Made of 18/10 stainless steel, matt polished. Light-duty version with open, smooth rim. Suitable for foodstuffs. Autoclavable.

① **Deep type**

Volume (l)	Top ∅ (mm)	Bottom ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
0,5	120	75	70	**YH77.1**	1	7,40
1	150	95	80	**YH78.1**	1	9,20
3	220	140	125	**YH79.1**	1	15,20
5	265	180	130	**YH80.1**	1	20,70
8	310	200	165	**YH81.1**	1	28,30
11	355	215	180	**YH82.1**	1	37,60
14	370	215	200	**YH83.1**	1	38,70

② **Flat type**

Volume (l)	Top ∅ (mm)	Bottom ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
0,5	140	95	55	**YH84.1**	1	7,80
1	165	115	75	**YH85.1**	1	9,15
3	240	160	95	**YH86.1**	1	15,20
6	290	195	130	**YH87.1**	1	25,30
8	320	210	140	**YH88.1**	1	26,75
11	380	285	130	**YH89.1**	1	39,00
14	400	285	155	**YH90.1**	1	42,05

Buckets

By Nalgene®. Made of **LDPE**. Air-tight. With nylon coated wire handles. The close-fitting and airtight lids enable the bins to be used for storage of samples in formalin and other preservatives. Bins comply to OSHA-Norm 29 CFR part 1910.1030 for use as protection against haematogen pathogens. Suitable for safe handling of biologically harmful substances.

Volume (l)	Colour	Innner ∅ (mm)	Height with lid (mm)	Height without lid (mm)	Art. No.	Pack Qty.	€
7,6	white	240	267	254	**K573.1**	1	41,85
13,2	yellow	270	328	315	**K575.1**	1	56,90

Rotilabo®-bins with nozzle

Made of **HDPE**. With metal handle. White, with graduation. Scale in 1-litre-steps.

Volume (l)	Height (mm)	Top ∅ (mm)	Bottom ∅ (mm)	Art. No.	Pack Qty.	€
9	250	280	203	**AC97.1**	1	10,70
12	280	300	227	**AC98.1**	1	12,75
17	310	340	249	**AC99.1**	1	19,30

Rotilabo®-buckets with spout

Made of natural coloured **HDPE**, polished, conical, can be stacked. With embossed graduation 500 ml inside. Approved for foodstuffs.

Volume (l)	Height (mm)	Top ∅ (mm)	Weight (g)	Art. No.	Pack Qty.	€
10	280	290	570	**1608.1**	1	16,80
17	320	330	860	**1609.1**	1	20,40

Buckets

Made of **HDPE**. White. With graduation (scale in 1-litre-steps) and handle. Approved for foodstuffs.

Volume (l)	Height (mm)	Top ∅ (mm)	Bottom ∅ (mm)	Art. No.	Pack Qty.	€
5	240	250	165	**K620.1**	1	13,55
10	300	290	210	**K622.1**	1	16,35

Lids

Made of **LDPE**. Transparent. Air-tight. Approved for foodstuffs.

Type	Art. No.	Pack Qty.	€
Lid for bins 5 l	**K621.1**	1	4,15
Lid for bins 10 l	**K623.1**	1	4,75

- ▶ Chemical Resistance of Plastics, table see page 6
- ▶ For autoclaving information see page 5

A 121 °C

Disposable buckets

Made of white **PP**. For safe storage of liquids, solids and pathological samples. Tamper evident closure guarantees the safety of the contents: a security tab breaks when opening the snap-on lid, indicating that the container has been opened. Art. No. AYP9.1 and AYT0.1 include carry handle for easy transportation. Autoclavable.

Volume (ml)	Height (mm)	Top ∅ (mm)	Art. No.	Pack Qty.	€
300	45	111	**AYP6.1**	100	82,60
500	75	111	**AYP7.1**	100	92,85
1000	140	111	**AYP8.1**	100	131,15
2600	124	200	**AYP9.1**	25	85,50
5700	195	225	**AYT0.1**	10	71,95

Rotilabo®-bins with nozzle

Made of **PP**. With handle and scale in 1-litre-steps. Good chemical resistance. Suitable for foodstuffs.

Volume (l)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
12	330	310	**HX60.1**	1	27,25
15	370	310	**HX61.1**	1	29,85

A 121 °C

Rotilabo®-measuring beaker

Made of 18/10 stainless steel, matt polished. Heavy-duty quality, wall thickness 0.8 mm. Graduated in one-litre increments. With handle and additional grip for simple pouring. Suitable for foodstuffs. Autoclavable.

Volume (l)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
10	240	260	**YH43.1**	1	299,95
15	270	300	**YH44.1**	1	333,25
20	270	400	**YH45.1**	1	396,70

Accessories:

Lid for Rotilabo®-measuring beaker, 10 l	**YH46.1**	1	47,15
Lid for Rotilabo®-measuring beaker, 15 and 20 l	**YH47.1**	1	52,15

Buckets

A 121 °C

Rotilabo®-carrier buckets

Made of 18/10 stainless steel. With lid and handle. Convex base. Autoclavable without lid. Suitable for foodstuffs.

Volume (l)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
2	130	170	**C856.1**	1	131,15
3	155	180	**C857.1**	1	138,70
5	175	240	**C859.1**	1	166,65
8	200	290	**C861.1**	1	192,45
10	220	300	**C862.1**	1	199,95

A 121 °C

Stainless steel buckets

Made of **Remanit 4301**. Graduated, scale in 1-litre-steps.
With smooth bottom. Handle width: 15 mm, rim width: 8 mm. Autoclavable.
Delivery without lid, please order separately if required.

Volume (l)	Overall height (mm)	Top ∅ (mm)	Bottom ∅ (mm)	Art. No.	Pack Qty.	€
6	210	265	170	**KY05.1**	1	53,25
10	282	295	170	**KY06.1**	1	67,20
12	298	340	220	**KY07.1**	1	74,20
15	340	355	250	**KY08.1**	1	84,95

Lids

For stainless steel buckets. Made of **Remanit 4301.**

∅ (mm)	Art. No.	Pack Qty.	€
265	**KY70.1**	1	39,25
295	**KY69.1**	1	41,25
340	**KY71.1**	1	50,55
355	**KY72.1**	1	53,70

▶ For additional containers for storage and transport from page 752

A 121 °C

Carrier buckets

Made of 18/10 stainless steel. Lid with high/low pressure equalising valve, silicon gasket and three fasteners. Suitable for foodstuffs. Autoclavable without lid.

Volume (l)	Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
6,5	240	160	**LT21.1**	1	96,65
10,5	240	250	**LT22.1**	1	107,30
15,5	300	230	**LT23.1**	1	149,45

Universal containers

Made of 18/10 stainless steel, extra heavy-duty.
Material thickness of 1.0 mm. Items EEX5.1 and EEX6.1 come with handle reinforcement plates.
Delivery incl. lid and three toggle fasteners to secure it in place.

Volume (l)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
20	265	395	**EEX2.1**	1	377,35
25	300	395	**EEX3.1**	1	414,95
30	300	465	**EEX4.1**	1	450,45
50	350	555	**EEX5.1**	1	525,70
75	400	620	**EEX6.1**	1	628,90

Transport castors

Made of 18/10 stainless steel. With five rubber castors dia. 100 mm, one of which can be locked. For transporting round containers safely.

For ∅ (mm)	Art. No.	Pack Qty.	€
300	**EET7.1**	1	177,40
350	**EET8.1**	1	181,70
400	**EET9.1**	1	235,45
445	**EEX0.1**	1	288,10
550	**EEX1.1**	1	364,45

Flat-bottom flasks

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Flat-bottom flasks

Made of DURAN®. In acc. with ISO 1773. Autoclavable.

① **Narrow neck flat-bottom flasks**

Volume (ml)	Neck ∅ (mm)	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	26	51	90	**K182.1**	10	86,20
100	26	64	105	**K183.1**	10	66,40
250	34	85	138	**K184.1**	10	77,75
500	34	105	163	**K185.1**	10	105,00
1000	42	131	190	**K186.1**	1	15,55
2000	42	166	250	**K187.1**	1	28,55
3000	50	185	250	**K188.1**	1	54,85
4000	50	207	275	**K189.1**	1	78,10
5000	50	223	290	**K190.1**	1	88,20
6000	65	237	315	**K191.1**	1	99,60
10 000	65	280	360	**K192.1**	1	173,00

② **Wide neck flat-bottom flasks**

Volume (ml)	Neck ∅ (mm)	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	34	51	90	**K193.1**	10	162,00
100	34	64	105	**K194.1**	10	66,80
250	50	85	138	**K195.1**	10	78,15
500	50	103	163	**K196.1**	10	106,00
1000	50	131	190	**K197.1**	1	18,25
2000	50	166	230	**K198.1**	1	28,65

A 121 °C

Rotilabo®-flat bottom flasks

Made of type 3.3 borosilicate glass with heavy duty rim. Autoclavable.

① **Narrow neck,** in accordance with ISO 1773.

Volume (ml)	Neck ∅ (mm)	Largest outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	22	51	100	**NT71.1**	10	89,80
100	22	64	110	**NT72.1**	10	22,35
250	34	85	140	**NT73.1**	10	24,65
500	34	105	170	**NT74.1**	10	40,10
1000	42	131	200	**NT75.1**	1	17,10
2000	50	166	250	**NT76.1**	1	24,75
4000	50	207	300	**NT77.1**	1	35,40
6000	65	236	340	**NT78.1**	1	46,15
10 000	65	279	400	**NT79.1**	1	71,50

② **Wide neck**

Volume (ml)	Neck ∅ (mm)	Largest outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	34	51	100	**NT54.1**	10	87,10
250	50	85	140	**NT55.1**	10	97,85
500	50	105	170	**NT56.1**	10	112,90
1000	50	131	200	**NT57.1**	1	18,30
2000	76	166	250	**NT58.1**	1	25,30

Material DURAN®
A 121 °C

Flat-bottom flasks with ground glass joints

Made of DURAN®. In acc. with DIN 12348.
With standard ground joint 29/32. Autoclavable.

Volume (ml)	Outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	51	90	**Y653.1**	1	8,25
100	64	110	**Y654.1**	1	8,55
250	85	140	**Y655.1**	1	15,45
500	105	170	**Y656.1**	1	21,05
1000	131	200	**Y657.1**	1	29,70
2000	166	250	**Y658.1**	1	56,95

A 121 °C

Rotilabo®-flat bottom flasks with standard ground joint

Made of type 3.3 borosilicate glass. In acc. with DIN 12 348. Autoclavable.

Volume (ml)	Ground glass joint	Largest outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
250	29/32	85	140	**NT59.1**	10	130,10
250	45/40	85	140	**NT60.1**	10	148,35
500	29/32	105	170	**NT61.1**	10	153,75
500	45/40	105	170	**NT62.1**	10	177,40
1000	29/32	131	200	**NT63.1**	1	21,85
1000	45/40	131	200	**NT64.1**	1	23,90
2000	29/32	166	250	**NT65.1**	1	26,80
2000	45/40	166	250	**NT66.1**	1	30,65
4000	45/40	207	300	**NT67.1**	1	42,95
6000	60/46	236	340	**NT68.1**	1	51,95
10 000	60/46	279	400	**NT69.1**	1	98,50
20 000	60/46	345	190	**NT70.1**	1	135,45

Standard ground joint flasks

Material DURAN®
A 121 °C

Round flasks, DURAN®

Made of DURAN®. With ground glass joints.
In acc. with DIN 4797 and/or in addition to DIN. Autoclavable.

* In add. to DIN.

Transparent glass

Volume (ml)	Conical ground joint (NS)	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
5*	14/23	30	58	**HY49.1**	1	7,00
10*	14/23	35	70	**HY50.1**	1	6,95
25*	14/23	41	85	**E588.1**	1	7,45
25	19/26	41	85	**KY27.1**	1	7,80
50	14/23	51	90	**E589.1**	1	8,45
50	19/26	51	90	**KY28.1**	1	8,90
50*	24/29	51	90	**KY32.1**	1	9,45
50	29/32	51	90	**E590.1**	1	8,90
100	14/23	64	105	**E591.1**	1	8,75
100	19/26	64	105	**KY29.1**	1	10,20
100*	24/29	64	105	**KY33.1**	1	9,70
100	29/32	64	105	**E592.1**	1	8,40
250*	14/23	85	140	**KY26.1**	1	18,80
250*	19/26	85	140	**KY30.1**	1	19,15
250*	24/29	85	140	**KY34.1**	1	16,50
250	29/32	85	145	**E593.1**	1	15,45
250	45/40	85	145	**E594.1**	1	37,65
500*	19/26	105	168	**KY31.1**	1	29,15
500*	24/29	105	165	**KY35.1**	1	20,95
500	29/32	105	175	**E595.1**	1	19,70
500	45/40	105	175	**E596.1**	1	42,90
1000*	24/29	131	195	**KY36.1**	1	29,00
1000	29/32	131	200	**E597.1**	1	28,65
1000	45/40	131	200	**E598.1**	1	36,30
2000*	24/29	166	260	**KY37.1**	1	55,35
2000	29/32	166	260	**E599.1**	1	49,15
2000	45/40	166	260	**E600.1**	1	53,70
3000*	29/32	185	265	**TE93.1**	1	139,75
3000*	45/40	185	265	**TE94.1**	1	143,00
4000	29/32	207	290	**TE95.1**	1	138,70
4000	45/40	207	315	**E601.1**	1	138,70
5000*	29/32	223	315	**TE96.1**	1	166,65
5000	45/40	223	315	**TE97.1**	1	167,70
6000*	29/32	236	360	**ELA0.1**	1	210,70
6000	45/40	236	360	**ELA1.1**	1	216,10
10 000*	29/32	279	375	**ELA2.1**	1	360,15
10 000	45/40	279	375	**ELA3.1**	1	368,75
20 000*	29/32	345	495	**ELA4.1**	1	545,05
20 000*	45/40	345	495	**ELA5.1**	1	566,55

Amber glass

Volume (ml)	Conical ground joint (NS)	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	29/32	51	90	**ELA6.1**	1	40,10
100	29/32	64	115	**Y646.1**	1	34,90
250	29/32	85	145	**Y647.1**	1	53,45
500	29/32	105	175	**Y648.1**	1	54,45
1000	29/32	131	210	**Y649.1**	1	64,50

A 121 °C

Rotilabo®-round bottom flasks with ground glass joint

① Made of borosilicate glass 3.3. ISO 4797 compliant. Autoclavable.

Volume (ml)	Standard ground glass joint	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	14/23	51	105	**ACH0.1**	10	70,65
50	19/26	51	105	**ACH1.1**	10	76,65
50	29/32	51	105	**ACH2.1**	10	71,95
100	14/23	64	115	**ACH3.1**	10	80,45
100	19/26	64	115	**ACH4.1**	10	94,10
100	29/32	64	115	**ACH5.1**	10	77,85
250	29/32	85	145	**ACH6.1**	10	120,40
250	45/40	85	145	**ACH7.1**	1	18,95
500	29/32	105	175	**ACH8.1**	10	141,90
500	45/40	105	175	**ACH9.1**	1	23,15
1000	29/32	131	210	**ACK0.1**	1	24,20
1000	45/40	131	210	**ACK1.1**	1	26,55
2000	29/32	166	260	**ACK2.1**	1	28,70
2000	45/40	166	260	**ACK3.1**	1	31,85
4000	45/40	207	315	**ACK4.1**	1	40,75
6000	60/46	236	355	**ACK5.1**	1	55,40
10 000	60/46	279	420	**ACK6.1**	1	90,45

Rotilabo®-round bottom flasks with heavy duty rim

Made of type 3.3 borosilicate glass. Autoclavable.

② **Narrow neck,** in accordance with ISO 1773.

Volume (ml)	Neck ∅ (mm)	Largest outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	22	51	105	**NT88.1**	10	85,95
100	22	64	115	**NT89.1**	10	112,90
250	34	85	147	**NT90.1**	10	90,25
500	34	105	175	**NT91.1**	10	110,75
1000	42	131	210	**NT92.1**	1	18,60
2000	50	166	260	**NT93.1**	1	23,60
4000	50	207	315	**NT94.1**	1	32,95
6000	65	236	355	**NT95.1**	1	44,55
10 000	65	279	420	**NT96.1**	1	65,60
20 000	80	345	500	**NT97.1**	1	116,10

③ **Wide neck**

Volume (ml)	Neck ∅ (mm)	Largest outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	34	51	105	**NT98.1**	10	87,65
100	34	64	115	**NT99.1**	10	107,30
250	50	85	145	**NX00.1**	10	95,60
500	50	105	175	**NX01.1**	10	109,65
1000	50	131	210	**NX02.1**	1	18,20
2000	76	166	260	**NX03.1**	1	23,55
4000	76	207	315	**NX04.1**	1	32,20
6000	89	236	355	**NX05.1**	1	45,75
10 000	89	279	420	**NX06.1**	1	66,90

▶ Boiling pebbles see page 1181
▶ Iodine determination flasks see page 18

Standard ground joint flasks

❄❄❄ A 121 °C

Round bottom flasks, PFA

Made of **PFA**, transparent.
- High chemical resistance
- Temperature resistant in the range -200 to +260 °C
- Hydrophobic and anti-adhesive, extremely smooth surfaces allow easy cleaning
- High purity, ideal for used in trace analysis and for storage of reference solutions
- No memory effect
- Also suitable for use in rotary evaporator as safety flask
- Autoclavable

Volume (ml)	NS	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	29/32	65	117	**XY62.1**	1	83,70
250	29/32	88	147	**XY63.1**	1	96,65
500	29/32	107	177	**XY64.1**	1	134,40

❄❄❄ A 121 °C

Rotilabo®-PTFE round bottom flasks

Made of **PTFE**. Chemically inert, temperature stable from -200 to +250 °C. Autoclavable.

Volume (ml)	Standard ground glass joint	∅ (mm)	Art. No.	Pack Qty.	€
10	14/23	32	**NX92.1**	1	29,00
10	19/26	32	**NX93.1**	1	29,60
25	19/26	42	**NX94.1**	1	42,50
25	24/29	42	**NX95.1**	1	41,95
50	24/29	52	**NX96.1**	1	59,15
50	29/32	52	**NX97.1**	1	58,05
100	29/32	64	**NX98.1**	1	95,70

Material DURAN® A 121 °C

Kjeldahl flasks

Made of DURAN®. With ground glass joint. In acc. with DIN 12360. Autoclavable.

Volume (ml)	Flask outer ∅ (mm)	Height (mm)	Ground glass joint	Art. No.	Pack Qty.	€
50	51	200	14/23	**Y659.1**	1	40,85
50	51	200	19/26	**Y661.1**	1	40,30
100	60	200	14/23	**Y660.1**	1	41,75
100	60	200	19/26	**Y662.1**	1	41,55
250	81	270	29/32	**Y663.1**	1	55,20
500	101	300	29/32	**Y664.1**	1	57,90
750	115	340	29/32	**Y665.1**	1	65,75
1000	126	350	29/32	**Y666.1**	1	76,00

Material DURAN® A 121 °C

Pear shaped flasks

Made of DURAN®. In acc. with DIN 12383. Autoclavable.

*In add. to DIN

Volume (ml)	Socket (ground glass)	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
5*	14/23	27	68	**TK67.1**	1	9,50
10*	14/23	30	75	**E602.1**	1	7,90
25*	14/23	40	90	**E603.1**	1	9,95
25*	19/26	42	90	**TK68.1**	1	10,05
50*	14/23	50	110	**E604.1**	1	11,10
50	19/26	51	100	**TK69.1**	1	12,15
50*	29/32	51	100	**TK70.1**	1	15,25
100*	14/23	62	125	**E605.1**	1	13,25
100	19/26	64	130	**TK71.1**	1	16,05
100*	29/32	64	130	**TK72.1**	1	23,25
250*	14/23	85	195	**TK73.1**	1	28,70
250	19/26	85	195	**TK74.1**	1	29,60
250*	29/32	85	190	**TK75.1**	1	31,95

Material DURAN® A 121 °C

Two-necked pear shaped flasks

Made of DURAN®. With angled side neck (angle 25°) NS 14/23. In acc. with DIN 12383. Autoclavable.

*In add. to DIN.

Volume (ml)	Centre neck with ground glass joints	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
25*	14/23	40	90	**TH63.1**	1	24,00
25*	19/26	40	90	**TH64.1**	1	43,00
50*	14/23	50	100	**TH65.1**	1	25,05
50	19/26	50	100	**TH66.1**	1	46,25
100*	14/23	64	130	**TH67.1**	1	27,85
100	19/26	64	130	**TH68.1**	1	56,45
250*	14/23	85	195	**TH69.1**	1	74,95
250	19/26	85	195	**TH70.1**	1	80,50

- ▶ Iodine determination flasks see page 18
- ▶ Taper-ground clamps see page 144
- ▶ Boiling pebbles made of PTFE see page 1181

Standard ground joint flasks

Material
DURAN®
A 121 °C

Double neck round bottom flasks

Made of DURAN®. Centre neck NS 29/32, with parallel side neck.
Autoclavable.

Volume (ml)	Side neck with ground glass joints	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	14/23	64	105	**ELA7.1**	1	25,75
250	14/23	85	140	**ELA8.1**	1	33,55
250	29/32	85	140	**ELA9.1**	1	40,15
500	14/23	105	163	**ELC0.1**	1	44,75
500	29/32	105	163	**ELC1.1**	1	50,30
1000	14/23	131	200	**ELC2.1**	1	51,35
1000	29/32	131	200	**ELC3.1**	1	59,15
2000	14/23	166	240	**ELC4.1**	1	80,65
2000	29/32	166	240	**ELC5.1**	1	85,90
4000	29/32	207	290	**ELC6.1**	1	189,20

A 121 °C

Rotilabo®-double neck round bottom flasks

Made of borosilicate glass 3.3. With standard ground joints. Autoclavable.

Volume (ml)	Centre neck with ground glass joints	Side neck with ground glass joints	Art. No.	Pack Qty.	€
250	29/32	14/23	**ACE4.1**	1	24,10
500	29/32	14/23	**ACE5.1**	1	27,00
1000	29/32	14/23	**ACE6.1**	1	32,05
2000	29/32	14/23	**ACE7.1**	1	39,45
4000	45/40	14/23	**ACE8.1**	1	60,85
6000	60/46	14/23	**ACE9.1**	1	85,90

Material
DURAN®
A 121 °C

Two-necked round-bottom flasks

Made of DURAN®. With angled side neck (angle 20°).
In accordance with DIN 12394 an/or in addition to DIN. Autoclavable.

* Add. to DIN

Volume (ml)	Centre neck with ground glass joints	Side neck with ground glass joints	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
25	14/23	14/23	41	85	**KY12.1**	1	20,65
50	14/23	14/23	51	90	**KY13.1**	1	21,45
100*	14/23	14/23	64	105	**KY14.1**	1	22,60
100*	24/29	14/23	64	105	**ELC7.1**	1	24,55
100*	24/29	19/26	64	105	**KY24.1**	1	30,50
100*	29/32	14/23	64	105	**E606.1**	1	24,90
100*	29/32	19/26	64	105	**ELC8.1**	1	32,40
100*	29/32	29/32	64	105	**ELC9.1**	1	35,25
250*	14/23	14/23	85	140	**ELE0.1**	1	34,65
250*	24/29	14/23	85	140	**ELE1.1**	1	33,50
250*	24/29	19/26	85	140	**KY25.1**	1	40,15
250	29/32	14/23	85	140	**E607.1**	1	33,80
250	29/32	19/26	85	140	**ELE2.1**	1	40,25
250*	29/32	29/32	85	140	**ELE3.1**	1	41,35
500*	24/29	14/23	105	163	**ELE4.1**	1	36,85
500*	24/29	19/26	105	163	**ELE5.1**	1	40,25
500	29/32	14/23	105	163	**E608.1**	1	39,35
500	29/32	19/26	105	163	**ELE6.1**	1	45,80
500*	29/32	29/32	105	163	**ELE7.1**	1	48,55
1000*	24/29	19/26	131	200	**ELE8.1**	1	48,25
1000	29/32	14/23	131	200	**E609.1**	1	47,55
1000	29/32	19/26	131	200	**ELE9.1**	1	48,25
1000*	29/32	29/32	131	200	**ELH0.1**	1	57,65
2000	29/32	14/23	166	240	**E610.1**	1	80,10
2000	29/32	19/26	166	240	**ELH1.1**	1	87,05
2000*	29/32	29/32	166	240	**ELH2.1**	1	85,95
4000*	29/32	29/32	207	290	**ELH3.1**	1	174,15

Standard ground joint flasks

Material
DURAN®
A 121 °C

Three-necked round-bottom flasks, side necks paral

Made of DURAN®. In accordance with DIN 12392 and/or in addition to DIN. Autoclavable.

*in addition to DIN

Volume (ml)	Centre neck with ground glass joints	Side neck with ground glass joints	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100*	24/29	19/26	64	105	**ELH4.1**	1	44,30
100*	29/32	14/23	64	105	**KY15.1**	1	33,00
100*	29/32	19/26	64	105	**ELH5.1**	1	50,85
100*	29/32	29/32	64	105	**KY16.1**	1	66,30
250*	24/29	19/26	85	105	**ELH6.1**	1	54,20
250*	29/32	14/23	85	140	**E615.1**	1	48,05
250*	29/32	19/26	85	140	**ELH7.1**	1	64,45
250*	29/32	29/32	85	140	**KY17.1**	1	51,30
500*	24/29	19/26	105	163	**ELH8.1**	1	65,90
500*	29/32	14/23	105	163	**E616.1**	1	52,15
500*	29/32	19/26	105	163	**ELH9.1**	1	67,05
500*	29/32	29/32	105	163	**E617.1**	1	62,35
1000*	24/29	19/26	131	200	**ELK0.1**	1	70,80
1000*	29/32	14/23	131	200	**E618.1**	1	63,45
1000*	29/32	19/26	131	200	**ELK1.1**	1	77,55
1000	29/32	29/32	131	200	**E619.1**	1	68,80
1000*	45/40	29/32	131	200	**ELK2.1**	1	88,85
2000*	24/29	19/26	166	240	**ELK3.1**	1	118,25
2000*	29/32	14/23	166	240	**E620.1**	1	94,60
2000*	29/32	19/26	166	240	**ELK4.1**	1	119,35
2000	29/32	29/32	166	240	**E621.1**	1	102,15
2000	45/40	29/32	166	240	**ELK5.1**	1	132,25
3000*	29/32	14/23	185	265	**ELK6.1**	1	191,35
3000*	29/32	29/32	185	265	**ELK7.1**	1	180,60
3000*	45/40	29/32	185	265	**ELK8.1**	1	222,55
4000*	29/32	14/23	207	290	**ELK9.1**	1	224,70
4000*	29/32	29/32	207	290	**ELL0.1**	1	227,90
4000	45/40	29/32	207	290	**ELL1.1**	1	255,85
5000*	29/32	29/32	223	315	**ELL2.1**	1	278,45
5000*	45/40	29/32	223	315	**ELL3.1**	1	316,05
6000*	29/32	14/23	236	360	**ELL4.1**	1	272,00
6000*	29/32	29/32	236	360	**ELL5.1**	1	282,75
6000	45/40	29/32	236	360	**ELL6.1**	1	326,80
10 000*	29/32	29/32	279	375	**ELL7.1**	1	435,40
10 000*	45/40	29/32	279	375	**ELL8.1**	1	482,70
20 000*	45/40	29/32	345	495	**ELL9.1**	1	742,85

Material
DURAN®
A 121 °C

Three-necked round-bottom flasks

Made of DURAN®. With two angled side necks (angle 20°). In accordance with DIN 12394 and/or in addition to DIN. Autoclavable.

*in addition to DIN

Volume (ml)	Centre neck with ground glass joints	Side neck with ground glass joints	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
25*	14/23	14/23	41	70	**ELN0.1**	1	49,15
50*	14/23	14/23	51	90	**KY18.1**	1	42,05
100*	14/23	14/23	64	105	**KY19.1**	1	44,20
100*	24/29	14/23	64	105	**ELN1.1**	1	45,65
100*	24/29	19/26	64	105	**ELN2.1**	1	49,70
100*	29/32	14/23	64	105	**E611.1**	1	37,65
100*	29/32	19/26	64	105	**ELN3.1**	1	54,30
100*	29/32	29/32	64	105	**ELN4.1**	1	74,35
250*	24/29	14/23	85	140	**ELN5.1**	1	56,20
250*	24/29	19/26	85	140	**ELN6.1**	1	59,95
250	29/32	14/23	85	140	**E612.1**	1	46,25
250	29/32	19/26	85	140	**ELN7.1**	1	70,90
250*	29/32	29/32	85	140	**KY20.1**	1	53,40
500*	24/29	14/23	105	163	**ELN8.1**	1	62,25
500*	24/29	19/26	105	163	**ELN9.1**	1	65,40
500	29/32	14/23	105	163	**E613.1**	1	51,60
500	29/32	19/26	105	163	**ELP0.1**	1	72,05
500*	29/32	29/32	105	163	**KY21.1**	1	58,00
1000*	24/29	14/23	131	200	**ELP1.1**	1	74,15
1000*	24/29	19/26	131	200	**ELP2.1**	1	75,90
1000	29/32	14/23	131	200	**E614.1**	1	61,25
1000	29/32	19/26	131	200	**ELP3.1**	1	81,85
1000*	29/32	29/32	131	200	**KY22.1**	1	70,65
1000*	45/40	29/32	131	200	**ELP4.1**	1	95,80
2000*	24/29	19/26	166	240	**ELP5.1**	1	123,65
2000	29/32	14/23	166	240	**ELP6.1**	1	117,20
2000	29/32	19/26	166	240	**ELP7.1**	1	119,35
2000*	29/32	29/32	166	240	**KY23.1**	1	92,40
2000*	45/40	29/32	166	240	**ELP8.1**	1	127,95
3000*	29/32	14/23	185	265	**ELP9.1**	1	199,95
3000*	29/32	29/32	185	265	**ELT0.1**	1	211,80
3000*	45/40	29/32	185	265	**ELT1.1**	1	213,95
4000*	29/32	14/23	207	290	**ELT2.1**	1	215,00
4000*	29/32	29/32	207	290	**ELT3.1**	1	238,65
4000*	45/40	29/32	207	290	**ELT4.1**	1	235,45
5000*	29/32	29/32	223	315	**ELT5.1**	1	315,00
5000*	45/40	29/32	223	315	**ELT6.1**	1	296,70
6000*	29/32	14/23	236	360	**ELT7.1**	1	267,70
6000*	29/32	29/32	236	360	**ELT8.1**	1	334,35
6000*	45/40	29/32	236	360	**ELT9.1**	1	299,95
10 000*	29/32	29/32	279	375	**ELX0.1**	1	492,35
10 000*	45/40	29/32	279	375	**ELX1.1**	1	482,70
20 000*	45/40	29/32	345	495	**ELX2.1**	1	820,25

Standard ground joint flasks

Round bottom flasks

Made of PFA. Highly pure, chemically inert. Hydrophobic, anti-adhesive surfaces. Centre neck NS 29/32. Temperature stable from -200 to +250 °C. Transparent and pore-free, partially suitable for vacuum (e.g. 30 mbar at 50 °C).

Single neck flasks

Volume (ml)	Height (mm)	Flask outer ∅ (mm)	Art. No.	Pack Qty.	€
100	117	67	**NY39.1**	1	113,95
250	149	88	**NY40.1**	1	134,40
500	177	107	**NY41.1**	1	181,70

Double neck flasks

Volume (ml)	Side neck with ground glass joints	Height (mm)	Flask outer ∅ (mm)	Art. No.	Pack Qty.	€
100	14/23	117	67	**NY42.1**	1	368,75
250	29/32	149	88	**NY43.1**	1	618,15
500	29/32	177	107	**NY44.1**	1	688,00

Triple neck flasks

Volume (ml)	Side neck with ground glass joints	Height (mm)	Flask outer ∅ (mm)	Art. No.	Pack Qty.	€
100	14/23	117	67	**NY45.1**	1	513,85
250	29/32	149	88	**NY46.1**	1	948,15
500	29/32	177	107	**NY47.1**	1	1015,90

Sulphuration flasks

Made of type 3.3 borosilicate glass.
With three standard ground joints on side neck. Autoclavable.

Volume (ml)	Standard ground joint (main neck)	Standard ground joints (side necks 1 + 2)	Standard ground joint (side neck 3)	Art. No.	Pack Qty.	€
500	45/40	14/23	14/23	**TK78.1**	1	41,50
1500	71/51	29/32	14/23	**TK79.1**	1	63,35
2500	71/51	29/32	14/23	**TK80.1**	1	71,85
4000	71/51	29/32	14/23	**TK81.1**	1	94,50
6000	71/51	29/32	14/23	**TK82.1**	1	109,45

Material DURAN®
A 121 °C

Four-necked round bottom flasks

Made of DURAN®. In accordance with DIN 12392 and/or in addition to DIN. Side necks with ground glass joints 29/32. Autoclavable.

*In addition to DIN

① Parallel side necks

Volume (ml)	Centre neck with ground glass joints	Flask outer ∅ (mm)	Art. No.	Pack Qty.	€
500*	29/32	105	**TH78.1**	1	104,25
1000	29/32	131	**TH79.1**	1	113,95
1000	45/40	131	**ELX3.1**	1	112,90
2000	29/32	166	**TH80.1**	1	148,35
2000	45/40	166	**ELX4.1**	1	154,80
3000*	29/32	185	**TH81.1**	1	223,60
3000*	45/40	185	**ELX5.1**	1	234,35
4000*	29/32	207	**ELX6.1**	1	238,65
4000	45/40	207	**ELX7.1**	1	278,45
5000*	45/40	223	**TH82.1**	1	340,80
6000*	29/32	236	**ELX8.1**	1	345,10
6000	45/40	236	**ELX9.1**	1	356,90
10000*	45/40	279	**ELY0.1**	1	566,55

② Side necks, angled (15°)

Volume (ml)	Centre neck with ground glass joints	Flask outer ∅ (mm)	Art. No.	Pack Qty.	€
250*	29/32	85	**TH76.1**	1	104,65
500	29/32	105	**TH77.1**	1	105,30

- Standard ground joint stoppers see page 143
- Clear lubricants see page 1171
- Taper-ground clamps see page 144
- Boiling pebbles see page 1181

Standard ground joint flasks

Material DURAN®
A 121 °C

Collecting flasks

Made of DURAN®. With spherical bowl joint S 35.
Made especially for rotary evaporators. Autoclavable.

Volume (ml)	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
250	85	140	**KY57.1**	1	33,35
500	105	155	**KY58.1**	1	36,90
1000	131	200	**KY59.1**	1	48,75
2000	166	245	**KY65.1**	1	74,35

Collecting flasks with PUR coating

Made of DURAN®. With spherical ground cup S 35, specially designed for rotary evaporators. Highly transparent coating provides protection from scratches, impacts and light (absorption up to approx. 380 nm). In the event of glass breakage, the coating helps contain broken glass and leakage. Temperature stable from -30 to +140 °C. Autoclavable.

Volume (ml)	Flask outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	64	100	**TH18.1**	1	92,20
250	85	124	**TH19.1**	1	98,20
500	105	150	**TH20.1**	1	110,75
1000	131	185	**TH21.1**	1	125,80
2000	166	240	**TH22.1**	1	166,65

Material DURAN®
A 121 °C

Powder flasks

Made of DURAN®. With centred ground glass joint 29/32,
for drying substances on the rotary evaporator. Autoclavable.

Volume (ml)	Largest outer ∅ (mm)	Height approx. (mm)	Art. No.	Pack Qty.	€
100	60	110	**TH71.1**	1	77,90
250	81	125	**TH72.1**	1	85,20
500	101	155	**TH73.1**	1	102,15
1000	126	195	**TH74.1**	1	121,50
2000	158	245	**TH75.1**	1	167,70

Material DURAN®
A 121 °C

Evaporating flasks

Made of DURAN®. With ground glass joint, pear shaped. Autoclavable.

Volume (ml)	Flask outer ∅ (mm)	Height (mm)	Ground glass joint	Art. No.	Pack Qty.	€
5	25	55	14/23	**TH04.1**	1	16,60
10	33	65	14/23	**TH05.1**	1	17,50
25	40	75	14/23	**TH06.1**	1	18,25
50	50	88	14/23	**TH07.1**	1	19,30
50	56	95	29/32	**TH08.1**	1	13,20
100	60	110	29/32	**K263.1**	1	19,35
250	81	140	29/32	**K264.1**	1	32,70
500	101	170	29/32	**K265.1**	1	38,10
1000	126	210	29/32	**K266.1**	1	53,70
2000	158	245	29/32	**TH09.1**	1	67,65
3000	175	270	29/32	**TH10.1**	1	117,20

Evaporating flasks with PUR coating

Made of DURAN®. With ground glass joint, pear shaped.
Highly transparent coating provides protection from scratches, impacts and light (absorption up to approx. 380 nm). In the event of glass breakage, the coating helps contain broken glass and leakage. Temperature stable from -30 to +140 °C. Autoclavable.

Volume (ml)	Flask outer ∅ (mm)	Height (mm)	Ground glass joint	Art. No.	Pack Qty.	€
50	56	95	29/32	**TH11.1**	1	64,35
100	60	110	29/32	**TH12.1**	1	66,15
250	81	140	29/32	**TH13.1**	1	83,35
500	101	170	29/32	**TH14.1**	1	96,75
1000	126	210	29/32	**TH15.1**	1	113,95
2000	158	245	29/32	**TH16.1**	1	148,35
3000	175	270	29/32	**TH17.1**	1	188,15

- Rotary evaporator see page 991
- Round bottom flask stand see page 146

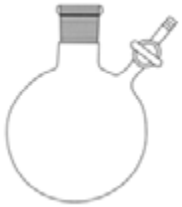
Standard ground joint flasks

Material
DURAN®

Nitrogen round-bottom flasks (Schlenk flasks)

Made of DURAN®. With ground glass joint. With stopcock ground glass joint 14.5; bore hole 2.5 mm, connector ∅ 9 mm.

Volume (ml)	Conical ground joint (NS)	Height (mm)	Art. No.	Pack Qty.	€
25	14/23	85	**KY38.1**	1	47,70
50	14/23	90	**KY39.1**	1	48,15
50	29/32	90	**KY42.1**	1	49,35
100	14/23	105	**KY40.1**	1	50,40
100	29/32	105	**KY43.1**	1	52,50
250	14/23	140	**KY41.1**	1	60,85
250	29/32	137	**KY44.1**	1	60,80
500	29/32	160	**KY45.1**	1	65,15
1000	29/32	192	**KY46.1**	1	82,55



Round bottom flasks with stopcock, special sizes

By Winzer. Made of borosilicate glass 3.3. With ground glass joint and NS 12.5 stopcock, 2.5 mm hole. Connector for hoses with inner ∅ 8 mm.

Volume (ml)	Conical ground joint (NS)	Art. No.	Pack Qty.	€
10	14/23	**AAP1.1**	1	45,05
2000	29/32	**AAP2.1**	1	102,80

Material
DURAN®

Nitrogen round bottom flasks with stopcock

Made of DURAN®. With PTFE stopcock. Valve bore 2.5 mm.

Volume (ml)	Standard ground glass joint	Art. No.	Pack Qty.	€
25	14/23	**TH35.1**	1	61,10
50	14/23	**TH36.1**	1	63,00
50	29/32	**TH37.1**	1	64,05
100	14/23	**TH38.1**	1	66,55
100	29/32	**TH39.1**	1	68,40
250	14/23	**TH40.1**	1	74,00
250	29/32	**TH41.1**	1	75,25
500	29/32	**TH42.1**	1	77,80
1000	29/32	**TH43.1**	1	95,35

① ②

Material
DURAN®

Nitrogen tubes (Schlenk tubes)

Made of DURAN®. With stopcock ground glass joint 14.5; bore hole 2.5 mm, connector ∅ 9 mm.

① Model with sleeve joint 14/23

Volume (ml)	Art. No.	Pack Qty.	€
10	**KY47.1**	1	50,10
25	**KY48.1**	1	51,75
50	**KY49.1**	1	52,55
100	**KY50.1**	1	54,95
250	**KY51.1**	1	60,90

② Model with core joint 14/23

Volume (ml)	Art. No.	Pack Qty.	€
10	**KY52.1**	1	61,90
25	**KY53.1**	1	63,00
50	**KY54.1**	1	64,30
100	**KY55.1**	1	66,20
250	**KY56.1**	1	76,45

① ②

Material
DURAN®

Nitrogen tubes with stopcock

Made of DURAN®. With PTFE stopcock. Valve bore 2.5 mm.

① With ground glass socket 14/23

Volume (ml)	Art. No.	Pack Qty.	€
10	**TH25.1**	1	82,10
25	**TH26.1**	1	84,55
50	**TH27.1**	1	87,90
100	**TH28.1**	1	90,75
250	**TH29.1**	1	102,95

② With ground glass cone 14/23

Volume (ml)	Art. No.	Pack Qty.	€
10	**TH30.1**	1	96,25
25	**TH31.1**	1	97,45
50	**TH32.1**	1	100,10
100	**TH33.1**	1	103,00
250	**TH34.1**	1	111,80

▶ Bubble counter see page 154
▶ Dewar containers see page 255

Reversible frits/Stand. ground joint stoppers

Reversible frits

By Winzer. Made of borosilicate glass 3.3. With vacuum receiver, two stopcocks (NS 14.5 with solid glass plug, 2.5 mm hole) and ∅ 8 mm connector.

10 ml, filter plate ∅ 13 mm, ground glass cones 14/23.

Porosity	Art. No.	Pack Qty.	€
1	**AAT0.1**	1	170,95
2	**AAT1.1**	1	170,95
3	**AAT2.1**	1	170,95
4	**AAT3.1**	1	170,95

50 ml, filter plate ∅ 22 mm, ground glass cones 29/32.

Porosity	Art. No.	Pack Qty.	€
1	**AAT4.1**	1	183,85
2	**AAT5.1**	1	183,85
3	**AAT6.1**	1	183,85
4	**AAT7.1**	1	183,85

100 ml, filter plate ∅ 32 mm, ground glass cones 29/32.

Porosity	Art. No.	Pack Qty.	€
1	**AAT8.1**	1	189,20
2	**AAT9.1**	1	189,20
3	**AAX0.1**	1	189,20
4	**AAX1.1**	1	192,45

250 ml, filter plate ∅ 46 mm, ground glass cones 29/32.

Porosity	Art. No.	Pack Qty.	€
1	**AAX2.1**	1	210,70
2	**AAX3.1**	1	210,70
3	**AAX4.1**	1	206,40
4	**AAX5.1**	1	210,70

500 ml, filter plate ∅ 52 mm, ground glass cones 29/32.

Porosity	Art. No.	Pack Qty.	€
1	**AAX6.1**	1	261,25
2	**AAX7.1**	1	261,25
3	**AAX8.1**	1	261,25
4	**AAX9.1**	1	270,90

1000 ml, filter plate ∅ 75 mm, ground glass cones 29/32.

Porosity	Art. No.	Pack Qty.	€
1	**AAY0.1**	1	310,70
2	**AAY1.1**	1	306,40
3	**AAY2.1**	1	306,40
4	**AAY3.1**	1	306,40

- ▶ Volumetric flasks from page 25
- ▶ Mixing cylinder from page 24
- ▶ Test tubes see page 80
- ▶ Glass flasks see page 17
- ▶ Glass components from page 148

Cold traps

Made of DURAN®, cone and socket style 29/32.

Without steam outlet

Coolant (ml)	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
200	270	70	**Y803.1**	1	306,40
500	320	85	**Y804.1**	1	448,30
1000	400	100	**Y805.1**	1	785,85

With steam outlet

Coolant (ml)	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
200	370	70	**Y806.1**	1	382,70
500	395	85	**Y807.1**	1	519,25
1000	480	100	**Y808.1**	1	884,75

Glass stoppers

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

Type	Standard taper (NS)	Art. No.	Pack Qty.	€
Solid	14/23	**E652.1**	10	44,50
Solid	19/26	**E653.1**	10	63,50
Semi-hollow	29/32	**E654.1**	10	71,70
Semi-hollow	45/40	**E655.1**	1	12,40

Brown glass stoppers

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

Type	Standard taper (NS)	Art. No.	Pack Qty.	€
SBW glass, solid	14/23	**LK28.1**	10	64,40
SBW glass, solid	19/26	**LK29.1**	10	77,40
DURAN®, solid	24/29	**LK30.1**	10	96,00
DURAN®, semi-hollow	29/32	**LK32.1**	10	95,30
DURAN®, semi-hollow	45/40	**LK33.1**	1	17,40

Standard ground joint stoppers

DURAN WHEATON KIMBLE

Material DURAN®

A 121 °C

Hollow glass stoppers

Made of DURAN®. Hexagonal with ground glass joint. Autoclavable.

Standard taper (NS)	Art. No.	Pack Qty.	€
7/16	**X782.1**	10	23,55
10/19	**X783.1**	10	14,90
12/21	**X784.1**	10	15,80
14/23	**X785.1**	10	15,95
19/26	**X786.1**	10	20,85
24/29	**X787.1**	10	22,70
29/32	**X788.1**	10	27,40
34/35	**X789.1**	1	8,75
45/40	**X790.1**	1	11,95

DURAN WHEATON KIMBLE

Standard ground glass joint stoppers

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

Standard taper (NS)	Colour	Art. No.	Pack Qty.	€
7/16	blue	**AKH6.1**	10	7,75
10/19	green	**AKH7.1**	10	9,90
12/21	violet	**AKH8.1**	10	11,85
14/23	yellow	**AKH9.1**	10	8,35
19/26	blue	**AKK0.1**	10	9,55
24/29	green	**AKK1.1**	10	11,20
29/32	red	**AKK2.1**	10	13,50
34/35	orange	**AKK3.1**	1	2,95
45/40	brown	**AKK4.1**	1	3,35

▶ Stoppers made of natural rubber see page 83

Plastic stoppers

Made of **PE**. With ground glass joint in acc. with DIN 12254, octagonal.

Standard taper (NS)	Art. No.	Pack Qty.	€
7/16	**LL77.1**	10	5,60
10/19	**LL78.1**	10	7,50
12/21	**LL79.1**	10	8,00
14/23	**LL80.1**	10	8,55
19/26	**LL81.1**	10	11,00
24/29	**LL82.1**	10	12,30
29/32	**LL83.1**	10	13,40
34/35	**LL84.1**	1	3,35
45/40	**LL85.1**	1	3,80

Rotilabo®-standard ground glass joint stoppers

Made of **PE**. In acc. with DIN 12242.

Standard ground joint (NS)	Colour	Bottom ∅ (mm)	Art. No.	Pack Qty.	€
7/16	violet	5,9	**K864.1**	10	10,50
10/19	blue	8,1	**K865.1**	10	10,50
12/21	green	10,4	**K866.1**	10	10,50
14/23	brown	12,2	**K867.1**	10	10,50
19/26	yellow	16,4	**K868.1**	10	12,85
24/29	red	21,1	**K869.1**	10	16,10
29/32	black	25,8	**K870.1**	5	9,90
34/35	white	30,9	**K871.1**	5	13,25

❄❄❄ A 121 °C

Rotilabo®-PTFE stoppers

Made of **PTFE**. Usable without ground joint grease.
Chemically inert, temperature stable from - 200 to +250 °C. Autoclavable.

Standard ground glass joint	Height (mm)	Art. No.	Pack Qty.	€
10/19	31	**NX99.1**	1	8,55
14/23	34	**NY00.1**	1	9,65
19/26	38	**NY01.1**	1	11,65
24/29	44	**NY02.1**	1	14,65
29/32	47	**NY03.1**	1	17,00
34/35	51	**NY04.1**	1	20,00

Wire joint clamps

Conical joint clips

Made of **POM**. Resistant to most chemicals.
Temperature stable up to +90 °C.

for ground glass joints	Colour	Art. No.	Pack Qty.	€
10	green	**1163.1**	12	32,80
12	violet	**1164.1**	12	35,10
14	yellow	**1165.1**	12	37,10
19	blue	**1166.1**	12	38,55
24	green	**1167.1**	12	40,50
29	red	**1168.1**	12	41,40
34	orange	**1169.1**	12	44,05
40	yellow	**1170.1**	12	50,50
45	brown	**1171.1**	12	51,50

Safety clips for conically tapered joints

Made of **POM**. Can be varied in height, also for ground joint sleeves with grip band. Highly chemical-resistant. Colour: Blue. Heat resistant up to approx. +150 °C.

Ground glass joint	Art. No.	Pack Qty.	€
10/19	**EKA0.1**	10	23,20
12/21	**EKA1.1**	10	24,70
14/23	**EKA2.1**	10	25,55
19/26	**EKA3.1**	10	26,30
24/29	**EKA4.1**	10	27,05
29/32	**EKA5.1**	10	27,60
34/35	**EKA6.1**	10	29,35
45/40	**EKA8.1**	10	33,85

A 121 °C

Rotilabo®-PTFE clamps for ground joint clamps

Made of PTFE-encased steel. Chemically inert, temperature stable from -200 to +250 °C. Autoclavable.

Standard ground glass joint	Art. No.	Pack Qty.	€
14/23	**NX71.1**	1	5,05
19/26	**NX72.1**	1	5,35
24/29	**NX73.1**	1	5,50
29/32	**NX74.1**	1	5,75
34/35	**NX75.1**	1	7,10
45/40	**NX76.1**	1	7,90

A 121 °C

Rotilabo®-wire joint clamps

Made of nickel chromium spring steel. For conical ground glass joints. Autoclavable.

Ground glass joint	Art. No.	Pack Qty.	€
14/23	**CE96.1**	1	4,00
19/26	**CE97.1**	1	4,15
24/29	**CE98.1**	1	4,90
29/32	**CE99.1**	1	5,20
45/40	**CH00.1**	1	6,70

A 121 °C

Clamps for conical ground joint

Made of spring steel, nickel-plated. Suitable for temperatures over 150 °C. Autoclavable.

for ground glass joints	Art. No.	Pack Qty.	€
14	**8231.1**	4	25,50
19	**8232.1**	4	27,00
24	**8233.1**	4	28,20
29	**8234.1**	4	29,40
Set	**8289.1**	4	30,10

Spring clips

Made of nickel-plated steel. For bottles with standard ground glass joints and Winkler oxygen bottles.

Suitable for ground glass joints	Art. No.	Pack Qty.	€
NS 14	**CEA6.1**	1	3,35
NS 19	**CEA7.1**	1	3,55
NS 24	**CEA8.1**	1	3,80
NS 29	**CEA9.1**	1	4,20

- Winkler bottles see page 31
- Glass components until page 148

Round bottom flask stand

121 °C

Rotilabo®-fork clamps for ground joints

Made of nickel chromium steel. Autoclavable.

Without set screw

Ground glass joint	Art. No.	Pack Qty.	€
14/23	**CH01.1**	1	13,65
19/26	**CH02.1**	1	14,30
24/29	**CH03.1**	1	14,95
29/32	**CH04.1**	1	17,15
45/40	**CH05.1**	1	18,15

With set screw

Ground glass joint	Art. No.	Pack Qty.	€
14/23	**CH06.1**	1	19,25
19/26	**CH07.1**	1	19,90
24/29	**CH08.1**	1	21,00
29/32	**CH09.1**	1	22,00
45/40	**CH10.1**	1	23,50

121 °C

Rotilabo®-joint clamps for spherical ground joints

Made of **stainless steel.** With adjustment screw. For securing spherical ground glass joints. Very sturdy model. Autoclavable.

For spherical joint	Art. No.	Pack Qty.	€
13/2	**E033.1**	1	10,70
19/9	**E034.1**	1	11,80
29/15	**E035.1**	1	12,85
35/25	**E036.1**	1	13,95
40/25	**E037.1**	1	24,75
65/45	**E038.1**	1	40,65

Coil spring ground-joint clamps

For secure connection of tapered ground joints.
Delivery without coil springs. Please order separately.

Aluminium rings with hooks

for ground glass joints	Art. No.	Pack Qty.	€
12/21-14/23	**LE76.1**	10	16,70
19/26-24/29	**LE77.1**	10	33,90
29/32-34/35	**LE78.1**	10	17,70
45/40	**LE79.1**	10	34,95

Coil springs, made of stainless steel.

Total length (mm)	for aluminium rings	Art. No.	Pack Qty.	€
25	LE76.1	**LE80.1**	10	26,70
35	LE77.1	**LE81.1**	10	27,90
40	LE78.1	**LE82.1**	10	34,20
60	LE79.1	**LE83.1**	10	42,95

121 °C

Flask stand

Made of **PP**. Secure hold for flasks and tubes of different shapes and sizes. Autoclavable.

for flask vol. (ml)	Innner ∅ (mm)	Overall height (mm)	Art. No.	Pack Qty.	€
10	36	73	**ETA7.1**	3	25,40
25	45	74	**ETA8.1**	3	25,40
50	55	75	**ETA9.1**	3	25,40
100	64	88	**ETC0.1**	3	29,00
250	89	110	**ETC1.1**	3	34,65
500	110	132	**ETC2.1**	3	37,60

Flask stand set

Set comprising 3x 10 ml, 25 ml, 50 ml and 100-ml stands each.

Art. No.	Pack Qty. (set)	€
ETC3.1	1 set = 12 stands	109,65

Ground glass joints seals

A 121 °C

Round bottom flask stand

Made of PP. With 10-step inner wall for good stability. Suitable for round bottom flasks up to 10 litres in size. Usable at temperatures of up to +100 °C (for short periods). H 49 mm, ∅ 160 mm. Autoclavable.

Art. No.	Pack Qty.	€
TT11.1	1	9,90

Rotilabo®-cork rings

Compressed cork secure non-slip stand for round flasks, etc.

for flask vol. (ml)	Outside ∅ (mm)	Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
10-100	80	30	30	**H111.1**	5	10,70
250-500	110	60	30	**H112.1**	5	13,90
500-1000	140	90	30	**H113.1**	5	20,35
1000-6000	170	120	30	**H114.1**	5	25,60
10 000	210	160	30	**H115.1**	2	18,20
20 000	240	180	30	**H116.1**	2	23,55

Rotilabo®-cork ring assortments

Set 1 containing 3 rings each, type H111.1/H112.1/H113.1
Set 2 containing 2 rings each, type H114.1/H115.1/H116.1

Type	Art. No.	Pack Qty. (assortment)	€
Set 1 for flask vol.10-1000 ml	**0421.1**	1	25,50
Set 2 for flask vol. 1000-20 000 ml	**0422.1**	1	49,60

Rotilabo®-compressed cork mats

10 mm thick, ideal for hot flat-bottom flasks, beakers, etc. soft and non-slip. Pack: contains 2 mats 30 x 30 cm and 4 mats 15 x 15 cm.

Art. No.	Pack Qty. (assortment)	€
1391.1	1	36,80

- Clear lubricant see page 1171
- Glass flasks and ground components see page 150

❄❄❄ A 121 °C

Rotilabo®-ridged sleeves

Made of **PTFE**. For gas-, liquid- and vacuum-tight ground glass joints up to max. 0.1 mbar. Almost universally chemically-resistant, temperature stable from -200 to +260 °C. Easy to remove with thick rim. Reusable.
No grease necessary. Autoclavable.

Conical ground joint (NS)	Art. No.	Pack Qty.	€
7/16	**E053.1**	10	31,30
10/19	**E054.1**	10	25,10
12/21	**E055.1**	10	28,50
14/23	**0692.1**	10	12,40
19/26	**0693.1**	10	12,70
24/29	**E056.1**	10	13,80
29/32	**0694.1**	10	13,65
34/35	**E057.1**	5	11,30
45/40	**0695.1**	5	14,55
60/46	**E058.1**	5	20,35

❄❄❄ A 121 °C

Rotilabo®-sealing sleeves

Made of **PTFE**, for gas-, liquid- and vacuum-tight ground glass joints. Joint rings on the outer side of the conical sleeves ensure a high vacuum-tight seal (Leakage rate <1 x 10^{-1} mbar l s^{-1}) and prevent the ground glass joints from sticking. Easy to remove with thick rim. Reusable. Practically resistant to all chemicals. Temperature stable from -200 to +260 °C.
No grease necessary. Autoclavable.

Conical ground joint (NS)	Art. No.	Pack Qty.	€
10/19	**C246.1**	1	7,50
14/23	**1012.1**	1	8,30
19/26	**C248.1**	1	9,15
24/29	**C249.1**	1	10,55
29/32	**1013.1**	1	16,25
34/35	**C250.1**	1	17,75
45/40	**1014.1**	1	23,65

❄❄❄ A 121 °C

Rotilabo®-spherical ground glass joint sleeves

Made of **PTFE**. For gas-, liquid- and vacuum-tight ball-and-socket joints. With sealing grooves for sealing in high vacuums (leakage: <1 x 10^{-2} mbar l s^{-1}). Easy to remove and reusable. No grease necessary. Temperature stable from -200 to +260 °C. High chemical resistance. Autoclavable.

For spherical joint	Art. No.	Pack Qty.	€
13	**A219.1**	5	31,15
19	**A220.1**	5	29,00
29	**A221.1**	5	38,20
35	**A222.1**	5	48,20
40	**A223.1**	5	68,80

Reducing adapters

Rotilabo®-seals for conical ground glass joints

Made of **PTFE**. Can be used to seal the equipment and containers. For gas-, liquid- and extremely vacuum-tight standard ground joints (Leakage rate <1 x 10^{-6} Pa l s^{-1}). Prevents seizing of joints. Joints remain clean and free of grease. Temperature stable up to +250 °C. Seals are wafer-thin and can be combined with joint clips. Autoclavable.
Delivery incl. cartridge with 50 fitted gaskets.

for ground glass joints	Art. No.	Pack Qty.	€
12	**T221.1**	50	26,70
14	**E699.1**	50	29,00
19	**E700.1**	50	30,05
24	**E701.1**	50	31,10
29	**E702.1**	50	32,20
45	**T222.1**	50	42,90

Rotilabo®-bellow connectors for ground joints

Made of **PTFE**. Bend of angle max. 120°.
Prevents tension between parts in glass equipment. Autoclavable.

Conical ground joint (NS)	Art. No.	Pack Qty.	€
14/23	**7235.1**	1	46,80
19/26	**7236.1**	1	53,65
24/29	**7239.1**	1	61,20
29/32	**7240.1**	1	70,65

Hose connection plug for standard ground joints

Made of **PP**, transparent, NS 29/32. With 2 ∅ 8 mm hose connections. Autoclavable.

Art. No.	Pack Qty.	€
TT21.1	1	8,80

Rotilabo® PTFE-reducers

Made of **PTFE**. Usable without ground joint grease.
Chemically inert, temperature stable from - 200 to + 250 °C. Autoclavable.

Socket (ground glass)	Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	19/26	**NX82.1**	1	13,95
14/23	24/29	**NX83.1**	1	16,10
19/26	24/29	**NX84.1**	1	17,10
19/26	29/32	**NX85.1**	1	21,45
19/26	34/35	**NX86.1**	1	24,55
24/29	29/32	**NX87.1**	1	21,45
24/29	34/35	**NX88.1**	1	24,65
24/29	45/40	**NX89.1**	1	28,50
29/32	34/35	**NX90.1**	1	24,55
29/32	45/40	**NX91.1**	1	28,50

Ground glass joint reduction set

Made of **PTFE**. Highly pure, chemically inert. Comprising 7 reducer rings: NS 14, NS 19, NS 24, NS 29, NS 34, NS 45, NS 60. Height 20 mm, suitable for all ground glass joints conforming to DIN 12242.
Temperature stable from -200 °C to +250 °C. Suitable for vacuum.

Art. No.	Pack Qty.	€
NY32.1	1	79,85

Material DURAN®

Extensions

Made of DURAN®.

Socket (ground glass)	Cone (ground glass)	∅ (mm)	Wall thickness (mm)	Overall length, approx. (mm)	Art. No.	Pack Qty.	€
14/23	14/23	17	1.8	120	**TK08.1**	1	10,95
14/23	29/32	26	2.0	130	**TK09.1**	1	12,45
19/26	19/26	22	1.8	125	**TK10.1**	1	11,70
29/32	29/32	33	2.0	150	**TK11.1**	1	13,85

Reducing adapters

Material
DURAN®

Reducing adapters

Made of DURAN®. With ground glass joints (NS) in acc. with DIN 12257.

*In addition to DIN

Socket (ground glass)	Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	19/26	**K267.1**	1	10,55
14/23	24/29*	**K268.1**	1	10,70
14/23	29/32	**K269.1**	1	10,55
19/26	14/23	**K270.1**	1	11,80
19/26	24/29*	**K271.1**	1	12,50
19/26	29/32	**K272.1**	1	11,80
24/29*	14/23	**K273.1**	1	15,05
24/29*	19/26	**K274.1**	1	16,15
24/29*	29/32	**K275.1**	1	12,75
29/32	14/23	**K276.1**	1	14,80
29/32	19/26	**K277.1**	1	15,30
29/32	24/29*	**K278.1**	1	17,55
29/32	45/40	**KN64.1**	1	15,40
29/32*	60/46	**TK15.1**	1	59,80
45/40*	29/32	**KN65.1**	1	25,20
45/40*	60/46	**TK16.1**	1	69,05
60/46*	29/32	**TK17.1**	1	79,40
60/46*	45/40	**TK18.1**	1	90,10

Material
DURAN®

Adapters from ground glass joint to spherical socket

Made of DURAN®.

Ground glass joint to spherical socket

Cone (ground glass)	Connection (spherical)	Art. No.	Pack Qty.	€
29/32	29	**TH93.1**	1	39,15
29/32	35	**TH94.1**	1	46,60

Ground joint socket to spherical socket

Socket (ground glass)	Ball (spherical)	Art. No.	Pack Qty.	€
29/32	29	**TH95.1**	1	40,30
29/32	35	**TH96.1**	1	45,30

Material
DURAN®

Adapters with olive, ground glass joint

Made of DURAN®. With ground glass joint core and tubing olives ∅ 10 mm.

Straight tubing olive

Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**CA80.1**	1	9,00
19/26	**CA81.1**	1	9,65
24/29	**CA82.1**	1	10,90
29/32	**CA83.1**	1	11,10

Bent tubing olive (90°)

Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**CA84.1**	1	9,65
19/26	**CA85.1**	1	10,90
24/29	**CA86.1**	1	11,80
29/32	**CA87.1**	1	11,80

Material
DURAN®

Adapters with olive and sleeve

Made of DURAN®. With sleeve and tubing olive outer-∅ 10 mm.

Straight tubing olive

Socket (ground glass)	Art. No.	Pack Qty.	€
14/23	**LK46.1**	1	13,35
19/26	**LK47.1**	1	14,55
24/29	**LK48.1**	1	15,95
29/32	**LK49.1**	1	16,80

Bent tubing olive (90°)

Socket (ground glass)	Art. No.	Pack Qty.	€
14/23	**LK50.1**	1	13,25
19/26	**LK51.1**	1	14,35
24/29	**LK52.1**	1	15,95
29/32	**LK53.1**	1	16,40

Reducing adapters

Material
DURAN®

Adapters with NS-stopcock

Made of DURAN®. With ground glass joint core and stopcock with solid glass plugs. Bore hole 2.5 mm. Both straight and 90° offset tubing olives ∅ 10 mm are available.

Straight tubing olive

Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**CC24.1**	1	26,85
19/26	**CC25.1**	1	29,00
24/29	**CC26.1**	1	30,70
29/32	**CC27.1**	1	30,70

Bent tubing olive (90°)

Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**CC28.1**	1	26,90
19/26	**CC29.1**	1	29,00
24/29	**CC30.1**	1	30,70
29/32	**CC31.1**	1	30,70

Material
DURAN®

Adapters with socket and stopcock

Made of DURAN®. With bent nozzle.
Stopcock NS 14.5 with solid glass plug, bore 2.5 mm, olive ∅ 10 mm.

Socket (ground glass)	Art. No.	Pack Qty.	€
14/23	**LK54.1**	1	34,15
19/26	**LK55.1**	1	35,15
24/29	**LK56.1**	1	38,20
29/32	**LK57.1**	1	39,65

Material
DURAN®

Adapters with stopcock

Made of DURAN®. With solid glass plugs and screw retaining devices for Art. No. EPE9.1 or rubber seal for Art. No. EPH0.1.

Socket (ground glass)	Cone (ground glass)	Hole ∅ (mm)	Art. No.	Pack Qty.	€
14/23	14/23	2,5	**EPE9.1**	1	65,20
29/32	29/32	8	**EPH0.1**	1	74,50

Ground swivel screw fittings

Ground element made of **PTFE**, with screw cap made of **PPS**.
Allows secure fixing of thermometers, sensor probes, tubes or hoses to avoid collisions within the reaction vial, e.g. during simultaneous use of a stirrer shaft.
Temperature stable from -50 to +250 °C.

Standard ground glass joint	Outer ∅ of opening (mm)	Maximum angle of deflection	Cap thread	Art. No.	Pack Qty.	€
19/26	6	4°	GL 18	**NY48.1**	1	125,80
29/32	6	8°	GL 25	**NY49.1**	1	92,70
29/32	8	7°	GL 25	**NY50.1**	1	90,30
29/32	10	6°	GL 25	**NY51.1**	1	92,45
29/32	12	5°	GL 25	**NY52.1**	1	91,60

Ground glass joints components/glass tubes

Material DURAN®

Thermometer adapters

Made of DURAN®. Ground glass joint, plastic screw cap, silicone seal with PTFE-sleeve.

Thread	for thermometers-∅ (mm)	Cone (ground glass)	Art. No.	Pack Qty.	€
14	5,5-6,5	14/23	**AK92.1**	1	14,60
14	5,5-6,5	19/26	**TE98.1**	1	17,10
14	5,5-6,5	24/29	**TE99.1**	1	18,40
14	5,5-6,5	29/32	**AK93.1**	1	16,95
18	7,5-9,0	14/23	**AK94.1**	1	15,60
18	7,5-9,0	19/26	**TH00.1**	1	18,25
18	7,5-9,0	29/32	**AK95.1**	1	17,55
25	9,0-11,0	29/32	**TH01.1**	1	36,00
32	13,0-15,0	29/32	**TH02.1**	1	42,90

A 121 °C

① Screw caps with borehole

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

Thread GL	Hole ∅ (mm)	Art. No.	Pack Qty.	€
14	9,5	**L993.1**	2	3,60
18	11	**EL61.1**	1	2,90
25	15	**LL40.1**	5	9,50
32	20	**H396.1**	1	2,60
45	34	**L994.1**	1	4,50

② Gaskets for screw caps with borehole

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

Thread GL	for pipe ∅ (mm)	Art. No.	Pack Qty.	€
14	5.5-6.5	**AK96.1**	1	4,25
18	5.5-6.5	**AK97.1**	1	4,80
18	7.5-9.0	**AK98.1**	1	4,80
18	9.0-11.0	**AK99.1**	1	4,80
25	7.5-9.0	**LL92.1**	2	10,25
25	9.0-11.0	**LL93.1**	2	10,25
25	11.0-13.0	**LL94.1**	2	10,25
32	9.0-11.0	**LL95.1**	2	14,90
32	11.0-13.0	**H397.1**	1	7,20
32	13.0-15.0	**LL96.1**	2	14,80
32	15.0-17.0	**LL97.1**	2	13,90
32	17.0-19.0	**LL98.1**	2	14,25
45	25.0-27.0	**LL99.1**	1	13,65
45	31.0-33.0	**LN00.1**	1	13,00

Material DURAN®

Spherical joint connections

Made of DURAN®. In accordance with DIN 12264.

*in addition to DIN

Connection (spherical)	Total length (mm)	Art. No.	Pack Qty.	€
13/2*	100	**EKA9.1**	10	89,95
13/5	100	**EKC0.1**	10	63,45
19	120	**EKC1.1**	10	65,80
29	120	**EKC2.1**	10	76,90
35*	120	**EKC3.1**	10	90,20
40	120	**EKC4.1**	1	16,05
41*	120	**EKC5.1**	1	25,40
51	150	**EKC6.1**	1	39,00
65	170	**EKC7.1**	1	78,05

Material DURAN®

Balls with a spherical joint

Made of DURAN®. In accordance with DIN 12264.

*in addition to DIN

Ball (spherical)	Total length (mm)	Art. No.	Pack Qty.	€
13/2*	100	**EKC8.1**	10	88,50
13/5	100	**EKC9.1**	10	65,60
19	120	**EKE0.1**	10	68,25
29	120	**EKE1.1**	10	85,60
35*	120	**EKE2.1**	10	97,05
40	120	**EKE3.1**	1	18,05
41*	120	**EKE4.1**	1	26,70
51	150	**EKE5.1**	1	39,10
65	170	**EKE6.1**	1	63,40

- ▶ Ground joint thermometers see page 813
- ▶ Thread couplings see page 54
- ▶ Clear lubricant see page 1171

Ground glass joints components/glass tubes

Material DURAN®

Tubes with standard ground joint

Made of DURAN®.

Ground glass joints in acc. with DIN 12249 Shape B.

Cone (ground glass)	∅ (mm)	Wall thickness (mm)	Overall length, approx. (mm)	Art. No.	Pack Qty.	€
14/23	13	1.5	130	**TH83.1**	10	24,70
19/26	17	1.8	130	**TH84.1**	10	31,20
24/29	22	1.8	130	**TH85.1**	10	36,15
29/32	26	2.0	130	**TH86.1**	10	37,65
45/40	40	2.3	145	**TH87.1**	10	92,45

Sockets with ground glass joint in acc. with DIN 12249 Shape E.

Socket (ground glass)	∅ (mm)	Wall thickness (mm)	Overall length, approx. (mm)	Art. No.	Pack Qty.	€
14/23	17	1.8	130	**TH88.1**	10	24,55
19/26	22	1.8	130	**TH89.1**	10	28,10
24/29	28	2.0	130	**TH90.1**	10	37,40
29/32	33	2.0	130	**TH91.1**	10	40,35
45/40	50	2.5	145	**TH92.1**	10	108,60

Material DURAN®

Threaded tubes

Made of DURAN®. Acc. to DIN 12216.

*In addition to DIN

Thread GL	∅ (mm)	Wall thickness (mm)	Overall length, approx. (mm)	Art. No.	Pack Qty.	€
14	12	1.5	100-120	**TH97.1**	10	14,50
18	16	1.8	100	**TH98.1**	10	19,80
25	22	1.8	100	**TH99.1**	10	29,75
32	28	2.0	140	**TK00.1**	10	45,75
45*	40	2.3	180	**TK01.1**	10	138,70

Glass tubes

Made of calcium soda glass. Length 50 cm.
Heat resistant up to approx. 100 °C.

Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
6	0.9	**CNK8.1**	12	7,85
8	0.9	**CNK9.1**	12	8,30
10	1.0	**CNL0.1**	12	8,55

Cooling tubes

Made of borosilicate glass 3.3. Ground glass joint. Autoclavable.

Length (mm)	Standard ground glass joint	Art. No.	Pack Qty.	€
500	29/32	**TP48.1**	1	18,20
1000	29/32	**TP49.1**	1	21,45

Material DURAN®

Immersion heater with bell

Made of DURAN®. To prevent boiling delay. Dimensions: L 180 x ∅ 4 mm.

Art. No.	Pack Qty.	€
EPX0.1	1	4,55

▶ Boiling pebbles see page 1181

Material
DURAN®

Gas inlet tubes/boiling capillaries

Made of DURAN®.
With ground cone and thin arms (for removing from the burner).

① **Straight.** Installation length approx. 200 mm.

Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**Y343.1**	1	10,95
19/26	**EPT4.1**	1	16,80
24/29	**EPT5.1**	1	19,05
29/32	**EPT6.1**	1	18,50

② **Straight, with valve stopcock.** For dosing, with angled olive (90°), olive ∅ 8 mm. Installation length approx. 150 mm.

Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**EPT7.1**	1	75,05

③ **Curved, (angle 90°).** Installation length approx. 250 mm.
Olive ∅ 10 mm.

Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**Y344.1**	1	12,50
19/26	**EPT8.1**	1	19,15
24/29	**EPT9.1**	1	31,00
29/32	**Y345.1**	1	21,00

Material
DURAN®

Elbow

Made of DURAN®. With two NS cones, curved.

① **Elbow, 75°**

Cones (NS)	Art. No.	Pack Qty.	€
14/23	**EPC6.1**	1	15,20
19/26	**EPC7.1**	1	21,15
24/29	**EPC8.1**	1	26,70
29/32	**EPC9.1**	1	30,10

② **Elbow, 90°**

Cones (NS)	Art. No.	Pack Qty.	€
14/23	**EPE0.1**	1	15,50
19/26	**EPE1.1**	1	20,45
24/29	**EPE2.1**	1	26,20
29/32	**EPE3.1**	1	29,25

Material
DURAN®

Two-necked adapters

Made of DURAN®. With parallel necks. In acc. with DIN 12594.
With two NS sleeves and one NS cone.

*in addition to DIN

Sockets (NS)	Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	14/23	**Y676.1**	1	20,75
19/26	19/26	**LK66.1**	1	30,85
19/26*	24/29	**EPC3.1**	1	32,05
24/29*	24/29	**EPC4.1**	1	34,40
24/23*	29/32	**EPC5.1**	1	32,65
29/32	29/32	**Y677.1**	1	29,05

Material
DURAN®

Claisen heads

Made of DURAN®. Sleeves NS 14/23. In acc. with DIN 12594.
For distillation thermometers with 55 mm total length.

Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**KX43.1**	1	30,10
29/32	**Y681.1**	1	36,55

Material
DURAN®

Distillation heads

Made of DURAN®. With one sleeve 14/23 and two NS cores.
Drain angle 75°. In accordance with DIN 12594.
For distillation thermometers with 55 mm installation length.

*In addition to DIN

Vertical cone (NS)	Angled cone (NS)	Art. No.	Pack Qty.	€
14/23	14/23	**KX44.1**	1	25,00
19/26	19/26	**EPE4.1**	1	21,90
24/29*	19/26	**EPE5.1**	1	26,90
24/29*	24/29	**EPE6.1**	1	27,45
29/32	29/32	**Y680.1**	1	31,20

▶ Distillation thermometers see page 813

Material
DURAN®

Vacuum adapters

Made of DURAN®. With olive, outer-∅ 7-8 mm. With drain tip.

① **Straight**

Socket/cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**LK62.1**	1	19,15
19/26	**LK63.1**	1	23,05
24/29	**LK64.1**	1	27,45
29/32	**LK65.1**	1	22,35

② **Bent 105°**

Socket/cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**Y341.1**	1	22,20
19/26	**LK70.1**	1	28,60
24/29	**LK71.1**	1	31,50
29/32	**Y342.1**	1	29,30

Material
DURAN®

Vacuum adapters with threaded connection

Made of DURAN®. In accordance with DIN 12594 and/or in addition to DIN. With threaded connection GL 18 and angle tip.

*in addition to DIN

① **Straight**

Socket/cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**EPP5.1**	1	31,50
19/26*	**EPP6.1**	1	30,45
24/29	**EPP7.1**	1	34,35
29/32	**EPP8.1**	1	34,35

② **Curved 105°**

Socket/cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**EPP9.1**	1	37,10
19/26*	**EPT0.1**	1	37,65
24/29	**EPT1.1**	1	41,25
29/32	**EPT2.1**	1	41,25

Accessories:

Olive with screw cap GL 18, straight	**LK73.1**	2	13,15
Olive with screw cap GL 18, curved	**LK75.1**	2	18,30

Material
DURAN®

Adapters for distillation receiver acc. to Bredt

Made of DURAN®. Sleeves with NS 29/32. With suction nozzle GL 18.

Type	Art. No.	Pack Qty.	€
Straight	**EPT3.1**	1	47,10
Curved 105°	**EE76.1**	1	57,85

Accessories:

Plastic olives, ∅ outside 10 mm	**EL60.1**	1	6,40
Screw cap with hole, GL 18	**EL61.1**	1	2,90

Material
DURAN®

Distributor acc. to Bredt

Made of DURAN®. With 4 cores ground glass joints NS 14/23 for round-bottomed flasks of max. 250 ml. The top is ground glass joint NS 29/32.

Art. No.	Pack Qty.	€
EE75.1	1	96,75

Material
DURAN®

Distilling distributors acc. to Bernauer (Spider)

Made of DURAN®. With vacuum connection, ground glass joint 14/23.

Socket (ground glass)	Art. No.	Pack Qty.	€
14/23	**KX78.1**	1	81,70
29/32	**KX79.1**	1	85,30

Material
DURAN®

① Delivery adapters

Made of DURAN®. With bent drain tube. Length 65 mm, angle 105°.

Socket (ground glass)	Art. No.	Pack Qty.	€
14/23	**LK58.1**	1	11,30
19/26	**LK59.1**	1	18,60
24/29	**LK60.1**	1	19,80
29/32	**LK61.1**	1	15,70

② Delivery adapters

Made of DURAN®. Bent 105°, with drain tip.

Socket (ground glass)	Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	14/23	**KX77.1**	1	16,35
19/26	19/26	**EPN9.1**	1	18,30
24/29	24/29	**EPP0.1**	1	21,50
29/32	29/32	**EE74.1**	1	20,45

Material
DURAN®

Delivery adapters

Made of DURAN®. Straight with suction connection (glass olive).

Socket/cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**EPP1.1**	1	16,65
19/26	**EPP2.1**	1	19,60
24/29	**EPP3.1**	1	21,50
29/32	**EPP4.1**	1	21,50

- Clamps for conical ground joint see page 144
- Ground joint sleeves see page 146
- Clear lubricant see page 1171
- Vacuum pumps see page 370

Material
DURAN®

Stutzer splash heads

Made of DURAN®. Straight with cone and socket.
Fits directly onto the destillation flask for droplet separation.

Socket (ground glass)	Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	14/23	**KX80.1**	1	57,30
19/26	24/29	**EPE8.1**	1	67,65
29/32	14/23	**EPE7.1**	1	67,65
29/32	29/32	**EE70.1**	1	58,30

Material
DURAN®

Bubble counter

Made of DURAN®. For monitoring gas flow.
∅ 32 mm, overall height 120 mm, hose connection ∅ 8 mm.

Length (mm)	Art. No.	Pack Qty.	€
100	**KX54.1**	1	27,55

Bubble counters with ground glass joint

Made of type 3.3 borosilicate glass. For monitoring the gas flow in apparatus. Suitable for excess pressure and vacuum.
With ground glass joint and GL 32 screw cap with PTFE-coated seal.
Overall height without ground joint approx. 145 mm, ∅ approx. 30 mm.
Temperature stable up to +200 °C.
Delivery without GL 14 connectors, please order separately for bubble counters with GL connection.

Connections	Cone (ground glass)	Art. No.	Pack Qty.	€
Tubing connector ∅ 7-8 mm	29	**CEK3.1**	1	138,70
Threaded connection GL 14	29	**CEK4.1**	1	138,70
Tubing connector ∅ 9-10 mm	14	**CEK5.1**	1	138,70
Threaded connection GL 14	14	**CEK6.1**	1	138,70

Accessories:

Tubing connector ∅ 9 mm with connecting cap GL 14	**LK72.1**	2	11,60

Material
DURAN®

Distillation bridges

Made of DURAN®. Joints are parallel and vertical.

Jacket length (mm)	Cone (ground glass)	Art. No.	Pack Qty.	€
150	14/23	**KX82.1**	1	17,75
350	29/32	**EE71.1**	1	33,25

Material
DURAN®

Distillation bridges

Made of DURAN®. Liebig condenser with vacuum stopper ∅ 8 mm. Sleeve NS 14/23. For distillation thermometers with 55 mm total length. ∅ olive water connection 11 mm.

Jacket length (mm)	Cone (ground glass)	Art. No.	Pack Qty.	€
160	14/23	**KX49.1**	1	64,50
250	29/32	**EE72.1**	1	76,90
400	29/32	**EE73.1**	1	86,25

Material
DURAN®

Distillation bridge

Made of DURAN®. Without condenser, with two vertical openings and ground glass joints 14/23. For distillation thermometers with 55 mm total length.

Jacket length (mm)	Cone (ground glass)	Art. No.	Pack Qty.	€
350	29/32	**KY60.1**	1	46,75

Material
DURAN®

Distillation bridges acc. to Claisen

Made of DURAN®. Liebig condenser with straight outlet, and ground glass joints 14/23. For distillation thermometers with 55 mm total length. Olives ∅ 11 mm.

Jacket length (mm)	Cone (ground glass)	Art. No.	Pack Qty.	€
160	14/23	**KX70.1**	1	71,90
250	29/32	**KX71.1**	1	81,30

Material
DURAN®

Distillation bridges

Made of DURAN®. Liebig condenser with straight outlet, and ground glass joints 14/23. For distillation thermometers with 55 mm total length. Olives ∅ 11 mm.

Jacket length (mm)	Cone (ground glass)	Art. No.	Pack Qty.	€
160	14/23	**KX72.1**	1	60,20
250	29/32	**KX73.1**	1	71,50

Material
DURAN®

Distillation bridges acc. to Claisen

Made of DURAN®. Liebig condenser with vacuum stopper ∅ 8 mm. Ground glass joints 14/23. For distillation thermometers with 55 mm total length. ∅ olive water connection 11 mm.

Jacket length (mm)	Cone (ground glass)	Art. No.	Pack Qty.	€
160	14/23	**KX45.1**	1	82,75
250	14/23	**KX46.1**	1	86,40
250	29/32	**KX47.1**	1	90,45
400	29/32	**KX48.1**	1	95,90

▶ Distillation thermometers see page 813

Material
DURAN®

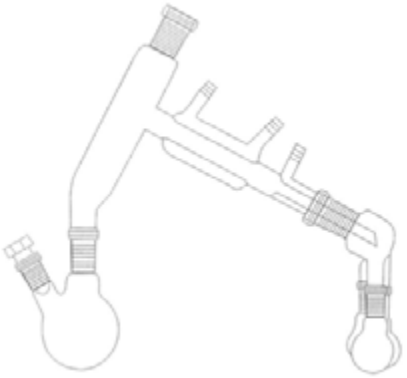
Short-path-distillation bridge

Made of DURAN®. Core and sleeve standard ground glass joint 14/23.
GL 14 coolant and vacuum connections.
Delivery without olive fittings and screw caps (please order separately).

Art. No.	Pack Qty.	€
LE20.1	1	93,35

Accessories:

Replacement plastic hose connection with silicone seal, straight, GL 14, outer- ∅ 8.6 mm	**L992.1**	2	3,35
Replacement screw caps, red, PBT, GL 14, hole ∅ 9.5 mm	**L993.1**	2	3,60



Micro distillation apparatus

Made of borosilicate glass 3.3. Compact design for loss-free condensate flow. Short-flow distilling link with socket and two ground glass cones 14/23, Liebig condenser, jacket length 70 mm and vacuum receiver.
Please order ground joint clamps and thermometer separately.
Delivery incl. distillation udder, 3 5 ml round bottom flasks, 50 ml double-neck flask and NS 14/23 hollow glass stopper.

Art. No.	Pack Qty.	€
AAN5.1	1	202,10

Replacement parts for micro distillation apparatus

Replacement parts

Type	Art. No.	Pack Qty.	€
Short-flow distilling link	**AAN6.1**	1	107,30
Distillation udder without vacuum receiver	**AAN7.1**	1	67,50
50-ml-double neck flask NS 14/23	**KY13.1**	1	21,45
5-ml round bottom flask NS 14/23	**HY49.1**	1	7,00
Hollow glass stopper NS 14/23	**X785.1**	10	15,95

Accessories:

Wire ground joint clamps NS 14/23	**CE96.1**	1	4,00
Thermometer -10 to +250 °C	**ET05.1**	1	19,90
Thermometer adapter	**AK92.1**	1	14,60

Apparatus for the determination of etheric oils

Made of borosilicate glass 3.3. in acc. with DAB. Complete distillation head with ground glass cone 29/32, Allihn cooler, vent plug NS 7/16, 1 ml measuring tube (graduated 0.01 ml) with 3 ml ball, refill/overflow funnel and Czako three-way stopcock with PTFE keys.

Art. No.	Pack Qty.	€
XX23.1	1	290,25

Material
DURAN®

Water analysis meter tubes acc. to Dean Stark

Made of DURAN®. In acc. with DIN 12420. Core and sleeve ground glass joint 29/32. With stopcock standard ground joint 14.5; bore hole ∅ 2.5 mm. Maximum measuring volume 10 ml, subdivisions 0.1 ml.
Delivery without condenser and flask, please order separately.

Design	Art. No.	Pack Qty.	€
Zero point at the stopcock	**LE60.1**	1	88,05
Zero point above stopcock	**LE61.1**	1	99,35
Without stopcock, zero point at tip	**LE62.1**	1	70,25

▶ Drying agents see Chromatography chapter!

Condensors

Material
DURAN®

Attachment for steam distillation

Made of DURAN®. With two ground glass joints 29/32 cores and GL 14 threaded connection. For 2000-ml-flasks.

Art. No.	Pack Qty.	€
LE19.1	1	61,55

① ② ③

Material
DURAN®

Vigreux columns

Made of DURAN®. Alternating horizontal and diagonal punctures.

① Without shell

Filling height (mm)	Total length (mm)	Socket/cone (ground glass)	Art. No.	Pack Qty.	€
200	300	14/23	**LE21.1**	1	48,70
300	425	14/23	**LE22.1**	1	61,65
300	445	29/32	**LE23.1**	1	60,95

② With slip-on glass shell

Filling height (mm)	Total length (mm)	Socket/cone (ground glass)	Art. No.	Pack Qty.	€
300	450	29/32	**E628.1**	1	87,60
600	650	29/32	**E629.1**	1	111,80

③ With fused on glass vacuum shell

Filling height (mm)	Total length (mm)	Socket/cone (ground glass)	Art. No.	Pack Qty.	€
200	300	14/23	**LE24.1**	1	144,05
300	445	29/32	**LE25.1**	1	180,60
600	745	29/32	**LE26.1**	1	184,90

Material
DURAN®

Columns acc. to Hempel

Made of DURAN®. For filling with packing (Raschig rings or glass pearls).

Without glass jacket

Filling height (mm)	Socket/cone (ground glass)	Art. No.	Pack Qty.	€
200	14/23	**TK19.1**	1	27,70
300	29/32	**TK20.1**	1	41,40
500	29/32	**TK21.1**	1	47,50
800	29/32	**TK22.1**	1	67,85

With fused-on glass jacket

Filling height (mm)	Socket/cone (ground glass)	Art. No.	Pack Qty.	€
200	14/23	**TK23.1**	1	147,30
300	29/32	**TK24.1**	1	192,45
500	29/32	**TK25.1**	1	201,05
800	29/32	**TK26.1**	1	245,10

Material
DURAN®

Condensers with glass hose connections

Made of DURAN®. With standard ground socket and cone. Olives ∅ 11 mm.

Liebig condensers, in acc. with DIN 12576.

*In add. to DIN

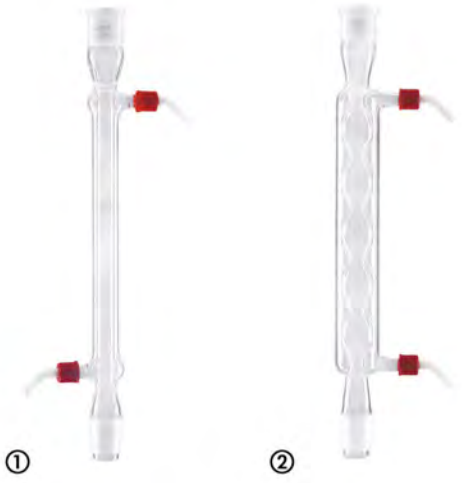
Jacket length (mm)	Socket/cone (ground glass)	Art. No.	Pack Qty.	€
160	14/23	**TK27.1**	1	37,50
160	19/26	**TK28.1**	1	40,45
250*	14/23	**TK29.1**	1	42,05
250	19/26	**TK30.1**	1	43,55
250*	24/29	**TK31.1**	1	44,00
250	29/32	**TK32.1**	1	44,75
400	29/32	**TK33.1**	1	55,40

Dimroth condensers, in acc. with DIN 12591.

*In add. to DIN

Jacket length (mm)	Socket/cone (ground glass)	Art. No.	Pack Qty.	€
160*	14/23	**TK34.1**	1	68,55
160*	19/26	**TK35.1**	1	75,10
250*	14/23	**TK36.1**	1	83,80
250*	19/26	**TK37.1**	1	85,40
250*	24/29	**TK38.1**	1	86,70
250	29/32	**TK39.1**	1	76,65
400	29/32	**TK40.1**	1	89,80
400	45/40	**TK41.1**	1	130,10

Condensors



Material DURAN®

① Liebig condensers

Made of DURAN®. With 2 ground glass joints and 2 removable plastic hose connections thread GL 14. In acc. with DIN 12576.

Jacket length (mm)	Socket (ground glass)	Cone (ground glass)	Art. No.	Pack Qty.	€
160	14/23	14/23	**E630.1**	1	41,55
250	14/23	14/23	**E631.1**	1	51,10
250	29/32	29/32	**E632.1**	1	51,50
400	29/32	29/32	**E633.1**	1	58,75

② Bulb condensers

Made of DURAN®. With 2 ground glass joints and 2 unscrewable plastic olives thread GL 14. In acc. with DIN 12581.

Jacket length (mm)	Number of beads	Socket/cone (ground glass)	Art. No.	Pack Qty.	€
160	5	14/23	**KX81.1**	1	53,70
250	5	29/32	**E634.1**	1	65,60
400	8	29/32	**E635.1**	1	80,10

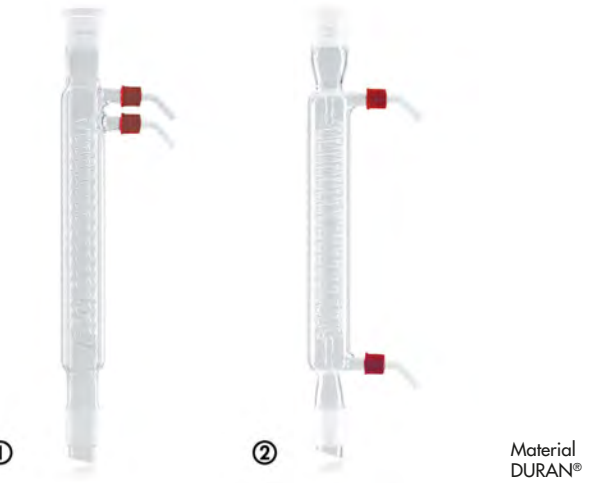
Material DURAN®

Dimroth condensers

Made of DURAN®. With two ground glass joints and two removable plastic hose connections thread GL 14. In acc. with DIN 12591.

* Not in acc. with DIN.

Jacket length (mm)	Socket (ground glass)	Cone (ground glass)	Art. No.	Pack Qty.	€
160*	14/23	14/23	**E637.1**	1	78,50
250	29/32	29/32	**E638.1**	1	83,85
400	29/32	29/32	**E639.1**	1	102,15



Material DURAN®

① Coil condensers

Made of DURAN®. With two removable plastic hose connections GL 14. In acc. with DIN 12593.

*Not in acc. with DIN

Jacket length (mm)	Socket/cone (ground glass)	Art. No.	Pack Qty.	€
160*	14/23	**TH44.1**	1	91,95
250*	24/29	**TH45.1**	1	121,50
160	29/32	**TH46.1**	1	93,45
250	29/32	**E640.1**	1	105,60
400	29/32	**E641.1**	1	113,95
500*	29/32	**TH47.1**	1	132,25

② Spiral condensers

Made of DURAN®. With two removable plastic hose connections thread GL 14.

Jacket length (mm)	Socket/cone (ground glass)	Art. No.	Pack Qty.	€
160	14/23	**TH48.1**	1	70,95
250	29/32	**E636.1**	1	85,90
400	29/32	**TH49.1**	1	133,30
500	29/32	**TH50.1**	1	138,70

- ▶ Tubes from page 385
- ▶ Round bottom flasks from page 134
- ▶ High quality ground glass joint sleeves and joint clamps from page 146
- ▶ To purchase RBS-liquid concentrate - the universal special cleaner for labware see page 1136

Material
DURAN®

Dimroth condensers

Made of DURAN®. For Soxhlet extractors, with two screw-off plastic olives.

Cone (ground glass)	Extractor-capacity (ml)	Art. No.	Pack Qty.	€
45/40	100-250	**AA60.1**	1	80,40
60/46	300-500	**AA61.1**	1	119,35
71/51	1000	**AA62.1**	1	140,85

Soxhlet extractors

Made of borosilicate glass 3.3.
Cone ground glass joints 29/32, socket 45/40. In acc. with DIN 12602.

* Not in acc. with DIN

Volume (ml)	Innner ∅ (mm)	Art. No.	Pack Qty.	€
100	43	**Y353.1**	1	41,40
150	43	**Y354.1**	1	45,15
250	45	**Y355.1**	1	56,90
500*	54	**Y356.1**	1	75,15

Selection list extraction thimbles

Extraction thimble (Art. No.)	Outer ∅ x H (mm)	For extractors **acc. to DIN** with volume (ml)
H203.1	25 x 80	30
H209.1	36 x 94	100
H210.1	33 x 100	150
L867.1	36 x 205	250
L868.1	52 x 230	500
L869.1	62 x 315	1000

▶ Further extraction thimbles see page 538

① ②

Material
DURAN®

① Soxhlet extractors

Made of DURAN®. Cone NS 29/32. In acc. with DIN 12602.

Sockets (NS)	Volume (ml)	Art. No.	Pack Qty.	€
29/32	30	**TE05.1**	1	50,40
45/40	100	**Y685.1**	1	72,50
45/40	150	**Y686.1**	1	76,25
45/40	250	**Y687.1**	1	79,80
60/46	500	**Y688.1**	1	113,95
71/51	1000	**Y689.1**	1	144,05

② Soxhlet extractors with stopcock

Made of DURAN®. Cone NS 29/32. In acc. with DIN 12602.

*not in acc. with DIN

Sockets (NS)	Volume (ml)	Art. No.	Pack Qty.	€
45/40	100	**Y690.1**	1	113,95
45/40	150*	**Y691.1**	1	117,20
45/40	250	**Y692.1**	1	126,85
60/46	500	**Y693.1**	1	175,25

Material
DURAN®

Knöfler-Böhm extraction heads

Made of DURAN®. Core standard ground joint 29/32. The extracting agent is constantly in circulation, the condensate flows back continuously through the extraction material into the flask.

Socket (ground glass)	Volume (ml)	Art. No.	Pack Qty.	€
29/32	30	**LE38.1**	1	165,55
45/40	100	**LE39.1**	1	206,40
45/40	250	**LE40.1**	1	227,90
60/46	500	**LE41.1**	1	299,95

Material
DURAN®

① Extraction heads for solids

Made of DURAN®. Core ground glass joint 29/32.
The ascending vapours enter the condenser directly; the condensate flows back continuously through the extraction material into the flask.
Delivery without glass inserts for extraction sleeves, please order separately.

Socket (ground glass)	Volume (ml)	Art. No.	Pack Qty.	€
45/40	70	**LE42.1**	1	90,85
45/40	100	**LE43.1**	1	94,50
60/46	250	**LE44.1**	1	136,55

② Glass inserts for extraction sleeves

Made of DURAN®. For extraction adapters LE42.1ff.

Volume (ml)	Art. No.	Pack Qty.	€
70	**LE45.1**	1	34,15
100	**LE46.1**	1	36,15
250	**LE47.1**	1	42,25

Material
DURAN®

① Extraction heads

Made of DURAN®. Core ground glass joint 29/32.
For extracting liquids with a particularly light extraction agent.
Delivery without distribution tube, please order separately.

Socket (ground glass)	Volume (ml)	Art. No.	Pack Qty.	€
45/40	100	**LE48.1**	1	192,45
45/40	250	**LE49.1**	1	226,85
60/46	500	**LE50.1**	1	269,85

② Distribution tubes

Made of DURAN®. With frit porosity 0. For extraction adapters LE48.1ff.

Volume (ml)	Art. No.	Pack Qty.	€
100	**LE51.1**	1	60,70
250	**LE52.1**	1	69,70
500	**LE53.1**	1	74,40

Material
DURAN®

① Thielepape extraction heads

Made of DURAN®. Core ground glass joint 29/32. With two-way stopcock ground joint 18.8 and bore hole ∅ 4 mm. For extraction of solid materials.
The ascending vapours enter the condenser directly; the condensate flows back continuously through the extraction material into the flask.
Delivery without fritted sleeve, please order separately.

Socket (ground glass)	Volume (ml)	Art. No.	Pack Qty.	€
29/32	30	**LE32.1**	1	126,85
45/40	150	**LE33.1**	1	191,35
45/40	250	**LE34.1**	1	208,55

② Fritted sleeves

Made of DURAN®. For Thielepape extraction adapters.
With fused in filter plate, porosity 0.

Volume (ml)	Art. No.	Pack Qty.	€
30	**LE35.1**	1	39,25
150	**LE36.1**	1	40,10
250	**LE37.1**	1	47,95

Material
DURAN®

① Extractor heads

Made of DURAN®. Core 29/32. For the extraction of liquids with specific heavier solvents.
Delivery without distribution tube, please order separately.

Socket (ground glass)	Volume (ml)	Art. No.	Pack Qty.	€
45/40	100	**LE54.1**	1	177,40
45/40	250	**LE55.1**	1	226,85
60/46	500	**LE56.1**	1	278,45

② Distribution tubes

Made of DURAN®. With frit porosity 0. For extractor heads LE54.1ff.

Volume (ml)	Art. No.	Pack Qty.	€
100	**LE57.1**	1	36,95
250	**LE58.1**	1	41,80
500	**LE59.1**	1	54,85

Drying tubes

Material
DURAN®

Drying tubes with cone

Made of DURAN®. Bent (75°). Inner-∅ 15 mm.

Cone (ground glass)	Art. No.	Pack Qty.	€
14/23	**KX74.1**	1	15,30
29/32	**Y340.1**	1	19,05

Material
DURAN®

Drying tubes (chlorcalcium tubes)

Made of DURAN®. In acc. with DIN 12610, straight or bent.
Inner-∅ 13 mm, nominal length 130 mm. ∅ hose connection 6 mm.

Design	Art. No.	Pack Qty.	€
Straight	**KX75.1**	1	7,50
Bent	**KX76.1**	1	10,30

Rotilabo®-drying tubes

Made of **PE**. Ideal for drying gases. With push-in stoppers and conical olives for tubing ∅ 8 to 10 mm on both sides.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
100	20	**6553.1**	1	4,65
150	20	**6554.1**	1	5,35
200	20	**6557.1**	1	6,15

Material
DURAN®

U-shaped drying tubes

Made of DURAN®, U-shaped drying tubes.
① **Side tube with connector**, external -∅ 6 mm.

Height (mm)	Tube inner ∅ (mm)	Art. No.	Pack Qty.	€
100	13	**PL35.1**	1	25,25
130	13	**PL36.1**	1	26,35
180	18	**PL37.1**	1	29,60

U-shaped drying tubes

Made of DURAN®, U-shaped drying tubes.
② **With NS stopcocks.** Conforms to DIN 12616. With interchangeable NS stopcock plugs and side hose connector ∅ 6 mm. Tube inner ∅ 13 mm.

Height (mm)	Socket (ground glass)	Art. No.	Pack Qty.	€
125	14/23	**PL38.1**	1	59,40
150	19/26	**PL39.1**	1	80,65

A 121 °C

① Rotilabo®-fermentation tube

Made of soda-lime glass. With 2 spheres and extension.
Overall length 200 mm, tube ∅ approx. 10-11 mm. Autoclavable.

Art. No.	Pack Qty.	€
CKY8.1	1	3,50

② Rotilabo®-fermentation tube

Made of borosilicate glass 3.3. With NS 29/32 ground glass joint.
Height 200 mm. Autoclavable.

Art. No.	Pack Qty.	€
ACL2.1	1	33,80

▶ Drying agents see chapter Chromatography!

CFS battery capillary filling device

To quickly and safely fill melting-point determination capillaries. Suitable for capillaries with a diameter of 1 to 1.5 mm and a length of 60 to 100 mm.

- Lengthy stoking and tapping are no longer required, the capillaries are cleanly and repeatedly filled to the bottom
- No direct contact with dangerous substances
- Clear housing protects against glass breakage

Usage:
The capillaries are carefully inserted into the filling funnel until their open side matches the lowest point of the funnel. Insert the funnel containing the capillaries into the unit. By turning the funnel guide, the height is adjusted until the capillaries touch the bottom and the funnel overlaps the guide by a few millimetres (see figure). The funnel is filled with a spatula tip's worth of the sample, and the unit switches on. The capillaries are filled using powerful vibrations. The unit switches off automatically after 10 seconds. The filling process can be repeated as often as required.

Note: The samples must be dry and finely powdered.
Unit dimensions: ∅ 80 x height 140 mm.
Delivery incl. AC-adapter.

Art. No.	Pack Qty.	€
YT60.1	1	304,25

Material
DURAN®

Thiele melting point measuring apparatus

Made of DURAN®.

Usage:
Fill apparatus with silicone oil. Insert a melting point capillary (outer-∅ max. 2 mm) into one of the side tubes so that the molten end touches the ball of the thermometer. The other side tube is for ventilation purposes. If the apparatus does not have side tubes, a long capillary must be inserted from above. This apparatus also has to be ventilated from above. The apparatus should be heated at the elbow to ensure a uniform rise in temperature.

Type	Art. No.	Pack Qty.	€
Without side tubes	**TH23.1**	1	40,45
With side tubes	**TH24.1**	1	53,70

Rotilabo®-capillary tubes

Made of AR®-glass. Thin-walled, open on one side.
Length 80 mm, outer-∅ 1.35 mm, inner-∅ 0.95 mm.

Art. No.	Pack Qty.	€
0820.1	100	7,90

Melting point capillary

By Hirschmann. Made of clear glass. Thin-walled, open at one end.

Length (mm)	Outer ∅ (mm)	Inner ∅ (mm)	Art. No.	Pack Qty.	€
75	1,35	0,95	**EAA9.1**	10 x 100	55,80
75	1,55	1,15	**EAC0.1**	10 x 100	62,30
80	1,0	0,8	**EAC1.1**	10 x 100	74,10
80	1,55	1,15	**EAC2.1**	10 x 100	64,45
90	1,55	1,15	**EAC3.1**	10 x 100	66,15
100	1,0	0,8	**EAC4.1**	10 x 100	97,85
100	1,35	0,95	**EAC5.1**	10 x 100	59,15
100	1,55	1,15	**EAC6.1**	10 x 100	66,20

Rotilabo®-clay squares

For drying melting-point samples. Dimensions 150 x 150 mm, divided in 25 squares 30 x 30 mm. Easy to break off by hand.
No sharp edges or splinters, therefore there is no danger of injury.

Art. No.	Pack Qty.	€
A205.1	1	15,00

Stopcocks and plugs

DURAN WHEATON KIMBLE

Material DURAN®

Single way stopcocks

Made of DURAN®. Complete with SBW-glass stopcock plug and three part retaining device. Art. Nos. LP05.1 and LP06.1 are capillary stopcocks.

Stopcock NS	Tube outer ∅ (mm)	Hole ∅ (mm)	Art. No.	Pack Qty.	€
12,5	8	2,0	**LP05.1**	1	14,65
14,5	9	2,5	**LP06.1**	1	15,25
12,5	8	2,0	**LP07.1**	1	10,95
12,5	8	2,5	**LP08.1**	1	10,95
14,5	9	2,5	**LP09.1**	1	11,55
14,5	10	4	**LP10.1**	1	12,70
18,8	10	4	**LP11.1**	1	15,50
18,8	13	6	**LP12.1**	1	17,35

DURAN WHEATON KIMBLE

Material DURAN®

Single way stopcocks

Made of DURAN®. Wall thickness 3 mm, 1.5 mm in LP13.1 and in LP14.1. Complete with **PTFE**-stopcock plug and three part retaining device.

Stopcock NS	Tube outer ∅ (mm)	Hole ∅ (mm)	Art. No.	Pack Qty.	€
12,5	8	2,0	**LP13.1**	2	31,55
12,5	8	2,5	**LP14.1**	2	31,55
14,5	9	2,5	**LP15.1**	2	35,60
14,5	10	4	**LP16.1**	2	38,50
18,8	10	4	**LP17.1**	2	48,50
18,8	13	6	**LP18.1**	2	51,20
21,5	13	6	**LP19.1**	1	35,40
24	15	8	**LP20.1**	1	47,85
29,2	18	10	**LP21.1**	1	65,55

DURAN WHEATON KIMBLE

Cock plugs

Made of **SBW** glass. With screw thread and standard joint.

for ground glass joints	Hole ∅ (mm)	Art. No.	Pack Qty.	€
12.5	2	**LN87.1**	2	13,20
12.5	2,5	**LN88.1**	2	13,20
14,5	2,5	**LN89.1**	2	15,20
14.5	4	**LN90.1**	2	15,20
18.8	4	**LN91.1**	2	18,80
18.8	6	**LN92.1**	2	18,80

Screw-retaining devices

Three part, complete. For stopcock plugs made of **SBW** glass.

for cock plug NS	Thread GL	Art. No.	Pack Qty.	€
12,5	8	**LN93.1**	10	10,00
14,5	9	**LN94.1**	10	10,00
18,8	12	**LN95.1**	10	12,40

▶ Plastic cocks see page 399

A 121 °C

Cock plugs

Made of **PTFE**. With screw thread and standard joint, with retaining device made of **PP**. Autoclavable.
Please order O-rings separately.

for ground glass joints	Hole ∅ (mm)	Art. No.	Pack Qty.	€
12.5	2	**LN96.1**	2	8,55
12.5	2,5	**LN97.1**	2	9,65
14.5	2,5	**LN98.1**	2	9,90
14.5	4	**LN99.1**	2	10,45
18.8	4	**LP00.1**	2	11,85
18.8	6	**LP01.1**	2	15,60
21.5	6	**LP02.1**	1	16,15
24	8	**LP03.1**	1	18,85
29.2	10	**LP04.1**	1	30,00

O-rings for cock plugs

Made of Perbunan.

For cock plug	Art. No.	Pack Qty.	€
NS 12,5, NS 14,5	**CNC6.1**	20	12,85
NS 18,8	**CNC7.1**	20	18,85
NS 21,5, NS 24, NS 29,1	**CNC8.1**	20	13,45

Chromatography columns

Material
DURAN®

Chromatography columns

Made of DURAN®. With ground glass socket and PTFE stopcock (NS 14.5).

① **Without frit.**
With grooves under the stopcock to apply a piece of cotton wool.

Length (mm)	Volume (ml)	Inner ∅ (mm)	Ground glass joint	Art. No.	Pack Qty.	€
200	15	10	14/23	**TK54.1**	1	48,15
200	35	15	14/23	**Y669.1**	1	51,45
400	125	20	29/32	**Y670.1**	1	56,20
600	430	30	29/32	**Y671.1**	1	63,90
800	1000	40	29/32	**TK55.1**	1	100,65

② **With fused-in frit** (porosity 0)

Length (mm)	Volume (ml)	Inner ∅ (mm)	Ground glass joint	Art. No.	Pack Qty.	€
100	8	10	14/23	**TK56.1**	1	58,65
200	15	10	14/23	**Y672.1**	1	62,55
300	23	10	14/23	**Y673.1**	1	64,50
200	35	15	14/23	**Y674.1**	1	66,45
400	125	20	29/32	**Y675.1**	1	80,30
600	430	30	29/32	**HX73.1**	1	84,55

③ **With fused-in frit** (porosity 0),
ground glass cone and extraction connection GL 18

Length (mm)	Volume (ml)	Inner ∅ (mm)	Ground glass joint	Art. No.	Pack Qty.	€
200	35	15	14/23	**TK57.1**	1	125,80
400	120	20	14/23	**TK58.1**	1	133,30
400	280	30	29/32	**TK59.1**	1	138,70
600	430	30	29/32	**TK60.1**	1	147,30

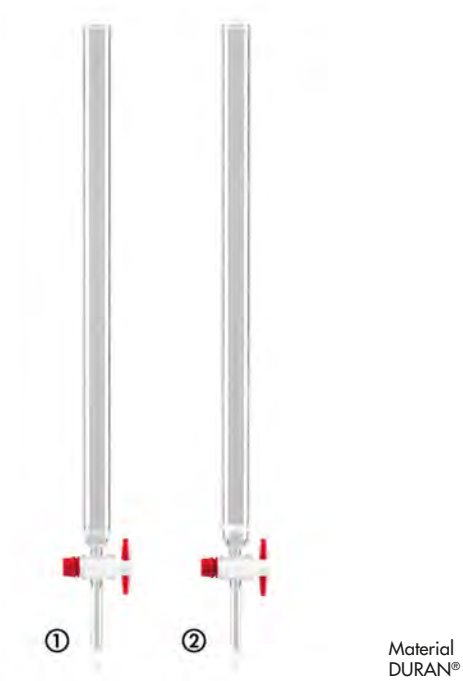
Accessories for chromatography columns

Connectors with screw cap GL 18, for hoses with inside ∅ 10.5 mm

Art. No.	Pack Qty.	€
LK73.1	2	13,15

Screw caps GL 18

Art. No.	Pack Qty.	€
E696.1	10	24,40



Material
DURAN®

Chromatography columns with beaded rim

Made of DURAN®. With ground glass socket and PTFE stopcock (NS 14.5).

① **Without frit.** With grooves under the stopcock to apply a piece of cotton wool.

Length (mm)	Volume (ml)	Innner ∅ (mm)	Art. No.	Pack Qty.	€
200	15	10	**ENT5.1**	1	49,45
200	35	15	**ENT6.1**	1	51,20
400	125	20	**ENT7.1**	1	56,15
600	430	30	**ENT8.1**	1	66,90
800	1000	40	**ENT9.1**	1	90,90

② **With fused-in frit** (porosity 0)

Length (mm)	Volume (ml)	Innner ∅ (mm)	Art. No.	Pack Qty.	€
200	15	10	**ENX0.1**	1	62,25
200	35	15	**ENX1.1**	1	67,00
400	125	20	**ENX2.1**	1	65,05
600	430	30	**ENX3.1**	1	79,30
800	1000	40	**ENX4.1**	1	107,50

- Glass beads see page 1181
- Rotisol see page 1153
- Stand rings see page 222
- Stand rods see page 218

Separating funnels

Separating funnels, conical

Conical form. Made of Borosilicate glass 3.3. With ground glass joint, glass or PTFE, stopcock, and plastic stopper. In acc. with DIN 12451.

① With glass stopcock

Volume (ml)	Standard ground joint	Stopcock NS	Hole ∅ (mm)	Art. No.	Pack Qty.	€
50	19/26	12,5	2,5	**E646.1**	1	39,15
100	19/26	12,5	2,5	**E647.1**	1	40,65
250	29/32	14,5	4,0	**E648.1**	1	47,70
500	29/32	14,5	4,0	**E649.1**	1	55,65
1000	29/32	18,8	6,0	**E650.1**	1	78,65
2000	29/32	18,8	6,0	**E651.1**	1	113,95

② With PTFE stopcock

Volume (ml)	Standard ground joint	Stopcock NS	Hole ∅ (mm)	Art. No.	Pack Qty.	€
50	19/26	12,5	2,5	**KT70.1**	1	39,80
100	19/26	12,5	2,5	**KT71.1**	1	43,55
250	29/32	14,5	4,0	**KT72.1**	1	52,10
500	29/32	14,5	4,0	**KT73.1**	1	62,90
1000	29/32	18,8	6,0	**KT74.1**	1	80,75
2000	29/32	18,8	6,0	**KT75.1**	1	115,05

Separating funnels, Squibb

Squibb-form, graduated. Made of borosilicate glass 3.3.
With ground glass joint, **PTFE**-plug, and plastic stopper.

Volume (ml)	Standard ground joint	Stopcock NS	Hole ∅ (mm)	Art. No.	Pack Qty.	€
50	19/26	12,5	2,5	**KT76.1**	2	77,20
100	19/26	12,5	2,5	**KT77.1**	2	72,40
250	29/32	14,5	4,0	**KT78.1**	2	87,10
500	29/32	14,5	4,0	**KT79.1**	2	103,00
1000	29/32	18,8	6,0	**KT80.1**	2	126,35
2000	29/32	18,8	6,0	**KT81.1**	1	85,50

Separating funnels acc. to Gilson

Made of Borosilicate glass 3.3.
With ground glass joint PTFE-plug and PE-stopper.

Volume (ml)	Standard ground joint	Stopcock NS	Hole ∅ (mm)	Art. No.	Pack Qty.	€
50	19/26	12.5	2,5	**LK40.1**	2	136,55
100	19/26	12.5	2,5	**LK41.1**	2	139,75
250	29/32	14.5	4,0	**LK42.1**	2	153,75
500	29/32	14.5	4,0	**LK43.1**	2	194,60
1000	29/32	18.8	6,0	**LK44.1**	2	242,95
2000	29/32	18.8	6,0	**LK45.1**	1	180,60

A 121 °C

Separating funnels, cylindrical

Cylindrical. Made of borosilicate glass 3.3.
Graduated, with NS glass and/or PTFE-tap valves and PE plugs.

① With glass plug

Volume (ml)	Gradua-tions (ml)	Standard ground glass joint	Stop-cock NS	Hole ∅ (mm)	Art. No.	Pack Qty.	€
50	2	29/32	12,5	2,5	**ENN3.1**	2	96,15
100	5	29/32	12,5	2,5	**ENN4.1**	2	92,00
250	10	29/32	14,5	4,0	**ENN5.1**	2	115,05
500	10	29/32	14,5	4,0	**ENN6.1**	2	136,55
1000	20	29/32	18,8	6,0	**ENN7.1**	2	191,35

② With PTFE plug

Volume (ml)	Gradua-tions (ml)	Standard ground glass joint	Stop-cock NS	Hole ∅ (mm)	Art. No.	Pack Qty.	€
50	2	29/32	12,5	2,5	**ENN8.1**	2	109,65
100	5	29/32	12,5	2,5	**ENN9.1**	2	102,80
250	10	29/32	14,5	4,0	**ENP0.1**	2	140,85
500	10	29/32	14,5	4,0	**ENP1.1**	2	148,35
1000	20	29/32	18,8	6,0	**ENP2.1**	2	202,10

Separating and dropper funnels

A 121 °C

Separating funnels acc. to Squibb

Made of **PP**, with **PTFE** plug **PP** screw cap. Graduated. Transparent (to allow easy recognition of phase transitions). Plug NS 14.5, hole ∅ 4 mm. Temperature stable up to max. 135 °C. High chemical resistance, max. 60 % hydrofluoric acid. Autoclavable without stopcock and closure.

Volume (ml)	Art. No.	Pack Qty.	€
100	**YA73.1**	1	99,55
250	**YA74.1**	1	105,60

Separating funnels

Made of **FEP**. Highly pure, chemically inert, temperature stable from -200 to +250 °C. Hydrophobic, anti-adhesive surfaces. With fine metering tap and NS 29/32 ground glass cone made of **PTFE**, screw cap and integrated combination nut for easy attachment and detachment of the conical ground joint.

Volume (ml)	Art. No.	Pack Qty.	€
125	**NY53.1**	1	403,15
250	**NY54.1**	1	459,05
500	**NY55.1**	1	592,35

Separating funnel holder

Made of **PP**. For separating funnels from 125-500 ml.
With clamp for attaching to stand rods with ∅ 8-14 mm.

Art. No.	Pack Qty.	€
PY61.1	1	12,85

- ▶ Standard ground glass joint stoppers see page 143
- ▶ Stand rings see page 222
- ▶ Stand rods see page 218

① ②

Dropping funnels, cylindrical

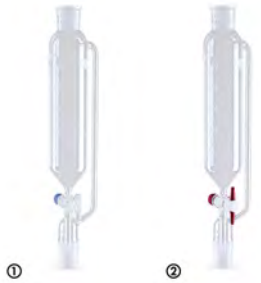
Made of Borosilicate glass 3.3. Graduated and cylindrical.
With ground glass brusted joint, standard joint core and tapered valve plugs with threaded nut retention. In acc. with DIN 12567/ISO 4800.

① With solid glass tap cocks

Volume (ml)	Gradua-tions (ml)	Socket/cone (ground glass)	Stop-cock NS	Hole ∅ (mm)	Art. No.	Pack Qty.	€
50	1	29/32	12.5	2,5	**CH30.1**	1	55,65
100	2	29/32	12.5	2,5	**CH31.1**	1	61,75
250	5	29/32	14,5	4,0	**CH32.1**	1	74,00
500	10	29/32	14,5	4,0	**CH33.1**	1	80,65

② With PTFE-plug valve

Volume (ml)	Gradua-tions (ml)	Socket/cone (ground glass)	Stop-cock NS	Hole ∅ (mm)	Art. No.	Pack Qty.	€
50	1	29/32	12.5	2,5	**CH34.1**	1	62,30
100	2	29/32	12.5	2,5	**CH35.1**	1	66,30
250	5	29/32	14,5	4,0	**CH36.1**	1	78,50
500	10	29/32	14.5	4,0	**CH37.1**	1	87,10



① ②

A 121 °C

Dropper funnels with pressure compensation

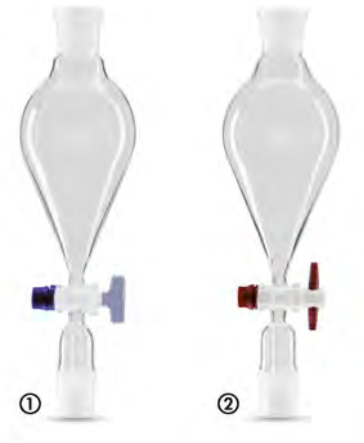
Made of borosilicate glass 3.3. Graduatied and cylindrical.
With pressure compensation tube, NS-core, NS-sleeve and stopcock plug with threaded safety device. In acc. with DIN 12567, ISO 4800.

① With solid glass plugs

Volume (ml)	Gradua-tions (ml)	Socket/cone (ground glass)	Stop-cock NS	Hole ∅ (mm)	Art. No.	Pack Qty.	€
50	1	14/23	12,5	2,5	**E642.1**	1	70,15
50	1	29/32	12,5	2,5	**KL62.1**	1	68,60
100	2	14/23	12,5	2,5	**E643.1**	1	72,65
100	2	29/32	12,5	2,5	**KL63.1**	1	75,15
250	5	29/32	14,5	4,0	**E644.1**	1	83,70
500	10	29/32	14,5	4,0	**E645.1**	1	93,50
1000	20	29/32	18,8	6,0	**KL64.1**	1	120,40

② With PTFE-plug

Volume (ml)	Gradua-tions (ml)	Socket/cone (ground glass)	Stop-cock NS	Hole ∅ (mm)	Art. No.	Pack Qty.	€
50	1	14/23	12,5	2,5	**KL65.1**	1	74,40
50	1	29/32	12,5	2,5	**KL76.1**	1	73,00
100	2	14/23	12,5	2,5	**KL77.1**	1	75,60
100	2	29/32	12,5	2,5	**KL78.1**	1	78,15
250	5	29/32	14,5	4,0	**KL79.1**	1	89,80
500	10	29/32	14,5	4,0	**KL80.1**	1	102,15
1000	20	29/32	18,8	6,0	**KL81.1**	1	123,65



A 121 °C

Dropping funnels, conical

Conical. Made of borosilicate glass 3.3.
With NS sleeve, NS cone and stopcock with thread lock.

① **With solid glass plug**

Volume (ml)	Socket/cone (ground glass)	Stopcock NS	Hole ∅ (mm)	Art. No.	Pack Qty.	€
50	19/26	12.5	2,5	**ENP3.1**	1	61,60
100	19/26	12.5	2,5	**ENP4.1**	1	59,80
250	29/32	14.5	4,0	**ENP5.1**	1	68,05
500	29/32	14.5	4,0	**ENP6.1**	1	76,65
1000	29/32	18.8	6,0	**ENP7.1**	1	92,70
2000	29/32	18.8	6,0	**ENP8.1**	1	155,90

② **With PTFE plug**

Volume (ml)	Socket/cone (ground glass)	Stopcock NS	Hole ∅ (mm)	Art. No.	Pack Qty.	€
50	19/26	12.5	2,5	**ENP9.1**	1	71,85
100	19/26	12.5	2,5	**ENT0.1**	1	71,25
250	29/32	14.5	4,0	**ENT1.1**	1	79,30
500	29/32	14.5	4,0	**ENT2.1**	1	104,75
1000	29/32	18.8	6,0	**ENT3.1**	1	111,80
2000	29/32	18.8	6,0	**ENT4.1**	1	178,45

A 121 °C

Ribbed funnels

Made of type 3.3 borosilicate glass. For quick filtration. Autoclavable.

Top, outer ∅ (mm)	Outer stem ∅ (mm)	Funnel length (mm)	Art. No.	Pack Qty.	€
105	18	80	**NY75.1**	1	14,30
138	22	90	**NY76.1**	1	17,65
170	26	120	**NY77.1**	1	22,40
210	38	140	**NY78.1**	1	36,90
250	40	155	**NY79.1**	1	51,20

Rotilabo®-glass funnels

Made of soda-lime glass. With short stem. Angle 60°.

Funnel-∅ outer (mm)	Outer stem ∅ (mm)	Length of stem (mm)	Art. No.	Pack Qty.	€
30	6	30	**EE58.1**	10	31,00
35	6	35	**EE59.1**	10	31,45
40	6	40	**EE60.1**	10	32,50
45	7	45	**EE61.1**	10	37,05
50	7	50	**EE62.1**	10	40,25
55	8	55	**EE63.1**	10	41,95
60	8	60	**EE64.1**	10	44,20
70	9	70	**EE65.1**	10	54,80
80	9	80	**EE66.1**	10	60,70
100	10	100	**EE67.1**	10	76,45

Rotilabo®-funnels

Made of borosilicate glass 3.3. With short stem. 60° angle. Autoclavable.

Inner rim ∅ (mm)	Outer stem ∅ (mm)	Length of stem (mm)	For paper filter ∅ (mm)	Art. No.	Pack Qty.	€
35	6	35	45-55	**ACC3.1**	10	31,20
45	6	45	55-70	**ACC4.1**	10	34,95
55	8	55	70-90	**ACC5.1**	10	38,60
75	8	75	125-150	**ACC6.1**	10	49,45
85	9	85	150	**ACC7.1**	10	54,85
100	10	100	150-185	**ACC8.1**	10	67,40
125	16	125	185	**ACC9.1**	1	11,50
150	16	150	240-270	**ACE0.1**	1	15,95
200	24	150	320-385	**ACE1.1**	1	28,50
250	30	175	400-450	**ACE2.1**	1	38,40
300	34	175	500	**ACE3.1**	1	65,60

Funnels

Made of **PP**. Transparent. With handle and ring bolt. Suitable for foodstuffs.

Top ∅ (mm)	Height (mm)	Outlet ∅ x L (mm)	Art. No.	Pack Qty.	€
30	45	1,5 x 25	**YA44.1**	1	1,25
30	47	4 x 25	**YA45.1**	1	1,35
40	65	4 x 35	**YA46.1**	1	1,45
50	85	7 x 43	**YA47.1**	1	1,60
75	108	7 x 55	**YA48.1**	1	1,80
100	155	8 x 77	**YA49.1**	1	2,00
120	180	11 x 90	**YA50.1**	1	2,55
150	220	15 x 95	**YA51.1**	1	3,35

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Funnels

Made of DURAN®. With short stem. In acc. with ISO 4798. Autoclavable.

*Not in acc. with ISO

Outer edge ∅ (mm)	Outer stem ∅ (mm)	Length, stem (mm)	For paper filter ∅ (mm)	Art. No.	Pack Qty.	€
35	6	35	45-55	**C153.1**	10	92,30
45*	6	45	55-70	**C154.1**	10	96,00
55	8	55	70-90	**C155.1**	10	140,00
70*	8	70	110-125	**C156.1**	10	139,00
80	10	80	125-150	**C157.1**	10	147,00
100	10	100	150-185	**C158.1**	1	16,65
150	16	150	240-270	**C159.1**	1	28,50
200*	26	175	320-385	**C160.1**	1	68,00
300*	30	175	500	**C161.1**	1	129,00

Rotilabo®-plastic funnels

Made of natural coloured **HDPE** with smooth surface.
With lifting eye and 4 ventilation ribs (except Art. No. 0583.1).

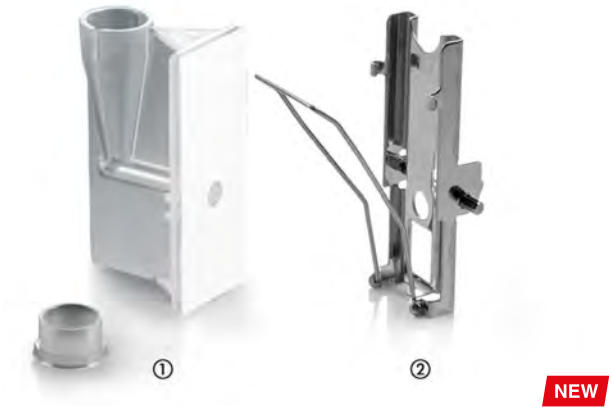
*Incl. sieve ∅ 50 mm, mesh size 0.4 mm.

Top ∅ (mm)	Height (mm)	Outlet ∅ (mm)	Art. No.	Pack Qty.	€
50	60	3	**0583.1**	1	1,90
60	80	8	**0584.1**	1	2,10
80	105	11	**0585.1**	1	2,30
100	125	12	**0586.1**	1	2,45
120	145	12	**0587.1**	1	2,55
140	165	15	**0588.1**	1	3,20
164	195	17	**0589.1**	1	3,70
208	220*	20	**A828.1**	1	6,40

Rotilabo®-plastic funnel set

7 pieces, one each Art. No. 0583.1 to 0589.1

Art. No.	Pack Qty. (assortment)	€
0594.1	1	13,05



NEW

Cytology hopper CytoSep™

Disposable sample chambers for manufacturing thin-layering preparations by means of centrifugation. For sample volume up to 0.5 ml.
Cells are applied directly to a microscope slide.
Cell application range approx. ∅ 6 mm (areas approx. 28 mm²).
With white filter cards to absorb excess liquid.
CE marking acc. to IVD directive 98/79/EC

- Suitable for the examination of blood, spinal chord fluid, saliva, urine and gastric fluids
- Disposable material, therefore no time-consuming cleaning necessary
- Prevents cross-contamination and contaminations through pathogenic samples

Compatible with the cyto centrifuges Thermo Cytospin™ 3 and 4, Tharmac Cellspin® as well as the Hettich Cyto system.

① **Cytology hopper CytoSep™**

Delivery incl. push-in plugs for closing the funnel.
Please order microscope slides separately.

Art. No.	Pack Qty.	€
HNY3.1	50 pieces	91,40
HNY3.2	10 boxes á 50 pieces	817,00

② **Metal clips for cytology hopper CytoSep™**

For fixing the microscope slide at the cytology funnel. Autoclavable.

Art. No.	Pack Qty.	€
HNY4.1	6 pieces	138,70

Rotilabo®-disposable funnels

With aeration grooves. Angle 60°. ∅-spout, inside 4.3 mm.

Made of PS

Top inside ∅ (mm)	Height (mm)	Length, stem (mm)	For paper filter ∅ (mm)	Art. No.	Pack Qty.	€
55	69	25	110	**HY45.1**	100	25,75
65	78	30	125	**HY46.1**	100	25,75

Made of PP

Top inside ∅ (mm)	Height (mm)	Length, stem (mm)	For paper filter ∅ (mm)	Art. No.	Pack Qty.	€
55	69	25	110	**HY47.1**	100	25,75
65	78	30	125	**HY48.1**	100	25,75

Funnels

Rotilabo®-PTFE funnels

Made of **PTFE**. Chemically inert, temperature stable from - 200 to + 250 °C. With very smooth, hydrophobic inner surface. Autoclavable.

Outside ∅ (mm)	Stem ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
30	8	50	**NX77.1**	1	15,70
50	10	85	**NX78.1**	1	21,45
70	12	110	**NX79.1**	1	31,00
100	14	170	**NX80.1**	1	64,40
150	16	220	**NX81.1**	1	105,90

Microfunnels

Made of **PP**. For filling burettes and vessels with small opening. Autoclavable.

Top ∅ (mm)	Stem ∅ (mm)	Volume (ml)	Length, stem (mm)	Art. No.	Pack Qty.	€
24	4,5	2,6	16	**YA66.1**	12	50,80
28	6	5,2	19	**YA67.1**	12	44,10
35	8	8,1	23	**YA68.1**	12	39,70
43	8	15,7	26	**YA69.1**	12	83,75

Rotilabo®-lab funnels

Made of stainless steel 18/10. With lifting eye and side groove for air discharge from the container (except Art. No. 0162.1). Autoclavable. Suitable for food.

Top inside ∅ (mm)	Height (mm)	Outlet ∅ (mm)	Art. No.	Pack Qty.	€
50	65	7	**0162.1**	1	12,40
95	125	11	**0164.1**	1	18,85
120	145	14	**0166.1**	1	27,45
140	170	14	**0167.1**	1	30,10
200	225	22	**0168.1**	1	42,90
243	265	23	**0169.1**	1	52,15

Rotilabo®-lab funnel set

6 pieces, one each of every size.

Art. No.	Pack Qty. (assortment)	€
5838.1	1	170,95

Rotilabo®-stainless steel mini funnels

Made of stainless steel 18/10. Height 5 cm. Seamless, matt polished. Suitable for foodstuffs. Autoclavable.

Outlet ∅ (mm)	Top ∅ (mm)	Art. No.	Pack Qty.	€
4	27	**YY23.1**	10	25,20
6	27	**YY24.1**	10	25,20
7	28	**YY25.1**	10	25,20
8	29	**YY26.1**	10	25,20
10	31	**YY27.1**	10	25,20
11	32	**YY28.1**	10	25,20
12	33	**YY29.1**	10	25,20
13	34	**YY30.1**	10	25,20
14	35	**YY31.1**	10	25,20

Funnels

Material
DURAN®
A 121 °C

Funnels with ground joint

Made of DURAN®. Funnel tube with 60° angle. Autoclavable.

Cone (ground glass)	Outer edge ∅ (mm)	Art. No.	Pack Qty.	€
14/23	45	**KX83.1**	1	19,35
19/26	55	**EHL5.1**	1	22,50
24/29	70	**EHL6.1**	1	34,25
29/32	80	**KY11.1**	1	31,95

A 121 °C

Powder funnels

Made of borosilicate glass 3.3 with short stem. Autoclavable.

Outer edge ∅ (mm)	Outer stem ∅ (mm)	Length, stem (mm)	Overall height (mm)	Art. No.	Pack Qty.	€
50	20	20	50	**X669.1**	10	78,50
60	20	20	60	**X670.1**	10	79,05
80	25	25	75	**X672.1**	10	85,50
100	25	25	95	**X673.1**	10	105,15
120	30	25	110	**X674.1**	10	112,90
160	35	30	137	**NX16.1**	1	20,40
200	38	30	180	**NX17.1**	1	22,50

Rotilabo®-standard joint funnel

Made of **PP**. For clean filling of flasks and other equipment.
Suitable for foodstuffs.

Conical ground joint (NS)	Top ∅ (mm)	Length (mm)	Funnel length (mm)	Art. No.	Pack Qty.	€
14/23	40	75	17	**2060.1**	1	3,70
19/26	50	95	23	**2073.1**	1	4,75
29/32	75	135	30	**2075.1**	1	5,95

Rotilabo®-standard joint funnel assortment

3 pieces, one of each size.

Art. No.	Pack Qty. (assortment)	€
2080.1	1	13,35

A 121 °C

Powder funnels

Made of **PP**, with ribbed exterior to avoid pressure build-up.
60° inclination angle. Autoclavable.

Outer edge ∅ (mm)	Outer stem ∅ (mm)	Volume (ml)	Length, stem (mm)	Art. No.	Pack Qty.	€
60	15	45	18	**TT41.1**	1	2,35
80	15	94	22,2	**TT42.1**	1	3,80
100	25	200	24,8	**TT43.1**	1	4,45
120	30	360	27,1	**TT44.1**	1	4,80
150	36	730	39,9	**TT45.1**	1	5,65
180	43	1290	48,8	**TT46.1**	1	6,95

A 121 °C

Rotilabo®-powder funnels

Made of **PP** or **HDPE**, very light, with smooth surface, transparent.
Autoclavable, with the exception of 2057.1.

*incl. sieve ∅ 105 mm.

Top inside ∅ (mm)	Height (mm)	∅ inner, bottom (mm)	Material	Art. No.	Pack Qty.	€
65	68	16	PP	**2041.1**	1	2,05
80	75	22	PP	**2046.1**	1	2,75
100	94	23	PP	**2047.1**	1	2,90
120	110	27	PP	**2049.1**	1	3,25
150	138	29	PP	**2051.1**	1	4,55
253	190*	50	HDPE	**2057.1**	1	11,75

Rotilabo®-powder funnel set

6 pieces, one of each size

Art. No.	Pack Qty. (assortment)	€
2020.1	1	24,55

Funnels

Rotilabo®-barrel funnels

Made of **PP** or **HDPE**, transparent. Art. No. HY26.1 and HY27.1 with side handle.

∅ (mm)	Length (mm)	Outlet ∅ (mm)	Material	Art. No.	Pack Qty.	€
200	200	22	PP	**HY26.1**	1	7,45
250	260	30	PP	**HY27.1**	1	11,75
350	440	35	PP	**HY28.1**	1	24,60
400	365	42	HDPE	**HY29.1**	1	59,15

Sieve insert

Made of stainless steel and aluminium.
Suitable for Art. No. HY26.1 and HY27.1.

∅ (mm)	Mesh size (mm)	Art. No.	Pack Qty.	€
50	0,45	**HY30.1**	1	4,85

121 °C

Rotilabo®-analytical funnels

Made of type 3.3 borosilicate glass. In acc. with ISO 4798. Stem ∅ 8 mm. Length 150 mm. For quick filtration. Autoclavable.

Inner rim ∅ (mm)	For paper filter ∅ (mm)	Art. No.	Pack Qty.	€
55	70-90	**NT85.1**	1	12,85
75	110-125	**NT86.1**	1	13,45
100	150-185	**NT87.1**	1	15,00

- Disposable sieves see page 536
- Round and folded filters see page 528

DURAN WHEATON KIMBLE
Material DURAN®
121 °C

Analysis funnels

Made of DURAN®. Ribbed. Autoclavable.

Outer edge ∅ (mm)	Outer stem ∅ (mm)	Length, stem (mm)	For paper filter ∅ (mm)	Art. No.	Pack Qty.	€
70	8	70	110 - 125	**K243.1**	1	20,55
80	10	80	125 - 150	**K244.1**	1	21,75
100	10	100	150 - 185	**K245.1**	1	26,25
150	16	150	240 - 270	**K246.1**	1	34,80
200	26	175	320 - 385	**K247.1**	1	56,70

121 °C

Rotilabo®-analysis funnels

Made of transparent **PP**. Funnel length 150 mm, funnel-∅ 8 mm. Autoclavable.

Top, outer ∅ (mm)	For paper filter ∅ (mm)	Art. No.	Pack Qty.	€
60	70-90	**9518.1**	1	10,00
80	110-125	**9519.1**	1	10,70
100	150-185	**9520.1**	1	11,45

121 °C

Rotilabo®-urbanti funnels

Made of **TPX**. Ideal for speedy filtration without a vaccum. The spiral-shaped groove inside the funnel enhances the porosity of the filter paper. With ventilation grooves. Temperature stable up to 170 °C. Autoclavable.

Top inside ∅ (mm)	∅ of tube, inside (mm)	Length, stem (mm)	Art. No.	Pack Qty.	€
51	3	150	**EA42.1**	1	7,85
70	3	150	**EA43.1**	1	8,55
100	7	108	**EA44.1**	1	10,15
140	10	132	**EA45.1**	1	33,90
196	20	160	**EA46.1**	1	45,10

Funnels and holder

Hirsch funnels 126

Made of glazed porcelain.

∅ Filter plate (mm)	Top ∅ (mm)	Height (mm)	Tube ∅, bottom/top (mm)	Art. No.	Pack Qty.	€
9	30	45	5,5/7	**TL75.1**	1	29,55
11	40	56	6/9	**TL76.1**	1	32,15
13	45	61	7/12	**TL77.1**	1	32,25
15	52	74	8/11,5	**TL78.1**	1	37,30
27	72	102	11/16	**TL79.1**	1	42,65

Funnel racks

Made of PP and chromium-plated steel. For funnel ∅ from 40 to 180 mm (the reduction inserts supplied can be used for smaller funnels) or for Imhoff sedimentation funnels from ∅ 90 mm. Magnet concept for infinitely variable height adjustment. Adjustable height up to 450 mm. With 2 or 4 slots on the foot.

Design	Art. No.	Pack Qty.	€
For 2 funnels	**HCC8.1**	1	75,10
For 4 funnels	**HCC9.1**	1	103,20
For 2 sedimentation cones	**HCE0.1**	1	78,30

Accessories:

Funnel holder with reduction insert	**HCE1.1**	1	13,45
Holder (2 holding rings) for 1 sedimentation cone	**HCE2.1**	1	16,10

Rotilabo®-funnel holders

Made of **PP**. With stand clamp for attaching to stands with ∅ 8 to 14 mm. Suitable for funnel-∅ of 50 to 120 mm and max. stem outer ∅ of 39 mm. With replaceable inner ring for varying funnel sizes.

Design	Art. No.	Pack Qty.	€
For 1 funnel	**9768.1**	1	16,90
For 2 funnels	**9769.1**	1	23,60

Rotilabo®-Büchner funnels

Made of glazed porcelain. Excellent resistance to acids and bases. Temperature stable up to 1000 °C.

Volume (ml)	for filter paper ∅ (mm)	∅ Filter plate (mm)	Height (mm)	Tube length (mm)	Art. No.	Pack Qty.	€
35	45	48	24	43	**XX44.1**	1	13,85
70	55	62	30	64	**XX45.1**	1	16,10
120	70	77	35	64	**XX46.1**	1	19,20
240	90	97	40	71	**XX47.1**	1	26,65
400	110	116	49	83	**XX48.1**	1	33,15
600	125	130	52	85	**XX49.1**	1	41,75
1000	150	156	59	96	**XX50.1**	1	55,50
2000	185	192	74	117	**XX51.1**	1	74,30
4000	240	248	90	117	**XX52.1**	1	170,95
7000	290	296	105	130	**XX53.1**	1	410,65
10 000	320	334	120	133	**XX54.1**	1	514,95

Büchner funnels 127 C

By Haldenwanger. With firm sieve plate.
Made of porcelain in acc. with DIN 60672-3, type C 110.
Highly resistant to chemical and physical influences.

Size	Height (mm)	∅ Filter plate (mm)	Tube length (mm)	Art. No.	Pack Qty.	€
000	47	19	22	**1578.1**	1	32,60
00	64	29	30	**1579.1**	1	33,35
0a	95	48	35	**1580.1**	1	36,05
0	76	42	50	**4168.1**	1	35,50
1	110	59	50	**1581.1**	1	42,50
2	140	74	65	**1582.1**	1	54,85
2a	165	94	70	**4177.1**	1	69,45
3	195	114	75	**1583.1**	1	85,95
4	215	129	100	**4178.1**	1	115,05
4a	235	155	105	**1584.1**	1	153,75
5	280	190	105	**XX19.1**	1	246,20
6	300	248	120	**XX20.1**	1	395,60
6a	330	279	125	**XX21.1**	1	725,65
8	350	330	150	**XX22.1**	1	966,45

- Material for stands from page 215
- Water jet pumps see page 384
- Filtering flasks see page 175
- Matching filter papers see page 524

Fritted filter funnels

A 121 °C

Rotilabo®-Büchner funnels

Made of **PP**. Robust, breakproof.
Top and bottom parts can be detached for cleaning. Autoclavable.

For filters-Ø (mm)	Volume (ml)	Outer stem Ø (mm)	Hole size (mm)	Art. No.	Pack Qty.	€
55	70	5,1	1,1	**HT33.1**	1	10,45
70	180	6,8	2	**HT34.1**	1	11,05
80	285	8,1	2	**HT35.1**	1	12,85
90	390	9,1	2.5	**HT36.1**	1	17,15
110	810	14	2.5	**HT37.1**	1	21,45
150	2100	16,0	2,75	**HT38.1**	1	38,55

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Slotted sieve filters (Büchner funnels)

Made of DURAN®. For paper-round filters and membrane filters.
Autoclavable.

For filters-Ø (mm)	Volume (ml)	Plate Ø (mm)	Outer stem Ø (mm)	Art. No.	Pack Qty.	€
45	70	48	10	**Y880.1**	1	67,70
55	125	60	10	**Y881.1**	1	80,20
70	220	73	18	**Y882.1**	1	105,00
90	500	95	22	**Y883.1**	1	120,00
110	1000	120	22	**Y884.1**	1	167,00

A 121 °C

Fritted filter funnels

Made of borosilicate glass 3.3. Autoclavable.

50 ml

Porosity	Plate Ø (mm)	Outer stem Ø (mm)	Art. No.	Pack Qty.	€
1	35	10	**Y772.1**	1	30,95
2	35	10	**Y773.1**	1	30,95
3	35	10	**Y774.1**	1	30,95
4	35	10	**Y775.1**	1	32,50
5	35	10	**Y871.1**	1	55,55

75 ml

Porosity	Plate Ø (mm)	Outer stem Ø (mm)	Art. No.	Pack Qty.	€
1	45	10	**Y777.1**	1	33,45
2	45	10	**Y778.1**	1	34,25
3	45	10	**Y779.1**	1	35,95
4	45	10	**Y780.1**	1	38,50
5	45	10	**Y872.1**	1	61,30

125 ml

Porosity	Plate Ø (mm)	Outer stem Ø (mm)	Art. No.	Pack Qty.	€
1	60	10	**Y782.1**	1	47,30
2	60	10	**Y783.1**	1	48,40
3	60	10	**Y784.1**	1	49,90
4	60	10	**Y785.1**	1	52,25
5	60	10	**Y873.1**	1	91,80

500 ml

Porosity	Plate Ø (mm)	Outer stem Ø (mm)	Art. No.	Pack Qty.	€
1	95	22	**Y787.1**	1	97,50
2	95	22	**Y788.1**	1	100,85
3	95	22	**Y789.1**	1	97,50
4	95	22	**Y790.1**	1	117,20
5	95	22	**Y874.1**	1	190,00

1000 ml

Porosity	Plate Ø (mm)	Outer stem Ø (mm)	Art. No.	Pack Qty.	€
1	120	22	**Y792.1**	1	145,15
2	120	22	**Y793.1**	1	148,35
3	120	22	**Y794.1**	1	150,50
4	120	22	**Y795.1**	1	153,75
5	120	22	**Y875.1**	1	325,00

4000 ml

Porosity	Plate Ø (mm)	Outer stem Ø (mm)	Art. No.	Pack Qty.	€
1	175	30	**Y876.1**	1	406,00
2	175	30	**Y877.1**	1	406,00
3	175	30	**Y878.1**	1	406,00
4	175	30	**Y879.1**	1	472,00

Filter crucibles

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Filter crucibles

Made of DURAN®. Autoclavable. Temperature stable up to 450 °C.

Porosity	Pore width (µm)	Examples for use
0	160 - 250	Gas dispersion in fluids, filtration of coarse sediments
1	100 - 160	Filtration of coarse sediments, gas dispersion in fluids, liquid dispersion, coarse gas filters
2	40 - 100	Preparative fine filtration, mercury filtration, preparative work with crystalline sediments
3	16 - 40	Analytic filtration, analytic and preparative work with medium-fine sediments, fine gas filters
4	10 - 16	Analytic fine filtration, analytic and preparative work with very fine sediments e.g. $BaSO_4$, Cu_2O
5	1.0 - 1.6	Very fine filtration

Volume (ml)	Porosity	Plate ∅ (mm)	Art. No.	Pack Qty.	€
8	2	20	**E549.1**	1	13,00
8	3	20	**E550.1**	1	13,20
8	4	20	**E551.1**	1	14,65
15	1	23	**E552.1**	1	12,90
15	2	23	**E553.1**	1	12,90
15	3	23	**E554.1**	1	12,90
15	4	23	**E555.1**	1	15,60
30	1	30	**E556.1**	1	13,60
30	2	30	**E557.1**	1	13,60
30	3	30	**E558.1**	1	13,60
30	4	30	**E559.1**	1	15,35
30	5	30	**E560.1**	1	28,85
50	1	40	**E561.1**	1	19,70
50	2	40	**E562.1**	1	19,70
50	3	40	**E563.1**	1	19,70
50	4	40	**E564.1**	1	22,50
50	5	40	**E565.1**	1	45,65

DURAN WHEATON KIMBLE
A 121 °C

Rubber adapters

Made of **EPDM**. For vacuum-tight connection of crucibles and adapters. Temperature stable from -45 to +150 °C. Autoclavable.

Outside ∅ (mm)	For filter crucibles (ml)	Art. No.	Pack Qty.	€
26	8	**E566.1**	10	19,70
33	15	**E567.1**	10	20,15
41	30	**E568.1**	10	20,90
49	50	**E569.1**	10	21,90

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Crucible adapters

Made of DURAN®. For filter crucibles. Outer-∅ funnel 10 mm. Autoclavable.

Top inside ∅ (mm)	Length (mm)	For filter crucibles (ml)	Art. No.	Pack Qty.	€
27	108	8	**E570.1**	1	19,50
34	110	15	**E571.1**	1	19,65
41	125	30	**E572.1**	1	20,55
50	132	50	**E573.1**	1	21,30

A 121 °C

Filter tubes acc. to Allihn

Made of borosilicate glass 3.3. Volume 30 ml, filter plate-∅ 20 mm. Tube outer-∅ 9 mm. Autoclavable.

Porosity	Art. No.	Pack Qty.	€
1	**LE72.1**	1	28,90
2	**LE73.1**	1	28,90
3	**LE74.1**	1	28,90
4	**LE75.1**	1	30,45

A 121 °C

Micro filter funnels

Made of borosilicate glass 3.3. Volume 2 ml, filter plate-∅ 10 mm. Tube outer-∅ 6 mm. Autoclavable.

Porosity	Art. No.	Pack Qty.	€
0	**LE65.1**	1	26,70
1	**LE66.1**	1	26,70
2	**LE67.1**	1	26,70
3	**LE68.1**	1	28,20
4	**LE69.1**	1	30,10

▶ Filter crucibles made of porcelain see p. 189

Filtering flasks and seals

121 °C

Filter funnels

Made of borosilicate glass 3.3. Volume 25 ml, filter plate-∅ 25 mm, overall-∅ 55 mm. Height 100 mm. Autoclavable.

Porosity	Art. No.	Pack Qty.	€
3	**LE70.1**	1	30,10
4	**LE71.1**	1	32,80

121 °C

Vacuum filter adapters

Made of PTFE, with sealing ring made of FKM. Allows filtration of commercially available filter funnels directly in the vials with ground sleeve with thread GL 45. For funnel without outlet ∅ up to 22 mm.
Side stepped olive made of PTFE for connection to a vacuum pump using hoses with an inner ∅ 9 or 12 mm.
Temperature stable from -15 to +200 °C. Autoclavable.

For vessels with ground sleeve

Standard ground glass joint	Art. No.	Pack Qty.	€
29/32	**HKK8.1**	1	67,65
45/40	**HKK9.1**	1	132,25

For vessels with thread

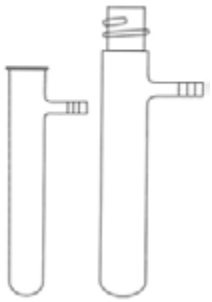
Thread GL	Art. No.	Pack Qty.	€
45	**HKL0.1**	1	113,95

121 °C

Suction bottles

By Nalgene®. Made of **PP**. Moulded from a single piece.
Downwards-facing hose connection reduces tilting hazard. Autoclavable.

Volume (ml)	∅ x H (mm)	Neck inner ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
500	108 x 187	29	6,4-9,5	**ATL0.1**	1	27,55
1000	140 x 215	32,5	6,4-9,5	**ATL1.1**	1	42,95
1700	162 x 272	44	9,5	**ATL2.1**	1	59,95



Suction tubes

By Winzer. Made of borosilicate glass 3.3. With glass hose connection.

With heavy duty rim

Volume (ml)	Outer ∅ x H (mm)	Art. No.	Pack Qty.	€
20	16 x 160	**AAP7.1**	1	23,55
30	18 x 180	**AAP8.1**	1	23,80

With GL 14 thread, screw cap with hole and silicon gasket (inner ∅ 6 mm)

Volume (ml)	Outer ∅ x H (mm)	Art. No.	Pack Qty.	€
10	12 x 160	**AAP9.1**	1	28,40

121 °C

Rotilabo®-suction bottles

Made of borosilicate glass 3. With glass hose connection. ∅ 10 mm. Autoclavable.

Volume (ml)	Bottle ∅ (mm)	Neck inner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	70	24	105	**NY65.1**	1	25,75
250	85	35	145	**NY66.1**	1	30,65
500	105	35	175	**NY67.1**	1	34,30
1000	135	45	230	**NY68.1**	1	49,45
2000	165	60	255	**NY69.1**	1	55,30

DURAN WHEATON KIMBLE

121 °C

Flask with safety coating

By Wheaton. Made of borosilicate glass with PVC coating.
With glass olives for hoses with an inner ∅ of 6 mm. Autoclavable.

Volume (ml)	Largest outer ∅ (mm)	Height (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
1000	136	225	37	**EXX9.1**	1	147,30

Filtering flasks and seals

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Filtering flasks

Made of DURAN®. With KECK™-connector set, consisting of plastic tubing connector made of PP, plastic-tubulature made of PP and silicone rubber seal. Heavy walled for vacuum use. In acc. with DIN 12 476, ISO 6556. Autoclavable.

Erlenmeyer shape

Volume (ml)	Largest outer ∅ (mm)	Height (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
100	64	105	24	**E575.1**	1	18,60
250	85	155	34	**E576.1**	1	24,15
500	105	185	34	**E577.1**	1	30,15
1000	135	230	45	**E578.1**	1	45,00
2000	166	255	60	**E579.1**	1	93,00

Bottle shape

Volume (ml)	Largest outer ∅ (mm)	Height (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
3000	170	295	58	**E580.1**	1	116,00
5000	185	360	68	**E581.1**	1	161,00
10 000	240	420	70	**E582.1**	1	241,00
15 000	255	500	70	**E583.1**	1	311,00
20 000	290	535	70	**E584.1**	1	391,00

Spare connector set

Consisting of plastic tubing connector straight ∅ 9 mm and **PP** tubulature. Silicone rubber seal.

Art. No.	Pack Qty. (set)	€
A389.1	1	4,95

Rotilabo®-safety cuffs

Made of **EPDM**. For glass filtering flasks. Enables a clean, firm seal between funnels, vacuum filters, etc. and the flask. The tightness of the seal increases when flask is under vacuum.

For filtering flasks capacity (ml)	Height (mm)	Adapter inner-/outer-∅ (mm)	Art. No.	Pack Qty.	€
100	6	17/39	**E349.1**	1	10,75
250 - 500	15	29/54	**E350.1**	1	11,65
1000	20	32/66	**E351.1**	1	12,85
2000 - 3000	25	41/83	**E352.1**	1	13,95
5000 - 20000	25	55/93	**E353.1**	1	15,60

Set of Rotilabo®-safety adapters

Set of five adapters for filtering flasks 100 - 20 000 ml.

Art. No.	Pack Qty. (set)	€
E354.1	1	52,65

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Witt filtration apparatus

Made of DURAN®. Complete with KECK™ assembly kit and tube lid NS 29/32 ① or NS 45/40 ②. Lids are interchangeable. Autoclavable.

Nominal ∅ (mm)	Socket (ground glass)	Overall height (mm)	Art. No.	Pack Qty.	€
100	29/32	236	**PL01.1**	1	225,00
150	29/32	302	**PL02.1**	1	270,00
200	29/32	426	**PL03.1**	1	361,00
100	45/40	244	**PL04.1**	1	233,00
150	45/40	312	**PL05.1**	1	298,00

Accessories: spare lids for Witt filtration apparatus

Nominal ∅ (mm)	Socket (ground glass)	Height (mm)	Art. No.	Pack Qty.	€
100	29/32	76	**PL06.1**	1	117,00
150	29/32	102	**PL07.1**	1	143,00
200	29/32	126	**PL08.1**	1	170,00
100	45/40	84	**PL09.1**	1	172,00
150	45/40	112	**PL10.1**	1	232,00

Rotilabo®-Guko sleeve adapters

Made of natural rubber. For vacuum-tight connection of suction bottles and filter funnels. Successive sizes can be stacked inside each other.

Top, outer ∅ (mm)	∅ bottom, outer (mm)	Height (mm)	Wall thick-ness (mm)	Art. No.	Pack Qty.	€
21	12	18	2,5	**9755.1**	1	2,60
27	17	20	3	**9756.1**	1	3,00
33	21	24	3	**9757.1**	1	3,85
41	27,5	27	4	**9758.1**	1	4,45
53	33	34	5	**9759.1**	1	4,75
68	48	35	5,5	**9760.1**	1	5,35
78	58	35	6	**9761.1**	1	6,60
89	66	40	6,5	**9762.1**	1	7,90

DURAN WHEATON KIMBLE
A 121 °C

GUKO set

Made of **EPDM**. Conical rubber seals for suction bottle.
Temperature resistant in the range -45 to +150 °C. Autoclavable.
Delivery incl. 8 Gukos, size 22, 29, 36, 44, 53, 63, 73, 84 mm.

Art. No.	Pack Qty. (set)	€
PK84.1	1	37,50

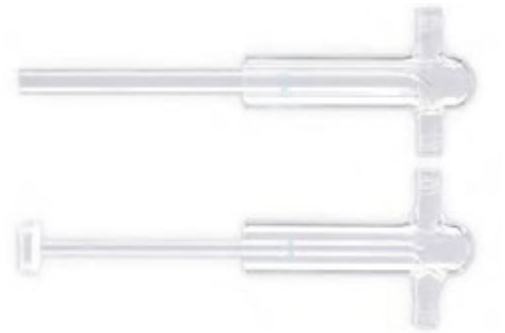
Gas wash bottles/Woulff's bottles

Material DURAN®
A 121 °C

Gas wash bottles

Made of DURAN®. With top acc. to Drechsel, adjustable. Capacity 500 ml. Porosity of filter plate 100-160 µm. Autoclavable.
Delivery incl. 2 olives for tubes with inner ∅ 8 mm.
Tip: Absorption effiency can be increased considerably when the gas is distributed into the liquid through filter plate.

Design	Volume (ml)	Art. No.	Pack Qty.	€
without filter disc	500	**C215.1**	1	51,55
with filter disc, porosity 1	500	**C216.1**	1	68,55



Material DURAN®
A 121 °C

Drechsel spare top-insert

Total length 220 mm, screw connectors not included. Autoclavable.

Design	Art. No.	Pack Qty.	€
without filter disc	**C217.1**	1	25,75
with filter disc, ∅ 24 mm, porosity 1	**C218.1**	1	39,80

A 121 °C

Gas wash bottles

Made of borosilicate glass 3.3.
Standard ground joint 29/32, in acc. with DIN 12463.
Height of bottle: 200 mm. Autoclavable.
Delivery incl. top made of DURAN® with two olives (outer-∅ approx. 11 mm).

Design	Volume (ml)	Bottle ∅ (mm)	Art. No.	Pack Qty.	€
① Without filter plate	100	40	**KX61.1**	1	38,35
① Without filter plate	250	55	**KX62.1**	1	40,65
① Without filter plate	500	75	**KX63.1**	1	48,20
② With filter plate, porosity 1	100	40	**KX64.1**	1	55,80
② With filter plate, porosity 1	250	55	**KX65.1**	1	60,20
② With filter plate, porosity 1	500	75	**KX66.1**	1	62,65

Accessories:

Spare gas washing bottle 100 ml	**KX50.1**	1	19,80
Spare gas washing bottle 250 ml	**KX51.1**	1	22,45
Spare gas washing bottle 500 ml	**KX60.1**	1	31,65
Spare top-insert without filter plate, with tubing olives	**KX52.1**	1	18,10
Spare top-insert without filter plate, with GL 14 connections	**EPX1.1**	1	31,30
Spare top-insert with filter plate, porosity 0, with tubing olives	**EPX2.1**	1	44,60
Spare top-insert with filter plate, porosity 1, with tubing olives	**KX53.1**	1	39,80
Spare top-insert with filter plate, porosity 2, with tubing olives	**EPX3.1**	1	44,90
Spare top-insert with filter plate, porosity 0, with GL 14 connections	**EPX4.1**	1	51,35
Spare top-insert with filter plate, porosity 1, with GL 14 connections	**EPX5.1**	1	51,60
Spare top-insert with filter plate, porosity 2, with GL 14 connections	**EPX6.1**	1	51,45

- ▶ Water jet pumps on page 384
- ▶ Tubing accessories see page 391
- ▶ Tubes from page 385

Gas wash bottles/Woulff's bottles

Material
DURAN®
A 121 °C

Kit for Woulff´s bottle

One pack of every Art. No. is required. Autoclavable.

Image	Type	Art. No.	Pack Qty.	€
①	DURAN®-pressure plus-screw thread bottle, 1000 ml	**H995.1**	1	14,30
②	Top without filter disc	**C217.1**	1	25,75
③	Replacement plastic hose connection with silicone seal, straight, GL 14, outer- ∅ 8.6 mm	**L992.1**	2	3,35
④	Replacement screw caps, red, PBT, GL 14, hole ∅ 9.5 mm	**L993.1**	2	3,60
⑤	GL 45 replacement screw cap with hole	**L994.1**	1	4,50
(not illu-strated)	Silicone ring inner ∅ 26 mm	**L995.1**	1	5,70

DURAN WHEATON KIMBLE
Material
DURAN®
A 121 °C

Woulff's bottles

Made of DURAN®. With three ground glass joint necks. Vacuum resistant due to the wall thickness and geometry. In acc. with DIN 12480. Autoclavable.

Volume (ml)	Standard ground joint necks	Outside ∅ (mm)	Art. No.	Pack Qty.	€
500	19/26	87	**AK00.1**	1	90,00
1000	24/29	113	**AK01.1**	1	96,50
2000	29/32	135	**AAC2.1**	1	140,00
5000	34/35	185	**AAC3.1**	1	213,00

① Gas wash bottles

Made of **PFA**, attachment made of PTFE with 2 threaded connections for hoses with 6 or 8 mm outer ∅. Highly pure, chemically inert. Hydrophobic, anti-adhesive surfaces. Temperature stable from -200 °C to +250 °C.

Delivery incl. interchangeable frit made of porous PTFE (Art. No. NY24.1), pore size approx. 3 µm, M8 threaded connection.

Volume (ml)	Height (mm)	Outer ∅ (mm)	For hoses with outer ∅ (mm)	Art. No.	Pack Qty.	€
250	175	60	6	**NY26.1**	1	313,90
500	200	75	6	**NY27.1**	1	418,20
1000	240	95	8	**NY28.1**	1	473,00

A 121 °C

① PTFE gas inlet tubes

Highly pure, chemically inert. Hydrophobic, anti-adhesive surface. Inner ∅ 5 mm. With ∅ 9 mm hose connector and M8 thread for connecting to a gas frit or a gas distributor (please order separately). Temperature stable from -200 to +250 °C, autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
200	**NY21.1**	1	18,50
400	**NY22.1**	1	21,20
600	**NY23.1**	1	23,30

Accessories for PTFE gas inlet tubes and gas wash bottles

② Gas frit

Made of porous PTFE. Pore size approx. 3 µm, M8 threaded connection.

Outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
25	26	**NY24.1**	1	31,00

③ PTFE gas distributor

With ports (4 x ∅ 0.4 mm) for even dispersion of the flowing gas. M8 threaded connection.

Outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
28	24	**NY25.1**	1	55,60

Sample bowls

Filter tubes

Made of DURAN®. For treatment of liquids for intake or for protecting downstream pumps and other apparatus against ingress of solid particles.

① **Microfilter cartridges** 13 x 25 mm, tube: ∅ 8 mm, H 200 mm

Porosity	Art. No.	Pack Qty.	€
1	**AAC7.1**	10	329,00
2	**AAC8.1**	10	329,00
3	**AAC9.1**	10	329,00
4	**AAE0.1**	10	368,00

② **Immersion filters**

Micro: plate ∅ 10 mm, tube: ∅ 6 mm, H 100 mm

Porosity	Art. No.	Pack Qty.	€
1	**AAE1.1**	10	232,00
2	**AAE2.1**	10	232,00
3	**AAE3.1**	10	232,00
4	**AAE4.1**	10	249,00

② **Standard:** plate ∅ 35 mm, tube: ∅ 10 mm, H 210 mm

Porosity	Art. No.	Pack Qty.	€
1	**AAE5.1**	1	46,40
2	**AAE6.1**	1	46,40
3	**AAE7.1**	1	46,40
4	**AAE8.1**	1	48,80

Gas dispersion tubes

Made of DURAN®. For fine dispersion of gases in liquids, e.g. during reactions. Tube height 250 mm.

Glass tube, lateral ring

Tube outer ∅ (mm)	Plate ∅ (mm)	Porosity	Art. No.	Pack Qty.	€
6	22	0	**AAE9.1**	5	149,00
6	22	1	**AAH0.1**	5	149,00
6	22	2	**AAH1.1**	5	149,00

Glass tube, centre ring

Tube outer ∅ (mm)	Plate ∅ (mm)	Porosity	Art. No.	Pack Qty.	€
9	25	0	**AAH2.1**	5	177,00
9	25	1	**AAH3.1**	5	177,00
9	25	2	**AAH4.1**	5	177,00
11	34	1	**AAH5.1**	5	206,00

A 121 °C

Rotilabo®-sample bowls

Made of stainless steel 18/10, high-gloss finish. Suitable for foodstuffs. Autoclavable.

Delivery without lid. Please order separately.

Volume (l)	Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
0,25	120	35	**YH20.1**	1	12,60
0,4	130	40	**YH21.1**	1	11,30
0,65	150	45	**YH22.1**	1	12,85
0,85	170	45	**YH23.1**	1	16,05
1,25	190	50	**YH24.1**	1	18,10
1,4	190	55	**YH25.1**	1	20,35
1,6	210	55	**YH26.1**	1	22,60
2	225	55	**YH27.1**	1	25,80

Lids for Rotilabo®-sample bowls

for sample pan	Art. No.	Pack Qty.	€
YH20.1	**YL03.1**	1	8,55
YH21.1	**YL04.1**	1	9,65
YH22.1	**YL05.1**	1	10,70
YH23.1	**YL06.1**	1	12,70
YH24.1	**YL07.1**	1	13,90
YH25.1	**YL08.1**	1	15,00
YH26.1	**YL09.1**	1	17,10
YH27.1	**YL10.1**	1	19,30

A 121 °C

Rotilabo®-tablet bowls

Made of stainless steel 18/10, high-gloss. Suitable for foodstuffs. Autoclavable.

Flat type

∅ x H (mm)	Art. No.	Pack Qty.	€
120 x 20	**YX74.1**	1	9,15
140 x 25	**YX75.1**	1	12,50

Tall type

∅ x H (mm)	Art. No.	Pack Qty.	€
65 x 20	**YX76.1**	1	4,50
100 x 30	**YX77.1**	1	7,45

Sample bowls

Rotilabo®-aluminium bowls with lid

Moulded in one piece. Leakproof. The cardboard lids are aluminium coated on one side and can be secured by bending rim of container.
The white side can be marked or labelled.

Volume (ml)	Length, top (mm)	Width, top (mm)	Height (mm)	Art. No.	Pack Qty.	€
500	140	115	40	**0906.1**	100	48,30
250	120	95	35	**0522.1**	100	40,80

Rotilabo®- general-purpose aluminium trays

Made of aluminium. Free of oil residues and coatings. Easy to stack. Highly versatile as weighing or drying dishes, as dispensing or storage containers or for covering vessels.

Volume (ml)	Height (mm)	Innner ∅ (mm)	Art. No.	Pack Qty.	€
20	12	44	**PP65.1**	100	17,75
60	17	63	**PP66.1**	100	17,00
75	30	62	**PP67.1**	100	17,75
200	35	110	**PP68.1**	50	18,20
500	25	181	**PP69.1**	50	20,40

Rotilabo®-sample bowls

Made of aluminium. Flat, without lid.

Volume (ml)	Height (mm)	Innner ∅ (mm)	Top, outer ∅ (mm)	Art. No.	Pack Qty.	€
28	13	55	64	**5494.1**	100	13,55
125	26	85	96	**5496.1**	100	21,45

Dappen glasses

Made of calcium soda glass. For mixing small quantities of substances.
∅ 31 x H 29 mm. Can be used on both sides. Volume: approx. 1.5 or 3 ml.

Colour	Art. No.	Pack Qty.	€
clear	**CKY4.1**	1	7,35
green	**CKY5.1**	1	7,35
pink	**CKY6.1**	1	7,35
brown	**CKY7.1**	1	7,35

Rotilabo®-specimen jars

Made of type 3.3 borosilicate glass.

① With lid with knob

Jar outer ∅ (mm)	Lid ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
85	95	85	**NT38.1**	1	35,05
100	110	100	**NT39.1**	1	38,30
120	130	120	**NT40.1**	1	44,40
150	162	150	**NT41.1**	1	59,15
200	214	200	**NT42.1**	1	103,00
250	264	250	**NT43.1**	1	146,20
300	314	300	**NT44.1**	1	177,40

② With recessed knob

Jar outer ∅ (mm)	Lid ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
65	60	65	**NT46.1**	1	53,90
85	79	85	**NT47.1**	1	65,75
100	94	100	**NT48.1**	1	69,90
100	94	500	**NT49.1**	1	119,35
120	103	120	**NT50.1**	1	81,50
120	103	500	**NT51.1**	1	133,30
150	130	150	**NT52.1**	1	109,65
150	130	500	**NT53.1**	1	174,15

▶ Aluminium foils see page 264

Crystallization dishes and watch glasses

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Glass jars

Made of DURAN®. High temperature and chemical resistance. Autoclavable.
Delivery incl. lid.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
75	60 x 40	**CCL2.1**	1	32,20
175	80 x 50	**CCL3.1**	1	38,80
325	100 x 60	**CCL4.1**	1	48,40
1000	150 x 80	**CCL5.1**	1	88,30

A 121 °C

Rotilabo®-cotton and swab container

Made of stainless steel 18/10, suitable for foodstuffs. Autoclavable.
Delivery without lid, please order separately.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
150	60 x 60	**YT80.1**	1	12,50
250	85 x 50	**YT81.1**	1	13,45
350	100 x 50	**YT82.1**	1	17,15
400	85 x 85	**YT83.1**	1	16,05
600	85 x 125	**YT84.1**	1	24,10
750	100 x 100	**YT85.1**	1	17,75
1750	150 x 100	**YT86.1**	1	29,70
2500	150 x 150	**YT87.1**	1	28,95
3000	200 x 100	**YT88.1**	1	43,00

Lid for Rotilabo®-cotton and swab container

Made of stainless steel 18/10,

For container ∅ (mm)	Art. No.	Pack Qty.	€
60	**YT89.1**	1	6,80
85	**YT90.1**	1	8,55
100	**YT91.1**	1	9,30
150	**YT92.1**	1	14,65
200	**YT93.1**	1	15,80

▶ Cotton wool see page 1164

A 121 °C

Rotilabo®-crystallising dishes

Made of type 3.3 borosilicate glass. Autoclavable.

With spout. Compliant with DIN 12338.

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
20	40	25	**AYE1.1**	10	43,25
40	50	30	**AYE2.1**	10	45,15
60	60	35	**AYE3.1**	10	53,25
100	70	40	**AYE4.1**	10	61,10
150	80	45	**AYE5.1**	10	85,60
300	95	55	**AYE6.1**	10	95,60
500	115	65	**AYE7.1**	10	107,50
900	140	75	**AYE8.1**	10	135,45
2000	190	90	**AYE9.1**	1	22,05
3500	230	100	**AYH0.1**	1	26,25

Without spout. Compliant with DIN 12337.

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
20	40	25	**AYH1.1**	10	33,90
40	50	30	**AYH2.1**	10	34,20
60	60	35	**AYH3.1**	10	37,85
100	70	40	**AYH4.1**	10	49,25
150	80	45	**AYH5.1**	10	78,95
300	95	55	**AYH6.1**	10	83,65
500	115	65	**AYH7.1**	10	91,05
900	140	75	**AYH8.1**	10	121,50
2000	190	90	**AYH9.1**	1	19,90
3500	230	100	**AYK0.1**	1	23,60

Watch glasses

Made of soda-lime glass. With fused edges (C090.2: ground edges).

∅ (mm)	Art. No.	Pack Qty.	€
40	**C079.1**	10	9,25
50	**C080.1**	10	9,80
60	**C081.1**	10	10,70
70	**C082.1**	10	12,15
80	**C083.1**	10	13,15
90	**C084.1**	10	14,30
100	**C085.1**	10	15,45
120	**C086.1**	10	18,20
125	**C087.1**	10	20,00
150	**C088.1**	10	22,25
200	**C089.1**	10	40,65
250	**C090.2**	5	30,50

Crystallization dishes

Made of DURAN®. Autoclavable.

With spout. In acc. with DIN 12338.

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
20	40	25	**C091.1**	10	65,75
40	50	30	**C092.1**	10	66,25
60	60	35	**C093.1**	10	68,75
100	70	40	**C094.1**	10	76,20
150	80	45	**C095.1**	10	84,40
300	95	55	**C096.1**	10	89,50
500	115	65	**C097.1**	1	13,90
900	140	75	**C098.1**	1	20,50
2000	190	90	**HX07.1**	1	47,90
3500	230	100	**HX08.1**	1	69,45

Without spout. In acc. with DIN 12337.

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
20	40	25	**HX09.1**	10	65,75
40	50	30	**HX10.1**	10	66,25
60	60	35	**HX11.1**	10	68,75
100	70	40	**HX12.1**	10	76,20
150	80	45	**HX13.1**	10	84,40
300	95	55	**HX14.1**	10	89,50
500	115	65	**HX15.1**	1	13,60
900	140	75	**HX16.1**	1	19,65
2000	190	90	**HX17.1**	1	47,90
3500	230	100	**HX18.1**	1	69,45

Rotilabo®-watch glasses

Made of **PP**. Very stable. Autoclavable.

∅ (mm)	Art. No.	Pack Qty.	€
60	**K842.1**	10	13,40
80	**K843.1**	10	16,50
100	**K844.1**	10	20,40
125	**K845.1**	10	23,35

Rotilabo®-watch glasses

Made of **PTFE**. Excellent chemical resistance.
Temperature stable from -200 to +260 °C. Autoclavable.

∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	6	**K837.1**	1	5,30
75	13	**K838.1**	1	6,35
100	20	**K839.1**	1	10,70
125	20	**K840.1**	1	11,35
150	25	**K841.1**	1	18,25

Watch glasses

Made of DURAN®. Fused edge. In acc. with DIN 12341. Autoclavable.

∅ (mm)	Art. No.	Pack Qty.	€
40	**Y634.1**	10	66,90
50	**Y635.1**	10	73,70
60	**Y636.1**	10	79,65
80	**Y637.1**	10	87,40
100	**Y638.1**	10	99,80
125	**Y639.1**	10	108,00
150	**Y640.1**	10	139,00
200	**Y641.1**	10	209,00
250	**Y642.1**	1	37,45

Rotilabo®-mortars with pestle

Made of borosilicate glass 3.3, with spout.
Capacity specifications are approximate figures.

① **Coarse friction surface**

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
100	60	80	**TX04.1**	1	35,50
200	75	100	**TX05.1**	1	41,30
300	90	120	**TX06.1**	1	51,95
650	110	150	**TX07.1**	1	64,40
800	135	200	**NX15.1**	1	96,25

② **Smooth inner surface**

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
100	60	80	**NT80.1**	1	31,20
200	75	100	**NT81.1**	1	34,30
300	90	120	**NT82.1**	1	40,35
650	110	150	**NT83.1**	1	52,70
800	135	200	**NT84.1**	1	73,65

Mortars

Smooth-walled mortars

Made of **MF**, white, with spout. Smooth friction surface prevents accumulation of sample residues and cross-contamination. Microwave safe. Temperature resistant from -40 to +110 °C.

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
300	75	125	**PY55.1**	1	18,25
500	90	150	**PY56.1**	1	21,40

Pestles

Made of **MF**, white, heavy-duty version, with smooth head. Temperature resistant from -40 to +110 °C.

∅ Head (mm)	Length (mm)	Weight (g)	Art. No.	Pack Qty.	€
30	125	55	**PY57.1**	1	20,55
35	145	85	**PY58.1**	1	22,15
40	160	120	**PY59.1**	1	24,75
42	215	175	**PY60.1**	1	51,60

Mortars and pestles, short form

Made of **agate**. Flawless, polished inner surface. Minimal abrasion. Dimensions are approximate. Autoclavable.

Outside ∅ (mm)	Innner ∅ (mm)	Volume (ml)	Art. No.	Pack Qty.	€
25	20	5	**TL93.1**	1	46,15
40	35	10	**TL94.1**	1	49,35
50	42	15	**HC74.1**	1	56,90
60	48	20	**TL95.1**	1	65,40
75	63	40	**HC75.1**	1	107,30
85	70	65	**TL96.1**	1	141,90
100	80	80	**HC76.1**	1	223,60
110	90	100	**TL97.1**	1	304,25
125	115	150	**HC77.1**	1	382,70
150	125	180	**HC78.1**	1	794,45
200	170	400	**TL98.1**	1	2514,45

Spare pestles for mortars, short form

Made of **agate.**

∅ Head (mm)	Length (mm)	For Mortar	Art. No.	Pack Qty.	€
7	28	TL93.1	**TL99.1**	1	11,65
9	42	TL94.1	**TP00.1**	1	12,85
12	52	HC74.1	**TP01.1**	1	13,45
14	62	TL95.1	**TP02.1**	1	14,55
18	77	HC75.1	**TP03.1**	1	20,35
20	86	TL96.1	**TP04.1**	1	27,85
24	104	HC76.1	**TP05.1**	1	45,45
22	112	TL97.1	**TP06.1**	1	65,80
29	128	HC77.1	**TP07.1**	1	84,20
35	155	HC78.1	**TP08.1**	1	164,50
43	203	TL98.1	**TP09.1**	1	362,30

Mortars and pestles, tall form

Made of **agate.** Flawless, polished inner surface. Minimal abrasion. Dimensions are approximate. Autoclavable.

Outside ∅ (mm)	Innner ∅ (mm)	Volume (ml)	Height (mm)	Art. No.	Pack Qty.	€
60	50	25	36	**TP10.1**	1	192,45
70	55	40	42	**TP11.1**	1	246,20
80	65	65	53	**TP12.1**	1	364,45
90	70	100	56	**TP13.1**	1	457,95
100	80	125	61	**TP14.1**	1	581,60
130	110	250	72	**TP15.1**	1	1316,90

Spare pestles for mortars, tall form

Made of **agate.**

∅ Head (mm)	Length (mm)	For Mortar	Art. No.	Pack Qty.	€
16	60	TP10.1	**TP16.1**	1	26,45
18	80	TP11.1	**TP17.1**	1	35,40
22	100	TP12.1	**TP18.1**	1	46,70
22	110	TP13.1	**TP19.1**	1	64,10
23	120	TP14.1	**TP20.1**	1	90,30
27	150	TP15.1	**TP21.1**	1	192,45

Mortars and pestle

Mortar and pestle made of stainless steel 18/10, mortar frame and pestle handle made of powder-coated steel. Smooth friction faces. Heavy design, with slip resistant feet.
Note: Not autoclavable, not suitable for dishwashers. Do not immerse in water.

Volume (ml)	Outer ∅ (mm)	Inner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
165	100	90	60	**LL28.1**	1	81,60
330	135	125	80	**LL29.1**	1	100,85
450	160	150	90	**LL30.1**	1	124,70

Rotilabo®-mortar

Made of stainless steel, with plastic base. Heavy duty. Suitable for foodstuffs.
Delivery incl. pestle, length 175 mm.

Top inside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
110	80	**YX96.1**	1	23,45

Mortars 55, coarse

By Haldenwanger. Made of glazed porcelain, **coarse grind surface (unglazed).**

Volume (ml)	Size	Height (mm)	Innner ∅ (mm)	Art. No.	Pack Qty.	€
20	00	32	50	**XL89.1**	1	11,05
70	0a	40	65	**1567.1**	1	16,70
75	1	45	70	**3773.1**	1	17,35
100	2	50	80	**3782.1**	1	22,80
170	3	55	90	**1568.1**	1	24,30
300	4	63	115	**3820.1**	1	32,20
400	5	65	130	**3823.1**	1	47,85
700	6a	70	150	**3824.1**	1	60,10
1000	8	80	180	**3826.1**	1	144,05
2600	11	100	240	**XL90.1**	1	332,20
6000	15	140	330	**XL91.1**	1	536,45

Pestles 56, coarse

By Haldenwanger. Made of glazed porcelain, **coarse grind surface (unglazed).**

∅ Head (mm)	Size	Height (mm)	Art. No.	Pack Qty.	€
24	00	115	**1570.1**	1	11,10
28	0a	125	**3831.1**	1	12,05
30	1	135	**1571.1**	1	13,75
36	2	150	**3832.1**	1	18,85
42	3	175	**3836.1**	1	26,75
45	4	180	**XL92.1**	1	29,40
48	5	185	**3839.1**	1	31,80
55	6a	210	**3841.1**	1	34,30
60	8	215	**XL93.1**	1	49,35
74	13	262	**XL94.1**	1	160,20
85	15	280	**XL95.1**	1	213,95

Mortars 55, smooth

By Haldenwanger. Made of glazed porcelain, **smooth grind surface (glazed)**, prevents accumulation of sample residues and cross-contamination.

Volume (ml)	Size	Height (mm)	Innner ∅ (mm)	Art. No.	Pack Qty.	€
20	00	32	50	**XL96.1**	1	24,00
70	0a	40	65	**XL97.1**	1	28,35
170	3	55	90	**XL98.1**	1	36,70
700	6a	70	150	**XL99.1**	1	71,60
1000	8	80	180	**XP00.1**	1	158,05

Pestles 56, smooth

By Haldenwanger. Made of glazed porcelain, **smooth grind surface (glazed)**.

∅ Head (mm)	Size	Height (mm)	Art. No.	Pack Qty.	€
24	00	115	**XP01.1**	1	21,85
28	0a	125	**XP02.1**	1	22,45
30	1	135	**XP03.1**	1	24,30
42	3	175	**XP04.1**	1	36,35
55	6a	210	**XP05.1**	1	45,00
60	8	215	**XP06.1**	1	57,85

❄❄❄

Mini-Cryo mortar with pestle

Container made of stainless steel with PE insulating jacket, reaction vial holder made of stainless steel with insulated, removable handle (L 102 mm). For filling with liquid nitrogen. Allows the homogenisation of plant material or tissue directly inside the 1.5 ml reaction vial.
Dimensions: ∅ 165 x H 114 mm.
Delivery incl. pestle (∅ 9 x L 127 mm) with PE handle.

Art. No.	Pack Qty.	€
CXX6.1	1	518,15

❄❄❄

Cryo mortar

Container made of stainless steel with PE insulating jacket, mortar and pestle insert made of stainless steel with insulated, removable handle (L 102 mm). For filling with liquid nitrogen; cooling aids, for example, the shredding and homogenisation of plant material and similar samples.
Dimensions: ∅ 165 x H 114 mm. Inner ∅ of mortar and pestle insert 100 mm, 48 mm deep.

Delivery without pestle; can be used with porcelain pestles (Art. No. 3836.1 or XL92.1), for example.

Cryo mortars

Art. No.	Pack Qty.	€
CYH1.1	1	506,35

Replacement pestle insert (without handle)

Art. No.	Pack Qty.	€
CYH2.1	1	189,20

Evaporating bowls

Rotilabo®-evaporating dishes

Made of type 3.3 borosilicate glass. With spout. Autoclavable.

With round bottom

Volume (ml)	Outer edge ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
15	51	22	**AYK1.1**	10	80,75
35	64	29	**AYK2.1**	10	95,90
90	85	39	**AYK3.1**	10	98,50
180	105	49	**AYK4.1**	10	110,75
400	131	62	**AYK5.1**	10	137,60
800	166	80	**AYK6.1**	1	16,90
1700	206	100	**AYK7.1**	1	24,20
2600	235	115	**AYK8.1**	1	28,40

With flat bottom

Volume (ml)	Outer edge ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
10	40	18	**AYK9.1**	10	58,80
15	50	25	**AYL0.1**	10	67,75
45	60	30	**AYL1.1**	10	80,20
60	70	35	**AYL2.1**	10	83,85
90	80	45	**AYL3.1**	10	89,05
170	95	55	**AYL4.1**	10	94,20
320	115	65	**AYL5.1**	10	117,20
600	140	80	**AYL6.1**	1	16,90
1500	190	100	**AYL7.1**	1	21,65
2500	230	130	**AYL8.1**	1	24,55

DURAN WHEATON KIMBLE

Material DURAN®

Evaporating bowls

Made of DURAN®, with spout. In acc. with DIN 12 336. Autoclavable.

Volume (ml)	Outer edge ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
15	50	25	**E540.1**	10	67,75
45	60	30	**E541.1**	10	69,65
60	70	35	**E542.1**	10	78,25
90	80	45	**E543.1**	10	85,00
170	95	55	**E544.1**	10	90,60
320	115	65	**E545.1**	10	136,00
600	140	80	**E546.1**	1	19,80
1500	190	100	**E547.1**	1	48,40
2500	230	130	**E548.1**	1	70,15

Evaporating dishes with snap-on lids

Made of highly transparent **PFA**, lid made of **PE**. For contamination-free sample preparation and for transporting samples.

- Temperature resistant in the range -200 to +250 °C
- Chemically inert to nearly all chemicals
- Hydrophobic and anti-adhesive
- High purity, ideal for used in trace analysis and for storage of reference solutions
- With conical recess in base, to hold small quantities of solvent for absorption of evaporated samples
- Extremely smooth surfaces allow easy cleaning, no memory effect
- Autoclavable

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
25	25	50	**XY19.1**	1	40,65
50	54	50	**XY20.1**	1	53,70

Rotilabo®-evaporating bowls, PTFE

Made of **PTFE**. Flat. Chemically inert.
Temperature stable from -200 to +260 °C. Anti-adhesive. Autoclavable.

Volume (ml)	Outside ∅ (mm)	Outer height (mm)	Art. No.	Pack Qty.	€
25	42	25	**T654.1**	1	16,70
50	65	23	**1188.1**	1	18,60
100	80	28	**1189.1**	1	24,00
180	78	46	**T655.1**	1	33,35
350	100	55	**1190.1**	1	46,80

A 121 °C

Rotilabo®-evaporating bowls, stainless steel

Made of 18/10 stainless steel. Cylindric. Autoclavable.

Tall form

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
125	35	71	**C873.1**	1	31,85
250	50	85	**C874.1**	1	40,25
500	55	110	**C875.1**	1	57,85
1000	75	140	**C876.1**	1	87,75
2000	105	160	**C877.1**	1	112,90
5000	160	200	**C878.1**	1	233,30

Short form

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
50	20	60	**C879.1**	1	21,40
75	20	70	**C880.1**	1	26,75
100	20	80	**C881.1**	1	37,30

A 121 °C

Evaporating dishes 888

By Haldenwanger. Made of glazed porcelain, with the exception of the outer bottom surface. Temperature stable up to +400 °C. Flat shape, with spout. Autoclavable.

Volume (ml)	Size	∅ x H (mm)	Art. No.	Pack Qty.	€
5	000	40 x 9	**XL72.1**	1	8,25
10	00	50 x 11	**XL73.1**	1	9,15
20	0	63 x 13	**XL74.1**	1	10,15
40	2	80 x 20	**XL75.1**	1	11,25
80	4	100 x 22	**XL76.1**	1	15,40
270	6	125 x 27	**XL77.1**	1	19,95
450	6a	160 x 35	**XL78.1**	1	33,30
1100	8	190 x 55	**XL79.1**	1	71,85
1750	9	240 x 65	**XL80.1**	1	127,95
2500	10	300 x 60	**XL81.1**	1	183,85

A 121 °C

Rotilabo®-evaporating dishes, porcelain

Made of porcelain, glazed inner surface.
Semi-deep form with round bottom.
Temperature stable up to +1000 °C. Autoclavable.

Volume (ml)	Height (mm)	Top ∅ (mm)	Art. No.	Pack Qty.	€
41	26	72	**XX26.1**	5	28,30
62	27	83	**XX27.1**	5	31,00
110	30	96	**XX28.1**	5	46,05
160	37	110	**XX29.1**	5	47,25
215	41	117	**XX30.1**	5	47,95
240	42	127	**XX31.1**	5	60,20
325	46	142	**XX32.1**	5	61,25
420	50	154	**XX33.1**	5	68,70
558	55	170	**XX34.1**	5	82,45

A 121 °C

Evaporating dishes 109

By Haldenwanger. Made of glazed porcelain, with spout and round bottom.
Temperature stable up to +400 °C. Autoclavable.

Volume (ml)	Size	∅ x H (mm)	Art. No.	Pack Qty.	€
20	4/0	50 x 20	**3860.1**	10	59,80
40	000	63 x 25	**1575.1**	10	68,50
50	00	70 x 26	**3880.1**	10	84,95
75	0	80 x 34	**3933.1**	10	96,25
110	1	85 x 36	**3945.1**	10	104,10
180	2	100 x 40	**1576.1**	1	12,80
310	5	115 x 47	**4004.1**	1	22,60
370	6	150 x 45	**4012.1**	1	32,95
640	6a	160 x 64	**1577.1**	1	39,10
1000	7B	200 x 80	**XL62.1**	1	59,05
2200	9	260 x 86	**XL63.1**	1	100,10
3400	10	310 x 110	**XL64.1**	1	180,60

121 °C

Evaporating dishes 131

By Haldenwanger. Made of glazed porcelain. French style, with spout and flat bottom. Temperature stable up to +400 °C. Autoclavable.

Volume (ml)	Size	∅ x H (mm)	Art. No.	Pack Qty.	€
30	2	58 x 24	**XL65.1**	1	11,75
60	3	75 x 30	**XL66.1**	1	19,60
100	4	84 x 38	**XL67.1**	1	22,60
150	5	97 x 40	**XL68.1**	1	28,20
250	6	110 x 50	**XL69.1**	1	34,55
290	7	125 x 52	**XL70.1**	1	39,25
400	8	150 x 60	**XL71.1**	1	48,30

121 °C

Evaporating dishes 130

By Haldenwanger. Made of glazed porcelain. French style, with spout and round bottom. Temperature stable up to +400 °C. Autoclavable.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
70	75 x 40	**TL71.1**	1	20,45
190	97 x 50	**TL72.1**	1	32,60
270	110 x 52	**TL73.1**	1	41,15
350	125 x 60	**TL74.1**	1	44,30

121 °C

Casseroles

By Haldenwanger. Made of porcelain. With handle.
Glazed with the exception of the rim. In acc. with DIN 12907.
Temperature stable up to +400 °C. Autoclavable.

Volume (ml)	Size	Height (mm)	Top ∅ (mm)	Art. No.	Pack Qty.	€
80	4/0	36	63	**HC79.1**	1	26,70
140	000	46	80	**HC80.1**	1	33,00
290	0	69	102	**HC81.1**	1	40,35
500	2	70	127	**HC82.1**	1	59,70
1300	4	97	160	**HC83.1**	1	188,15
2600	4 b	110	215	**HC84.1**	1	194,60

121 °C

Ignition dishes 33 D

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

Volume (ml)	Size	∅ x H (mm)	Art. No.	Pack Qty.	€
8	2	37 x 10	**XL82.1**	1	6,80
10	3	42 x 11	**XL83.1**	1	7,10
15	4	48 x 12	**XL84.1**	1	8,90

121 °C

Ignition dishes 33

By Haldenwanger. Porcelain, glazed. Temperature stable up to +1000 °C. Autoclavable.

Volume (ml)	Size	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
15	1	21	40	**3740.1**	10	60,35
30	2	25	50	**1564.1**	10	75,20
60	4	31	60	**1565.1**	10	91,25

121 °C

Ignition dishes 33 C

By Haldenwanger. Made of glazed porcelain. Slightly tapered.
Temperature stable up to +400 °C. Autoclavable.

Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
48	26	10	**TL80.1**	1	10,65
55	42	16	**TL81.1**	1	13,25
70	46	13	**TL82.1**	1	16,65
96	55	16	**TL83.1**	1	21,20

- Laboratory burners see page 945
- Metal crucibles see page 190

A 121 °C

Combustion boats

By Haldenwanger. Made of porcelain. With eyelet. Autoclavable.

Glazed. Glazing prevents build-up of sample residues and cross-contamination. Temperature stable up to +1000 °C.

L x W x H (mm)	Art. No.	Pack Qty.	€
90 x 12 x 8	**L016.1**	1	16,70
100 x 12 x 10	**L017.1**	1	18,05
130 x 20 x 13	**L019.1**	1	26,85

Unglazed. Temperature stable up to +1350 °C.

L x W x H (mm)	Art. No.	Pack Qty.	€
80 x 13 x 9	**TL84.1**	10	16,65

A 121 °C

Rotilabo®-spoons

Made of glazed porcelain. Length 237 mm.
Temperature stable up to 1000 °C. Autoclavable.

Art. No.	Pack Qty.	€
XX62.1	5	87,10

A 121 °C

Rotilabo®-weighing boats

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

Length (mm)	Width (mm)	Weight (g)	Art. No.	Pack Qty.	€
37	17	7	**XX55.1**	10	23,80
53	23	10	**XX56.1**	10	24,65
64	29	12	**XX57.1**	10	25,75

A 121 °C

Spoon spatulas

By Haldenwanger. Made of porcelain. Temperature stable up to +400 °C. Autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
120	**C749.1**	1	14,60
160	**C751.1**	1	15,35
200	**C753.1**	1	22,70
300	**C755.1**	1	42,50

A 121 °C

Spot test plates

By Haldenwanger. Made of glazed porcelain.
Temperature stable up to +400 °C. Autoclavable.

No. of moulds	L x W x H (mm)	∅ of moulds (mm)	Depth of moulds (mm)	Art. No.	Pack Qty.	€
6	115 x 80 x 12	36	11	**C765.1**	1	17,65
12	119 x 85 x 6	20	3	**C767.1**	1	25,60
12	127 x 97 x 12	25	6	**C768.1**	1	26,70

Porcelain marker pen

For labelling glazed and unglazed lab porcelain.
Ink color: brown, temperature stable up to max. 1400 °C.

Art. No.	Pack Qty.	€
CEK7.1	1	12,85

Filter crucibles

Rotilabo®-filter crucibles

Made of glazed porcelain. With porous bottom, unglazed.
Temperature stable up to +1000 °C. Compliant with DIN 12909.

Volume (ml)	Pore size (µm)	Top ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
8	6	25	28	**XX64.1**	2	26,35
8	7	25	28	**XX65.1**	2	26,35
8	8	25	28	**XX66.1**	2	26,35
15	6	30	35	**XX67.1**	2	30,00
15	7	30	35	**XX68.1**	2	30,00
15	8	30	35	**XX69.1**	2	30,00
25	6	35	40	**XX70.1**	2	32,25
25	7	35	40	**XX71.1**	2	32,25
25	8	35	40	**XX72.1**	2	32,25
35	6	40	43	**XX73.1**	2	32,80
35	7	40	43	**XX74.1**	2	32,80
35	8	40	43	**XX75.1**	2	32,80
50	6	45	50	**XX76.1**	2	32,80
50	7	45	50	**XX77.1**	2	32,80
50	8	45	50	**XX78.1**	2	32,80

Gooch crucibles

By Haldenwanger. Made of glazed porcelain.
Temperature stable up to +400 °C.
Delivery without sieve plate. Please order separately.

Wide body, type 82 A

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
25	39 x 42	**TL86.1**	1	18,85
35	42 x 45	**TL87.1**	1	20,60

High body, type 82 R

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
25	35 x 41	**TL88.1**	1	16,10

Sieve plates for Gooch crucibles

By Haldenwanger. Made of glazed porcelain. According to Dr. Witt.

∅ (mm)	for crucible	Art. No.	Pack Qty.	€
22	TL86.1, TL88.1	**TL89.1**	1	8,90
25	TL87.1	**TL90.1**	1	9,90

Rotilabo®-swelling crucibles with cover

Made of unglazed porcelain, wide form.
Temperature stable up to +1350 °C.

Volume (ml)	Height (mm)	Top ∅ (mm)	Art. No.	Pack Qty.	€
19	27	43	**XX25.1**	5	13,55

Filter crucible 84

By Haldenwanger. Made of glazed porcelain. Temperature stable up to +400 °C. Porosity of base: P2 (~5 µm). In acc. with DIN 12909.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
25	35 x 43	**C760.1**	1	105,90

Rotilabo®-crucibles with cover

Made of unglazed porcelain, high form. Temperature stable up to +1350 °C.
For the determination of volatile liquids.

Volume (ml)	Height (mm)	Top ∅ (mm)	Art. No.	Pack Qty.	€
22	42	32	**XX24.1**	5	12,50

- ▶ Filter crucibles made of glass see p. 164
- ▶ Lab burners see page 945

Crucibles

① Melting crucibles 79, shallow

By Haldenwanger. Porcelain, wide, glazed.
Temperature stable up to +1000 °C.

Volume (ml)	Size	Height (mm)	Top ∅ (mm)	Art. No.	Pack Qty.	€
8	000 a	20	30	**L217.1**	10	44,10
11	00	23	35	**L218.1**	10	44,95
20	0	26	40	**L219.1**	10	49,10
25	1	29	45	**L220.1**	10	62,55
40	2	32	50	**L221.1**	10	82,30
65	2 a	38	60	**L222.1**	10	90,20
95	3	47	70	**L223.1**	10	115,05
180	4	55	83	**L224.1**	10	149,45

② Melting crucibles 79 MF, medium

By Haldenwanger. Porcelain, glazed. Temperature stable up to +1000 °C.

Volume (ml)	Size	Height (mm)	Top ∅ (mm)	Art. No.	Pack Qty.	€
10	8	25	30	**L225.1**	10	43,90
13	7	28	35	**L226.1**	10	45,30
20	7 a	32	40	**L227.1**	10	49,15
38	6	36	45	**L228.1**	10	61,90
50	6 a	40	50	**L229.1**	10	69,85
60	5	43	52	**L230.1**	10	72,70
90	4	50	60	**L231.1**	10	88,05
150	2	60	70	**L232.1**	10	120,40
230	1	65	82	**L233.1**	10	160,20

Melting crucibles 79 C, high

By Haldenwanger. Porcelain, glazed. Temperature stable up to +1000 °C.

Volume (ml)	Size	Height (mm)	Top ∅ (mm)	Art. No.	Pack Qty.	€
15	0	38	30	**1572.1**	10	49,45
24	1	44	35	**3842.1**	10	52,70
40	2	51	40	**3848.1**	10	62,35
50	3	53	46	**1573.1**	10	72,00
85	4	65	51	**3859.1**	10	107,00
140	5	79	60	**1574.1**	10	141,90

Lids for melting and filter crucibles

By Haldenwanger. Porcelain, glazed. Temperature stable up to +1000 °C.

For crucible-∅ (mm)	for size	Art. No.	Pack Qty.	€
30	8	**L234.1**	10	53,65
35	7	**L235.1**	10	55,40
40	7a	**L236.1**	10	59,65
45/46	6	**L237.1**	10	62,35
50/52	5	**L238.1**	10	67,40
60	4	**L239.1**	10	81,25
70	2	**L240.1**	5	45,75
80-85	1	**L241.1**	5	66,10

A 121 °C

Rotilabo®-melting crucibles, medium-high form

Made of glazed porcelain. Temperature stable up to +1000 °C.
In acc. with DIN 12904. Autoclavable.

*Not in acc. with DIN

Volume (ml)	Top ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
10*	30	25	**XX79.1**	5	11,40
12	35	28	**XX80.1**	5	12,30
20	40	32	**XX81.1**	5	14,20
30	45	36	**XX82.1**	5	14,65
45	50	40	**XX83.1**	5	19,60
80	60	48	**XX84.1**	5	23,90
120	70	56	**XX85.1**	5	30,55
200*	80	62	**XX86.1**	5	37,65

Lids for Rotilabo®-melting crucibles

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

For crucible-∅ (mm)	Lid ∅ (mm)	Art. No.	Pack Qty.	€
30	34	**XX87.1**	5	12,05
35	39	**XX88.1**	5	13,05
40	44	**XX89.1**	5	14,20
45	49	**XX90.1**	5	17,10
50	54	**XX91.1**	5	17,85
60	64	**XX92.1**	5	19,50
70	74	**XX93.1**	5	23,35
80	84	**XX94.1**	5	24,40

Rotilabo®-melting crucibles, stainless steel

Made of 18/10 stainless steel (material-number 1.4301).
Wall thickness 1 mm. Temperature stable up to about +850 °C.

Volume (ml)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
25	35	35	**8307.1**	1	23,50
30	40	35	**8309.1**	1	29,70
70	50	45	**8311.1**	1	32,95

Lids for melting crucibles made of stainless steel

Type	Art. No.	Pack Qty.	€
Lid for crucible 25 ml	**8313.1**	1	12,20
Lid for crucible 30 ml	**8314.1**	1	12,70
Lid for crucible 70 ml	**8315.1**	1	14,00

Crucibles

Rotilabo®-melting crucibles nickel

Made of pure nickel 99.5 %. Temperature stable up to about +750 °C.

Volume (ml)	∅ x H (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
5	20 x 20	0,5	**ETY8.1**	1	21,15
10	25 x 25	0,5	**ETY9.1**	1	22,95
15	30 x 30	1	**8291.1**	1	39,15
25	35 x 35	1	**8293.1**	1	47,70
30	40 x 40	1	**8294.1**	1	57,15
30	40 x 40	2	**EXA0.1**	1	102,15
50	45 x 45	1	**8296.1**	1	66,95
50	45 x 45	1,5	**EXA1.1**	1	91,85
70	50 x 50	1	**8298.1**	1	72,50
70	50 x 50	2	**EXA2.1**	1	192,45
130	60 x 60	1	**8299.1**	1	96,25
130	60 x 60	2	**EXA3.1**	1	217,15
270	80 x 80	1	**EXA4.1**	1	138,70

Lids for melting crucibles made of pure nickel

Type	Art. No.	Pack Qty.	€
Lid for crucible 5 ml	**EXA5.1**	1	14,45
Lid for crucible 10 ml	**EXA6.1**	1	17,15
Lid for crucible 15 ml	**8300.1**	1	16,85
Lid for crucible 25 ml	**8301.1**	1	18,90
Lid for crucible 30 ml	**8302.1**	1	20,75
Lid for crucible 50 ml	**8303.1**	1	24,50
Lid for crucible 70 ml	**8304.1**	1	25,65
Lid for crucible 130 ml	**8305.1**	1	29,05
Lid for crucible 270 ml	**EXA7.1**	1	45,45

Rotilabo®-melting crucible iron

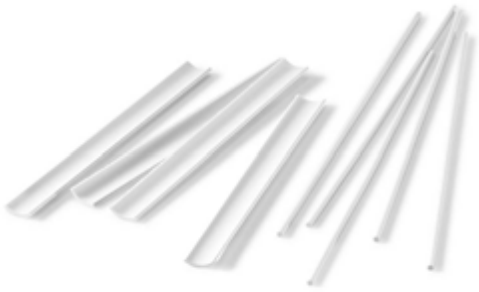
Made of iron. 2 mm wall thickness, ∅ top 48 mm, height 36 mm.
Temperature stable to +800 °C, or up to +1000 °C in the absence of oxygen.

Type	Art. No.	Pack Qty.	€
Melting crucible	**8316.1**	1	12,35
Lid	**8317.1**	1	5,30

Rotilabo®-lead crucible

With lid. 3 mm wall thickness, ∅ top 40 mm, height 44 mm.
Temperature stable up to max. +200 °C.

Art. No.	Pack Qty.	€
8326.1	1	13,95



Magnesia scoops

For annealing and incineration of samples, as well as for the production of oxygen melts for the detection of chromium, manganese etc. and for bead tests. W 9 x L 100 mm.

Art. No.	Pack Qty.	€
6537.1	25	21,45

Magnesia rods

Ideal for flame analysis of sodium, etc. For borax-bead analysis of cobalt. For bead tests. ∅ 1.5 x L 140 mm.

Art. No.	Pack Qty.	€
6543.1	25	24,30

▶ Lab burners see page 945

A 121 °C

Rotilabo®-weighing bottles with ground glass caps

Made of borosilicate glass 3.3. With ground glass cap and labelling space.

Short

Volume (ml)	Height without cap (mm)	Standard ground glass joint	Art. No.	Pack Qty.	€
9	30	29/12	**AAY7.1**	1	18,20
12	30	34/12	**AAY8.1**	1	21,40
25	35	40/12	**AAY9.1**	1	23,45
38	35	50/12	**ACA0.1**	1	27,90
100	35	80/12	**ACA1.1**	1	45,70

Middle

Volu-me (ml)	Height without cap (mm)	Standard ground glass joint	Art. No.	Pack Qty.	€
25	50	29/12	**ACA2.1**	1	18,25
32	50	34/12	**ACA3.1**	1	21,40
47	50	40/12	**ACA4.1**	1	23,45
70	50	50/12	**ACA5.1**	1	28,95
185	50	80/12	**ACA6.1**	1	45,50

A 121 °C

Rotilabo®-weighing cans

Made of transparent **PP**. With airtight lid. Upper part can be pressed together to enable easy pouring. Low weight reduces measurement adjustments. Autoclavable.

Volume (ml)	Top, outer ∅ (mm)	Height (mm)	Tara (g)	Art. No.	Pack Qty.	€
20	40	30	8	**K778.1**	2	6,90
23	30	50	8	**K779.1**	2	7,00
30	50	30	10	**K790.1**	2	7,75
40	40	70	14	**K791.1**	2	7,80
50	60	35	18	**K792.1**	2	8,30
190	60	90	28	**K793.1**	2	9,25
360	70	120	40	**K794.1**	2	10,40

A 121 °C

Rotilabo®-weighing bottles

Made of borosilicate glass. **Tall type**.
With replaceable NS lid, label field and size details.

Volume (ml)	Standard ground glass joint	Height without lid (mm)	Outside ∅ (mm)	Art. No.	Pack Qty.	€
2	14/8	20	15	**1368.1**	1	17,60
4,5	19/9	30	20	**1367.1**	1	18,25
10	24/11	40	25	**1366.1**	1	17,60
20	29/11	50	30	**1365.1**	1	18,05
45	34/11	70	35	**1364.1**	1	18,25
40	40/11	50	40	**HNX1.1**	1	19,30
45	40/11	65	40	**HNX2.1**	1	20,40
70	40/11	80	40	**HNX3.1**	1	22,55
110	50/11	80	50	**HNX4.1**	1	29,05

Rotilabo®-weighing bottles assortment

Five pieces, sizes 2 to 45 ml.

Art. No.	Pack Qty. (assortment)	€
1369.1	1	70,85

Rotilabo®-weighing bottles

Made of DURAN®. **Low type**.
With replaceable NS lid, label field and size details. In acc. with DIN 12605.

* not in acc. with DIN

Volume (ml)	Standard ground glass joint	Height without lid (mm)	Outside ∅ (mm)	Art. No.	Pack Qty.	€
6*	24/12	25	25	**K614.1**	1	13,20
15	40/12	25	40	**HNX5.1**	1	21,45
15	34/12	30	35	**K615.1**	1	14,70
30	50/12	30	50	**K616.2**	6	85,95
45	60/12	30	60	**HNX6.1**	1	30,10
80	80/12	30	80	**K617.1**	1	29,75

- ▶ Balances from page 883
- ▶ Test weights from page 906

Rotilabo®-weighing tweezers

Made of stainless steel, with PVC tips. Curved.
Length 90 mm. Weight 8 g.

Art. No.	Pack Qty.	€
YT63.1	1	6,35

Weighing accessories

121 °C

Rotilabo®-weighing boats

Made of borosilicate glass 3.3. With flat bottom.

Volume (ml)	Length (mm)	Art. No.	Pack Qty.	€
2	50	**AAY4.1**	1	39,45
4	70	**AAY5.1**	1	44,00
7	100	**AAY6.1**	1	46,75

121 °C

Rotilabo®-weighing boats

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

Length (mm)	Width (mm)	Weight (g)	Art. No.	Pack Qty.	€
37	17	7	**XX55.1**	10	23,80
53	23	10	**XX56.1**	10	24,65
64	29	12	**XX57.1**	10	25,75

Weighing funnels

Made of antistatic **PP**, resistant to static charge. With wide mouth for easy access. Tapered neck for use with volumetric flasks in sizes from 10 to 250 ml. Extended metering neck for direct transfer of samples and liquids to flask, ventilation slot between funnel and vessel prevents accumulation of liquid.

Technical specifications:

Typical metering quantity	1 mg - 5 g
Suitable for volumetric flasks	5 (wide mouth), 10, 25, 50, 100 and 250 ml
Suitable for ground glass joints	10/19, 12/21, 14/23
Dimensions	L 75 x W 30 x H 26 mm
Nozzle outer ∅	Tapered, 9-15 mm

Art. No.	Pack Qty.	€
CET4.1	50	92,80

▶ Volumetric flasks see page 25

Programme extension!

121 °C

Rotilabo®-weighing funnels

Ideal for weighing liquid and solid samples. Sits safely and flush on the balance. Spout enables easy filling and emptying of measuring flasks, test tubes, etc. Autoclavable.

Made of PP

Volume (ml)	Length (mm)	Funnel ∅ (mm)	Spout ∅ (mm)	Art. No.	Pack Qty.	€
1	38	15	5	**HTT3.1**	96	89,25
2	44	23	7	**P652.1**	50	46,05
7	63	35	11	**P653.1**	50	65,60
10	88	48	17	**P654.1**	20	62,35
25	117	63	20	**P655.1**	10	68,70

Made of PP, antistatic

Volume (ml)	Length (mm)	Funnel ∅ (mm)	Spout ∅ (mm)	Art. No.	Pack Qty.	€
1	38	15	5	**HTT4.1**	96	93,00
2	44	23	7	**HTT5.1**	50	104,20
7	63	35	11	**HTT6.1**	50	81,10
10	88	48	17	**HTT7.1**	20	71,10
25	117	63	20	**HTT8.1**	10	76,90

Made of borosilicate glass

Volume (ml)	Length (mm)	Funnel ∅ (mm)	Spout ∅ (mm)	Art. No.	Pack Qty.	€
1	38	15	5	**HTT9.1**	6	60,10
2	44	23	7	**P656.1**	6	65,60
7	63	35	11	**P657.1**	6	75,15
10	88	48	17	**P658.1**	6	87,35
25	117	63	20	**P659.1**	6	91,40

121 °C

Rotilabo®-weighing boats

Made of stainless steel 18/8. Width 30 mm.

Length (mm)	Art. No.	Pack Qty.	€
105	**HT05.1**	1	8,55
120	**HT06.1**	1	9,35

Weighing accessories

Rotilabo®-micro aluminium dishes

Made of **aluminium**. Free from oil residues and layers.
- Suitable for micro scales, micro-elementary and thermal systems
- Compatible with most micro scales and analysis devices
- Packed in practical plastic containers

Round form

Volume (ml)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
0,035	6	2,5	**PP58.1**	250	102,15
0,35	13	3,5	**PP59.1**	100	53,00

Oval form

Volume (ml)	L x W x H (mm)	Art. No.	Pack Qty.	€
0,04	6,5 x 3,5 x 2,5	**PP60.1**	250	89,80
0,11	10 x 4 x 4,5	**PP61.1**	250	85,80
0,12	12 x 4 x 2,7	**PP62.1**	250	95,70
1,12	25 x 7 x 7	**PP64.1**	50	56,80

Rotilabo®-weighing pans

Made of stainless steel 18/10. With rounded edges. Autoclavable.

Design	L x W x H (mm)	Weight (g)	Art. No.	Pack Qty.	€
Mat	260 x 180 x 25	266	**YE43.1**	1	16,05
Glossy	260 x 200 x 45	356	**YE44.1**	1	19,90
Glossy	310 x 245 x 50	564	**YE45.1**	1	23,65

Rotilabo®-aluminium dishes with handle

Made of aluminium. Free from oil residues and layers. Compressed walls for extra stability. Handles ideal for labelling or holding. Easy to stack. Variety of applications that require weighing dishes, evaporating dishes or drying dishes, to cover containers or store small items.

Volume (ml)	∅ (mm)	Height (mm)	Material thickness (mm)	Art. No.	Pack Qty.	€
8	28	10	0,11	**PP54.1**	500	53,25
20	43	13	0,11	**PP55.1**	100	10,70
60	57	16	0,09	**PP56.1**	100	11,30
80	70	16	0,11	**PP57.1**	100	13,90

Rotilabo®-disposable weighing trays

Made of aluminium. For solid and liquid substances. Stackable.
∅ 100 mm, height 7 mm. Material thickness 0.1 mm.
Temperature stable up to approx. +400 °C.

Art. No.	Pack Qty.	€
9262.1	80	40,80

Rotilabo® disposable weighing pans

Made of **PS**.
- For solid and liquid substances
- Resistant to diluted acids, bases and alcohols
- Bioinert
- Temperature stable up to +80 °C
- Anti-static design for the best possible sample recovery
- Opaque blue design specifically for weighing white substances

Natural colours, transparent, standard

Volume (ml)	Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
20	46	46	8	**HYT8.1**	500	16,70
100	85	85	24	**HYT9.1**	500	26,70
330	140	140	22	**HYX0.1**	500	50,50

Natural colours, transparent, anti-static

Volume (ml)	Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
20	46	46	8	**1878.2**	500	26,35
100	85	85	24	**1884.1**	500	36,45
330	140	140	22	**0875.2**	500	71,95

Opaque blue, standard

Volume (ml)	Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
20	46	46	8	**HYX1.1**	500	26,80
100	85	85	24	**HYX2.1**	500	40,35
330	140	140	22	**HYX3.1**	500	74,85

Opaque blue, anti-static

Volume (ml)	Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
20	46	46	8	**2149.2**	500	26,15
100	85	85	24	**2150.1**	500	40,10
330	140	140	22	**2159.2**	500	75,05

Weighing accessories

Flat weighing pans

Made of **PS**, antistatic. Flexible design with wide base for even pouring and dispensing of solids and liquids. Resistant to diluted acids, bases and alcohols. Bioinert. Capacity 50 ml, dimensions: L 89 x W 89 x H 6 mm.

Art. No.	Pack Qty.	€
ATC3.1	500	34,40

Rotilabo®-hexagonal weighing pans

Made of **PS**, antistatic. For solid and liquid substances. With flat bottom. Stackable. Pans can be squeezed together in several places to form a spout. Temperature max. +80 °C.

Volume (ml)	Inner-∅ top (mm)	Inner-∅ bottom (mm)	Height (mm)	Art. No.	Pack Qty.	€
9	38	25	9	**KC03.1**	500	23,55
50	64	51	19	**KC04.1**	500	31,75
200	102	76	22	**KC05.1**	500	64,00
350	127	89	31	**KC06.1**	500	85,50

Disposable weighing pans, diamond-shaped

Made of **PS**, antistatic. Flexible pans with smooth surface for thorough emptying with minimal sample loss. FDA-compliant.
Temperature stable from -10 to +70 °C.

Natural colours, transparent

Volume (ml)	L x W x H (mm)	Art. No.	Pack Qty.	€
5	55 x 35 x 6	**TP58.1**	500	20,40
25	71 x 46 x 14	**TP59.1**	500	34,20
100	119 x 90 x 19	**TP60.1**	500	64,30

Black, optimal contrast, specially designed for white weighing material

Volume (ml)	L x W x H (mm)	Art. No.	Pack Qty.	€
5	55 x 35 x 6	**TP61.1**	500	23,45
25	71 x 46 x 14	**TP62.1**	500	33,35
100	119 x 90 x 19	**TP63.1**	500	67,75

- Balances from page 883
- Volumetric flasks see page 25

Weighing boats

Made of nitrogen-free special parchment, 0.07 mm thick, grammage 83 g/m^2. For weighing viscous and syrupy substances.
For determining nitrogen concentration using the Kieldahl method.

L x W x H (mm)	Art. No.	Pack Qty.	€
58 x 10 x 10	**EL10.1**	100	83,00
70 x 23 x 15	**EL11.1**	100	117,00

Disposable weighing boats

Made of natural-coloured **PS**, antistatic. For weighing solid and liquid substances. With spout for easy pouring and flat bottom.
Temperature stable up to +90 °C.

Volume (ml)	Length (mm)	Width (mm)	Depth (mm)	Art. No.	Pack Qty.	€
20	57	41	8	**A229.1**	250	27,85
140	133	89	25	**A230.1**	250	42,95
270	190	120	25	**ATC2.1**	250	64,00

SmartBoat™ disposable weighing pans

Made of paper, biodegradable. Suitable for dry substances and substances containing fat. White design for weighing dark substances or brown colour for light samples. Temperature stable up to +210 °C.

Colour	Size	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
white	small	35 x 35 x 15	**HYT2.1**	500	46,15
white	medium	48 x 48 x 14	**HYT3.1**	500	53,25
white	large	92 x 92 x 25	**HYT4.1**	250	54,85
brown	small	35 x 35 x 15	**HYT5.1**	500	46,15
brown	medium	48 x 48 x 14	**HYT6.1**	500	53,25
brown	large	92 x 92 x 25	**HYT7.1**	250	54,85

Rotilabo®-disposable weighing pans

Made of pergament paper. For solid substances. No static charging.
Brown pans for better recognition of light-colored weighing materials.
Dimensions: ∅ 88 mm x H 11 mm.

Art. No.	Pack Qty.	€
HX57.1	150	34,40

Rotilabo®-weighing papers

Made of nitrogen-free paper.
With smooth surface for optimal sample recovery.

L x W (mm)	Art. No.	Pack Qty.	€
76 x 76	**TP64.1**	500	21,45
102 x 102	**TP65.1**	500	36,35
152 x 152	**TP66.1**	500	52,15

Rotilabo®-cards

Blank for laboratory purposes, e.g. can be used as weighing blades or scratchers.

Art. No.	Pack Qty. (kg)	€
1656.1	1	16,70

Weighing brushes

Brush head made of goat hair, with white-painted birchwood handle.
Ideal for dusting weighing boats, scales and weights.
Total length approx. 170 mm.

Art. No.	Pack Qty.	€
5481.1	3	8,85

Weighing papers

By Macherey-Nagel. Made of glassine. With smooth surface. Impervious, transparent. Booklet with 100 sheets. Dimensions: L 115 x W 90 mm.

Art. No.	Pack Qty.	€
1069.1	10	105,00
1069.2	1	11,90

Set of brushes

Brushes made of bovine hair with nickel ferrule.
With long, unlaquered handles. Ideal for cleaning sensitive equipment.
Set consists of 6 brushes, sizes 2 to 12.

Art. No.	Pack Qty. (set)	€
L242.1	1	18,25

- ▶ Balances from page 883
- ▶ Test weights from page 906

Brush handles ergo brush

By Hammacher. Made of plastic, angled. Equips with various sizes of brush heads. Tilted design for free view to workpiece. Length 140 mm.

Type	Design	Colour	Art. No.	Pack Qty.	€
①	(for brush head sizes 0-4)	petrol	**EXC8.1**	1	24,15
②	(for brush head sizes 5-8)	violet	**EXC9.1**	1	23,90

Brush heads

By Hammacher. Made of chrome-nickel steel (18/8), with red sable hair. Suitable for ergo brush handles.
Delivery without ergo brush handle.

Technical specifications:

Design	Brush head length (mm)	Total length (mm)	Art. No.
Size 0	7	32	EXE1.1
Size 1	8	35	EXE2.1
Size 2	10	37	EXE3.1
Size 4	13	43	EXE4.1
Size 6	17	50	EXE5.1
Size 8	20	57	EXE6.1

Type	Design	Use	Art. No.	Pack Qty.	€
①	Size 0	For brush handle EXC8.1	**EXE1.1**	1	7,00
②	Size 1	For brush handle EXC8.1	**EXE2.1**	1	7,20
③	Size 2	For brush handle EXC8.1	**EXE3.1**	1	8,10
④	Size 4	For brush handle EXC8.1	**EXE4.1**	1	10,65
⑤	Size 6	For brush handle EXC8.1	**EXE5.1**	1	17,70
⑥	Size 8	For brush handle EXC9.1	**EXE6.1**	1	24,70

A 121 °C

Rotilabo®-round sieves

Made of 18/10 stainless steel (1.4301). With handle and 2 eyelets for resting sieve on vessels. Autoclavable. Mesh size approx. 1.5 mm (ca. 6 holes/cm).

Volume (l)	∅ (mm)	Grifflänge (mm)	Art. No.	Pack Qty.	€
0,15	100	135	**8096.1**	1	10,55
0,25	120	145	**8097.1**	1	12,15
0,4	140	150	**8098.1**	1	14,55
0,7	160	170	**8099.1**	1	16,35
1,0	180	160	**8100.1**	1	17,10
1,5	200	160	**8101.1**	1	19,75
2,0	220	170	**8102.1**	1	23,60

A 121 °C

Rotilabo®-round sieves

Made of 18/8 stainless steel (1.4112), polished.
With handle, broad rim and a big eyelet. Autoclavable.

Outside ∅ (mm)	Mesh size (mm)	Art. No.	Pack Qty.	€
75	0,5	**A624.1**	1	13,55
120	0,8	**A625.1**	1	17,75
160	1,2	**1359.1**	1	25,40
190	1,2	**A626.1**	1	28,50
230	1,2	**A627.1**	1	32,20

Sodium spoon

Bowl made of copper mesh, ∅ 25 mm. Total length 180 mm.

Art. No.	Pack Qty.	€
P180.1	1	9,65

Slotted ladles and sieve spoons

Rotilabo®-flat sieves

Sieve frame and braid made of stainless steel 18/10. Suitable for separating powders, granulates and other bulk goods. Easy to clean, dishwasher safe.

① **Very fine** (8 holes/cm, mesh aperture approx. 1 mm).
Without ground clearance.

Innner ∅ (mm)	Overall height (mm)	Art. No.	Pack Qty.	€
200	60	**YH29.1**	1	11,05
240	63	**YH30.1**	1	13,45
275	67	**YH31.1**	1	19,90
390	77	**YH32.1**	1	47,60

② **Medium fine** (hole size: approx. 1 x 2.5 mm). Filling height 50 mm.

Innner ∅ (mm)	Overall height (mm)	Art. No.	Pack Qty.	€
300	100	**YH36.1**	1	72,00
350	100	**YH37.1**	1	88,60

③ **Coarse** (hole size: approx. 3 x 3 mm). Filling height 50 mm.

Innner ∅ (mm)	Overall height (mm)	Art. No.	Pack Qty.	€
250	100	**YH38.1**	1	55,90
300	100	**YH39.1**	1	72,00

Rotilabo®-plastic sieve

Sieve frame made of **PP**, woven nylon braid. Suitable for separating powders, bulk goods and granulates. Extra fine, 7 holes/cm (hole size: 1 x 1 mm). Dimensions: inner ∅ 220 mm, outer ∅ 240 mm, overall height 82 mm, inner height 60 mm.

Art. No.	Pack Qty.	€
YH42.1	1	25,70

A 121 °C

Rotilabo®-drain scoop

Made of stainless steel, perforated, with hollow handle.
For taking samples from water baths, transporting agarose gels, etc.
Scoop dimensions: L 100 x W 80 mm. Overall length: 255 mm.
Autoclavable.

Art. No.	Pack Qty.	€
YE60.1	1	10,65

A 121 °C

① Rotilabo®-slotted ladles, flat

Made of stainless steel 18/10, seamless. Flat shape. Heavy duty.
Hole ∅ 4 mm. Autoclavable.

∅ (mm)	Handle length (mm)	Art. No.	Pack Qty.	€
80	280	**YE97.1**	1	8,10
100	320	**YE98.1**	1	9,80
120	360	**YE99.1**	1	11,30
140	400	**YH00.1**	1	13,90
160	430	**YH01.1**	1	16,45
200	470	**YH03.1**	1	26,90

② Rotilabo®-slotted ladles, deep

Made of stainless steel 18/10, seamless. With hole ∅ 5-6 mm. Heavy duty. Autoclavable.

Volume (ml)	∅ (mm)	Handle length (mm)	Art. No.	Pack Qty.	€
80	70	290	**YE90.1**	1	20,35
125	80	320	**YE91.1**	1	21,80
200	90	330	**YE92.1**	1	22,85
250	100	370	**YE93.1**	1	23,90
500	120	400	**YE94.1**	1	27,40
750	140	410	**YE95.1**	1	32,00

▶ Analytical sieves, see page 540

Hand scoops

A 121 °C

Rotilabo®-embryo spoon Banivo

Made of stainless steel. To hold delicate structures. Perforated spoon allows fluid to drain. Dimensions: spoon ∅ 15 mm, depth 3 mm. Overall length 145 mm. Autoclavable.

Art. No.	Pack Qty.	€
TL85.1	1	64,40

A 121 °C

Rotilabo®-ladles

Made of stainless steel 18/10 (1.4301). High-gloss, seamless, made in one piece (except L006.1), heavy-duty version.

Volume (ml)	∅ (mm)	Handle length (mm)	Art. No.	Pack Qty.	€
20	45	220	**L001.1**	1	11,50
30	50	220	**L002.1**	1	12,85
60	60	230	**L003.1**	1	13,45
80	70	290	**L004.1**	1	14,75
125	80	320	**L005.1**	1	17,60
200	90	330	**L006.1**	1	19,20
250	100	360	**L007.1**	1	24,85
500	120	400	**L008.1**	1	29,55
750	140	410	**L009.1**	1	39,80
1000	160	450	**L010.1**	1	42,95

A 121 °C

Filling scoops with knob handle

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

Dimensions of scoop (mm)	Length (mm)	Art. No.	Pack Qty.	€
35/70	190	**YC80.1**	1	21,15
30/63	205	**YC81.1**	1	22,25

A 121 °C

Pharmaceutical scoops

Made of stainless steel V4A (1.4401), high gloss finish. GMP-compliant. Smooth scoop surface. Wall thickness 1.2 mm. Autoclavable.

Volume (ml)	Dimensions of scoop L x W (mm)	Total length (mm)	Art. No.	Pack Qty.	€
100	100 x 50	180	**CHX0.1**	1	134,40
450	150 x 75	260	**CHX1.1**	1	144,05
1000	235 x 110	365	**CHX2.1**	1	163,40
2500	250 x 135	400	**CHX3.1**	1	188,15

A 121 °C

Rotilabo®-multipurpose scoops

Made of stainless steel 18/10 (1.4301). Jointless connection of scoop with hollow handle. With loop to hang up. Extra strong. Autoclavable.

Volume (ml)	Dimensions of scoop (mm)	Total length (mm)	Weight (g)	Art. No.	Pack Qty.	€
100	120 x 59	215	145	**KP45.1**	1	15,55
200	140 x 75	230	190	**KP46.1**	1	18,60
250	155 x 85	245	223	**KP47.1**	1	20,40
350	180 x 100	290	280	**KP48.1**	1	24,25
500	220 x 130	350	415	**KP49.1**	1	30,05

A 121 °C

Rotilabo®-aluminium scoops

Made of cast aluminium. Suitable for hand cleaning using mild detergents (no soda). A dark-coloured protective film may form (does not have to be removed). Autoclavable.

Volume (ml)	Dimensions of scoop (mm)	Total length (mm)	Weight (g)	Art. No.	Pack Qty.	€
20	85 x 50	145	38	**YE53.1**	1	3,05
80	105 x 55	185	45	**YE54.1**	1	3,55
110	120 x 70	210	78	**YE55.1**	1	4,25
250	150 x 90	250	118	**YE56.1**	1	6,05
400	170 x 100	265	148	**YE57.1**	1	6,65
400	180 x 105	310	206	**YE58.1**	1	12,80
750	220 x 135	350	303	**YE59.1**	1	15,00

Hand scoops

A 121 °C

Rotilabo® hand scoops

Made of Remanit 4301. Length excluding handle. Autoclavable.

Volume (ml)	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
120	100	50	**0703.1**	1	13,95
450	150	75	**0704.1**	1	18,05
1000	200	100	**PX24.1**	1	18,95
1500	240	120	**0705.1**	1	22,60
2500	250	150	**PX25.1**	1	27,45

Rotilabo® hand scoop range

Three hand scoops, with capacities of 120, 450 and 1500 ml.

Art. No.	Pack Qty. (assortment)	€
0706.1	1	47,20

Rotilabo®-plastic scoops

Made of natural coloured **HDPE** with smooth surface.

Volume (ml)	Dimensions L x W (mm)	Art. No.	Pack Qty.	€
25	135 x 42	**0574.1**	1	1,90
65	185 x 60	**0575.1**	1	1,95
125	187 x 65	**0576.1**	1	3,05
275	250 x 90	**0577.1**	1	4,15
512	310 x 110	**0578.1**	1	6,10
857	350 x 145	**0579.1**	1	7,40
1520	400 x 170	**0580.1**	1	10,70

Rotilabo®-plastic scoop-set

Seven scoops, capacity from 25 to 1520 ml.

Art. No.	Pack Qty. (assortment)	€
0997.1	1	23,55

Plastic scoops

Made of **PP**. White or assorted colours (white, yellow, green, light blue, blue, ultramarine, red, grey, black). Also suitable as weighing scoop.
With precision moulded filling edge and comfortable, sturdy handle.
Easily legible volume quantities on the upper side of the handle.
Suitable for foodstuffs under regulation (EC) No. 10/2011.
Volume 100 ml, dimensions: L 200 x W 70 mm.

Colour	Art. No.	Pack Qty.	€
white	**APH4.1**	12	16,25
assorted colours	**APH5.1**	9	13,80

S

Disposable sample scoops

Made of **PS**, **sterile** (gamma-sterilised, individually packed).
With or without lid.

- Long handle allows safe distance between sample and hand
- Flat base for upright storage
- Usable as a weighing bottle

For sampling, analysis or conveyance of substances.

With lid, white.
Lid with tab. Spoon and sample container in one.

Volume (ml)	Total length (mm)	Scoop L x W x H (mm)	Art. No.	Pack Qty.	€
60	205	78 x 41 x 29	**YC11.1**	10	67,20
60	205	78 x 41 x 29	**YC10.1**	100	256,95

Without lid, white

Volume (ml)	Total length (mm)	Scoop L x W x H (mm)	Art. No.	Pack Qty.	€
60	205	78 x 41 x 29	**YC15.1**	100	156,95
125	221	94 x 51 x 33	**YC14.1**	100	198,90

Without lid, red.
Suitable for light-coloured substances, aids visibility.

Volume (ml)	Total length (mm)	Scoop L x W x H (mm)	Art. No.	Pack Qty.	€
60	205	78 x 41 x 29	**YC16.1**	100	203,20

S

Sample scoops SteriPlast®

By Bürkle. Made of **PS**, **sterile**, with transparent lid. For sterile and contamination-free sampling, e.g. of powders, granulates and pastes.
Sample scoop can be sealed with lid after taking sample.
Cleanroom-manufactured (class 7), individually packed.
Suitable for use with foodstuffs.

Volume (ml)	Length (mm)	Art. No.	Pack Qty.	€
25	142	**CPP5.1**	10	28,30
50	161	**CPP6.1**	10	30,05
100	206	**CPP7.1**	10	31,10
150	218	**CPP8.1**	10	32,20

Spoons

SteriPlast®Bio sample scoops

By Bürkle. Made of green **PE**, **sterile**. For sampling powders, granulates and pastes. Sample scoop and packaging are made from renewable raw materials and fully recyclable. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

Volume (ml)	Length (mm)	Art. No.	Pack Qty.	€
25	141	**CPP9.1**	10	21,00
50	160	**CPT0.1**	10	21,00
100	205	**CPT1.1**	10	21,45
150	216	**CPT2.1**	10	22,90

SteriPlast®Bio sample spoon

By Bürkle. Made of green **PE**, **sterile**. For sampling powders, granulates, pastes and liquids. Sample spoon and packaging are made from renewable raw materials and are fully recyclable. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

Volume (ml)	Length (mm)	Art. No.	Pack Qty.	€
2,5	127	**CPT3.1**	100	46,35
10	170	**CPT4.1**	100	48,95

Sample spoons, sterile

Made of **PS**. **Sterile** (individually wrapped).
For powder, granulates, pastes, liquids.

Volume (ml)	Length (mm)	Spoon W x L (mm)	Art. No.	Pack Qty.	€
2	125	25 x 35	**X031.2**	1000 (10 x 100)	275,20
8	150	35 x 50	**X032.2**	1000 (10 x 100)	275,20

Sample spoons

Made of **PS**, white. **Sterile.** Volume approx. 2.5 ml.
Dimensions: L 155 x W 32.5 mm.

Art. No.	Pack Qty.	€
EPY9.1	100 (5 x 20)	26,35

Single-use spoon spatulas

By Bürkle. Made of **PS**. **Sterile** (gamma-sterilised) or non-sterile. Double spatula with spoon 0.5 ml and spatula blade 17 mm. Ideal for single-use applications, chemical-stable, corrosion-proof. Numerous applications for measuring or transferring small amounts or mixing and stirring. Cleanroom-manufactured (class 7). Suitable for foodstuffs.

Design	Art. No.	Pack Qty.	€
Non-sterile	**HEP4.1**	100	22,05
Sterile, individually packed	**HEP5.1**	100	55,50

Sample spoons

Made of **PS**, white. For powders, granulates, pastes and liquids.
Suitable for foodstuffs.

Volume (ml)	Length (mm)	Spoon W x L (mm)	Art. No.	Pack Qty.	€
2	125	25 x 35	**APC9.1**	100	9,15
9	175	40 x 60	**APE0.1**	100	10,60

Mini sample spoon

Made of **PS**, assorted colours. For powders, granulates, pastes and liquids.
Suitable for foodstuffs.
Volume 0.5 ml, spoon W 20 x L 25 mm, overall length 93 mm.

Art. No.	Pack Qty.	€
APC8.1	1000	14,15

Measuring spoon

By Bürkle. Made of **PS**, blue. Set comprising 8 measuring spoons with volumes 0.5/1/2.5/5/10/15/25/50 ml. Volume of measuring spoon stamped on spoon handle. Round shape, easy emptying.

Volume (ml)	Art. No.	Pack Qty. (set)	€
0,5-50	**HEP3.1**	1	11,00

Rotilabo®-measuring spoon set

Made of 18/10 stainless steel. Set of 4 spoons.

Technical specifications:

Model	Volume (ml)	Length (mm)	∅ (mm)	Depth (mm)
①	1.25	120	24	5
②	2.5	125	28	8
③	5	130	32	10
④	15	145	48	10

Art. No.	Pack Qty. (set)	€
HC47.1	1	15,35

Set of glass spoons

Made of borosilicate glass. In 4 sizes, length from 210 to 230 mm.

Packaging	Art. No.	Pack Qty. (set)	€
Pack of 4 x 2 = 8	**0185.1**	1	278,45

Rotilabo®-spoons

Made of glazed porcelain. Length 237 mm.
Temperature stable up to 1000 °C. Autoclavable.

Art. No.	Pack Qty.	€
XX62.1	5	87,10

Spoon spatulas

By Haldenwanger. Made of porcelain. Temperature stable up to +400 °C. Autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
120	**C749.1**	1	14,60
160	**C751.1**	1	15,35
200	**C753.1**	1	22,70
300	**C755.1**	1	42,50

Laboratory spoons

By Hammacher. Made of Wironit 4301 stainless steel. Autoclavable.

Total length (mm)	Spoon W x L (mm)	Art. No.	Pack Qty.	€
195	44/60	**YC90.1**	1	15,90
205	55/70	**YC91.1**	1	27,25

Rotilabo®-melting spoon

Stainless steel scoop, with wooden handle. Scoop-∅ 75 mm, with spout. Length 275 mm. Weight 73 g.

Art. No.	Pack Qty.	€
YT65.1	1	6,35

Spoons

Round spoon

Made of stainless steel, with ergonomic handle made of **ABS**.
Dimensions: L 148 x W 43 x H 21 mm, spoon ∅ 40 mm.
Temperature stable up to max. +99 °C. Dishwasher safe.

Art. No.	Pack Qty.	€
YC43.1	1	9,35

A 121 °C

Spoons for chemicals

Made of 18/10 stainless steel. One-sided, with rounded handle.
Autoclavable.

Total length (mm)	Spoon ∅ (mm)	Art. No.	Pack Qty.	€
120	25	**A635.1**	1	4,85
150	25	**A636.1**	1	4,85
180	25	**A637.1**	1	5,30
210	30	**A638.1**	1	6,25
250	35	**A639.1**	1	7,00
300	35	**A640.1**	1	7,45

A 121 °C

Chemicals spoon, angled

By Hammacher. Made of Wironit 4301 stainless steel.
Length 200 mm, spoon ∅ 27 mm. Autoclavable.

Art. No.	Pack Qty.	€
YC82.1	1	22,25

Rotilabo®-phosphor spoon

Stainless steel scoop. Scoop-∅ 16 mm.
Length 450 mm. Weight 14 g.

Art. No.	Pack Qty.	€
YT64.1	1	3,45

A 121 °C

Pharmacist's spoon

Made of Remanit 4301 high-grade steel. Total length 150 mm.
Spoon width 15 mm, spoon length 30 mm. Autoclavable.

Art. No.	Pack Qty.	€
K745.1	1	3,15

A 121 °C

Open spoon

Made of Remanit 4301 high-grade steel. Length 200 mm.
Spoon width 20 mm, spoon length 30 mm. Autoclavable.

Art. No.	Pack Qty.	€
K734.1	1	7,05

A 121 °C

Rotilabo®-Pharmacist's spoons

Made of stainless steel 18/10. Wide form. Autoclavable.

Length (mm)	Spoon W x L (mm)	W x L of spatula (mm)	Art. No.	Pack Qty.	€
150	28 x 43	17 x 60	**HY05.1**	1	4,85
200	36 x 60	22 x 80	**HY06.1**	1	5,35
240	43 x 75	25 x 90	**HY07.1**	1	6,40
280	50 x 85	31 x 105	**HY08.1**	1	8,55
320	45 x 110	32 x 115	**HY09.1**	1	9,95

A 121 °C

Double spoons, large

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

Length (mm)	W x L spoon 1 (mm)	W x L spoon 2 (mm)	Art. No.	Pack Qty.	€
160	22/35	30/45	**YC88.1**	1	7,45
230	30/60	38/75	**YC89.1**	1	9,05

Spoon spatulas

A 121 °C

Spoons for chemicals

Made of high-grade 18/9 steel. Double-sided, with rounded handle. Autoclavable.

Length (mm)	W x L spoon 1 (mm)	W x L spoon 2 (mm)	Art. No.	Pack Qty.	€
120	17/17	25/30	**K746.1**	1	6,25
150	17/17	25/30	**K747.1**	1	6,40
180	17/17	25/30	**K748.1**	1	7,00
210	20/25	30/35	**K749.1**	1	7,35
250	20/25	35/45	**K750.1**	1	8,10
300	20/25	35/45	**K751.1**	1	8,50

NEW

Chemical spoon, open at front

Made of stainless steel 1.4301. Double-sided, larger spoon open at front.

Total length (mm)	L x W open spoon (mm)	L x W small spoon (mm)	Art. No.	Pack Qty.	€
150	32 x 20	17 x 15	**HPY7.1**	5	27,45
180	32 x 20	17 x 15	**HPY8.1**	5	28,50
210	32 x 20	17 x 15	**HPY9.1**	5	29,60

A 121 °C

Double spoons

By Hammacher. Made of Wironit 4301 stainless steel. Autoclavable.

Length (mm)	W x L spoon 1 (mm)	W x L spoon 2 (mm)	Art. No.	Pack Qty.	€
150	11/22	20/25	**YC83.1**	1	27,10
180	20/27	24/32	**YC84.1**	1	28,40
210	20/28	27/35	**YC85.1**	1	34,05
250	24/32	30/40	**YC86.1**	1	38,60
300	29/40	35/45	**YC87.1**	1	41,95

A 121 °C

Double spoon

Made of Remanit 4301 high-grade steel. Autoclavable.

Length (mm)	W x L spoon 1 (mm)	W x L spoon 2 (mm)	Art. No.	Pack Qty.	€
190	12/30	20/35	**K733.1**	1	7,20

A 121 °C

Double spoons

By Hammacher. Made of Remanit 4024 stainless steel.
Spoon dimensions: W 10 x L 20 mm. Stem ∅ 3.5 mm. Autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
180	**YK72.1**	1	6,05
210	**YK73.1**	1	6,25

A 121 °C

Rotilabo®-multi-purpose spoons

Made of stainless steel 18/10. With solid round handle.

① Handle-∅ 5 mm. Dimensions of spoon: 15 x 35 mm

Length (mm)	Art. No.	Pack Qty.	€
150	**HX95.1**	1	6,20
180	**HX96.1**	1	6,40
210	**HX97.1**	1	6,70
250	**HX98.1**	1	7,50
300	**HX99.1**	1	7,50

② Handle-∅ 8 mm. Dimensions of spoon: 28 x 65 mm

Length (mm)	Art. No.	Pack Qty.	€
210	**HY00.1**	1	9,05
250	**HY01.1**	1	9,50
300	**HY02.1**	1	10,00
400	**HY03.1**	1	12,90
500	**HY04.1**	1	14,25

A 121 °C

Spoon spatulas, round or flat handle

Made of 18/10 rust-proof stainless steel, Remanit 4301. Autoclavable.

① With solid round handle

Total length (mm)	Spoon ∅ (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
150	25	15	35	**A641.1**	1	6,40
180	25	15	35	**A642.1**	1	6,90
210	25	15	35	**A643.1**	1	7,50
250	25	15	35	**A644.1**	1	7,50

② With flat handle

Total length (mm)	Spoon ∅ (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
120	20	18	20	**YP87.1**	1	3,45
150	25	18	25	**YP88.1**	1	3,80
180	25	20	25	**YP89.1**	1	4,10
210	30	20	30	**YP90.1**	1	4,85
250	35	28	40	**YP91.1**	1	8,10
300	35	28	40	**YP92.1**	1	9,15

Spatulas

A 121 °C

Micro-spoon spatula

Made of stainless steel 18/10, with hexagonal handle. Autoclavable.

Length (mm)	Spoon ∅ (mm)	Art. No.	Pack Qty.	€
140	5	**AT18.1**	1	10,70

A 121 °C

Multi-purpose spoon set for left-handers

Made of stainless steel 1.4301. With solid round handle. Autoclavable.

Contents:

Type	Length (mm)	Spoon dimensions (mm)	Stem ∅ (mm)
①	150	15 x 35	5
	180	15 x 35	5
	210	15 x 35	5
②	210	28 x 65	8
	300	28 x 65	8

Art. No.	Pack Qty. (set)	€
HEY3.1	1	31,15

Spoon spatulas

Made of stainless steel 18/10.

① **Autoclavable**

Length (mm)	Spoon W x L (mm)	Plate W x L (mm)	Art. No.	Pack Qty.	€
120	31 x 23	30 x 20	**PH56.1**	1	3,60
150	38 x 27	32 x 22	**PH57.1**	1	4,45
180	40 x 28	32 x 22	**PH58.1**	1	5,00
210	40 x 28	32 x 22	**PH59.1**	1	5,75
250	50 x 35	45 x 32	**PH60.1**	1	9,35
300	55 x 41	50 x 37	**PH61.1**	1	11,35

② **With PTFE coating**

Length (mm)	Spoon W x L (mm)	Plate W x L (mm)	Art. No.	Pack Qty.	€
180	40 x 28	32 x 22	**PH62.1**	1	30,65

A 121 °C

Micro-spoon powder spatula

Made of stainless steel 1.4301. Overall length 150 mm, spoon width 5 mm, blade L 30 x W 5 mm. Autoclavable.

Art. No.	Pack Qty.	€
CHN5.1	1	5,50

A 121 °C

Spoon spatulas, by Hammacher

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

① **With micro-spoon**

Dimensions of spoon: W 10 x L 20 mm.

Length (mm)	Blade width (mm)	Blade length (mm)	Stem ∅ (mm)	Art. No.	Pack Qty.	€
180	10	35	3,5	**YK74.1**	1	5,70
210	10	35	3,5	**YK75.1**	1	6,40

② **With flat spoon**

Dimensions of spoon: W 17 x L 38 mm.

Length (mm)	Blade width (mm)	Blade length (mm)	Stem ∅ (mm)	Art. No.	Pack Qty.	€
150	10	50	3,5	**YK76.1**	1	6,65
180	10	55	3,5	**YK77.1**	1	6,80
210	10	60	3,5	**YK78.1**	1	7,00
230	10	60	4,0	**YK79.1**	1	7,20

A 121 °C

Micro-spoon spatulas

Made of 18/10 stainless steel, Remanit 4301. Blade width 5 mm. Autoclavable.

① **Spoon shape, spoon width 5 mm**

Length (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
100	30	**PX33.1**	1	4,25
150	30	**6186.1**	1	5,00
185	30	**PX34.1**	1	4,60
300	30	**PX35.1**	1	5,00

① **Spoon shape, spoon width 7 mm**

Length (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
150	30	**YP97.1**	1	4,15
185	30	**YP98.1**	1	4,25
210	30	**YP99.1**	1	4,75

② **Scoop shape**

Length (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
150	40	**3191.1**	1	5,20
180	40	**PX36.1**	1	6,40

NEW

A 121 °C

Micro spoons with wire end

By Hammacher. Made of Wironit stainless steel (1.4301). Length 180 mm. Autoclavable.

Design	Art. No.	Pack Qty.	€
right-handed	**KAT0.1**	1	18,10
left-handed	**KAT1.1**	1	18,10

A 121 °C

Micro spatulas, US type

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
140	6	45	**YL35.1**	1	4,55
160	6	45	**YL36.1**	1	5,05
210	6	45	**YL37.1**	1	5,35

A 121 °C

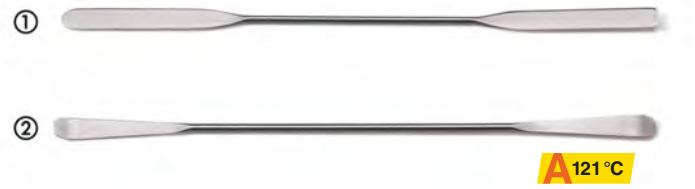
Micro-spoon powder spatula sets

Made of 1.4301 stainless steel. Autoclavable.

Contents:

Type	Length (mm)	Spoon width (mm)	Blade width (mm)
①	150	5.5	5
	180	5.5	5
	210	5.5	5
②	150	8	7
	180	8	7
	210	8	7

Type	Art. No.	Pack Qty. (set)	€
①	**HEY4.1**	1	13,95
②	**HEY5.1**	1	14,10



A 121 °C

Micro double spatulas

By Hammacher. Flexible, autoclavable.

① **Angular type, made of Remanit 4024 stainless steel, flexible, stem ∅ 2.5 mm.**

Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
130	6	40	**YL38.1**	1	4,25
150	6	40	**YL39.1**	1	4,45
185	6	50	**YL40.1**	1	4,85
210	6	55	**YL41.1**	1	5,05

② **Trapezoidal, made of Wironit 4301 stainless steel, stem ∅ 2.0 mm.**

Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
130	5	28	**YL42.1**	1	8,55
185	5	30	**YL43.1**	1	9,00
210	5	30	**YL44.1**	1	10,20

A 121 °C

Double spatulas, Remanit stainless steel

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

① **Narrow type**

Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
300	15	70	**YK66.1**	1	7,50
350	15	70	**YK67.1**	1	9,00
400	20	70	**YK68.1**	1	9,65
500	20	70	**YK69.1**	1	11,35

② **Wide type**

Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
150	15	32	**YK70.1**	1	4,55
210	18	36	**YK71.1**	1	5,65

A 121 °C

Micro-double spatulas

Made of stainless steel 18/10, electropolished. Autoclavable.

Length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
100	2	**3396.1**	1	3,20
130	2	**3415.1**	1	3,40
150	2	**3433.1**	1	3,70
100	3	**3439.1**	1	3,95
130	3	**2865.1**	1	4,30
150	3	**2866.1**	1	4,30
100	4	**2867.1**	1	4,30
130	4	**2868.1**	1	4,30
150	4	**2869.1**	1	4,30
185	4	**2889.1**	1	4,30
100	5	**2901.1**	1	4,30
130	5	**2905.1**	1	4,30
150	5	**2906.1**	1	4,30
185	5	**2910.1**	1	4,30
210	5	**2912.1**	1	4,30

Chemist's double spatula

Made of high-grade steel. Width 6 mm, length 150 mm.

Art. No.	Pack Qty.	€
1902.1	5	21,00

Spatulas

Double spatulas, Wironit stainless steel

By Hammacher. Made of Wironit 4301 stainless steel. Autoclavable.

① One spatula blade is rounded

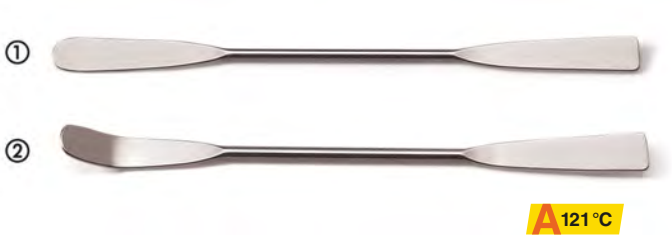
Length (mm)	Blade width (mm)	Blade length (mm)	Stem ∅ (mm)	Art. No.	Pack Qty.	€
120	4	25	2,0	**YK51.1**	1	7,50
120	6	28	2,5	**YK52.1**	1	8,55
150	9	36	3,5	**YK53.1**	1	9,00
150	11	38	4,0	**YK54.1**	1	9,25
180	9	38	3,5	**YK55.1**	1	10,20
180	11	40	4,0	**YK56.1**	1	11,40
210	9	40	3,5	**YK57.1**	1	11,40
210	11	40	4,0	**YK58.1**	1	12,10
240	12	60	4,0	**YK59.1**	1	15,75
300	13	60	5,0	**YK60.1**	1	21,20

② Both spatula blades are rounded

Length (mm)	Blade width (mm)	Blade length (mm)	Stem ∅ (mm)	Art. No.	Pack Qty.	€
150	7	28	2,5	**YK61.1**	1	10,25
180	7	28	2,5	**YK62.1**	1	10,60

③ One spatula blade is trapezoidal

Length (mm)	Blade width (mm)	Blade length (mm)	Stem ∅ (mm)	Art. No.	Pack Qty.	€
150	9	33	3,5	**YK63.1**	1	12,85
180	10	38	3,5	**YK64.1**	1	14,20
210	12	40	4,0	**YK65.1**	1	14,75



Double spatulas, Chattaway type

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

① Straight

Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
100	7	30	**YL21.1**	1	3,20
125	7	40	**YL22.1**	1	3,70
150	7	40	**YL23.1**	1	3,90
180	8	50	**YL24.1**	1	4,15
200	9	60	**YL25.1**	1	4,20
235	10	70	**YL26.1**	1	4,25
265	11	70	**YL27.1**	1	5,00

② Curved

Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
100	7	30	**YL28.1**	1	3,45
125	7	40	**YL29.1**	1	3,90
150	7	40	**YL30.1**	1	4,05
180	8	50	**YL31.1**	1	4,25
200	9	60	**YL32.1**	1	4,55
235	10	70	**YL33.1**	1	4,65
265	11	70	**YL34.1**	1	5,85

Double spatulas

Made of stainless steel 18/10 or pure nickel 99.5 %.
Both versions electropolished. Autoclavable.

① Remanit 4301 (18/10) high-grade steel, flexible

Length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
130	8	**3293.1**	1	4,75
150	9	**3294.1**	1	4,95
185	9	**3298.1**	1	5,15
210	11	**3311.1**	1	5,50
250	11	**3318.1**	1	5,60

① Remanit 4301 (18/10) high-grade steel, fixed

Length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
300	16	**3321.1**	1	7,05
350	16	**3335.1**	1	7,50
500	20	**3351.1**	1	10,35

② Pure nickel, fixed

Length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
130	9	**3361.1**	1	11,30
210	11	**3371.1**	1	11,60
250	11	**3376.1**	1	12,85

Double spatulas, curved

Made of stainless steel Remanit 4301, electropolished. Autoclavable.

Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
130	4	30	**3194.1**	1	5,20
150	4	30	**3200.1**	1	5,20
150	9	35	**3207.1**	1	5,35
185	4	30	**3455.1**	1	4,75
185	9	35	**3472.1**	1	5,30
210	9	35	**3489.1**	1	5,60

Spatulas

A 121 °C

Micro powder spatulas

By Hammacher. Made of Remanit 4024 stainless steel, flexible. Autoclavable.

Straight

Length (mm)	Blade width (mm)	Blade length (mm)	Stem ∅ (mm)	Art. No.	Pack Qty.	€
130	6	40	2,5	**YL50.1**	1	5,20
150	3	40	1,8	**YL51.1**	1	5,35
150	6	40	2,5	**YL52.1**	1	5,30
185	3	50	1,8	**YL53.1**	1	5,85
185	6	50	2,5	**YL54.1**	1	5,65
210	6	55	2,5	**YL55.1**	1	5,95

Angled

Length (mm)	Blade width (mm)	Blade length (mm)	Stem ∅ (mm)	Art. No.	Pack Qty.	€
150	5	40	2,0	**YL56.1**	1	5,75
185	5	50	2,0	**YL57.1**	1	5,85
210	4	55	2,0	**YL58.1**	1	5,95

A 121 °C

Micro-powder spatulas, straight

Made of stainless steel 18/10, with hexagonal handle. Autoclavable.

Length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
150	3	**AT23.1**	1	10,70
150	4	**AT24.1**	1	10,70

A 121 °C

Weighing spatulas

By Hammacher. Made of Wironit 4301 stainless steel. Autoclavable.

① **Standard**

Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
120	6	28	**YL14.1**	1	9,80
150	9	30	**YL15.1**	1	11,15
180	9	35	**YL16.1**	1	11,75
210	9	38	**YL17.1**	1	12,80

② **Micro**

Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
130	4	28	**YL18.1**	1	10,05
150	4	28	**YL19.1**	1	11,25
180	5	30	**YL20.1**	1	11,75

A 121 °C

Weighing spatula

By Hammacher. Made of Remanit 4024 stainless steel. Length 170 mm, scoop L 40 x W 10 mm. Autoclavable.

Art. No.	Pack Qty.	€
YL59.1	1	4,95

A 121 °C

Powder spatula

Made of 18/10 stainless steel. Scoop L 40 x W 10 mm. Total length 170 mm. Autoclavable.

Art. No.	Pack Qty.	€
C829.1	1	3,20

A 121 °C

Spatulas

Made of stainless steel 18/10, electropolished. One end is spoon-shaped. Autoclavable.

Length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
130	5	**3006.1**	1	3,05
150	5	**3066.1**	1	3,15
185	5	**3015.1**	1	3,25
210	5	**3042.1**	1	3,35

A 121 °C

Mixing spatulas

By Hammacher. Made of Wironit 4301 stainless steel. Autoclavable.

Type	Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
① Double	210	6	30	**YL45.1**	1	34,10
① Double	210	7	30	**YL46.1**	1	34,10
① Double	210	8	30	**YL47.1**	1	34,10
② With spoon	190	10	20	**YL48.1**	1	33,35
③ Single	155	5	30	**YL49.1**	1	24,00

Spatulas

Micro-spatula set

4 pieces. Made of stainless steel 18/10, with black plastic handle made of PVC.

Length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
160	3 - 4 - 5 - 6	**AT16.1**	1	14,90

Micro-powder spatula set

4 pieces. Made of stainless steel 18/10, with black plastic handle made of PVC.

Length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
160	3 - 4 - 5 - 6	**AT17.1**	1	16,45

Micro-spatulas

Made of 18/10 stainless steel. With handle made of PVC, ∅ 6 mm.

Length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
160	4	**6191.1**	1	3,55
160	5	**3119.1**	1	3,60

Micro-spatulas, straight

Made of stainless steel 18/10, with hexagonal-handle. Autoclavable.

Length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
140	3	**AT21.1**	1	10,70
140	4	**AT22.1**	1	10,70

Micro-spatulas, round

Made of stainless steel 18/10, with hexagonal-handle. Autoclavable.

Length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
140	2	**AT19.1**	1	10,70
140	3	**AT20.1**	1	10,70

Dosing spatula

Stainless steel (18/10) blade and plastic handle. For powders, granules, etc. Required dosage of sample can be obtained by turning the knurling wheel. Blade L 50 x W 12 mm. Total length 190 mm. Autoclavable.

Art. No.	Pack Qty.	€
C848.1	1	18,95

Vibrating spatula, narrow

By Hammacher. Made of stainless steel (1.4301), handle made of PVC.

Standard

Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
210	5	18	**KAX3.1**	1	26,80

PTFE-coated

Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
210	5	18	**KAX4.1**	1	30,45

Spatulas with knob

Made of Remanit 4301 high-grade steel. With plastic knob.

Length (mm)	Blade width (mm)	Blade length (mm)	Art. No.	Pack Qty.	€
150	9	35	**K722.1**	1	5,90
210	9	35	**K723.1**	1	6,05
250	20	35	**K728.1**	1	8,05
300	30	60	**K729.1**	1	9,65
400	30	60	**K730.1**	1	10,75
500	30	60	**K731.1**	1	11,80

Pharmacist's spatulas

With wooden handle and flat blade made of hardened stainless chrome steel.

Total length (mm)	Blade length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
180	70	18	**A651.1**	1	6,75
210	100	20	**A652.1**	1	6,95
235	125	20	**A653.1**	1	7,85
255	145	22	**A654.1**	1	8,25

NEW

Chemist's spatula

With a wooden handle and flat blade made of chromium steel 1.4034, hardened.

Total length (mm)	Blade length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
320	200	30	**HPY4.1**	2	14,55
370	250	30	**HPY5.1**	2	15,60
420	300	30	**HPY6.1**	2	16,70

Chemist's instruments

Consists of four instruments made of high-grade steel (Remanit 4301). In case W 90 x L 150 mm.

Contents:

1 precision scissors, pointed/blunt 130 mm
1 forceps, pointed 130 mm
1 micro-double spatula 130 mm, blade width 4 mm
1 chemist's double spatula, 150 mm, blade width 9 mm

Art. No.	Pack Qty.	€
1863.1	1	23,90

Spatula assortement

In case. Made of 18/10 stainless steel. Set consists of 6 of the most commonly used double and micro-spatulas plus 1 forceps (straight with blunt tips). Autoclavable (without case).

Art. No.	Pack Qty. (assortment)	€
E286.1	1	41,85

Chemist set, large

By Hammacher. Instruments made of stainless steel, autoclavable.

*Scissors made of steel, nickel plated and coated, non-autoclavable.

In plastic box, dimensions: L 214 x W 102 x H 27 mm.

Contents:

1 micro double spatula, 130 mm
1 micro spoon spatula, spoon 5 x 7 mm
1 micro powder spatula, flexible, 185 mm
1 double spatula, rigid, 185 mm
1 tweezers, straight, sharp, 160 mm
1 scissors*, straight, serrated, 170 mm
1 Poly spoon, 180 mm
1 weighing spoon
1 double spatula, wide, round on both sides, 150 mm

Art. No.	Pack Qty.	€
TE20.1	1	72,00

NEW
A 121 °C

Spatula set

By Hammacher. In zip-up case, with elastic loops to hold spatulas. Autoclavable.

Contents:

2 spoon spatulas, 150 mm and 180 mm
3 micro-spoon spatulas, spoon 5 x 7 mm, L 100, 150, 185 mm
3 double spatulas, rigid, L 130, 150, 185 mm
1 micro-powder spatula, flexible, 150 mm
1 chemist's spoon, double-ended, 170 mm
1 spoon for chemicals, double-ended, 150 mm
1 weighing spatula, 170 mm
2 micro-double spatulas, spoon-shaped, L 130, 150 mm

Art. No.	Pack Qty.	€
KAT8.1	1	81,20

Spatulas

A 121 °C

Spatula

Flexible blade made of chromium steel 18/0. Handle made of stainless steel 18/10. Dimensions: blade L 210 x W 30 mm, total length 340 mm. Autoclavable.

Art. No.	Pack Qty.	€
CY65.1	1	9,15

A 121 °C

Solid spatulas for easy lifting of tissue

Made of stainless steel 18/10.
Flexible blade length 50 mm, total length 150 mm. Autoclavable.

Blade width (mm)	Art. No.	Pack Qty.	€
10	**A645.1**	1	6,95
15	**A646.1**	1	6,95
20	**A647.1**	1	7,05

A 121 °C

Spatulas

With blade made of stainless steel 18/0 and black **PA** handle. Autoclavable.

Blade L x W (mm)	Total length (mm)	Art. No.	Pack Qty.	€
100 x 65	260	**YE83.1**	1	24,75
160 x 100	285	**YE84.1**	1	31,20

Spatula

With blade made of a stainless steel 18/0 (1.4016), with a wood handle.
Blade L 115 x W 100 mm. Total length 215 mm.

Art. No.	Pack Qty.	€
8108.1	1	12,40

Scrapers

Made of flexible **PP**. Thickness 0.6 mm. Dimensions: L 130 x W 100 mm.

Art. No.	Pack Qty.	€
YE82.1	10	8,10

S

Rotilabo®-mouth spatulas

Made wood or **PS. Sterile** (ETO gas sterilised, individually packed) or non-sterile. Dimensions: L 150 x W 20 mm.

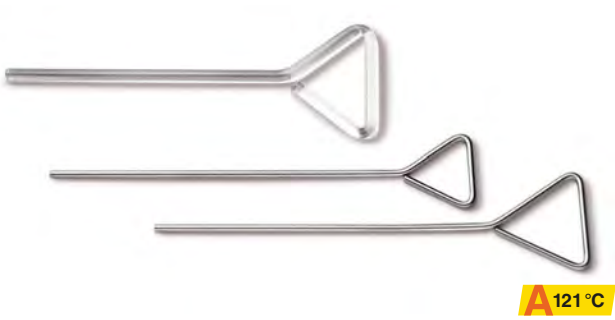
Material	Design	Art. No.	Pack Qty.	€
Wood	**sterile**	**XL58.1**	50	13,85
Wood	non-sterile	**EH10.1**	100	4,10
PS, white	non-sterile	**XL59.1**	100	9,45

Stirring spatula

Made of wood. Dimensions: L 140 x W 5 mm.

Art. No.	Pack Qty.	€
APE1.1	1000	5,35

Spatulas



Drigalski spatulas

Made of stainless steel (Remanit 4301) or soda-lime glass.
Ideal for even distribution of bacterial substances on solid nutrient media.
Also suitable as stirrer. Autoclavable.

Material	Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
Stainless steel	165	30	**K732.1**	1	4,00
Stainless steel	165	40	**AL98.1**	1	4,55
Glass	145	50	**T724.2**	10	32,80

▶ Further Bacterial cell spreaders see p. 286

Glass spatula

By Hammacher. Made of calcium soda glass. Length 100 mm.
Autoclavable.

Art. No.	Pack Qty.	€
HEA5.1	1	4,95

Rotilabo®-double spatulas

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

Length (mm)	Art. No.	Pack Qty.	€
104	**XX58.1**	5	30,80
186	**XX59.1**	5	41,50
250	**XX60.1**	5	46,90
298	**XX61.1**	5	57,00

Mixing and laboratory spatula

By Hammacher. Made of PP. Length 160 mm, width 20 mm.

Art. No.	Pack Qty.	€
HEA6.1	1	10,55

Spatula

Made of **PTFE**. Double-sided, flexible. Chemically inert. L 150 x W 16 mm.
Thickness 4 mm. Weight 19 g. Temperature stable from -200 to +250 °C.
Autoclavable

Art. No.	Pack Qty.	€
0503.1	1	17,15

Plastic spatulas

Made of **fibre reinforced PA**, red. Autoclavable.

Type	Length (mm)	Spoon capacity (ml)	Art. No.	Pack Qty.	€
Double spatula	150	-	**TT31.1**	10	10,70
Double spatula	180	-	**TT32.1**	10	12,20
Spoon spatula	180	1,5	**TT33.1**	10	15,40
Spoon spatula	210	1,8	**TT34.1**	10	17,05

Plastic stirring spatula

Made of **PS**, transparent. With or without mixing plate for vertical mixing in cells or other narrow vessels. Overall length 120 mm.
Sheet: L 30 x W 3 mm. Rod ∅ 3 mm.

Design	Art. No.	Pack Qty.	€
With mixing plate	**XL60.1**	500	12,85
Without mixing plate	**4893.2**	500	13,95

Plastic stirring spatula

Made of **PS**, white. Dimensions: overall length 140 mm, rod width 5 mm, stirrer blade: L 30 x W 10 mm. Temperature stable from -25 to + 90 °C.

Art. No.	Pack Qty.	€
APE2.1	1000	11,15

Spatulas

S
A 121 °C

Disposable plastic spatulas

Made of **PP**. **Sterile** or non-sterile. Suitable for use as sample spoon, scraper and stirring bar. Ideal for weighing, e.g. in PCR vials, reaction vials and centrifuge tubes. FDA-compliant.
Temperature stable from 0 to +121 °C. Autoclavable.

Technical specifications:

Type	For vials (ml)	Overall length (mm)	Stem ∅ (mm)	W x L spoon (mm)
① Micro, antistatic	0.2	140	3.5	-
② Eco	15/1.5	140	7	14 x 25
③ Standard, blue	15/1.5	210	7	14 x 25
④ Standard, opaque	15/1.5	210	7	14 x 25
⑤ Macro, green	50 ml	310	10	23.5 x 42

Type	Design	Art. No.	Pack Qty.	€
① Micro, antistatic	non-sterile	**NL90.1**	300	31,10
② Eco	non-sterile	**NL91.1**	300	42,50
③ Standard, blue	non-sterile	**NL92.1**	300	40,35
④ Standard, opaque	non-sterile	**NL93.1**	300	40,35
④ Standard, opaque	**sterile** (10 per pack.)	**NL94.1**	100 (10 x 10)	156,95
⑤ Macro, green	non-sterile	**NL95.1**	150	42,50

S

Single-use micro-spatula

By Bürkle. Made of **PS**. **Sterile** (gamma-sterilised) or non-sterile. Double-spoon spatula with rounded ends, contents 1.0 and 0.25 ml. Precise working with stable and easy-to-handle centre grip. For filling or processing small amounts of chemicals, powders, granulates, pastes, creams or liquids. Cleanroom-manufactured (class 7). Suitable for foodstuffs.

Design	Art. No.	Pack Qty.	€
Non-sterile	**HEP6.1**	100	21,45
Sterile, individually packed	**HEP7.1**	100	55,50

S

Sample spatula SteriPlast®

By Bürkle. Made of PS, sterile. For sterile and contamination-free sampling, e.g. of powders, granulates and pastes. Insertion depth 150 mm. With long, sturdy handle and sharp blade for piercing paper and plastic bags etc. Sample spatula is optionally available with a lid made of PS which allows the sample to be sealed straight after it is taken. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

Design	Total length (mm)	Art. No.	Pack Qty.	€
Without lid	263	**CLT5.1**	10	17,55
With lid	268	**CLT6.1**	10	25,30

S

Bacterial cell spreaders

Made of **PS**. **Sterile** (packed individually).
To easily spread out cells on agar plates. Dimensions: L 171 x W 36 mm.

Art. No.	Pack Qty.	€
AY19.1	100	84,95

S

L-shaped bacterial cell spreaders

Made of **ABS**. **Sterile.** With smooth surface prevents scratching for agrar surfaces. Dimensions: L 146 x W 38 x ∅ 4 mm.

Packaging	Art. No.	Pack Qty.	€
individually wrapped	**PC57.1**	500	81,70
50 x 10	**PC58.1**	500	76,35

S

Bacterial cell spreaders Delta™

Made of **ABS**. **Sterile** (packed individually). With smooth surface prevents scratching of agrar surfaces. Delta-shaped head distributes the contact pressure evenly for a smooth application.
Dimensions: L 172 x W 37 x ∅ 4 mm.

Art. No.	Pack Qty.	€
PC59.1	500	92,35

Rotilabo®-jacks

Plates made of stainless steel. Aluminium scissors frame. Compliant with DIN 12897. Rubber feet for stable standing position. Support plates with M 10 threaded hole, e.g. for attaching the Flex clamps, Art. No. YT72.1ff.

Technical specifications:

Type	L x W (mm)	Height adjustability (mm)	Operating load (kg)	Static load (kg)	Weight (kg)
①	120 x 140	60-243	5	30	1.37
②	130 x 160	60-255	7	30	1.67
③	200 x 200	60-265	7	30	2.3
④	300 x 300	130-470	12	60	8.0
⑤	400 x 400	150-670	15	60	12.4

Delivery without flex clamps, please order separately.

Standard version

Type	Art. No.	Pack Qty.	€
①	**YT69.1**	1	124,70
②	**T458.1**	1	139,55
③	**T459.1**	1	155,90

Heavy duty version

Gas-spring assisted for easy action.

Type	Art. No.	Pack Qty.	€
④	**YT70.1**	1	552,55
⑤	**YT71.1**	1	738,55

Rotilabo®-flex clamps with M 10 thread

Made of die cast zinc and brass, nickel-plated. For use on jacks (Art. no. YT69.1 ff.) or stand plates with M 10 thread (for ex. Art. no. X072.1ff.). Length 300 mm.

Design	Span (mm)	Art. No.	Pack Qty.	€
Three finger	0-40	**YT72.1**	1	29,60
Round	12-25	**YT73.1**	1	29,60

Operating load is the greatest dynamic load at which the jack can be lifted out of any position.

Static load is the maximum static load which can be applied to the jack

Example:
the Rotilabo® Mini jack (Art No. YT68.1) can carry a max. load of 2 kg and be moved up or down (= operating load). A maximum weight of 15 kg may be applied to the jack, but it will no longer be possible to screw the jack up or down (= static load).

Rotilabo® Mini jack

Plates made of stainless steel. Aluminium scissors frame.
Compliant with DIN 12897. Rubber feet for stable standing position.
Dimensions: L 75 x W 80 mm. Height adjustable 49-147 mm.
Moveable load 2 kg. Static load 15 kg. Weight 415 g.

Art. No.	Pack Qty.	€
YT68.1	1	118,25

MAXI lab jacks

Manufactured in accordance with DIN 12897. Height adjustment using a hand-wheel. Increased height (30 %) using extended scissor lift.
Height adjustable 75-400 mm. Moveable load 7 kg.
Maximum static load 30 kg.

Made of 18/10 stainless steel

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
160	130	**YT34.1**	1	208,55
200	200	**YT35.1**	1	247,25

Made of powder-coated aluminium, green

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
160	130	**YT36.1**	1	155,90
200	200	**YT37.1**	1	183,85

Lab jacks

Made of powder-coated aluminium. Scissor-type construction made of 18/10 steel. Manufactured in accordance with DIN 12897.

- Ergonomic knob, rounded
- Smaller models (type ①) with single adjusting wheel, manual operation
- Larger models (type ②) for use with ratchet to be attached to a special adjusting wheel

Technical specifications:

Type	L x W (mm)	Height-adjustability (mm)	Moveable load (kg)	Static load (kg)	Art. No.
①	100 x 100	55-120	5	10	K578.1
①	160 x 130	60-275	7	30	K579.1
①	200 x 200	60-275	7	30	K580.1
①	240 x 240	60-275	7	30	K581.1
②	300 x 300	90-470	12	60	0483.1
②	400 x 400	90-470	15	60	K583.1

Type ② delivery incl. ratchet.

Type	Art. No.	Pack Qty.	€
①	**K578.1**	1	131,15
①	**K579.1**	1	140,85
①	**K580.1**	1	155,90
①	**K581.1**	1	181,70
②	**0483.1**	1	517,10
②	**K583.1**	1	791,20

A 121 °C

Laboratory jacks, autoclavable

Plates, shears and rotary knob made of stainless steel 18/10. Manufactured in accordance with DIN 12897. Height adjustability 60-275 mm. Operating load 7 kg. Maximum static load 30 kg. Autoclavable.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
160	130	**CHY3.1**	1	194,60
200	200	**CHY4.1**	1	229,00
240	240	**CHY5.1**	1	245,10

H-stand

Complete with cast iron base, 3 x 80 cm aluminium rods, 2 x 50 cm aluminium rods and 6 boss heads.
Dimensions: H 80 cm x W 50 cm x D 25 cm. Stand rod ∅ 12 mm.
Weight 6.5 kg.

Art. No.	Pack Qty.	€
CHH2.1	1	272,00

Accessories:

Hexagon wrench, 4 mm AF	**CHX9.1**	1	6,10

H-stands

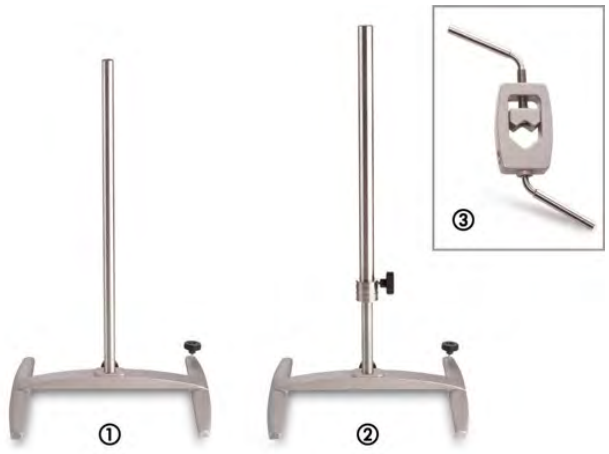
Suitable for large, heavy units and attachments, e.g. stirrer. With H-foot for non-tilting stand. With compensator screw for uneven workplaces. Support rod-∅: 34 mm. Max. load: 10 kg. Model R 2723 also comes with pressure spring telescopic support stand for smooth moving of heavy units or attachments. Height of lift: 390 mm.

Type	Width (mm)	Depth (mm)	Height (mm)	Art. No.	Pack Qty.	€
R2722	460	420	1010	**CC16.1**	1	636,00
R2723	460	420	620-1010	**CC17.1**	1	1179,00

Plate stands

With anti-slip foil on plate.The support rod is also fixed under the plate with a nut to prevent accidental removal of rod. Support rod-∅: 16 mm.
Max. load: 5 kg.

Type	Width (mm)	Depth (mm)	Height (mm)	Art. No.	Pack Qty.	€
R1825	200	316	560	**CC13.1**	1	247,00
R1826	200	316	800	**CC14.1**	1	272,00
R1827	200	316	1000	**CC15.1**	1	296,00



S2-series H-stands

S2 and S2 XXL models
Made of V2A. The support rod is additionally secured with a nut which prevents it from being unscrewed accidentally. Support rod ∅ 25 mm.
With levelling screw. Max. weight load: 4 kg.

Tele S2 model
same as S2 and S2 XXL but with retractable support rod variable in length from 725 to 1025 mm. Support rod ∅ 32 mm.

Type	Width (mm)	Depth (mm)	Height (mm)	Art. No.	Pack Qty.	€
① S2	345	420	700	**TL67.1**	1	247,00
S2 XXL	345	420	1000	**TL68.1**	1	291,00
② Tele S2	345	420	725-1025	**TL69.1**	1	585,00

Accessories for S2-series H-stands

③ **Clamp**
Made of V2A and cast aluminium. For rod ∅ 13 to 32 mm.

Art. No.	Pack Qty.	€
TL70.1	1	108,00

Stand plates with rods

Made of **PP**, rods made of chrome-plated steel. Stand rods L 250 mm, ∅ 12 mm, can be interconnected to increase overall height.
Dimensions: L 300 x W 150 x H 15 mm.
Delivery incl. two stand rods.

Product	Art. No.	Pack Qty.	€
Central insertion opening	**TT24.1**	1	67,95
Side insertion opening	**TT25.1**	1	67,95

Accessories:

Stand rods made of chrome-plated steel, L 250 mm, ∅ 12 mm	**TT26.1**	2	57,70

Rotilabo®-flexible stands

Manufactured from die cast zinc and brass, nickel-plated.
With adhesive safety base. Length 300 mm.

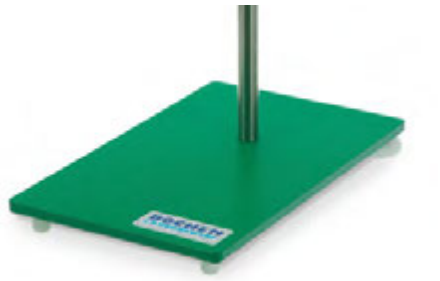
Design	Span (mm)	Art. No.	Pack Qty.	€
Three-prong	0-40	**X094.1**	1	38,65
round	12-25	**X095.1**	1	37,25

Rotilabo®-flex clamps with M 10 thread

Made of die cast zinc and brass, nickel-plated. For use on jacks (Art. no. YT69.1 ff.) or stand plates with M 10 thread (for ex. Art. no. X072.1ff.). Length 300 mm.

Design	Span (mm)	Art. No.	Pack Qty.	€
Three finger	0-40	**YT72.1**	1	29,60
Round	12-25	**YT73.1**	1	29,60

Material for stands



Retort stand bases, classic

In acc. with DIN 12892. Made of powder coated steel.
With threaded bore hole M 10 in the centre of the front side.
With four feet for extra stability, one adjustable foot.
Delivery without stand rod, please order separately.

Length (mm)	Width (mm)	Weight (g)	Art. No.	Pack Qty.	€
210	130	1300	**2369.1**	1	23,45
250	160	2000	**2375.1**	1	31,40
300	150	2200	**2376.1**	1	34,35
315	200	3000	**2377.1**	1	49,35

Rotilabo®-stand plates

Made of corrosion-free stainless 18/10 (material 1.4301).
With four adjustable feet made of plastic.
Threaded hole M10 in the centre of the face side.

Length (mm)	Width (mm)	Weight (g)	Art. No.	Pack Qty.	€
180	100	850	**ENY4.1**	1	42,95
220	142	1470	**ENY5.1**	1	56,95
250	142	1670	**ENY6.1**	1	62,70
285	142	1900	**ENY7.1**	1	67,70
315	200	2970	**ENY8.1**	1	87,85
330	165	2600	**ENY9.1**	1	81,60

Rotilabo®-stand plates, tall

Made of corrosion-free stainless 18/10 (material 1.4301). With four anti-slip feet for safe positioning. Threaded hole M10 in the centre of the face side.
Overall height 33 mm, floor clearance 28 mm.

Length (mm)	Width (mm)	Weight (g)	Art. No.	Pack Qty.	€
210	130	1600	**EPA1.1**	1	56,35
300	150	2500	**EPA2.1**	1	75,05

Rotilabo®-tripods

Made of powder coated steel. With threaded bore hole M 10.
Rubber feet for secure support.

Leg length (mm)	Art. No.	Pack Qty.	€
80	**X072.1**	1	17,15
115	**X075.1**	1	19,30
150	**X076.1**	1	25,30
185	**X077.1**	1	30,00

Stand plates, extra stability

Made from 18/10 stainless steel (material 1.4301-5, AISI type 304-303), antimagnetic. In acc. with DIN 12892. Wide, heavy adjusting feet with non-slip rubber surface for high stability, 1 adjustable foot to compensate for uneven surfaces. M 10 threaded hole at front centre.
Delivery without stand rod (please order separately).

Length (mm)	Width (mm)	Weight (g)	Art. No.	Pack Qty.	€
210	130	1600	**C851.1**	1	87,20
250	160	1900	**C852.1**	1	105,00
300	150	2000	**C853.1**	1	117,20
315	200	2400	**C854.1**	1	140,85

Rotilabo®-tripods

Made of powder coated steel. For max. 13 mm ∅ of rods.
Rods are attached with locking screw M 6. Rubber feet for secure support.

Leg length (mm)	Art. No.	Pack Qty.	€
80	**X078.1**	1	23,15
115	**X079.1**	1	26,70
150	**X080.1**	1	33,90
185	**X081.1**	1	36,45

Stand base

Made of Laboral (aluminium alloy). For wall/ceiling attachment.
For stand rod ∅ from 12-13 mm. Secured by socket head screw.
Base ∅ 50 mm. With three screw holes (fastening material not included).

Art. No.	Pack Qty.	€
CHE9.1	1	31,85

Accessories:

Hexagon wrench, 4 mm AF	**CHX9.1**	1	6,10

Stand base

Made of white malleable cast iron. For wall/ceiling attachment. For up to three ∅ 12 mm stand rods. Rods are secured by slotted-head screws.
Base ∅ 80 mm. With four screw holes.

Art. No.	Pack Qty.	€
CHE8.1	1	22,40

Rotilabo®-stand rods

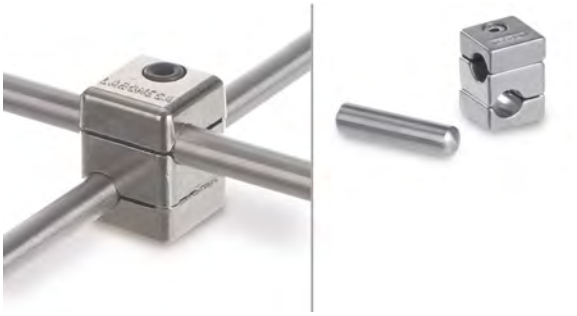
Made of stainless steel (material 1.4305), solid. With thread M 10.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
600	10	**2378.1**	1	14,85
750	12	**2379.1**	1	17,55
1000	12	**2380.1**	1	22,85
1250	12	**2381.1**	1	26,65
1500	16	**2382.1**	1	43,55

Rotilabo®-stand rods

Made of polished stainless steel (Remanit 4301), antimagnetic.
With thread M 10. Rod ∅ 12 mm.

Length (mm)	Art. No.	Pack Qty.	€
450	**CHC9.1**	1	14,75
500	**CHE0.1**	1	16,70
600	**P110.1**	1	22,05
750	**P111.1**	1	23,80
1000	**P112.1**	1	29,60
1250	**P113.1**	1	37,25
1500	**P114.1**	1	42,50



Double boss heads, square

For connecting 2 stand rods ∅ 12-13 mm at an angle of 90°.
With hexagon socket screws. Angles from 0-360° can be set by connecting two double boss heads using a connecting rod.
Delivery without connecting rod (please order separately).

Material	Art. No.	Pack Qty.	€
High grade steel 18/10	**CHX6.1**	1	42,80
Laboral (aluminium alloy)	**CHX7.1**	1	13,45

Accessories:

Connecting rod L 50 x ∅ 12 mm	**CHX8.1**	1	7,00
Hexagon wrench, 4 mm AF	**CHX9.1**	1	6,10

Rotilabo®-table clamp

Manufactured from powder-coated aluminium. For rods of max. ∅ 13 mm and table tops max. 60 mm.

Art. No.	Pack Qty.	€
X082.1	1	30,10

Rotilabo®-stand rods, unthreaded

Made of polished stainless steel (Remanit 4301), antimagnetic.
Rod ∅ 12 mm.

Length (mm)	Art. No.	Pack Qty.	€
450	**CHE1.1**	1	14,75
500	**CHE2.1**	1	15,90
600	**CHE3.1**	1	18,75
750	**CHE4.1**	1	21,35
1000	**CHE5.1**	1	26,75
1250	**CHE6.1**	1	32,15
1500	**CHE7.1**	1	37,30

Material for stands

① Double boss heads, rectangular

Made of malleable cast iron, chrome-plated. 90° angle.
With clamping screws.

Design	Art. No.	Pack Qty.	€
For rods up to ∅ 16.5 mm	**2134.1**	1	10,70
For rods up to ∅ 20 mm	**2135.1**	1	15,00
For rods with ∅ 36 mm	**2179.1**	1	27,10

② Cross double boss head

Made of malleable cast iron, chrome-plated. 90/180° angle.
With clamping screws.

Design	Art. No.	Pack Qty.	€
For rods up to ∅ 16.5 mm	**2194.1**	1	13,90

③ Double boss heads, rotatable

Made of die-cast zinc, powder-coated.
With brass clamping screws, nickel-plated.

Design	Art. No.	Pack Qty.	€
For rods up to ∅ 16 mm	**2136.1**	1	18,80

Ball sleeves

Made of die-cast zinc, with nickel-plated hinge screws. ∅ 35 mm.
For rod-∅ to 13 mm.

Design	Art. No.	Pack Qty.	€
Powder-coated	**PH46.1**	1	9,15
Uncoated	**PH47.1**	1	9,65
Nickel-plated	**PH48.1**	1	11,30

Hook connectors

For stable right angle connection of rods or clamps to retort stands.
Span width 13 mm. With brass screw, nickel-plated.

Design	Art. No.	Pack Qty.	€
Powder-coated steel	**E039.1**	1	9,90
Rustproof stainless steel	**E040.1**	1	18,65

Cross sleeve 18/10

Made of stainless steel 18/10, with heart-shaped safety screws.
For stand rods up to ∅ 16,5 mm.

Art. No.	Pack Qty.	€
XT63.1	1	62,35

① Cross double boss head

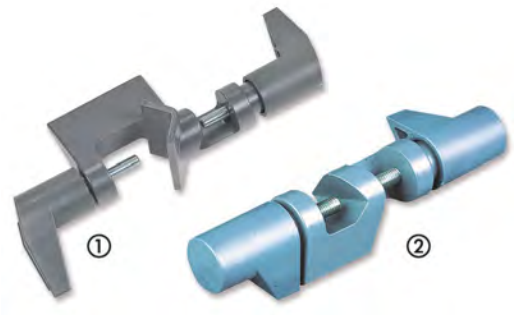
Made of aluminium. 90° angle. With easily accessible clamping screws.
For rods up to ∅ 16.5 mm.

Art. No.	Pack Qty.	€
P179.1	1	11,80

② Universal clamp

Made of aluminium, powder-coated. With brass clamping screws, nickel-plated. 90/180° angle. For rods up to ∅ 13 mm.

Art. No.	Pack Qty.	€
P178.1	1	18,25



Cross sleeves

Made with aluminium casting.

Type	for stand type	Clamping range stand (mm)	Clamping range bracket (mm)	Art. No.	Pack Qty.	€
① R 270	R 2722, R 2723	25-36	5-21	**CC18.1**	1	101,00
② R 182	R 1825, R 1826, R 1827	6-16	6-16	**CY92.1**	1	75,00

Stand clamps with boss head

Manufactured from powder-coated die-cast zinc. Clamp with cork insert.

Span (mm)	Total length (mm)	Art. No.	Pack Qty.	€
12-25	185	**X083.1**	1	13,45
20-40	195	**X084.1**	1	14,65
38-60	200	**X086.1**	1	17,00

Stand clamps

Made of die-cast zinc, powder-coated. With cork inlay. Rod ∅ 10 mm.

Span (mm)	Art. No.	Pack Qty.	€
10-25	**P172.1**	1	11,45
13-40	**P174.1**	1	11,75
26-60	**P175.1**	1	13,05

Stand clamps, made of 18/10 steel

With two round jaws, with cork inlay.

① **Made of 18/10 steel**

Span (mm)	Shaft length (mm)	Shaft ∅ (mm)	Art. No.	Pack Qty.	€
25	150	10	**2000.1**	1	26,65
40	150	10	**2004.1**	1	29,00
60	150	10	**2007.1**	1	31,85
80	180	12	**P177.1**	1	26,80

② **Made of die cast zinc, powder-coated**

Span (mm)	Shaft ∅ (mm)	Art. No.	Pack Qty.	€
12-25	10	**1993.1**	1	11,95
20-40	10	**1995.1**	1	13,15
38-60	10	**1998.1**	1	15,05

Universal stand clamps

4-finger jaws, with cork protection. Total length 240 mm.

① **Made of Remanit 4301 high grade steel**, span width max. 90 mm.

Art. No.	Pack Qty.	€
KX88.1	1	46,20

② **Made of die-cast zinc**, span width max. 80 mm.

Art. No.	Pack Qty.	€
KX89.1	1	17,55

Stand clamps, large span

In acc. with DIN 12894. Round jaws with cork pads. Shaft ∅ 12 mm.
Shaft length 180 mm.

Made of galvanised steel

Span (mm)	Total length (mm)	Art. No.	Pack Qty.	€
80	325	**CHL5.1**	1	17,75
100	345	**CHL6.1**	1	19,70
120	360	**CHL7.1**	1	22,15
150	380	**CHL8.1**	1	25,30

Made of stainless steel 18/10

Span (mm)	Total length (mm)	Art. No.	Pack Qty.	€
80	325	**CHL9.1**	1	33,45
100	340	**CHN0.1**	1	53,55
120	360	**CHN1.1**	1	58,60
150	380	**CHN2.1**	1	76,90

Universal-stand clamp, swivel-type

Made of die cast zinc, powder coated, 4-finger jaws with cork pads.
Clamping range 0-80 mm. Swivel range 180°.
Overall length 275 mm, rod length 150 mm, rod ∅ 10 mm.

Art. No.	Pack Qty.	€
YP54.1	1	36,95

Rotilabo®-stand clamps

Flexible. Made of 18/8 stainless steel. With nickel-plated shaft.
Available as round, rectangular and burette shaped clamp.
Please order bossheads separately.

Design	Span (mm)	Shaft ∅ (mm)	Shaft length (mm)	Art. No.	Pack Qty.	€
① round	25-40	12	250	**C863.1**	1	112,90
② round	15-65	12	200	**C864.1**	1	131,15
③ rectangular	25-40	12	250	**C865.1**	1	112,90
④ burette	0-20	12	250	**C866.1**	1	107,15
⑤ burette	0-30	8	200	**C867.1**	1	95,65

Rotilabo®-flexible clamps with rotatable boss head

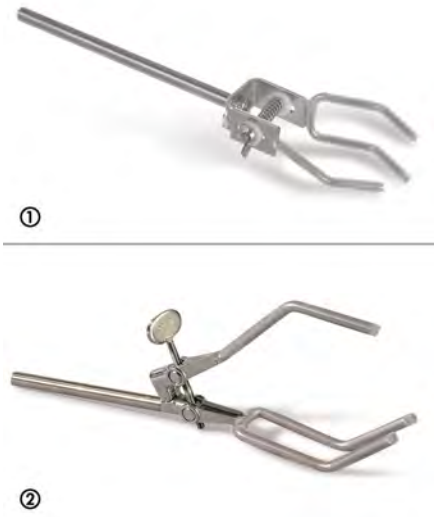
Manufactured from die-cast zinc and brass, nickel-plated.
For rods of max. 16 mm ∅. Length 300 mm.

Design	Span (mm)	Art. No.	Pack Qty.	€
three prong	0-40	**X087.1**	1	36,90
round	12-25	**X088.1**	1	38,20

Rotilabo®-three-prong clamps

Manufactured from powder-coated die-cast zinc.
With plastic-coated prongs. Shaft length 140 mm.

Span (mm)	Bar-∅ (mm)	Total length (mm)	Art. No.	Pack Qty.	€
0-40	8	225	**X096.1**	1	10,05
0-40	10	225	**X097.1**	1	10,70
25-80	10	250	**X098.1**	1	16,70



Rotilabo®-three-finger clamps

Made of stainless steel 18/10. Silicone coated fingers. Also suitable for holding irregular shaped objects. Shaft ∅ 12 mm, shaft length 190 mm.

Image	Span (mm)	Total length (mm)	Art. No.	Pack Qty.	€
①	0-80	320	**CHN3.1**	1	71,70
②	0-120	340	**C827.1**	1	138,70

Rotilabo®-four-finger clamp

Made of stainless steel 18/10. Silicone coated fingers. Also suitable for holding irregular shaped objects. Shaft ∅ 12 mm, shaft length 190 mm.

Span (mm)	Total length (mm)	Art. No.	Pack Qty.	€
50-150	360	**CHN6.1**	1	97,30

Rotilabo®-cooler clamp

Made of malleable cast iron, chrome-plated. With movable shaft.
Prongs are covered with transparent silicone. Spans from 50 to 100 mm.
Shaft-∅ 12 mm, shaft length 150 mm.

Span (mm)	Art. No.	Pack Qty.	€
50-100	**C826.1**	1	30,80

Chain clamps

With cork inlay. For fastening flasks and other laboratory vessels.
Shaft ∅ 10 mm. Shaft length 200 mm.

For containers ∅ (mm)	Art. No.	Pack Qty.	€
40-120	**E050.1**	1	41,85
80-150	**E051.1**	1	41,40
100-170	**E052.1**	1	42,15

Belt clamp

Clamping head of powder-coated aluminium and stem of nickel-plated steel. With eccentric lock and cork insert. Bar ∅ 10 mm, shaft length 195 mm. Belt length 600 mm, width 12 mm. For vessel ∅ 60 to 170 mm.

Art. No.	Pack Qty.	€
PH45.1	1	41,95

Rotilabo®-stand rings with opening

Made of stainless steel 18/10. Shaft ∅ 8 mm.

Technical specifications:

Type	Inner ∅ (mm)	Outer ∅ (mm)	Opening width (mm)	Overall length (mm)	Shaft length (mm)
①	50	68	35	220	160
②	70	87	50	280	200
③	100	120	70	330	220

Delivery without boss head.

Type	Art. No.	Pack Qty.	€
①	**CHN7.1**	1	20,75
②	**CHN8.1**	1	21,25
③	**CHN9.1**	1	23,45

Stand rings

Without sleeve
Made of galvanised steel. With three-point support. Rod ∅ 8 mm.

Innner ∅ (mm)	Outside ∅ (mm)	Art. No.	Pack Qty.	€
54	70	**2206.1**	1	10,35
84	100	**2210.1**	1	11,40
114	130	**2211.1**	1	13,90
130	146	**2262.1**	1	14,10

With sleeve
Made of galvanised steel, with three-point support.
Sleeve with nickel-plated brass screw. Rod ∅ 8 mm.

Innner ∅ (mm)	Outside ∅ (mm)	Art. No.	Pack Qty.	€
54	70	**2264.1**	1	16,35
84	100	**2265.1**	1	18,30
114	130	**2283.1**	1	19,25
130	146	**2336.1**	1	20,25

Rotilabo® stand rings, without sleeve

Without sleeve
Made of Remanit 4301 stainless steel. Electropolished.
Rod ∅ 8 mm.

Innner ∅ (mm)	Outside ∅ (mm)	Total length (mm)	Length of stem (mm)	Art. No.	Pack Qty.	€
50	65	210	150	**C882.1**	1	13,95
70	85	240	150	**C883.1**	1	15,60
100	115	255	145	**C884.1**	1	16,25
130	145	290	145	**C885.1**	1	18,75
160	175	330	155	**C886.1**	1	19,80

Rotilabo®-burette holders

Made of die-cast zinc, nickel-plated. For rods of max. ∅ 16 mm.
Clamping width 0-40 mm.

Design	Art. No.	Pack Qty.	€
For 1 burette	**2048.1**	1	23,65
For 2 burettes	**2129.1**	1	33,00

Tongs

Burette holders

Made of **PP**. With non-slip rubber grips and stainless steel springs.
With stand clamp for attaching to rods with ∅ 8-14 mm.
Burette stays fully readable.

Type	Art. No.	Pack Qty.	€
For 1 burette	**PY63.1**	1	24,25
For 2 burettes	**PY64.1**	1	30,80

Burette clamps

Made of die-cast aluminium, with roller support.
Clamping width: 0 to 20 mm.

Design	Art. No.	Pack Qty.	€
For 1 burette	**PH49.1**	1	26,35
For 2 burettes	**PH50.1**	1	34,95

Beaker tongs

Made of 18/10 stainless steel, Remanit 4301, with cork inserts.

∅ jaws (mm)	Length (mm)	Art. No.	Pack Qty.	€
30	200	**YP93.1**	1	21,10
40	220	**YP94.1**	1	21,35
50	250	**YP95.1**	1	21,95
60	300	**YP96.1**	1	22,90

Rotilabo®-beaker tongs

Made of 18/10 steel. Jaws covered with ceramic fibres.
For ∅ 60 to 150 mm. Length 330 mm.

Art. No.	Pack Qty.	€
6150.1	1	26,35

Rotilabo®-flask tongs

Made of 18/10 steel. Electropolished. With cork inserts.
For ∅ 15 to 60 mm. Length 230 mm.

Art. No.	Pack Qty.	€
6160.1	1	24,50

All-purpose holding forceps Hünebeck

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Jaws ribbed on inside for better grip. Length 195 mm. Autoclavable.

Art. No.	Pack Qty.	€
HCN7.1	1	47,85

All-purpose holding forceps

By Hammacher. Made of Remanit 4301 stainless steel. Inside serrated gripper jaws for better grip (production-related indentations do not influence the functionality). Autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
200	**YL66.1**	1	48,20
280	**YL67.1**	1	49,35

NEW

A 121 °C

Test tube holder

By Hammacher. Made of stainless steel (1.4301). Max. span 25 mm. Length 75 mm. Autoclavable.

Art. No.	Pack Qty.	€
KAT2.1	1	26,70

A 121 °C

Crucible forceps

By Hammacher. Made of Remanit 4301 stainless steel.
Double curved, with scissor action, notched on inside. Autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
200	**YL62.1**	1	18,85
250	**YL63.1**	1	19,15
400	**YL64.1**	1	24,20
600	**YL65.1**	1	28,50

Rotilabo®-flask tongs

Made of 18/8 stainless steel, plastic coated.

Span (mm)	Length (mm)	Art. No.	Pack Qty.	€
① 45-70	300	**X100.1**	1	18,25
② 17-60	220	**X101.1**	1	20,40

A 121 °C

Rotilabo®-tongs for crucibles

Bent twice. Made of Remanit 4301. Electropolished. Autoclavable.

Riveted

Length (mm)	Art. No.	Pack Qty.	€
200	**3214.1**	1	9,15
220	**3221.1**	1	9,65
250	**3228.1**	1	9,85
300	**3231.1**	1	10,05
400	**3232.1**	1	17,85
500	**3236.1**	1	17,85
600	**3237.1**	1	17,85

Screwed

Length (mm)	Art. No.	Pack Qty.	€
200	**3240.1**	1	18,25
220	**3241.1**	1	19,30
300	**3271.1**	1	20,25

Rotilabo®-beaker tongs

Made of 18/8 stainless steel. With PVC coating. Span width 40-100 mm. Length 250 mm.

Art. No.	Pack Qty.	€
X099.1	1	13,95

Rotilabo®-tongs

(Sodium tongs) stainless steel, L 350 mm, W 16 mm.

Art. No.	Pack Qty.	€
0065.1	1	17,15

Cell forceps

By Hammacher. Made of Remanit 4301 stainless steel. Length 550 mm.

Art. No.	Pack Qty.	€
YL61.1	1	47,10

Universal spring clamps

Made of **PA**. For powerful clamping with constant tension force.
With ergonomic, antislip handle and flexible, movable soft pads.
Excellent for sensitive materials such as glass plates, wood and plastics.
Extremely light and handy, but with highest stability.

Total length (mm)	Span (mm)	Art. No.	Pack Qty.	€
60	20	**LK35.1**	1	4,70
90	34	**LK36.1**	1	5,35
120	44	**LK37.1**	1	8,10
160	60	**LK38.1**	1	11,45

A 121 °C

Rotilabo®-mercury tongs

Made of 18/10 stainless steel. Length 220 cm, weight 140 g. Autoclavable.

Art. No.	Pack Qty.	€
1551.1	1	17,85

Rotilabo®-clips

Made of spring steel. For DC plates, x-ray films, sheets of paper, etc.
Can be hung up.

Width (mm)	Span (mm)	Art. No.	Pack Qty.	€
19	7	**ACY9.1**	12	5,05
25	10	**0826.1**	12	5,85
41	18	**0827.1**	6	7,50
51	28	**0850.1**	6	11,75

Rotilabo®-tube tongs

Manufactured from die-cast zinc, nickel-plated. With plastic-coated handle.
Width of bit 55 mm.

Art. No.	Pack Qty.	€
X102.1	1	32,15

▶ Universal clamps see p. 771

Weighting rings

Rotilabo®-weights and stabilizing rings

With heavy metal core and vinyl coating. Suitable for stabilizing flasks and Erlenmeyer flasks in water baths and during stirring.

Closed form

Innner ∅ (mm)	for Erlenmeyer flasks (ml)	Weight (g)	Art. No.	Pack Qty.	€
48	125-500	270	**CY71.1**	1	32,20
51	250-1000	500	**CY72.1**	1	35,35
57	500-2000	700	**CY73.1**	1	41,40
70	1000-4000	840	**CY74.1**	1	44,65

Open form

Innner ∅ (mm)	for Erlenmeyer flasks (ml)	Weight (g)	Art. No.	Pack Qty.	€
42	125-500	200	**CY81.1**	1	36,05
51	250-1000	480	**CY82.1**	1	40,75
54	500-2000	660	**CY83.1**	1	47,95
66	1000-4000	930	**CY84.1**	1	51,85

Rotilabo®-weighting rings

Open. Heavy lead core covered with PVC. Prevent floating or tipping of Erlenmeyer and measuring flasks, etc. in waterbaths.

for Erlenmeyer flasks (ml)	Innner ∅ (mm)	Weight (g)	Colour	Art. No.	Pack Qty.	€
-	20	95	orange	**L075.1**	1	37,65
25	35	240	red	**L076.1**	1	52,15
50-250	50	650	orange	**L077.1**	1	62,35
200-500	70	900	red	**L078.1**	1	67,65
750-1500	100	1200	blue	**L079.1**	1	75,15
2000	150	1750	orange	**L080.1**	1	96,25

Rotilabo®-supports for beakers and flasks

Beakers or flasks are supported by 4 stainless steel clamps, then placed upright on a vinyl-coated lead ring. Ideal in waterbaths, circulation thermostats, etc. as water can circulate under the glass.

∅ (mm)	For cylinder (ml)	Weight (g)	Art. No.	Pack Qty.	€
80	250	237	**K989.1**	1	140,85

Rotilabo®-stabilizing collars

For bottles, beakers, vacuum bottles, flasks, etc.

- Metal core with PVC coating
- Pliable, can be opened and closed
- Protect vessels from falling and support them in an upright position

For containers ∅ (mm)	Weight (g)	Colour	Art. No.	Pack Qty.	€
45-65	240	red	**L082.1**	1	53,25
55-80	460	orange	**L083.1**	1	61,30
65-100	600	red	**L084.1**	1	65,05
85-125	750	blue	**L085.1**	1	79,15

▶ For ultrasonic compact baths see p. 1126

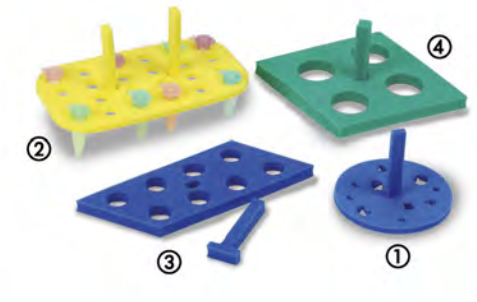
▶ Glass beakers and erlenmeyer flasks see p. 10

Floating racks

Rotilabo®-multi-purpose holders

Made of **PP**. Ideal for attaching or clamping probes, tubes, thermometers to beakers or Erlenmeyer flasks. White holder has additional opening. Autoclavable.

Colour	∅ of openings (mm)	L x W (mm)	Art. No.	Pack Qty.	€
orange	11, 9, 7	70 x 15	**C533.1**	5	17,15
white	11, 9, 7/6	100 x 15	**C534.1**	5	42,70
green	15, 12, 10	85 x 22	**C535.1**	5	23,20



Rotilabo®-floating racks

Made of foam **HDPE**. Excellent for tempering centrifuge and micro-centrifuge tubes in water baths. With handle for easier immersion and removal. The racks float fully loaded on the surface, the tubes however, remain immersed in water.

Model	①	②	③	④
for tubes	0.2/0.5/1.5/2.0 ml	1.5/2 ml	15 ml	50 ml
Number of holes	18	24	8	4
L x W x H (mm)	round, ∅ 82 x H 60	150 x 82 x 69	130 x 59 x 65	105 x 105 x 65
Colour	blue	yellow	blue	green

Type	Art. No.	Pack Qty.	€
①	**LP92.1**	5	17,15
②	**P199.1**	5	17,10
③	**P200.1**	5	17,10
④	**P201.1**	5	17,10

▶ Microcentrifuge tube see page 490

Microcentrifuge tube racks

By Nalgene®. Made of **PP**, ideal for temperature control of centrifuge tubes, size 0.5 to 2.0 ml in water bath tubs. Racks float fully loaded on the water´s surface. Microcentrifuge tubes are fixed into rack and cannot float away. With handle for inserting and removing. Temperature stable from -70 to +100 °C. Autoclavable.

Design	Dimensions (mm)	Slots	Art. No.	Pack Qty.	€
round	∅ 66	8	**E072.1**	1	10,25
round	∅ 96	20	**E073.1**	1	10,25
square	103 x 103	(4 x 4)	**E075.1**	1	10,25

Cryo floating stands

Made of foam **PE**. Ideal for keeping temperature of samples in PCR-tubes or 8 port strips. Loaded stands still float, and tubes remain fixed in the stand. Borehole ∅ 5 mm, temperature stable from -80 to +80 °C.

Type	For containers	Slots	L x W x H (mm)	Art. No.	Pack Qty.	€
round	Single tubes	10	∅ 70 x 8,5	**LH39.1**	10	14,55
square	8-port strips	4 x 8	80 x 80 x 8,5	**LH40.1**	10	24,65

▶ For dewar containers and ice containers see page 255

Stands for vials and micro inserts

Rotilabo®-storage boxes

Made of **PP**. For autosamplervials or other vials with suitable dimensions. With transparent lid. Stackable.
Heat resistant from -80 to +100 °C. Autoclavable.

① **For 1.5 ml autosamplervials:**
81 slots, hole ∅ 12 mm. With alphanumeric coding on all four side edges and in base cavities.
Outer dimensions: L 130 x W 130 x H 45 mm.

Colour	Art. No.	Pack Qty.	€
pink	**TY99.1**	1	21,25
yellow	**XA00.1**	1	21,25
orange	**XA01.1**	1	21,25
blue	**XA02.1**	1	21,25
green	**XA03.1**	1	21,25
transparent	**XA04.1**	1	21,25

② **For 4 ml autosamplervials:**
49 slots, hole ∅ 15 mm. With alphanumeric coding on all four side edges and in base cavities.
Outer dimensions: L 130 x W 130 x H 52 mm.

Colour	Art. No.	Pack Qty.	€
red	**XA05.1**	1	26,10

③ **For 5, 10 and 20 ml headspace vials:**
25 slots, 25 x 25 mm.
Outer dimensions: L 130 x W 130 x H 102 mm.

Colour	Art. No.	Pack Qty.	€
blue	**XA06.1**	1	30,85

③ **For 20 ml EPA screw top vials:**
16 slots, 30 x 30 mm.
Outer dimensions: L 130 x W 130 x H 70 mm.

Colour	Art. No.	Pack Qty.	€
violet	**XA07.1**	1	30,85

④ **For 30 ml and 40 ml EPA screw top vials:**
10 slots, ∅ 30 mm.
Outer dimensions: L 130 x W 130 x H 105 mm.

Colour	Art. No.	Pack Qty.	€
violet	**XA08.1**	1	36,20

Storing box with lid

Made of **PP**, with insert for 96 vials to max. ∅ 12 mm.
Dimensions: L 172.5 x W 116.5 x H 40.5 mm. Autoclavable.

Art. No.	Pack Qty.	€
A618.1	1	11,00

Rotilabo®-stands for vials and micro inserts

Made of **acrylic**. Transparent material allows easy checking of the filling level of the vials in the stand. With silicon feet for stability and stackability.
Stand for micro inserts and vials in sizes from ND8 to ND11 (Art. no. TY95.1 and TY96.1) can also hold tapered base vials.

For auto-sampler vials	Hole ∅ (mm)	Slots	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
Micro inserts	8,5/3	5 x 10	173 x 95 x 20	**TY95.1**	1	70,00
ND8 to ND11	12	5 x 10	173 x 95 x 20	**TY96.1**	1	76,15
ND13	15,1	5 x 8	176 x 116 x 20	**TY97.1**	1	77,85
ND18, ND20 (up to 20 ml)	24	5 x 5	160 x 160 x 30	**TY98.1**	1	89,05

Racks for 5-8 ml sample vials

Made of **PP**. For 150 vials up to ∅ max. 17 mm. Suitable for the storage and transportation of glass bottles, vials and reaction vials.
Dimensions: L 324 x W 210 x H 48 mm. Autoclavable.

Art. No.	Pack Qty.	€
CXP5.1	1	70,90

Sample vial holders

Made of hardwood. L 257 x W 47 x H 24 mm. Bore hole ∅ 11 mm.

Art. No.	Pack Qty.	€
0403.1	1	16,40

▶ Sampling vials see page 78

Stands for vials and micro inserts

Racks for incubation test tubes

Made of **PP**, with handles. For incubation of small test tubes, serum / RIA test tubes and T3/T4 reaction vials. Suitable for most water baths.
Height of second level: 41 mm.
Temperature stable from -80 up to max. +121 °C. Autoclavable.

For test tube ∅ (mm)	Slots	L x W x H (mm)	Art. No.	Pack Qty.	€
10-13	72	238 x 111 x 89	**YC06.1**	1	46,15
13-16	40	254 x 111 x 89	**YC07.1**	1	43,55
16-20	40	254 x 111 x 89	**YC08.1**	1	44,65

Rack for scintillation tubes

Made of **PP**, with 24 holes in 3 x 8 array. Hole-∅ 30 mm.
Ideal for storing, transporting or as a rack on the laboratory bench.
Dimensions: L 298 x W 127 x H 95 mm. Height to intermediate shelf 44 mm.
Autoclavable.

Art. No.	Pack Qty.	€
K993.1	1	51,60

Rotilabo®-PTFE racks for test tubes

Made of **PTFE**. Bottom dimensions L 180 x B 60 mm.
Chemically inert, temperature stable from - 200 to +250 °C. Autoclavable.

Hole ∅ (mm)	Slots	Height (mm)	Art. No.	Pack Qty.	€
8	27 (3 x 9)	45	**NY05.1**	1	71,95
19	10 (2 x 5)	70	**NY07.1**	1	71,95
30	4 (1 x 4)	80	**NY08.1**	1	71,95

Rack for sample vials

Made of **acrylic**, with 30 slots, hole ∅ 24 mm.
Transparent base for easy reading of labels.
Dimensions: L 330 x W 110 x H 22 mm.

Art. No.	Pack Qty.	€
YC05.1	1	116,10

Racks for sample vials

Made of **PP**. For 12 vials up to ∅ max. 32 mm. Suitable for the storage and transportation of glass bottles, vials and sample tubs.
Dimensions: L 267 x W 102 x H 53 mm. Autoclavable.

Art. No.	Pack Qty.	€
CXP7.1	1	35,40

Test tube racks

A 121 °C

Racks for test tubes and tubs

Made of epoxy-coated steel. Temperature stable up to 121 °C. Autoclavable.

Compartment size (mm)	Slots	L x W x H (mm)	Art. No.	Pack Qty.	€
24	12 (2 x 6)	164 x 64 x 32	**AXE5.1**	1	20,35
24	50 (5 x 10)	271 x 145 x 32	**AXE6.1**	1	34,10
33	12 (2 x 6)	212 x 80 x 60	**AXE7.1**	1	20,35
33	50 (5 x 10)	355 x 189 x 60	**AXE8.1**	1	33,35
58	24 (6 x 4)	393 x 262 x 50	**AXE9.1**	1	56,45

A 121 °C

Test tube and drying racks

By Nalgene®. Made of reinforced **PP**. Provides a secure hold for sample vials and centrifuge tubes, e.g. when used to secure sample while shaking. Racks allow full view of tube contents and do not float in water bath. Also excellent as drying rack for tubes, electrophoresis and chromatography plates. Autoclavable.

Colour	For test tube ∅ (mm)	Slots	L x W x H (mm)	Art. No.	Pack Qty.	€
white	10-13	96 (8x12)	179 x 127 x 64	**E088.1**	1	16,05
blue	10-13	96 (8x12)	179 x 127 x 64	**E091.1**	1	16,05
white	14-17	50 (5x10)	187 x 105 x 70	**E094.1**	1	17,15
blue	14-17	50 (5x10)	187 x 105 x 70	**E097.1**	1	17,15

▶ Test tubes see page 80

A 121 °C

Rack for NMR-test tubes

Made of **PP**. With 72 slots and 2 side handles for easy transportation. Stability is provided by hemispherical holes in the lower level. For NMR test tubes L 178 mm, outer ∅ 5 mm. Dimensions: L 210 x W 110 x H 220 mm. Autoclavable.

Art. No.	Pack Qty.	€
YA94.1	1	60,95

▶ NMR-Vials an scintillation tubes see page 74

Rotilabo®-test tube trays

Made from foam **PS**. Ideal for a large number of centrifuge tubes or test tubes. Holes are deep enough to keep test tubes, vials, etc. stable. Stackable. Extremely light. With finger recesses for easy lifting. K828.1 is ideal for 1.5 ml vials. Dimensions: L 218 x W 218 x H 33 mm.

Hole ∅ (mm)	Depth of holes (mm)	No. of holes	Art. No.	Pack Qty.	€
8,5	15	250	**K828.1**	5	28,95
14,5	18	119	**K829.1**	5	28,95
16,5	22	96	**K830.1**	5	28,95

Test tube racks

Test tube racks

By Nalgene®. Made of **Resmer®**. Moulded in one piece with 3 tiers. Easy viewing of contents. With alphanumeric marking on the top and a large labelling area on the front side. Do not float in water baths, stackable. Temperature stable from -70 to +121 °C. Autoclavable.

For tubes ∅ 13 mm, compartment size 14 x 14 mm

Colour	Slots	L x W x H outer (mm)	Art. No.	Pack Qty.	€
white	36 (6 x 6)	102 x 102 x 56	**H529.1**	1	17,10
blue	36 (6 x 6)	102 x 102 x 56	**H530.1**	1	17,10
red	36 (6 x 6)	102 x 102 x 56	**H532.1**	1	17,10
white	72 (6 x 12)	200 x 100 x 57	**7390.1**	1	25,75
orange	72 (6 x 12)	200 x 100 x 57	**7391.1**	1	25,75
yellow	72 (6 x 12)	200 x 100 x 57	**7392.1**	1	25,75
blue	72 (6 x 12)	200 x 100 x 57	**7393.1**	1	25,75
green	72 (6 x 12)	200 x 100 x 57	**7394.1**	1	25,75
red	72 (6 x 12)	200 x 100 x 57	**H524.1**	1	23,90

For tubes ∅ 16 mm, compartment size 18 x 18 mm

Colour	Slots	L x W x H outer (mm)	Art. No.	Pack Qty.	€
white	36 (6 x 6)	126 x 126 x 68	**H533.1**	1	19,25
blue	36 (6 x 6)	126 x 126 x 68	**H534.1**	1	19,25
green	36 (6 x 6)	126 x 126 x 68	**H535.1**	1	19,25
red	36 (6 x 6)	126 x 126 x 68	**H536.1**	1	19,25
white	72 (6 x 12)	250 x 130 x 70	**7395.1**	1	25,75
orange	72 (6 x 12)	250 x 130 x 70	**7401.1**	1	25,75
yellow	72 (6 x 12)	250 x 130 x 70	**7407.1**	1	25,75
blue	72 (6 x 12)	250 x 130 x 70	**7431.1**	1	25,75
green	72 (6 x 12)	250 x 130 x 70	**7435.1**	1	25,75
red	72 (6 x 12)	250 x 130 x 70	**H525.1**	1	23,90

For tubes ∅ 20 mm, compartment size 22 x 22 mm

Colour	Slots	L x W x H outer (mm)	Art. No.	Pack Qty.	€
white	20 (4 x 5)	128 x 103 x 83	**H537.1**	1	19,25
blue	20 (4 x 5)	128 x 103 x 83	**H538.1**	1	19,25
green	20 (4 x 5)	128 x 103 x 83	**H539.1**	1	19,25
red	20 (4 x 5)	128 x 103 x 83	**H540.1**	1	19,25
white	40 (4 x 10)	250 x 100 x 83	**7438.1**	1	25,75
orange	40 (4 x 10)	250 x 100 x 83	**7441.1**	1	25,75
yellow	40 (4 x 10)	250 x 100 x 83	**7475.1**	1	25,75
blue	40 (4 x 10)	250 x 100 x 83	**7477.1**	1	25,75
green	40 (4 x 10)	250 x 100 x 83	**7478.1**	1	25,75
red	40 (4 x 10)	250 x 100 x 83	**H526.1**	1	23,90

For tubes ∅ 25 mm, compartment size 26 x 26 mm

Colour	Slots	L x W x H outer (mm)	Art. No.	Pack Qty.	€
white	16 (4 x 4)	122 x 122 x 75	**H541.1**	1	19,25
blue	16 (4 x 4)	122 x 122 x 75	**H542.1**	1	19,25
white	40 (4 x 10)	300 x 120 x 92	**7479.1**	1	25,75
orange	40 (4 x 10)	300 x 120 x 92	**7484.1**	1	25,75
yellow	40 (4 x 10)	300 x 120 x 92	**7487.1**	1	25,75
blue	40 (4 x 10)	300 x 120 x 92	**7488.1**	1	25,75
green	40 (4 x 10)	300 x 120 x 92	**7489.1**	1	25,75
red	40 (4 x 10)	300 x 120 x 92	**H527.1**	1	26,85

For tubes ∅ 30 mm, compartment size 32 x 32 mm

Colour	Slots	L x W x H outer (mm)	Art. No.	Pack Qty.	€
white	9 (3 x 3)	109 x 109 x 84	**H543.1**	1	19,25
blue	9 (3 x 3)	109 x 109 x 84	**H544.1**	1	19,25
green	9 (3 x 3)	109 x 109 x 84	**H545.1**	1	19,25
red	9 (3 x 3)	109 x 109 x 84	**H546.1**	1	19,25
white	24 (3 x 8)	285 x 110 x 83	**7492.1**	1	25,75
orange	24 (3 x 8)	285 x 110 x 83	**7493.1**	1	25,75
yellow	24 (3 x 8)	285 x 110 x 83	**7495.1**	1	25,75
blue	24 (3 x 8)	285 x 110 x 83	**7497.1**	1	25,75
green	24 (3 x 8)	285 x 110 x 83	**7508.1**	1	25,75
red	24 (3 x 8)	285 x 110 x 83	**H528.1**	1	26,85

Universal test tube racks

Made of **PP**. Does not float in water. Alphanumerically coded holes for up to 90 test tubes. Temperature stable from -10 to +120 °C. Autoclavable.

For tubes ∅ 13 mm, compartment size 13 x 13 mm

Colour	Slots	L x W x H outer (mm)	Art. No.	Pack Qty.	€
white	90 (6 x 15)	250 x 105 x 60	**4279.1**	1	11,80
red	90 (6 x 15)	250 x 105 x 60	**4283.1**	1	11,80
blue	90 (6 x 15)	250 x 105 x 60	**4287.1**	1	11,80
yellow	90 (6 x 15)	250 x 105 x 60	**4288.1**	1	11,80

For tubes ∅ 16 mm, compartment size 16 x 16 mm

Colour	Slots	L x W x H outer (mm)	Art. No.	Pack Qty.	€
white	60 (5 x 12)	250 x 105 x 70	**4299.1**	1	11,80
red	60 (5 x 12)	250 x 105 x 70	**4327.1**	1	11,80
blue	60 (5 x 12)	250 x 105 x 70	**4367.1**	1	11,80
yellow	60 (5 x 12)	250 x 105 x 70	**4383.1**	1	11,80

For tubes ∅ 20 mm, compartment size 21 x 21 mm

Colour	Slots	L x W x H outer (mm)	Art. No.	Pack Qty.	€
white	40 (4 x 10)	250 x 105 x 70	**4388.1**	1	11,80
red	40 (4 x 10)	250 x 105 x 70	**4398.1**	1	11,80
blue	40 (4 x 10)	250 x 105 x 70	**4399.1**	1	11,80
yellow	40 (4 x 10)	250 x 105 x 70	**4430.1**	1	11,80

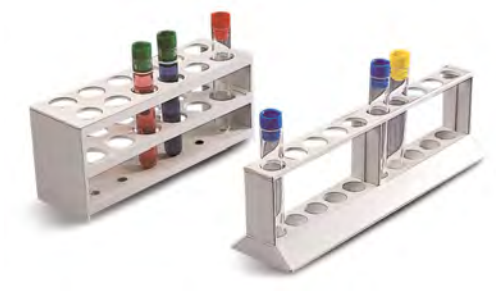
For tubes ∅ 25 mm, compartment size 26 x 26 mm

Colour	Slots	L x W x H outer (mm)	Art. No.	Pack Qty.	€
white	40 (4 x 10)	300 x 125 x 85	**4448.1**	1	11,80
red	40 (4 x 10)	300 x 125 x 85	**4449.1**	1	11,80
blue	40 (4 x 10)	300 x 125 x 85	**4450.1**	1	11,80
yellow	40 (4 x 10)	300 x 125 x 85	**4466.1**	1	11,80

For tubes ∅ 30 mm, compartment size 31 x 31 mm

Colour	Slots	L x W x H outer (mm)	Art. No.	Pack Qty.	€
white	24 (3 x 8)	300 x 110 x 85	**K833.1**	1	17,00
red	24 (3 x 8)	300 x 110 x 85	**K834.1**	1	17,00
blue	24 (3 x 8)	300 x 110 x 85	**K835.1**	1	17,00
yellow	24 (3 x 8)	300 x 110 x 85	**K836.1**	1	17,00

Test tube racks

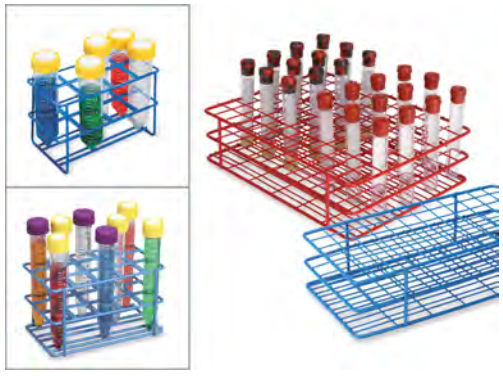


A 121 °C

Test tube stands with several tiers

Made of **PP**. Temperature stable up to 120 °C, autoclavable.

Slots	Hole ∅ (mm)	Tiers	L x W x H (mm)	Art. No.	Pack Qty.	€
10	18	2	250 x 60 x 74	**EPA9.1**	1	8,35
12	12	3	190 x 60 x 80	**EPC0.1**	1	9,30
12	20	3	190 x 60 x 80	**EPC1.1**	1	9,30
24	20	3	375 x 65 x 95	**EPC2.1**	1	17,40



A 121 °C

Racks for test tubes

Made of epoxy-coated steel. Temperature stable up to 121 °C. Autoclavable.

For test tube ∅ (mm)	Slots	L x W x H (mm)	Colour	Art. No.	Pack Qty.	€
13	72 (6 x 12)	205 x 105 x 65	blue	**AXH0.1**	1	31,85
13	108 (9 x 12)	205 x 162 x 65	red	**AXH1.1**	1	31,85
16	72 (6 x 12)	241 x 127 x 65	blue	**AXH2.1**	1	31,10
16	108 (9 x 12)	237 x 188 x 65	red	**AXH3.1**	1	31,10
18	15 (3 x 5)	127 x 76 x 76	blue	**AXH4.1**	1	32,05
30	8 (2 x 4)	147 x 80 x 89	blue	**AXH5.1**	1	32,15

A 121 °C

Rotilabo®-test tube rack

Made of stainless steel 18/10 (material 1.4301), electrolytically polished. With four feet, floor clearance 14 mm.
Dimensions: L 200 x W 200 x H 70 mm. Autoclavable.

For container ∅ (mm)	Slots	Compartment size (mm)	Art. No.	Pack Qty.	€
16	100 (10 x 10)	18 x 18	**ENX9.1**	1	39,75

Rotilabo®-test tube racks

Made of clear acrylic glass.

Hole ∅ 11 mm, bottom plate with bore holes (hole ∅ 6 mm).

Slots	L x W x H outer (mm)	Art. No.	Pack Qty.	€
6 x 2	135 x 42 x 35	**5427.1**	1	64,45
12 x 2	255 x 42 x 35	**5453.1**	1	75,20
12 x 4	255 x 82 x 35	**5457.1**	1	104,10

Hole ∅ 18 mm, bottom plate with bore holes (hole ∅ 14 mm).

Slots	L x W x H outer (mm)	Art. No.	Pack Qty.	€
6	165 x 55 x 75	**CPT9.1**	1	17,80
6 x 2	186 x 60 x 80	**5119.1**	1	64,45
8 x 3	220 x 80 x 79	**CPX0.1**	1	48,05
11 x 3	310 x 80 x 80	**CPX1.1**	1	60,85

Hole ∅ 36 mm, smooth bottom plate.

Slots	L x W x H outer (mm)	Art. No.	Pack Qty.	€
6 x 2	275 x 100 x 80	**5416.1**	1	92,45

Rotilabo®-test tube racks

Made of **steel and polyamide coating**, height 70 mm.

Slots	L x W (mm)	Compartment size (mm)	Art. No.	Pack Qty.	€
2 x 6	130 x 50	18 x 18	**L385.1**	1	15,35
2 x 10	210 x 50	18 x 18	**L386.1**	1	17,95
2 x 12	250 x 50	18 x 18	**L387.1**	1	18,60
3 x 12	250 x 70	18 x 18	**L388.1**	1	20,20
4 x 6	130 x 90	18 x 18	**L389.1**	1	19,05
4 x 12	250 x 90	18 x 18	**L390.1**	1	21,40
10 x 10	210 x 210	18 x 18	**L391.1**	1	28,85

Made of **stainless steel**, height 70 mm, autoclavable.

Slots	L x W (mm)	Compartment size (mm)	Art. No.	Pack Qty.	€
2 x 6	101 x 44	14 x 14	**H439.1**	1	39,60
2 x 12	197 x 44	14 x 14	**H440.1**	1	46,80
4 x 12	197 x 76	14 x 14	**H441.1**	1	48,30
2 x 6	130 x 50	18 x 18	**H442.1**	1	30,05
2 x 12	250 x 50	18 x 18	**H443.1**	1	42,95
4 x 12	250 x 90	18 x 18	**H444.1**	1	40,75

▶ For autoclaving information see page 5

Test tube racks

A 121 °C

Test tube racks

Made of stainless steel 18/10. Autoclavable.

Slots	Hole ∅ (mm)	L x W x H (mm)	Art. No.	Pack Qty.	€
2 x 6	17	145 x 52 x 90	**PH51.1**	1	37,60
2 x 12	17	278 x 52 x 90	**PH52.1**	1	41,15
4 x 12	17	287 x 97 x 90	**PH53.1**	1	70,50
2 x 6	20	164 x 60 x 90	**PH54.1**	1	47,00
2 x 12	20	310 x 60 x 90	**PH55.1**	1	60,80

A 121 °C

Rotilabo®-test tube racks, round

Made of 18/10 stainless steel. Hole-∅ 20 mm.
Height (without handle) 165 mm. Autoclavable.

∅ (mm)	Slots	Art. No.	Pack Qty.	€
98	9	**YT05.1**	1	59,15
116	12	**YT06.1**	1	84,85
194	45	**YT07.1**	1	98,40

A 121 °C

Rotilabo®-test tube racks

Made of stainless steel Remanit 4301. Stackable. Autoclavable.

Slots	Hole ∅ (mm)	L x W x H (mm)	Art. No.	Pack Qty.	€
50	12,5	155 x 78 x 50	**X115.1**	1	26,45
50	14,5	188 x 95 x 58	**X116.1**	1	29,60
25	17,5	110 x 110 x 40	**PX26.1**	1	24,10
50	17,5	220 x 115 x 63	**X117.1**	1	34,30
15	30	220 x 115 x 63	**PX27.1**	1	30,00

▶ Autoclaving informations on page 5

Test tube racks, wood

Made of beechwood, varnished. For test tubes with a min. height of 100 mm (Art. No. AEE3.1 for test tubes with a min. height of 160 mm).
Optionally available with draining pegs for drying test tubes after cleaning.

Single level

For glass ∅ (mm)	Slots	Draining pegs	L x W x H (mm)	Art. No.	Pack Qty.	€
18	6	without	210 x 55 x 120	**AEE0.1**	1	10,55
18	6	6	210 x 55 x 120	**AEE1.1**	1	12,10
22	6	without	230 x 55 x 120	**AEE2.1**	1	11,10
30	6	Without	270 x 55 x 180	**AEE3.1**	1	13,90

Two levels for simple storage of test tubes

For glass ∅ (mm)	Slots	Draining pegs	L x W x H (mm)	Art. No.	Pack Qty.	€
18	12	Without	210 x 55 x 200	**AEE4.1**	1	13,15
18	12	6	210 x 55 x 200	**AEE5.1**	1	15,60
18	24	Without	370 x 55 x 200	**AEE8.1**	1	16,80
22	12	6	230 x 75 x 200	**AEH0.1**	1	15,60

Test tube racks, extra large

Made of **PP**. For applications involving high sample throughput.
With alphanumeric coding

For vials ∅ 10-13 mm

Colour	Slots	L x W x H (mm)	Art. No.	Pack Qty.	€
white	216	327 x 267 x 91	**TP51.1**	1	39,70
blue	216	327 x 267 x 91	**TP50.1**	1	39,70

For vials ∅ 13-16 mm

Colour	Slots	L x W x H (mm)	Art. No.	Pack Qty.	€
white	120	327 x 267 x 91	**TP54.1**	1	39,70
blue	120	327 x 267 x 91	**TP55.1**	1	39,70

Combined test tube racks and grid inserts

Made of **POM**. Versatile frame racks with interchangeable grid inserts.
- Grid inserts in 5 colours for different test tube sizes
- 2 different test tube sizes are possible per rack
- Fast replacement of individual grids
- 3 levels for stability
- Slip-resistant rubber feet
- Stackable

Dimensions: L 318 x W 111 x H 67 mm. Temperature stable from -80 to +121 °C. Autoclavable.

Delivery incl. frame rack and a set of 4 grids.

Colour	For test tube ∅ (mm)	Slots	Art. No.	Pack Qty.	€
orange	10-13	84 (14 x 6)	**YA95.1**	1	27,00
blue	13-16	60 (12 x 5)	**YA96.1**	1	27,00
green	16-20	40 (10 x 4)	**YA97.1**	1	27,00
pink	20-25	24 (8 x 3)	**YA98.1**	1	27,00
yellow	25-30	12 (6 x 2)	**YA99.1**	1	26,90

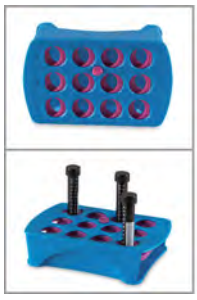
Accessories:

Grid inserts for test tubes ∅ 10-13 mm, 84 slots, orange	**YC00.1**	4	9,35
Grid inserts for test tubes ∅ 13-16 mm, 60 slots, blue	**YC01.1**	4	9,35
Grid inserts for test tubes ∅ 16-20 mm, 40 slots, green	**YC02.1**	4	9,35
Grid inserts for test tubes ∅ 20-25 mm, 24 slots, pink	**YC03.1**	4	9,35
Grid inserts for test tubes ∅ 25-30 mm, 12 slots, yellow	**YC04.1**	4	9,35

Slanted racks

By Nalgene®. Made of white **PC**, for simple and speedy preparation of angular agar with two different inclination angles.
The side supports on the rack enable on the one side the preparation of a culture medium with a 5° angle of inclination, i.e. with a steep slope and therefore with a larger surface, e.g. for aerobic cultures, and on the other side with a 20° inclination angle, i.e. with a flat slope and smaller surface, e.g. for anaerobic cultures. The 20° angle helps prevent the drying out of nutrient media during long-term storage.
Also excellent for incubating liquid tissue cultures and for use in water baths - do not float. Nutrient media tubes can be autoclaved in rack in a vertical position. With 40 alphanumerically marked holes (4x10).
Dimensions: L 285 x W 115 mm.

For test tubes	Hole ∅ (mm)	Art. No.	Pack Qty.	€
∅ 15-16 mm	17	**E100.1**	1	60,20
∅ 20 mm	20	**E101.1**	1	60,20



Universal rack for test tubes

Made of **PP**. With 12 variable-size slots, for test tube ∅ 16-30 mm.
Slots can be opened by inserting the vessels or by turning a knob.
Dimensions: L 194 x W 140 x H 51 mm.

Art. No.	Pack Qty.	€
NY31.1	1	47,10

Pop-Up™ racks

Made of **PP**. For centrifuge tubes 15 and/or 50 ml. Folds up to save storage space. Easy to unfold for quick access. Numbered slots for identification of samples. Robust design. Dimensions: L 255 x W 137 x H 72 mm, folded H 21 mm.

for centrifuge tubes	Holes	Colour	Art. No.	Pack Qty.	€
15/50 ml	21 x ∅ 17 mm / 12 x ∅ 30 mm	blue	**PC54.1**	2	32,05
15/50 ml	21 x ∅ 17 mm / 12 x ∅ 30 mm	pink	**PC55.1**	2	32,05
15 ml	45 x ∅ 17 mm	violet	**TP22.1**	2	32,20
50 ml	18 x ∅ 30 mm	green	**TP23.1**	2	32,20

Programme extension!

❄❄ A 121 °C

Rotilabo®-combi racks 4 in 1, oblong shape

Made of **PP**. Space saving and ideal for use on the laboratory bench, under a hood, in the water bath and freezer (max. -90 °C).
For centriguge tubes, test tubes, microcentrifuge tubes, PCR-tubes.
Dimensions: L 174 x W 95 x H 52 mm. Autoclavable.
Four different side can be fitted:

- Bore holes-∅ 30 mm - 4 centrifuge tubes 50 ml
- Bore holes-∅ 17.5 mm - 12 centrifuge tubes 15 ml
- Bore holes-∅ 11.6 mm - 32 centrifuge tubes 1.5/2 ml
- Bore holes-∅ 8.2 mm - 32 centrifuge tubes 0.5/ml

Colour	Art. No.	Pack Qty.	€
natural	**HYN6.1**	5	36,15
neon blue	**K082.1**	1	17,45
neon green	**K083.1**	1	17,45
neon orange	**K084.1**	1	17,45
neon pink	**K085.1**	1	17,45
neon yellow	**K086.1**	1	17,45
sorted (blue, green, orange, pink, yellow)	**HYN7.1**	5	36,15

Single stand for 50 ml centrifuge tubes

For tube ∅ 27.5 to 29 mm, with conical or round base.

① Made of **PS**, ∅ 92 x H 30 mm.

Art. No.	Pack Qty.	€
TP29.1	5	22,60

② Made of epoxy-coated steel, autoclavable.
Dimensions: L 90 x W 67 x H 67 mm.

Art. No.	Pack Qty.	€
TP30.1	1	16,10

- For autoclaving information see page 5
- Centrifuge tubes see page 85
- Microcentrifuge tubes see page 490

Combi reaction vial stands

Pipetting station, individually combinable. For reaction vials, centrifuge tubes or reagent reservoirs.

- Vials are readily visible due to cascaded design
- Inserts also suitable for use on laboratory bench or ice bath
- Dimensions of a single white station: L 260 x W 135 x H 90 mm
- Red holders allow assembly to form a combination station

Inserts temperature stable from -90 to +121 °C, autoclavable.

Type	Art. No.	Pack Qty.	€
Set (2 stations, 6 inserts for 1.5 ml vials, 2 inserts each for 0.5 ml vials and centrifuge tubes 15 and 50 ml, 2 holders	**EKN9.1**	1	49,80
Station (white) incl. holders, without inserts	**EKP0.1**	2	28,00
Holders (red)	**EKP1.1**	6	16,50
Inserts for 12 x 0.5 ml reaction vials (red)	**EKP2.1**	5	10,50
Inserts for 12 x 1.5 ml reaction vials (violet)	**EKP3.1**	5	10,50
Inserts for 7 x 0.5 ml reaction vials (green)	**EKP4.1**	5	10,50
Inserts for 4 x 0.5 ml reaction vials (blue)	**EKP5.1**	5	10,50
Inserts for 3 x 50 ml reaction vials (orange)	**EKP6.1**	5	10,50
Inserts for 36 x 0.2 ml PCR tubes (yellow)	**EKP7.1**	5	10,50
Reagent reservoir insert, 25 ml	**EKP8.1**	50	29,50

Multi Tube racks

Made of **POM**. 4 flexible slots for variable use, fits tube ∅ 12 to 30 mm. Interconnectable. Dimensions: L 181 x W 56 x H 76 mm. Autoclavable.

Colour	Art. No.	Pack Qty.	€
blue/green	**AXH9.1**	2	13,45
blue/yellow	**AXK0.1**	2	13,45
blue	**AXK1.1**	2	13,45
green	**AXK2.1**	2	13,45
yellow	**AXK3.1**	2	13,45
white	**AXK4.1**	2	13,45
pink	**AXK5.1**	2	13,45

Rotilabo®-combi racks 4 in 1, cubical shape

Made of **PP**. Can be fitted together on the open sides any way you like. For centrifuge vials, test tubes and centrifuge tubes. Autoclavable.
Dimensions: L 108 x W 108 x H 108 mm.
With four different insertion sides:

- Bore holes-∅ 30 mm - 4 centrifuge vials 50 ml
- Bore holes-∅ 17 mm - 10 centrifuge vials 15 ml
- Bore holes-∅ 13 mm - 12 test tubes ∅ 12 x L 75/100 mm
- Bore holes-∅ 12 mm - 16 centrifuge tubes 1.5/2 ml

Colour	Art. No.	Pack Qty.	€
sorted (blue, yellow, green, orange, pink)	**AK71.1**	5	46,25

Rotilabo®-racks, revolving

Made of **PP**. Four colored models (violet, blue, green and yellow) are connected together, can however be turned individually, thus allowing centrifuge tubes and vials of different size to be stored and transported in one rack. Autoclavable.

Model 1 for large vials:

- Hole-∅ 29.6 mm - 2 vials 50 ml
- Hole-∅ 16.4 mm - 8 vials 15 ml
- Hole-∅ 20.5 mm - 6 vials ∅ 16 to 20 mm
- Hole-∅ 13.5 mm - 10 vials ∅ 10 to 13 mm

Dimensions: L 112 x W 112 x H 224 mm

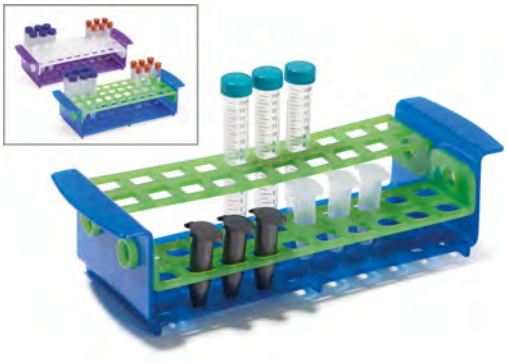
Model 2 for centrifuge tubes:

- Hole-∅ 16.4 mm - 6 centrifuge tubes 15 ml
- Hole-∅ 11.2 mm - 9 centrifuge tubes 1.5 to 2 ml
- Hole-∅ 8.0 mm - 12 centrifuge tubes 0.5 ml
- Hole-∅ 6.5 mm - 32 PCR-centrifuge tubes or 4 centrifuge tube strips at 8 tubes each

Dimensions: L 100 x W 100 x H 208 mm.

Type	Art. No.	Pack Qty.	€
1	**HC25.1**	1	51,45
2	**HC26.1**	1	51,45

Centrifuge tube racks



A 121 °C

Combi racks for 5/15-ml tubes

Made of **PP**. With 40 slots, slot ∅ 17 mm for test tube ∅ bis 16 mm.

Flexible adaptation by turning the slot level:
- Upper position for 15 ml centrifuge tubes, high form
- Lower position for 5 ml reaction vials, low form

Dimensions: L 309 x W 107 x H 77 mm. Temperature-stable up to 121 °C. Autoclavable.

Colour	Art. No.	Pack Qty.	€
blue/green	**ENL5.1**	1	34,95
violet/clear	**ENL6.1**	1	34,95

A 121 °C

Centrifuge tube racks 2 in 1

Double-sided, made of **PP**, with lid. Handy and compact size of 158 x 79 mm. With 32 holes for 0.5/0.65 ml centrifuge tubes and 8 holes for 1.5/1.7/2 ml vials on one side as well as 32 holes for 1.5/1.7/2 ml vials and 8 holes for 0.5/0.65 ml vials on the other. Hole-∅ 8 or 11 mm. Alphanumerically coded on both sides. Can be stacked. Autoclavable.

Colour	Art. No.	Pack Qty.	€
Selected (orange, pink, yellow, blue, green)	**EHP2.1**	5	74,20

A 121 °C

Reaction vial racks for 5 ml tubes

Made of **PP**. For 5 ml centrifuge vials as well as tubes with ∅ 13-16 mm. With side handles for transporting and stacking.
Dimensions: L 260 x W 113 x H 105 mm. Autoclavable.

Art. No.	Pack Qty.	€
CXP6.1	1	42,80

❄❄

Test tube racks, recycled

Made from recycled plastic, colour variations possible.

- Double-sided, with 48 or 96 alphanumerically labelled slots
- 10.5 mm slot ∅ for 1.5/2 ml reaction vials
- 7.5 mm slot ∅ for 0.5 ml reaction vials
- Large distances between the slots to ensure that screw cap vials can be opened easily
- Temperature-resistant down to -80 °C

Slots	L x W x H (mm)	Art. No.	Pack Qty.	€
48	215 x 69 x 27	**EEC5.1**	5	20,70
96	215 x 130 x 27	**EEC6.1**	5	37,65

A 121 °C

Rotilabo®-centrifuge tube racks

Made of **PP**, for 1.5 and 2 ml centrifuge tubes. 20 holes,∅ 10.5 mm, arranged in two levels. Large, easy-to-read numbers on the individual holes. Can be clipped together on the sides. With recessed grip for easy handling.
Dimensions: L 210 x W 90 x H 50 mm. Autoclavable.

Colour	Art. No.	Pack Qty.	€
blue	**N390.1**	1	7,50

A 121 °C

MµIti®-ultra racks

Made of **PP**. With 48 alphanumerically coded holes for centrifuge tubes with 0.65, 1.7 and 2 ml volume. Colour grey. Autoclavable.

For vials (ml)	Hole ∅ (mm)	Art. No.	Pack Qty.	€
0.65	8	**A775.1**	1	22,60
1.5 / 1.7 / 2	11	**A777.1**	1	22,60

Centrifuge tube racks

Rotilabo®-micro-centrifuge tube racks 2 in 1

Double-sided, made of **PP**. There are alphnumerically coded holes for 0.5/0.65 ml or 1.5/1.7 ml centrifuge tubes. With bore holes ∅ 8 resp. 11 mm on both sides. With large spaces for labelling on all four sides of the rack and transparent lid. Autoclavable.
Dimensions: L 210 x W 115 x H 25 mm without lid/with lid 50 mm.

Colour	Slots	Art. No.	Pack Qty.	€
natural	96 (8 x 12)	**E271.1**	1	29,05
blue	96 (8 x 12)	**E272.1**	1	29,05
green	96 (8 x 12)	**E273.1**	1	29,05
red	96 (8 x 12)	**E274.1**	1	29,05
yellow	96 (8 x 12)	**E275.1**	1	29,05

Rotilabo®-test tube racks

Made of **PP**. With 80 numerically labelled holes in 5 x 16 array, for 1.5/2 ml centrifuge tubes as well as screw cap vials with volumes up to 2 ml.
11 mm ∅ of holes, depth 25 mm, vertically drilled. With a space for labelling.
Temperature stable down to -80 °C. Autoclavable.
Dimensions: L 210 x W 65 x H 27 mm.

Colour	Art. No.	Pack Qty.	€
blue	**C771.1**	1	7,35
green	**C772.1**	1	7,35
orange	**C773.1**	1	7,35
pink	**C774.1**	1	7,35
yellow	**C775.1**	1	7,35

2 in 1 Rotilabo®-racks for microcentrifuge tubes

Double-sided, made of **PP**. With 96 holes for 1.5/2 ml centrifuge tubes on one side and 96 holes for 0.5 ml centrifuge tubes on the other.
Alphanumerically coded holes in a 8 x 12 array. Hole-∅ 8 or 11 mm.
Transparent slip lid with latch and large labelling area.
Dimensions: L 246 x W 121 x H 25 mm without lid (with lid 50 mm).
Autoclavable.

Colour	Art. No.	Pack Qty.	€
natural	**T216.1**	1	12,90
blue	**T217.1**	1	12,90
green	**T218.1**	1	12,90
pink	**T219.1**	1	12,90
yellow	**T220.1**	1	12,90
sorted (blue, green, pink, yellow, orange)	**NY18.1**	5	57,85

Rotilabo®-micro-centrifuge tube rack

Made of highly transparent **PS**. With 24 holes in 3 rows, for 1.5/2 ml centrifuge tubes as well as test tubes and vials up to a ∅ of 12 mm.
Each row is numbered from 1 to 8. Temperature stable from -40 to +70 °C.
L 155 x W 76 mm. Set consists of 4 attachable racks.

Art. No.	Pack Qty. (set)	€
P166.1	1	37,55

Centrifuge tube racks

Racks for micro-centrifuge tubes

Made of **PP**. With alphanumerically labelled holes ∅ 11 mm for 100 centrifuge tubes with 1.5 - 2 ml volume. Does not float in water. Stackable. Temperature stable from -15 to +130 °C.
Dimensions: L 265 x W 110 x H 45 mm. Autoclavable.

Colour	Art. No.	Pack Qty.	€
white	**4562.1**	1	15,60
blue	**4563.1**	1	15,60
red	**4575.1**	1	15,60
yellow	**4581.1**	1	15,60

Mini reaction vial racks 2 in 1

Made of **PP**. With 25 slots for 1.5 / 2 ml reaction vials or screw vials up to 2 ml on one side and 16 slots for 0.2 / 0.5 ml PCR vials on the other side.
Dimensions: 75 mm long x 65 mm wide x 22 mm high. Autoclavable.

Colour	Art. No.	Pack Qty.	€
blue	**CXN7.1**	10	28,20
red	**CXN8.1**	10	28,20
yellow	**CXN9.1**	10	28,20

Cryo vials racks

By Nalgene®. Made of white **PC**. The snap-in attachment in the base stops the vials from turning when opening and closing the box and also enables speedy and convenient one-hand operation. With alpha-numerical coding for easy sample identification. Rubber knobs on base prevent slipping.
50 holes in a 5 x 10 array (∅ 12.5 mm).
Dimensions: L 197 x W 102 x H 28 mm. Autoclavable.

Art. No.	Pack Qty.	€
H615.1	1	45,15

Racks for reaction vials with screw cap

Made of **POM**. For 50 screw top vials. Hole ∅ 10.75 mm, locking system in base as well as ribbed holes allowing single-handed opening of most standard reaction vials with screw cap and cryogenic vials.
Suitable for use in a water bath, non floating, retains stability even when stored under water. Stackable. Temperature stable from -196 to +121 °C
Dimensions: L 293 x W 115 x H 39 mm.

Colour	Art. No.	Pack Qty.	€
blue	**AEN2.1**	10	113,95
green	**AEN3.1**	10	113,95
violet	**AEN4.1**	10	113,95
orange	**AEN5.1**	10	113,95
yellow	**AEN6.1**	10	113,95

Rotilabo®-cryogenic vial racks

Made of **PP**. With 50 alphanumerically coded holes (∅ 12.5 mm) in a 5 x 10 array. Latch system on the bottom allows one-handed opening and closing of the cryo vials. Rubber knobs prevent slipping. Stackable.
Dimensions: L 200 x W 100 x H 25 mm. Autoclavable.

Colour	Art. No.	Pack Qty.	€
blue	**K551.1**	1	16,05
red	**K552.1**	1	16,05
violet	**K554.1**	1	16,05

▶ Cryo-vials see page 497

PCR-workstations

Made of **PP**, with lid. With 32 holes for PCR-vials 0.2 ml, 24 holes for 1.5/2 ml centrifuge tubes and 16 holes for 0.5 ml centrifuge tubes. Alphanumerically coded holes and large label space on all 4 sides for easy identification. Holes-∅ 6.5/8/12 mm. Dimensions: L 215 x W 120 x H 50 mm. Can be combined with PCR-racks, Art. No. K823.1-K827.1. Autoclavable.

Colour	Art. No.	Pack Qty.	€
neon blue	**K818.1**	1	28,50
neon green	**K819.1**	1	28,50
neon orange	**K820.1**	1	28,50
neon pink	**K821.1**	1	28,50
neon yellow	**K822.1**	1	28,50

▶ PCR-vials see page 488

PCR-racks

Made of **PP**, with lid. With 96 holes ∅ 6 mm for 0.2 ml PCR-tubes. Come in standard 8 x 12 micro-titre plate array. Are therefore excellent for PCR-plates, 8 or 12 tube strips or for individual PCR-tubes. PCR-racks can be easily mounted over the 32 x 0.2 ml holes of PCR-workstation. By securing them with 4 clips, the racks can be removed or inserted easily when required. Dimensions: L 126 x W 86 mm. Height 33 mm with lid, 11 mm without lid. Autoclavable.

Colour	Art. No.	Pack Qty.	€
neon blue	**K823.1**	1	11,50
neon green	**K824.1**	1	11,50
neon orange	**K825.1**	1	11,50
neon pink	**K826.1**	1	11,50
neon yellow	**K827.1**	1	11,50

Rotilabo®-PCR-racks

Made of **PP**, with transparent slip lid. Stackable. For PCR-vials, strips and plates with a volume of 0.2 ml. 96 holes. Array 8 x 12. Bore hole ∅ 5.5 mm. Temperature stable from -80 to +121 °C. Dimensions: L 138 x W 98 x H 39 mm. Height without lid: 30 mm.

Colour	Art. No.	Pack Qty.	€
assorted (blue, yellow, green, red, purple)	**HX25.1**	5	55,40

Rotilabo®-PCR-racks

Made of **PP**. With attached, removable lid. 96 alphanumerically coded holes ∅ 6 mm for PCR-vials, -plates and -strips 0.2 ml. 8 x 12 array in microtitre plate format. Dimensions: L 130 x W 100 x H 30 mm. Height without lid: 15 mm. Autoclavable.

Colour	Art. No.	Pack Qty.	€
natural	**T098.1**	1	8,50
blue	**T099.1**	1	8,50
green	**T100.1**	1	8,50
sorted (blaue, green, pink, yellow, orange)	**NY17.1**	5	35,30

PCR-box

Made of **PC**. With 144 alphanumerically numbered slots for 0.2 ml PCR vials. Dimensions: L 132 x W 132 x H 25 mm. Temperature stable to -86 °C.

Art. No.	Pack Qty.	€
CXP1.1	1	11,85

Rotilabo®-PCR-stands

Made of **PP**, lid Art. No. P769.2 made of **SBS**.
With 96 holes ∅ 6 mm in 8 x 12 array, for vials 0.2 ml, individual vials, on strips or plates. Dimensions L 127 x W 85 x H 16 mm.

Type	Colour	Art. No.	Pack Qty.	€
PCR-racks	white	**P765.2**	10	18,75
PCR-racks	blue	**P766.2**	10	18,75
PCR-racks	red	**P767.2**	10	18,75
Lid high (28 mm)	colourless	**P769.2**	10	18,75

PCR cryogenic boxes

Made of low-temperature-resistant, water-repellent cardboard.
For storing PCR single vials or PCR 8-tube strips. Slot size 8 x 8 mm.
Delivery incl. partition piece.

Slots	L x W x H (mm)	Art. No.	Pack Qty.	€
64	76 x 76 x 25	**EKN0.1**	5	13,95
196	114 x 124 x 25	**EKN1.1**	5	11,50

Work2Store™ storage boxes

Variable all-in-one rack and storage boxes: Can be pulled apart for easy sample handling with large distances between rows.
Can be stored flat to save space.

- Alphanumeric numbering
- Stackable
- Temperature stable from -80 to +121 °C.
- Autoclavable

Technical specifications:

	Work2Store™	Work2Store™ Micro
For reaction vials	1.5/2 ml or cryo vials up to 2 ml	0.2/0.5 ml or PCR strips
Slots	64 x ∅ 12 mm; holes with locking function for cryo vials	Double-sided rack: side 1: 64 x ∅ 7.99 mm side 2: 96 x ∅ 6.30 mm
Dimensions with lid / open	L 133 x W 133 x H 53 / L 310 x W 128 x H 33.5 mm	L 133 x W 133 x H 48 mm / L 310 x W 128 x H 31 mm

Type	Art. No.	Pack Qty.	€
Work2StoreTM	**NL88.1**	1	27,85
Work2Store™ Micro	**AXH8.1**	1	32,15

Storage boxes with inserts

Made of **PP**. Box with 8 inserts. Individually removable inserts for flexible working, alphanumeric marking for sample identification.
Dimensions Box: L 129 x W 130 x H 35 mm.
Temperature stable from -80 to +70 °C. Inserts autoclavable.

Technical specifications:

Type	For vessels	Slots	Slot-∅	Special features
TracRack™	1.5/2 ml or cryo vials up to 2 ml	64	12.3	Latching device at bottom for Cryo-vial enables single-handed opening and closing
TracRack™ Micro	0.2 ml	96	5.1	Inserts reversible for flexible use
	0.5 ml	64	7.8	

Type	Art. No.	Pack Qty.	€
TracRack™	**ENL8.1**	1	20,40
TracRack™ Micro	**ENL9.1**	1	19,70

Cryo racks for cryo boxes

Made of polished stainless steel. Corrosion resistant, very robust and easy to clean. For storing cryo-boxes in freezers. With handles.
Suitable for cryo boxes in sizes from 130 x 130 to 136 x 136 mm.

① Horizontal racks for upright freezers

For box height (mm)	L x W x H (mm)	Compartments	Art. No.	Pack Qty.	€
50	424 x 140 x 274	3 x 5	**LH44.1**	1	131,15
50	566 x 140 x 219	4 x 4	**LH43.1**	1	127,95
50	566 x 140 x 274	4 x 5	**LH42.1**	1	139,75
50	566 x 140 x 328	4 x 6	**LH41.1**	1	153,75

② Vertical racks for chest style freezers

For box height (mm)	L x W x H (mm)	Compartments	Art. No.	Pack Qty.	€
50	140 x 140 x 495	1 x 9	**LH49.1**	1	91,40
50	140 x 140 x 550	1 x 10	**T440.1**	1	89,20
50	140 x 140 x 604	1 x 11	**LH47.1**	1	92,40
50	140 x 140 x 659	1 x 12	**LH48.1**	1	93,00
50	140 x 140 x 713	1 x 13	**LH46.1**	1	96,70
75-77	140 x 140 x 641	1 x 8	**LH50.1**	1	85,90
75-77	140 x 140 x 720	1 x 9	**LH51.1**	1	93,55

Cryogenic racks for cryogenic boxes, aluminium

Made of aluminium, with carry handle. At least 30 % lighter than stainless steel racks. For the storage of cryogenic boxes in deep freezer chests or deep freezers, less effort is required for removal and insertion.
Improved design for faster cooling rate. Suitable for cryogenic boxes in sizes from 130 x 130 to 136 x 136 mm.

① Wide version for deep freezers

For box height (mm)	L x W x H (mm)	Compartments	Art. No.	Pack Qty.	€
50	566 x 140 x 274	4 x 5	**CLL6.1**	1	203,20
50	566 x 140 x 328	4 x 6	**CLL7.1**	1	224,70

② High version for deep freezer chests

For box height (mm)	L x W x H (mm)	Compartments	Art. No.	Pack Qty.	€
50	140 x 140 x 550	1 x 10	**CLL8.1**	1	127,95

Cryogenic racks for cryogenic boxes, cabinet modules

Made of stainless steel with polished surface, easy to clean.
With drawers made of aluminium. For the storage of cryogenic boxes in deep freezers, less effort is required for removal and insertion.
Cabinet modules without pull-out stop.
Suitable for cryogenic boxes in sizes from 130 x 130 to 136 x 136 mm.

For box height (mm)	L x W x H (mm)	Compartments	Art. No.	Pack Qty.	€
50	570 x 144 x 224	4 x 4	**CLL9.1**	1	155,90
50	570 x 144 x 280	5 x 4	**CLN0.1**	1	160,20
50	709 x 144 x 280	5 x 5	**HHX5.1**	1	198,90
50	570 x 144 x 336	6 x 4	**CLN1.1**	1	167,70
75	570 x 144 x 250	3 x 4	**CLN2.1**	1	149,45
75	570 x 144 x 335	4 x 4	**CLN3.1**	1	163,40

Ice Grip® cold resistant gloves

By KCL by Honeywell. Acc. to EN 511 and EN 388. RAL-certified, suitable for use in the food industry. Made of PVC, inner lining made of breathable Thinsulate®. Very good grip, especially of wet parts, due to special slipstop coating on palm. Moisture repellent. The knitted wrist stops cold from getting into the glove. Cold-stable to max. -50 °C.

Size	Art. No.	Pack Qty. (pair)	€
7	**CC00.1**	1	14,20
8	**CC01.1**	1	14,20
9	**CC02.1**	1	14,20
10	**CC03.1**	1	14,20

Rotilabo®-cryogenic boxes made of cardboard

Made of low temperature resistant cardboard. Flexible storage of cryo vials and other sample containers through variable configurations using different dividers. Also suitable for larger contains without grid dividers.
Dimensions: L 136 x W 136 mm.
Delivery without dividers, please order dividers separately.

Fitting table for Rotilabo®-cryo boxes:

Sample vessel type	Cryobox	Divider
0.5 ml reaction vial	Y054.2 / CLE8.1	Y050.2
1.5/2 ml reaction vials	P895.3 / CLE9.1	P900.2
Cryovials up to 2 ml, internal thread	P895.3 / CLE9.1	P900.2
Cryovials up to 2 ml, external thread	P895.3 / CLE9.1	P900.2
5 ml cryovials	P897.2 / CLH5.1	Y046.2
15 ml centrifuge tubes	CLE7.1	incl.
50 ml centrifuge tubes	CLE6.1	incl.

With water repellent standard coating

Height (mm)	Colour	Art. No.	Pack Qty.	€
32	white	**Y054.2**	10	34,30
50	white	**P895.3**	10	28,50
50	white	**P895.2**	50	96,65
50	blue	**XP98.1**	10	36,45
50	red	**XP99.1**	10	36,45
50	green	**XT00.1**	10	36,45
50	yellow	**XT01.1**	10	36,45
75	white	**P896.2**	10	40,75
100	white	**P897.2**	10	62,25
130	white	**Y055.2**	10	64,30

With waterproof plastic coating

Height (mm)	Colour	Art. No.	Pack Qty.	€
32	white	**CLE8.1**	10	50,50
50	white	**CLE9.1**	10	32,80
50	blue	**CLH0.1**	10	54,85
50	red	**CLH1.1**	10	54,85
50	green	**CLH2.1**	10	54,85
50	yellow	**CLH3.1**	10	54,85
75	white	**CLH4.1**	10	41,55
100	white	**CLH5.1**	10	62,30
130	white	**CLH6.1**	10	69,80

Partition inserts made of cardboard

Made of cardboard for partitioning cryo boxes.

Slots	Slot L x W (mm)	Height (mm)	Art. No.	Pack Qty.	€
4 x 4	31 x 31	30	**Y037.2**	10	31,65
4 x 4	31 x 31	65	**Y038.2**	10	31,65
5 x 5	24 x 24	30	**Y039.2**	10	21,30
5 x 5	24 x 24	65	**Y040.2**	10	24,20
6 x 6	20 x 20	30	**Y041.2**	10	24,75
6 x 6	20 x 20	65	**Y042.2**	10	27,60
7 x 7	17 x 17	30	**Y043.2**	10	19,90
7 x 7	17 x 17	65	**Y044.2**	10	27,60
8 x 8	15 x 15	30	**P898.2**	10	16,10
8 x 8	15 x 15	65	**Y045.2**	10	27,60
9 x 9	13,5 x 13,5	30	**P899.2**	10	16,10
9 x 9	13,5 x 13,5	65	**Y046.2**	10	27,60
10 x 10	12,5 x 12,5	30	**P900.2**	10	16,10
10 x 10	12,5 x 12,5	65	**Y047.2**	10	27,60
12 x 12	10 x 10	25	**Y048.2**	10	27,45
12 x 12	10 x 10	30	**Y049.2**	10	27,45
13 x 13	9 x 9	25	**Y050.2**	10	29,00
13 x 13	9 x 9	30	**Y051.2**	10	29,00
14 x 14	8 x 8	25	**Y052.2**	10	29,00
14 x 14	8 x 8	30	**Y053.2**	10	29,00

Rotilabo®-mini cryo boxes made of cardboard

Made of frost-resistant, water-repellent cardboard.
Boxes are suitable for labelling, space-saving and environmentally friendly.
Ideal for storing cryo vials and other sample vessels.
Delivery without cardboard inserts, please order separately.

Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
75	75	50	**LH31.1**	10	37,45
136	68	50	**LH33.1**	10	32,90

Partition inserts made of cardboard, H 30 mm

Suitable for cardboard boxes L x W (mm)	For vial ∅ (mm)	Slots	Art. No.	Pack Qty.	€
75 x 75	11,0	5 x 5	**LH32.1**	10	19,10
136 x 68	14,5	8 x 4	**LH34.1**	10	19,70
136 x 68	11,0	10 x 5	**LH35.1**	10	18,60

Rotilabo®-maxi cryogenic boxes made of cardboard

Made of low temperature resistant cardboard, with waterproof plastic coating. For the storage of samples from 5, 15 or 50 ml centrifuge vials. Can also be used for larger vessels without grid dividers.
Temperature stable up to -80 °C.
Delivery incl. grid dividers.

For vial ∅ x H (mm)	Grid dividers	Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
30 x 115	4 x 4	148	148	130	**CLE6.1**	5	60,20
17 x 120	6 x 6	148	148	130	**CLE7.1**	5	63,45
17 x 60	6 x 6	136	136	75	**HNY0.1**	10	66,65

Cryo boxes / storage boxes

Rotilabo®-cryogenic boxes

Made of **PP**. With hinged lid and drain holes in base. Flexible storage of cryogenic vials and other sample containers through variable configurations using different dividers. Also suitable for larger contains without grid dividers.
Dimensions: L 133 x W 133 mm.
Temperature stable from -90 to +121 °C. Autoclavable.
Delivery without grid dividers. Please order separately.

Cryogenic box height 52 mm

Colour	Art. No.	Pack Qty.	€
natural	**CLH7.1**	5	18,25
yellow	**CLH8.1**	5	18,25
red	**CLH9.1**	5	18,25
green	**CLK0.1**	5	18,25
blue	**CLK1.1**	5	18,25
black	**CLK2.1**	5	18,25

Cryogenic box height 75 mm

Colour	Art. No.	Pack Qty.	€
natural	**CLK3.1**	5	19,30
yellow	**CLK4.1**	5	19,30
red	**CLK5.1**	5	19,30
green	**CLK6.1**	5	19,30
blue	**CLK7.1**	5	18,25
black	**CLK8.1**	5	18,25

Grid dividers, H 30 mm

Slots	Slot L x W (mm)	Art. No.	Pack Qty.	€
6 x 6	20,5 x 20,5	**CLK9.1**	5	12,85
7 x 7	17,3 x 17,3	**CLL0.1**	5	13,95
8 x 8	15,8 x 15,8	**CLL1.1**	5	14,55
9 x 9	12,8 x 12,8	**CLL2.1**	5	15,60
10 x 10	11,2 x 11,2	**CLL3.1**	5	17,75

Cryogenic boxes, foldable

Made of corrugated **PP**, moisture-resistant.
Temperature-resistant down to -80 °C.
Delivery incl. dividers.

For vessel type	Slots	Slot L x W (mm)	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
0,2 ml	144 (12 x 12)	7,9	133 x 130 x 30	**ENL0.1**	10	73,05
0,5 ml	81 (9 x 9)	12	133 x 130 x 42	**ENL1.1**	10	73,05
1,5/2 ml	81 (9 x 9)	12	133 x 130 x 51	**AXE4.1**	10	41,40
5 ml	25 (5 x 5)	22,6	133 x 130 x 75	**ENL2.1**	10	73,05
15 ml	36 (6 x 6)	19,8	147 x 145 x 120	**ENL3.1**	10	96,25
50 ml	16 (4 x 4)	31,6	147 x 145 x 120	**ENL4.1**	10	94,55

Cryogenic boxes, foldable

Made of thin **PP**, moisture-resistant. Temperature stable up to -196 °C. Suitable for storing samples in the liquid nitrogen gas phase.
- For vessel type 1.5/2 ml
- 81 slots (9 x 9)
- Slot L 12.1 x W 12.1 mm

Delivery incl. pre-installed divider inserts, boxes simply need to be assembled.

Colour	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
white	125 x 124 x 49	**HYN2.1**	10	70,85
blue	125 x 124 x 49	**HYN3.1**	10	70,85
green	125 x 124 x 49	**HYN4.1**	10	70,85
violet	125 x 124 x 49	**HYN5.1**	10	70,85

Storage boxes with variable partitioning

Made of **PP**, transparent, with slip lid. For storage of reaction vials, cryo vials and other sample containers. Please order variable dividers separately.
Temperature stable to -196 °C. Autoclavable.

Storage boxes
- 4 to 81 slots
- Variable partitioning, by using between 2 and 16 dividers
- Height-adjustable lid, locks at 43 mm, 50 mm and 55 mm

Dimensions: L 130 x W 130 x H 43-55 mm.

Art. No.	Pack Qty.	€
ACL8.1	5	30,95

Dividers

Made of **PP**, individual partitions for flexible partitioning of ACL8.1 storage boxes.
Dimensions: L 121 x H 30 mm, thickness 1 mm.

Technical specifications:

Number of partitions	Slots	Compartment size (mm)
2	4	50 x 55 to 65 x 65
3	6	40 x 50 to 40 x 65
4	9	40 x 40
6	12	25 x 40
8	16	25 x 25
10	27	12 x 40
12	36	12 x 25
16	81	12 x 12

Art. No.	Pack Qty.	€
ACL9.1	16 partitions	7,50

Cryo boxes / storage boxes

Storage boxes

Made of **PP**. For centrifuge vials 15 and 50 ml. Replaceable, with quick-action inserts that offer ample depth for stable, upright vials storage. Translucent lid and numbered inserts for fast identification of samples. Temperature resistant in the range -80 to + 121 °C.
Dimensions: L 132 x W 132 x H 129 mm. Autoclavable.

Art. No.	Pack Qty.	€
PC60.1	5	64,00

Rotilabo®-cryo storage boxes

Made of **PC**, transparent color. Hinged lid with alphanumeric coding attached. (HE00.1 with loose lid). Stackable. For 1.2 to 5.0 ml cryo vials. With outlet holes on the base. Temperature resistant from -196 to +121 °C. Autoclavable. Art. No. HE01.1 comes with extraction aid.

Technical specifications:

Model	**Spaces**	Dimensions L x W x H (mm)	Vessels
① **Small box**	5 x 5	76 x 76 x 53	Cryo vials 1.2 / 2.0 ml
② **Standard box**	9 x 9	133 x 133 x 53	Cryo vials 1.2 / 2.0 ml
③ **Standard box with pin raster**	10 x 10	133 x 133 x 53	Cryo vials 1.2 / 2.0 ml

Type	Colour	∅ hole (mm)	Art. No.	Pack Qty.	€
①	red	12,5	**HE00.1**	1	8,40
②	assorted by color (blue, red, green, violet)	12,5	**HE01.1**	4	60,20
③	blue	12,5 x 12,5	**HE03.1**	1	14,85

Rotilabo®-deep freeze boxes

Made of **PP**, with transparent slip lid. For 15 and 50 ml centrifuge tubes. With labelling area on two sides. Dimensions: L 144 x W 144 x H 127 mm. Height without lid: 102 mm. Temperature resistant from -90 to +121 °C. Autoclavable.

Technical specifications:

	Type ①	Type ②
For centrifuge tubes (ml)	15	50
Tubes max. ∅ x H (mm)	18 x 121	30 x 121
Spaces	36 (6 x 6)	16 (4 x 4)
Inner hole size (mm)	18 x 18	30 x 30
Colour	green	blue

Type	Art. No.	Pack Qty.	€
①	**HX01.1**	2	49,35
②	**HX02.1**	2	49,35

Rotilabo®-cryo boxes

Made of robust **PC**. With transparent lid and removeable coloured insert. **81 holes** (12.2 x 12.2 mm) numerically coded for cryo vials with an outer thread of 1 to 5 ml, depending on the design of the box. Lid is also numerically coded corresponding to the bottom part. With outlet holes on the base, and with a large labelling field on the box and lid. Stackable. Boxes K585.1-K588.1 suitable for cryo-racks LH44.1ff.
Temperature stable from -196 to +121 °C. Autoclavable.

For cryo vials (ml)	Colour	L x W x H (mm)	Art. No.	Pack Qty.	€
1 to 2 ml	blue	133 x 133 x 52	**K585.1**	1	13,05
1 to 2 ml	green	133 x 133 x 52	**K586.1**	1	13,05
1 to 2 ml	red	133 x 133 x 52	**K587.1**	1	13,05
1 to 2 ml	yellow	133 x 133 x 52	**K588.1**	1	13,05
3 to 5 ml	blue	133 x 133 x 95	**K589.1**	1	16,05
3 to 5 ml	green	133 x 133 x 95	**K590.1**	1	16,05
3 to 5 ml	red	133 x 133 x 95	**K591.1**	1	16,05
3 to 5 ml	yellow	133 x 133 x 95	**K592.1**	1	16,05

Cryo boxes / storage boxes

Rotilabo®-cryo storage box

Made of **PC**, transparent, with hinged lid and coloured insert.
For cryo vials, screw vials and reaction vials up to 5 ml.
Also suitable for storage of larger vials thanks to removable insert.

- 81 slots
- For vial ∅ 12-13 mm, heights up to 93 mm
- With embossed numeric coding
- Stackable

Dimensions: L 145 x W 142 x H 97 mm.
Temperature stable to -196 °C. Autoclavable.

Art. No.	Pack Qty.	€
ACL7.1	1	11,50

Rotilabo®-cryo storage boxes

Made of **PP**. With **100 holes** (12.4 x 12.4 mm). For 0.5 and 1.5/2 ml centrifuge tubes and for cryo vials. Max. tube height 53.3 mm. Transparent lid with alphanumerically coded index card for speedy identification.
Black box with black lid for the storage of light-sensitive samples.
Stackable. Dimensions: L 140 x W 140 x H 60 mm.
Suitable for Rotilabo®-stainless steel rack P959.1.
Temperature stable from -90 to +121 °C. Autoclavable.

Colour	Art. No.	Pack Qty.	€
transparent	**N195.1**	1	15,00
red	**N196.1**	1	15,00
blue	**N197.1**	1	15,00
green	**N198.1**	1	15,00
yellow	**N199.1**	1	15,00
black	**N200.1**	1	12,70

Rotilabo®-cryo boxes

Coloured bottom part made of **PC** and transparent lid. With **100 holes** for 1 to 2 ml cryo-vials with female thread. Holes are numerically coded in bottom and on the lid. With outlet holes on the base. Large field for labelling on the side. Stackable. Dimensions: L 133 x W 133 x H 52 mm.
Suitable for cryo-racks LH44.1ff.
Temperature stable from -196 to +121 °C. Autoclavable.

Colour	Art. No.	Pack Qty.	€
blue	**K593.1**	1	12,50
green	**K594.1**	1	12,50
red	**K595.1**	1	12,50
yellow	**K596.1**	1	12,50

Rotilabo®-box inserts

Made of **PP**. With **64 holes** for 0.5/1.5 ml centrifuge tubes. Suitable for storage boxes N195.1ff as well as N200.1. Can be used as a free-standing rack on the laboratory bench or as an insert in the storage boxes.
Can be inserted and removed quickly. Stackable. Alphanumerically coded in 8 x 8 configuration. Temperature stable up to -85 °C. Autoclavable.

Hole ∅ (mm)	for Tubes (ml)	Colour	Art. No.	Pack Qty.	€
8	0,5	transparent	**N912.1**	1	3,95
11	1,5	transparent	**N917.1**	1	3,95

Cryo boxes / storage boxes

Rotilabo®-cryo boxes

Made of **PP**. **81 holes** in 9 x 9 array for cryo vials. Other features include a hinged lid and spring-loaded latch. Numerically coded, **contains removable grid**, slots 13 x 13 mm. Outlet on the base and corners for stacking ensure safe transport. Dimensions: L 133 x W 133 x H 52 mm. Suitable for Cryo-racks Art. No. LH44.1ff.
Temperature stable from -90 to +121 °C. Autoclavable.

Colour	Art. No.	Pack Qty.	€
transparent	**T435.1**	1	5,35
red	**T436.1**	1	5,35
blue	**T437.1**	1	5,35
green	**T438.1**	1	5,35
yellow	**T439.1**	1	5,35

Storage boxes, recycled

Lower section is made from recycled plastic, colour variations possible. With transparent PP hinged lid, removable.
Temperature-resistant from -80 to +135 °C. Autoclavable.

- 100 slots
- Taller than standard boxes, for tubes up to max. height of 53.5 mm
- For reaction vials from 0.5 to 2 ml
- Alphanumerically labelled lid
- Stackable
- Dimensions: L 140 x W 140 x H 62 mm

Art. No.	Pack Qty.	€
EEC4.1	5	26,40

Storage boxes

Made of **PP**, with transparent lid. **With 81 slots** (13 x 13 mm).
For the storage of 1.5/2 ml reaction vials or cryo vials up to 2 ml.
Alphanumeric numbering of slots (9 x 9 arrangement). With outlet holes on the base. Black box with black lid for the storage of light-sensitive samples.
Dimensions: L 130 x W 130 x H 47 mm. Autoclavable.

Colour	Art. No.	Pack Qty.	€
transparent	**NL80.1**	5	35,45
blue	**NL81.1**	5	35,45
green	**NL82.1**	5	35,45
pink	**NL83.1**	5	35,45
yellow	**NL84.1**	5	35,45
orange	**NL85.1**	5	35,45
black	**NL86.1**	5	35,45
assorted colours (blue, green, pink, yellow, orange)	**NL87.1**	5	35,45

Cryogenic storage boxes

Made of **PP**. With **50 slots**. For the storage of 1.5/2 ml reaction vials or cryogenic vials up to 2 ml. Autoclavable.

Type ①: With hinged cover. Slots: 13 x 13 mm.
Alphanumeric labelling of the slots.
Dimensions: L 142 x W 92 x H 56 mm.

Colour	Art. No.	Pack Qty.	€
transparent	**NY15.1**	5	21,40
sorted (blue, green, violet, yellow, orange)	**NY16.1**	5	21,40

Type ②: With slip lid. Slots: 12.5 x 12.5 mm.
Tube height variable up to 55 mm thanks to height-adjustable slip lid.
Dimensions: L 144 x W 75 x H 35-55 mm.

Colour	Art. No.	Pack Qty.	€
transparent	**N201.1**	1	8,85
pink	**P184.1**	1	8,85
yellow	**P185.1**	1	8,85
blue	**P186.1**	1	8,85
green	**P187.1**	1	8,85

Cooling racks

Rotilabo® storage boxes

Made of **PP**. For 0.5 ml to 2 ml reaction vials and cryo vials.
With two tabs on the front for inserting tags.
- 200 slots (12 x 12 mm)
- For tube ∅ up to 12 mm, heights up to 53.5 mm
- Hinged lid with alphanumeric coding
- Stackable
- Suitable for Rotilabo® stainless steel rack P959.1

Dimensions: L 275 x W 151 x H 64 mm.
Temperature stable from -80 to +135 °C. Autoclavable.

Colour	Art. No.	Pack Qty.	€
transparent	**P786.1**	1	23,55
black	**ACN1.1**	1	23,55

Cryo-freezing device Mr. Frosty

By Nalgene®. Made of **PC**, lid and vial holder made of HDPE.
With foamed lining.
Simple application: only 100 % isopropylalcohol and a freezer are required. For 18 cryo-vials 1.2 / 2 ml. For reproducible, repeated cooling of specimens by approx. -1 °C/min. Optimal cellular yield after storage at very low temperatures. The vial holder prevents direct contact of the vials to the alcohol, the writing on the vials remains readable. The vial holder can be used additionally as a floating stand to defrost the samples in the water bath. Dimensions: H 86 x ∅ 112 mm. Lid-∅ 120 mm.

Art. No.	Pack Qty.	€
AC96.1	1	124,70

Rotilabo® storage box, slim version

Made of black **PP**. For 0.5 ml to 2 ml reaction vials and cryo vials
- 100 slots (12 x 12 mm)
- For tube ∅ up to 12 mm, heights up to 50 mm
- Slip lid with alphanumeric coding
- Loose fitting lid, height-adjustable
- Stackable

Dimensions: L 287 x W 76 x H 38-52 mm.
Temperature stable from -80 to +135 °C. Autoclavable.

Art. No.	Pack Qty.	€
ACN0.1	1	9,30

Labtop freezing boxes

By Nalgene®. Made of **PC**. For cooling heat-sensitive samples in the laboratory.
- Usable up to -20 °C (min. -40 °C)
- Protects against temperature fluctuation and power failure
- Markable grid surface on lid
- Breakproof and stackable, with non-slip feet
- With white PC lid with non-toxic gel filling or with transparent PC lid without gel filling

Labtop box -20 °C:
Bottom part made of blue, gel-filled PC.

Labtop freezer boxes 0 °C:
Bottom part made of green, gel-filled PC.

*Delivery incl. 16 adapters for remodelling the 1.5 ml holes into 0.5 ml holes for 0.5 ml tubes.

For 12 vials (3 x 4), lid without gel filling

Temp. constancy	For test tubes	L x W x H (mm)	Art. No.	Pack Qty.	€
< -15 °C to 1 hour	0.5-2 ml*	151 x 108 x 125	**L243.1**	1	170,95
< 1 °C to 3,5 hours	0.5-2 ml*	151 x 108 x 125	**L245.1**	1	170,95
< 1 °C to 5 hours	∅ 12-13 mm	197 x 140 x 190	**L247.1**	1	316,05
< 1 °C to 5 hours	∅ 16-17 mm	197 x 140 x 190	**L248.1**	1	316,05

For 32 vials (4 x 8), lid with gel filling

Temp. constancy	For test tubes	L x W x H (mm)	Art. No.	Pack Qty.	€
< -15 °C to 2 hours	0.5-2 ml*	243 x 157 x 146	**L244.1**	1	320,35
< 1 °C to 5 hours	0.5-2 ml*	243 x 157 x 146	**L246.1**	1	342,95

Rotilabo®-polystyrene boxes with lid

With 50/100 holes in 5 rows for 1.5 and 2 ml micro-centrifuge tubes and for 1.2 ml cryo vials (max. height 44 mm). Ideal for long-term storage in refrigerators and freezing chambers or as a working rack on the lab benchtop. Space-efficient and stackable.

Slots	∅ (mm)	L x W x H (mm)	Art. No.	Pack Qty.	€
50	13	210 x 110 x 71	**N443.2**	10	45,60
100	12	338 x 95 x 63	**K496.2**	10	48,05

▶ Centrifuge tubes see page 490

Cooling racks

Cooling boxes

Made of **PC**, gel-filled. For cooling heat-sensitive samples such as PCR reagents or enzymes in the laboratory.
- With non-slip rubber feet
- Type 0.2 ml is also suitable for PCR plates

Technical specifications:

Lid	Temp. constancy	For vial type	Number of vials	Art. No.
Transparent	-15 °C to 2.5 hrs.	0.5-2 ml*	12 (3 x 4)	**NY09.1**
Transparent	-15 °C to 3.5 hrs.	0.5-2 ml*	32 (4 x 8)	**NY10.1**
Gel-filled	-15 °C to 5 hrs.	0.5-2 ml*	32 (4 x 8)	**NY11.1**
Transparent	-15 °C to 3.5 hrs.	0.2 ml	96 (8 x 12)	**NY12.1**

***Delivery incl**. adapter for 0.5 ml reaction vials·

For test tubes	L x W x H (mm)	Art. No.	Pack Qty.	€
12 (0.5-2 ml)	145 x 105 x 100	**NY09.1**	1	89,25
32 (0.5-2 ml)	245 x 105 x 100	**NY10.1**	1	147,30
32 (0.5-2 ml)	245 x 105 x 100	**NY11.1**	1	167,70
96 (0.2 ml)	225 x 165 x 110	**NY12.1**	1	167,70

Rotilabo®-cooling boxes

Double-sided, made of **PC**, for 20 centrifuge tubes 0.5 ml on one side and 20 vials 1.5 or 2 ml on the other. Ideal for cooling heat-sensitive samples on the lab benchtop. Also excellent for transporting frozen samples or as a storage box in refrigerators to protect against temperature fluctuation or power failure. Holes (∅ 8/12 mm) are alphanumerically coded on both sides. Comes with gel filling and transparent lid. Once they have been removed from the refrigerator, the boxes maintain a temperature of 0 °C (white box) for 5 hours or -15 to -20 °C (blue box) for approx. 2 hours. Dimensions of boxes (with lid): L 170 x W 110 x H 105 mm.

Colour	Fit for	Art. No.	Pack Qty.	€
white	0 °C	**K087.1**	1	181,70
blue	-20 °C	**K088.1**	1	181,70

Freezing box

By Nalgene®. Made of **PC**, with non-toxic insulating liquid. Excellent for speedy and repeated cooling of samples. Can be used repeatedly for max. 45 min. Cools up to 2 ml alcohol-based solution in less than 3 min to -20 °C or up to 2 ml water-based solution in less than 4 min to 0 °C. 12 holes for 0.2 ml tubes (with adapters) to 2 ml. Holes have 3 x 4 array. Labels and markings do not dissolve as there is no direct contact between tube and dielectric liquid. Breakproof and stackable. Rubber feet on base prevent slipping. Comes with 16 adapters. Dimensions: L 151 x W 108 x H 125 mm.

Art. No.	Pack Qty.	€
L249.1	1	189,20

Rotilabo®-ice boxes for PCR-plates

Made of **PP**. Filled with non-toxic gel filling. 96 slots ∅ 6 mm in 8 x 12 array. Ideal for cooling heat-sensitive samples on the laboratory desk.

Suitable for 0.2 ml PCR-vials, plates and centrifuge tube strips.
- Keeps the temperature at 4-7 °C for approx. 3 hours
- The rack changes its colour at approx. 7 °C
- Recommended storage temperature: -20 °C

Dimensions: with lid: L 141 x W 99 x H 44 mm,
without lid: L 141 x W 99 x H 38 mm.

Colour change	Art. No.	Pack Qty.	€
violet to pink	**EX48.1**	2	115,05
green to yellow	**EX49.1**	2	115,05

Rotilabo®-Aluminium racks

Aluminium stands for cooling samples in ice baths.

Technical specifications:

Model	Slots	For centrifuge tubes
Aluminium rack	24 (4 x 6)	2.0 ml
Aluminium rack 1.5	24 (4 x 6)	1.5 ml
Aluminium rack 2	96 (8 x 12) / 6	0.2 ml (single / strips / 96 hole plates) / 1.5 ml
Aluminium rack 5	36 / 11	0.5 ml / 1.5 ml

Type	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
Rotilabo®-Aluminium rack	115 x 90 x 30	**KH56.1**	1	78,40
Rotilabo®-Aluminium rack 1.5	115 x 90 x 30	**EP69.1**	1	78,40
Rotilabo®-Aluminium rack 2	115 x 90 x 15	**N470.1**	1	78,40
Rotilabo®-Aluminium rack 5	180 x 80 x 15	**N548.1**	1	78,40

Cooling racks PolarSafe™

Made of aluminium, blue anodised. Ideal for use on ice, dry ice, in water baths or liquid nitrogen. With side recesses for safe grip. Temperature stable up to -196 °C. Autoclavable.
Note: Frequent autoclaving and cleaning can result in colour changes.

For vessel type	Slots	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
2 ml cryo vials	15 (3 x 5)	113 x 77 x 38	**EKP9.1**	1	110,00
Reaction vials 1.5 to 2 ml	15 (3 x 5)	113 x 77 x 38	**EKT0.1**	1	110,00
0.5 ml reaction vial	24 (4 x 6)	113 x 77 x 33	**EKT1.1**	1	110,00
PCR vials, strips and trays	96	113 x 77 x 20	**EKT2.1**	1	130,00
PCR trays	384	113 x 77 x 13	**EKT3.1**	1	169,00

Cooling racks

Made of heat-conductive metal, anodised for improved corrosion resistance. Suitable for cooling samples on ice, dry ice or in the vapour phase of liquid nitrogen as well as for heating samples in water baths and incubators. Slots are numbered alphanumerically. Temperature stable to -150 °C. Autoclavable.

Cooling racks for reaction vials

For 1.5/2 ml reaction vials and screw vials in sizes from 0.5 to 2 ml.

Slots	L x W x H (mm)	Art. No.	Pack Qty.	€
6 (2 x 3)	60 x 43 x 32	**CXK6.1**	1	79,95
15 (3 x 5)	96 x 60 x 32	**CXK7.1**	1	167,70
30 (5 x 6)	114 x 96 x 32	**CXK8.1**	1	284,90
90 (6 x 15)	274 x 114 x 32	**CXK9.1**	1	413,90
96 (8 x 12)	221 x 149 x 32	**CXL0.1**	1	525,70

Cooling racks for cryo vials

For cryo vials in sizes up to 2 ml. Rack CXL2.1 includes a locking mechanism for one-handed opening of vials.

Slots	L x W x H (mm)	Art. No.	Pack Qty.	€
15 (3 x 5)	128 x 85 x 32	**CXL1.1**	1	177,40
24 (4 x 6)	96 x 60 x 32	**CXL2.1**	1	320,35
30 (5 x 6)	114 x 96 x 32	**CXL3.1**	1	333,25
45 (5 x 9)	173 x 96 x 32	**CXL4.1**	1	295,65

Cooling racks for PCR plates

SBS dimensions, compatible with automated systems.

Slots	L x W x H (mm)	Art. No.	Pack Qty.	€
96	128 x 85 x 25	**CXL5.1**	1	338,65
384	128 x 85 x 23	**CXL6.1**	1	396,70

Ice box

Made of **EPP** (polypropylene-based foam).
Highly robust with excellent insulation properties. With recessed hand grips.
Internal dimensions: L 345 x W 345 x H 175 mm.
Outer dimensions: L 400 x W 400 x H 220 mm.
Delivery incl. lid.

Art. No.	Pack Qty.	€
EET6.1	1	41,00

Ice containers True North®

Made of **PU**. Excellent insulation properties for deep-freeze applications using ice, ice-salt mixtures or other cooling media. Tight-fitting cover for minimum evaporation loss (can be stored below ice container while not in use).
Nozzle for easy pouring out of melted ice.
Conical shape and recessed cover for space-saving stacking.
Delivery incl. cover.

Volume (l)	Colour	L x W x H (mm)	Art. No.	Pack Qty.	€
1	turquoise	267 x 196 x 114	**TP25.1**	1	64,40
4	black	∅ 234 x 181	**TP24.1**	1	81,20
4	blue	381 x 254 x 182	**TP26.1**	1	91,40
9	red	521 x 292 x 163	**TP27.1**	1	127,95

Ice containers and ice tubs

Made of foam **PS**. Sturdy thick-walled design provides ideal cooling and prevents condensation. Suitable for ethanol and refrigerant mixtures, dry ice or liquid nitrogen. Temperature stable to -196 °C.

① **Ice containers**
Close fitting cover minimises evaporation losses.
Delivery incl. cover.

Volume (l)	Colour	∅ x H (mm)	Art. No.	Pack Qty.	€
2,5	blue	300 x 110	**TE08.1**	1	41,90
2,5	green	300 x 110	**TE09.1**	1	41,90
5	blue	300 x 160	**TE10.1**	1	55,65
5	green	300 x 160	**TE11.1**	1	55,65

② **Ice tubs**

Volume (l)	Colour	L x W x H (mm)	Art. No.	Pack Qty.	€
1	blue	155 x 155 x 95	**TE12.1**	1	20,25
1	green	155 x 155 x 95	**TE13.1**	1	20,25
4	blue	220 x 310 x 125	**TE14.1**	1	41,95
4	green	220 x 310 x 125	**TE15.1**	1	41,95
9	blue	335 x 435 x 130	**TE16.1**	1	58,05
9	green	335 x 435 x 130	**TE17.1**	1	58,05

Ice shovel

Made of stainless steel. Perforated, ideal for filling ice. Melt water flows back into the ice container. Dimensions: ∅ 50 x L 190 mm.

Art. No.	Pack Qty.	€
HEC6.1	1	10,65

Rotilabo®-ice bucket

Made of stainless steel, double-walled, with handle.
Capacity 2 l, ∅ 150 mm, height 210 mm.
Delivery incl. cover.

Art. No.	Pack Qty.	€
YE46.1	1	32,90

Ice containers

Made of stainless steel 18/10 (material 1.4301), dual wall.

Volume (l)	∅ x H (mm)	Art. No.	Pack Qty.	€
1,5	200 x 90	**HEC4.1**	1	26,80

Ice boxes Xtreme®

Made of **HDPE**, with full foam insulation made of **PU**. With attached lid and snap closure for tight closing. Watertight and rust resistant drainage. Cooling capacity max. 5 days. Suitable for food.

Volume (l)	L x W x H outer (mm)	L x W x H inner (mm)	Weight (kg)	Art. No.	Pack Qty.	€
48	700 x 380 x 440	530 x 240 x 280	5,6	**LT01.1**	1	107,00
66	720 x 400 x 440	610 x 300 x 330	6,1	**LT02.1**	1	143,00
90	920 x 420 x 440	790 x 330 x 290	7,4	**LT03.1**	1	203,20

Ice container racks

Made of **PS**, for filling with ice or water. Exact-fit rack holds samples securely in ice. Stackable.

For vials (ml)	Number of vials	L x W x H (mm)	Art. No.	Pack Qty.	€
15/50	15	276 x 164 x 134	**NY14.1**	1	40,75

Dry ice machines

To make a block of -79 °C cold dry ice
- A weight of 50 g in ~0.5 min
- A weight of 250 g in ~1 min

Multi-range unit, e.g. for lowering temperature in cooling baths or traps, precooling of tissue samples, transporting or storing biological substances, freezing blood or tissue samples, research in chemistry and physics etc. Fits all standard short CO_2-gas bottles with top valve (W 21.80 x 1/14“ acc. to DIN 477 no. 6).

Instructions:

Fit ice machine to CO_2-bottle, open valve, allow CO_2 to enter ice machine, close valve, open fastener and take out ice block.

Dry ice machine for 50 g blocks

H 30 x ∅ 50 mm. Protuctiveness with 22 kg gas canister for approx. 90 blocks.

Art. No.	Pack Qty.	€
9282.1	1	229,00

Dry ice machine for 250 g blocks

H 60 x ∅ 80 mm. Productiveness with 22 kg gas canister for approx. 16 blocks.

Art. No.	Pack Qty.	€
9285.1	1	295,65

Cooling boxes

Made of **PP**, with isolation made of PU foam.
With hinged lid and bow handle.

Technical specifications:

Capacity (l)	L x W x H outer (mm)	Cooling power (±1 °C)	Weight (kg)
26	407 x 313 x 424	24 h	2.4
30	408 x 322 x 461	27 h	2.6

Volume (l)	Art. No.	Pack Qty.	€
26	**AA46.1**	1	34,55
30	**AA47.1**	1	39,75

Cooling boxes

Made of **PP**, with isolation made of PU foam.
With hinged lid and bow handle (box 37 l with 2 side handles).
10 and 17 l boxes with loose-fit lid.

Technical specifications:

Capacity (l)	L x W x H outer (mm)	Cooling power (±1 °C)	Weight (kg)
10	350 x 225 x 310	17 h	1.4
17	410 x 245 x 355	20.5 h	2.1
25	407 x 314 x 425	26 h	2.5
29	408 x 322 x 462	29 h	2.7
37	550 x 349 x 407	32 h	3.7

Volume (l)	Art. No.	Pack Qty.	€
10	**P252.1**	1	34,40
17	**P253.1**	1	52,65
25	**P254.1**	1	47,25
29	**P255.1**	1	59,05
37	**P256.1**	1	72,05

Thermoelectric cooler

- Operates via 230 V power supply (optional) or 12 V connector in the car
- Capacity 24 litres
- Strong PU insulation
- Secure lid
- Integrated storage compartment for the cable
- Integrated fan (39 dB) accelerates the cooling process
- Cooling capacity up to 20 °C below outside temperature,

Dimensions outside: L 407 x W 313 x H 435 mm,
inside: L 328 x W 243 x H 310 mm. Weight 3.6 kg.
Delivery incl. 12 V connector. Please order 230 V transformer separately.

Type	Art. No.	Pack Qty.	€
Thermoelectric cooler	**P272.1**	1	96,65
Transformer	**P273.1**	1	37,60

Cooler bags Fold'N Cool™

Made of **polyester**, with PU coating on back. PEFA lining, suitable for foodstuffs, easy to clean. High-performance EPE foam insulation. Collapsible for space-saving storage. With adjustable shoulder strap, hanger loop and separate front bag.
Art. No. LP94.1 with 2 additional carry handles.

Image	Volume (l)	L x W x H outer (mm)	Weight (g)	Art. No.	Pack Qty.	€
①	5	230 x 155 x 190	310	**LP95.1**	1	17,75
②	20	320 x 200 x 370	610	**LP93.1**	1	26,85
③	30	390 x 250 x 380	765	**LP94.1**	1	30,05

Cooler bag Freez'Box™

Made of **PP** with airtight lid. Textile casing made of polyester, PVC-coated inside. Insulation made of EPE. Lid with handle and holder for cooling element (Art. No. E447.1 or LT04.1, please order separately).
Approved for foodstuffs.
Delivery incl. one plastic container and one cooling element.

Volume (l)	L x W x H outer (mm)	L x W x H (Box) inside (mm)	Art. No.	Pack Qty.	€
2	195 x 145 x 110	181 x 110 x 38	**LP98.1**	1	20,40

Insulating bags, Frozen Food Bag

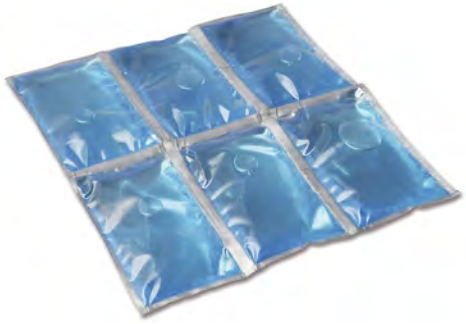
Made of **PE**. With **EPE** foam insulation. Cooling capacity max 3 h.
Suitable for food.

Volume (l)	L x W x H outer (mm)	Weight (g)	Art. No.	Pack Qty.	€
19	500 x 465 x 7	110	**LP96.1**	10	38,50
26	585 x 475 x 7	120	**LP97.1**	10	44,65

Rotilabo®-cooling packs

Made of suitable for food-safe PA/PE, with gel filling.
Outstanding cooling properties. Multifunctional.

Length (mm)	Width (mm)	Weight (g)	Art. No.	Pack Qty.	€
140	137	230	**PX99.1**	60	40,35
190	137	460	**PY00.1**	32	25,30



Cooling elements Flexi Freez'Pack®

With individual cooling segments for extreme flexibility, even when frozen.
Suitable for food.

L x W x H outer (mm)	Cooling segments	Weight (g)	Art. No.	Pack Qty.	€
290 x 160 x 18	6 x 2	150	**LT04.1**	10	45,15
300 x 240 x 18	4 x 3	300	**LT05.1**	10	53,25
600 x 240 x 18	12 x 3	600	**LT06.1**	10	64,30

Rotilabo®-cooling packs

Made of environmental-friendly **PE**. Filled with coolant.
Dimensions: 169 x 75 x 19 mm. Weight 220 g each.

Art. No.	Pack Qty.	€
E447.1	5	7,35
E447.2	50	48,35

Rotilabo®-cooling jacket

Insulating cooling pack in black microfibre sleeve. For cooling and keeping cool bottles with a ∅ of approx. 70-100 mm. Adapts to bottle shape.
Also suitable for angled containers. Can be reused any number of times.
Foldable for space-saving storage.
Dimensions: L 450 x W 200 mm, folded approx. L 200 x W 150 mm.

Art. No.	Pack Qty.	€
CY97.1	1	32,05

▶ Screw thread bottles see page 38

Temperature-control containers

By KGW. Double-walled, made of stainless high-grade steel.
Ideal for keeping samples warm or cold in the range of -30 to +120 °C.
Quick adaption to change of temperature. Features connector for tubing with inner ∅ 6 mm. The cold or hot tempering medium is pumped with the aid of a thermostat through the space between the double walls.

Volume (l)	Innner ∅ (mm)	Outside ∅ (mm)	Inner height (mm)	Outer height (mm)	Art. No.	Pack Qty.	€
1	85	107	206	231	**A628.1**	1	384,85
2	100	122	285	312	**A629.1**	1	464,40
3	185	200	160	190	**A630.1**	1	625,65
6	185	200	270	300	**A631.1**	1	761,10

Dewar containers

Bowl shaped Dewar vessels

By KGW. With silver plated glass inlet and aluminium housing.
Ideal for tempering flasks in heating or cooling baths. Not magnetic.

Volume (ml)	Innner ∅ (mm)	Filling height (mm)	Overall height (mm)	Art. No.	Pack Qty.	€
80	67	40	75	**LH06.1**	1	121,50
120	77	50	90	**C610.1**	1	127,95
400	110	70	115	**C611.1**	1	210,70
800	138	80	125	**C612.1**	1	249,40
1600	170	110	145	**C613.1**	1	347,25
2700	200	125	160	**LH07.1**	1	542,90

Dewar ice containers

By KGW. With silver-coated glass insert, lid and handle. Suitable for storage and transportation of heat sensitive goods, such as dry ice (CO_2).
A hole must be drilled in the lid when using gassing coolants.

Volume (l)	Innner ∅ (mm)	Filling height (mm)	Overall height (mm)	Art. No.	Pack Qty.	€
10	200	350	475	**0443.1**	1	557,95
14	200	500	610	**1100.1**	1	650,40
28	250	620	750	**0444.1**	1	966,45

Dewar insulating containers

By KGW. Cylindric. With silvered borosilicate glass insert 3.3, metal jacket, blue-coated. Suitable for storage and on-site transportation of specimens in coolants, such as liquid nitrogen.
Delivery without stopper, please order separately.

① **without handle**

Type	Volume (ml)	Innner ∅ (mm)	Filling height (mm)	Overall height (mm)	Art. No.	Pack Qty.	€
00C	100	40	90	135	**LE85.1**	1	73,50
3C	500	57	210	260	**0440.1**	1	110,75
9C	1000	77	235	290	**0441.1**	1	121,50
12C	1500	90	245	300	**LE86.1**	1	155,90
13C	2000	90	340	390	**LE87.1**	1	184,90
18C	2500	110	290	345	**1003.1**	1	206,40
S21C	4000	138	310	375	**LE88.1**	1	298,85

② **with side handle**

Type	Volume (ml)	Innner ∅ (mm)	Filling height (mm)	Overall height (mm)	Art. No.	Pack Qty.	€
G0C	200	40	170	215	**LE89.1**	1	105,90
G3C	500	57	210	260	**LE90.1**	1	137,60
G9C	1000	77	235	290	**LE91.1**	1	153,75
G12C	1500	90	245	300	**LE92.1**	1	180,60
G13C	2000	90	340	390	**LE93.1**	1	203,20
G18C	2500	110	290	345	**LE94.1**	1	223,60
GS21C	4000	138	310	375	**LE95.1**	1	321,45
GS22C	8000	138	600	660	**LE96.1**	1	446,15

Stoppers for Dewar-insulation containers

Made of **PU**. Lie loosely on top. For Dewar-insulation containers LE85.1ff.

For Dewar containers with Volume (ml)	Art. No.	Pack Qty.	€
100	**LE97.1**	1	33,25
200	**LE98.1**	1	33,25
500	**LE99.1**	1	33,25
1000	**LH00.1**	1	35,45
1500	**LH01.1**	1	35,45
2000	**LH02.1**	1	35,45
2500	**LH03.1**	1	41,85
4000	**LH04.1**	1	41,85
8000	**LH05.1**	1	41,85

Dewar containers

Dewar containers

By KGW. Cylindric. Made of stainless chrome-nickel steel.
For safe handling of cooling agents and freezing mixtures, e.g. liquid nitrogen. No danger of implosion.
Delivery without stopper, please order separately.

① Type DSS. 1 litre and up come with removeable handle.

Volume (ml)	Innner ∅ (mm)	Filling height (mm)	Overall height (mm)	Art. No.	Pack Qty.	€
500	65	180	203	**3628.1**	1	284,90
1000	85	206	231	**3635.1**	1	299,95
1000 W	100	157	177	**3651.1**	1	333,25
2000	100	285	312	**3653.1**	1	380,55
3000	185	160	190	**3655.1**	1	546,10
6000	185	270	300	**3669.1**	1	693,40

② Type GSS. With handles on side and top.

Volume (ml)	Innner ∅ (mm)	Outside ∅ (mm)	Inner height (mm)	Outer height (mm)	Art. No.	Pack Qty.	€
1000	85	107	206	231	**A632.1**	1	338,65
2000	100	122	285	312	**A633.1**	1	414,95
3000	185	200	160	190	**A634.1**	1	571,90

Stoppers for Dewar containers

Made of **PU**. Lie loosely on top.
For Dewar containers 3628.1ff. and A632.1ff.

For Dewar containers with Volume (ml)	Art. No.	Pack Qty.	€
500	**XX13.1**	1	38,65
1000	**XX14.1**	1	38,65
1000W, 2000	**XX15.1**	1	38,65
3000, 6000	**XX16.1**	1	42,95

▶ Sekuroka®-safety gloves CRYO see page 670

Dewar transporting containers

By KGW. Suitable for storage and transportation of heat-sensitive specimens in coolants, such as liquid nitrogen. With silver coated glass insert made of borosilicate glass 3.3, insulated plastic lid and aluminium handle. **A hole must be made in the lid when using a gassing coolant (in the centre; ∅ approx. 2 mm).**

Technical specifications:

Model	∅ inner (mm)	∅ outer (mm)	Filling height (mm)	Total height (mm)	Evaporating rate liq. N_2 (l/day)
26 B / 26 BE	100	132	150	215	1.1
27 B / 27 BE	138	170	170	245	1.7
28 B / 28 BE	138	170	230	305	1.5
29 B / 29 BE	138	170	310	385	1.3

① With blue metal cover

Type	Volume (l)	Art. No.	Pack Qty.	€
26 B	1	**0442.1**	1	148,35
27 B	2	**HT39.1**	1	210,70
28 B	3	**1098.1**	1	256,95
29 B	4	**1099.1**	1	315,00

② With stainless steel cover

Type	Volume (l)	Art. No.	Pack Qty.	€
26 BE	1	**HT40.1**	1	170,95
27 BE	2	**HT41.1**	1	239,75
28 BE	3	**HT42.1**	1	305,30
29 BE	4	**HT43.1**	1	350,45

Long wooden tweezers

Made of untreated beechwood.
Suitable for removing samples from liquid nitrogen.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
300	20	**EET0.1**	1	2,70
400	20	**EET1.1**	1	3,20

Sample bags

Dewar vessels in spherical shape

By KGW. For storing liquid nitrogen. The vessels consist of a robust metal casing with handle and bulb-form, silver-plated glass insert. The glass inlet is wrapped in foam rubber to prevent breaking. An insulation lid put on loosely prevents evaporation.

Technical specifications:

Model	Outer-∅ (mm)	Inner-∅ opening (mm)	Filling height (mm)	Total height (mm)	Evaporating rate liq. N_2 (l/day)
21 AL	175	30	235	300	0.2
22 AL	225	60	305	380	0.4
23 AL	260	60	350	450	0.4
24 AL	330	65	380	480	0.6

Type	Volume (l)	Art. No.	Pack Qty.	€
21 AL	1	**C369.1**	1	267,70
22 AL	3	**C370.1**	1	418,20
23 AL	5	**C371.1**	1	488,05
24 AL	10	**C372.1**	1	653,60

Dewar containers

By Nalgene®. Made of **HDPE**. Chemical-resistant with double walls filled with polyurethane foam. Vented, insulated lid. With moulded-in ribs, metal clips for fastening the lid, pour spout, and bottom grip area. Canister with carrying strap (except for 10 l). Suitable for safe short-term handling and storage of liquid nitrogen, dry ice, freezing mixtures and iced water. Shatter-proof. With stands temperatures from -196 to +100 °C.

Volume (l)	Inner ∅ (mm)	Inner height (mm)	Art. No.	Pack Qty.	€
1	96	195	**PP15.1**	1	167,70
2	122	231	**PP16.1**	1	182,75
4	158	295	**PP17.1**	1	195,65
10	198	396	**PP18.1**	1	348,30

Rotilabo®-sample bags

Made of glass-transparent **LDPE**. Press down on strip to seal.

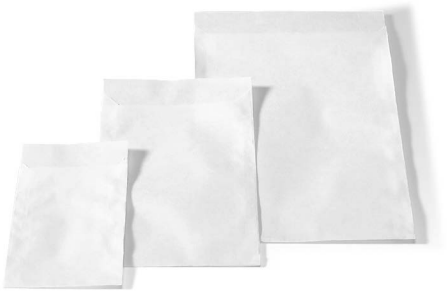
50 µm thick

Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
40	60	**HHL0.1**	1000	14,85
50	80	**P277.2**	1000	25,70
60	130	**HHL1.1**	1000	21,45
70	100	**HHL2.1**	1000	18,85
80	120	**P278.2**	1000	32,15
90	90	**HHL3.1**	1000	20,40
100	150	**P279.2**	1000	36,45
120	170	**P280.2**	1000	38,60
140	190	**HHL4.1**	1000	28,95
150	220	**P281.2**	1000	42,90
180	250	**P282.2**	1000	55,50
200	300	**P283.2**	1000	68,70
250	350	**HHL5.1**	100	19,25
300	400	**P284.1**	100	13,95
350	450	**HHL6.1**	100	26,90

90 µm thick

Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
160	220	**HHL7.1**	100	18,15
200	300	**HHL8.1**	100	21,00
300	400	**HHL9.1**	100	31,75

▶ Waste disposal bags see page 732



Paper bags

For storage of small parts, plant seeds etc.

Made of cellulose

Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
65	90	**TK02.1**	1000	25,75
95	132	**TK03.1**	1000	35,45
130	180	**TK04.1**	1000	51,60

Made of glassine

Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
65	90	**XC52.1**	100	4,65
95	132	**XC53.1**	100	7,00
130	180	**XC54.1**	100	10,70

Rotilabo®-sample bags

Made of glass-transparent **LDPE**. Press down on strip to seal.
Also feature white write-on lines for labelling on one side. 50 µm thick.

Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
40	60	**HHK7.1**	100	7,35
70	100	**0638.1**	100	7,50
100	150	**0639.1**	100	8,55
120	170	**0640.1**	100	9,65
160	220	**HHK8.1**	100	12,40
200	300	**HHK9.1**	100	16,80

Rotilabo®-bags with string-tie closure

Made of 50 µm thick **LDPE**.

Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
160	240	**1510.1**	100	16,10
200	300	**1511.1**	100	19,30
300	500	**1512.1**	100	27,85

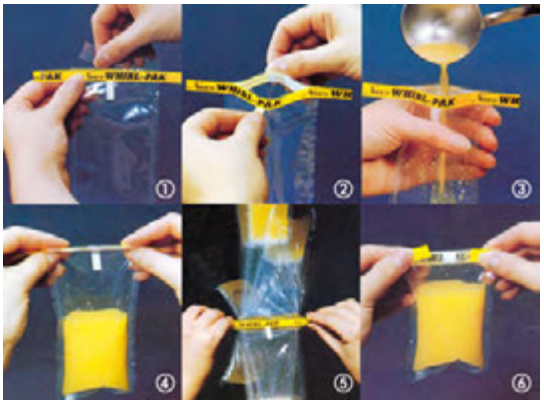
Liquid sample bags, black

By Nasco. Whirl-Pak®. Made of **LDPE. Sterile**. For saving and storing light-sensitive liquid and solid samples. With imprinted, white labelling area.
Dimensions: L 115 mm x W 230 mm, 64 µm thick. Volume 532 ml.

Art. No.	Pack Qty.	€
HT83.2	100	32,05

Sample bags Whirl-Pak®

- Made of **LDPE**
- **Sterile**
- With wire-tie closure for leakproof and airtight seal of bags
- Temperature stable from -196 to +80 °C
- FDA-approved



Liquid sample bags

By Nasco. Whirl-Pak®. Made of **LDPE**. **Sterile**.
Ideal for storing liquid and solid samples.

Procedure:

1. Can be opened easily by simply tearing the plastic along the perforation. The bag interior is therefore protected against contamination, as long as the bag is not used.

2. Practical pull-open loops enable easy opening of bag, without contact to the interior. The bag remains open when filling.

3. The wide-neck opening of the bag makes filling easier. Hold the bag as indicated and fill approx. 2/3 full.

4. The bags are closed by pulling on the outer loops.

5. Hold the bag at a distance and spin it at least 3 times (bag with volume >2500 ml, fold 4-5x to seal).

6. The bags are sealed tightly by bending the loops.

With labelling space

Volume (ml)	Wall thickness (µm)	W x H (mm)	Art. No.	Pack Qty.	€
30	57	65 x 125	**E252.2**	500	79,90
60	57	75 x 125	**E253.2**	500	81,65
120	57	75 x 185	**1611.2**	500	88,05
210	64	95 x 180	**CEE1.1**	500	92,40
530	64	115 x 230	**1612.2**	500	116,10
710	76	150 x 230	**CEE2.1**	500	138,70
800	76	125 x 305	**CEE3.1**	500	153,75
2720	102	254 x 380	**CEE5.1**	250	201,05
5440	102	380 x 508	**CEE6.1**	100	155,90

Without labelling space

Volume (ml)	Wall thickness (µm)	W x H (mm)	Art. No.	Pack Qty.	€
120	57	75 x 185	**T252.2**	500	76,55
210	76	95 x 180	**CEE7.1**	500	87,20
530	64	115 x 230	**T253.2**	500	112,90
710	76	150 x 230	**T254.2**	500	147,30
800	76	125 x 305	**CEE8.1**	500	134,40
1080	76	125 x 380	**T255.2**	500	169,85
1630	76	190 x 300	**CEE9.1**	500	203,20
2070	76	190 x 380	**T256.2**	500	207,50

Homogenizing bags

Sample bags, free-standing

By Nasco. Whirl-Pak®. Made of **LDPE. Sterile**. Stand-Up specially formed base allows bags to stand completely free and without support. Suitable for liquids and solids. With large labelling area.

Volume (ml)	Wall thickness (µm)	W x H (mm)	Art. No.	Pack Qty.	€
120	64	75 x 185	**T261.2**	500	107,30
540	76	115 x 230	**T262.2**	500	152,65
710	76	150 x 230	**ETA5.1**	500	197,80
2000	102	190 x 380	**ETA6.1**	250	207,50

Liquid sample bags with sponge

By Nasco. Whirl-Pak®. Made of **LDPE,** sponge and bag. **Sterile**. Speci-Sponge® for sample taking from laboratory benches, furniture, equipment and all other areas which must be tested for listeria, salmonella, *E.coli* and other pathogens. Sponge and bags are sterile. Sponge is free from bacteria and not growth-inhibiting. After "wiping" the sample, return the sponge to the bag. Add medium and if required incubate directly in the bag. Bags come with wire ties and large labelling area. Dimensions of sponge when wet: L 76 x W 38 x H 16 mm.

Volume (ml)	Filling quantity (ml)	W x H (mm)	Art. No.	Pack Qty.	€
540	360	115 x 230	**T263.2**	100	126,85
1650	1100	190 x 300	**T265.2**	100	175,25

Homogeniser bag stand BagOpen®

For opening and holding bags.
For single 400 ml bags. Self-adhesive pads adhere to the outer walls of the bag and to the side walls of the stand and hold the bag open. Reduces risk of sample contamination. Dimensions: W 80 x D 150 x H 250 mm.

Delivery incl. 2 adhesive pads.

Art. No.	Pack Qty.	€
XX17.1	1	117,20

Sample bags

By Nasco. Whirl-Pak®. Made of **PE**, **sterile**. Suitable for use with lab blenders.

Without labelling space

Volume (ml)	Wall thickness (µm)	W x H (mm)	Art. No.	Pack Qty.	€
380	76	130 x 190	**T257.2**	500	116,10
710	102	150 x 230	**T258.2**	500	177,40

With labelling space

Volume (ml)	Wall thickness (µm)	W x H (mm)	Art. No.	Pack Qty.	€
710	102	150 x 230	**E254.2**	500	179,55
1650	102	190 x 300	**E255.2**	500	239,75

With labelling space and round bottom
Round bottom prevents sample fragments from getting caught in the corners of the bag.

Volume (ml)	Wall thickness (µm)	W x H (mm)	Art. No.	Pack Qty.	€
1540	102	185 x 330	**CEC2.1**	500	240,80

With labelling space and full-surface filter
Contains a third layer of finely perforated PE which filters out solids in the sample when used in lab blenders.

Volume (ml)	Wall thickness (µm)	W x H (mm)	Art. No.	Pack Qty.	€
200	76	95 x 180	**CEC3.1**	250	166,65
710	102	150 x 230	**P310.2**	250	219,30
1650	102	190 x 300	**P311.2**	250	273,05
2040	102	190 x 380	**CEC4.1**	250	275,20
2720	102	254 x 380	**CEC5.1**	100	203,20

Homogenizing bags

Made of **PE**. γ-**sterile**. 70 µm thick. Suitable for use in homogenizers. Available with and without filter. The filter holds back solid particles and stops the pipettes from becoming blocked.

Volume (ml)	W x H (mm)	Filter type	Art. No.	Pack Qty.	€
80	105 x 150	without	**AYY6.1**	1500	102,15
400	180 x 300	without	**EP15.1**	500	47,25
400	190 x 300	over whole surface	**EP16.1**	500	225,75
400	190 x 300	side filters	**EP17.1**	500	224,70
3500	380 x 510	without	**AYY7.1**	100	34,35

▶ Homogenizers see page 1069

Portable racks and Clips

A 121 °C

Portable racks

By Nasco. Ideal for sample bags, especially Whirl-Pak®-bags. For transport and storage of bags filled with liquid. Made of plastic-coated metal.
With second wire netting, approx. 2.5 cm below the upper edge to hold the bag in an upright position and to prevent it from slipping in the rack.
Autoclavable.

Matching bags	Rotilabo®-portable racks		
	N225.1	N228.1	N229.1
1611.2	x		
1612.2		x	
E252.2	x		
E253.2	x		
E254.2			x
E255.2			x
P310.2			x
P311.2			x
T252.2	x		
T253.2		x	
T254.2			x
T255.2			x
T256.2			x
T257.2		x	x
T258.2			
T259.1	x		
T260.1		x	
T261.2	x		
T262.2		x	
T263.2		x	
T265.2			x
HT83.2		x	

Number of compartments	Compartment size (mm)	L x W x H (mm)	Art. No.	Pack Qty.	€
15	40 x 50	230 x 165 x 76	**N225.1**	1	37,65
20	64 x 64	340 x 270 x 102	**N228.1**	1	51,60
6	114 x 114	350 x 235 x 114	**N229.1**	1	61,95

▶ Further Clips see chapter Dialysis!

A 121 °C

Clips

Made of polyamide. Ideal for closing bags, dialysis tubes, freezer bags. Tightly closing. Easy to use. Usage temperature -30 to +80 °C. Colour white. Autoclavable.

Sealing length (mm)	Total length (mm)	Art. No.	Pack Qty.	€
45	65	**H277.1**	10	7,50
65	90	**H278.1**	10	9,65
110	130	**P901.1**	10	15,70
150	170	**P902.1**	10	24,20

Rotilabo®-soft ties

Made of highly flexible material (**TPU**). With extremely high tensile strength and high flexibility. UV- and weather resistant. Enables binder to be opened and closed repeatedly. Resistant to oils, fats and solvents.

Technical specifications:

Material	TPU
Temperature range	from -40 to +80 °C
Breakdown voltage	20 kV/mm
Elongation at tear	approx. 400 %

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
180	7	**K150.1**	50	11,10
260	7	**K151.1**	50	13,85
260	11	**K152.1**	50	17,95
340	11	**K153.1**	50	23,15

Rotilabo®-all-purpose rounded ties

Made of **PE**. Ideal for closing bags, for tying cables, replacing wires, for attaching and hanging up equipmnet, etc.
With practical snap-on closure, can be opened repeatedly.

Length (mm)	Closure holes	Design	Art. No.	Pack Qty.	€
140	1	reinforced	**H720.1**	100	7,00
180	2	standard	**H721.1**	100	7,35
240	2	standard	**H722.1**	100	9,65

Roll holder

With cutter. With holding devices for 2 rolls of foil and 1 paper towel rolls up to 35 cm width. Colour white grey.

Art. No.	Pack Qty.	€
0661.2	1	32,20

Refillable rolls

Rotilabo®-aluminium foil, 13 µm, W 30 cm, L 20 m.

Art. No.	Pack Qty. (roll)	€
0192.1	6	28,50

Paper towels Rotizell® T, 64 perforated tissues 26 x 25 cm per roll.

Art. No.	Pack Qty. (roll)	€
0264.1	28	40,75

Rotilabo®-dispenser box

Made of clear 5 mm thick acrylic glass with 5 mm thick PC lid. With safety cutting device. For clean storage and cutting of Parafilm® and Dura Seal®. For max. roll width 10 cm.

Art. No.	Pack Qty.	€
H413.1	1	149,45

▶ Roll holder and dispenser cart for large rolls, see page 1162

Foil bag sealer

With sight glass, double weld seam and automatic air evacuation. Dimensions: W 35 x H 9 x D 13 cm. Power approx. 160 watt. **Delivery incl.** sample roll of foil.

Art. No.	Pack Qty.	€
K279.1	1	48,30

Roll of foil

Made of opaque **HDPE**. W 285 mm, L 10 m. Approx. 30 µm strong. One side wall open. Temperature stable from -40 to +100 °C.

Art. No.	Pack Qty.	€
0278.1	3	11,80

Rotilabo®-dispenser boxes

Made of **ABS**. For speedy and clean cutting of Parafilm® and Dura Seal® (only Art. No. E364.1) or also Tough Tags®. Handling width up to max. 10 cm. With safety cutting device. Dimensions: L 171 x W 120 x H 144 mm.

Type	Art. No.	Pack Qty.	€
Dispenser, blue	**EE82.1**	1	52,65
Dispenser, green	**HY13.1**	1	52,80
Dispenser, red	**HY14.1**	1	52,80
Accessories:			
Spare blades	**EE83.1**	5	9,30

PARAFILM® M

Ideal for sealing vessels, petri dishes, cells etc. High flexible (stretches up to 200 %). Clings even around irregular shapes and surfaces.

- The sealing film is free of plasticisers, and consists largely of polyolefin's and paraffin waxes
- PARAFILM® M complies with the general requirements of the FAD (Food and Drug Administration) for use under 55 °C, as well as satisfying GMP (Good Manufacturing Practice)
- PARAFILM® is resistant up to 48 hours against many polar substances, e.g. saline solutions, inorganic acids and alkaline solutions; after this period embrittlement may occur

Gas permeability in 24 hours at 23 °C with 50 % relative humidity for:
Oxygen: 350 cm^3/m^2
Nitrogen: 105 cm^3/m^2
Carbon dioxide: 1100 cm^3/m^2
Water vapor permeability in 24 hours at 37 °C and 90 % relative humidity for: 0.8 g/m^2.

Technical specifications:

Film thickness	120 µm
Temperature stability	-45 to +50 °C
Melting point	60 °C
Elasticity	200 %

Width (mm)	Length (m)	Art. No.	Pack Qty. (roll)	€
50	75	**H951.1**	1	38,60
100	38	**H666.1**	1	36,50
100	75	**CNP8.1**	1	74,10
500	15	**PC00.1**	1	90,85

Accessories:

Cutter for rolls, widths 50/100 mm	**CNP9.1**	1	159,10

Foil Overview

Foil type	Parafilm®	Dura Seal®	Barriofilm®-foil
Art. No.	H666.1 f.	E364.1 f.	HCL0.1
Material	primarily polyolefine and paraffin wax	on a LDPE-base	on a vinyl chloride-base
Starch (µm)	approx. 120	100	11.5
Temp. stability	45 to +50 °C	up to approx. +100 °C	-20 to +100 °C
Elasticity	200 %	500-800 %	60 %
Anti-adh. paper	yes	no	no
Suitable for microwave	no	yes	yes
Transparency	semi	yes	yes

Dura Seal®

Highly transparent stretch cling film on a LDPE-base. Ideal for covering beakers, Erlenmeyer flasks, test tubes, etc. Chemically resistant against most aliphatic, aromatic and chlorinated solvents as well as acids and alkaline solutions.
Excellent heat resistance (softening point at approx. 110 °C).
Approved for microwave.
Application: Stretch the film and pull it over the container rim. The film clings automatically to the rims.

Technical specifications:

Foil thickness	38 µm
Temperature stability	up to approx. +100 °C
Elasticity	500-800 %

Delivery on rolls in a roll-off carton without layers of paper.

Width (mm)	Length (m)	Art. No.	Pack Qty. (roll)	€
102	150	**E364.1**	1	93,55
127	45	**Y701.1**	1	64,00

Barriofilm® film

Based on vinylidene chloride, foil thickness 10 µm. With very good battery properties. Excellent for covering gel-electrophoresis plates, particularly with DNA- and RNA-sequencing gels. Foil does not stick and is easy to roll. Non-flammable, self-extinguishing High water vapour and oxygen barrier. Food-safe and microwave-safe. Temperature stable from -60 to +140 °C.
Delivery incl. foil cutter, in box.

Width (mm)	Length (m)	Art. No.	Pack Qty. (roll)	€
295	300	**HCL0.1**	1	49,35

Clear cling foil

Made of LDPE, fully transparent. For wrapping and covering containers. Very flexible. Inert to odour and taste. Water and greaseproof. Approx. 14 µm strong. On rolls: W 30 cm, L 300 m. In tear-off box. Temperature stable from -20 to +70 °C.

Art. No.	Pack Qty. (roll)	€
1255.1	1	18,25

Tin foil

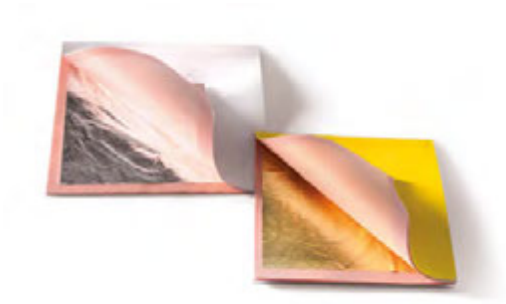
(Tin foiling) 98 %. 8 µm thick. Very soft and adaptable. Mostly resistant against chemicals. On rolls of 40 cm width. Length about 11 m. 250 g net weight.

Art. No.	Pack Qty. (roll)	€
9296.1 *	1	63,45

Rotilabo®-cover foil

Made of **LDPE**. Transparent. Heavy-duty version, very strong and tear resistant. Dimensions: L 4 x W 6 m.

Design	Thickness (mm)	Art. No.	Pack Qty.	€
heavy	0,16	**0828.1**	1	47,25
standard	0,08	**0833.1**	1	34,20



Sheets of gold

22 carat, block of 25 sheets 80 x 80 mm.

Art. No.	Pack Qty.	€
7605.1	1 piece (25 sheets)	113,85

Sheets of silver

Strength 4 µm, block of 25 sheets 95 x 95 mm.

Art. No.	Pack Qty.	€
9367.1	1 piece (25 sheets)	38,60

Filmolux 609 protective films

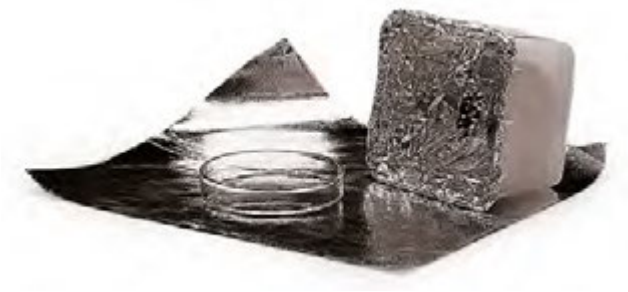
Made of **soft PVC**. Thickness 70 µm, self-adhesive. For protecting labels, laminating books, warning signs, instructions and the like. High-gloss, transparent, non-yellowing. On siliconised paper with grid (20 mm) for easy cutting to size.

Width (mm)	Length (m)	Art. No.	Pack Qty. (roll)	€
40	50	**C327.1**	1	23,55
100	50	**C328.1**	1	51,50
240	25	**YY17.1**	1	50,35
420	10	**0484.1**	1	45,10

Pre-cut aluminium foil pieces with dispenser box

Easy removal from dispenser box. Material thickness 13 µm. Measurements: 230 x 270 mm.

Art. No.	Pack Qty.	€
EE77.1	1 box with 200 pieces	16,05



Rotilabo®-aluminium foil pre-cut pieces

In carton, 1000 foils, separated by silk paper. Thickness 25 µm.

Type	Length (mm)	Width (mm)	Art. No.	Pack Qty. (box)	€
Z7	245	177	**5473.1**	1	95,70
Z12	290	235	**5474.1**	1	128,50

Rotilabo®-aluminium foil disks

In a box, 1000 sheets separated with a layer of tissue paper. Aluminium foil 30 µm strong.

Type	∅ (mm)	Art. No.	Pack Qty. (box)	€
R 80	80	**E723.1**	1	52,25
R 100	100	**0953.1**	1	64,45
R 120	120	**E724.1**	1	83,85
R 130	130	**E725.1**	1	92,45
R 150	150	**0196.1**	1	105,35

A 121 °C

Foil Cover-ALLS™ aluminium foil cover

Pre-moulded aluminium foil cover, 25 µm thick. For quick covering of various laboratory vessels. Suitable for sterilisation of Erlenmeyer flasks, beakers and measuring cylinders. Autoclavable.

Height (mm)	Basic ∅ (mm)	Art. No.	Pack Qty.	€
25	38	**YA87.1**	252	38,40
44	51	**YA89.1**	252	45,10

Rotilabo®-aluminium foils

Ideal for covering up, wrapping and insulating. Approved for food handling. Al-content over 99.0 %. In cutter box (articles 0192.1 and 1770.2 refill rollers without cutter box).

Thickness (µm)	Width (mm)	Length (m)	Art. No.	Pack Qty. (roll)	€
12	295	150	**1399.1**	1	24,70
13	300	20	**0192.1**	6	28,50
15	300	150	**AA76.1**	1	24,65
15	450	150	**AA77.1**	1	40,35
16	300	100	**1770.1**	1	22,05
16	300	100	**1770.2**	4	89,90
18	440	150	**1502.1**	1	48,40
20	450	150	**0954.1**	1	56,95
30	500	100	**2596.1**	1	62,35

A 121 °C

Polyfoil™ covers

Thermoplastic aluminium foils, polyester-coated. Square blanks. Easy to fold, adapts well to surfaces. Resistant to mechanical influences. **Resistant to most organic solvents as well as corrosive media.** Suitable for sterilisation of laboratory vessels, incubation of cultures or temporary sterile storage of laboratory materials. FDA-compliant. Autoclavable.

Size (mm)	Art. No.	Pack Qty.	€
102 x 102	**YA90.1**	100	52,50

121 °C

Rotilabo®-sterile indicator strips

Self-adhesive, for labelling or sealing sterilisation vessels. Labellable.
Roll length 55 m, strip width 19 mm, core inner ∅ 76 mm. Autoclavable.

① **Steam sterilisation:**
Changes colour from yellow to brown after 10 min at 121 °C
or after 2 min at 135 °C.
② **Hot air sterilisation (Poupinel method):**
The V imprint changes colour from green to brown after 30 min at 155 °C.

Type	Art. No.	Pack Qty. (roll)	€
① For steam sterilisation	**XC20.1**	1	10,60
② For hot air sterilisation	**XC21.1**	1	20,90

121 °C

Sterile indicator tapes

By 3M. For marking or sealing sterilisation vessels. Labellable.
Inner core ∅ 76 mm. Autoclavable.

Technical specifications:

Type	① steam sterilisation (Comply™)	② hot air sterilisation (Indair™)
Specification	Changes colour from beige to dark brown after 10 min at 121 °C (after 2 min at 134 °C). Process indicator in compliance with EN ISO 11140-1:2005.	Changes colour from green to brown after approx. 30 min at 155 °C.
Roll length (m)	55	50
Strip width (mm)	18	19

Type	Art. No.	Pack Qty. (roll)	€
① For steam sterilisation	**8221.1**	1	17,15
② For hot air sterilisation	**H590.1**	1	29,35

Sterilisation monitoring

Machine monitoring

System-independent function test for air extraction and steam penetration. Must be performed once per steriliser every day according to DIN EN 17665.
Not a direct indicator of sterilisation performance (= Performance Test).

Treatment monitoring

Sterilisable materials are labelled with external indicators to allow differentiation between sterilisable materials and sterile materials.
This minimises the risk of using non-sterilised goods.

Load/batch monitoring

A meaningful chemo-indicator is treated together with the load. This may be inserted in a special test piece.

Indicator selection aid

Monitoring step	Class*	Application	Product type	Art. No.
Treatment monitoring	1	Process indicators (treatment indicators) for differentiating between treated goods and untreated goods	Sterile indicator strips	XC20.1 XC21.1 8221.1 H590.1 HXE6.1 HXE7.1 HXE8.1
			Sterile indicator labels	ANX6.1 HXC8.1 HXC9.1 HXC7.1
Machine monitoring	2	Indicators for daily air extraction and steam penetration testing	Bowie-Dick disposable test pack	ANX4.1 HXC6.1
Batch monitoring	5	Integrators for reaction to all critical variables in a series of defined sterilisation processes	SteriGage™ Integrator stericlin® indicator strips	ANX5.1 HXE9.1

*Indicator classes according to DIN EN ISO 11140

NEW

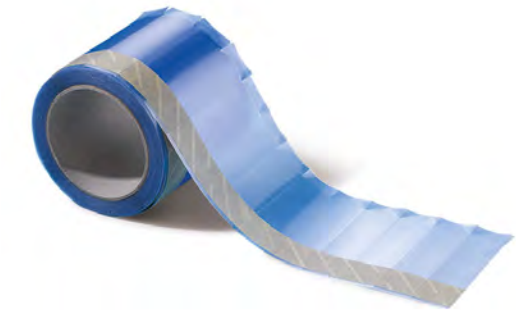
A 121 °C

stericlin® sterile indicator strips

Self-adhesive. For marking or sealing sterilisation containers as well as differentiating between untreated and treated sterile materials.
Colour change from light green to dark brown/black following exposure to saturated steam for ten minutes at 121 °C or two minutes at 134 °C.

- Sterilisation method: steam sterilisation
- Process indicators type 1
- With steam indicator (STEAM)
- Core ∅ 76 mm
- Material thickness: 0.17 mm
- Autoclavable

Type	Roll width (mm)	Length (m)	Art. No.	Pack Qty. (roll)	€
beige, paper	19	50	**HXE6.1**	1	4,25
beige, low-crepe paper	25	50	**HXE7.1**	1	5,35
blue, waterproof low-crepe paper	19	50	**HXE8.1**	1	6,25



A 121 °C

Comply™ indicator labels

By 3M. Simple identification labels for steam sterilisation, with treatment indicator, lead-free. Can be labelled with an indelible pen, easily removable without residues, especially from metal containers.
Dimensions: L 100 x W 25 mm.

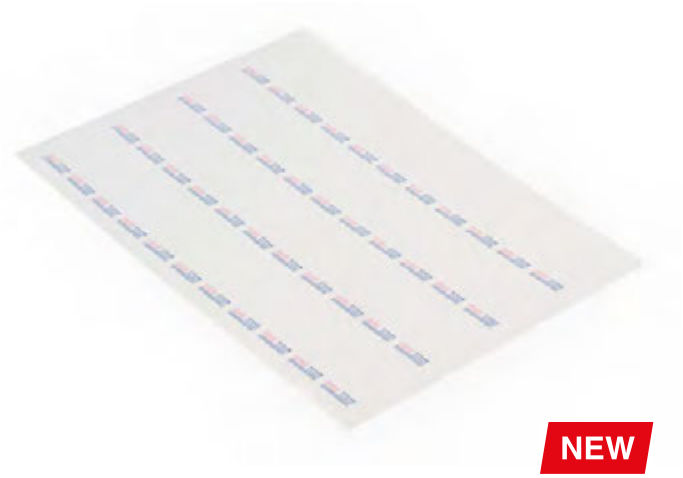
Art. No.	Pack Qty.	€
ANX6.1	500	192,45

NEW

Table dispensers for sterile indicator strips

Made from metal. Colour: Blue. For sterile indicator strips with a core diameter of 76 mm, max. width: 25 mm.

Art. No.	Pack Qty.	€
HXC5.1	1	88,15



NEW

stericlin® sterile indicator labels for laser printers

Made from paper, simply self-adhesive. With STEAM indicator (type 1 indicator as per ISO 11140-1). For marking or sealing sterilisation containers as well as differentiating between untreated and treated sterile materials. Colour change from pink to brown. Paper format DIN A4.

Label size (mm)	Art. No.	Pack Qty.	€
48 x 25	**HXC8.1**	2000	192,45
65 x 40	**HXC9.1**	2000	267,70

NEW

A 121 °C

stericlin® sterile indicator labels for thermal printers

Made from paper, double-sided adhesive (sandwich).
With STEAM indicator (type 1 indicator as per ISO 11140-1).
For sterilisation-resistant labelling and documenting. Suitable for all common thermal transfer printers such as Zebra, CAB and GoDex.

- Colour change from pink to brown
- 1000 labels per roll
- Size: 70 x 35 mm
- Core ∅ 40 mm
- 3 mm-wide revenue stamp for printers on the reverse
- Roll width: 73 mm

Art. No.	Pack Qty. (roll)	€
HXC7.1	1	85,90

NEW

stericlin® Bowie-Dick disposable test pack

Steam penetration test for daily function monitoring and quality assurance of the steam steriliser according to DIN EN ISO 11140-4.
Free from heavy metals and toxic substances.

Application:

- Place the test pack in the steriliser
- Carry out the Bowie-Dick test procedure
- Remove the test sheet
- Review the result: in the event of complete steam penetration, the indicator will evenly change colour from blue to pink. In the event of a malfunction, however, no even colour conversion will occur. Following a successful colour conversion, the colour hue of the indicator will no longer change. This ensures complete reliability of documentation.

Art. No.	Pack Qty.	€
HXC6.1	20	113,10

▶ Disposal bags with sterilisation indicator see page 733

▶ Data logger for autoclaves see page 831

A 121 °C

Indicators for autoclave monitoring

By 3M. Bowie-Dick disposable test pack. Heavy-metal-free indicators for daily air extraction and water vapour permeability test in accordance with DIN EN 17665. Meets EN 867-1 1997, EN 867-4:2000, ISO 11140-1:1995 and ISO 11140-4:2001. Simple interpretation and fault detection through colour change from blue to pink, as well as non-reflective surface. No subsequent change of colour for safe storage and transparency of results. Reproducible.

Art. No.	Pack Qty.	€
ANX4.1	20	241,90

A 121 °C

Comply™ SteriGage™ chemo-indicators

By 3M. Class 5 integrating indicators (integrators) for monitoring the sterilisation process within individual packaging. "Moving Front" technology ensures clear results: As the sterilisation process progresses, a dark strip forms, stopping either within the "Accept" band (pass) or within the "Reject" band (fail). The result can be read directly off the indicator without any need for interpretation. Suitable for steam sterilisation at +121 °C and +134 °C. High performance: reaction is identical to that of an bioindicator strip in the sterilisation process.

Art. No.	Pack Qty.	€
ANX5.1	100	90,85

NEW

stericlin® type 5 indicator strips (STEAM)

Absorptive indicators for package monitoring in accordance with DIN EN ISO 11140-1. Review of the sterilisation process to sufficient influence of steam (steam, temperature and time) in the interior of packaging or in other selected areas. Free from heavy metals and toxic substances.

Application:

- Place in the desired areas of the load (in transparent packaging, wrapping materials, containers, etc.)
- Carry out the sterilisation program (121 °C/134 °C)
- Remove the indicator strips
- Review the result: in the event of sufficient influence from vapour, the indicator will change colour from blue to pink. An incomplete colour change indicates a malfunction of the steriliser. Following a successful colour conversion, the colour hue of the indicator will no longer change. This ensures complete reliability of documentation.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
80	30	**HXE9.1**	500	54,65

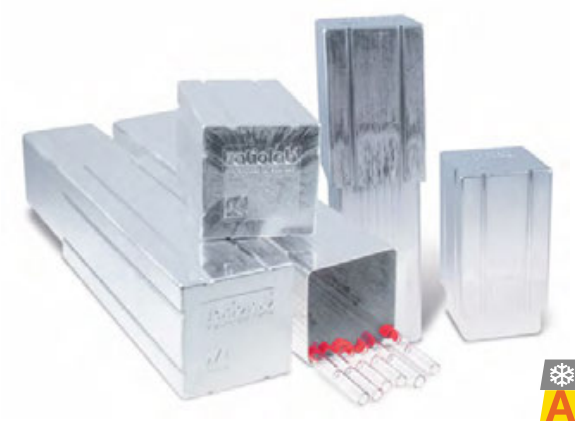
NEW

A 121 °C

stericlin® transparent bags

Made from paper and film. Pre-sealed on three sides, for sealing with heat sealing units (sealing temperature: 175–200 °C). In accordance with DIN EN ISO 11607 and DIN 868-5. The sterilisation-resilient kraft paper with a strength of 70 g/m² constitutes an effective barrier against germs, yet is also permeable to air, vapour and sterilising gases. With three imprinted indicators outside the filling area: STEAM, EO and FORM.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
200	100	**HXE0.1**	2000	85,95
250	125	**HXE1.1**	2000	134,40
300	150	**HXE2.1**	1000	80,60



A 121 °C

Pipette containers

Made of aluminium. For the storage of plastic pipettes and glassware between 160 and 480 mm in length, e.g. stirring bars, serological, Pasteur pipettes, volumetric pipettes and graduated pipettes. With silicone inner padding and lid for protection of the stored glass pipettes. Autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
160-200	**CLN4.1**	1	33,10
235-305	**CLN5.1**	1	38,60
315-385	**CLN6.1**	1	41,75
315-485	**CLN7.1**	1	44,00

A 121 °C

Varicon variable pipette containers

Made of aluminium. Round. Ideal for sterilising pipettes of different volume and size. Consists of two aluminium parts, which can be pushed inside each other. ∅ 60 mm.
Only one container size required for:
all standard pipettes 280 to 420 mm and
for all short- or Pasteur pipettes 145 to 235 mm.

Type	Art. No.	Pack Qty.	€
Varicon RK 145-235 mm	**P978.1**	1	50,45
Varicon RS 280-420 mm	**P979.1**	1	37,45

Silicone insert

For laying in Varicon pipette container. Prevents damage to pipettes. Made of 2 mm thick silicone rubber. ∅ 58 mm.

Art. No.	Pack Qty.	€
P980.1	1	7,50

121 °C

Rotilabo® sterilising container for pipettes

Made of stainless steel. With silicone coated base and lid. Sterilisable up to +205 °C.

① **Round**
The holes in the lid can be opened and closed by twisting the lid.

Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
380	65	**C841.1**	1	74,20
380	80	**C843.1**	1	83,85
500	80	**C844.1**	1	91,40

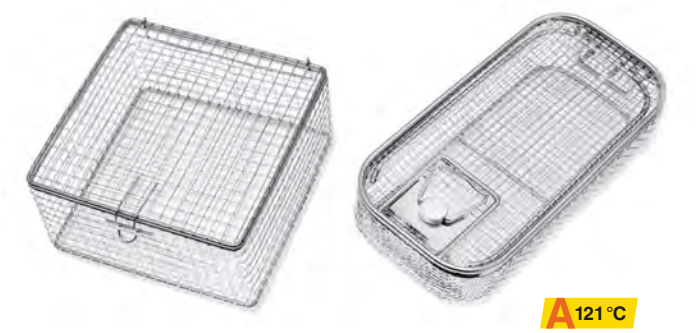
② **Angular**
Stackable. Tube size 70 x 70 mm.

Total length (mm)	Effective length (mm)	Art. No.	Pack Qty.	€
210	180	**C868.1**	1	129,00
290	257	**C869.1**	1	139,75
430	412	**C871.1**	1	166,65

Rack for pipette containers

Made of stainless steel. With fixed tilt. Ideal for convenient storage of round and rectangular pipette containers at the workplace or in safe storage. Max. ∅ of round containers 74 mm, and max. edge length of rectangular ones 71 mm. Minimum length of containers 250 mm.

For	W x D x H (mm)	Art. No.	Pack Qty.	€
4 containers	195 x 235 x 229	**P982.1**	1	126,85
6 containers	195 x 235 x 315	**P983.1**	1	132,25
8 containers	195 x 235 x 405	**P984.1**	1	170,95



121 °C

Rotilabo®-sterilisation baskets

Made of stainless steel 18/10 (material 1.4301), electrolytically polished. With lid attached. Autoclavable.

Type	L x W x H (mm)	Art. No.	Pack Qty.	€
Square	180 x 180 x 90	**EPA3.1**	1	78,35
Rectangular, with handle	250 x 130 x 60	**EPA4.1**	1	107,00

121 °C

Rotilabo®-sterilisation baskets

Made of stainless steel 1.4301, electropolished.
Mesh baskets spot-welded, 8 x 8 x 1 mm. Ideal for storing, transporting, cleaning and sterilising labware. Autoclavable.

① **Quadratic and rectangular**

Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	100	100	**L040.1**	1	40,75
120	120	120	**L041.1**	1	46,20
140	140	140	**L042.1**	1	52,65
160	160	160	**L043.1**	1	59,05
180	180	180	**L044.1**	1	67,65
200	200	200	**L045.1**	1	79,35
300	200	200	**L046.1**	1	100,85
400	200	200	**L047.1**	1	123,65

② **Round**
With handle.

∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	80	**HHA1.1**	1	49,25
120	100	**L050.1**	1	57,55
150	120	**L051.1**	1	57,95
160	180	**HHE0.1**	1	75,15
180	160	**L052.1**	1	74,10
210	180	**L053.1**	1	84,95
240	180	**L054.1**	1	92,45
270	180	**L055.1**	1	109,65
300	200	**L056.1**	1	129,00

A 121 °C

Sterilisation baskets, rectangular

Made of stainless steel 18/10, electrolytically polished. For storage, transportation, cleaning and sterilisation of labware.
Mesh size 8 x 8 x 1 mm. Autoclavable.

Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
150	100	100	**YT41.1**	1	52,65
200	150	150	**YT42.1**	1	66,15
250	150	150	**YT43.1**	1	117,20
500	300	250	**YT44.1**	1	229,00
600	400	300	**YT45.1**	1	239,75

A 121 °C

Baskets

By Nalgene®. Made of **PP**. Ideal for storing, sterilising and cleaning labware.
Smooth surface prevents any scratching of glass and plastic.
Baskets are stackable. Autoclavable.

Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
123	154	105	**L068.1**	1	23,15
168	178	156	**L069.1**	1	25,60
230	239	233	**L070.1**	1	33,85

A 121 °C

Sterilisation containers polySteribox®

Transparent special plastic, can be used for approx. 1250 sterilization cycles. **For the sterilization and storage of instruments.** Suitable for steam, gas and plasma sterilization. Hydrophobic PTFE filter stops germs and bacteria (replace after approx. 250 sterilizations, includes date insert). A sterilization mark and protective seal can be used to check the sterility of the contents. Safety seal for safe transportation. Stackable.
Dishwasher safe.
In acc. with DIN 58952, 58953, EN 868-1/868-8/554, ISO 11607 and DIN EN ISO 17664 and 11137-1. CE certified. Autoclavable up to 134 °C.
Delivery incl. PTFE filter (12-month filter, polySteribox M with permanent filter). Permanent filter set is optional. Please order separately.

Type	Outer dimensions: L x W x H (mm)	Inner dimensions: L x W x H (mm)	Art. No.	Pack Qty.	€
polySteribox® SH	208 x 111 x 55	177 x 76 x 44	**X616.1**	1	115,05
polySteribox® M	185 x 145 x 59	156 x 124 x 48	**KP96.1**	1	134,40
polySteribox® L	290 x 184 x 74	261 x 163 x 64	**KP97.1**	1	164,50
polySteribox® XL	497 x 122 x 65	465 x 90 x 54	**TA78.1**	1	226,85

Accessories:

Sterilisation seal with indicator strip	**X617.1**	1000	49,05
Protective seals	**H653.1**	500	46,70
Non-slip silicon mat for polySteribox® SH	**H654.1**	1	29,05
Non-slip silicon mat for polySteribox® M	**TA79.1**	1	32,20
Non-slip silicon mat for polySteribox® L	**TA80.1**	1	46,15
Screen basket for polySteribox® SH	**HLE9.1**	1	80,65
Screen basket for polySteribox® M	**HLH0.1**	1	83,35
Screen basket for polySteribox® L	**HLH1.1**	1	85,80
Screen basket for polySteribox® L with lid	**HLH2.1**	1	192,45
Grid insert made of stainless steel for polySteribox® L	**HLH3.1**	1	55,80
Screen basket for polySteribox® XL with lid for 2 endoscopes	**HLH4.1**	1	265,55
Permanent filter set for polySteribox® SH	**TA85.1**	1	20,45
Permanent filter set for polySteribox® M	**TA86.1**	1	24,20
Permanent filter set for polySteribox® L/XL	**TA87.1**	1	30,65

▶ Steam sterilizers CertoClav see page 931

▶ Instrument trays made of stainless steel see page 129

Cell culture bottles

A 121 °C

DuraPorter™ safety containers

Made of **PC**, with watertight silicon seal. Ideal for in-house transportation of biological and chemical samples, instruments or for storage. Transparent box with hinged lid, three snap locks and carry handle, stackable. Partitionings for smaller samples can be removed to make use of the entire interior. Lid can be fully opened for easy filling and cleaning. Dimensions: outer L 380 x W 196 x H 160 mm, inner L 335 x W 155 x H 135 mm. Autoclavable.

Colour	Art. No.	Pack Qty.	€
transparent/blue	**AAA0.1**	1	89,00
red	**AAA1.1**	1	89,00
yellow	**AAA2.1**	1	89,00

S

Plastic roller bottles

By Greiner Bio-One. Made of **PS**. **Sterile.** Graduated. TC-surface treatment improves cell adhesion and increases the yield. **DNase-, RNase- and human DNA-free.** Non-pyrogenic. HDPE-screw closure available as a standard screw closure or as a filter screw closure with hydrophobic membrane (PET/PTFE) for optimal gas exchange.

Max. filling cap. (ml)	∅ x H (mm)	Growth surface (cm^2)	Screw closure	Art. No.	Pack Qty.	€
2550	122 x 271	850	standard	**CE58.1**	24	147,30
2100	122 x 271	850	with filter	**CE59.1**	24	162,35

A 121 °C

Rotilabo®-sterilisation containers for petri dishes

Made of 18/8 stainless steel. With holder for dishes with max. ∅ 100 mm. Can be sterilised up to max. +150 °C.

∅ (mm)	Height (mm)	Capacity	Art. No.	Pack Qty.	€
120	250	10 Petri dishes	**C846.1**	1	118,25
120	500	20 Petri dishes	**C847.1**	1	203,20

S

Suspension culture bottles

By Greiner Bio-One. Made of **PS**. **Sterile.** With white screw cap. Ideal for suspension cultures through strongly hydrophobic surfaces. High, slanting bottle neck protects cap interior from contamination through medium. Bottles are graduated on the side and have a labeling area. **DNase-, RNase- and human DNA-free.** Endotoxin free, free of cytotoxic substances.

Max. filling cap. (ml)	Art. No.	Pack Qty.	€
50	**CE51.1**	200	138,70
250	**CE52.1**	120	139,75
650	**CE53.1**	40	95,15

S

Suspension culture bottles with filter screw cap

By Greiner Bio-One. **Made of PS. Sterile.** Hydrophobic membrane (pore size 0.2 µm) for minimal risk of contamination and optimal gas exchange. High, angled neck reduces the risk of media contact with the inside of the screw cap and thus provides an additional layer of protection against contamination.

- Hydrophobic surface
- Ideal for suspension cultures, hybridoma cells and embryonal stem cells
- Optimal access with pipette
- Graduations and labelling space on side
- Optimal gas exchange thanks to high air flow rate of membrane
- Additional standard screw caps (without filter) in every box
- **DNase, RNase and human DNA free**
- Endotoxin free, free of cytotoxic substances

Max. filling cap. (ml)	Art. No.	Pack Qty.	€
50	**CNA6.1**	200 (20 x 10)	137,60
250	**CNA7.1**	120 (24 x 5)	112,90
650	**CNA8.1**	40 (8 x 5)	85,15

S

Tissue culture bottles

Made of **PS**. Lid made of **PE**. **Sterile**. Ideal for cultivating and storing cell cultures. Very high optical clarity. Non toxic. Bottom of bottle has been surface-treated for optimum cell growth. Slanting neck and large opening enable entire culture surface to be accessed.
Variable closure: Screw cap can be closed tightly for anaerobic cultures, or screwed into vent position for defined ventilation.
Bottles are graduated and have a labeling area. Stackable.

Useable area (cm^2)	Volume (ml)	L x W x H (mm)	Packaging	Art. No.	Pack Qty.	€
25	60	90 x 50 x 25	36 x 10	**X845.1**	360	378,40
75	270	150 x 85 x 35	20 x 5	**X846.1**	100	226,85
150	690	205 x 120 x 45	12 x 3	**X847.1**	36	176,30

S

Cell culture bottles with filter screw cap

By Greiner Bio-One. Made of **PS**. **Sterile**. Hydrophobic membrane (pore size 0.2 µm) for minimal risk of contamination and optimal gas exchange. Angled neck reduces the risk of media contact with the inside of the screw cap and thus provides an additional layer of protection against contamination.

- Cell layers are easy to reach with the cell scraper
- Optimal access with pipette
- Graduations and labelling space on side
- Improved cell adherence through physical surface treatment
- Optimal gas exchange thanks to high air flow rate of membrane
- **DNase, RNase and human DNA free**
- Endotoxin free, free of cytotoxic substances

Max. filling cap. (ml)	Working capacity (ml)	Growth surface (cm^2)	Art. No.	Pack Qty.	€
50	5-10	25	**CE48.1**	200 (20 x 10)	148,35
250	15-38	75	**CE49.1**	120 (24 x 5)	155,90
550	20-45	175	**CLY2.1**	50 (10 x 5)	111,80
650	20-85	175	**CE50.1**	40 (8 x 5)	95,60

S

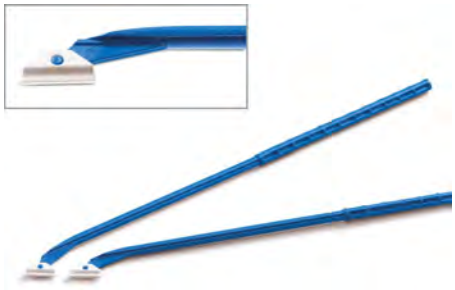
Cell culture bottles

By Greiner Bio-One. **Made of PS. Sterile.** Screw cap can be used in two positions: ventilation position or gastight cap. High, angled bottle neck reduces the risk of media contact with the inside of thecap.

- Cell layers are easy to reach with the cell scraper
- Optimal access with pipette
- Graduations and labelling space on side
- Improved cell adherence through physical surface treatment
- **DNase, RNase and human DNA free**
- Endotoxin free, free of cytotoxic substances

*With grid.

Max. filling cap. (ml)	Working capacity (ml)	Growth surface (cm^2)	Art. No.	Pack Qty.	€
50	5-10	25	**CNA9.1**	200 (20 x 10)	136,55
50	5-10	25*	**CNC0.1**	200 (20 x 10)	163,40
250	15-38	75	**CNC1.1**	120 (24 x 5)	107,00
550	20-45	175	**CNC2.1**	50 (10 x 5)	103,65
650	20-85	175	**CNC3.1**	40 (10 x 4)	85,65



S

Cell scrapers

By Greiner Bio-One. Made of **PS**. Swivel blade, made of **HDPE**, for gentle scraping of cells on difficult to reach surfaces. Individually **sterile** wrapped.

Length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
280	18	**CE60.1**	100	230,05
400	18	**CE61.1**	100	265,55

S

Cell scrapers

Made of **ABS**, blade made of flexible TPE. **Sterile**, individually packed. For cell harvesting in cell culture flasks and dishes. Swivelling movements, as well as horizontal and vertical blade rotation, enable a variety of applications and allow access to points that are difficult to reach.

Length (mm)	Blade width (mm)	Art. No.	Pack Qty.	€
245	20	**EKX9.1**	100	79,00
385	30	**EKY0.1**	100	121,00

S

FourWell Plate™ CELLSTAR®

By Greiner Bio-One. Made of **PS**. **Sterile.** Four-well plate for microscopic applications, for cultivation and processing of cells on microscope slides. Can also be used as incubation tray for blotting membranes. Dimensions: L 127.8 x W 85.5 x H 14.4 mm (plate footprint conforms to ANSI standard).

- 4 individual chambers, each with a max. volume of 18.6 ml per well
- Numbered wells for secure sample identification
- Bevelled edges on the left-hand side of the plates serve as a guide
- Vents
- With cover panel
- **Free of detectable DNase, RNase and human DNA**
- **Free of detectable endotoxins, free of cytotoxic substances**

Art. No.	Pack Qty.	€
CNA2.1	32 (4 x 8)	119,35

S

Microtitration plates BRAND*plates*®

By Brand. Manufactured in accordance with ANSI/SBS standards 1 to 4 - 2004 to ensure compatibility when carrying out manual processes and, in particular, automatic processes.

- 96 well standard format
- Clearly distinguishable by embossed alphanumeric colour code: grey for standard plates, blue for immunology, orange for the cell culture
- **Free of endotoxins, DNase, DNA, RNase, non-cytotoxic**

Microtitration plates cellGrade™

Made of **PS**.

- **Sterile** (individually packed, with cover)
- Standard plate for cultivating adherent cell cultures
- PS surface with various freely accessible chemical groups, e.g. carboxyl and hydroxyl groups
- Surface is hydrophilic (untreated PS is non-hydrophilic)
- Serum constituents are bound to the free chemical groups which allow indirect adhesion of cells

Volume per well (µl)	Type	Art. No.	Pack Qty.	€
350	transparent, F-bottom	**CNP6.1**	50	146,20
350	white, F-bottom	**XT72.1**	50	267,70
350	black, F-bottom	**XT73.1**	50	267,70
330	white, with transparent F-bottom	**XT74.1**	50	643,95
330	black, with transparent F-bottom	**XT75.1**	50	643,95

Microtitration plates, inertGrade™

Made of **PS**.

- **Sterile** (individually packed, with cover)
- Suitable for cultivating suspension cell cultures
- Ideal for cell cultures if cell adhesion is to be avoided
- Optimised surface properties minimise cell binding, protein absorption, enzyme activation and cellular activation
- This allows, for example, premature differentiation of stem cells to be inhibited

Volume per well (µl)	Type	Art. No.	Pack Qty.	€
330	96 well, transparent, U-bottom	**XT76.1**	40	493,45
350	96 well, transparent, F-bottom	**XT77.1**	40	493,45

Microtiter plates pureGrade™ S

Made of transparent **PS**. Untreated surface.

- **Sterile** (individually packed, with cover) or non-sterile
- Chimney shaped 96 well cavities, with alphanumeric labelling
- F profile (flat bottom shape) for precision optical measurements
- Sterile type is ideal for bacteriological assays
- Non-sterile type designed, in particular, for homogeneous assays, screenings and storage

Volume per well (µl)	Type	Art. No.	Pack Qty.	€
350	F-profile, **sterile**	**XT64.1**	50	126,85
350	F-profile, non-sterile	**CNP7.1**	100	104,60

▶ For further information on Brand microtiter plates see page 479

Cell culture plates, pans + vials

S

Cell culture plates

Made of **PS**. **Sterile** (Gamma sterilised), individually packed, with cover. Hydrophilic, negatively-charged surface through plasma treatment for uniform cell adhesion and cell growth.

- F profile (flat-shaped base)
- Optically clear for good cell visualisation
- Increased well edge reduces evaporation
- Condensation rings in the lid reduce cross-contamination
- Alphanumeric numbering
- Non-pyrogenic

Wells	Volume per well (ml)	Art. No.	Pack Qty.	€
6	17	**EKX5.1**	100	149,00
12	6,8	**EKX6.1**	100	159,00
24	3,5	**EKX7.1**	100	159,00
96	0,39	**EKX8.1**	100	159,00

S

Cell culture Multiwell plates

By Greiner Bio-One. Made of **PS**. **Sterile** (individually packed, cover plate for adherent cell cultures). TC-surface treated. Non-pyrogenic.
Free of detectable DNase, RNase and human DNA.
Free of detectable endotoxins, free of zytotoxic substances.
Alphanumeric well coding. F-bottom. Max. centrifuging: 4800 x g.

Wells	Growth surface per well (cm^2)	Working volume per well (ml)	Art. No.	Pack Qty.	€
6	9,6	2-5	**CE54.1**	100	189,20
12	3,9	2-4	**CE55.1**	100	238,65
24	1,9	0,5-1,5	**CE56.1**	100	210,70
48	1,0	0,5-1	**CE57.1**	100	277,35
96	0,34	0,025-0,34	**KL43.1**	100	222,55

S

Cell strainer EASYstrainer™

By Greiner Bio-One. Housing made of **PP**, filter diaphragm made of **PET**. **Sterile,** individually packed (single blister pack). For the filtration of cell suspensions and primary cell isolates, e.g. after organ digestion, for use in primary cell extraction or cell preparation for flow cytometry.

- Fits all standard 50 ml tubes
- With handle and mantle surface for improved aseptic handling
- Venting slot for rapid filtration, no overflowing of the cell strainer

Aids aseptic work: the mantle surface and handle protect against unintentional contact with the sterile filter material. The single blister pack allows for convenient and aseptic removal of the strainer. Venting slot between fitted cell strainer and tube allows the air in the tube to escape quickly during filtration and ensures that liquid does not accumulate between the strainer and the tube or that the strainer cannot overflow.

Mesh size (µm)	Colour	Art. No.	Pack Qty.	€
40	green	**CLY9.1**	50	99,35
70	blue	**CNA0.1**	50	99,35
100	yellow	**CNA1.1**	50	99,35

S

Cell culture dishes

Made of **PS**. **Sterile** (gamma-sterilised). Optically clear for microscopy. Plasma-treated for optimal cell growth conditions, both for adherent cells and for cell suspensions. With vents to ensure optimal gas exchange. Stackable. The circular elevation on the edge prevents accidental opening of dishes during transit. Non-pyrogenic.

Working capacity (ml)	Growth surface (cm^2)	∅ x H (mm)	Art. No.	Pack Qty.	€
3	9,4	35 x 10	**PK37.1**	500 (25 x 20)	147,30
5	21,5	60 x 15	**PK38.1**	500 (50 x 10)	181,70
12,5	60,8	100 x 20	**PK39.1**	200 (20 x 10)	113,95

NEW

S

Cell culture dishes

By Sarstedt. Made of **PS. Sterile.** Standard growth surface for adherent cells. SUREGrip Design. Non-pyrogenic/endotoxin-free, non-cytotoxic.

- Growth surface 152 cm^2
- Work volume 36 ml
- Diameter 150 mm
- Height 20 mm

Art. No.	Pack Qty.	€
HPX6.1	100 (20 x 5)	127,95

Culture vials

CELLreaktor™-tubes CELLSTAR®

By Greiner Bio-One. Made of **PP**, filter screw cap with PTFE-coated capillary pore filter membrane (USP Class VI certified, pore size 0.2 µm). **Sterile.** Temperature stability - tube: from -196 to +121 °C, screw cap: from -80 to +100 °C. Tubes are autoclavable (without screw cap).

- Conical tube design facilitates direct cell harvesting
- With graduations and labelling space
- Excellent gas exchange
- Free of detectable DNase, RNase and human DNA
- Pyrogen free, non-cytotoxic

Uses:
- Miniaturisation of large scale test set-ups
- Maximises the number of parallel experiments
- Bioreactors for the cultivation of suspension cells and spheroid cells
- Expansion of aerobic bacteria, yeasts and micro-organisms
- Storage of substances which require gas exchange

Volume (ml)	Max. centrifugability	Dimensions: ∅ x H (mm)
15	Oscillating rotor: 4000 x g Fixed angle rotor: 15 000 x g	17 x 120
50	Oscillating rotor: 3200 x g Fixed angle rotor: 9500 x g	30 x 115

Volume (ml)	Art. No.	Pack Qty.	€
15	**CLY4.1**	300 (15 x 20)	211,80
50	**CLY3.1**	500 (25 x 20)	389,15

Cell culture vials CELLSTAR®

By Greiner Bio-One. Made of **PS**, with HDPE screw cap. **Sterile.** Volume 12 ml, dimensions: ∅ 17 x H 100 mm.

- Improved cell adherence through physical surface treatment
- **Free of detectable DNase, RNase and human DNA**
- **Free of detectable endotoxins, free of cytotoxic substances**

Technical specifications:

Type	Max. centrifugability (g)	
	Fixed angle rotor	Oscillating rotor
Conical bottom, with screw cap	5000	3000
Self-standing, with support skirt and bayonet cap (opens with 1/3 turn)	5000	5000

Type	Art. No.	Pack Qty.	€
Conical bottom	**CNC4.1**	1000 (200 x 5)	270,90
Self-standing	**CNC5.1**	1000 (200 x 5)	275,20

Culture vials

Made of AR-GLAS®, clear. Autoclavable.
Supplied without screw caps (please order separately).

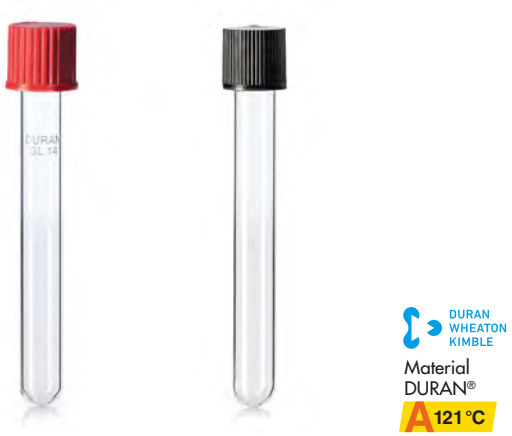
Type	Volume (ml)	Outside ∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
Conical bottom	15	16	125	**EXE8.1**	100	25,75
Straight base	15	16	125	**EXE9.1**	100	25,75

Screw-cap closures

Made of **PP**, white, with integrated seal made of TPE, **leak-proof**.
- Extended closures, reduce risk of contamination
- Short screw thread for easy opening and closing
- Highest safety for sterilization through injected seal

Dimensions: outside ∅ 20 x L 30 mm.
Temperature stable from -10 to +121 °C. Autoclavable.

Art. No.	Pack Qty.	€
EXH0.1	100	37,65



Culture tubes with screw caps

Made of DURAN®, with DIN-thread, screw caps made of PBT, gaskets PTFE-coated. Hot air sterilization to max. 180 °C. Autoclavable.

Volume (ml)	Outside ∅ (mm)	Length (mm)	Thread	Art. No.	Pack Qty.	€
6	12	100	GL 14	**K248.1**	50	162,00
9	13	100	GL 14	**PY94.1**	50	162,00
20	16	150	GL 18	**PY95.1**	50	162,00
20	16	160	GL 18	**K249.1**	50	210,00
34	20	150	GL 18	**PY96.1**	50	239,00
30	18	180	GL 18	**K250.1**	50	229,00

Made of **AR-GLAS®**, with DIN-thread, screw caps made of PP, white rubber gasket. Heat resistant to 140 °C. Autoclavable (repeated autoclaving can lead to glas corrosion).

Volume (ml)	Outside ∅ (mm)	Length (mm)	Thread	Art. No.	Pack Qty.	€
6	12	100	GL 14	**K251.1**	100	40,65
12	16	100	GL 18	**K252.1**	100	43,60
20	16	160	GL 18	**K253.1**	100	53,75
30	18	180	GL 18	**K254.1**	100	62,65

▶ For spare screw caps see page 46
▶ Test tubes see page 80

Culture bottles

Sterile culture vials with screw cap

Made of **PS**. Cap made of **HDPE**. **Sterile**. Centrifugable to 3000 x g. Coloured lid inserts for identification are optional (CK72.1ff). Volume 8 ml. Dimensions: ∅ 13 x L 100 mm. Pyrogen free. Temperature resistant in the range -80 to +80 °C.

Art. No.	Pack Qty.	€
AEL3.1	1000 (8 x 125)	265,55

Sterile culture vials

- Made of transparent **PS** or translucent **PP**
- With two-position **PE** closure for anaerobic and aerobic bacteria cultures
- **Sterile**
- With or without graduations and labelling space
- Available in space-saving box or economy-priced bag

	PS vials	PP vials
Temperature stability	up to +70 °C	-190 to +121 °C
Centrifugable up to	1400 x g	3000 x g

Made of PS

Volume (ml)	∅ (mm)	Height (mm)	Graduations	Packaging	Art. No.	Pack Qty.	€
4	12	75	yes	individual	**EA97.1**	500	143,30
4	12	75	yes	25/box	**EA98.1**	500	115,05
4	12	75	no	bulk-packed (bag)	**AEX8.1**	500	72,80
12	17	95	yes	individual	**EA99.1**	500	191,35
12	17	95	yes	25/box	**EC00.1**	500	145,15
12	17	95	no	bulk-packed (bag)	**AEX9.1**	500	87,45

Made of PP

Volume (ml)	∅ (mm)	Height (mm)	Graduations	Packaging	Art. No.	Pack Qty.	€
4	12	75	yes	individual	**EC01.1**	500	143,00
4	12	75	yes	25/box	**EC02.1**	500	112,90
4	12	75	no	25/bag	**AEY0.1**	500	69,85
12	17	95	yes	individual	**EC03.1**	500	191,35
12	17	95	yes	25/box	**EC04.1**	500	145,15
12	17	95	no	25/bag	**AEY1.1**	500	106,70

Drosophila vials

By Greiner Bio-One. Made of **PS**. Ideal for the cultivation of Drosophila melanogaster.

Volume (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
16	22 x 63	**CLY5.1**	1500	107,00
28	27 x 64	**CLY6.1**	1500	147,30

Plug for Drosophila vials

By Greiner Bio-One. Made of water repellent Ceapren, permeable to air.

For vial vol. (ml)	∅ (mm)	Art. No.	Pack Qty.	€
16	22	**CLY7.1**	1500	177,40
28	26	**CLY8.1**	1500	123,65

Drosophila cultivation tubes

Made of **PP**. Ideal for cultivating drosophila and other insects. Straight-walled for easy storage in racks, filling and sealing. Autoclavable.

∅ x H (mm)	Art. No.	Pack Qty.	€
50 x 100	**PK11.1**	225	92,60
28 x 85	**PK10.2**	950	138,70

Plug for drosophila cultivation tubes

Made of multiple-embossed foam (PU), air permeable and mite safe.

∅ x H (mm)	Art. No.	Pack Qty.	€
28 x 25	**PK13.1**	100	51,95
50 x 25	**PK15.1**	100	92,65

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Breed-Demeter square bottle

Made of DURAN®. Capacity 180 ml. Neck ∅ 28 mm. Dimensions: W 48 x H 148 mm. Autoclavable.

Art. No.	Pack Qty.	€
T954.1	1	16,00

Culture bottles

S

Medium bottles

By Greiner Bio-One. Made of **PET. Sterile.**
- With graduations
- Square shaped
- **Free of detectable DNase, RNase and human DNA**
- **Free of detectable endotoxins, free of cytotoxic substances**

Volume (ml)	L x W x H (mm)	Art. No.	Pack Qty.	€
100	53 x 53 x 108,3	**CNA3.1**	100 (4 x 25)	133,30
500	77 x 77 x 177,3	**CNA4.1**	50 (2 x 25)	99,40
1000	92 x 92 x 218,8	**CNA5.1**	24 (2 x 12)	96,45

S

Nutrient media bottles

By Nalgene®. Bottle made of **PETG**, screw cap made of **HDPE**. **Sterile** (γ-sterilized). Square. Break-resistant and robust, transparent. **Leakproof.** The 2 l-bottle has moulded handles to enable easier handling.
Low permeation of CO_2 and O_2 enables storage of nutrient media up to 6 months. Bottles and caps are non-pyrogenic. Sealed with a heat-shrink band sealing around cap and neck: Sterility is ensured as long as band is intact.

Volume (ml)	Cap ∅ (mm)	L x W x H (mm)	Art. No.	Pack Qty.	€
30	20	38 x 38 x 63	**C481.1**	24	62,30
60	24	41 x 41 x 82	**C482.1**	24	82,70
125	38	52 x 52 x 108	**C483.1**	24	130,10
250	38	58 x 58 x 147	**C484.1**	24	151,60
500	38	73 x 73 x 177	**C485.1**	12	115,05
1000	38	93 x 93 x 218	**C486.1**	12	156,95
2000	53	116 x 116 x 270	**C487.1**	6	131,15

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

DURAN®-*TILT* cell culture media bottles

Made by DURAN®. Can be used in two positions:
Upright for storage, tilted at 45° for ergonomic pipetting.
- Compact shape, ideal for low sliding windows in sterile workbenches
- Stackable and space-saving
- Wide opening for easy pipetting
- Ergonomic screw thread for easy opening and closing
- Double volume marking for added convenience

500 ml volume, GL 56 thread, 151 mm high.
Delivery incl. screw thread made of **PP**, white.

Art. No.	Pack Qty.	€
EXH2.1	4	51,20

Accessories:

White silicone light protection cover, with 4 identification rings (orange, yellow, blue, violet)	**EXH3.1**	4	23,30
DURAN® Bottle Tags identification rings, silicone, GL 56, orange	**EXH4.1**	20	26,05
DURAN® Bottle Tags identification rings, silicone, GL 56, yellow	**EXH5.1**	20	25,90
DURAN® Bottle Tags identification rings, silicone, GL 56, blue	**EXH6.1**	20	25,90
DURAN® Bottle Tags identification rings, silicone, GL 56, violet	**EXH7.1**	20	25,90
PTFE thread adapter, white, for DURAN®-*TILT* bottles (GL 45 outside, GL 56 inside)	**EXH8.1**	1	31,10
Self-adhesive labels, polyester, white, ∅ 40 mm, for GL 56 screw threads	**EXH9.1**	60	12,95
Replacement screw threads GL 56, PP, white	**EXK0.1**	10	18,95

▶ To purchase nutrient media, go to the Life Science chapter part Microbiology!

① Nutrient media bottles with beaded rim

Made of DURAN®. Autoclavable.

Volume (ml)	∅ (mm)	Neck ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	50	29	115	**T955.1**	1	15,45
300	70	42	168	**T956.1**	1	20,50
1000	105	46	237	**T958.1**	1	32,00
2500	150	50	315	**T959.1**	1	63,30

② Nutrient media bottles with straight neck

Made of DURAN®. Neck-∅ 38 mm, suitable for Erlenmeyer-CAP-caps K395.1-K397.1. Autoclavable.

Volume (ml)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
300	70	170	**T962.1**	1	34,75
500	83	208	**T963.1**	1	40,75
1000	105	243	**T964.1**	1	52,60

Fernbach culture flask

Made of DURAN®. Volumen 1800 ml. Large liquid surface, ideal for cultivating micro-organisms in liquid nutrient media, with improved ventilation for faster growth.Conical form with straight neck for Erlenmeyer-CAP-caps K395.1-K397.1. Capacity 1800 ml.
Neck ∅ 38 mm, base ∅ 200 mm, height 175 mm. Autoclavable.

Art. No.	Pack Qty.	€
T965.1	1	63,20

Flasks for culture media, Erlenmeyer shape

Made of DURAN®. One-sized, straight neck with ∅ 38 mm, for metal caps. Autoclavable.

Volume (ml)	Largest outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	64	114	**L182.1**	10	151,00
200	79	138	**L183.1**	10	163,00
250	85	149	**L184.1**	10	166,00
300	87	161	**L185.1**	10	82,90
500	105	183	**L186.1**	10	103,00
1000	131	229	**L187.1**	1	21,75
2000	166	302	**L188.1**	1	28,30

Baffled Erlenmeyer flasks

By Nalgene®. Made of breakproof **PC**. Ideal as an alternative to glass flasks, with comparable growth rate for *E.coli* and *S.cerevisiae*.
The four incorporated baffles increase the mixing during trypsinizing, aeration or fermentation in cell culture or genetic engineering. Autoclavable.

* Straight neck for closing with Erlenmeyer-CAP-caps K395.1; K396.1; K397.1

Volume (ml)	Type	Art. No.	Pack Qty.	€
250	neck with beaded rim	**E104.1**	1	17,15
500*	straight neck	**E105.1**	1	22,05
1000*	straight neck	**E106.1**	1	37,65
2000	neck with beaded rim	**E107.1**	1	51,55

▶ For autoclaving information see page 5

Culture flasks

S

Sterile disposable Erlenmeyer flask

By Nalgene®. Made of crystal-clear **PETG**, screw-cap closures made of **HDPE**. **Sterile** (individually packed), SAL 10^{-6}, non-pyrogenic, non-cytotoxic. With graduations. Suitable for agitation and suspension cultures, for making culture media or storage.

Without baffles, with blue screw cap, ventilated.
The ventilation filter made of hydrophobic PTFE membrane, pore size 0.2 µm allows sterile ventilation and reduces risk of contamination.

Volume (ml)	Art. No.	Pack Qty.	€
125	**PX73.1**	24	213,95
250	**PX74.1**	12	118,25
500	**PX75.1**	12	146,20
1000	**PX76.1**	6	84,95
2000	**PX77.1**	4	84,95

With baffles, with blue screw cap, ventilated.
The ventilation filter made of hydrophobic PTFE membrane, pore size 0.2 µm allows sterile ventilation and reduces risk of contamination.

Volume (ml)	Art. No.	Pack Qty.	€
125	**ETA0.1**	24	210,70
250	**ETA1.1**	12	116,10
500	**ETA2.1**	12	139,75
1000	**ETA3.1**	6	82,75
2000	**ETA4.1**	4	80,45

NEW

DURAN WHEATON KIMBLE

A 121 °C

Erlenmeyer flask with baffles

By Wheaton. Made from borosilicate glass. With four bottom baffles for improved mixing and aeration when cultivating bacterial cultures on orbital shakers or shakers with lateral shaking movement. The constriction in the neck and the flanged rim prevent liquids from spurting out. Autoclavable.

Volume (ml)	Largest outer ∅ (mm)	Neck inner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
50	47	17,5	83	**HYH2.1**	1	51,40
125	67	23,8	110	**HYH3.1**	1	52,35
250	82	28,4	140	**HYH4.1**	1	55,50
500	100	33,1	180	**HYH5.1**	1	57,25
1000	133	39,5	210	**HYH6.1**	1	88,55

A 121 °C

Rotilabo®-wide neck Erlenmeyer flasks

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

Volume (ml)	Graduations (ml)	Thread	Standard ground glass joint	Art. No.	Pack Qty.	€
50	10	GL 40	34	**8338.1**	1	4,45
100	20	GL 40	34	**8339.1**	1	5,00
250	50	GL 52	45	**8341.1**	1	7,00
500	100	GL 52	45	**8342.1**	1	7,90
1000	200	GL 52	45	**8344.1**	1	10,60

Material DURAN®

A 121 °C

Rotilabo®-baffled flasks with straight neck

Made of DURAN®. Neck-∅ 38 mm, for Erlenmeyer CAP caps K395.1-K397.1. Flask for culture media with three integrated baffles for better mixing. Ideal for cultivating *S. cerevisiae* and aerobic bacteria cultures. Autoclavable.

*Narrow neck flask with flanged edge, cannot be used with Erlenmeyer CAP caps.

Volume (ml)	Largest outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	64	114	**LY94.1**	1	36,45
250	85	149	**LY95.1**	1	40,15
500	105	183	**LY96.1**	1	38,20
1000	131	232	**LY97.1**	1	53,45
2000	166	305	**LY98.1**	1	71,90
5000*	220	365	**PK29.1**	1	132,25

▶ RBS®-Neutral T for cleaning, see p. 1136

A 121 °C

Erlenmeyer-CAP-caps

Made of aluminium, colour anodized. For Erlenmeyer and culture flasks with straight neck, ∅ 38 mm. Springs grip the outer wall of vessel.
Use a neutral cleaner only. Temperature stable up to 140 °C. Autoclavable.

for glasses with ∅ (mm)	Colour	Art. No.	Pack Qty.	€
37/39	silver	**K395.1**	10	37,65
37/39	blue	**K396.1**	10	37,65
37/39	red	**K397.1**	10	37,65

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Erlenmeyer baffled flasks

Made of DURAN®. With diaphragm screw caps (GL 45 thread) and graduations. Four baffles on the bottom create a turbulent flow, enlarge gas exchange surface area and thus increase oxygen intake. Automated production ensures a reproducible flask geometry and consistent results. High wall thickness for tagged mechanical stability. With retrace code. Temperature stable up to +140 °C. Autoclavable.

Volume (ml)	Largest outer ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
250	81	145	**PK16.1**	4	69,55
500	105	180	**PK17.1**	4	77,85
1000	136	221	**AEP1.1**	1	24,85

Material DURAN®
A 121 °C

Rotilabo®-erlenmeyer flasks with baffles

Made of DURAN®. With screw caps made of **PBT** and **PTFE**-coated sealings. Flask for culture media with three integrated baffles for better mixing. Particularly excellent for cultivating *S. cerevisiae* (do not close cap tightly).

Volume (ml)	Largest outer ∅ (mm)	Thread	Height (mm)	Art. No.	Pack Qty.	€
100	64	GL 25	109	**LK17.1**	1	36,40
250	85	GL 32	149	**LK18.1**	1	37,10
500	105	GL 32	180	**LK19.1**	1	38,65
1000	131	GL 32	225	**LK20.1**	1	54,30

Membrane screw caps

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

Thread	Art. No.	Pack Qty.	€
GL 25	**LY42.1**	5	23,60
GL 32	**LY43.1**	5	24,10
GL 45	**CK81.1**	5	21,90
GLS 80	**KE50.1**	2	16,00

A 121 °C

Silicone sponge plugs

Made of silicone rubber with regular pores, ideal for the preparation and sterilization of culture media, as well as the cultivation of aerobic micro-organisms. Good air permeability with low evaporation, ideal for long-term culture tests. Washable and reusable. Dry sterilizable up to 180 °C, autoclavable.

Bottom ∅ (mm)	Top ∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
9	12	30	**NN15.1**	10	32,65
11	15	20	**NN16.1**	10	38,65
13	17	40	**0599.2**	10	37,55
15	19	42	**0606.2**	10	41,90
18	22	45	**0607.2**	10	44,95
22	32	60	**0615.2**	10	60,75
30	42	90	**NN17.1**	10	220,40
40	52	100	**0616.2**	10	181,70

Culture stoppers and caps

121 °C

Rotilabo®-culture plugs

Made of cellulose. Air permeable, bacteria filtering plug, ideal for the incubation of plant or bacteria cultures and for the sterilisation of culture media. Autoclavable up to 200 °C.

Fitting chart for Rotilabo®-culture plugs:

Vial type	Matching Rotilabo®-culture plug
Narrow neck Erlenmeyer flask, 25 - 100 ml	PC22.1
Narrow neck Erlenmeyer flask, 200 - 500 ml	PC24.1
Narrow neck Erlenmeyer flask, 1000 ml	PC29.1
Narrow neck Erlenmeyer flask, 2000 - 5000 ml	PC31.1
Wide neck Erlenmeyer flask, 25 ml	PC25.1
Wide neck Erlenmeyer flask, 50 - 100 ml	PC24.1
Wide neck Erlenmeyer flask, 200 - 1000 ml	PC31.1
Straight neck culture flask ∅ 38 mm	PC27.1
Erlenmeyer flask, NS 14/23	PC17.1
Erlenmeyer flask, NS 19/26	PC20.1
Erlenmeyer flask, NS 29/32	PC23.1
Erlenmeyer flask, NS 45/40	PC29.1

Size	for inner ∅ (mm)	Bottom ∅ (mm)	Top ∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
8 P	7,5-11,0	7,5	12,5	30,0	**PC16.1**	1000	35,40
9 P	9,0-10,5	8,5	12	31,0	**CTC8.1**	2000	64,45
13	12,0-14,5	11,0	16,0	36,5	**PC17.1**	1000	34,35
14	13,0-14,5	11,5	16,5	40,0	**PC18.1**	1000	34,35
14 P	12,0-14,0	11,0	17,0	37,0	**CTC9.1**	1000	39,10
15 P	14,0-16,5	13,0	20,0	39,0	**PC19.1**	1000	41,75
16	16,5-18,0	15,5	20,0	39,0	**PC20.1**	1000	54,70
17	13,0-16,0	11,5	18,5	34,0	**CTE0.1**	1000	50,00
18 D	17,5-19,5	16,5	22,0	36,5	**PC21.1**	1000	45,70
20 P	19,0-22,5	18,5	25,0	39,0	**PC22.1**	500	53,55
26	25,0-27,0	24,0	27,5	42,0	**PC23.1**	2000	184,90
27	27,0-32,5	24,0	35,0	54,0	**PC24.1**	1500	203,20
29	28,5-31,0	27,5	33,0	63,0	**PC25.1**	1200	177,40
32 P	31,0-33,5	31,0	45,5	55,5	**PC26.1**	850	180,60
32	32,5-35,0	31,0	36,0	61,0	**PC27.1**	1000	181,70
34	33,5-36,0	33,0	37,0	61,5	**PC28.1**	900	170,95
37	37,5-41,5	38,0	47,0	60,0	**CTE1.1**	400	110,75
38	40,0-45,5	38,0	49,0	61,0	**PC29.1**	650	164,50
40 P	43,0-46,0	42,0	52,0	50,0	**PC30.1**	650	249,40
45 P	44,0-48,0	44,0	60,0	65,0	**PC31.1**	370	177,40
60 P	58,0-66,0	56,0	71,0	68,0	**PC32.1**	250	237,60

Rotilabo®-ready-to-use cellucotton stoppers

For test tubes, flasks, smoothing coiled.

Bottom ∅ (mm)	Top ∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
6,5	9,5	18,5	**E336.1**	1000	24,70
8	12	23	**4512.1**	1000	27,90
8	13,5	31	**E337.1**	1000	35,95
10,5	15	29	**E338.1**	1000	38,60
14	16	23	**E339.1**	1000	36,50
13	19	35	**4514.1**	1000	51,95
13,5	17	37,5	**E340.1**	1000	53,50
18	22	32	**4515.2**	500	33,00
14,8	21,5	41	**E341.2**	800	58,70
14	22	34,5	**E342.1**	1000	64,40
27	30	35	**E343.1**	500	72,80
21,5	32	60	**E344.2**	200	42,95
34	44	60	**E345.1**	250	102,15
41	49,5	79	**E346.1**	100	58,95

121 °C

LABOCAP-caps with gripping knob

Made of aluminium, colour anodized. Chrome-nickel steel springs grip the outer wall of the vessel. Use a neutral cleaner only.
Temperature stable up to 140 °C. Autoclavable.

for glasses with ∅ (mm)	Colour	Art. No.	Pack Qty.	€
15/16	silver	**K363.1**	100	117,20
17/18	silver	**K364.1**	100	123,65
15/16	blue	**K367.1**	100	117,20
17/18	blue	**K368.1**	100	123,65
15/16	red	**K371.1**	100	117,20
17/18	red	**K372.1**	100	123,65

▶ RBS®-Neutral T for cleaning, see p. 1136

LABOCAP-caps without handle

Made of aluminium, colour anodized. Chrome-nickel steel springs clamp against the outer wall of the vessel. Use a neutral cleaner only. Temperature stable up to 140 °C. Autoclavable.

Silver

for glasses with ∅ (mm)	Art. No.	Pack Qty.	€
9/10	**LL88.1**	100	82,70
12/13	**K375.1**	100	85,50
14/15	**K376.1**	100	103,20
15/16	**K377.1**	100	91,40
17/18	**K378.1**	100	95,70
19/20	**K379.1**	100	102,15
21/23	**LN27.1**	100	166,65
24/26	**K381.1**	100	203,20
28/30	**K382.1**	100	213,95

Blue

for glasses with ∅ (mm)	Art. No.	Pack Qty.	€
12/13	**K385.1**	100	85,50
14/15	**LN10.1**	100	104,85
15/16	**K387.1**	100	91,40
17/18	**K388.1**	100	95,70
19/20	**K389.1**	100	102,15
24/26	**LN30.1**	100	203,20

Red

for glasses with ∅ (mm)	Art. No.	Pack Qty.	€
12/13	**K390.1**	100	85,50
15/16	**K392.1**	100	91,40
17/18	**K393.1**	100	95,70
19/20	**LN21.1**	100	102,15
24/26	**LN31.1**	100	203,20

Yellow

for glasses with ∅ (mm)	Art. No.	Pack Qty.	€
12/13	**LL91.1**	100	85,90
15/16	**LN11.1**	100	91,40
17/18	**LN16.1**	100	95,70
19/20	**LN22.1**	100	102,15

Green

for glasses with ∅ (mm)	Art. No.	Pack Qty.	€
12/13	**LN06.1**	100	85,90
15/16	**LN12.1**	100	91,40
17/18	**LN17.1**	100	95,70
19/20	**LN23.1**	100	102,15

Black

for glasses with ∅ (mm)	Art. No.	Pack Qty.	€
12/13	**LN08.1**	100	85,90
15/16	**LN14.1**	100	91,40
17/18	**LN19.1**	100	95,70

Violet

for glasses with ∅ (mm)	Art. No.	Pack Qty.	€
12/13	**LN09.1**	100	85,90
15/16	**LN15.1**	100	91,40
17/18	**LN20.1**	100	95,70

Plastic caps

Made of **PP**. For test tubes, culture vials and straight-neck Erlenmeyer flasks. For air-tight sealing, also use sealing tape or Parafilm® M. Autoclavable.

For container with outer ∅ (mm)	Art. No.	Pack Qty.	€
13	**CXK0.1**	1000	98,40
16	**CXK1.1**	1000	100,75
18	**CXK2.1**	1000	132,25
20	**CXK3.1**	1000	95,15
25	**CXK4.1**	500	149,45
38	**CXK5.1**	250	164,50

▶ Bacterial cell spreaders see page 286

NEW

DishRack petri dish stand

By Sarstedt. Made of **PC**, colourless. For storing, transporting and incubating up to 52 Petri disks with Ø 92/100 mm. With 4 holders, the Petri disks can be removed easily and without alignment from any position. Two flexible silicone retaining lips provide a secure hold for the plates in the stand, even during transport. Height 240 mm.
Note: Autoclaving of the rack is possible as a rule; however, if carried out several times (more than 3x) stress cracks can occur at the riveted eyelets of the rack, which can adversely affect the stability of the rack.
Delivery incl. paper marking strips.

Art. No.	Pack Qty.	€
HPT9.1	1	81,20

Petri dishes and accessories

121 °C

Rotilabo®-stands for petri dishes

Made of **PP**. For Petri dishes with ∅ 90-94 mm. Robust, stable design with rounded edges. Clips on the end rods of the stand enable a card to be attached to identify the stand. Dimensions: L 294 x W 100 x H 172 mm. Autoclavable.

Number of Petri dishes	Colour	Art. No.	Pack Qty.	€
3 x 10	natural	**K120.1**	1	50,50
3 x 10	red	**K121.1**	1	57,00
3 x 10	blue	**K122.1**	1	57,00

Rotilabo®-stands for petri dishes

For petri dishes with 100 mm ∅. Stacking height 230 mm, overall height 250 mm, inner ∅ 102 mm, outer ∅ 120 mm excl. handle, 137 mm incl. handle. Stand made of high grade steel are autoclavable.

Material	Art. No.	Pack Qty.	€
Steel, PE-coated (not autoclavable)	**L057.1**	1	21,40
High grade steel, electropolished	**L058.1**	1	29,05

121 °C

Stand for ∅ 60 mm Petri dishes

Made of **PP**, powder coated steel base. With carry handle.
For Petri dishes with ∅ max. 60 mm. Capacity: max. 54 Petri dishes in 6 stacks. Dimensions: L 267 x W 171 x H 171 mm. Autoclavable.

Art. No.	Pack Qty.	€
CXP2.1	1	92,35

121 °C

Stands for ∅ 60 mm Petri dishes

Made of powder coated steel. For Petri dishes with ∅ max. 72 mm. Autoclavable.

Number of Petri dishes	L x W x H (mm)	Art. No.	Pack Qty.	€
1 x 10	82 x 82 x 140	**CXP3.1**	1	36,15
3 x 10	82 x 246 x 140	**CXP4.1**	1	80,20

Sealing tapes for petri dishes

Elastic, self-adhesive. As well for microtest plates, bottles, cans, etc. Excellent alternative to heat-shrinkable sleeves. Prevents water loss, gas diffusion and contamination. Waterproof and resistant to most solvents. Flexible even under low temperatures (-30 °C).
Temperature stable from -40 to +77 °C (for a short time stable to +100 °C).
Thickness 0.13 mm, width of roll 13 mm, length of roll 33 m.

Colour	Art. No.	Pack Qty.	€
transparent	**K427.1**	1	53,25
white	**K428.1**	1	53,25
red	**K429.1**	1	53,25
yellow	**K430.1**	1	53,25
blue	**K431.1**	1	53,25

Sealing tapes for petri dishes, gas permeable

Polyurethane based, elastic, self-adhesive.
Ideal for cultivating aerobic bacteria, yeast cultures or plant seedlings.
- Safe sealing of Petri dishes
- Prevents contamination
- Even exchange of oxygen and carbon dioxide

Temperature stable from -80 to +100 °C.
Dimensions: L 282.58 x W 15.88 mm.

Art. No.	Pack Qty.	€
AEA2.1	100	96,60

Petri dishes and accessories

A 121 °C

Rotilabo®-petri dishes

Two pieces. Manufactured from hydrolytic class 3 soda-lime-glass using a countersinking process. Dimensions: ∅ 100 x H 20 mm. Autoclavable.

Art. No.	Pack Qty.	€
0690.1	18	36,50

DURAN WHEATON KIMBLE

A 121 °C

DUROPLAN® petri dishes

Two pieces. In acc. with DIN EN ISO 13132. Made from DURAN® in a special production process, microscopically flat and free from bubbles and streaks. Dishes enable an even distribution of culture media and have a distortion-free transparency. Autoclavable.

Outside ∅ (mm)	Height (mm)	Height with lid (mm)	outer ∅ base (mm)	Art. No.	Pack Qty.	€
60	20	22	54,5	**K608.1**	10	109,00
80	20	22	74	**K609.1**	10	113,00
100	15	17	94	**K610.1**	10	119,00
100	20	22	94	**K611.1**	10	118,00
120	20	22	114	**K612.1**	10	126,00
150	27	32	143	**K613.1**	10	198,00

STERIPLAN® petri dishes

Two pieces. Made of soda-lime glass. Autoclavable.

Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
40	12	**T937.1**	10	13,15
60	15	**T938.1**	10	13,15
80	15	**T939.1**	10	13,75
90	15	**PY88.1**	10	13,90
100	10	**T940.1**	10	14,90
100	15	**T941.1**	10	14,90
100	20	**T942.1**	10	14,90
120	20	**T943.1**	10	23,20
150	25	**T944.1**	10	36,50
180	30	**T945.1**	10	75,35
200	30	**T946.1**	10	99,80
200	45	**T947.1**	10	112,00

S

Petri dishes, standard version

By Greiner Bio-One. Made of **PS**, transparent. **Sterile** or non-sterile. Flat stacking surfaces ensure high dimensional stability. Versatile: has a wide range of uses in microbiology and bacteriology. Ideal for microscopy.

Available in two versions:
- With vents to ensure optimal gas exchange.
- Without vents, for long incubation periods at 37 °C

Sterile (gamma-sterilised)

∅ (mm)	Height (mm)	Type	Art. No.	Pack Qty.	€
35	10	with vents	**XH88.1**	740 (74 x 10)	184,90
60	15	with vents	**XH89.1**	600 (30 x 20)	143,00
94	16	without vents	**EN16.1**	480 (24 x 20)	89,45
94	16	with vents	**ALA5.1**	480 (24 x 20)	76,15
145	20	with vents	**XH90.1**	120 (8 x 15)	93,85

Produced under aseptic conditions

∅ (mm)	Height (mm)	Type	Art. No.	Pack Qty.	€
35	10	with vents	**EL46.1**	740 (74 x 10)	152,65
60	15	with vents	**EL47.1**	600 (30 x 20)	80,75
94	16	with vents	**EL48.1**	480 (24 x 20)	57,55
94	16	without vents	**EL45.1**	480 (24 x 20)	54,85
145	20	with vents	**EL49.1**	120 (8 x 15)	60,20

▶ Nutrient media see chapter Life Science!

Petri dishes and accessories

Petri dishes

Made of **PS**, transparent. **Sterile** (gamma-sterilised). Flat surfaces for reproducible agar filling levels. Temperature stable up to 55 °C. Versatile: has a wide range of uses in microbiology and bacteriology. 25 mm high Petri dishes are ideal for the germination of plant seeds.

Available in two versions:

- With vents to ensure optimal gas exchange
- Without vents, for long incubation periods at 37 °C

∅ (mm)	Height (mm)	Type	Art. No.	Pack Qty.	€
90	14	with vents	**N221.2**	825 (25 x 33)	112,90
90	14	without vents	**TA19.1**	825 (25 x 33)	130,10
55	15	with vents	**N223.2**	1620 (108 x 15)	179,55
55	15	without vents	**N224.2**	1620 (108 x 15)	181,70
90	25	with vents	**NP90.1**	500 (50 x 10)	250,50

Cultura® M mini incubator

For the incubation of 18 dip slides (e.g. Roti®-DipSlides) or 12 petri dishes for verification of bacteria, fungi and yeasts, as well as other small-sized vials.

- **Operating temperature range from +5 °C above room temperature to 45 °C; temperature adjustment range from 25 to 45 °C**
- Thermometer in tube with special petroleum filling. Measuring range 7 to 60 °C. Graduations 1 °C. Accuracy ±1 °C. Dimensions: H 95 x ∅ 25 mm.
- Transparent full-vision door for visual inspection
- Minimal footprint, i.e. space-saving

Technical specifications:

Volume	4 l
Temperature variance	±1 °C
Internal dimensions (W x D x H)	220 x 150 x 120 mm
External dimensions (W x D x H)	310 x 168 x 155 mm
Weight	1.1 kg
Power supply	230 V, 50 Hz

Delivery incl. test thermometer in tube and shelf.

Art. No.	Pack Qty.	€
AHH9.1	1	235,45

Petri dishes

Made of **PS**. **Sterile**. Stackable, tight-sealing and therefore suitable for long incubation times without drying out. Lid with matt white labelling space and projecting edge for single-handed opening. For use with filter paper ∅ 47 mm. Optionally available with absorptive paper, e.g. for cultivating plant seedlings .
Dimensions: ∅ 50 mm x H 9 mm.

Design	Art. No.	Pack Qty.	€
without absorptive paper	**AEN0.1**	500 (25 x 20)	119,35
with absorptive paper	**AEN1.1**	500 (25 x 20)	133,30

Quadratic petri dishes

By Greiner Bio-One. Made of **PS**, transparent. **Sterile** or non-sterile. For multi-purpose use in microbiology and bacteriology. Can be stacked easily. With ventilation cams. Dimensions: L 120 x W 120 x H 17 mm.

Sterile (gamma-sterilized)

Art. No.	Pack Qty.	€
PX67.1	240 (24 x 10)	168,80

Produced under low-germ conditions

Art. No.	Pack Qty.	€
EL50.1	240 (24 x 10)	163,40

Square petri dishes with grid

Made of **PS**. **Sterile**. Ideal for phage typing, colony counting etc. With 13 mm grid on bottom, alphanumeric identification markings. With vents to avoid condensation.
Dimensions: L 100 x W 100 x H 15 mm, volume 110 ml.

Art. No.	Pack Qty.	€
AEL9.1	500 (50 x 10)	227,90

S

Contact dishes

By Greiner Bio-One. Made of **PS**, transparent. **Sterile** (gamma-sterilised). For detecting microorganisms and testing the effectiveness of cleaning and disinfection on flat surfaces using contact cultures.
Dimensions: ∅ 65 x H 15 mm.

- Optimised dish design produces a meniscus on the surface of the agar when the contact dish is filled
- Optionally available with vents for improved gas exchange, or without vents
- Graduated and divided into 10 mm squares to allow quick and easy analysis

Type	Filling capacity (ml)	Art. No.	Pack Qty.	€
with vents	12,5	**PX85.1**	600 (30 x 20)	188,15
without vents	13,5	**PX86.1**	600 (30 x 20)	159,10

S

Subdivided petri bowls

By Greiner Bio-One. Made of **PS**, transparent. **Sterile** or non-sterile.
For multi-purpose use in microbiology and bacteriology labs.
Can be stacked easily. With ventilation cams. Dimensions: ∅ 94 x H 15 mm.

Sterile (gamma-sterilized)

Type	Volume/Well (ml)	Art. No.	Pack Qty.	€
subdivided in 2 sections	25	**HLY9.1**	480 (24 x 20)	140,85

Produced under almost germ-free conditions

Type	Volume/Well (ml)	Art. No.	Pack Qty.	€
subdivided in 2 sections	25	**EP50.1**	480 (24 x 20)	91,70

▶ Sterile ready-to-use agar carrier Roti®-DipSlides see section Life Science!

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Petri dishes with partitions

Made of DURAN®. Pressed. In acc. with DIN 12339.
Dimensions: ∅ 100 x H 20 mm. Autoclavable.

Type	Art. No.	Pack Qty.	€
with 2 partitions	**T948.1**	10	93,50
with 3 partitions	**T949.1**	10	93,50
with 4 partitions	**T950.1**	10	93,50

A 121 °C

Rotilabo®-petri dishes, stainless steel

Made of 18/10 stainless steel. Autoclavable.

Outside ∅ (mm)	Height without lid (mm)	Art. No.	Pack Qty.	€
60	20	**YT00.1**	1	12,40
75	20	**YT01.1**	1	14,55
90	20	**YT02.1**	1	17,65
100	15	**YT03.1**	1	35,75
120	20	**YT04.1**	1	26,70

S

Bacterial cell spreaders Delta™

Made of **ABS**. **Sterile** (packed individually). With smooth surface, prevents scratching of agrar surfaces. Delta-shaped head distributes the contact pressure evenly for a smooth application.
Dimensions: L 172 x W 37 x ∅ 4 mm.

Art. No.	Pack Qty.	€
PC59.1	500	92,35

S

Bacterial cell spreaders

Made of **PS**. **Sterile** (packed individually).
To easily spread out cells on agar plates. Dimensions: L 171 x W 36 mm.

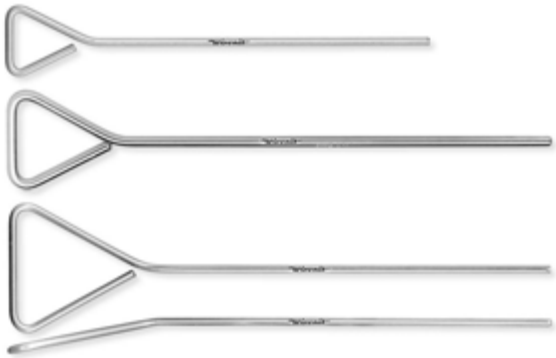
Art. No.	Pack Qty.	€
AY19.1	100	84,95

S

L-shaped bacterial cell spreaders

Made of **ABS**. **Sterile.** With smooth surface, prevents scratching for agrar surfaces. Dimensions: L 146 x W 38 x ∅ 4 mm.

Packaging	Art. No.	Pack Qty.	€
individually wrapped	**PC57.1**	500	81,70
50 x 10	**PC58.1**	500	76,35



NEW

A 121 °C

Drigalski spatula

By Hammacher. Made of Wironit stainless steel (1.4301). Autoclavable.

Type	L x W x ∅ (mm)	Art. No.	Pack Qty.	€
straight	150 x 25 x 3	**KAP0.1**	1	8,75
straight	195 x 36 x 4	**KAP1.1**	1	9,00
Hünebeck, angled, 10°	195 x 45 x 3	**KAP2.1**	1	9,00

NEW

A 121 °C

Bacterial cell spreaders, L-shaped, 90°

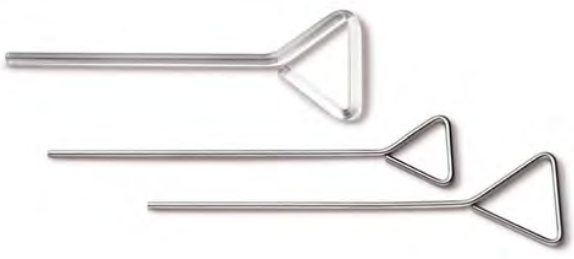
By Hammacher. Made of Wironit stainless steel (1.4301).
Dimensions: L 195 x W 40 x ∅ 4 mm. Autoclavable.

Art. No.	Pack Qty.	€
KAP9.1	1	6,80

Electroporation cuvettes

Cuvette made of **PC**, electrodes made of **aluminium**. Manufactured under clean-room conditions, individually packed. In 3 column widths, 1, 2 and 4 mm. Colour-coded lids according to column width. Compatible with most electroporation systems (Bio-Rad®, BTX®, Invitrogen®, Eppendorf and Kodak®/IBI®), and many more.

Column width (mm)	Lid colour	Art. No.	Pack Qty.	€
1	orange	**PP38.1**	50	169,85
2	green	**PP39.1**	50	169,85
4	black	**PP40.1**	10	42,50



A 121 °C

Drigalski spatulas

Made of stainless steel (Remanit 4301) or soda-lime glass.
Ideal for even distribution of bacterial substances on solid nutrient media.
Also suitable as stirrer. Autoclavable.

Material	Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
Stainless steel	165	30	**K732.1**	1	4,00
Stainless steel	165	40	**AL98.1**	1	4,55
Glass	145	50	**T724.2**	10	32,80

Inoculation loops / applicators

S

Clone cylinders

Made of **PS, sterile**. For isolating clones or for singling out cells or cell groups. Conical cylinder flared at lower edge for good contact with dish surface.

To isolate a clone, the base of the cylinder is coated with a thin grease film (e.g. sterile silicone oil) in order to ensure better sealing. The silicone side cylinder is placed over the selected clone. After adding a small quantity of Trypsin/EDTA and a short incubation period at 37 °C, the cells separate and can be transferred to other vessels.

Size	Innner ∅ (mm)	∅ x H (mm)	Art. No.	Pack Qty.	€
Small	4,7	7 x 8	**YA78.1**	50 (5 x 10)	85,75
Medium	6,4	8.5 x 9,5	**YA79.1**	50 (5 x 10)	89,20
Large	9,5	12 x 13	**YA80.1**	50 (5 x 10)	112,90

Toothpicks

Made of polished wood, ∅ 2.2 mm. With two tips, ∅ at tip 0.8 mm. Come loose in dispenser.

Length (mm)	Art. No.	Pack Qty.	€
65	**ETT2.1**	1000	4,25
80	**EC48.1**	1000	4,25

S

Rotilabo®-cotton buds

With cotton tip. **Sterile** (ETO-gas sterilized, individually wrapped) or non-sterile. Ideal for hygiene, cleaning or laboratory applications.

Supports	Design	∅ Head (mm)	Handle L x ∅ (mm)	Art. No.	Pack Qty.	€
Wood	non-sterile	4-5,5	150 x 2,2	**EH11.1**	100	3,90
Wood	**sterile**	4-5,5	150 x 2,2	**EH12.1**	100	12,55
Wood	non-sterile	10-12	200 x 3	**XL54.1**	50	9,10
Aluminium	**sterile**	2	150 x 1	**XL55.1**	100	25,75
PP	**sterile**	4-5,5	150 x 2,5	**XL56.1**	100	15,00
PP	**sterile**	10-12	150 x 4,7	**XL57.1**	100	22,90

S

Sterile applicators

Made of wood, with cotton tip. **Sterile**. Fitted in **PP** tubes, with **HDPE** screw cap. Volume 13 ml. Dimensions: ∅ 16 x H 100 mm.

Art. No.	Pack Qty.	€
XC10.2	1000 (10 x 100)	198,90

S

Disposable inoculation loops

Made of PS. Sterile. With flat, grooved handle for safe handling. Inoculation loop volume 1 µl or 10 µl, each with inoculation needle on other end. Length 195 mm.

Design	Colour	Art. No.	Pack Qty.	€
1 µl	neutral	**CPX4.1**	500 (25 x 20)	41,90
10 µl	blue	**CPX5.1**	500 (25 x 20)	41,90

▶ To purchase nutrient media, go to the Life Science chapter part Microbiology!

A 121 °C

Inoculation loop

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Eyelets ∅ inside 4 mm, outside 6.4 mm. Length 210 mm. Autoclavable.

Art. No.	Pack Qty.	€
HCN0.1	1	22,85

Inoculation loops / applicators

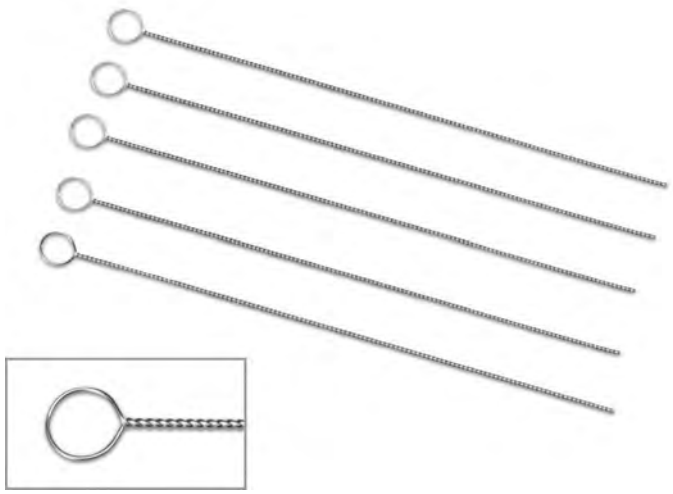
S

Disposable inoculation loops and needles

Precision-moulded from **PS**. **Sterile**. The loops are smooth, flexible and enable inoculation in clear streaks. Needles can be used for intradermal inoculation in all types of culture media as well as colony picking. Length 227 mm. Subpacked in resealable pressure lock bags, individually packed inoculation loop in disposable packaging made of paper/plastic.

Design	Colour	Packaging	Art. No.	Pack Qty.	€
Inoculation loop, 1 µl	blue	250 x 1	**AEL0.1**	250	112,90
Inoculation loop, 1 µl	blue	100 x 10	**EA88.1**	1000	92,75
Inoculation loop, 1 µl	blue	40 x 25	**EA89.1**	1000	78,40
Inoculation loop, 10 µl	yellow	250 x 1	**AEL1.1**	250	112,90
Inoculation loop, 10 µl	yellow	100 x 10	**EA90.1**	1000	92,75
Inoculation loop, 10 µl	yellow	40 x 25	**EA91.1**	1000	78,40
Needles	white	250 x 1	**AEL2.1**	250	112,90
Needles	white	100 x 10	**EA92.1**	1000	96,30
Needles	white	40 x 25	**EA93.1**	1000	78,40

▶ Bacterial cell spreaders see page 286



Inoculation loops

Made of twisted nickel-chrome wire. Fast cooling, uniform shape and high flexibility to conserve the agar plate. Calibrated inoculation loops are supplied with ASM/APHA calibration certificate, test method acc. to Evans Blue Dye test protocol. Dimensions: wire ∅ 0.6 mm, L 75 mm. **Delivery without** inoculation loop holder.

Design	Innner ∅ (mm)	Art. No.	Pack Qty.	€
Standard, small	2,26	**EKN2.1**	25	49,50
Standard, medium	2,91	**EKN3.1**	25	49,50
Standard, large	3,57	**EKN4.1**	25	49,50
Calibrated, 10 µl	4	**EKN5.1**	5	159,00
Calibrated, 1 µl	1,45	**EKN6.1**	5	159,00

① Rotilabo®-needle holder

Acc. to Kolle. With aluminium upper part and plastic handle. Length 240 mm.

Art. No.	Pack Qty.	€
6189.1	1	9,60

② Inoculating loops, needles and lancets

Made of heat conducting Ni Cr 80 20 wire.
Temperature stable up to 1200 °C. Wire ∅ 0.6 mm. Autoclavable.

Type	Length (mm)	Art. No.	Pack Qty.	€
Loops-∅ 1.5 mm	50	**6163.1**	10	10,25
Loops-∅ 1.5 mm	70	**ENX6.1**	10	11,65
Loops-∅ 2.5 mm	50	**6173.1**	10	10,65
Loops-∅ 2.5 mm	70	**ENX7.1**	10	11,65
Loops-∅ 4.0 mm	50	**6174.1**	10	11,75
Loops-∅ 4.0 mm	70	**ENX8.1**	10	11,65
Needles	50	**6183.1**	10	8,10
Lancets	50	**6181.1**	10	9,90

A 121 °C

Preparation needle holder, aluminium

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Needle holder for smear test eyelets and preparation needles up to max. ∅ 1.0 mm, with Wironit top part and aluminium handle (∅ 5 mm). Length 170 mm. Autoclavable.

Art. No.	Pack Qty.	€
HCN8.1	1	15,80

Preparation needle holder with removable handle

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Needle holder for smear test eyelets and preparation needles up to max. ∅ 1.0 mm, with removable Wironit top part (autoclavable) and plastic handle (∅ 5 mm). Length 240 mm.

Art. No.	Pack Qty.	€
HCN9.1	1	21,25

A 121 °C

Inoculating loop holder

Made of stainless steel. Loops are fixed with union nut. For inoculating loops with wire-∅ 0.6-1.0 mm. Set sorted by colour: blue, yellow, red, black. Length: 245 mm. Autoclavable at 121 °C.

Type	Art. No.	Pack Qty.	€
Inoculating loop holder set	**KL97.1**	4	55,80

Accessories: Inoculating loops

Made of **special stainless steel**. Wire-∅ 0.6 mm.
Delivery without inoculating loop holder, please order separately.

Type	Art. No.	Pack Qty.	€
Loop ∅ inside 3 mm	**KL99.1**	10	28,85
Loop ∅ inside 5 mm	**KN00.1**	10	28,85

Made of **platinum/iridium**. Wire-∅ 0.6 mm.
Delivery without inoculating loop holder, please order separately.

Type	Art. No.	Pack Qty.	€
Loop ∅ inside 1 mm	**KN01.1**	1	105,35
Loop ∅ inside 3 mm	**KN02.1**	1	105,35
Loop ∅ inside 5 mm	**KN03.1**	1	105,35

A 121 °C

Instrument holder

By Hammacher. Made of stainless steel Remanit® 4021.
Holder for Drigalski spatula, brush, inoculating loops and other instruments. Autoclavable.

Art. No.	Pack Qty.	€
EXE0.1	1	74,20

Petri dish revolving tables

For smoothing out liquids evenly on agar surfaces in Petri dishes.

Technical specifications:

Model	**① Petriturn-M**	**② Petriturn-E**
Operation	manual	electric drive
Housing material	-	Stainless steel
Special features	· Strong drive and long running due to high mass of the rotary disc · **Can be used on both sides**	· Non-contact operation of rotary disc via **sensor with automatic switch-off** (3 s to 2 min) · Continuous operation possible
Foot switch-control	-	Can also be operated via foot switch (please order separately ③)
Suitable for petri dishes up to:	∅ 100 mm, or to ∅ 150 mm by simply turning over	to ∅ 100 mm (Please order attachment for up to ∅ 150 mm separately ④)
Speed control	-	10 to 100 min^{-1}, continuously variable
Voltage supply	-	Power unit 12 V DC / 5 VA
Dimensions ∅ x H (mm)	160 x 45	160 x 70
Weight	2.3 kg	approx. 1 kg

Type	Art. No.	Pack Qty.	€
① Petriturn-M	**N962.1**	1	209,65
② Petriturn-E	**HT52.1**	1	418,20
Accessories:			
③ Foot switch (Petriturn-E)	**HT53.1**	1	74,10
④ Rotary disc attachment for petri dishes ∅ 150 mm (Petriturn-E)	**HT54.1**	1	69,45

Colony counter SC6 PLUS

By Stuart. For fast and exact counting of bacterial colonies in Petri dishes.
- Counting is initiated by pressing down on the Petri dish with any pen
- Pressure sensitivity is individually adjustable
- Confirmation of count by audible signal (optional)
- With integrated average counter for evaluating up to 99 Petri dishes
- Optional light or dark background (dark background aids counting translucent colonies)
- With non-reflective LED lighting
- Three-digit LED display
- Connectivity to PC
- With antimicrobial BioCote® surface coating

Technical specifications:

Digital display	0-999
Ambient temperature range	+5 to +40 °C
Dimensions (W x D x H)	310 x 300 x 140 mm
Weight	1.5 kg
Power supply	230 V, 50 Hz

Delivery incl. 2 Wolffhügel grids and 2 reducer rings (centring aids) for Petri dishes 50-90 mm in diameter, USB cable (1 m long).
Please order magnifying glasses for counting microscopic colonies separately.

Type	Art. No.	Pack Qty.	€
Colony counter SC6 PLUS	**EN38.1**	1	810,00
Accessories:			
Magnifying glass, 1.7x magnification (with flexible swan neck stand)	**EN39.1**	1	98,95
Magnifying glass, 3x magnification (with fixed stand arm)	**EN40.1**	1	118,00
Clear protective covers	**EN43.1**	5	79,60
Replacement Wolffhügel grid	**EN41.1**	10	96,25
Replacement Petri dish holder	**TK07.1**	1	21,50
Replacement reducer rings (centring aids)	**EN42.1**	2	24,90

▶ Manual counters see page 881

Hand-held colony counters

Battery-operated pen for counting and marking colonies.
- Acoustic or visual signal registers counting process
- Count up/down function
- Locking key to switch off counting function
- For counting up to 32 plates
- With totalling function

Delivery incl. pen, stand and battery (3 V, Type: CR 1220).

Art. No.	Pack Qty.	€
KN08.1	1	320,35

Accessories:

Spare pens, black	**KN09.1**	12 per pack	40,35
Spare pens, sorted	**XT85.1**	8	33,35
Button cell battery CR 1225 (3 V)	**AEC3.1**	1	5,35

Quick-change chuck and pestle

Cone-shaped pestle made of autoclavable **PP**, quick change chuck made of stainless steel. Fits all standard laboratory-stirrers. Reusable.

Pestle-dimensions: Overall length 70 mm. Shaft-∅ 4.9 mm.
Cone can reduce from 6 to 2.5 mm, cone length 10 mm.

Pestle can be changed when motor is running:
Vessel can be held with one hand and pestle changed with the other.

Quick-change chuck suitable for all chucks that fit an 8 mm clamp.

Type	Art. No.	Pack Qty.	€
Quick-change chuck	**P986.1**	1	74,75
PP-pestle	**P987.1**	10	32,05

▶ Homogenizers see page 1070
▶ Laboratory stirrers see page 1050

121 °C

Micro pestles

Made of **PP**. For homogenising cells and tissue in reaction vials by hand or using laboratory stirrers. Length 70 mm. Autoclavable.

For reaction vials	Design	Art. No.	Pack Qty.	€
0.5 ml	Standard	**CXH6.1**	100	106,35
1.5 ml	Standard	**CXH7.1**	100	106,35
0.5 ml	RNase/DNase-free, pyrogen free, individually packed	**CXH8.1**	100	144,05
1.5 ml	RNase/DNase-free, pyrogen free, individually packed	**CXH9.1**	100	144,05

121 °C

Micro-homogenizers

Made of **PP**. Conical form. Autoclavable. For homogenizing cells and tissue in centrifuge tubes and test tubes. Overall length 206 mm. Shaft-∅ 5 mm. Cone can reduce from 8.2 to 2.9 mm, cone length 18 mm. Rounded base.

Art. No.	Pack Qty.	€
K994.1	6	25,75

121 °C

Rotilabo®-micro pestles

Made of stainless steel 1.4301. For homogenising cells, tissue, foodstuff samples and much more in reaction vials or reagent test tubes manually or using laboratory stirrers. Tailored from a single block and polished, perfect transitions, easy to disinfect. Tapered shank for minimal homogenate displacement. Autoclavable.

Technical specifications:

For vessels	Overall length (mm)	Handle length (mm)	Stem length (mm)	Taper length (mm)	Weight (g)
0.5 ml	94	60	26.3 (tapered from 6.0 to 3.0)	10 (tapered from 6.0 to 2.9)	16
1.5 ml	124	69	40 (tapered from 7.9 to 3.5)	17 (tapered from 7.9 to 3.5)	34
2.0 ml	120	67	40 (tapered from 8.0 to 3.5)	11.2 (tapered from 8.6 to 1.7)	35
13 ml	190	100	75 (tapered from 8.0 to 4.4)	10 (round head, ∅ 15 mm)	60

Type	Art. No.	Pack Qty.	€
① For 0.5 ml vessels	**YE13.1**	1	31,55
② For 1.5 ml vessels	**YE14.1**	1	34,10
③ For 2.0 ml vessels	**YE15.1**	1	35,95
④ For 13 ml vessels	**YE16.1**	1	40,45

121 °C

Rotilabo®-macro pestle

Made of stainless steel 1.4301. For the homogenisation of cells, tissue, foodstuffs samples and much more, manually or using laboratory stirrers. Suitable for 15 ml centrifuge tubes (e.g. Art. No. AN76.1f).

- Made from one piece and polished for a perfect fit
- Transitions are optimally designed for easy disinfection
- Tapered shank for minimal homogenate displacement
- Autoclavable

Dimensions: overall length 185 mm, handle length 100 mm. Shank ∅ 8 mm (tapering to 4.5 mm), taper ∅ 12 mm (tapering to 4 mm). Weight 60 g.

Art. No.	Pack Qty.	€
NH32.1	1	41,85

Homogenisers and pestles

A 121 °C

Homogenisers

Made of borosilicate glass.
Distance between mortar and pestle: 0.15 to 0.25 mm.

Effective capacity (ml)	Inner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
2	8	120	**TT57.1**	1	31,15
5	12	135	**TT58.1**	1	34,40
10	15	150	**TT59.1**	1	36,05
15	16	155	**TT60.1**	1	37,55
30	25	175	**TT61.1**	1	42,95
50	32	195	**TT62.1**	1	53,25

Micro-tissue grinders

Made of borosilicate glass. With pestle. For pulverizing and homogenizing minute amounts, e.g. in histology. Autoclavable.

Type	Height (mm)	Innner ∅ (mm)	Art. No.	Pack Qty.	€
G 1, 10 - 25 µl	30	~4	**0296.1**	1	96,65
G 2, 25 - 100 µl	40	~6	**0297.1**	1	96,65
G 3, 100 - 1000 µl	50	~8	**0298.1**	1	96,65

Accessories: pestles for homogenisers

Head made of **PTFE**, rod made of stainless steel.
Grooves on the lower edge.
Rod ∅ 6.5 mm.

Effective capacity (ml)	Height (mm)	Art. No.	Pack Qty.	€
2	230	**TT63.1**	1	21,40
5	235	**TT64.1**	1	21,65
10	270	**TT65.1**	1	23,15
15	270	**TT66.1**	1	29,05
30	270	**TT67.1**	1	34,10
50	270	**TT68.1**	1	42,80

DURAN WHEATON KIMBLE

Micro-blenders

By Wheaton. Made of Wheaton typed 33 borosilicate glass.
High product yield due to smaller friction area. For single use, prevents cross-contamination, e.g. when handling radioactive samples.

Volume (ml)	Inner ∅ (mm)	Length (mm)	Total length (mm)	Art. No.	Pack Qty.	€
0,75	8	44	88	**HLC0.1**	25	224,70

A 121 °C

DURAN WHEATON KIMBLE

Micro-blender acc. to Potter-Elvehjem

By Wheaton. Made of Wheaton typed 33 borosilicate glass. Micro-size for extremely precise work, reservoir and lip for pouring out the micro-sample. Can be autoclaved and sterilized to prevent cross-contamination.
Gap between pestle and vial: 0.1-0.15 mm.

Usable volume (ml)	Mortar L x ∅ (mm)	Total length (mm)	Art. No.	Pack Qty.	€
0,1	65 x 4	110	**HLC1.1**	1	84,40

Homogenisers and pestles

A 121 °C

Dounce homogenisers

Made of glass. For grinding of cellular material while preserving the cell nucleus. Autoclavable.
Delivery incl. two pestles, pestle A for coarse grinding, pestle B for fine grinding.

Volume (ml)	Length (mm)	Art. No.	Pack Qty.	€
0,5	37	**CXC8.1**	1	138,70
1	88	**CXC9.1**	1	138,70
2	60	**CXE0.1**	1	160,20
7	125	**CXE1.1**	1	153,75
15	157	**CXE2.1**	1	158,05
40	215	**CXE3.1**	1	155,90
100	232	**CXE4.1**	1	377,35

Potter-Elvehjem homogenisers

Made of glass. For gentle disruption of soft tissue, e.g. for the extraction of cell organelles. Suitable for motor drive by laboratory stirrers.
Distance between mortar and pestle: 0.1 to 0.15 mm.

Size	Volume (ml)	Pestle L x ∅ (mm)	Mortar L x ∅ (mm)	Art. No.	Pack Qty.	€
19	1	145 x 5	95 x 13	**CXH1.1**	1	116,10
21	5	205 x 6	140 x 16	**CXH2.1**	1	92,25
22	8	215 x 8	150 x 18	**CXH3.1**	1	103,00
23	17	265 x 10	175 x 25	**CXH4.1**	1	106,40
24	45	315 x 10	220 x 32	**CXH5.1**	1	113,95

Dual homogenisers

Made of glass.With tapered and cylindrical areas, for effective grinding and consistent homogenisation of tissue. Ideal for cellular tissue such as muscle, heart and lungs.
Distance between mortar and pestle: 0.1 to 0.15 mm.

Volume (ml)	Pestle L x ∅ (mm)	Mortar L x ∅ (mm)	Art. No.	Pack Qty.	€
1	155 x 4,5	80 x 13	**CXE5.1**	1	132,25
3	210 x 6	120 x 16	**CXE6.1**	1	132,25
5	228 x 6	150 x 18	**CXE7.1**	1	132,25
15	268 x 6	175 x 25	**CXE8.1**	1	149,45
30	305 x 10	215 x 32	**CXE9.1**	1	159,10
50	330 x 10	225 x 38	**CXH0.1**	1	203,20

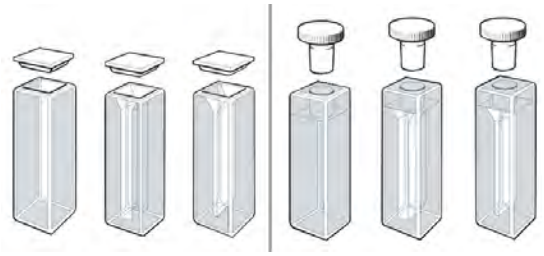
Stand mixer

By Severin. For simple mixing and emulsifying tasks.

Features

- Removable 1.5 l glass mixing attachment with removable drip tray
- Capacity approx. 550 W
- Two speed settings with additional pulse mode option
- Lid with opening for refilling
- Removeable stainless steel blade
- Dimensions: L 210 x W 180 x H 402 mm
- Cord wind

Art. No.	Pack Qty.	€
X477.1	1	53,70



Rotilabo®-precision glass cuvettes

Made of special optical glass or UV-permeable quartz glass.
Supplied either with PTFE-seamed lid or liquid tight PTFE-stopper.

- Gauged spectral
- 10 mm thick, tolerance ±0.01 mm
- 2 polished sides
- Transmission ≥80 %

Dimensions:
Model, double seam lid: L 12.5 x W 12.5 x H 45 mm
Model, stopper: L 12.5 x W 12.5 x H 48 mm

Passband:

- Special-purpose optical glass: 320 - 2500 nm
- Spectrosil®-quartz glass 190 - 2700 nm

Macro, capacity 3.5 ml, inner width 10 mm

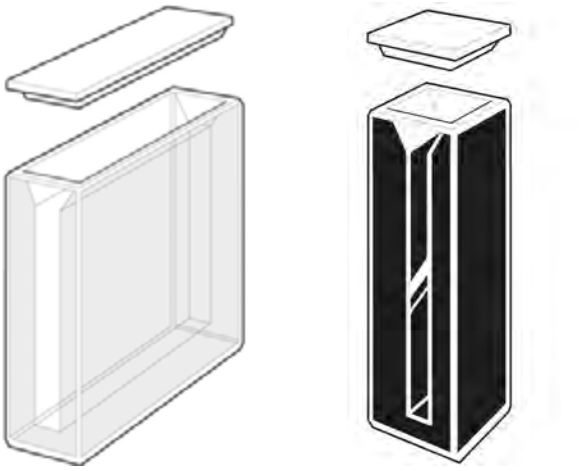
Type	Cover	Art. No.	Pack Qty.	€
Optical special-purpose glass	seamed lid	**X851.1**	1	43,90
Optical special-purpose glass	stopper	**Y030.1**	1	83,80
Quartz glass	seamed lid	**X852.1**	1	83,85
Quartz glass	stopper	**Y031.1**	1	138,70

Semi-micro, capacity 1.4 ml, inner width 4 mm

Type	Cover	Art. No.	Pack Qty.	€
Optical special-purpose glass	seamed lid	**X853.1**	1	66,65
Optical special-purpose glass	stopper	**Y032.1**	1	115,05
Quartz glass	seamed lid	**X854.1**	1	120,40
Quartz glass	stopper	**Y033.1**	1	170,95

Micro, capacity 0.7 ml, inner width 2 mm

Type	Cover	Art. No.	Pack Qty.	€
Optical special-purpose glass	seamed lid	**X855.1**	1	74,20
Optical special-purpose glass	stopper	**Y034.1**	1	126,85
Quarz glass	seamed lid	**X856.1**	1	129,00
Quarz glass	stopper	**Y035.1**	1	174,15



Rotilabo®-precision glass cells

Made of special optical glass. With PTFE seamed lid.

- Spectrally calibrated
- Layer thickness 50 mm, tolerance ±0.02 mm
- Two polished sides
- Transmission ≥80 %

Dimensions: L 52.5 x W 12.5 x H 45 mm.
UV transmittance range: 320-2500 nm.

Volume (ml)	Inner width (mm)	Art. No.	Pack Qty.	€
17,5	9,5	**AHA7.1**	1	117,20

Rotilabo®-precision glass cells, black

Made of UV-transmittant Spectrosil® quartz glass with sturdy black walls.
With PTFE seamed lid.

- Spectrally calibrated
- Layer thickness 10 mm, tolerance ±0.01 mm
- Two polished sides
- Transmission ≥80 %

Dimensions: L 12.5 x W 12.5 x H 45 mm.
UV transmittance range: 170-2700 nm.

Type	Volume (ml)	Inner width (mm)	Art. No.	Pack Qty.	€
Semi-micro	1,4	4	**AHA5.1**	1	207,50
Micro	0,7	2	**AHA6.1**	1	230,05

Rotilabo®-glass fluorescence cell

Made of UV-transmittant Spectrosil® quartz glass, for fluorimetry.
With PTFE seamed lid.

- Spectrally calibrated
- Layer thickness 10 mm, tolerance ±0.01 mm
- Four polished sides and polished base
- Transmission ≥80 %

Dimensions: L 12.5 x W 12.5 x H 45 mm.
UV transmittance range: 190-2700 nm.

Type	Volume (ml)	Art. No.	Pack Qty.	€
Macro	3,5	**AHC0.1**	1	166,65

Single-use cells for fluorescence measurements

- Made of **PS** or **PMMA**, with 4 optical windows
- Volume 4 ml
- **PS** for measurements starting from 340 nm, **PMMA** for measurements starting from 300 nm
- Cavity-sorted production
- Layer thickness 10 mm
- Dimensions: L 12.5 x W 12.5 x H 45 mm

Material	Art. No.	Pack Qty.	€
PS	**NK49.1**	100	17,10
PMMA	**NK50.1**	100	19,15

Rotilabo®-single-use cuvettes

Made of **PS**, **PPMA** or special plastic.
- Two optical windows
- Extremely low deviation in absorbance values
- Outstanding optical transmission values
- Cavity-sorted production

Layer thickness 10 mm. Dimensions: L 12.5 x W 12.5 x H 45 mm.

Polystyrene (PS)
Range of application: 340 to 900 nm.

Type	Volume (ml)	Packaging	Art. No.	Pack Qty.	€
① Semi-micro	1,6	10 x 100	**XK20.1**	1000	74,15
② Macro	4,0	10 x 100	**XK21.1**	1000	74,15

Polymethylacrylate (PMMA)
Range of application: 300 to 900 nm.

Type	Volume (ml)	Packaging	Art. No.	Pack Qty.	€
① Semi-micro	1,6	10 x 100	**XK23.1**	1000	89,15
② Macro	4,0	10 x 100	**XK24.1**	1000	89,15

Single-use UV
For photometric measurements into the UV range.
Range of application: 220 to 900 nm.

Type	Volume (ml)	Packaging	Art. No.	Pack Qty.	€
① Semi-micro	1,6	1 x 100	**XK26.1**	100	29,90
② Macro	4,0	1 x 100	**XK27.1**	100	27,85

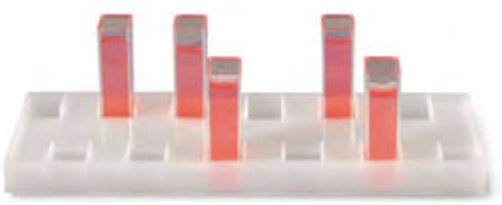
Single-use, solvent resistant
For substances containing polar solvents.
Range of application: 220 to 900 nm.

Type	Volume (ml)	Packaging	Art. No.	Pack Qty.	€
① Semi-micro	1,6	1 x 100	**XK28.1**	100	29,90
② Macro	4,0	1 x 100	**XK29.1**	100	27,85

Lids for single-use cuvettes

Made of **PP**. Suitable for all single-use cuvettes macro and semi-micro.

Art. No.	Pack Qty.	€
XK25.1	1000	33,15



Rotilabo®-cuvette stand

Made of **PE**. For 12 cuvettes 10 mm thick. With staggered arrangement of holders. Low stand-depth for better observation of cuvette contents.
Dimensions: L 170 x W 50 x H 15 mm.

Art. No.	Pack Qty.	€
9663.2	5	24,70

Disposable cuvettes

By Brand. Made of **PS** or **PMMA**.
- Two optical windows
- Optically perfect transparency
- Sorted according to nest numbers to minimize extinction deviation
- Recessed windows to protect against scratching
- Arrow marks direction of irradiation

Standard-layer thickness 10 mm. Dimensions: 12.5 x 12.5 x 45 mm.
Passband: PS: 340-900 nm. PMMA: 300-900 nm.
Standard deviation:
- PS at 360 nm ≤0.005 extinction units.
- PMMA at 320 nm ≤0.004 extinction units.

Polystyrol (PS)

Type	Volume (ml)	Art. No.	Pack Qty.	€
Macro	2,5-4,5	**Y194.1**	100	12,15
Semi-micro	1,5-3,0	**Y195.1**	100	12,75

Polymethylmethacrylate (PMMA)

Type	Volume (ml)	Art. No.	Pack Qty.	€
Macro	2,5-4,5	**Y196.1**	100	14,50
Semi-micro	1,5-3,0	**Y197.1**	100	15,70

Lids for single-use cuvettes

Made of **PP**. Suitable for all single-use cuvettes macro and semi-micro.

Art. No.	Pack Qty.	€
XK25.1	1000	33,15

Rotilabo®-cuvette rack

Made of **PP**. For 12 cuvettes 10 mm thick. Extremely robust design.
The special design of the rack eliminates scratching of cuvette surface.
Stackable. Dimensions: L 115 x W 110 x H 105 mm.
Temperature stable to 130 °C. Autoclavable.

Art. No.	Pack Qty.	€
9664.1	1	45,10

UV-cuvettes

By Brand. Made of plastic.
For UV-measurement in **wave range 230-900 nm**. Specially developed for the photometrical determination of proteins, ssDNA, dsDNA, RNA and oligonucleotides in the UV-range.

- Disposable cuvettes - no danger of contamination during cleaning
- High chemical stability
- Two optical windows
- Optically perfect transparency
- Sorted according to nest numbers to minimize extinction deviation
- Recessed windows to protect against scratching
- Arrow marks direction of irradiation

Micro-cuvettes are ideal specially for small sample volumes from 70 µl and available in two different centric heights (8.5 and 15 mm).
Standard thickness: 10 mm, dimensions 12.5 x 12.5 x 45 mm

Standard deviation:

240 nm ≤±0.007 extinction units

300 nm ≤±0.005 extinction units

Type	Volume	Art. No.	Pack Qty.	€
① Macro	2,5-4,5 ml	**Y198.1**	100	34,10
② Semi-micro	1,5-3,0 ml	**Y199.1**	100	36,50
③ Micro (z = 8.5 mm)	70-850 µl	**Y200.1**	100	25,30
③ Micro (z = 8.5 mm), individually packed, DNase, DNA and RNase-free	70-850 µl	**CNT6.1**	100	65,50
④ Micro (z = 15 mm)	70-550 µl	**Y201.1**	100	25,30
④ Micro (z = 15 mm), individually packed, DNase, DNA and RNase-free	70-550 µl	**CNT7.1**	100	65,50

Accessories:

Round cover made of **PE** for UV micro cells by Brand. Provides a secure seal and allows the storage of samples at temperatures down to -20 °C.

Colour	Art. No.	Pack Qty.	€
blue	**Y202.1**	100	13,55
yellow	**CNT8.1**	100	14,30
green	**CNT9.1**	100	14,30
orange	**CNX0.1**	100	14,30

A 121 °C

Cell stand

By BRAND. Made of **PP**. For 16 cells with a light path of 10 mm.
Numbered slots. Dimensions: L 210 x W 70 x H 38 mm. Autoclavable.

Art. No.	Pack Qty.	€
CNP5.1	1	14,55

Cells with 4 optical windows

By Brand. Made of **PS** or UV-transparent plastic.
Ideal for fluorescence spectroscopy.

- Optically flawless radiographic area
- UV cells with minimal autofluorescence
- Four optical windows for precise measurements
- Matt handle, can be labelled
- Produced under controllable room conditions with fully automatic packaging
- Sorted by nest numbers, minimal deviation of extinction values

Capacity: 2.5-4 ml. Dimensions: L 12.5 x W 12.5 x H 45 mm, window: W 10 x H 35 mm. Thickness: 10 mm.

Technical specifications:

Material	**Polystyrene (PS)**	**UV-transparent plastic**
Operating range	340-900 nm	230-900 nm
Standard deviation (extinction units)	360 nm ≤±0.005	320 nm ≤±0.007 300 nm ≤±0.005

Type	Art. No.	Pack Qty.	€
Polystyrene cells	**EXP1.1**	100	18,85
Polystyrene cells	**EXP2.1**	500	76,55
Cells made of UV-transparent plastic	**EXP3.1**	100	45,10
Cells made of UV-transparent plastic	**EXP4.1**	500	198,90

Lids for single-use cuvettes

Made of **PP**. Suitable for all single-use cuvettes macro and semi-micro.

Art. No.	Pack Qty.	€
XK25.1	1000	33,15

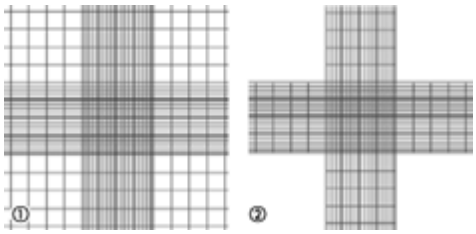
NEW

Cuvette bar

Made of **PMMA**. 12-fold cuvette bar, matches thermo scientific analysers Arena 20, Arena 20XT, Arena 30 and Arena 60.
Applications:

- Foodstuffs (milk, meat. honey)
- Beverages (wine, beer, juice)
- Customer-specific applications

Art. No.	Pack Qty.	€
HNX9.1	1000 (40 x 25)	806,25



① Neubauer counting cells

By Marienfeld. Made of **special optical glass**, CE-certified, double grid.

Cell depth: 0.1 mm, large square: 1 mm², group square: 0.04 mm², smallest square: 0.0025 mm². Counting net with nine large squares. The large square in the centre is split into 16 group squares and these in turn are split into 16 least squares.

Delivery incl. two haemacytometer cover slips (20 x 26 mm).

Design	Art. No.	Pack Qty.	€
excl. spring clamps	**T728.1**	1	46,25
with 2 spring clamps	**PC74.1**	1	69,05

① Neubauer counting chamber, bright-lined

Same as Neubauer but with rhodium-plated chamber base.
Therefore bright counter grating during standard setting of microscope.

Delivery incl. 2 haemacytometer cover slips (20 x 26 mm).

Design	Art. No.	Pack Qty.	€
without spring clamps	**T734.1**	1	84,95

② Thoma counting chamber

For thrombocyte and erythrocyte counting.

Chamber depth: 0.1 mm, smallest square: 0.0025 mm², counter grating with 5 large squares (without corner sections). The large centre square is subdivided into 16 group squares which, in turn, are divided into 16 mini squares.

Delivery incl. 2 haemacytometer cover slips (20 x 26 mm).

Design	Art. No.	Pack Qty.	€
without spring clamps	**T732.1**	1	47,85

② Thoma new counting chamber

Same as Thoma. But without any lines in the boundary areas.

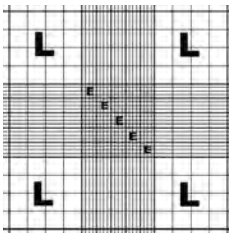
Delivery incl. 2 haemacytometer cover slips (20 x 26 mm).

Design	Art. No.	Pack Qty.	€
without spring clamps	**T733.1**	1	50,75

C-Chip Neubauer improved

Disposable counting cell **made of optical plastic**, lightweight and unbreakable. Precise quantification, high reproducibility.
Same cell configuration as Neubauer improved glass counting cells.
Double net ruling. Cell thickness 0.1 mm. Cell volume 10 µl.
Dimensions: L 75 x W 25 x H 1.6 mm. Cover slips are not required.

Art. No.	Pack Qty.	€
PK36.1	50	163,40



Neubauer counting chamber improved

By Marienfeld. Made of **special optical glass**, CE-certified, double graticule division.

For leucocyte, thrombocyte and erythrocyte counting.

Chamber depth: 0.1 mm, large square: 1 mm², group square: 0.04 mm², smallest square: 0.0025 mm².
Counter grating with 9 large squares.The four corner squares are for leucocyte counting.The large square in the centre is subdivided into 25 group squares and these in turn into 16 smallest squares.
Five group squares are for erythrocyte counting.

Delivery incl. 2 haemacytometer cover slips (20 x 26 mm).

Design	Art. No.	Pack Qty.	€
without spring clamps	**T729.1**	1	45,70
with 2 spring clamps	**PC72.1**	1	69,35

Neubauer counting chamber improved, bright-lined

Same as Neubauer improved but with rhodium-plated chamber base.
Therefore bright counter grating during standard setting of microscope.

Delivery incl. 2 haemacytometer cover slips (20 x 26 mm).

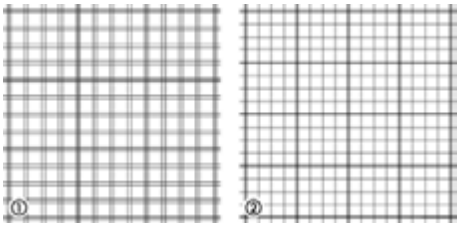
Design	Art. No.	Pack Qty.	€
without spring clamps	**T735.1**	1	82,25

Neubauer counting chamber improved, with special depth

Same as Neubauer improved but chamber depth: 0.01 mm.

Delivery incl. 2 haemacytometer cover slips (20 x 26 mm).

Design	Art. No.	Pack Qty.	€
without spring clamps	**PC73.1**	1	149,45



① Bürkner counting chamber

By Marienfeld. Made of **special optical glass**, CE-certified, double graticule division.

For leucocyte and erythrocyte counting.

Chamber depth: 0.1 mm, large square: 1 mm², group square: 0.04 mm².
Counter grating with 9 large squares. They are used for leucocyte counting. Each large square is subdivided into 16 group squares for erythrocyte counting. The group squares have no subdivisions.

Delivery incl. 2 haemacytometer cover slips (20 x 26 mm).

Design	Art. No.	Pack Qty.	€
without spring clamps	**T730.1**	1	48,40

② Fuchs-Rosenthal counting chamber

Made of **special optical glass**, CE-certified, double graticule division.

For cell counting in liquor.

Chamber depth: 0.2 mm, total surface: 16 mm².
Counter grating with 16 large squares. The total area is counted.

Delivery incl. 2 haemacytometer cover slips (20 x 26 mm).

Design	Art. No.	Pack Qty.	€
without spring clamps	**T731.1**	1	47,55

Cover slips

Cover slips

In acc. with ISO 8255-1, made of transparent borosilicate glass, hydrolytic class 1. Thickness no. 1 (0.13-0.16 mm).
- The visible spectral region is absorption-free
- Optically clean and free from smears, bubbles or streaks
- High chemical stability
- No interference from natural fluorescence even when working within short UV-range (e.g. 365 nm)
- Refractive index 1.5230

Dimensions L x W (mm)	Packaging	Art. No.	Pack Qty.	€
18 x 18	5 x 200	**0657.2**	1000	19,90
20 x 20	5 x 200	**H873.2**	1000	21,45
22 x 22	5 x 200	**H874.2**	1000	22,60
24 x 24	5 x 200	**H875.2**	1000	27,55
21 x 26	10 x 100	**H876.2**	1000	29,00
24 x 32	10 x 100	**H877.2**	1000	38,50
24 x 40	10 x 100	**1870.2**	1000	44,65
24 x 50	10 x 100	**1871.2**	1000	49,40
24 x 60	10 x 100	**H878.2**	1000	56,90
∅ 12	10 x 100	**P231.1**	1000	57,95
∅ 15	10 x 100	**P232.1**	1000	57,95
∅ 18	10 x 100	**P233.1**	1000	57,95
∅ 20	10 x 100	**P234.1**	1000	69,35
∅ 22	10 x 100	**P235.1**	1000	69,35

NEW
S

Cover slips, sterile

By Sarstedt. Made of transparent **PETG** (polyethylene terephthalate, glycol modified). **Sterile.** For cultivating adherent cells. Pyrogene/endotoxin-free, not cytotoxic.

∅ (mm)	suitable for	Art. No.	Pack Qty.	€
13	35 x 10 mm cell culture dishes, 6-/12-/24-well microtiter plates	**HPX0.1**	200 (8 x 25)	73,00
22	35 x 10 mm cell culture dishes, 6-well microtiter plates	**HPX1.1**	200 (8 x 25)	77,95
25	35 x 10 mm cell culture dishes, 6-well microtiter plates	**HPX2.1**	200 (8 x 25)	81,70

Haemacytometre cover slips

For counting chambers. CE certified, faces have been polished to the same plane. 0.4 mm thick.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
20	26	**L189.1**	10	18,25
22	22	**L190.1**	10	19,25
24	24	**L191.1**	10	20,35

Precision cover slips

By Marienfeld. Made of hydrolytic class 1 borosilicate glass.
With defined thickness of 0.17 ±0.005 mm, specially for high-resolution precision instruments. Refractive index 1.524 to 1.527 at 546.07 nm.
- Absolutely colourless, completely clear, suitable for fluorescence microscopy

Ideal for lenses with a high numeric aperture and high resolving power, e.g.:
- Dry lens (air immersion): N.A. > 0.7
- Water immersion lens: N.A. > 1.0
- Glycerine immersion lens: N.A. > 1.2
- Oil immersion lens: N.A. > 1.3

Dimensions L x W (mm)	Art. No.	Pack Qty.	€
18 x 18	**LH22.1**	200	15,95
22 x 22	**LH24.1**	200	22,50
24 x 50	**LH25.1**	100	25,30
24 x 60	**LH26.1**	100	30,10
∅ 10 mm	**YX02.1**	100	18,60
∅ 12 mm	**YX03.1**	100	19,90
∅ 18 mm	**LH23.1**	100	32,20
∅ 24 mm	**PK26.1**	100	53,15
∅ 25 mm	**YX04.1**	100	60,75

Cover slips

Made of hydrolytic class 1 borosilicate glass.
Strength No. 1 (0.13-0.16 mm).
- Absolutely colourless, completely clear, suitable for fluorescence microscopy
- Very even, especially smooth surfaces
- Ready to use
- Suitable for use in coverslippers
- Satisfies the requirements of DIN ISO 8255
- CE-certified to IVD Directive 98/97/EC

Length (mm)	Width (mm)	∅ (mm)	Packaging	Art. No.	Pack Qty.	€
16	16		10 x 100	**HKE4.1**	1000	19,90
18	18		10 x 100	**HKE5.1**	1000	18,25
20	20		10 x 100	**HKE6.1**	1000	23,65
22	22		10 x 100	**HKE7.1**	1000	24,75
24	24		10 x 100	**HKE8.1**	1000	31,00
22	40		10 x 100	**HKE9.1**	1000	46,25
22	50		10 x 100	**HKH0.1**	1000	53,55
24	32		10 x 100	**HKH1.1**	1000	39,80
24	40		10 x 100	**HKH2.1**	1000	48,40
24	50		10 x 100	**HKH3.1**	1000	53,65
24	60		10 x 100	**HKH4.1**	1000	62,35
		12	10 x 100	**HKH5.1**	1000	63,45
		15	10 x 100	**HKH6.1**	1000	66,65
		18	10 x 100	**HKH7.1**	1000	73,10

Siliconised cover slips

By Marienfeld. Made of hydrolytic class 1 borosilicate glass (0.13 to 0.16 mm thick). Colourless, clear, with hydrophobic surfaces, siliconised on both sides. Suitable for protein crystallisation and for fluorescence microscopy. CE-certified to IVD Directive 98/97/EC.

Dimensions L x W (mm)	Packaging	Art. No.	Pack Qty.	€
12 x 12	10 x 100	**TX71.1**	1000	273,05
18 x 18	10 x 100	**TX72.1**	1000	273,05
22 x 22	10 x 100	**TX73.1**	1000	289,20
∅ 12	10 x 100	**TX74.1**	1000	310,70
∅ 18	10 x 100	**TX75.1**	1000	320,35
∅ 22	10 x 100	**TX76.1**	1000	341,85

▶ Cover slip forceps see page 324

Plastic cover slips

Made of **vinyl**. Individual cover slips are separated from one another by paper sheets. Dimensions: 22 x 22 mm, thickness 0.157 mm.

Art. No.	Pack Qty.	€
PK27.1	1000	96,65

DURAN WHEATON KIMBLE

Columbia staining dish

By Wheaton. Made of calcium soda glass. With white PP screw cap with PTFE-coated PE insert. For up to 4 coverslips B 17-23 mm, up to H 30 mm. Longer coverslips can also be inserted with the lid removed.

Type	Art. No.	Pack Qty.	€
Columbia staining dish with lid	**HLA6.1**	1	42,50

A 121 °C

Wash-N-Dry™ Coverslip rack

Made of **PP**. For 10 square or round cover slips from 18 to 25 mm. With grooves on the base for securing the cover slips, e.g. using rubber bands. Dimensions: L 39 x W 31 x H 24 mm. Autoclavable.

Art. No.	Pack Qty.	€
TH51.1	1	41,85

Standard microscope slides

By Menzel. Made of soda-lime glass, 76 x 26 mm, 1 mm thick, in acc. with ISO 8037/1. Partly with frosted edge of 20 mm width. Different edge styles serve different purposes: slides with cut edges are preferable for normal microscopy, and slides with 45° and 90° cut angles are better for for use in pathology, and histology, because they reduce risk of cutting injury. They are also good for use in automatic machines.

Design	Art. No.	Pack Qty.	€
cut	**0656.1**	50	3,20
cut / frosted edge	**H868.1**	50	4,00
ground 90°	**H869.1**	50	4,45
ground 90° / frosted edge	**H870.1**	50	4,95
ground 45°	**H871.1**	50	4,25
ground 45° / frosted edge	**H872.1**	50	5,30

▶ Microscopes and stereo-microscopes see page 778

Microscope slide in special size 76 x 52 mm

By Marienfeld. Made of calcium soda glass.
With cut or ground edges, pre-cleaned. Thickness 1 mm.
With CE mark, i.a.w. IVD directive 98/79/EC.

Edges	Design	Art. No.	Pack Qty.	€
cut	without frosted edge	**TX69.1**	50	29,70
cut	with frosted edge	**CEX1.1**	50	31,70
ground to 90°	without frosted edge	**TX70.1**	50	36,30
ground to 90°	with frosted edge	**CEX2.1**	50	35,30

Special size cover slips 75 x 50 mm

By Marienfeld. Made of borosilicate glass of hydrolytic class 1. Thickness 1 (0.13-0.16 mm).

Art. No.	Pack Qty.	€
XT62.1	100	64,30

Microscope slides

DG microscope slides

Produced from hydrolytic class 3 high-quality float glass (soda-lime glass). Planarity and thickness distribution lie within very a tight tolerance band and are therefore ideally suited to microscopy applications (readjustment of the microscope is not necessary).

- Virtually free from surface defects, inclusions, streaks and bubbles
- The edges of the glass slides are uniform and crystal clear, reducing the risk of breakage along the edges
- Excellent wettability
- Dimensions 26 x 76 mm (to ISO 8037/1)
- Glass thickness 1.0 ±0.05 mm

Design	Art. No.	Pack Qty.	€
Cut	**NK72.1**	50	4,15
Cut edges, with matt strip	**NK73.1**	50	5,75
Edges ground to 90°, with white labelling surface	**NK74.1**	50	8,70

DG cover slips

Produced from hydrolytic class 1 borosilicate glass D263.

- Virtually free from surface defects, inclusions, streaks and bubbles and unwanted striation thanks to high optical homogeneity
- Highly transparent, colourless and nearly free from colour impurities
- Absorption-free within the visible spectrum
- Also suitable for fluorescence microscopy thanks to UV absorption
- High planarity
- High quality is assured through optimal cooling process
- Refractive indices matched to microscopy applications

Length (mm)	Width (mm)	Thickness (mm)	Art. No.	Pack Qty.	€
18	18	No. 1 (0.13-0.16)	**NK75.1**	10 x 100	14,35
22	22	No. 1 (0.13-0.16)	**NK76.1**	10 x 100	19,90
24	50	No. 1 (0.13-0.16)	**NK77.1**	10 x 100	46,00
24	50	No. 1.5 (0.16-0.19)	**NK78.1**	10 x 100	51,50
24	60	No. 1 (0.13-0.16)	**NK79.1**	10 x 100	52,95
24	60	No. 1.5 (0.16-0.19)	**NK80.1**	10 x 100	58,30

Microscope slides with 45° ground corners

By Marienfeld. Made of soda lime glass, 76 x 26 mm, 1 mm thick, i.a.w. DIN ISO 8037/1. Ground edges with 45° or 90° angle, 4 ground corners to reduce risk of injury. Ideal for use in automatic systems.
With CE marking, i.a.w. IVD directive 98/79/EC.

Design	Art. No.	Pack Qty.	€
without frosted edge	**CEX3.1**	50	5,70
with frosted edge (20 mm)	**CEX4.1**	50	6,35

Microscope slides SuperFrost®

By Menzel. Made of soda-lime glass. The various coloured labelling areas (L 26 x W 19 mm) allow discrimination according to priority, research methods, staining techniques etc. The solvent resistant coating (thickness 0.013 mm) of the labelling areas prevents the slides from being scratched and from sticking together.
Dimensions, in acc. with ISO 8037/1: L 76 x W 26 mm, thickness 1 mm.

Cut edges

Colour	Art. No.	Pack Qty.	€
white	**1879.1**	50	4,10
blue	**2101.1**	50	4,10
pink	**2105.1**	50	4,10
yellow	**2106.1**	50	4,10
green	**2109.1**	50	4,10
orange	**L192.1**	50	3,90

Edges ground 90°

Colour	Art. No.	Pack Qty.	€
white	**1880.1**	50	5,35
blue	**2111.1**	50	5,35
pink	**2116.1**	50	5,35
yellow	**2119.1**	50	5,35

Edges ground 45°

Colour	Art. No.	Pack Qty.	€
white	**H879.1**	50	5,35
blue	**H880.1**	50	5,35
yellow	**H882.1**	50	5,35
green	**H883.1**	50	5,35

A 121 °C

Diagnostic microscope slides

By Menzel. 75 x 25 x 1 mm, made of extra-white glass with permanent epoxy or PTFE-coating. Can withstand extreme stress conditions without losing their hydrophobic properties. With white frosted edge for labelling. 90° ground edges minimize possible injury risks. Autoclavable.

Type Epoxy

No. of chambers	∅ (mm)	Colour coating	Art. No.	Pack Qty.	€
8	6	black	**L197.1**	100	64,00
10	6,7	black	**L198.1**	100	64,00
12	5	white	**L199.1**	100	64,00

Type PTFE

No. of chambers	∅ (mm)	Colour coating	Art. No.	Pack Qty.	€
10	6,7	black	**L203.1**	100	85,90

Adhesion slides

Made of soda-lime glass, with special adhesives for anchoring cells and tissues. Complex and expensive application of adhesives or protein layers is not necessary. No undesirable background staining. Ground edges 90° (except for ET08.1).
With labelling area.

SuperFrost®/Plus adhesion microscope slides

By Menzel. Freshly frozen tissue sections and cytology preparations are attracted electrostatically to the microscope slides.
Dimensions: L 75 x W 25 mm, thickness 1 mm.

Suitable for:
- Fixed tissue sections, embedded in paraffin (2-5 µm)
- Cell adhesions for cyto-centrifugal preparations in standard Papanicolaou smears
- Immuno-peroxidase hybridisation
- In-situ DNA hybridisation

Art. No.	Pack Qty.	€
H867.1	72	23,15

SuperFrost Ultra Plus®-adhesion microscope slides

By Menzel. Formaldehyde-fixed paraffin or resin tissue sections (2-5 µm), frozen sections and delicate cytologic samples are electrostatically attracted.
Dimensions: L 75 x W 25 mm, thickness 1 mm.

Suitable for:
- Difficult cytologic samples
- Microwave staining
- Immunoperoxidase processes when applying heat-induced antigen/ epitope retrieval (HIER, HMAR or HTAR)
- Optimized tissue adhesion for in-situ hybridisation
- Improved standardization and reproducibility of diagnostic routine staining processes
- 45° ground edges particularly well-suited for automatic processing

Edges	Art. No.	Pack Qty.	€
cut 90°	**ET07.1**	72	24,00
cut 45°	**ET08.1**	72	24,00

Histobond®+ adhesion microscope slides

By Marienfeld. The silanized glass surface has a permanent positive charge which ensures that all types of tissue sections attach securely to the glass. Coloured labelling spaces offer potential uses in routine histology.
Dimensions: L 76 x W 26 mm, thickness 1 mm.

Suitable for:
- In-situ hybridisation
- Problematic tissue samples, such as brain or spinal cord
- Multiple washing cycles, sections adhere firmly to the glass
- Microwave cooking

Edges 90° grounded

Colour	Art. No.	Pack Qty.	€
neutral	**CEX0.1**	100	31,15
white	**PC66.1**	100	32,20
yellow	**PC67.1**	100	32,20
green	**PC68.1**	100	32,20
blue	**PC69.1**	100	32,20
pink	**PC70.1**	100	32,20
orange	**PC71.1**	100	32,20

Edges 90° grounded, 4 corners 45° bevelled

Colour	Art. No.	Pack Qty.	€
neutral	**HKH8.1**	100	29,60
white	**HKH9.1**	100	31,75
yellow	**HKK0.1**	100	32,20
green	**HKK1.1**	100	32,20
blue	**HKK2.1**	100	32,20
pink	**HKK3.1**	100	32,20
orange	**HKK4.1**	100	32,20

SuperFrost® Plus Gold adhesion microscope slides

By Menzel. Fresh frozen sections or frozen section fixed in formalin are attracted to the slide and then chemically fixed onto the glass surface.
Dimensions: L 75 x W 25 mm, thickness 1 mm.

Suitable for:
- Special staining methods (toluidine blue staining, hematoxylin staining and quick-freeze eosin section staining)
- Tissue sections up to 20 µm
- Bone, frozen heart, brain, skin and other tissue sections that are normally difficult to bind
- Immunocytochemical and in-situ DNA-hybridisation of frozen tissue sections
- Selection counting for immunofluorescence analysis in the event of low tissue quantities

Art. No.	Pack Qty.	€
ET09.2	72	66,60

Adhesion slides

Polysine®-adhesion microscope slides

By Menzel. The samples are initially attracted electrostatically and then bound biochemically. The permanent adhesive provides excellent cell and tissue adhesion on the microscope slides. Polysine® microscope slides are not affected by enzyme predigestion or heating.
Dimensions: L 75 x W 25 mm, thickness 1 mm.

Ideally suitable for:
- Fresh frozen sections
- Paraffin-embedded (2-5 µm, fixed with alcohol, formalin, bouins or non-crosslinking sections)
- Extended staining process
- Extended in-situ DNA hybridisation and immunocytochemical methods
- Cytocentrifuge preparations

Art. No.	Pack Qty.	€
ET10.1	72	20,90

Roti®-Bond Adhesion Slides

Fast and highly efficient immobilisation of cellular material with optimal structure conservation.

The new adhesive coating of the Roti®-Bond adhesion slides reacts to natural surface structures of cells and tissues, anchoring them securely to the glass surface. Due to this procedure, based on different binding principles, the cells do not lose their antigenicity, their cell functionality and their three-dimensional structure.

- Assays using only several hundred cells possible
- No cell loss even during harsh incubation procedures
- Excellent recovery rate
- Compatible with all standard and modern assay systems and all fluorescent dyes
- Particularly adapted to assays using stem cells

Dimensions: L 75 mm x W 25 mm, thickness 1 mm

Roti®-Bond adhesion slides 50 and 100 are delivered in Rotilabo®-slide boxes.

Art. No.	Pack Qty.	€
CL20.1	5	11,75
CL20.2	50	84,85
CL20.3	100	118,25

Flexistrip spreading spatulas

Made of **PS**, for uniform spreading of blood smears on lens carriers. Usable on both sides. Dimensions: L 75 x W 26 mm.

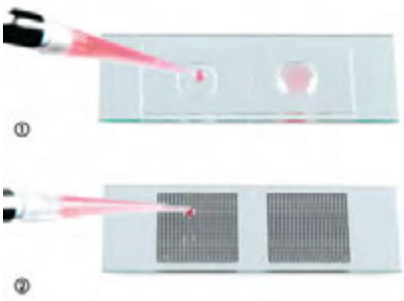
Art. No.	Pack Qty.	€
L430.1	50	36,05

Slides with moulds

By Menzel. Made of soda-lime glass, 76 x 26 mm. 1.2-1.5 mm thick with ground edges 90°. ∅ of mould 15 mm, depth approx. 0.6-0.8 mm.

No. of moulds	Art. No.	Pack Qty.	€
1	**H884.1**	100	131,15
2	**H885.1**	100	203,20
3	**H886.1**	100	284,90

▶ Lab Markers for labelling microscope slides on page 773



Self-adhesive marking films for microscope slides

Made of polyester. For microscopic examination or counting of cell cultures, yeasts, bacteria and other samples. Recesses and grids can also be used in combination. Depressions are made through recesses in the foil carrier.

① With two ∅ 10 mm recesses

Depth (mm)	Art. No.	Pack Qty.	€
0,25	**AXC3.1**	25	66,65
0.50	**AXC4.1**	25	80,65

② With two 20 x 20 mm grids, line spacing 1 mm

Art. No.	Pack Qty.	€
AXC5.1	40	45,70

DURAN WHEATON KIMBLE

Balsam glass

By Wheaton. Made of soda-lime glass, with loose ground cap and glass rod. Volume 100 ml. Dimensions: Ø 75 x H 100 mm.

Type	Art. No.	Pack Qty.	€
Balsam glass	**HHY5.1**	6	220,40
Spare glass rod	**HHY6.1**	2	22,25

Boerner staining plates

Made of pressed glass. With optically polished, pressed and numbered recesses. 10 recesses, ∅ approx. 14 mm, depth approx. 2 mm. Dimensions: L 107 x W 57 x H 4 mm.

Art. No.	Pack Qty.	€
CET7.1	6	85,90

▶ Canada balsam, oil of cedar wood etc., see chapter histology/microscopy!

Rotilabo®-Canada balsam bottle

60 ml, with loose ground cap and glass rod.

Art. No.	Pack Qty.	€
0708.1	1	29,60

Cedar wood oil bottle

Volume 30 ml.

Art. No.	Pack Qty.	€
0709.1	1	32,00

NEW

Mixing palettes

By Hammacher. Made of **PP**. Dimensions: L 70 x W 55 mm.

Art. No.	Pack Qty.	€
KAN8.1	10	5,20

Staining plates

Made of pressed glass. With rounded corners and frosted surface. 12 recesses, ∅ approx. 16 mm, depth approx. 2 mm. Dimensions: 79 mm long x 63 mm wide x 4 mm high.

Art. No.	Pack Qty.	€
CET6.1	10	148,35

Microscopy bowls

Made of calcium soda-lime glass. With semicircular recess, ∅ 30 mm x depth 10 mm. Dimensions: L 40 x W 40 x H 16 mm.
Delivery incl. 40 x 40 x 2 mm cover plate.

Design	Art. No.	Pack Qty.	€
Clear glass	**TK76.1**	1	6,40
Black glass	**TK77.1**	1	9,00

Transport boxes for microscope slides

Rotilabo®-mailing boxes

Made of **PP**. For 5 microscope slides 76 x 26 mm. Ideal for storing, transport, mailing, etc. With 4 guiding rail inside the can to separate the slides and prevent them from sticking to each other. Tightly closing lid. Dimensions: L 80 x W 17 x H 30 mm.

Art. No.	Pack Qty.	€
T208.1	25	16,10

Carrier buckets with tamper evident closure

PP bucket and **HDPE** screw cap. Colour: transparent/light-pink. For storage, shipping or for staining of 4 standard lens carriers 76 x 26 mm. Guide rails prevent lens carriers from sticking. Bucket can be opened and closed several times. Tamper evident closure is activated by snapping a tab into place. Buckets can be colour-coded using coloured cap inserts. Please order separately. Dimensions: ∅ 35 x H 87 mm, volume 12 ml.

Art. No.	Pack Qty.	€
KL89.1	100	47,85

Lid inserts

Made of **PP**. For colour-coded, easy identification of reaction vials (Art. No. CK47.1 ff, CK57.1 ff and ATC4.1) or microscope slide tubs with tamper evident closure (Art. No. KL89.1), as well as sample tubs (Art. No. AYT6.1ff und HYE7.1ff).

Colour	Art. No.	Pack Qty.	€
blue	**CK72.1**	500	14,65
yellow	**CK73.1**	500	14,65
red	**CK74.1**	500	14,65
white	**CK75.1**	500	14,65
green	**CK76.1**	500	14,65
assorted colours	**CK77.1**	500	14,65

① Mailing and storage boxes

Made of **PP**, for 5-10 microscope slides 76 x 26 mm, stable version. The microscope slides are easy to remove. Autoclavable.

Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
90	40	**2306.1**	10	47,10

② Transport boxes

Made of **PP**, for microscope slides 76 x 26 mm, excellent for sending by mail. Autoclavable.

Number of microscope slides	L x W (mm)	Art. No.	Pack Qty.	€
1	50 x 100	**2304.1**	10	22,95
1-3	84 x 99	**2305.1**	10	26,85

Mailing boxes for microscope slides

Made of **PS**. Ideal as a mailing box for individual microscope slides 76 x 26 mm. Also suitable for storage, as boxed can be stacked to any height. Can be closed easily and safely. Tilting mechanism enables easy removal of the slide. Temperature stable from -80 to +80 °C. Dimensions: L 89 x W 29 x H 6 mm.

Colour	Art. No.	Pack Qty.	€
blue	**AH01.1**	50	17,15
yellow	**AH02.1**	50	17,15
green	**AH03.1**	50	17,15
pink	**AH04.1**	50	17,15
white	**AH05.1**	50	17,15

Slide magazines

Slide holders

Made of **PE**. For microscope slides 76 x 26 mm. For storing, cleaning, drying microscope slides. Robust design with anti-slip rubber feet. Temperature resistant in the range -50 to +80 °C.

Number of microscope slides	L x W x H (mm)	Art. No.	Pack Qty.	€
15	153 x 102 x 21	**PC63.1**	1	37,10
40	298 x 105 x 24	**PC64.1**	1	42,95
78	299 x 178 x 21	**PC65.1**	1	53,65

▶ Microscopes see page 778

Rotilabo®-microscopic slide folders

Made of **PS**. Stackable.
For 20 microscope slides 76 x 26 mm. With numerical marking.
The transparent protective flaps can be turned backwards.
Simple removal of slides.
Temperature stable from -80 to +80 °C.
Dimensions: L 295 x W 192 x H 11 mm.

*For light-sensitive applications.

Colour	Art. No.	Pack Qty.	€
blue	**AH10.1**	1	16,10
yellow	**AH11.1**	1	16,10
green	**AH12.1**	1	16,10
grey	**CXN4.1**	1	13,95
white	**AH13.1**	1	16,10
white, opaque protective flaps*	**CXN6.1**	1	13,95
sorted (2 x blue, yellow, green, grey and white)	**CXN5.1**	10	127,95

Rotilabo®-microscope slide tray

Made of **ABS**. For 20 microscope slides 76 x 26 mm. With slightly slanted base for easy removal of slides. Temperature stable from -80 to +100 °C.
Dimensions: L 299 x W 206 x H 18 mm.

Art. No.	Pack Qty.	€
AH09.1	1	6,80

Storage and transport trays

Made of **PVC**, white, for microscope slides 76 x 26 mm.
The white bottom emphasized the staining.

Number of microscope slides	L x W (mm)	Art. No.	Pack Qty.	€
20	340 x 190	**2296.1**	1	12,50
40	680 x 190	**2297.1**	1	21,95

Storage boxes

Made of **PS**, with separate lid. For microscope slides 76 x 26 mm, stackable, breakproof, easy to clean. The slots are individually numbered. With index card (loosely inserted).

Number of microscope slides	L x W x H (mm)	Art. No.	Pack Qty.	€
25	98 x 83 x 38	**2301.2**	4	42,95
50	230 x 97 x 35	**2302.1**	1	19,90
100	230 x 180 x 35	**2303.1**	1	28,50

Slide magazines

Preparation folders

Made of cardboard. With two-piece cover, centre-folding. Coloured edges allow easier identification. For microscope slides 76 x 26 mm.

Number of microscope slides	Colour	L x W x H (mm)	Art. No.	Pack Qty.	€
20	black	208 x 341 x 9	**AXK6.1**	1	8,10
20	blue	208 x 341 x 9	**AXK7.1**	1	8,10
20	green	208 x 341 x 9	**AXK8.1**	1	8,10
20	red	208 x 341 x 9	**AXK9.1**	1	8,10
20	yellow	208 x 341 x 9	**AXL0.1**	1	8,10
30	black	281 x 328 x 10	**AXL1.1**	1	11,65

Rotilabo®-slide box

For 100 microscope slides 26 x 76 mm. Base and lid are attached to a wooden frame and the outside is covered with black paper. Wooden serrated strip with black printed numbers, the index card is loosely enclosed. The inside is made of moulded plastic (PS) with 2 tilting slats for easy removal of the miscroscope slides. 380 g net weight.
Dimensions: L 275 x W 185 x H 40 mm.

Art. No.	Pack Qty.	€
K335.1	1	31,15

Preparation folders and boards

Made of sturdy cardboard, with punched grid. Base is covered with white chromo paper. For microscope slides 76 x 26 mm.

Folders come with a hinged cover and pasted list of contents
Two piece cover, centre hinged; or one piece cover, side hinged.

Cover	Number of microscope slides	L x W (mm)	Weight (g)	Art. No.	Pack Qty.	€
two piece, with lock	20	340 x 205	250	**K326.2**	10	131,15
one piece	20	340 x 205	220	**K327.2**	10	85,50
one piece	6	215 x 105	70	**K329.2**	10	71,95
one piece	2	100 x 90	30	**K331.1**	10	28,95

Preparation boards, without cover
With punched grid (for 20 microscope slides) or without individual subdivisions (with continuous edge and central divider).

Cover	Number of microscope slides	L x W (mm)	Weight (g)	Art. No.	Pack Qty.	€
without	20	342 x 204	125	**P957.2**	10	64,30
without	-	342 x 204	110	**CPT8.2**	10	59,15

Rotilabo®-microscope slide boxes

Made of **PS**, coloured. For 100 microscope slides 76 x 26 mm. With hinged lid, nickel-plated lock and cork insert, to prevent damage to the slides inside. Affixed index card in lid. The numbers on the index card correspond to those embossed on the bottom of the box. Stackable.
Dimensions: L 208 x W 175 x H 34 mm.

Colour	Art. No.	Pack Qty.	€
blue	**K532.1**	1	7,85
green	**K533.1**	1	7,85
red	**K534.1**	1	7,85
yellow	**K535.1**	1	7,85
white	**K536.1**	1	7,85

Slide magazines

NEW

Premium microscope slide boxes

Made of **ABS** and **PP**.
For 100 slides with dimensions of 76 x 26 mm.
Dimensions: L 207 x W 195 x H 32 mm.

- Foam insert in the bottom of the box for protecting samples
- Hinged lid with non-metal closing mechanism, no risk of corrosion
- Replaceable index card integrated in the lid
- Central numbering of the samples on the central divider
- Usable for vertical or horizontal storage
- Stackable
- Side compartment for storing marker pens or drying agents

Colour	Art. No.	Pack Qty.	€
blue	**HYN9.1**	5	67,75
orange	**HYP0.1**	5	67,75
green	**HYP1.1**	5	67,75
red	**HYP2.1**	5	67,75
violet	**HYP3.1**	5	67,75
sorted (blue, orange, green, red, violet)	**HYP4.1**	5	67,75

Accessories:

Index card L 216 x W 280 mm	**HYP5.1**	10	31,15

121 °C

Freezing microscope slide box True North®

Made of **PC**. With foam insert and stainless steel closure for hinged-lid box. Index card integrated in the lid. Numbering on the index card matches the numbers stamped on the base of the box and on the labelling on the foam insert. Stackable. Temperature stable from -80 to +121 °C.

Number of microscope slides	Type	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
100	Hinged-lid box	208 x 175 x 34	**PC56.1**	1	24,70
25	Slip-lid box	141 x 88 x 35	**ENL7.1**	1	13,45

Storage rack for microscope slide boxes

Made of acrylic. With 15 spaces for 50 or 100-slot microscope slide boxes.
Compartment dimensions: L 214 x W 171 x H 38 mm,
Overall dimensions: L 711 x W 171 x H 228 mm.

Art. No.	Pack Qty.	€
TP32.1	1	310,70

Rotilabo®-slide boxes

Made of **PS/ABS**, coloured, for 25 or 50 microscope slides 76 x 26 mm. Push-on lid, cork inlet for protection of microscope slides from damaging. Affixed index card in lid. The numbers on the index card correspond to the embossed numbers on the base of the box. Stackable.

25 slots, box made of PS, dimensions: L 141 x W 88 x H 35 mm

Colour	Art. No.	Pack Qty.	€
blue	**K540.1**	1	7,35
green	**K541.1**	1	7,35
red	**K542.1**	1	7,35
white	**K544.1**	1	7,35

50 slots, box made of ABS, dimensions: L 209 x W 86 x H 35 mm

Colour	Art. No.	Pack Qty.	€
blue	**N952.1**	1	8,10
red	**N953.1**	1	8,10
white	**N954.1**	1	8,10

Slide magazines

Microscope slide box for large microscope slides

Made of **ABS**. For 100 microscope slides of size 76 x 52 mm. With hinged lid, nickel-plated catch and cork inlay. Index card integrated in the lid. The numbering of the index card matches the numbering embossed on the base of the box. Stackable. Dimensions: L 208 x W 175 x H 60 mm.

Art. No.	Pack Qty.	€
TP28.1	1	23,55

Containers for microscope slides

Container made of **ABS**, lid made of PS.
For 100 microscope slides 76 x 26 mm.

Type	L x W x H (mm)	Art. No.	Pack Qty.	€
Container	360 x 38 x 100	**2299.2**	2	34,85
Lid for 2299.2	345 x 35 x 40	**2300.2**	2	19,00

Microscope slides dispenser

Made of **ABS**. For 50 slides 76 x 26 mm. The slides can be stored protected from dust and taken out one after another by turning the knob.

Colour	Art. No.	Pack Qty.	€
white	**2298.1**	1	35,15

Microscope slide magazines

Made of **PS.** For vertical storage of 76 x 26 mm microscope slides. Easy retrieval of preparations through option for tilting microscope slides inside slots.

- Coloured box with large labelling space
- Contents are easily recognisable through transparent hinged lid
- Removable insert with individually numbered slots
- Incl. numbered index card
- Stackable
- Temperature stable from -80 to +80 °C

Microscope slide magazine, large

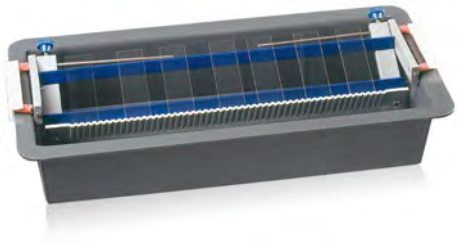
For 100 microscope slides. Up to 200 microscope slides can be stored by double use of slots. Up to 400 microscope slides can be stored in 3 rows by removing the insert. Dimensions: L 245 x W 82 x H 86 mm.

Colour	Art. No.	Pack Qty.	€
blue	**X021.1**	1	11,80
green	**X022.1**	1	11,80
pink	**X023.1**	1	11,80
white	**X024.1**	1	11,80
yellow	**X025.1**	1	11,80

Microscope slide magazine, small

For 50 microscope slides. Up to 100 microscope slides can be stored by double use of slots. Up to 200 microscope slides can be stored in 3 rows by removing the insert. Dimensions: L 140 x W 82 x H 86 mm.

Colour	Art. No.	Pack Qty.	€
blue	**AEL4.1**	1	9,15
green	**AEL5.1**	1	9,15
pink	**AEL6.1**	1	9,15
white	**AEL7.1**	1	9,15
yellow	**AEL8.1**	1	9,15



Staining rack and tray

Made of **PVC**. Staining rack for custom adaptation to a variety of dishes and tanks. With 2 fixing clips and 2 handles, each extendable by 115 mm. For tilting and fixing in horizontal position. When used in combination with staining tray CEX6.1, a locking bolt holds the tray securely in the tilted position. The tray can also be fixed in the horizontal position using the second locking bolt. Overall length of staining rack: approx. 380 mm, inner dimensions of staining tray: L 380 x W 145 x H 75 mm.

Type	Art. No.	Pack Qty.	€
Staining rack	**CEX5.1**	1	78,30
Staining tray	**CEX6.1**	1	42,50

A 121 °C

Wash-N-Dry™-microscope slide holder

Made of **PP**. For staining, washing and drying up to 12 microscope slides of size 76 x 26 mm. Ideal for 150 ml beakers, high form. Distance to stage 10 mm below the microscope slide for the use of magnetic stir bars. Dimensions: L 31.5 x W 38.4 x H 110 mm. Autoclavable.

Art. No.	Pack Qty.	€
AXC6.1	1	53,65

Staining chamber

By Nalgene®. Made of **PMP** for staining, fixing, and bleaching membranes, electrophoresis gels etc. With lid made of **PP**-copolymer and leakproof drain plug made of **LDPE** for problem-free draining of liquid without gel manipulation. Chamber with handles on both side for easy transport. Capacity with gel under shaking conditions: 500 to 750 ml. Temperature stable from -70 to +70 °C.

Not UV-transparent.

L x W x H (mm)	Art. No.	Pack Qty.	€
125 x 125 x 50	**H591.1**	1	34,00

Staining chambers Stain Tray™

Made of **ABS**, lid available either in **ABS** or **PETG**. Suitable as staining chamber or as moisture chamber in immunohistology, haematology, cytology and microbiology.

- Microscope slides stick securely on the rubber strips
- Floor drain with stopper for simple emptying of chamber
- Stackable
- Transparent lid for sample observation
- Black lid for applications in fluorescence microscopy

① **For up to 20 microscope slides:** Dimensions: L 380 x W 240 x H 45 mm

Lid material	Temperature resistance	Art. No.	Pack Qty.	€
PETG, transparent	-20 to +60 °C	**HA50.1**	1	241,90
ABS, black	-20 to +80 °C	**HA51.1**	1	241,90

② **For up to 10 microscope slides:** Dimensions: L 240 x W 240 x H 45 mm

Lid material	Temperature resistance	Art. No.	Pack Qty.	€
PETG, transparent	-20 to +60 °C	**HL97.1**	1	199,95
ABS, black	-20 to +80 °C	**HL98.1**	1	199,95

Disposable staining chambers

Made of **PP** and **PE**. For staining, washing and drying up to eight microscope slides of size 76 x 26 mm.

- Chamber volume 38 ml
- With moulded handles for easy transportation and two nozzles
- Dark cover for light-sensitive applications
- Dimensions: L 305 x W 127 x H 30 mm

Delivery incl. four staining chambers and a cover.

Art. No.	Pack Qty. (set)	€
TP31.1	1	41,50

Rotilabo®-staining boxes

Made of **acetal-polymer** (POM). Volume 80 ml. Resistant against most staining reagents, however irreversible discoloration possible.
Dimensions: L 64 x W 76 x H 92 mm.
Delivery incl. connector clips.
Without microscopic slide holder (please order separately).

Colour	Art. No.	Pack Qty.	€
blue	**HA44.1**	1	14,30
yellow	**HA45.1**	1	14,30
green	**HA46.1**	1	14,30
pink	**HA47.1**	1	14,30
white	**HA48.1**	1	14,30

Rotilabo®-microscope slide holders

Microscopic slide holders for 12 microscope slides 76 x 26 mm. Grey. Vertical storage of microscope slides prevents the labelling areas from coming in contact with the staining solution. Dimensions: 60 x 64 x 97 mm.

Type	Art. No.	Pack Qty.	€
Microscope slide holders	**HA49.1**	1	16,05

Universal microscope slide cuvettes

For histology, cuvettes made of black **POM**.

- Clip on lid makes structure impermeable to light. There is a compartment in the lid for drying agent (for example bluegel), which can be closed with a plate that also serves as a note board for labelling slides. Easy to transport racks for 25 microscope slides of standard format, slots for slides are numbered. For volume approx. 250 ml, only 150 ml are needed. Closes airtight, important for volatile solutions.
- Contains no metal, no danger of corrosion when using aggressive solvents
- Easy to clean
- The exposition, development and second stain of samples can be done in a time saving way without changing microscope slides by transporting the slides in the rack.

Staining cuvette

consisting of staining trough 2286.1 and staining rack 2287.1.

L x W x H (mm)	Material	Art. No.	Pack Qty.	€
100 x 87 x 51	POM	**2285.1**	1	20,00

Staining trough

and/or storage container for 25 microscope slides.

L x W x H (mm)	Material	Art. No.	Pack Qty.	€
100 x 87 x 51	POM	**2286.1**	1	15,60

Staining rack

(insert) for serial staining of 25 microscope slides.

L x W x H (mm)	Material	Art. No.	Pack Qty.	€
91 x 79 x 38	POM	**2287.1**	1	6,20

Rack for Rotilabo®-staining boxes

Made of aluminium. Holds up to six Rotilabo®-staining boxes HA44.1ff.
Dimensions: L 425 x W 105 x H 38 mm.

Art. No.	Pack Qty.	€
AEK9.1	1	84,15

Staining boxes and inserts

Staining boxes for microscope slides, made of **PMP**, clear, comes with two lids, one of which closels tightly, the other has a small opening for attaching the insert during staining. Insert made of PP, with handle, for 20 microscope slides 76 x 26 mm. Suitable for microwaves.

Type	L x W x H (mm)	Art. No.	Pack Qty.	€
Box	101 x 81 x 70	**2290.2**	4	64,20
Insert	86 x 70 x 21	**2291.2**	2	14,55

▶ Microscope slides and cover slips on page 300

Staining boxes

Made of **PMP**, with lid, for eight microscope slides 76 x 26 mm.
Dimensions: L 58 x W 54 x H 86 mm. Suitable for microwave.

Art. No.	Pack Qty.	€
2292.2	4	53,70

DURAN WHEATON KIMBLE

Coplin staining jar

Made of lime-soda-glass. For 10 microscope slides 76 x 26 mm.
Outer ∅ 66 mm. Height 108 mm.

Art. No.	Pack Qty.	€
H548.1	1	14,95

Staining boxes acc. to Schiefferdecker

Made of **PMP**. Staining boxes with lid for 20 microscope slides (10 pairs) 76 x 26 mm. Dimensions: L 89 x W 70 x H 50 mm. Microwave safe.

Art. No.	Pack Qty.	€
XC73.1	4	50,90

Staining boxes and troughs made of soda-lime glass have a maximum usage temperature of approx. 100 °C. It is very important to avoid sudden changes in temperature as this type of glass does not have good thermal shock resistance. The temperature should not exceed 60 °C during cleaning. The use of neutral to slightly alkaline cleaning agents is recommended.

A 121 °C

Coplin staining jar

Made of **PP**. For 10 microscope slides 76 x 26 mm.
With screw cap, opening ∅ 53 mm for easy loading.
Dimensions: ∅ 60 x H 114 mm. Autoclavable.

Art. No.	Pack Qty.	€
YC09.1	1	11,30

Coplin staining jars, with screw cap

Made of sodium-lime glass, with screw cap made of plastic and PE foam insert.
For 10 microscope slides 76 x 26 mm.

Type	Height (mm)	Art. No.	Pack Qty.	€
High form	108	**ETE2.1**	6	81,20
Low form	85	**ETE3.1**	6	78,50

DURAN WHEATON KIMBLE

Coplin staining dish

By Wheaton. Made of calcium soda glass.
Screw top made of PP. For 5 -10 microscope slides 76 x 26 mm.
Inner dimensions: L 26 x W 26 x D 90 mm. Storage capacity 60 ml.

Type	Art. No.	Pack Qty.	€
Coplin staining dish, complete	**HLA7.1**	1	32,55
Spare screw cap for Coplin staining dish	**HLA8.1**	1	11,80

DURAN WHEATON KIMBLE

Slide boxes

By Wheaton. Made of PP, suitable for Wheaton staining dishes acc. to Coplin. For 5 microscope slides.
Safe and easy transfer of microscope slides for staining.

Art. No.	Pack Qty.	€
HLA9.1	2	40,65

Staining boxes acc. to Hellendahl

Made of lime-soda-glass.
For 8 microscope slides, 76 x 26 mm.

Type	L x W x H (mm)	Art. No.	Pack Qty.	€
① without extension	93 x 43 x 97	**H549.1**	1	20,35
② with extension	63 x 58 x 98	**H550.1**	1	14,85

A 121 °C

Staining boxes with lid

Made of glazed porcelain. For the protection of light-sensitive staining solutions. For 6 microscope slides of size 76 x 26 mm.
Lid dimensions: L 75 x W 48 x H 5 mm. Temperature stable up to 1000 °C.
Microwave safe. Autoclavable.

L x W x H (mm)	Art. No.	Pack Qty.	€
70 x 40 x 86	**XX63.1**	2	45,40

Staining box acc. to Schiefferdecker

Made of lime-soda-glass.
For 20 microscope slides (10 pairs) 76 x 26 mm.
Dimensions: L 89 x W 71 x H 46 mm.

Art. No.	Pack Qty.	€
H551.1	1	15,05

Staining box and rack

Made of soda-lime glass. For 10 microscope slides 76 x 26 mm or for all widths to 52 mm.

Type	L x W x H (mm)	Art. No.	Pack Qty.	€
Staining box with lid	105 x 85 x 70	**H554.1**	1	17,00
Staining rack	85 x 60 x 45	**H552.1**	1	20,00
Staining tray made of stainless steel	80 x 55 x 53	**CET8.1**	1	21,40

Accessories:

Wire hanger made of stainless steel for glass staining rack		**H553.1**	1	2,75

Staining racks/Staining chambers

Staining system

By Wheaton. Made of calcium soda glass. For 50 microscope slides 76 x 26 mm, 76 x 38 mm and 76 x 52 mm. Frame made of stainless steel, folding handle to close the dish, and to insert and remove microscope slides. Inner dimensions at base: L 185 x W 88 x D 78 mm.

Delivery incl. staining box, lid and frame.

Type	Art. No.	Pack Qty.	€
Staining system, complete	**HLA2.1**	1	218,25

Accessories:

Staining box	**HLA3.1**	1	108,60
Lid	**HLA4.1**	1	72,85
Stainless steel insert for 50 microscope slides, with handle attached	**HLA5.1**	1	76,60

Hauser/Gedigk staining troughs

Made of lime-soda-glass. For 60 microscopic slides 76 x 26 mm. Staining insert made of stainless steel.

Type	L x W x H (mm)	Art. No.	Pack Qty.	€
Glass box	130 x 93 x 121	**T725.1**	1	34,95
Lid	130 x 93 x 3	**T726.1**	1	6,40
Staining insert	-	**T727.1**	1	77,30

Material DURAN®

Preparation boxes

Made of DURAN®. With cut glass sheet. Extremely versatile, can be used as a storage box for preparations, TLC-separating chambers, etc.

Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
60	50	100	**T067.1**	1	36,55
100	50	120	**T068.1**	1	43,70
130	50	130	**T069.1**	1	58,30
150	50	150	**T070.1**	1	72,00
120	60	180	**T071.1**	1	59,95
210	100	210	**T072.1**	1	120,00
250	140	250	**T073.1**	1	171,00

Glass boxes

Made of calcium soda glass. Ground rim.

L x W x H (mm)	Art. No.	Pack Qty.	€
100 x 100 x 100	**NY95.1**	1	10,75
100 x 150 x 150	**NY96.1**	1	15,95
220 x 300 x 150	**NY97.1**	1	49,25
180 x 250 x 220	**NY98.1**	1	46,80
230 x 360 x 260	**NY99.1**	1	102,15

Columbia staining dish

By Wheaton. Made of calcium soda glass. With white PP screw cap with PTFE-coated PE insert. For up to 4 coverslips B 17-23 mm, up to H 30 mm. Longer coverslips can also be inserted with the lid removed.

Type	Art. No.	Pack Qty.	€
Columbia staining dish with lid	**HLA6.1**	1	42,50

A 121 °C

Staining dish, silicone

By Hammacher. Made of silicone, soft. Volume 160 ml. Temperature stable from -55 to +200 °C. Autoclavable.

Art. No.	Pack Qty.	€
HCY2.1	1	26,70

Embedding cassettes and accessories

Embedding cassettes

Made of special polymer with a high density. Suitable for holding tissue samples during embedding or storage. Solvent-proof.
Large labelling area on front and sides.

① **Without lid**, fits standard metal lids.
Outer dimensions: L 40.5 x W 30 x H 6 mm.

Colour	Art. No.	Pack Qty.	€
white	**H579.1**	500	47,95
pink	**H580.1**	500	47,95
green	**H581.1**	500	47,95
yellow	**H582.1**	500	47,95
blue	**H583.1**	500	47,95
grey	**AA79.1**	500	44,45
orange	**EH20.1**	500	46,25

② **For biopsies,** with lid attached (the surface is penetrated with holes). To close cassettes break off lid and secure it on the bottom. The cassettes can be opened repeatedly from the back and closed again securely.
Outer dimensions: L 40.5 x W 28.5 x H 7 mm.

Colour	Art. No.	Pack Qty.	€
white	**E478.1**	500	53,25
pink	**AA78.1**	500	50,55
green	**E481.1**	500	53,25
yellow	**E480.1**	500	53,25
blue	**E479.1**	500	53,25
grey	**E483.1**	500	53,25
orange	**E482.1**	500	53,25

Rotilabo®-embedding cassettes

Made of **POM**. Ideal for routine embedding. With lid and labelling space.
Outer dimensions: 40 x 28 x 6.8 mm.

Colour	Art. No.	Pack Qty.	€
white	**K113.1**	500	60,65
red	**PX06.1**	500	60,65
blue	**K114.1**	500	60,65
yellow	**K115.1**	500	60,65
green	**K116.1**	500	60,65
pink	**K117.1**	500	60,65

Swingsette™ biopsy embedding cassettes

Made of **Acetal Polymer**. Cassette and lid with small square compartments for processing, embedding and storage of tissue specimens.
- With hinged lid for easy use
- Lid can be opened and closed any number of times
- Textured labelling area on the front
- 45° angle for automated labelling systems
- Resistant to standard histological solvents

Colour	Art. No.	Pack Qty.	€
white	**XY22.1**	500	64,45
pink	**XY23.1**	500	64,45
green	**XY24.1**	500	64,45
yellow	**XY25.1**	500	64,45
blue	**XY26.1**	500	64,45
purple	**XY27.1**	500	64,45
orange	**XY28.1**	500	64,45
turquoise	**XY29.1**	500	64,45

Biopsy embedding cassettes Micromesh™

Made from **Acetal Polymer**. Surface with 1676 square openings each offset by 0.38 mm, for improved fluid exchange and complete drainage.
Compartment size 27 mm.
- With hinged lid for easy use
- Lid can be opened and closed any number of times
- Textured labelling area on the front
- 45° angle for automated labelling systems
- Resistant to standard histological solvents

Colour	Art. No.	Pack Qty.	€
white	**CXN2.1**	250	74,75
blue	**CXN3.1**	250	74,75

▶ For further accessories for embedding see Microscopy/Histology.

Embedding cassettes and accessories

A 121 °C

Embedding cassettes Macro

Made of special high-density polymer. **Extra high (12 mm), ideal for holding oversized tissue samples** during the embedding process or for storage. Solvent-proof. With lid and labelling area. Easy to open and can be closed repeatedly. Outer dimensions: L 41 x W 27.5 x H 12 mm. Autoclavable.

Colour	Art. No.	Pack Qty.	€
white	**EE16.1**	250	91,40

Rotilabo®-metal lids

Reusable, made of high-grade stainless steel. Ideal for closing standard embedding cassettes. With perforation for optimal liquid diffusion.

Art. No.	Pack Qty.	€
H950.1	5	20,35

Metal embedding moulds

Made of stainless steel, with glossy finish, suitable for histology. Aids removing paraffin embeddings and allows ideal centring of findings in the paraffin block.

Design	L x W x H outer (mm)	Inner L x W (mm)	Art. No.	Pack Qty.	€
Standard	52 x 35 x 11	23 x 36	**TT29.1**	10	49,80
For biopsies	52 x 35 x 11,6	7 x 7	**TT30.1**	10	50,20

Macro embedding moulds

Made of **PVC**. With smooth inner surface and rounded corners for easy sampling. Volume 5 ml.
Dimensions outside: L 37 x W 24 x H 10 mm, inside: L 35 x W 22 x H 7 mm.

Art. No.	Pack Qty.	€
AEK8.1	500	78,85

Sponges for embedding cassettes

Synthetic sponge, for embedding in Rotilabo®-embedding cassettes. Colour: blue. With controlled porosity. Can easily be placed in embedding cassettes. Suitable for the preparation of biopsies.
Dimensions: L 32 x W 26 x H 2.5 mm.

Art. No.	Pack Qty.	€
TT56.1	500	22,55

Rotilabo®-storage systems

For keeping and storing up to 250 embedding cassettes.
With large labelling area. Dimensions: L 405 x W 230 x H 51 mm.
- Type ①: Made of PS. Can be stacked easily.
- Type ②: Made of coated, water-resistant carton

Type	Art. No.	Pack Qty.	€
① Drawer	**HT97.1**	6	136,55
② Box	**HT98.1**	12	82,65

Precision tweezers

Precision tweezers, straight with fine tips

By DUMONT®. Made of Inox, Dumoxel® and Dumostar®, autoclavable.
LH57.1 and types 5XL and L5 have a serrated outer surface for extra grip.

*Inox02 is not autoclavable.

Technical specifications:

Fig.	Type	Material (polished)	Tip		Length (mm)	Art. No.
			Thickness (mm)	Width (mm)		
①	3	Dumoxel®	0.04	0.08	120	**LH71.1**
①	3	Inox02*	0.1	0.17	120	**K339.1**
②	3	Inox08	0.1	0.17	120	**LH57.1**
③	3C (type 3, short)	Inox02*	0.1	0.17	110	**K340.1**
④	4	Inox02*	0.08	0.13	110	**K341.1**
④	4	Dumoxel®	0.02	0.06	110	**LH68.1**
⑤	5	Inox08	0.06	0.1	110	**K342.1**
⑤	5	Dumoxel®	0.06	0.1	110	**LH79.1**
⑥	5XL (type 5, long)	Inox08	0.06	0.1	150	**LH56.1**
⑦	SS135	Inox02*	0.12	0.2	135	**TE68.1**
⑦	SS135	Inox08	0.06	0.1	135	**TE69.1**
⑧	SS	Inox08	0.12	0.2	135	**LH59.1**
⑨	L5	Inox08	0.06	0.1	110	**LH55.1**

Fig.	Type	Art. No.	Pack Qty.	€
①	3	**LH71.1**	1	32,15
①	3	**K339.1**	1	28,85
②	3	**LH57.1**	1	32,15
③	3C (type 3, short)	**K340.1**	1	26,90
④	4	**K341.1**	1	27,85
④	4	**LH68.1**	1	32,15
⑤	5	**K342.1**	1	31,10
⑤	5	**LH79.1**	1	28,85
⑥	5XL (type 5, long)	**LH56.1**	1	47,65
⑦	SS135	**TE68.1**	1	30,05
⑦	SS135	**TE69.1**	1	32,20
⑧	SS	**LH59.1**	1	31,00
⑨	L5	**LH55.1**	1	54,80

Precision tweezers, straight with extra fine tips

By DUMONT®. Made of Inox, Dumoxel® and Dumostar®, autoclavable.

Technical specifications:

Fig.	Type	Material (polished)	Tip		Length (mm)	Art. No.
			Thickness (mm)	Width (mm)		
①	5SPSF	Inox08, unpolished	0.005	0.025	110	**LH52.1**
①	5	Inox08	0.01	0.05	110	**LH53.1**
①	5	Dumoxel®	0.01	0.05	110	**LH66.1**
①	5	Dumostar®	0.01	0.05	110	**LH75.1**
②	55 (type 5, lightweight grips)	Inox08	0.01	0.05	110	**TE70.1**
②	55 (type 5, lightweight grips)	Dumostar®	0.01	0.05	110	**TE71.1**
③	M5 (type 5, small)	Dumoxel®	0.01	0.05	85	**TE72.1**

Fig.	Type	Art. No.	Pack Qty.	€
①	5SPSF	**LH52.1**	1	80,10
①	5	**LH53.1**	1	36,35
①	5	**LH66.1**	1	33,25
①	5	**LH75.1**	1	51,20
②	55 (type 5, lightweight grips)	**TE70.1**	1	36,05
②	55 (type 5, lightweight grips)	**TE71.1**	1	53,55
③	M5 (type 5, small)	**TE72.1**	1	33,90

Precision tweezers, Eco

By DUMONT®. Basic version, e.g. for student courses or routine applications.

Made of Inox02.

Fig.	Type	Tip thickness (mm)	Tip width (mm)	Length (mm)	Art. No.	Pack Qty.	€
①	5	0,06	0,10	110	**PK78.1**	1	23,55
②	3	0,10	0,17	120	**TE62.1**	1	24,20
③	7	0,10	0,17	115	**TE63.1**	1	27,45

Antimagnetic steel, epoxy coated.

Fig.	Type	Tip thickness (mm)	Tip width (mm)	Length (mm)	Art. No.	Pack Qty.	€
①	5	0,06	0,10	110	**LH63.1**	1	21,30
③	7	0,10	0,17	115	**LH65.1**	1	23,15

Precision tweezers

Precision tweezers, straight, special shape

By DUMONT®. Made of Inox 08, satin. Single cast, with curved handle for easy cleaning and sterilization. Ergonomic shape, constant pressure for fatigue-free use. Autoclavable.

Tip thickness (mm)	Tip width (mm)	Length (mm)	Art. No.	Pack Qty.	€
0.06	0,1	125	**HEC0.1**	1	32,20

Precision tweezers, made of titanium

By DUMONT®. Extra lightweight. With fine tips, autoclavable.

Fig.	Type	Tip thickness (mm)	Tip width (mm)	Length (mm)	Art. No.	Pack Qty.	€
①	5	0,01	0,05	110	**TE59.1**	1	40,65
②	3	0,10	0,17	120	**TE60.1**	1	36,05
③	7	0,10	0,17	115	**TE61.1**	1	43,00

Precision tweezers, straight with thick tips

By DUMONT®. Made of Inox, autoclavable. Types PP have a serrated outer surface and cross-ribbing on the inside of the tip for extra grip.

*Inox02 is not autoclavable.

Technical specifications:

Fig.	Type	Material (polished)	Tip		Length (mm)	Art. No.
			Thickness (mm)	Width (mm)		
①	1	Inox02*	0.12	0.2	120	**K337.1**
②	2	Inox02*	0.14	0.34	120	**K338.1**
③	AA	Inox02*	0.2	0.4	125	**TE66.1**
③	AA	Inox02, epoxy coated*	0.2	0.4	125	**TE67.1**
④	PP	Inox08	0.14	0.24	135	**LH61.1**

Fig.	Type	Art. No.	Pack Qty.	€
①	1	**K337.1**	1	27,85
②	2	**K338.1**	1	27,85
③	AA	**TE66.1**	1	23,55
③	AA	**TE67.1**	1	27,90
④	PP	**LH61.1**	1	38,85

Information on the various alloys in DUMONT® precision tweezers

Alloy	Antimagnetic	Temperature stability	Autoclavable	Special features
Steel (C, Mn, Si)	No	n. a.	No	Very hard for thick tips, not corrosion resistant
Inox02 (C, Mn, Cr, Si)	No	up to 400 °C (DIN 50914)	No	Standard stainless steel
Inox08 (C, Mn, Cr, Mo, V)	No	up to 400 °C (DIN 50914)	Yes (up to 180 °C)	Medical stainless steel, corrosion resistant, good resistance to salts
Antimagnetic steel (C, Cr, Ni, Mo)	80 %	up to 400 °C (DIN 50914)	Yes (up to 270 °C)	Corrosion resistant
Dumoxel® (C, Cr, Ni, Mo, Cu)	95 %	up to 400 °C (DIN 50914)	Yes (up to 270 °C)	Good resistance to corrosion, including mineral and organic acids
Dumostar® (C, Cr, Mo, Mn, Co, Ni, Si)	100 %	up to 500 °C	Yes	Elastic, high resistance to corrosion, including mineral and organic acids, as well as salts
Titanium (C, Fe, O, H, N, Ti)	100 %	up to 430 °C	Yes	Highest corrosion resistance to chemicals such as nitric acid, chlorides and salt water. More flexible and 40 % lighter than stainless steel

Precision tweezers

Precision tweezers, angled

By DUMONT®. Made of Inox08 and Dumoxel®, autoclavable.
Type SS/45 has a serrated outer surface for extra grip.

Technical specifications:

Fig.	Type	Material (polished)	Tip		Length (mm)	Art. No.
			Thickness (mm)	Width (mm)		
①	5/15 (type 5, 15°)	Inox08	0.06	0.1	105	**TE73.1**
②	5/45 (type 5, 45°)	Inox08	0.06	0.1	109	**K343.1**
②	5/45 (type 5, 45°)	Inox08	0.01	0.05	109	**LH54.1**
②	5/45 (type 5, 45°)	Dumoxel®	0.01	0.05	109	**LH67.1**
③	5/90 (type 5, 90°)	Inox08	0.06	0.1	106	**TE74.1**
④	SS/45 (type SS, 45°)	Inox08	0.12	0.2	133	**LH60.1**
⑤	6	Dumoxel®	0.1	0.17	115	**TE75.1**

Fig.	Type	Art. No.	Pack Qty.	€
①	5/15 (type 5, 15°)	**TE73.1**	1	34,40
②	5/45 (type 5, 45°)	**K343.1**	1	35,15
②	5/45 (type 5, 45°)	**LH54.1**	1	38,70
②	5/45 (type 5, 45°)	**LH67.1**	1	35,50
③	5/90 (type 5, 90°)	**TE74.1**	1	36,05
④	SS/45 (type 55, 45°)	**LH60.1**	1	36,55
⑤	6	**TE75.1**	1	40,85

Precision tweezers, special

By DUMONT®. Made of Dumoxel® and steel, epoxy coated.
Dumoxel® autoclavable.

Technical specifications:

Fig.	Type	Material (polished)	Tip		Length (mm)	Art. No.
			Thickness (mm)	Width (mm)		
①	2E½ (tip ∅ 12.7 mm)	Dumoxel®	-	-	118	**LH74.1**
②	15A ESD (cutting)	steel, epoxy coated	8.5	10.5	115	**TE78.1**

Fig.	Type	Art. No.	Pack Qty.	€
①	2E½ (tip ∅ 12.7 mm)	**LH74.1**	1	39,55
②	15A ESD (cutting)	**TE78.1**	1	51,60

Precision tweezers, curved

By DUMONT®. Made of Inox, Dumoxel® and Dumostar®, autoclavable.
Types 7XL and 7B have a serrated outer surface and cross-ribbing on the inside of the tip for extra grip.

*Inox02 is not autoclavable.

Technical specifications:

Fig.	Type	Material (polished)	Tip		Length (mm)	Art. No.
			Thickness (mm)	Width (mm)		
①	7	Inox02*	0.1	0.17	115	**K344.1**
①	7	Dumoxel®	0.1	0.17	115	**LH81.1**
②	7XL (type 7, long)	Inox08	0.14	0.24	150	**TE76.1**
③	7B	Inox02*	0.1	0.17	115	**TE77.1**
④	L7	Inox08	0.1	0.17	115	**LH58.1**

Fig.	Type	Art. No.	Pack Qty.	€
①	7	**K344.1**	1	33,60
①	7	**LH81.1**	1	31,00
②	7XL (type 7, long)	**TE76.1**	1	61,30
③	7B	**TE77.1**	1	31,85
④	L7	**LH58.1**	1	62,85

Precision tweezers, self-closing

By DUMONT®. Made of Dumoxel®, autoclavable.

Fig.	Type	Tip thickness (mm)	Tip width (mm)	Length (mm)	Art. No.	Pack Qty.	€
①	N5 (type 5)	0,01	0,05	108	**TE64.1**	1	42,95
②	N7 (type 7)	0,03	0,07	115	**TE65.1**	1	47,85

Precision tweezers

NEW

Precision tweezers, special shape with plastic tips

By DUMONT®. Made of anti-magnetic steel, satin.
With tips made of white TPE-ESD (thermoplastic elastomer, conductive).

- For gentle handling of delicate materials
- Single-cast handle, angled
- Easy to clean and sterilise
- Ergonomic shape, constant pressure for fatigue-free use
- Enhanced grip, notched on outside

Tip thickness (mm)	Tip width (mm)	Length (mm)	Art. No.	Pack Qty.	€
1	1	210	**HTX1.1**	1	82,60
2	2	210	**HTX2.1**	1	82,60

Accessories:

Spare tips, tip 1 mm thick	**HTX3.1**	2	47,25
Spare tips, tip 2 mm thick	**HTX4.1**	2	47,25

NEW
A 121 °C

Protective caps

By Hammacher. Made of silicone. For careful storage of tweezers, scissors and other sensitive instruments. Autoclavable.

Colour	Dimensions (mm)	Length (mm)	Art. No.	Pack Qty.	€
green	∅ 2,8	19,0	**KAT9.1**	100	39,75
pink	∅ 3,2	25,4	**KAX0.1**	100	39,75
yellow	∅ 5,0	25,0	**KAX1.1**	100	39,75
orange	W 9,0 x H 2,0	25,0	**KAX2.1**	100	39,75

A 121 °C

Micro forceps

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

Image	Type	Tip width (mm)	Length (mm)	Art. No.	Pack Qty.	€
①	No. 3, straight	0,3	115	**YE36.1**	1	35,95
②	No. 4, straight	0,4	110	**YE37.1**	1	39,55
③	No. 5, straight	0,15	110	**YE38.1**	1	41,40
④	No. 5-45, angled 45° to the side	0,3	110	**YE39.1**	1	41,40
⑤	No. 7, curved	0,2	115	**YE40.1**	1	42,95

A 121 °C

Microscopic forceps

By Hammacher. Made of Remanit 4024 stainless steel. With guide pin. Inside serrated tips. Autoclavable.

① **Straight**

Length (mm)	Art. No.	Pack Qty.	€
105	**YK30.1**	1	25,80
115	**YK31.1**	1	26,85
130	**YK32.1**	1	27,10

② **Bent**

Length (mm)	Art. No.	Pack Qty.	€
105	**YK33.1**	1	26,35
115	**YK34.1**	1	27,05

③ **Strongly bent**

Length (mm)	Art. No.	Pack Qty.	€
115	**YK35.1**	1	27,35

A 121 °C

Microscopic forceps

By Hammacher. Made of titanium. Strongly curved.
Inside serrated tips, tip ∅ 0.7 mm. Length 100 mm. Autoclavable.

Art. No.	Pack Qty.	€
ETE0.1	1	60,10

A 121 °C

Dissecting tweezers

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel, 18 % chrome, 10-12 % nickel), stainless, anti magnetic, acid-resistant. Fine-tip tweezers. Length 100 mm. Autoclavable.

Type	Design	Art. No.	Pack Qty.	€
①	straight	**EXC3.1**	1	68,55
②	curved	**EXC4.1**	1	68,30
③	straight, crossed (self-closing)	**EXC5.1**	1	61,50

Precision tweezers

A 121 °C

Dissecting forceps

By Hammacher. Made of Remanit 4024 stainless steel.
Fine tips, inside serrated. Autoclavable.

① **Straight**

Length (mm)	Art. No.	Pack Qty.	€
80	**YK39.1**	1	17,55
105	**YK40.1**	1	19,25
115	**YK41.1**	1	20,40
130	**YK42.1**	1	23,15
145	**YK43.1**	1	24,60

② **Bent**

Length (mm)	Art. No.	Pack Qty.	€
105	**YK44.1**	1	19,25
115	**YK45.1**	1	21,30
130	**YK46.1**	1	23,55
145	**YK47.1**	1	24,65

A 121 °C

Micro forceps

By Hammacher. Made of titanium. Tips smooth inside. Tip ∅ 0.1 mm.
Length 110 mm. Autoclavable.

Type	Design	Art. No.	Pack Qty.	€
①	straight	**ETC5.1**	1	80,65
②	angled, 45°	**ETC6.1**	1	85,15
③	curved, short tip	**ETC7.1**	1	103,60

A 121 °C

Fine forceps

By Hammacher. Made of stainless steel Remanit 4024.
With guide pin and long tip (inside serrated). Length 200 mm. Autoclavable.

Art. No.	Pack Qty.	€
YE29.1	1	39,25

A 121 °C

Laboratory forceps, sharp tipped

By Hammacher. Made of stainless steel Wironit 4301.
Tips smooth on inside. Autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
120	**YE33.1**	1	24,10
140	**YE34.1**	1	25,65
160	**YE35.1**	1	26,80

Precision tweezers, ESD

Made of stainless steel 18/10, with black, glare-free ESD coating.
Electrically dissipating. Fine tips, smooth inside.

Type	Design	Length (mm)	Art. No.	Pack Qty.	€
①	straight	110	**EPN4.1**	1	24,15
②	curved	120	**EPN5.1**	1	26,35

Precision tweezers, insulated

Made of high-strength spring steel, nickel-plated.
Dip-insulated, tested to IEC 60900. Fine tips, ribbed inside.Length 150 mm.

Type	Design	Art. No.	Pack Qty.	€
①	straight	**EPN6.1**	1	29,65
②	curved	**EPN7.1**	1	29,85

A 121 °C

Forceps with guide pin

Made of stainless steel Remanit 4301. Fine model. Autoclavable.

① Straight

Length (mm)	Art. No.	Pack Qty.	€
105	**LT35.1**	1	7,00
130	**LT36.1**	1	7,50

② Bent

Length (mm)	Art. No.	Pack Qty.	€
105	**LT37.1**	1	8,40
130	**LT38.1**	1	8,55

A 121 °C

Adson micro hooked forceps

By Hammacher. Made of stainless steel Remanit 4024.
With 2:1 fine serrations for secure grip. Length 120 mm. Autoclavable.

Art. No.	Pack Qty.	€
YE32.1	1	29,50

A 121 °C

Tweezers with fine tip

Made of stainless steel Remanit 4301. Precision ground tips. Autoclavable.

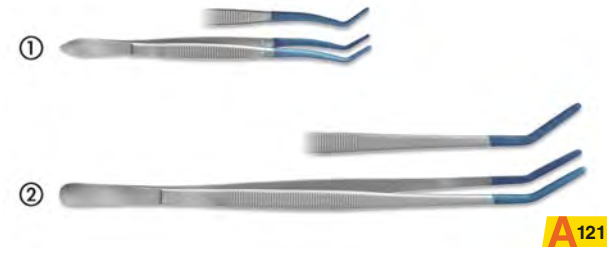
Type	Length (mm)	Art. No.	Pack Qty.	€
① straight	120	**PX37.1**	1	7,00
② curved	120	**PX39.1**	1	10,70
③ straight, tower tip	110	**PX38.1**	1	10,25

A 121 °C

Hooked forceps, fine

By Hammacher. Made of stainless steel Remanit 4301.
With 2:1 fine serrations for secure grip. Autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
105	**YE30.1**	1	41,70
115	**YE31.1**	1	42,25



A 121 °C

Tweezers with insulated tips

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel, 18 % chrome, 10-12 % nickel), stainless, anti magnetic, acid-resistant. Tips angled 45°, for secure gripping of small parts. Autoclavable.

Type	Length (mm)	Art. No.	Pack Qty.	€
①	165	**ETC8.1**	1	21,20
②	300	**ETC9.1**	1	32,20

A 121 °C

Hooked tip forceps

Surgical.
Made of stainless steel Remanit 4301.
With teeth 1 : 2 for securely fixing tissue pieces. Autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
115	**2860.1**	1	20,30
130	**2861.1**	1	21,30
145	**2862.1**	1	20,70
160	**2863.1**	1	24,70

A 121 °C

Adson anatomic forceps

By Hammacher. Made of Remanit 4024 stainless steel.
With fine tips, inside serrated. Autoclavable.

Type	Length (mm)	Art. No.	Pack Qty.	€
Adson, fine	120	**YK36.1**	1	27,20
Adson, fine	150	**YK37.1**	1	31,10
Micro Adson	120	**YK38.1**	1	28,85

A 121 °C

Splinter forceps

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

Type	Length (mm)	Art. No.	Pack Qty.	€
①	80	**YK48.1**	1	23,45
②	105	**YK49.1**	1	25,65

A 121 °C

Laboratory tweezers

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Straight tip, ribbed inside. Length 155 mm. Autoclavable.

Art. No.	Pack Qty.	€
HCL3.1	1	26,35

A 121 °C

Laboratory forceps, angled

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Length 150 mm. Autoclavable.

Type	Art. No.	Pack Qty.	€
Smooth tips	**HCL1.1**	1	26,15
Inside serrated tips	**HCL2.1**	1	27,45

A 121 °C

Forceps

Made of stainless steel Remanit 4301. Inside of tip is fluted for secure grip. Autoclavable.

① **Straight, blunt, anatomical**

Length (mm)	Art. No.	Pack Qty.	€
105	**2687.1**	1	5,65
115	**2688.1**	1	6,15
130	**2689.1**	1	6,40
145	**2690.1**	1	6,60
160	**2691.1**	1	7,00
200	**2692.1**	1	11,80
250	**2693.1**	1	13,35

② **Straight, pointed**

Length (mm)	Art. No.	Pack Qty.	€
105	**2695.1**	1	7,30
115	**2801.1**	1	8,55
130	**2802.1**	1	9,15
145	**2851.1**	1	9,25
160	**2852.1**	1	9,65
200	**2853.1**	1	16,10

③ **Bent, pointed**

Length (mm)	Art. No.	Pack Qty.	€
105	**2854.1**	1	7,30
115	**2855.1**	1	7,45
130	**2856.1**	1	8,75
145	**2857.1**	1	9,65
160	**2858.1**	1	10,25
200	**2859.1**	1	16,15

Bent, blunt (without fig.)

Length (mm)	Art. No.	Pack Qty.	€
115	**PX28.1**	1	5,55
130	**PX29.1**	1	5,85
145	**PX30.1**	1	6,75
160	**PX31.1**	1	7,00
200	**PX32.1**	1	10,70

Tweezers, round

Made of stainless steel with round tip, ribbed inside for safe grip.
Length 145 mm.

Art. No.	Pack Qty.	€
HEC7.1	1	8,10

A 121 °C

Long forceps

Made of stainless steel Remanit 4301 (18/10). Blunt, length 300 mm. With 25 mm corrugated handles. Autoclavable.

Design	Art. No.	Pack Qty.	€
straight	**0951.1**	1	16,10
curved	**HHA0.1**	1	15,00

A 121 °C

Gripper forceps

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel, 18 % chrome, 10-12 % nickel), stainless, anti magnetic, acid-resistant. Surface 5 mm wide tip. Autoclavable.

Type	Design	Length (mm)	Art. No.	Pack Qty.	€
①	straight	145	**EXC6.1**	1	29,80
②	curved	120	**EXC7.1**	1	29,05

A 121 °C

Automatic tensioning tweezers

Made of high-grade stainless steel 18/8. Automatic tensioning. Autoclavable.

Type	Length (mm)	Art. No.	Pack Qty.	€
① curved	105	**HL63.1**	1	6,40
② straight, pointed	120	**HL64.1**	1	7,50

NEW

A 121 °C

Graefe holding forceps, straight

By Hammacher. Made of Wironit stainless steel (1.4301). With ratchet for a secure hold. Length 110 mm. Autoclavable.

Art. No.	Pack Qty.	€
KAP3.1	1	50,00

A 121 °C

Forceps with ring-shaped tip

By Hammacher. Made of stainless steel Remanit 4301. For handling soft tissue and fragile specimens. Autoclavable.

Length (mm)	Outer ∅ (mm)	Inner ∅ (mm)	Art. No.	Pack Qty.	€
90	3	2,2	**LL00.1**	1	31,50
90	6	4,8	**LL01.1**	1	32,05

A 121 °C

Forceps for handling cover slips

Acc. to Kühne. Made of stainless steel Remanit 4301. Autoclavable.

Design	Length (mm)	Art. No.	Pack Qty.	€
straight	115	**K717.1**	1	6,60
curved	115	**K718.1**	1	6,75
curved	130	**K719.1**	1	7,85
curved	145	**K720.1**	1	8,40

A 121 °C

Wafer tweezers

Made of stainless steel 18/10. Autoclavable.

Model	Design	Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
①	PTFE-coated	120	7	**LX39.1**	1	41,40
②	non-coated	125	9	**LX40.1**	1	24,30
③	non-coated	125	12	**LX41.1**	1	23,60

▶ Cover slips see page 299

Forceps

Forceps for filter paper

Made of 18/10 stainless steel. For handling filter papers, cover slips and other flat objects. Width 12 mm, length 125 mm.

Art. No.	Pack Qty.	€
C828.1	1	10,45

Rotilabo®-weighing tweezers

Made of stainless steel, with PVC tips. Curved. Length 90 mm. Weight 8 g.

Art. No.	Pack Qty.	€
YT63.1	1	6,35

Forceps with ring-shaped tip

Made of stainless steel 18/10. Dimensions of tip: W 6.5 x ∅ 3.5 mm. Length 120 mm. Autoclavable.

Art. No.	Pack Qty.	€
LX48.1	1	17,50

Rotilabo®-tweezers set

Four stainless steel tweezers (Remanit 4301) in a case.

Contents:

1 tweezer with fine tip, curved, 120 mm
1 straight tweezer, blunt tip, 130 mm
1 tweezer with guide pin, straight, 130 mm
1 coverslipper tweezer, curved, 115 mm

Art. No.	Pack Qty.	€
PX40.1	1	33,55

Special tweezers, inside of tip hollow

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. To pick up long objects with small diameters, e.g. droplet needles, pin needles and nerve broaches. With fixing lock. Length 145 mm. Autoclavable.

Art. No.	Pack Qty.	€
HCL4.1	1	30,05

Rotilabo®-tweezers set

Four tweezers made of stainless steel 18/10 (material 1.4301), in etui. Red PTFE coating with good anti-adhesive properties forms a separating layer between the tweezer material and the sample. Dull colour of the coating enables glare-free working under the bright lighting in microscopy. The chemical-resistant coating also protects against contact with the nickel contained in the stainless steel.

Contents:

1 pair of tweezers with fine tip, curved, L 120 mm
1 pair of pointed tweezers with guide pin, L 130 mm
1 pair of pointed tweezers curved, L 130 mm
1 pair of blunt tweezers, L 145 mm

Art. No.	Pack Qty.	€
ENX5.1	1	51,55

Forceps made of spring steel

Lightweight.

Type	Length (mm)	Art. No.	Pack Qty.	€
pointed	105	**AL99.1**	1	9,65
blunt	115	**AN00.1**	1	9,65

aspirette® battery powered vacuum forceps

By Hirschmann. With vacuum pump. Ideal for handling small objects up to 70 g in weight. With one-button operation. Ergonomically designed. Suitable for handling membrane filters, optical lenses, microchips, cover slips, slides, etc. Rechargeable up to 1000 x.
Delivery incl. battery charger 230 V, 3 suction cups and 3 needles with ∅ 3.2 / 6 and 10 mm.

Art. No.	Pack Qty.	€
A247.1	1	198,90

Spare suction parts for aspirette®

Consists of 3 suction nozzles and cups ∅ 3.2 / 6 and 10 mm.

Art. No.	Pack Qty.	€
N178.1	1	30,65

A 121 °C

Forceps with PTFE-coating

Made of stainless steel 18/10 (Remanit 4301), with resistant PTFE coating. Suitable for liquids such as acids, bases and solvents as long as coating is intact. Non adhesive. Black. Temperature stable from -200 to +260 °C. Autoclavable.

Design	Length (mm)	Art. No.	Pack Qty.	€
blunt	115	**C830.1**	1	25,05
blunt	130	**C831.1**	1	25,05
blunt	145	**C832.1**	1	25,05
pointed	115	**C833.2**	1	25,05
pointed	130	**C834.2**	1	25,05
pointed	145	**C835.2**	1	25,05
pointed/curved	115	**C836.2**	1	25,05
pointed/curved	130	**C837.2**	1	25,05
pointed/curved	145	**C838.2**	1	25,05

Long tweezers

Made of nylon, handle made of 18/10 stainless steel.
Heat resistant from -20 to +150 °C. Length 300 mm.

Art. No.	Pack Qty.	€
PT95.1	1	11,80

Rotilabo®-tweezers stand

Made of Remanit 4301, ESD coated. For safe storage of sensitive tweezers as well as for drying of tweezers after cleaning. Tweezers holder can be screwed upside down under a shelf for space-saving storage.
Dimensions: L 185 x W 60 x H 135 mm.
Delivery without tweezers.

Art. No.	Pack Qty.	€
PX20.1	1	57,95

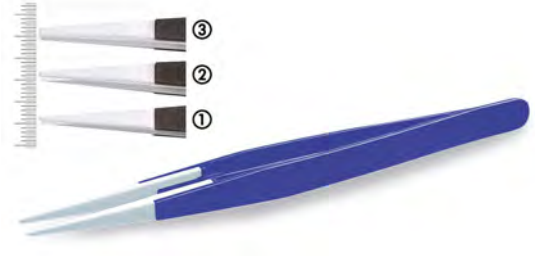
NEW

A 121 °C

Tweezers stands

By Hammacher. Made of stainless steel (1.4301). For safe storage of sensitive tweezers as well as for drying tweezers after cleaning.
Dimensions: L 140 x W 120 x H 140 mm. Autoclavable.

Art. No.	Pack Qty.	€
KAP8.1	1	41,85



Ceramic forceps

With ceramic tip and **PAA** handle. Stabilised for higher breaking strength. Metal-free and antimagnetic. Length 125 mm.

Image	Design	Tip width (mm)	Art. No.	Pack Qty.	€
①	Superfine	0,5	**PE65.1**	1	21,45
②	Fine	1,0	**PE66.1**	1	21,45
③	Universal	2,0	**PE67.1**	1	21,45

Forceps

Ceramic forceps

Solid ceramics
Heat resistant up to +700 °C. Resists acids and bases (except for HF).
Anti-magnetic. With non-adhesive surface. Low friction factor.
Low susceptibility to electrostatic charging.

Type	Length (mm)	Art. No.	Pack Qty.	€
① sharp, straight tip	120	**5327.1**	1	131,15
② sharp, curved tip	125	**5328.1**	1	159,10

S

Rotilabo®-disposable tweezers

Sterile (individually packed) or non-sterile. Anatomical shape.
Technical specifications:

Type	① **sterile**	② non-sterile
Material	**ABS**	**PP**, glass-fibre reinforced
Length (mm)	120	125
Width of tip (mm)	4	3

Type	Art. No.	Pack Qty.	€
① **sterile**	**KL05.1**	100	38,65
② non-sterile	**KL06.1**	100	16,10

Tweezers

Made of **POM**, yellow. Flexible, with rounded tips. Very good resilience.

Length (mm)	Art. No.	Pack Qty.	€
118	**TT35.1**	5	12,85
147	**TT36.1**	5	15,60
253	**TT37.1**	5	40,65

Plastic forceps

Made of glass fibre reinforced **POM** with carbon fibres. Good chemical resistance. Antistatic. Very robust by glass fibre reinforcement.
Length 110 mm. Temperature stable up to +90 °C.

Type	Tip width (mm)	Art. No.	Pack Qty.	€
① Flat tips	3,0	**C317.1**	3	33,90
② Very fine tips	0,3	**C318.1**	3	33,90
③ Fine tips	1,0	**C319.1**	3	33,90
④ Curved	2,0	**C320.1**	3	33,90

Plastic forceps

Made of **CTFE**. High chemical resistance, resistant to acids.
Suitable for chemical labs and in electronic workshops. Length 112 mm.
Temperatures up to +200 °C.

Type	Tip width (mm)	Art. No.	Pack Qty.	€
Smooth tips	3,0	**C321.1**	1	21,00
Corrugated tips	3,0	**C322.1**	1	21,45

A 121 °C

Plastic forceps

Made of **PTFE**. Extremely chemically and thermally stable.
Flexible, with smooth tips. Length 150 mm, weight 30 g. Autoclavable.

Art. No.	Pack Qty.	€
0504.1	1	25,30

Long wooden tweezers

Made of untreated beechwood.
Suitable for removing samples from liquid nitrogen.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
300	20	**EET0.1**	1	2,70
400	20	**EET1.1**	1	3,20

Scalpels/blades

A 121 °C

Scalpels made of chrome steel

Length 125 mm. Autoclavable.

Made of chrome steel 1.4034

Type	Art. No.	Pack Qty.	€
① anatomic	**PX21.1**	1	9,25

Made of chrome steel 1.4021

Type	Art. No.	Pack Qty.	€
② pointed tip	**PX23.1**	1	7,55
③ round tip	**PX22.1**	1	7,55

A 121 °C

Blade holder

By Hammacher. Made of stainless steel Remanit® 4021.
Round handle, for microblades. Length 125 mm. Autoclavable.

Art. No.	Pack Qty.	€
HCY3.1	1	48,95

A 121 °C

Accessories: Microblades

By Hammacher. Made of stainless steel Remanit® 4021.
Twin blade, straight. Length 35 mm. Autoclavable.
Suitable for blade holder HCY3.1.

Type	Art. No.	Pack Qty.	€
① Micro-Miniature sharp	**HCY4.1**	6	124,70
② Micro-Miniature round	**HCY5.1**	6	131,15
③ Micro, inclined	**HCY6.1**	6	61,50

A 121 °C

Scalpel handle

By Hammacher. Made of stainless steel Remanit® 4021. Hinge mechanism for inserting and removing the blade reduces the risk of injury. Suitable for scalpel blades types 10 to 15 (CE20.1ff and 3608.1ff). Autoclavable.

Art. No.	Pack Qty.	€
HCY7.1	1	16,95

Scalpels for blade types 10 to 36

For exchangeable blades. **Metal handle** (glossy) made of forged steel, chrome-plated. For heavy duty work.
Plastic handle made of shock-resistant **PS**. For light work.
Suitable for scalpel blades CE20.1ff and 3608.1 ff.

For blade types 10 to 16

Material	Scope of supply	Art. No.	Pack Qty.	€
Steel, chrome-plated	includes blade type 13	**3607.1**	1	12,80

For blade types 18 to 36

Material	Scope of supply	Art. No.	Pack Qty.	€
Steel, chrome-plated	includes blade type 21	**H753.1**	1	11,50
Polystyrene	includes blade type 24	**H752.1**	1	3,70

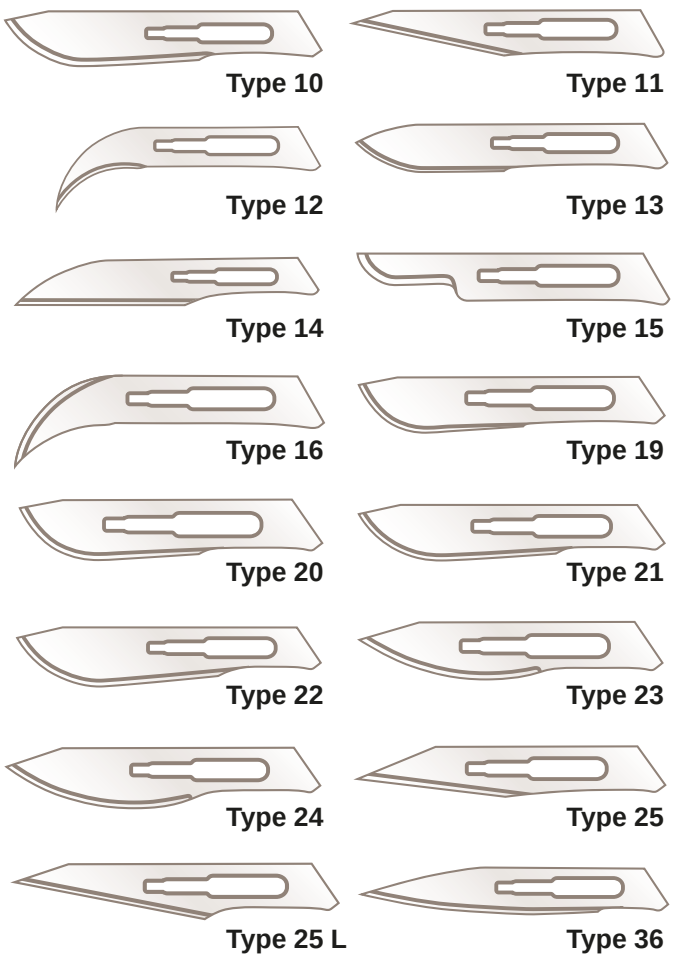
A 121 °C

Rotilabo®-scalpel handles

Made of stainless steel, mat finished. Autoclavable.
Suitable for scalpel blades CE20.1ff and 3608.1 ff.

Type	for blade-type	Type	Length (mm)	Art. No.	Pack Qty.	€
① No. 3	10-16	short	125	**CE16.1**	1	7,15
② No. 3 L	10-16	long	208	**CE17.1**	1	16,45
③ No. 4	18-36	short	135	**CE18.1**	1	7,15
④ No. 4 L	18-36	long	218	**CE19.1**	1	16,45

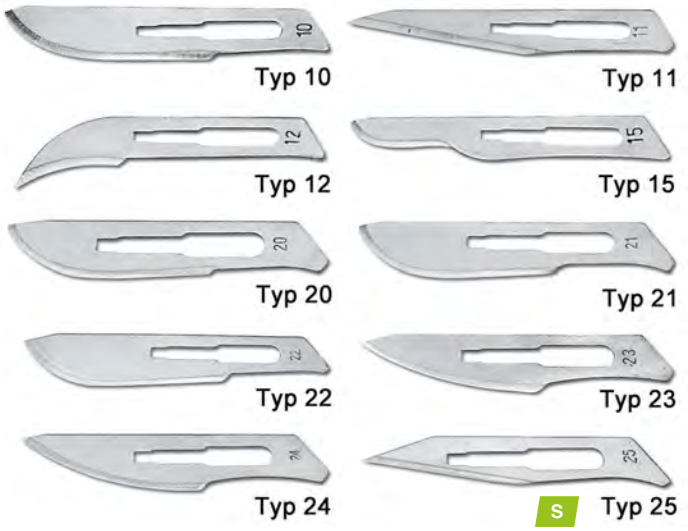
Scalpels/blades



Scalpel blades

Suitable for scalpels CE16.1ff and 3607.1 or H752.1f.

Type	For scalpels	Art. No.	Pack Qty.	€
10	3607.1/3596.1/no. 3	**3608.1**	10	8,55
11	3607.1/3596.1/no. 3	**3621.1**	10	8,55
12	3607.1/3596.1/no. 3	**3613.1**	10	8,55
13	3607.1/3596.1/no. 3	**3609.1**	10	8,55
14	3607.1/3596.1/no. 3	**H754.1**	10	9,05
15	3607.1/3596.1/no. 3	**H755.1**	10	8,55
16	3607.1/3596.1/no. 3	**H756.1**	10	8,85
19	H752.1/H753.1/no. 4	**H759.1**	10	9,10
20	H752.1/H753.1/no. 4	**H760.1**	10	9,10
21	H752.1/H753.1/no. 4	**H761.1**	10	8,85
22	H752.1/H753.1/no. 4	**H762.1**	10	8,85
23	H752.1/H753.1/no. 4	**H763.1**	10	8,85
24	H752.1/H753.1/no. 4	**H764.1**	10	8,85
25	H752.1/H753.1/no. 4	**H765.1**	10	8,85
25L	H752.1/H753.1/no. 4	**H766.1**	10	8,85
36	H752.1/H753.1/no. 4	**H767.1**	10	11,75



Rotilabo®-scalpel blades

Made of carbon steel (material 1.1545). **Sterile** (γ-sterilised and individually packed). Suitable for scalpels CE16.1 ff and 3607.1 f or H752.1 f.

Type	for scalpel handle	Art. No.	Pack Qty.	€
10	No. 3	**CE20.1**	100	14,55
11	No. 3	**CE21.1**	100	14,55
12	No. 3	**CE22.1**	100	14,55
15	No. 3	**CE23.1**	100	14,55
20	No. 4	**CE24.1**	100	14,55
21	No. 4	**CE25.1**	100	14,55
22	No. 4	**CE26.1**	100	14,55
23	No. 4	**CE27.1**	100	14,55
24	No. 4	**CE28.1**	100	14,55
25	No. 4	**CE29.1**	100	14,55

Kling-Ex scalpel blade remover

By Hammacher. Made of stainless steel (1.4310). For easy and uncomplicated removal of all blade shapes from the scalpel handle. Autoclavable.

Art. No.	Pack Qty.	€
KAT7.1	1	15,75

Scalpels/blades

Scalpel handles

By BAYHA®. Made of stainless steel.
- With locking mechanism
- Replaceable blades
- Safe to handle since the blades are inserted into the handle at the side
- Type 3 is particularly well suited to sterile work due to its length
- Type 6 with ergonomic handle made of **PA** (non-sterilisable)
- Fits BAYHA® scalpel blades (Art. No. EX68.1ff)

Type	Length (mm)	Art. No.	Pack Qty.	€
①	130	**EX64.1**	1	15,60
②	130	**XP07.1**	1	16,10
③	200	**EX66.1**	1	33,35
④	160	**EX65.1**	1	17,15
⑤ (hollow handle)	150	**EX67.1**	1	35,95
⑥ (with plastic handle)	160	**XP08.1**	1	30,75

Scalpel blades

Made of carbon steel. For Art. No. EX64.1 to EX67.1.
Sterile (individually wrapped in special foil) or non-sterile (individually wrapped in paper foil).

	Sterile			Non-sterile		
Image	Art. No.	Pack Qty.	€	Art. No.	Pack Qty.	€
11	**EX68.1**	12	7,20	**EX82.1**	12	5,85
15	**EX69.1**	12	7,20	**EX83.1**	12	5,85
16	**EX70.1**	12	7,20	**EX84.1**	12	5,85
18	**EX71.1**	12	7,20	**EX85.1**	12	5,85
19	**EX72.1**	12	7,20	**EX86.1**	12	5,85
20	**EX73.1**	12	7,20	**EX87.1**	12	5,85
21	**EX74.1**	12	7,20	**EX88.1**	12	5,85
22	**EX75.1**	12	7,20	**EX89.1**	12	5,85
23	**EX76.1**	12	7,20	**EX90.1**	12	5,85
24	**EX77.1**	12	7,20	**EX91.1**	12	5,85
26	**EX78.1**	12	7,20	**EX92.1**	12	5,85
27	**EX79.1**	12	7,20	**EX93.1**	12	6,00
28	**EX80.1**	12	7,20	**EX94.1**	12	6,00
29	**EX81.1**	12	7,20	**EX95.1**	12	6,00

Scalpel protective cap

Made of **PP**. For BAYHA® scalpels (Art. No. EX64.1ff).
Dimensions: L 80 x W 20 x H 11 mm.

Art. No.	Pack Qty.	€
XP09.1	1	4,10

Rotilabo®-special blades, blunt

Made of carbon steel. For scalpel handles by Bayha® (Art. No. EX64.1ff). Blunt scalpel blades for special applications, e.g. cutting DNA strands from agarose gels without scratching the transilluminator. Individually packed in paper film. No CE mark.

Type	Art. No.	Pack Qty.	€
26	**ATA9.1**	12	5,95

S

Cutfix®-disposable scalpels

By B. Braun. **Sterile** (γ-sterilized and individually wrapped).
- With ergonomically formed handle made of plastic
- Double precision grinding of blade for a smooth, clean cut
- Tight blade for precision cutting
- With easy to remove protective cover

Figure	Art. No.	Pack Qty.	€
10	**T997.1**	10	6,35
11	**T998.1**	10	6,35
12	**T999.1**	10	6,35
15	**X001.1**	10	6,35
20	**X002.1**	10	6,35
21	**X003.1**	10	6,35
22	**X004.1**	10	6,35
23	**X005.1**	10	6,35
24	**X006.1**	10	6,35

TRIMMEX CUTTOGRAF scalpel blade

Plastic scalpel handle with fitted blade No. 11. User-friendly blade clamp holds the blade at any desired cutting depth. On completion of work, the blade retracts safely into the handle. Easy blade replacement.

Art. No.	Pack Qty.	€
XK01.1	1	9,00

Accessories:

Scalpel blades, type 10	**3608.1**	10	8,55
Scalpel blades, type 11	**3621.1**	10	8,55
Scalpel blades, type 12	**3613.1**	10	8,55
Scalpel blades, type 13	**3609.1**	10	8,55
Scalpel blades, type 14	**H754.1**	10	9,05
Scalpel blades, type 15	**H755.1**	10	8,55
Scalpel blades, type 16	**H756.1**	10	8,85

S

Aesculap®-safety scalpels

By B. Braun. **Sterile** (individually packed). Locks securely in the disposal position to prevent cutting and piercing injuries. The mechanism is activated automatically by pushing back the blade with one hand.

Figure	Art. No.	Pack Qty.	€
10	**XC14.1**	10	19,90
11	**XC15.1**	10	19,90
21	**XC16.1**	10	20,00
22	**XC17.1**	10	20,00
24	**XC18.1**	10	20,00
36	**XC19.1**	10	20,00

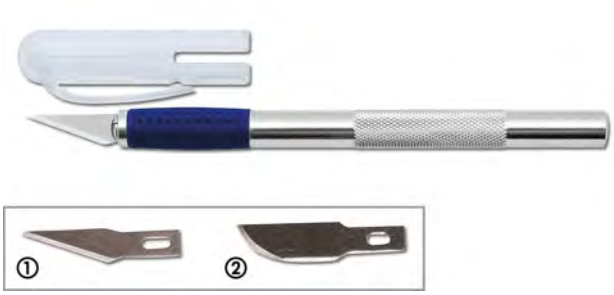
Scalpel blades with finger guide

Ergonomic shape with rubber coated grip on handle for comfortable handling, can be guided precisely with the forefinger. Ideal for delicate dissection work and preparation. With protective cap for safe storage. Assorted colours (yellow, pink, green).
Dimensions: L 104 x W 35 x H 20 mm, length without protective cap 98 mm.

Art. No.	Pack Qty.	€
ANY6.1	3	17,10

Replacement blades

Type	Art. No.	Pack Qty.	€
sharp	**AH89.1**	10	3,55
Machete	**AH90.1**	10	4,25



Scalpels

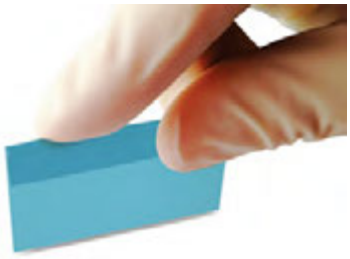
With replaceable steel blades. With aluminium handle. For precise cutting in paper, cardboard and foil. Length 148 mm. Incl. 3 spare blades, type 1.

Art. No.	Pack Qty.	€
AH88.1	1	4,95

Spare blades

For scalpel order Art. No. AH88.1.

Image	Type	Art. No.	Pack Qty.	€
①	sharp	**AH89.1**	10	3,55
②	Machete	**AH90.1**	10	4,25



Safety blades

Made of **PET**, thickness 0.22 mm. For cutting strips of agarose gel without scratching the transilluminator. Also suitable for cutting soft animal and plant tissue and for other applications where blunt blades reduce the risk of cutting injury. Blade length can be shortened by trimming.

Length (mm)	Height (mm)	Art. No.	Pack Qty.	€
38	19	**AXH6.1**	100	32,15
50	38	**AXH7.1**	100	37,65

Programme extension!

Stirrup-shaped blades

By Apollo. Blades with practical handle made of chromium-plated steel. Suitable for cutting and scraping.

Image	Length (mm)	Height (mm)	Thickness (mm)	Art. No.	Pack Qty.	€
①	57	24,8	0,28	**CK08.1**	5	7,50
②	39	19,0	0,30	**CK07.1**	5	3,95
②	39	19,0	0,30	**CK07.2**	100 (20 x 5)	50,30

Microtome blades Premium Surgipath® DB80-series

By Leica®. Disposable microtome blades with chrome plating and finely honed edge along the full length of the blade for extra-thin sections of the highest quality. Extra-sharp, durable blades ensure consistently precise sectioning from the 1st to the 25th time. Cutting angle 35°.

DB80 LS - with narrow blade profile for routine sectioning in all types of tissue. Extra-thin sections for diagnostic analysis.
Dimensions: L 80 x W 8 mm.

DB80 LX - with narrow blade profile for extremely hard and thick tissue as well as routine sectioning. Extremely durable. Dimensions: L 80 x W 8 mm.

DB80 HS - with wide blade profile for all paraffin-embedded tissue specimens and for routines sectioning in all types of tissue.
Suitable for in situ specimen preparation. Dimensions: L 80 x W 14 mm.

Type	Art. No.	Pack Qty.	€
DB80 LS	**PX78.1**	50	152,65
DB80 LX	**PX79.1**	50	152,65
DB80 HS	**PX80.1**	50	152,65

Razors

Blade length 64 mm.
Delivery incl. 10 spare blades (ground on both sides, 64 x 22 mm).

Design	Art. No.	Pack Qty.	€
Plastic handle	**KX90.1**	1	49,10
Metal handle	**KX91.1**	1	54,35
Accessories:			
Spare blades	**KX92.1**	10	15,90

A 121 °C

Bone-cutting forceps

By Hammacher. Made of stainless steel. Autoclavable.
Illustration shows TC38.1.

Length (mm)	Art. No.	Pack Qty.	€
120	**TC38.1**	1	50,20
130	**TC39.1**	1	52,95

Bone forceps, fine

By Hammacher.

Made of steel, nickel plated and chrome plated. Non-autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
105	**TC40.1**	1	35,35

Made of stainless steel. Autoclavable.
Illustration shows TC42.1.

Length (mm)	Art. No.	Pack Qty.	€
105	**TC42.1**	1	61,50
115	**TC43.1**	1	68,70

Bone scissors

Made of 18/0 nickel-free stainless steel. Length 250 mm.
Blade length 80 mm.

① Curved handle. With buffer spring. Autoclavable.

Weight (g)	Art. No.	Pack Qty.	€
295	**LT13.1**	1	28,90

② Black POM handles with stainless steel rivets. With inner spring.

Weight (g)	Art. No.	Pack Qty.	€
233	**LT14.1**	1	13,95

Utility shears

By Hammacher. Made of stainless steel, plastic handles with soft rubber insert. Stable blade, serrated. Large handles for comfortable handling. Hygienic cleaning - shears are easy to disassemble. Dishwasher-safe. Length 215 mm, cutting length 55 mm.

Art. No.	Pack Qty.	€
EXA9.1	1	34,40

A 121 °C

Utility scissors

Made of stainless steel 18/0, with lacquered handle. Serrated counter blade ensures good cutting quality. Hygienic cleaning - shears are easy to disassemble. Length 220 mm. Blade length 100 mm. Autoclavable.

Art. No.	Pack Qty.	€
YE80.1	1	17,50

NEW

Safety shears

Made of stainless steel. With special ground blades and rounded tips. For safe cutting of cardboard, paper, foil, srappings, material, PVC, leather and much more without the risk of injury.

Type	Length (mm)	Cutting length (mm)	Art. No.	Pack Qty.	€
①	135	56	**HTE9.1**	1	17,15
②	215	70	**HTH0.1**	1	32,20

Microscopy/Dissecting scissors

Scissors for foils and splints

By Hammacher. Made of stainless steel Remanit®, corrosion-free. Curved with fine serration. Length 105 mm.

Art. No.	Pack Qty.	€
EXA8.1	1	63,35

A 121 °C

Special scissors

Made of stainless steel 18/0. Suitable for cutting solid materials such as plant stems. Length 160 mm. Blade length 45 mm. Autoclavable.

Art. No.	Pack Qty.	€
YE81.1	1	16,25

Scissors

Made of steel, polished.

① **Pointed-blunt**

*Made of high grade steel, nickel plated.

Length (mm)	Cutting length (mm)	Art. No.	Pack Qty.	€
130*	37	**3543.1**	1	11,80
145	38	**3545.1**	1	11,70
160	50	**3551.1**	1	11,70

② **Pointed-pointed**

Length (mm)	Cutting length (mm)	Art. No.	Pack Qty.	€
130	37	**3569.1**	1	11,70
140	38	**3576.1**	1	11,70
160	48	**3577.1**	1	11,70

③ **Blunt-blunt**

Length (mm)	Cutting length (mm)	Art. No.	Pack Qty.	€
130	37	**3581.1**	1	11,70
145	38	**3582.1**	1	11,70
160	48	**3592.1**	1	12,30

Microscopy scissors

Pointed-pointed. Made of carbon steel, nickel-plated.

Length (mm)	Type	Cutting length (mm)	Art. No.	Pack Qty.	€
100	straight	30	**3534.1**	1	14,55
100	curved	28	**3539.1**	1	15,80

Dissecting scissors for microscopy, heavy duty

Made of carbon steel, nickel-plated.

Type	Design	Length (mm)	Cutting length (mm)	Art. No.	Pack Qty.	€
Pointed-pointed	straight	130	45	**HEY6.1**	1	10,65
Pointed-pointed	curved	130	45	**HEY7.1**	1	11,40
Blunt-blunt	straight	125	35	**HEY8.1**	1	12,60
Blunt-blunt	curved	125	35	**HEY9.1**	1	13,95

A 121 °C

Scissors, physiology

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Autoclavable.

Type	Design	Length (mm)	Art. No.	Pack Qty.	€
① pointed-blunt	straight	130	**HCT7.1**	1	41,20
① pointed-blunt	straight	145	**HCT8.1**	1	43,90
① pointed-blunt	straight	160	**HCT9.1**	1	44,75
① pointed-blunt	curved	130	**HCX0.1**	1	45,70
① pointed-blunt	curved	160	**HCX1.1**	1	48,20
② pointed-pointed	straight	130	**HCX2.1**	1	45,80
② pointed-pointed	straight	145	**HCX3.1**	1	44,65
② pointed-pointed	straight	160	**HCX4.1**	1	46,80
② pointed-pointed	curved	130	**HCX5.1**	1	45,80
② pointed-pointed	curved	145	**HCX6.1**	1	51,50
② pointed-pointed	curved	160	**HCX7.1**	1	49,25

▶ More scissors see page 764

A 121 °C

Dissecting scissors

By Hammacher. Made of corrosion-free stainless steel 18/8. Autoclavable.

① **Microscopy scissors**
Angled. Cutting length 27 mm. Length 115 mm.

Design	Art. No.	Pack Qty.	€
sharp-sharp	**LT18.1**	1	10,70

② **Incision scissors**
Probe-pointed tip. Length 145 mm.

Design	Art. No.	Pack Qty.	€
sharp probe-pointed	**LT19.1**	1	9,90

A 121 °C

Dissecting scissors for microscopy

By Hammacher. Made of stainless steel, straight, sharp. Autoclavable.
Illustration shows TE27.1.

With smooth blade

Scissors blade	Length (mm)	Cutting length (mm)	Art. No.	Pack Qty.	€
angular	90	18	**TE25.1**	1	35,45
angular	105	23	**TE26.1**	1	32,20
round	115	26	**TE27.1**	1	40,65

With serrated blade for easier cutting without slipping.

Scissors blade	Length (mm)	Cutting length (mm)	Art. No.	Pack Qty.	€
angular	90	18	**TE28.1**	1	36,05
angular	105	23	**TE29.1**	1	32,75
round	115	26	**TE30.1**	1	44,95

NEW

A 121 °C

Left-handed microscopy scissors

By Hammacher. Made of stainless steel (1.4117). Autoclavable.

Type	Design	Length (mm)	Art. No.	Pack Qty.	€
pointed-pointed	straight	115	**KAT3.1**	1	44,40
pointed-pointed	curved	115	**KAT4.1**	1	46,05

A 121 °C

Dissecting scissors for microscopy, curved

By Hammacher. Made of Remanit® stainless steel (4021). Autoclavable.

Scissors blade	Design	Length (mm)	Art. No.	Pack Qty.	€
Round	fine, sharp	90	**HCP5.1**	1	32,80
angular	sharp, pointed	105	**HCP6.1**	1	29,05
angular	sharp, pointed	115	**HCP7.1**	1	34,95

A 121 °C

Micro scissors, type STEVENS

Made of stainless steel, material number 1.4117. Straight. Length 105 mm. Autoclavable.

Art. No.	Pack Qty.	€
LX77.1	1	59,25

A 121 °C

Micro scissors, with spire tip

By Hammacher. Made of stainless steel Remanit® 4021.
Very fine. Length 115 mm. Autoclavable.

Design	Art. No.	Pack Qty.	€
straight	**LT28.1**	1	50,35
curved	**HCP9.1**	1	53,70

A 121 °C

Preparation scissors, Stevens

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Pointed/pointed. Length 110 mm. Autoclavable.

Design	Art. No.	Pack Qty.	€
straight	**HCT0.1**	1	53,25

NEW
A 121 °C

STEVENS dissecting scissors, blunt

By Hammacher. Made of stainless steel (1.4117). Autoclavable.

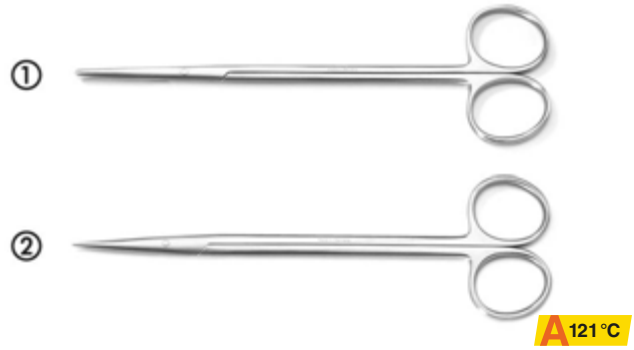
Design	Length (mm)	Art. No.	Pack Qty.	€
straight	115	**KAT5.1**	1	33,90
curved	155	**KAT6.1**	1	36,35

A 121 °C

Dissecting scissors with microsection

By Hammacher. Made of stainless steel, sharp.
For extra sharp cutting. Autoclavable.

Design	Length (mm)	Cutting length (mm)	Art. No.	Pack Qty.	€
① straight	105	24	**TE35.1**	1	53,25
curved	105	23	**TE36.1**	1	58,00
offset	105	28	**TE37.1**	1	60,50
② straight, type Joseph	140	31	**TE38.1**	1	63,35
③ straight, type Kelly	160	29	**TE39.1**	1	65,60



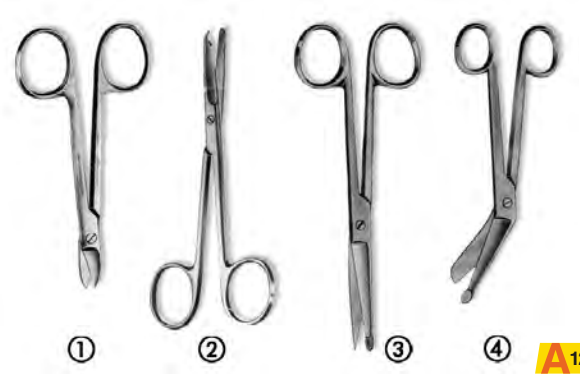
A 121 °C

Dissecting and suture scissors

By Hammacher. Made of stainless steel, straight, fine. Autoclavable.

Type	Design	Length (mm)	Cutting length (mm)	Art. No.	Pack Qty.	€
① Baby-Metzenbaum	blunt-blunt	145	32	**TE31.1**	1	52,65
① Baby-Metzenbaum	blunt-blunt	180	33	**TE32.1**	1	73,65
② Metzenbaum fino	sharp-sharp	145	34	**TE33.1**	1	77,35
② Metzenbaum fino	sharp-sharp	180	33	**TE34.1**	1	89,20

Microscopy/Dissecting scissors



A 121 °C

Special scissors

Made of stainless steel. Autoclavable.

Type	Design	Length (mm)	Art. No.	Pack Qty.	€
① BEE-BEE	straight	110	**LX66.1**	1	9,15
② SPENCER	straight	120	**LX67.1**	1	10,15
③ KNOWLES	straight	140	**LX68.1**	1	10,00
④ LISTER	offset	110	**LX69.1**	1	9,60

A 121 °C

Dissecting scissors

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Pointed/pointed. Length 145 mm. Autoclavable.

Design	Art. No.	Pack Qty.	€
straight	**HCT5.1**	1	67,20
curved	**HCT6.1**	1	66,15

NEW

A 121 °C

Spencer suture scissors, angled

By Hammacher. Made of stainless steel (1.4117). Length 115 mm. Autoclavable.

Art. No.	Pack Qty.	€
KAP7.1	1	46,80

A 121 °C

Microscopy scissors, buttoned

Made of stainless steel, material number 1.4117. Ball-ended on one side. Length 115 mm. Autoclavable.

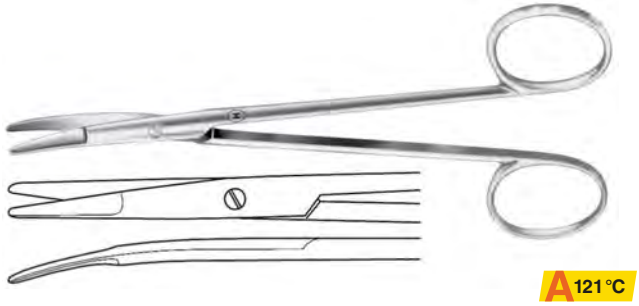
Art. No.	Pack Qty.	€
LX78.1	1	31,00

A 121 °C

Thread and vascular scissors

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Tip/blunt. Length 110 mm. Autoclavable.

Design	Art. No.	Pack Qty.	€
straight	**HCP0.1**	1	41,50
curved	**HCP1.1**	1	44,10
strongly curved	**HCP2.1**	1	44,10



A 121 °C

Dissecting scissors Kilner/Ragnell

By Hammacher. Made of Remanit® 4021. Curved, fine, blunt/blunt. Autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
120	**HCT2.1**	1	56,45
135	**HCT3.1**	1	59,15
150	**HCT4.1**	1	60,50

Micro scissors

A 121 °C

Laboratory scissors Lister, angled

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
145	**HCP3.1**	1	37,60
180	**HCP4.1**	1	40,00

A 121 °C

Micro scissors, type Mikro-Iris

By Hammacher. Made of stainless steel, sharp. Length 90 mm. Cutting length 19 mm. Autoclavable. Illustration shows TE45.1.

Design	Art. No.	Pack Qty.	€
straight	**TE45.1**	1	35,05
curved	**TE46.1**	1	36,95

A 121 °C

Dissecting scissors with carbide inserts

By Hammacher. Made of stainless steel, straight, sharp. For consistent cuts. Autoclavable.

Type	Length (mm)	Cutting length (mm)	Art. No.	Pack Qty.	€
① Standard	115	26	**TE40.1**	1	138,70
② Standard	145	47	**TE41.1**	1	133,30
③ Metzenbaum fino	145	38	**TE42.1**	1	160,20

Micro scissors

Made of stainless steel (material 1.4021). Overall length 120 mm, blade length 15 mm.

Art. No.	Pack Qty.	€
EPA0.1	1	25,75

A 121 °C

Micro dissecting scissors

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Straight, sharp/sharp. Length 110 mm. Autoclavable.

Art. No.	Pack Qty.	€
HCP8.1	1	45,45

A 121 °C

Micro scissors, type IRIS

Made of stainless steel. Length 110 mm. Autoclavable.

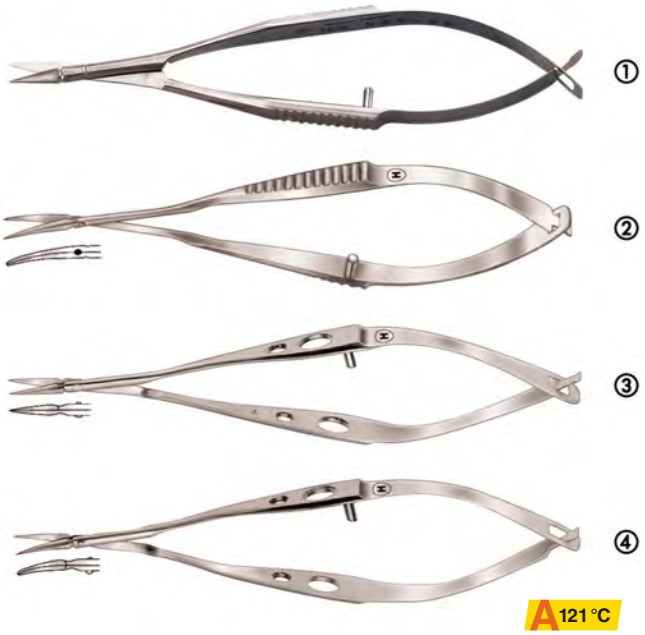
Art. No.	Pack Qty.	€
LX76.1	1	67,00

A 121 °C

Micro scissors, high precision

By Hammacher. Made of stainless steel, straight, tapered ends.
With very fine blades for precise and clean cuts. Autoclavable.

Type	Length (mm)	Cutting length (mm)	Art. No.	Pack Qty.	€
① Standard	105	15	**TE44.1**	1	190,30
② Standard	90	10	**TE43.1**	1	181,70
③ Vannas	80	8,5	**TE48.1**	1	226,85



A 121 °C

Micro scissors, model Tübingen

By Hammacher. Made of stainless steel, sharp.
With very fine blades for precise and clean cuts. Length 85 mm.
Cutting length 7 mm. Autoclavable.

Type	Design	Art. No.	Pack Qty.	€
① Standard	straight	**TE47.1**	1	235,45
② Standard	curved	**HCY0.1**	1	245,10
③ Very light (weight 2 g)	straight	**HCX8.1**	1	240,80
④ Very light (weight 2 g)	curved	**HCX9.1**	1	255,85

NEW

Grasping forceps, angled

By Hammacher. Made of stainless steel (1.4021), with rubber pads for a gentle hold. Length 170 mm. Angled design.

Art. No.	Pack Qty.	€
KAX5.1	1	41,75

A 121 °C

Clamps, smooth gripping surface

By Hammacher. Made of stainless steel Remanit® 4021. Autoclavable.

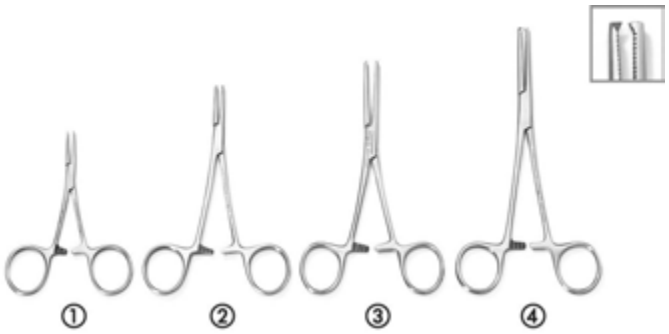
Jaw width (mm)	Length (mm)	Art. No.	Pack Qty.	€
8,4	160	**HCN4.1**	1	71,95
6,0	180	**HCN5.1**	1	74,15
7,7	200	**HCN6.1**	1	76,90

A 121 °C

Artery clamps, type Dieffenbach

By Hammacher. Made of stainless steel. Autoclavable.

Design	Length (mm)	Art. No.	Pack Qty.	€
① straight	28	**TC83.1**	1	46,15
② straight	35	**TC84.1**	1	44,65
straight	50	**TC85.1**	1	45,05
curved	28	**TC86.1**	1	48,65
③ curved	50	**TC88.1**	1	47,20



A 121 °C

Artery and hose clamps

By Hammacher. Made of stainless steel. Autoclavable.

① Type Baby-Mosquito

Design	Length (mm)	Art. No.	Pack Qty.	€
straight	90	**TC89.1**	1	45,10
curved	90	**TC90.1**	1	46,20

② Type Halsted-Mosquito

Design	Length (mm)	Art. No.	Pack Qty.	€
straight	90	**TC93.1**	1	42,95
straight	120	**TC94.1**	1	45,10
curved	90	**TC95.1**	1	45,30
curved	120	**TC96.1**	1	45,90

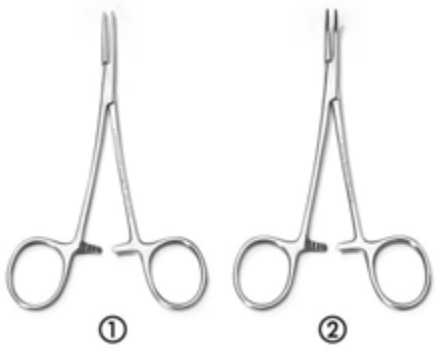
③ Type Pean

Design	Length (mm)	Art. No.	Pack Qty.	€
straight	130	**TC97.1**	1	42,95
straight	140	**TC98.1**	1	45,70
curved	130	**TC99.1**	1	46,20
curved	140	**TE00.1**	1	47,25

④ Type Kocher (Ochsner)
With 1:2 teeth for securing tissue.

Design	Length (mm)	Art. No.	Pack Qty.	€
straight	140	**TE01.1**	1	49,25
straight	160	**TE02.1**	1	55,85
curved	140	**TE03.1**	1	53,60
curved	160	**TE04.1**	1	59,45

▶ Clamping scissors see page 393



A 121 °C

Micro clamps, type Micro-Halsted

By Hammacher. Made of stainless steel, super fine. Length 125 mm. Autoclavable.

Design	Art. No.	Pack Qty.	€
① straight	**TC91.1**	1	44,10
② curved	**TC92.1**	1	47,25

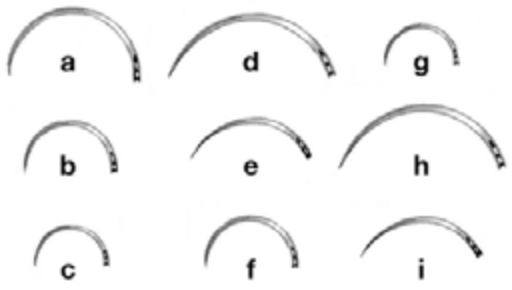
A 121 °C

Needle holder

Made of stainless steel. Autoclavable.

Type	Length (mm)	Art. No.	Pack Qty.	€
① MAYO-HEGAR	160	**LX64.1**	1	14,55
② MATHIEU	140	**LX65.1**	1	17,00

Suture material



A 121 °C

Surgical needles

By Hammacher. Made of corrosion-free stainless steel 18/8. Autoclavable.

Image	Needle shape	Type	Design	Art. No.	Pack Qty.	€
a	rectangular	Fig. 11	½ circular	**LX55.1**	12	16,10
b	rectangular	Fig. 14	½ circular	**LX56.1**	12	16,10
c	rectangular	Fig. 16	½ circular	**LX57.1**	12	16,10
d	rectangular	Fig. 11	⅜ circular	**LX58.1**	12	16,10
e	rectangular	Fig. 14	⅜ circular	**LX59.1**	12	16,10
f	Round	Fig. 14	½ circular	**LX60.1**	12	16,10
g	Round	Fig. 16	½ circular	**LX61.1**	12	16,10
h	Round	Fig. 11	⅜ circular	**LX62.1**	12	16,10
i	Round	Fig. 14	⅜ circular	**LX63.1**	12	16,10

A 121 °C

Sterilising box for needles

By Hammacher. Made of Wironit® (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Needle sterilising box, complete with inside box. Round, ∅ 65 x H 15 mm. Autoclavable.

Art. No.	Pack Qty.	€
HEA4.1	1	41,90

S

Needle-suture combinations

By B. Braun. Absorbable and non-absorbable suture materials, 300 grade stainless steel needles. **Sterile**, individually packed.

Atraumatic needle-suture combination: smooth transition between needle and suture ensures minimal wound trauma.

Technical specifications of suture material:

Suture type	Suture design	Material	Coating	Loss of tensile strength	Material absorption
Safil®	braided	Polyglycolic acid	Polyglyconate	18 days 50 %	approx. 60-90 days
Dafilon®	Monofilament	Polyamide 6/6.6	none	n.a.	non-absorbable
Silkam®	braided	Silk	Wax and silicone rubber	n.a.	non-absorbable

Technical specifications of needles:

Needle type	Curvature	Body	Bow length* (mm)
DS16	3/8 circle	Cutting	16
DS19	3/8 circle	Cutting	19

*Distance between needle tip and end of needle, measured along the outer curve of the needle.

Needle-suture combinations

Type	Colour	USP	metric	Length (mm)	Art. No.	Pack Qty.	€
Safil® / DS16	violet	5/0	1	45	**XC22.1**	36	353,70
Safil® / DS19	uncoloured	4/0	1,5	45	**XC23.1**	12	124,70
Dafilon® / DS16	blue	4/0	1,5	45	**XC26.1**	36	177,40
Dafilon® / DS16	blue	5/0	1	45	**XC27.1**	12	72,90
Silkam® / DS16	black	4/0	1,5	45	**XC29.1**	36	246,20
Silkam® / DS19	black	3/0	2	75	**XC31.1**	36	229,00

Short sutures (PreCuts)

Without needle. **Sterile.** Can be removed individually.

Type	Colour	USP	metric	Length (mm)	Art. No.	Pack Qty.	€
Silkam®	black	4/0	1,5	3 x 45	**XC35.1**	36	209,65

Overview of suture and needle types

Recommendations for use:

Type	Properties	Indications
Safil®	- High tensile strength - Minimal tissue trauma - Smooth suture - Low memory effect - Ease to handle	Safil® is indicated for surgical applications requiring a braided, synthetic and absorbable suture material, particularly for procedures in the gastrointestinal tract area, in gynaecology and urology, in ophthalmic surgery, microsurgery, subcutaneous suturing and ligature.
Dafilon®	- Soft and supple - Excellent knot security - Minimal tissue trauma - Low memory effect	Dafilon® is indicated for skin closure as interrupted or intracutaneous suture, and for securing drains and catheters, as well as dental procedures. It is used in microsurgery, ophthalmology and neurosurgery. Dafilon is not suitable for permanent placement in the body.
Silkam®	- Excellent handling properties - Good knot security	Silkam® is indicated for surgical applications requiring the use of a non-absorbable suture material. Applications include general surgery, skin closure, dental surgery, neurosurgery and ligatures.
Cutting needles (DS)	Three edges run along the entire length of the needle to provide an effective and gentle piercing action.	Skin needles: the three-edged, outer-cutting needle body is indicated for suturing of coarse tissue.

Dissecting needles and probes

Dissecting probes

Made of stainless steel. ∅ 5 mm. Autoclavable.

Model	Design	Art. No.	Pack Qty.	€
①	rectangular	**LX45.1**	1	21,65
②	angled	**LX44.1**	1	21,65
③	curved	**LX43.1**	1	21,65
④	straight	**LX42.1**	1	22,60

Dissecting probes

By Hammacher. Handle made of stainless steel 1.4571. Tip made of stainless steel 1.4310. Dimensions: ∅ 9 mm, length 135 mm. Autoclavable.

Type	Design	Art. No.	Pack Qty.	€
①	offset	**LX53.1**	1	33,60
②	curved	**LX54.1**	1	34,10

Micro dissecting probes

By Hammacher. Made of stainless steel. Autoclavable.

Type	∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
①	4.5	150	**LX51.1**	1	11,40
②	5.5	155	**LX52.1**	1	11,40
③	4,5	160	**PT69.1**	1	16,10

Dissecting needles

Made of Remanit 4301.

① **With stainless steel handle**

Design	Art. No.	Pack Qty.	€
straight	**KX98.1**	10	44,65
curved	**KX99.1**	10	47,30
Lancets	**KY00.1**	10	59,10

② **With plastic handle**

Design	Art. No.	Pack Qty.	€
straight	**KX93.1**	10	22,45
curved	**KX94.1**	10	24,85
Lancets	**KX95.1**	10	33,35

With wooden handle (not shown)

Design	Art. No.	Pack Qty.	€
straight	**KX96.1**	10	19,00
curved	**KX97.1**	10	21,45

Solofix® blood lancets

By B. Braun. Made of stainless steel. **Sterile.**
Puncturing lancets for capillary blood collection, optimal puncture depth.

Art. No.	Pack Qty.	€
ATK9.1	500	15,30

Probes, blunt

Made of stainless steel, material number 1.4301. Autoclavable.

∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
1	130	**LX79.1**	1	7,80
1,5	160	**LX80.1**	1	7,80

Dissecting accessories

NEW

Irrigation cannula

Made of stainless steel 1.4301, cannula lugs made of brass 2.0401. With tip olives and Luer-Lock lug. For feeding small animals using syringes, application of substances in sensitive areas and similar applications.

Type	Needle ∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
straight	1.2	60	**HPX8.1**	6	45,70
straight	1.5	80	**HPX9.1**	6	45,70
straight	2.0	80	**HPY0.1**	6	45,70
curved	1.2	60	**HPY1.1**	6	49,40
curved	1.5	80	**HPY2.1**	6	49,40
curved	2.0	80	**HPY3.1**	6	49,40

A 121 °C

Micro dissecting chisel

By Hammacher. Made of stainless steel. Length 125 mm. Autoclavable.

Art. No.	Pack Qty.	€
TC35.1	1	39,70

NEW

A 121 °C

Micro spoons, sharp

By Hammacher. Made of Wironit stainless steel (1.4310). Total length 130 mm. Autoclavable.

Spoon ∅ (mm)	Art. No.	Pack Qty.	€
1.8	**KAP4.1**	1	26,85
2.0	**KAP5.1**	1	26,85
2.5	**KAP6.1**	1	26,85

A 121 °C

Martini sharp double spoon

By Hammacher. Made of stainless steel. Spoon, round. Length 135 mm. Autoclavable.

∅ (mm)	Art. No.	Pack Qty.	€
3/3.5	**TC28.1**	1	48,95
3.5/4	**TC29.1**	1	48,95
4/4,5	**TC30.1**	1	48,95

A 121 °C

Retractor

By Hammacher. Made of stainless steel. Tines blunt. Length 160 mm. Autoclavable.

Type	Design	Art. No.	Pack Qty.	€
①	Single-tine, one-sided	**TC31.1**	1	34,15
②	Double-tine, one-sided	**TC32.1**	1	43,65

A 121 °C

Retractor

By Hammacher. Made of stainless steel. Length 100 mm. Autoclavable.

Art. No.	Pack Qty.	€
TC34.1	1	102,25

A 121 °C

Rotilabo®-embryo spoon Banivo

Made of stainless steel. To hold delicate structures. Perforated spoon allows fluid to drain. Dimensions: spoon ∅ 15 mm, depth 3 mm. Overall length 145 mm. Autoclavable.

Art. No.	Pack Qty.	€
TL85.1	1	64,40

A 121 °C

Mini mirror

Plastic handle made of **POM**, white. Autoclavable.

Length (mm)	Mirror ∅ (mm)	Art. No.	Pack Qty.	€
165	14	**LX47.1**	1	16,70

Dissecting accessories

A 121 °C

Miniature mirror handle

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Hollow. Length 140 mm. ∅ 8 mm.
Matches miniature mirrors HCL6.1ff and HCL8.1ff. Autoclavable.

Art. No.	Pack Qty.	€
HCL5.1	1	11,65

Miniature mirror

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Ideal for all types for cleaning and sterilization.
Mirror ∅ 22 mm. Matches miniature mirror handle HCL5.1
Delivery without mirror handle, please order separately.

Type	Design	Art. No.	Pack Qty.	€
Plan	Standard	**HCL6.1**	12	30,05
Plan	Rhodium Front	**HCL7.1**	12	50,55
Magnifying	Standard	**HCL8.1**	12	31,10
Magnifying	Rhodium Front	**HCL9.1**	12	68,75

Telescope rods

Chrome-plated. Form and size of rotatable pencil. With pocket clip.

Type	max. length (mm)	Art. No.	Pack Qty.	€
Telescope magnet, very powerful	600	**0407.1**	1	17,15
Telescope mirror, 32 mm ∅, rotatable	610	**0408.1**	1	16,10

A 121 °C

Rulers

By Hammacher. Made of metal, non-corrosive. Autoclavable.

Measuring range (mm/inch)	Length (mm)	Art. No.	Pack Qty.	€
150 / 6	167	**HCN1.1**	1	8,10
300 / 12	317	**HCN2.1**	1	10,25

A 121 °C

Ear punch, variable

By Hammacher. Made of 1.4021 stainless steel. For marking mice, rats and other small animals. Rugged design with rotatable disc for setting different hole sizes. (∅ 0,8 to 2 mm). Total length 170 mm. Autoclavable.

Art. No.	Pack Qty.	€
ANP2.1	1	168,80

A 121 °C

Ear punches

By Hammacher. Made of Remanit® 4021. For marking mice, rats and other small animals. Marking ∅: 2 mm. Autoclavable

Type	Design	Length (mm)	Art. No.	Pack Qty.	€
①	straight	100	**TE89.1**	1	48,95
②	angled (90°)	110	**ETE1.1**	1	51,20

A 121 °C

Tissue punches

By Hammacher. Made of stainless steel Remanit® 4021.
Ideal for animal and plant tissues. More control through manual guide.
Length 28 mm. Autoclavable.

Inner ∅ (mm)	Art. No.	Pack Qty.	€
3	**HCY8.1**	1	50,55
4	**HCY9.1**	1	50,35
5	**HEA0.1**	1	50,20
6	**HEA1.1**	1	50,20

Dissecting accessories

A 121 °C

Mouse Restrainer

Made of **PMP**, transparent. With large opening to hold mice weighing from 18-35 g. The mouse can be inserted forwards or backwards. The mouse can be immobilised in two positions in the restrainer by a gate. When the mouse is in the restrainer, its dorsal skin is easily accessible from above, e.g. for performing subcutaneous injections. With tail first entry, the tail of the mouse can be conveniently positioned outside the restrainer for taking blood samples.
The restrainer mounted to a lab worktop or other surface (fastening material not included).
Dimensions: L 174 x W 100 x H 67 mm. Autoclavable.

Art. No.	Pack Qty.	€
PK28.1	1	75,25

T-shaped dissecting needles

Made of stainless steel, nickel plated. Length 51 mm.
Approx. 375 needles per box.

Art. No.	Pack Qty. (box)	€
CEC6.1	1	33,55

Dissecting needles

With plastic handle made of **PS**. Length 30 mm, head ∅ 3 mm.
Assorted colours.

Art. No.	Pack Qty.	€
PK47.1	100	2,80

Preparation surfaces, glass

By Hammacher.

Type	L x W x H (mm)	Art. No.	Pack Qty.	€
① Glass plate	95 x 70 x 6	**HEA2.1**	1	7,50
② Glass block	150 x 75 x 20	**HEA3.1**	1	33,90

Preparation surfaces

Made of HDPE. Can be used on both sides, with a large preparation surface on one side and two smaller surfaces on the other side. Printed with helper lines and straight edges, as well as circles with diameters from 4 to 14 mm. With all-round drip channel and anti-slip rubber feet.

L x W x H (mm)	Art. No.	Pack Qty.	€
330 x 279 x 12,5	**CXL9.1**	1	102,50
575 x 400 x 12,5	**CXN0.1**	1	159,10

Tray for preparation surfaces

Made of **PS.** Suitable for use with preparation surfaces CXN0.1. Collects liquid overflow as required. Slip-resistant. Can be stacked to elevate the preparation surfaces to a comfortable working height.
Dimensions: L 656 x W 481 x H 91 mm.

Art. No.	Pack Qty.	€
CXN1.1	1	127,95

Disposable preparation surfaces

Made of corrugated plastic, suitable for use on both sides. Printed with helper lines and rulers, as well as circles with diameters from 4 to 16 mm and 2 to 6 cm. Temperature stable from -27 to +71 °C.

L x W (mm)	Art. No.	Pack Qty.	€
152 x 203	**CKP5.1**	24	74,20
229 x 305	**CTY6.1**	12	57,15
305 x 483	**CTY7.1**	12	102,70

Dissecting sets for anatomy

Dissecting dishes

Made of **HDPE**, with flexible PVC dissecting mat for secure fixing of preparations with the aid of needles. Hygienic alternative to wax trays, easy to use. With slip-resistant base, non-corrosive, breakage-resistant and leak-proof. Dissecting mats are washable, durable and have a smooth surface.

Type	Outer L x W (mm)	Inner L x W (mm)	Height (mm)	Art. No.	Pack Qty.	€
Small	320 x 227	265 x 180	41	**CEC7.1**	1	17,45
Large	363 x 273	315 x 220	48	**CEC8.1**	1	25,20

Covers for dissecting dishes

Made of transparent PET. For samples up to a height of 76 mm.

for dissecting dish type	Art. No.	Pack Qty.	€
Small	**CEC9.1**	1	7,50
Large	**CEE0.1**	1	9,65

Rotilabo®-dissecting sets

In zip-up case, with elastic loops to hold instruments.

Contents of small dissecting set for microscopy:
1 dissecting scissors for microscopy, straight, L 115 mm
1 scalpel, pointed, L 155 mm, blade 40 mm
1 pair of tweezers, pointed, straight, L 105 mm
1 lancet, straight, with plastic handle, L 140 mm
1 lancet with plastic handle, L 140 mm
1 spatula for easy lifting of tissues, L 160 mm, B 10 mm

Contents of large dissecting set for microscopy additionally:
1 dissecting scissors for microscopy, curved, L 115 mm
1 razor, folds out, with plastic handle
1 dissecting needle with plastic handle, L 140 mm

Type	Art. No.	Pack Qty.	€
Small dissecting set for microscopy	**ENY0.1**	1	21,45
Large dissecting set for microscopy	**ENY1.1**	1	32,15

Rotilabo®-tweezers set

Four tweezers made of stainless steel 18/10 (material 1.4301), in etui. Red PTFE coating with good anti-adhesive properties forms a separating layer between the tweezer material and the sample. Dull colour of the coating enables glare-free working under the bright lighting in microscopy.
The chemical-resistant coating also protects against contact with the nickel contained in the stainless steel.

Contents:
1 pair of tweezers with fine tip, curved, L 120 mm
1 pair of pointed tweezers with guide pin, L 130 mm
1 pair of pointed tweezers curved, L 130 mm
1 pair of blunt tweezers, L 145 mm

Art. No.	Pack Qty.	€
ENX5.1	1	51,55

Dissecting set

In zip-up case, with elastic loops to hold instruments.

Contents:
1 pair of scissors, sharp-blunt, L 140 mm
1 pair of small scissors, L 110 mm
1 pair of tweezers, blunt, L 140 mm
1 pair of tweezers, sharp, L 110 mm
1 scalpel handle No. 4
5 scalpel blades, type 23
2 dissecting needles, sharp

Art. No.	Pack Qty.	€
CAL6.1	1	24,70

Dissecting sets for anatomy

Rotilabo®-dissecting sets for anatomy

In zip-up case, with elastic loops to hold instruments.

Contents of small dissecting set:

1 dissecting scissors for microscopy, straight, L 100 mm
1 scalpel, pointed, L 125 mm, blade 25 mm
1 pair of tweezers, pointed, straight, L 105 mm
1 pair of tweezers, blunt, straight, L 115 mm
1 pair of tweezers made of spring steel, L 100 mm
1 dissecting needle with plastic handle, L 140 mm

Contents of large dissecting set additionally:

1 lancet with plastic handle, L 140 mm
1 dissecting scissors for microscopy, curved, L 100 mm
1 pair of scissors, blunt tip, L 130 mm

Type	Art. No.	Pack Qty.	€
Small dissecting set:	**ENY2.1**	1	38,25
Large dissecting set	**ENY3.1**	1	55,45

NEW
A 121 °C

Chemist set

By Hammacher. In zip-up case, with elastic loops to hold instruments. Autoclavable.

Contents:

2 micro-double spatulas, flexible, 150 mm
1 spoon spatula, 150 mm
1 micro-spoon spatula, 150 mm, spoon 5 x 7 mm
1 weighing spatula, 170 mm
1 micro-powder spatula, flexible, 150 mm
1 dissecting needle with plastic handle, 140 mm
1 chemist's spoon, 150 mm
1 pair of splinter forceps, curved, 105 mm
1 pair of tweezers, anatomically shaped, 145 mm
1 pair of tweezers, pointed, 105 mm
1 pair of scissors, pointed-pointed, 145 mm
1 pair of microscopy scissors, 115 mm

Art. No.	Pack Qty.	€
KAN9.1	1	85,50

Chemist set, large

By Hammacher. Instruments made of stainless steel, autoclavable.

*Scissors made of steel, nickel plated and coated, non-autoclavable.

In plastic box, dimensions: L 214 x W 102 x H 27 mm.

Contents:

1 micro double spatula, 130 mm
1 micro spoon spatula, spoon 5 x 7 mm
1 micro powder spatula, flexible, 185 mm
1 double spatula, rigid, 185 mm
1 tweezers, straight, sharp, 160 mm
1 scissors*, straight, serrated, 170 mm
1 Poly spoon, 180 mm
1 weighing spoon
1 double spatula, wide, round on both sides, 150 mm

Art. No.	Pack Qty.	€
TE20.1	1	72,00

Dissecting sets for microscopy

In wooden box.

Small. Dimensions: L 195 x W 85 x H 32 mm.

Contents:

- All-metal scalpel, 35 mm
- Dissecting needle, pointed
- Dissecting needle, lance shaped
- Splinter forceps, 110 mm
- Section lifter, 45 x 8 mm
- Dissecting scissors, 110 mm, straight

Art. No.	Pack Qty.	€
LX82.1	1	33,45

Large. Dimensions: L 195 x W 95 x H 35 mm.

Contents same as LX82.1, plus:

- Razor
- Dissecting probe, curved
- Dissecting scissors, 110 mm, curved

Art. No.	Pack Qty.	€
LX83.1	1	41,40

Dissecting set

In case, W 85 x L 195 x H 30 mm.

Contents:

1 scalpel handle No. 4 with 6 blades (type 21 + 23)
1 dissecting needle with plastic handle
1 self-closing tweezers, angled tip L 140 mm
1 coverslipper tweezers, L 160 mm
1 anatomic tweezers, blunt tip, L 140 mm
1 small scissors L 115 mm
1 scissors, blunt tip, L 130 mm
1 double spatula, L 170 mm
10 dissecting needles

Art. No.	Pack Qty.	€
0829.1	1	46,80

Chemist's instruments

Consists of four instruments made of high-grade steel (Remanit 4301).
In case W 90 x L 150 mm.

Contents:

1 precision scissors, pointed/blunt 130 mm
1 forceps, pointed 130 mm
1 micro-double spatula 130 mm, blade width 4 mm
1 chemist's double spatula, 150 mm, blade width 9 mm

Art. No.	Pack Qty.	€
1863.1	1	23,90

Dissecting set for anatomy, Premium

By Hammacher. Instruments made of stainless steel, autoclavable.
*Instruments with wooden handle are non-autoclavable.

In wooden box, dimensions: L 190 x W 100 x H 35 mm.

Contents:

1 scissors, buttoned, 145 mm
1 cartilage knife with scraper, wooden handle*, 180 mm
5 scalpel* with wooden handle, ball shaped, blade length 25-45 mm
1 tweezers, 105 mm, blunt
1 tweezers, 105 mm, sharp
1 muscle retractor, 100 mm
1 tube, double, straight
1 blunt probe, 130 mm, ∅ 1 mm
2 surgical needles, ½ circle

Art. No.	Pack Qty.	€
TE19.1	1	341,85

▶ Microscopes from page 778

Instrument oil

By Hammacher. Synthetic oil, silicone-free. Odourless and transparent, leaves no brown marks on the instruments. Spot-on application through safety/anti-drop valve.

Art. No.	Pack Qty.	€
HCY1.1	Application bottle 12 ml	16,45

A 121 °C

Instrument holders

Made of **PP**, white. For storage or precleaning of instruments and thermometers. Autoclavable.

Volume (ml)	Inner height (mm)	Outer height (mm)	Innner ∅ (mm)	Base ∅ (mm)	Art. No.	Pack Qty.	€
230	100	107	60	98	**TT27.1**	5	42,95
1100	190	200	89	147	**TT28.1**	5	58,30

A 121 °C

Glass instrument trays

Made of soda-lime glass with stainless steel lid. Autoclavable and hot air sterilisable up to +180 °C. **Note:** do not expose glass trays to abrupt changes of temperature. Trays must be heated and cooled slowly as soda-lime glass has limited thermal shock resistance.
Do not sterilise with lid attached.

L x W x H (mm)	Art. No.	Pack Qty.	€
120 x 60 x 40	**CYY9.1**	1	34,40
170 x 90 x 45	**EAA0.1**	1	40,10
200 x 100 x 50	**EAA1.1**	1	43,75
220 x 150 x 55	**EAA2.1**	1	51,50
275 x 150 x 60	**EAA3.1**	1	59,15
350 x 220 x 70	**EAA4.1**	1	118,25
200 x 100 x 100	**EAA5.1**	1	51,50

▶ Further instrument trays see page 129

A 121 °C

Sterilisation containers polySteribox®

Transparent special plastic, can be used for approx. 1250 sterilization cycles. **For the sterilization and storage of instruments.** Suitable for steam, gas and plasma sterilization. Hydrophobic PTFE filter stops germs and bacteria (replace after approx. 250 sterilizations, includes date insert). A sterilization mark and protective seal can be used to check the sterility of the contents. Safety seal for safe transportation. Stackable. Dishwasher safe.
In acc. with DIN 58952, 58953, EN 868-1/868-8/554, ISO 11607 and DIN EN ISO 17664 and 11137-1. CE certified. Autoclavable up to 134 °C. **Delivery incl.** PTFE filter (12-month filter, polySteribox M with permanent filter). Permanent filter set is optional. Please order separately.

Type	Outer dimensions: L x W x H (mm)	Inner dimensions: L x W x H (mm)	Art. No.	Pack Qty.	€
polySteribox® SH	208 x 111 x 55	177 x 76 x 44	**X616.1**	1	115,05
polySteribox® M	185 x 145 x 59	156 x 124 x 48	**KP96.1**	1	134,40
polySteribox® L	290 x 184 x 74	261 x 163 x 64	**KP97.1**	1	164,50
polySteribox® XL	497 x 122 x 65	465 x 90 x 54	**TA78.1**	1	226,85

Accessories:

Sterilisation seal with indicator strip	**X617.1**	1000	49,05
Protective seals	**H653.1**	500	46,70
Non-slip silicon mat for polySteribox® SH	**H654.1**	1	29,05
Non-slip silicon mat for polySteribox® M	**TA79.1**	1	32,20
Non-slip silicon mat for polySteribox® L	**TA80.1**	1	46,15
Screen basket for polySteribox® SH	**HLE9.1**	1	80,65
Screen basket for polySteribox® M	**HLH0.1**	1	83,35
Screen basket for polySteribox® L	**HLH1.1**	1	85,80
Screen basket for polySteribox® L with lid	**HLH2.1**	1	192,45
Grid insert made of stainless steel for polySteribox® L	**HLH3.1**	1	55,80
Screen basket for polySteribox® XL with lid for 2 endoscopes	**HLH4.1**	1	265,55
Permanent filter set for polySteribox® SH	**TA85.1**	1	20,45
Permanent filter set for polySteribox® M	**TA86.1**	1	24,20
Permanent filter set for polySteribox® L/XL	**TA87.1**	1	30,65

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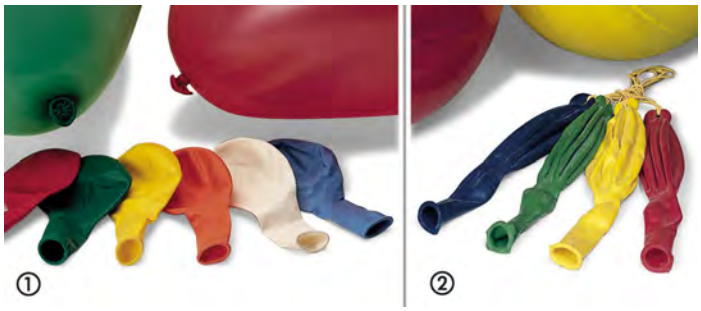


① Rotilabo®-gas bag

Made of natural rubber. Egg-shaped, ideal for mixing or short-term storage of gases. Max. circumference approx. 85 cm. Assorted colours.

Art. No.	Pack Qty.	€
0933.1	100	13,95

② Rotilabo®-gas bags maxi

Made of Latex. Ideal for testing air or gas intake and/or release from apparatus. Also for short-term storage of gases. When empty 22 cm long. Assorted colours.

Art. No.	Pack Qty.	€
TA08.1	10	21,45

Plastigas®-bags

Made of multiple laminated aluminium foil, thermoplastically welded with inner polyethylene layer. Ideal for storing small amounts of gas under low pressure.

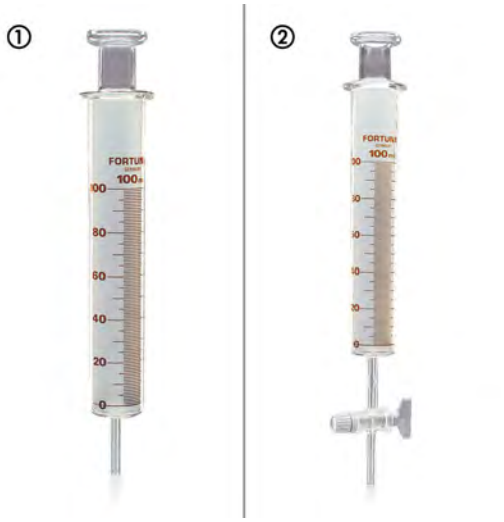
Bag 2.5 l with connection nozzle for bubble tubing.
Also with taped septum for removing samples with syringe.

Bag 27.0 l with screw-on valve and metal hose nozzle.
Also with septum for removing samples with syringe.

Bubble tubing, 80 cm long.

Accessories for Art. No. 0848.1, please order separately.

Type	Volulme (l)	Art. No.	Pack Qty.	€
① Plastigas®-bags	2,5	**0848.1**	1	29,60
② Plastigas®-bags	27,0	**0847.1**	1	85,95
③ Bubble tubing	-	**H547.1**	1	17,45



Piston samplers

Made of neutral glass of hydrolytic class 1. For carrying out gasometric experiments. Graduated. Acid and alkali resistant.

Applications: analysis of air and breathable air, identification of respiratory quotient, indirect water analysis, qualitative gas combustion, illuminating gas analysis etc.

With capillary attachment,
without spigot, inner ∅ approx. 2.5 mm, outer ∅ approx. 6.5 mm

Design	Volume (ml)	Graduation (ml)	Art. No.	Pack Qty.	€
①	25	0.5	**HT27.1**	1	60,20
①	50	0.5	**HT28.1**	1	64,40
①	100	1.0	**HT29.1**	1	70,75

With capillary spigot,
NS 12.5; 2.5 mm bore hole

Design	Volume (ml)	Graduation (ml)	Art. No.	Pack Qty.	€
②	50	0.5	**HT30.1**	1	95,60
②	100	1.0	**HT31.1**	1	105,15

Gas leak detector testo 316-1

By Testo. Ideal for tracing leaks in pipes, flanges, screw connectors, gas pipes etc. For methane. With visual and acoustic alarm. Sensor has extremely short reaction time.

Technical specifications:

Measuring range	0 to 10.000 ppm CH4
Alarm threshold	>200 ppm LED yellow / >10.000 ppm LED red
Battery life	>5 h
Working temperature	4 to 45 °C
Dimensions (L x W x H)	190 x 57 x 42 mm
Weight	300 g

Delivery incl. battery (9 V).

Art. No.	Pack Qty.	€
P757.1	1	215,00

Bottle pressure regulators, single-stage

By Kayser. Made of brass. Manufactured in acc. with EN ISO 2503.
For safe emptying of gas from steel cylinders to max. 200 bar,
with simultaneous reduction to required working pressure of 10 bar.
With safety valve (is triggered at 12 bar). Graduated in 0.5 bar increments.

Technical specifications:

Type of gas	Connection for bottle	Connection for tube
Compressed air	G 5⁄8″ pressure screw	G ¼″ right
Hydrogen	W 21.8 x 1⁄14″ left	G 3⁄8″ left
Oxygen	G ¾″ right	G ¼″ right
Nitrogen	W 24.32 x 1⁄14″ right	G ¼″ right
Calibrating gas	M 19 x 1.5 left	G 3⁄8″ left
Inert gases/CO_2	W 21.8 x 1⁄14″ right	G ¼″ right
Inert gases/CO_2 - vol.-strom 0-28/30 l/min*	W 21.8 x 1⁄14″ right	G ¼″ right
Purging gases - vol.-strom 0-50 l/min	W 21.8 x 1⁄14″ left	G 3⁄8″ left

* Work manometer with double scale (l/min and bar)

Type of gas	Connection for bottle	Art. No.	Pack Qty.	€
For compressed air	G 5/8″ pressure screw	**0270.1**	1	80,10
For hydrogen	W 21.8 x 1/14″ left	**0284.1**	1	80,10
For oxygen	G ¾″ right	**0285.1**	1	80,10
For nitrogen	W 24.32 x 1/14″ right	**0288.1**	1	80,10
For calibrating gas	M 19 x 1,5 left	**0280.1**	1	80,10
For inert gases/CO_2	W 21.8 x 1/14″ right	**0286.1**	1	80,10
For inert gases/CO_2 volume flow 0-28/30 l/min	W 21.8 x 1/14″ right	**0290.1**	1	80,10
For forming gas volume flow 0-50 l/min	W 21.8 x 1/14″ left	**0289.1**	1	80,10

Material DURAN®

Gas sampling tubes

Made of DURAN®. In acc. with DIN 12473-1, with two one-way cocks, standard ground joint 14.5 and sampling nozzle (Thread GL 14). Capillary tube (Inner-∅ 2.7 mm, outer-∅ 8 mm) on the one side and olive (outer-∅ 8 mm) on the other side. With labelling area.

Volume (ml)	Art. No.	Pack Qty.	€
350	**KX55.1**	1	90,30
500	**KX56.1**	1	100,65
1000	**KX57.1**	1	144,05

Gas pressure regulators, two stage

By Air Liquide. Made of chrome-plated brass. Ideal for all high-purity gases and gas compounds except acetylene and corrosive gases.
Excellent for use wherever constant outlet pressure is required.

Technical specifications:

Max. inlet pressure	200 bar
Working temperature	-20 to +50 °C
Weight	1.6 kg
Dimensions (L x W x H)	180 x 98 x 135 mm
Contact inlet	bottle attachment in acc. with DIN 477
Contact outlet	clamping ring connection for 6 mm tube
Overal leakage rate	3 x 10^{-7} mbar l/s

Back pressure 0.05-1 bar. Graduated in 0.1 bar-increments.

Type of gas	Connection for bottle	Art. No.	Pack Qty.	€
Inert gases	W 21.8 x 1⁄14″ right	**C286.1**	1	697,70
Hydrogen	W 21.8 x 1⁄14″ left	**C287.1**	1	697,70
Oxygen	R ¾″ right	**C288.1**	1	697,70
Nitrogen	W 24.32 x 1⁄14″ right	**C289.1**	1	697,70
Calibrating gas	M 19 x 1.5 left	**C290.1**	1	697,70

Back pressure 0.1-3 bar. Graduated in 0.1 bar-increments.

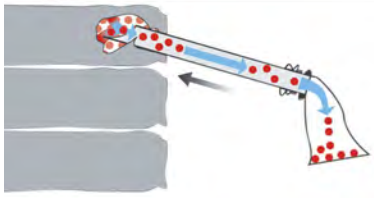
Type of gas	Connection for bottle	Art. No.	Pack Qty.	€
Inert gases	W 21.8 x 1⁄14″ right	**C291.1**	1	697,70
Hydrogen	W 21.8 x 1⁄14″ left	**C292.1**	1	697,70
Oxygen	R ¾″ right	**C293.1**	1	697,70
Nitrogen	W 24.32 x 1⁄14″ right	**C294.1**	1	697,70
Calibrating gas	M 19 x 1.5 left	**C295.1**	1	697,70

Back pressure 0.5-10 bar. Graduated in 0.5 bar-increments.

Type of gas	Connection for bottle	Art. No.	Pack Qty.	€
Inert gases	W 21.8 x 1⁄14″ right	**C296.1**	1	697,70
Hydrogen	W 21.8 x 1⁄14″ left	**C297.1**	1	697,70
Oxygen	R ¾″ right	**C298.1**	1	697,70
Nitrogen	W 24.32 x 1⁄14″ right	**C299.1**	1	697,70
Calibrating gas	M 19 x 1.5 left	**C300.1**	1	697,70

▶ For gas bottle supports, see page 746

Sampling for powders / granulates



A 121 °C

Tubus sampler

By Bürkle. Made of stainless steel (1.4404). Suitable for use with foodstuffs. For pourable bulk goods up to approx. 10 mm in diameter, e.g. hazel nuts, cereals, granulates, crystalline solids (e.g. sugar).
Insert Tubus into a sack to the desired sampling depth.
The sample flows directly through the open tube into the sampling bag.
Tube ∅ 40 mm. Autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
40	**EP04.1**	1	136,55
80	**EP05.1**	1	170,95

A 121 °C

QuickPicker samplers

By Bürkle. Made of transparent PP or stainless steel 1.4404, suitable for foodstuffs. For removal of bulk goods from bags and direct transfer into original sampling bottles. Insertion depth 300 mm. Total length 500 mm. Volume 75 ml. Tube ∅ 25 mm. Sampler is autoclavable (without bottle).

Delivery incl. two 250 ml LDPE sampling bottles and cleaning brush.

Material	Art. No.	Pack Qty.	€
PP	**YK99.1**	1	144,05
Stainless steel	**YL00.1**	1	227,90

Accessories:

Sampling bottle, LDPE, 250 ml	**YL01.1**	1	3,00

A 121 °C

Powder and granulate sampler

By Bürkle. Made of stainless steel 1.4404. Suitable for use with foodstuffs. Conforms to EN ISO 707 and IDF (International Dairy Federation). Suitable for sampling milk powder. The sampler is inserted into bags and the sample is removed using a semicircular profile lance.
Insertion depth 385 mm. Volume 150 ml. Total length 480 mm.
Outer ∅ approx. 28 mm. Autoclavable.

Art. No.	Pack Qty.	€
YL02.1	1	178,45

A 121 °C

SiloPicker

By Bürkle. Made of stainless steel (1.4404). For sampling bulk goods from silos, tanks, BigBags or other large containers.
Chamber volume: 100 ml. Length: 130 cm. Outer ∅ 50 mm. Autoclavable.

Application:

- Insert SiloPicker into bulk goods
- The closure sleeve automatically closes the collection container
- When the sampling depth has been reached, briefly pull back the SiloPicker
- The bulk goods flow into the collection container
- Pull out the SiloPicker
- Empty the sampler

Art. No.	Pack Qty.	€
YX85.1	1	416,05

Accessories:

Extension rod, 100 cm	**YX86.1**	1	68,30

- ▶ Sampling bags from page 258
- ▶ Bottles from page 32
- ▶ For scoops, see page 201

Control seals

121 °C

Zone samplers

By Bürkle. Made of aluminium, stainless steel (1.4404) or stainless steel (1.4404)/PTFE. For sampling bulk goods, e.g. from bags, drums, bins, BigBags and silos. Tube ∅ 25 mm. Suitable for use with foodstuffs. Autoclavable.

Application:
- Close the chambers by turning the handle
- Insert the sampler to the desired depth
- Open the chambers to allow the bulk goods to flow into the collector
- Close the chambers
- Withdraw the sampler
- Reseal the puncture using an adhesive seal

① All-layer samplers

Open inner tube for large sample volumes. Meets ISTA standard for seed lengths of 10 mm (wheat, oats) and 5 mm (flax, vetch).

Technical specifications:

Material	Total length (cm)	Insertion depth (cm)	Number of chambers	Chamber volume (ml)
Aluminium	55	43	3	70
Aluminium	85	71	3	130
Aluminium	150	135.5	5	260
Stainless steel	55	43	3	70
Stainless steel	85	71	3	130
Stainless steel	150	135.5	5	260

Material	Length (mm)	Art. No.	Pack Qty.	€
Aluminium	55	**YH96.1**	1	205,35
Aluminium	85	**YH97.1**	1	222,55
Aluminium	150	**YH98.1**	1	282,75
Stainless steel	55	**YH99.1**	1	603,10
Stainless steel	85	**YK00.1**	1	695,55
Stainless steel	150	**YK01.1**	1	837,45

② Multi-samplers

Inner tube with separate chambers.
For multi-taking target-point samples from various sample depths.

Technical specifications:

Material	Total length (cm)	Insertion depth (cm)	Number of chambers	Chamber volume (ml)
Aluminium	55	43	3	14
Aluminium	85	71	3	17
Aluminium	150	135.5	5	17
Stainless steel/PTFE	55	43	3	14
Stainless steel/PTFE	85	71	3	17
Stainless steel/PTFE	150	135.5	5	17

Material	Length (mm)	Art. No.	Pack Qty.	€
Aluminium	55	**YK02.1**	1	226,85
Aluminium	85	**YK03.1**	1	252,65
Aluminium	150	**YK04.1**	1	327,90
Stainless steel/PTFE	55	**YK05.1**	1	439,70
Stainless steel/PTFE	85	**YK06.1**	1	496,65
Stainless steel/PTFE	150	**YK07.1**	1	719,20

③ Uno-samplers

One closed sampling chamber. For taking target-point samples from a specific sample depth.

Technical specifications:

Material	Total length (cm)	Insertion depth (cm)	Number of chambers	Chamber volume (ml)
Stainless steel/PTFE	55	43	1	17
Stainless steel/PTFE	85	71	1	17
Stainless steel/PTFE	150	135.5	1	17

Material	Length (mm)	Art. No.	Pack Qty.	€
Stainless steel/PTFE	55	**YK08.1**	1	448,30
Stainless steel/PTFE	85	**YK09.1**	1	502,05
Stainless steel/PTFE	150	**YK10.1**	1	734,25

Accessories for zone samplers

Emptying device for multi- and uno-samplers

By Bürkle. Made of stainless steel (1.4301).

Design	Art. No.	Pack Qty.	€
Rack with 3 funnels, length 1 m	**YK11.1**	1	362,30
Funnel, single	**YK12.1**	1	56,95

Accessories for zone samplers

Cleaning brush

Made of PVC and stainless steel. ∅ 25 mm. Length 100 cm.

Art. No.	Pack Qty.	€
EE50.1	1	46,80

Control seals, metal-detectable

For hermetic sealing of pierced bags, cartons or BigBags after sampling. Barrier layer made of aluminium with extra-strong bonding layer, food-safe adhesive. Temperature-resistant from -20 °C to +70 °C, bonding temperature at least 0 °C. ∅ 95 mm. 1000 pieces on the roll.

Label	Art. No.	Pack Qty. (roll)	€
QUALITÄTSKONTROLLE	**T457.1**	1	122,05
QUALITY CONTROL	**T513.1**	1	122,05
CONTRÔLE QUALITE - PRELEVE LE	**T514.1**	1	122,05

Sampling for pasty / compound substances

Security control seals, coloured

By Bürkle. Aluminium barrier layer. Foodstuff-compatible adhesive. Prevents products from leaking out after sampling. Suitable for foodstuffs, pharmaceuticals, cosmetics, dietary supplements and frozen food. Sealed gastight. Can be labelled indelibly.
Temperature stable from -20 up to max. +40 °C.
Label dispenser is optional, please order separately.

Close-it food & pharma

Label size: W 95 x H 95 mm. 500 labels per roll.

Colour	Art. No.	Pack Qty.	€
red	**YC60.1**	500	64,45
black	**YC61.1**	500	64,45
yellow	**YC62.1**	500	64,45
blue	**YC63.1**	500	64,45
green	**YC64.1**	500	64,45
white, unprinted	**YC65.1**	500	64,45

Label size: W 150 x H 150 mm. 250 labels per roll.

Colour	Art. No.	Pack Qty.	€
red	**YC66.1**	250	85,95
black	**YC67.1**	250	85,95
yellow	**YC68.1**	250	85,95
blue	**YC69.1**	250	85,95
green	**YC70.1**	250	85,95
white, unprinted	**YC71.1**	250	85,95

Close-it tape food & pharma

Continuous label roll, for cutting out. Colour: white. Roll length 50 m.

Width (mm)	Art. No.	Pack Qty.	€
95	**YC72.1**	1	63,45
150	**YC73.1**	1	85,95

Label dispenser

Suitable for label width (mm)	Art. No.	Pack Qty.	€
95	**YC74.1**	1	91,95
150	**YC75.1**	1	130,10

A 121 °C

Plunge borers, conical

By Bürkle. Made of stainless steel 1.4301. Conically shaped with sharp edges and a solid handle. Suitable for use with foodstuffs. Acc. to EN ISO 707. For sampling soft and paste-like substances, such as cheese, butter, mud, clay, soap and wax. Insert the borer into the substance and turn it to cut out the sample material. Autoclavable.

Insertion depth (mm)	Total length (cm)	Pipe-∅ (mm)	Art. No.	Pack Qty.	€
120	18	10-15	**YP34.1**	1	67,70
170	22	11-18	**YP35.1**	1	100,85

A 121 °C

Plunge borer, cylindrical

By Bürkle. Made of stainless steel 1.4301. With sharp cutting crown. Suitable for use with foodstuffs. For sampling paste-like and semi-solid substances. Use the suction piston to push out the bored samples from the cylinder. Insertion depth 200 mm. Total length 260 mm. Inner diameter approx. 8 mm. Outer diameter approx. 10 mm. Autoclavable.

Art. No.	Pack Qty.	€
YP36.1	1	136,55

A 121 °C

Pigment samplers

By Bürkle. Made of stainless steel 1.4404. With half-open groove for very adhesive substances or quarter-open groove for less adhesive substances. For sampling pigments, pastes and agglomerating bulk goods. Insert the lance to the desired depth. Turn the handle so that the sample is collected in the open groove. Withdraw the lance. Remove the sample.
Tube diameter 30 mm. Autoclavable.

Length (mm)	Groove opening (%)	Volume (ml)	Art. No.	Pack Qty.	€
300	25	145	**YP37.1**	1	206,40
300	50	85	**YP38.1**	1	229,00
600	25	312	**YP39.1**	1	298,85
600	50	179	**YP40.1**	1	324,65

Samplers for viscous and liquid mediums

By Bürkle. Made of PP or PTFE/FEP (chemically inert).
Suitable for use with foodstuffs. Tube-∅ 25 mm, tip-∅ 32 mm.

① Visco sampler

Very strong suction power for sampling viscous, non-self-flowing substances such as mud, slime, watery clay and soil samples, oils, emulsions, creams. Samples are sucked and ejected via a suction piston.

② Liqui sampler

For liquid mediums. Compliant with DIN EN ISO 15 528. Practical push-button one-handed operation. For all-layer and target-point/soil sampling. For **all-layer sampling**, slowly plunge the liqui sampler into the liquid with the button pressed (valve open). Release the button, the valve closes. Withdraw the sampler and remove the sample.
For **target-point/soil sampling**, plunge the liqui sampler down to the target point/soil with the valve closed. Press the button, the valve opens and liquid flows in. Release the button, the valve closes. Withdraw the sampler and remove the sample.

Type	Material	Length (mm)	Contents (ml)	Art. No.	Pack Qty.	€
①	PP	60	160	**YP46.1**	1	251,55
①	PP	100	300	**YP47.1**	1	298,85
①	PP	200	650	**YP48.1**	1	442,90
①	PTFE/FEP	60	160	**YP49.1**	1	339,70
①	PTFE/FEP	100	300	**EE48.1**	1	406,35
①	PTFE/FEP	200	650	**EE49.1**	1	559,00
②	PP	60	150	**YP50.1**	1	163,40
②	PP	100	250	**YP51.1**	1	217,15
②	PP	200	500	**YP52.1**	1	325,75
②	PTFE/FEP	60	150	**YP53.1**	1	251,55
②	PTFE/FEP	100	250	**EE46.1**	1	356,90
②	PTFE/FEP	200	500	**EE47.1**	1	493,45

Accessories:

Cleaning brush, length 100 cm	**EE50.1**	1	46,80

A 121 °C

Liquid samplers

By Bürkle. Made of stainless steel (1.4404). For sampling thin to viscous liquids. With discharge funnel for safe filling of sampling bottles.
One-handed operation. Container ∅ 32 mm. Autoclavable.

Image	Type	Total length (mm)	Volume (ml)	Art. No.	Pack Qty.	€
①	Thumb hole	460	50	**YX81.1**	1	187,05
①	Thumb hole	540	100	**YX82.1**	1	198,90
②	Open by placing onto bottle	455	50	**YX83.1**	1	224,70
②	Open by placing onto bottle	535	100	**YX84.1**	1	252,65

Plunging siphon made of PP

For easy removal of liquid samples. The top end features a stopcock and the bottom end has a ball valve. With transparent pipe for good visibility. For drums with a minimum opening ∅ of 22 mm. Suitable for foodstuffs. Ideal for all-layer and target point sampling.

All-layer sampling: Plunge the siphon slowly into the liquid with the open stopcock. Close the valve. Withdraw the siphon and remove the sample. Empty sample into container via handle.

Target point sampling: Plunge the siphon with the closed stopcock down to the target point. Open the stopcock - the liquid will flow in.
Close the stopcock. Withdraw the siphon and remove the sample.
Empty sample into container via handle.
Model 3 is infinitely variable from 100 to 200 cm.

Type	Volume (ml)	Length (mm)	Art. No.	Pack Qty.	€
1	140	50	**EN97.1**	1	46,20
2	280	100	**EN98.1**	1	48,35
3	560	200	**EN99.1**	1	58,00

A 121 °C

Mini visco samplers

By Bürkle. Made of stainless steel 1.4404. For sampling viscous substances such as pastes, muds, creams and oils. Ideal for the pharmaceutical and cosmetics industry. Samples are sucked and ejected via a suction piston. Suction point with 2 mm suction hole. Suction points available with a larger diameter for more viscous mediums, please order separately. Autoclavable.

Length (mm)	Volume (ml)	Art. No.	Pack Qty.	€
60	30	**YP41.1**	1	284,90
100	50	**YP42.1**	1	328,95
150	75	**YP43.1**	1	398,85

Accessories:

Suction point, 4 mm suction hole	**YP44.1**	1	45,15
Suction point, 6 mm suction hole	**YP45.1**	1	45,15
Drip tray safety wall bracket	**TL59.1**	1	53,75

Rotilabo®-sampling containers

For use with Rotilabo® telescope rods (please order separately).
Delivery incl. beaker holder.

① **Rotilabo®-swing beaker**
For sampling liquids, e.g. out of deep tanks, pans or narrow shafts.
Vessel swings into the horizontal position.
For opening ∅ from 150 mm (Art. No. NH30.1 from 130 mm).

Volume (ml)	Material	Art. No.	Pack Qty.	€
600	PP	**NH29.1**	1	49,45
1000	PP	**9244.1**	1	48,95
2000	PP	**9251.1**	1	59,10
1000	Stainless steel (1.4301)	**NH30.1**	1	183,85

② **Rotilabo®-angle beaker**
Tilt angle is adjustable to 90° through quick adjustment of the joint.

Volume (ml)	Material	Art. No.	Pack Qty.	€
600	PP	**N104.1**	1	50,00
1000	PP	**N105.1**	1	51,50
2000	PP	**N106.1**	1	55,70

③ **Rotilabo®-beaker with digging edge**
For sampling of powders, granulates, pastes and sludge.

Volume (ml)	Material	Art. No.	Pack Qty.	€
1000	Stainless steel (1.4301)	**NH31.1**	1	145,15

④**Rotilabo®-bottle holder**
Fits bottles up to max. ∅ 88 mm. With quick-release clamp. Inclination angle is adjustable by up to 90° through quick adjustment of the joint.
Delivery incl. bottle with screw cap.

Volume (ml)	Material	Art. No.	Pack Qty.	€
750	Holder made of PP Tightening strap made of PA Bottle made of PE	**N107.1**	1	58,00

Rotilabo®-telescope rods

Made of aluminium and **PP**.
Can be combined with Rotilabo®-sampling containers.
Not suitable for aggressive liquids.

Adjustable length	Art. No.	Pack Qty.	€
from 0.6 to 1.2 m	**9254.1**	1	26,35
from 1.25 to 2.5 m	**9255.1**	1	33,90
from 1.0 to 3.0 m	**9257.1**	1	52,60
from 1.65 to 4.5 m	**T251.1**	1	73,65

Rotilabo®-sample scoops

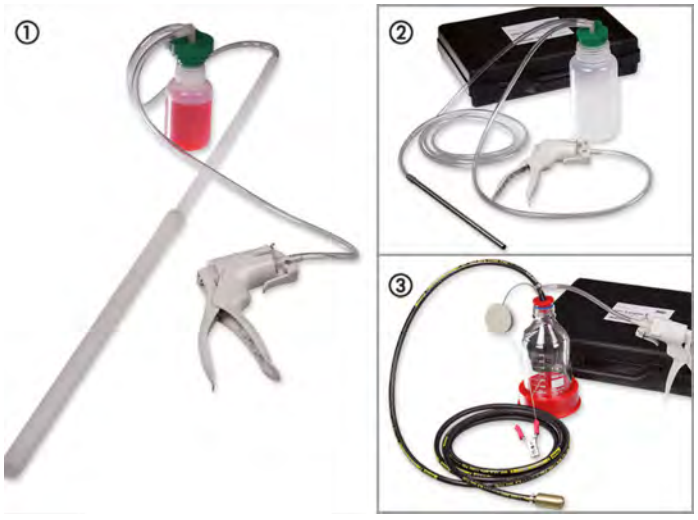
With solid handle bar, made of transparent **PP**.
For taking specific samples from tanks, tubs, galvanic baths, lakes, etc.
Length of handle 100 cm, ∅ 20 mm.

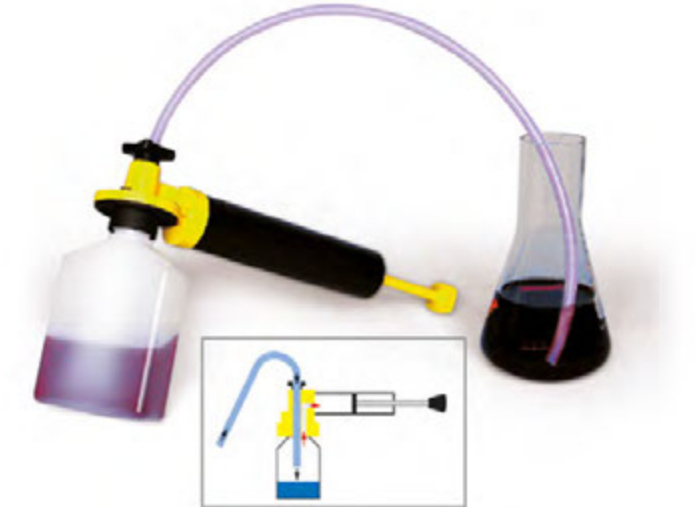
Capacity (ml)	Art. No.	Pack Qty.	€
250	**9220.1**	1	61,20
600	**9225.1**	1	63,35
1000	**9236.1**	1	65,60

Rotilabo®-chemo-sampler

Made of **PP**, grey. Length 100 cm. For safe sampling of aggressive liquids.
The sample is drawn up directly in the unscrewed bottle.
Delivery incl. sample bottle 1000 ml.
Accessories: Sample bottle made of **PE**, with screw-on cap.

Type	Volume (ml)	Art. No.	Pack Qty.	€
Chemo-Sampler	-	**T273.1**	1	77,00
Sample bottles	500	**T274.1**	5	14,55
Sample bottles	1000	**T275.1**	5	16,35





Liquid samplers UniSampler

By Bürkle. Easy to use: The sample is taken directly into the sample tube via a vacuum. There is no danger of contamination.

① **UniSampler with telescope lance**
For sampling liquids from specific depths. Telescopic suction pipe can be pulled out variably from 52 cm to 100 cm. Suction pipe made of PP, tube made of PVC.
Delivery incl. 5x250 ml and 5x500 ml sample vials made of PP and an adapter for all bottle sizes from 100 ml to 1 litre.
Procedure:
1. Pull out the suction lance to the desired sampling depth.
2. Fit the sample bottle onto the adapter.
3. Lower the suction lance into the medium.
4. Create a vacuum with the hand pump and take a sample.
5. Remove the filled sample bottle, close and label it.

② **UniSampler with hose**
Sampling system for deep, narrow and winding areas. The tube is pulled downwards by the heavy stainless steel pipe. PVC-tube, length 2.50 m.
Delivery incl. 1000 ml PP-bottle and adapter for all bottle sizes from 100 to 1000 ml, comes in a case for easy transport.
Function:
1. Lower suction tube to the desired depth.
2. Fit the sample bottle onto adapter.
3. Create a vacuum with the hand pump and take a sample.
4. Remove the filled sample bottle, close and label it.

③ **UniSampler Ex**
For sampling combustible liquids, Hazard Class A I (e.g. petrol). The glass bottle and tube are electro-conductively connected and are grounded with an grounding cable. PTB-approval D-333-009 618/00.
Delivery incl. 4 m-tube and 1000 ml-glass bottle, in transport case.
Function:
1. Ground device.
2. Lower suction tube to the desired depth.
3. Fit the adapter onto the sample vial.
4. Create a vacuum with the hand pump, take a sample.
5. Remove the filled sample vial, close and mark it.

Type	Art. No.	Pack Qty.	€
① UniSampler with telescopic lance	**AH45.1**	1	258,00
② UniSampler with tube	**AH46.1**	1	189,20
③ UniSampler Ex	**AH47.1**	1	359,05

Sampling pumps

Ideal for obtaining liquid samples even from difficult to reach areas. Liquid only comes in contact with the PE-tube and the sample vessel. Also suitable for viscous samples (e.g. oils). The sample vessel is screwed into the pump and can be sealed tightly after taking the sample. Tube is easy to change and can be replaced quickly. Procedure: a vacuum is produced by pullin up the pump. The liquid is drawn off and collected in the PE-bottle.

Type	Art. No.	Pack Qty.	€
Connector 22	**C001.1**	1	64,45
Connector 28	**E514.1**	1	59,35

Accessories:

PE-bottle round, 250 ml (connector 22)	**C003.1**	10	22,60
PE-bottle round, 500 ml (connector 28)	**E515.1**	10	24,55
PE-bottle flat, 150 ml (connector 22)	**E517.1**	10	24,55
PE-bottle flat, 150 ml (connector 22)	**E517.2**	220	363,35
PE-bottle round, 50 ml (connector 22)	**E516.1**	10	17,75
PE-tube ∅ inner 4.5 mm, ∅ outer 6 mm, length 13 m	**C004.1**	1	19,30

Sampling set

Delivery incl. the model 22 sampling pump, 5x50 ml bottles (angular), 2x250 ml bottles, 15 m of PE-tubing, and a transporting case (Art. No. CYX1.1).

Art. No.	Pack Qty. (set)	€
C005.1	1	109,65

▶ Sampling bags from page 258
▶ Bottles from page 32

A 121 °C

Rotilabo®-glass dipping bottle

Made from non-sparking materials. Nickel-plated brass dipping frame, closure made from electrically conductive polyamide, clear glass bottle, autoclavable. For taking sludge and water samples as well as samples of group A petroleum products, explosion groups IIA and IIB.
Approved for use in EX safety zone 0.
Safe closure for rapid bottle exchange. High weight for rapid lowering.
Dimensions: outer ∅ 148 mm, height 330 mm. Weight 3.3 kg.
Capacity 1000 ml.

Delivery without manual rope spool and lowering rope, please order separately.

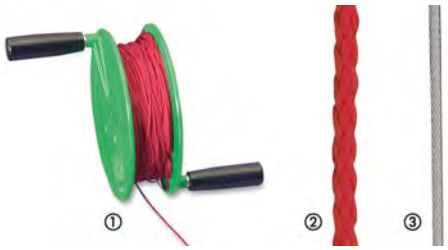
Art. No.	Pack Qty.	€
T266.1	1	471,95

Rotilabo®-dipping bottle Ex

Made from non-sparking brass, nickel-plated. For sampling of group A petroleum products, explosion groups IIA, IIB and IIC. Approved for use in EX safety zone 0. Removable bottle top for easy cleaning.
High weight for rapid lowering. Dimensions: outer ∅ 89 mm, height 443 mm. Weight 3.2 kg. Capacity 1000 ml.

Delivery without manual rope spool and lowering rope (please order separately).

Art. No.	Pack Qty.	€
T267.1	1	482,70



Accessories for dipping bottles

① **Manual rope spool** made of **PP**, excluding rope.
Spool ∅ 100 mm, total ∅ 180 mm, 55 mm wide.

Art. No.	Pack Qty.	€
T269.1	1	93,50

② **Lowering rope** made of **PP**, ∅ 2.3 mm, 10 m long.

Art. No.	Pack Qty.	€
T272.1	1	12,70

③ **Lowering rope** made of **V2A**, ∅ 1.25 mm, 10 m long.

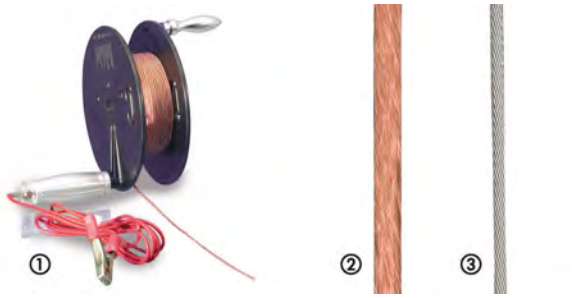
Art. No.	Pack Qty.	€
T271.1	1	31,85

Use of dipping bottles

- Lower the dipping bottle to the desired depth.
- To open the plug pull lowering rope with a short and powerful tug.
- After filling the bottle pull back the lowering rope.
- With T267.1, open the closure and drain the bottle.
- With T266.1, open the closure and remove the bottle.

Notes on explosion protection

Only electrically conductive manual rope spools with an earth connection and electrically conductive lowering ropes made of non-sparking materials for sampling flammable and highly flammable liquids.



Accessories for dipping bottles, for highly flammable solutions

① **Manual rope spool** with earthing cable, without rope, made entirely from conductive plastic. Explosion groups II A and II B.
Spool ∅ 100 mm, total ∅ 180 mm, 55 mm wide.

Art. No.	Pack Qty.	€
EP11.1	1	227,90

② **Lowering rope** made of electrically conductive **copper**, ∅ 4.5 mm, 10 m long.

Art. No.	Pack Qty.	€
EP10.1	1	123,65

③ **Lowering rope** made of **V2A**, ∅ 1.25 mm, 10 m long.

Art. No.	Pack Qty.	€
T271.1	1	31,85

Disposable sampling systems

S

SteriPlast®Bio sample spoon

By Bürkle. Made of green **PE**, **sterile**. For sampling powders, granulates, pastes and liquids. Sample spoon and packaging are made from renewable raw materials and are fully recyclable. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

Volume (ml)	Length (mm)	Art. No.	Pack Qty.	€
2,5	127	**CPT3.1**	100	46,35
10	170	**CPT4.1**	100	48,95

▶ For scoops, see page 201

S

Sample spatula SteriPlast®

By Bürkle. Made of **PS, sterile**. For sterile and contamination-free sampling, e.g. of powders, granulates and pastes. Insertion depth 150 mm. With long, sturdy handle and sharp blade for piercing paper and plastic bags etc. Sample spatula is optionally available with a lid made of PS which allows the sample to be sealed straight after it is taken. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

Design	Total length (mm)	Art. No.	Pack Qty.	€
Without lid	263	**CLT5.1**	10	17,55
With lid	268	**CLT6.1**	10	25,30

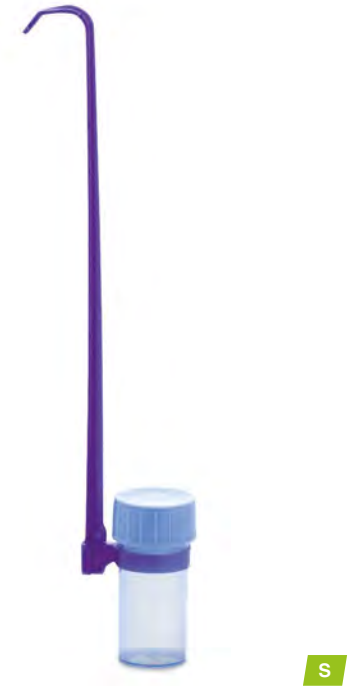
NEW

S

DispoDipper sample scoops

By Bürkle. Made of PP, **sterile** or non-sterile, transparent blue. 50 ml scaled beaker, height 98 mm, ∅ 40 mm. Total height 417 mm, depth of immersion 270 mm. Beaker can be sealed liquid-tight after sampling.
Removable handle. Suitable for 2-inch drum openings.
Particularly suitable for the food, animal feed and pharmaceutical industries in accordance with the EU foodstuffs directives and FDA guidelines.
Manufactured under clean-room conditions (class 7).
Individually packed in film.

Design	Art. No.	Pack Qty.	€
non-sterile	**HXH0.1**	20	24,00
sterile	**HXH1.1**	20	29,00



S

PP-sampling scoops with handle

Made of break-proof, transparent **PP**. Screw cap made of **PE**.
Sterile (packed individually). Blue, suitable for the food industry.
For sterile sampling and subsequent analysis, reduces cross contamination.
Handle removable, L 240 mm.

Volume (ml)	Height of container (mm)	Container-∅ (mm)	Overall height (mm)	Art. No.	Pack Qty.	€
40	70	30	275	**HL41.1**	250	229,00
125	74	52	275	**HL42.1**	100	125,80
180	102	52	305	**HL43.1**	100	120,40

Disposable sampling systems

S

SteriPlast®Bio sample scoops

By Bürkle. Made of green **PE**, **sterile**. For sampling powders, granulates and pastes. Sample scoop and packaging are made from renewable raw materials and fully recyclable. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

Volume (ml)	Length (mm)	Art. No.	Pack Qty.	€
25	141	**CPP9.1**	10	21,00
50	160	**CPT0.1**	10	21,00
100	205	**CPT1.1**	10	21,45
150	216	**CPT2.1**	10	22,90

S

Sample scoops SteriPlast®

By Bürkle. Made of **PS**, **sterile**, with transparent lid. For sterile and contamination-free sampling, e.g. of powders, granulates and pastes. Sample scoop can be sealed with lid after taking sample. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

Volume (ml)	Length (mm)	Art. No.	Pack Qty.	€
25	142	**CPP5.1**	10	28,30
50	161	**CPP6.1**	10	30,05
100	206	**CPP7.1**	10	31,10
150	218	**CPP8.1**	10	32,20

S

SteriPlast®-single-use samplers

By Bürkle. Made of PS, blue **Sterile.** For sampling of powders, granulates, pastes and liquids, especially in the food, animal feed and pharmaceutical industry. Compliant with the EU Food and FDA Regulations, applicable within the scope of HACCP/IFS foreign body management. Cleanroom-manufactured (class 7), individually packed.

① Food spoon

Volume (ml)	Length (mm)	Art. No.	Pack Qty.	€
2,5	127	**HET4.1**	100	36,50
10	170	**HET5.1**	100	39,25

② Food scoops

Volume (ml)	Length (mm)	Art. No.	Pack Qty.	€
100	205	**HET6.1**	10	18,25
150	216	**HET7.1**	10	18,75
250	232	**HET8.1**	10	22,60
500	280	**HET9.1**	10	40,35

S

SteriPlast®-single-use sampler, detectable

By Bürkle. Made of PS, blue. **Sterile.** For sampling powders, granulates, pastes and liquids. Compliant with EU Food and FDA Regulations. A special additive makes the single-use samplers visible in metal detectors or per X-rays and can be sorted out using regular systems for checking for foreign bodies. Cleanroom-manufactured (class 7), individually packed.

① Sample spoon

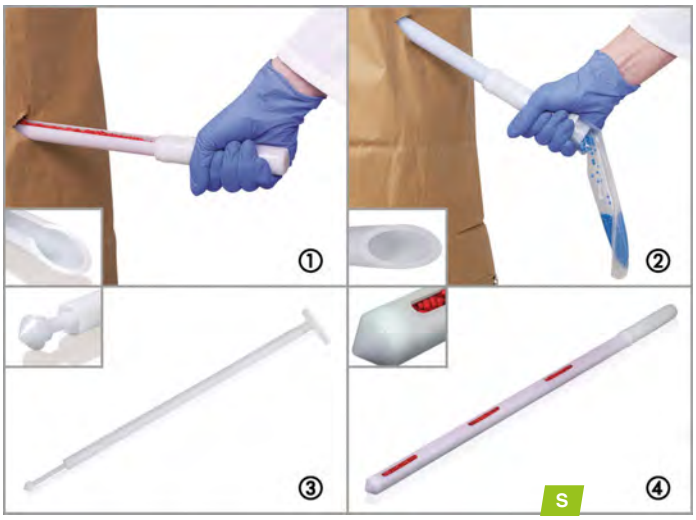
Volume (ml)	Length (mm)	Art. No.	Pack Qty.	€
2,5	127	**HEP8.1**	100	47,30
10	170	**HEP9.1**	100	52,35

② Sample scoops

Volume (ml)	Length (mm)	Art. No.	Pack Qty.	€
100	205	**HET0.1**	10	27,80
150	216	**HET1.1**	10	29,60
250	232	**HET2.1**	10	37,10
500	280	**HET3.1**	10	67,65

▶ Pharmaceutical scoops made of stainless steel
see page 199

Disposable sampling systems



Single-use samplers for solids

By Bürkle. Made of **HDPE**. For samples of bulk goods, powders and granulates. No contamination by other samples, no complicated and time-consuming cleaning. Manufactured under cleanroom conditions. Packed individually in film, non-sterile or **sterile**.

① **Powder Dispo**
For cross-section samples of cohesive, powdery substances. Conically shaped sampler for e.g. BigBag or sack penetration.

Length (mm)	Volume (ml)	∅ (mm)	Design	Art. No.	Pack Qty.	€
300	60	21	non-sterile	**ETX3.1**	10	56,80
300	60	21	**sterile**	**ETX4.1**	10	65,55
500	100	21	non-sterile	**NH28.1**	10	70,45
500	100	21	**sterile**	**ETX5.1**	10	73,35

② **DispoLance**
For free-flowing powder and fine granulates. Insert the lance down to the desired depth. Empty via the open end of the handle direct in the sample bag.

Length (mm)	Volume (ml)	∅ (mm)	Design	Art. No.	Pack Qty.	€
300	variable	21	non-sterile	**ETX6.1**	10	53,25
300	variable	21	**sterile**	**ETX7.1**	10	60,75
500	variable	21	non-sterile	**ETX8.1**	10	67,20
500	variable	21	**sterile**	**ETX9.1**	10	75,05

③ **MicroDispo**
For target point samples of small quantities of free-flowing bulk materials up to a grain size of 0.5 mm. Insert the sampler, pull up the handle of the pull rod and take the sample. Press the handle down to empty the sample into a vessel.

Length (mm)	Volume (ml)	∅ (mm)	Design	Art. No.	Pack Qty.	€
500	10	21	non-sterile	**HC55.1**	10	72,90
500	10	21	**sterile**	**ETY0.1**	10	98,40
1000	10	21	**sterile**	**ETY1.1**	10	115,05

④ **ZoneDispo**
For cross-section samples of free-flowing bulk materials and fine granulates. Insert the closed zone sampler down to the desired depth and open; the bulk material flows in. Close the sampler, pull it out and empty via the opened chamber.
The sample can be secured and transported in the closed sampler.

Length (mm)	Volume (ml)	∅ (mm)	Design	Art. No.	Pack Qty.	€
500	100	25	non-sterile	**HC58.1**	10	96,65
500	100	25	**sterile**	**ETY2.1**	10	111,80
1000	200	25	non-sterile	**ETY3.1**	10	118,25
1000	200	25	**sterile**	**ETY4.1**	10	134,40

Single-use samplers for fluids

By Bürkle. Made of **HDPE**. For sampling viscous media and liquids. No contamination by other samples, no complicated and time-consuming cleaning. Manufactured under cleanroom conditions. Packed individually in film, unsterile or **sterile**.

① **ViscoDispo**
For high-viscosity media up to max. 100 000 mPas. Insert the sampler into the liquid. Pull up the handle of the pull rod to take the sample. Then press the pull rod down to empty the sample into a vessel.

Length (mm)	Volume (ml)	∅ (mm)	Design	Art. No.	Pack Qty.	€
500	100	21	non-sterile	**HC52.1**	10	77,95
500	100	21	**sterile**	**ETT5.1**	10	76,90
1000	200	21	non-sterile	**HC53.1**	10	91,40
1000	200	21	**sterile**	**ETT6.1**	10	98,90

② **LiquiDispo**
For low-viscosity liquids up to max. 2000 mPas. Insert the sampler into the liquid. Pull up the handle of the pull rod to take the sample. Then press the pull rod down to empty the sample into a vessel.

Length (mm)	Volume (ml)	∅ (mm)	Design	Art. No.	Pack Qty.	€
500	100	21	non-sterile	**HC50.1**	10	78,05
500	100	21	**sterile**	**ETT7.1**	10	76,90
1000	200	21	non-sterile	**HC51.1**	10	84,85
1000	200	21	**sterile**	**ETT8.1**	10	98,90

③ **DispoPipette**
For cross-section and target point samples of liquids with a variety of viscosities (opening ∅ 2.5/5.5 mm). When the sampler is opened, the liquid flows in or out; when closed, it is held in the sampler.

Length (mm)	Volume (ml)	∅ (mm)	Design	Art. No.	Pack Qty.	€
500	100	21	non-sterile	**ETT9.1**	10	46,05
500	100	21	**sterile**	**ETX0.1**	10	56,95
1000	200	21	non-sterile	**ETX1.1**	10	53,25
1000	200	21	**sterile**	**ETX2.1**	10	68,60

▶ Sampling bags from page 258
▶ Bottles from page 32

Centrifugal pumps

Rotary pumps

With magnetic clutch for circulating water. Complete with 1.5 m cable and plug. Protective system IP 67.

Please note:

- Pumps must not be allowed to run dry
- Pumps are not self-priming and must always be installed below liquid level when used externally
- Temperature stable from -10 to +40 °C
- Can be used inside the pumping medium
- Output is non-adjustable

Technical specifications:

Model	①	②	③	④
Flow rate max. (l/min)	4.5	40	10	20
Lift of pump max. (m)	0.75	3.7	1.5	2.0
Power input (W)	4	65	10	28
Tube connections:				
Press. side (mm) Thread (inch)	13	18 ¾	13 ¼	13 ⅜
Suction side (mm) Thread (inch)	17	28 ¾	13 ⅜	17 ½
Dimensions L x W x H (mm)	87 x 48 x 88	218 x 116 x 161	147 x 75 x 119	178 x 96 x 121
Weight (kg)	0.45	2.5	1.0	1.6
Current	230 V, 50 Hz			
Comments	Pressure pipe joints are rotatable	Universal pump, variable assembly possible, with safety tube connector.		

Model	Art. No.	Pack Qty.	€
1	**A908.1**	1	64,00
2	**Y492.1**	1	232,20
3	**E234.1**	1	116,10
4	**A906.1**	1	151,60

▶ Hoses see page 384

Centrifugal pump

Medium contacting parts made of **PP**, **EPDM** and **ceramic**.
With magnetic clutch. Continuous running for transferring and circulating chemicals and gaseous liquids possible.
Adapter, outer thread ¼″. Magnetic resistance to fracture protects the motor against external interference. Economical in use of electricity, long-life due to low friction. Not self-priming. Not suitable for dry operation.

Technical specifications:

Flow rate	max. 13,8 l/min
Lift of pump	max. 2.3 m
Power input	51 W
Power output	10 W
Ideal for temperatures	from -20 to +85 °C
Dimensions (H x L x W)	100 x 150 x 112 mm
Weight	ca. 1.7 kg
Current	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
A902.1	1	278,45

Centrifugal pump

Medium contacting parts made of **PP**, **EPDM** and **ceramic**. With magnetic clutch. For aggressive chemicals, acids, alkalis and gaseous liquids.
Adapter, outer thread ½″. Continuous running possible.
No shaft sealing ring, therefore little friction and long-life of pump.
Not self-priming.

Technical specifications:

Flow rate	max. 52 l/min
Lift of pump	max. 6.0 m
Ideal for temperatures	from -20 to +85 °C
Power input	95 W
Dimensions (H x L x W)	143 x 214 x 102 mm
Weight	ca. 3.0 kg
Current	230 V, 50 Hz

Art. No.	Pack Qty.	€
A903.1	1	579,45

Membrane liquid pumps

Membrane liquid pumps LIQUIPORT®

By KNF. Ideal for delivering neutral and aggressive liquids.

- Flow rate can be adjusted from 10-100 % via knob with LED-display
- Standby-mode
- Maximum pressure control
- Selfpriming
- Dry running
- Long-life
- Protective system: IP65 (hoseproof)
- Permissible liquid temperature max. 80 °C
- Main supply 100-230 V, 50/60 Hz
- Membranes PTFE-coated, valves FFPM

All models are also available with external control, please check with our Sales Department.

Technical specifications:

Model	NF 100	NF 1.100	NF 300	NF 1.300
Output (ml/min)	200-1300		500-3000	
Suction lift (mWC)	3			
Pressure lift (mWC)	10	60	10	60
Tube connection ∅ inner (mm)	8		12	
Output P_1 (W)	12	18	24	
Weight (kg)	1.0		1.5	
Dimensions W x D x H (mm)	99 x 130 x 177		190 x 160 x 190	

Model	Pump head	Art. No.	Pack Qty.	€
NF 100 KT.18 S	PP	**EL62.1** *	1	618,15
NF 100 TT.18 S	PVDF	**EL63.1** *	1	757,90
NF 100 FT.18 S	PTFE	**EL64.1** *	1	1827,50
NF 1.100 KT. 18 S10	PP	**EL65.1** *	1	721,35
NF 1.100 TT. 18 S10	PVDF	**EL66.1** *	1	858,95
NF 1.100 FT. 18 S10	PTFE	**EL67.1** *	1	1929,65
NF 300 KT.18 S	PP	**EL68.1** *	1	788,00
NF 300 TT.18 S	PVDF	**EL69.1** *	1	998,70
NF 300 FT.18 S	PTFE	**EL70.1** *	1	2338,15
NF 1.300 KT.18 S	PP	**EL71.1** *	1	850,35
NF 1.300 TT.18 S	PVDF	**EL72.1** *	1	1058,90
NF 1.300 FT.18 S	PTFE	**EL73.1** *	1	2399,40

* Longer delivery times possible. Please check with our Sales Department.

SIMDOS® 10 metering pumps

By KNF. Suitable for pumping neutral and aggressive liquids.

- Optimised pump head geometry with safety feature prevents fluids from leaking into the pump drive.
- Operating modes: continuous pumping (unlimited time), continuous pumping with timed switch-off, volumetric metering and series metering
- With calibration function for better accuracy
- Adjustable pump characteristics (e. g. for vaporous, viscous liquids)
- Pause function without loss of data
- Dry-run safe, self-priming and maintenance-free
- EPDM diaphragm, PTFE-coated, valve plate/seals made of FFKM

All models are also available with external control, please check with our Sales Department.

Technical specifications:

Delivery rate	1-100 ml/min
Metering capacity	1-1000 ml
Metering time	1 s - 99 h 59 min
Max. suction head	3 mWS
Max. pressure	6 bar
Allowable medium temperatures	+5 to +80 °C
Connection for ID/AD hose	4 / 6 mm
Power requirement	24 W
Protection class	IP 65
Noise level	<40 dBA
Dimensions W x D x H	93 x 134 x 144 mm
Weight	0.9 kg
Power supply	100-240 V, 50/60 Hz

Delivery incl. connection kit (hose and screw fitting) and intake filter.

Model	Pump head	Art. No.	Pack Qty.	€
FEM 1.10 KT.18 S2	PP	**PA27.1**	1	1423,30
FEM 1.10 TT.18 S2	PVDF	**PA28.1**	1	1524,35
FEM 1.10 FT.18 S2	PTFE	**PA29.1**	1	2621,95

Membrane dosing pumps

Powerful, speed-controlled stepper motor. Constant, continuous dosing performance. Adjustment range up to 1:1000.
Traffic lights concept to indicate pump status.
PTFE membrane, universally resistant to chemicals.

Technical specifications:

Model	DDE 6-10	DDE 15-4
Max. flow rate (l/h)	6	15
Suction lift (mWS)	6	
Max. pressure (bar)	10	4
Ambient temperature (°C)	0 to 45	
Temperature of medium (°C)	-10 to 45	
Parts with media contact	PVC/FKM/ceramics	
For tubes ID/AD (mm)	4/6	6/9
Max. sound pressure level (dB(A))	60	
Degree of protection (housing)	IP 65	
Dimensions W x D x H (mm)	102 x 251 x 196	102 x 251 x 200.5
Weight (kg)	2.4	
Mains connection	100-240 V, 50/60 Hz	

Delivery incl. assembly plate as base or for wall mounting.

Type	Art. No.	Pack Qty.	€
DDE 6-10	**PE71.1**	1	514,95
DDE 15-4	**PE72.1**	1	675,10

Accessories: multifunction valve for diaphragm metering pump

Made of **PVDF**. To maintain the necessary counterpressure and vent the pump at start-up. Compact valve for connecting directly to the pump.
Dimensions: L 139 x H 92 mm.

Art. No.	Pack Qty.	€
PE73.1	1	218,25

Roth Cyclo II pericyclic pumps

Pumps for all applications in the laboratory, in chemical analysis and biotechnology.

- **1- or 2-channel head pumps** (∅ 62 mm)
- **3- or 6-roll pump head** for lower pulsation
- Simple operation with two knobs:
  Infinitely variable speed setting from 0 to 100 %
  adjustable left-hand/right-hand motion
- Tube can be changed easily in a few seconds
- Variable tube pressure
- With easy to disassemble pump head for problem-free cleaning
- Pump head can be turned by 90°
- Matching tube cassettes for 3 different tube sizes
- Temperature and current limiter for maximum reliability
- Stackable
- Tube with 1.6 mm wall thickness can be used

Technical specifications:

Safe delivery pressure	1 bar
Voltage	100-230 V
Drive / Power	DC-motor / 10 W
Weight	1.6 kg
Dimensions (W x D x H)	134 x 190 x 131 mm

Flow rates are dependent on tubing size (wall thickness 1.6 mm):

Tube cassette	Y375.1	Y376.1	Incl. in delivery
Tube-inner-∅ (mm)	1.6	3.2	4.8
Pumping capacity 3-roll head (ml/min) 6-roll head (ml/min)	 1.5-30 1.2-24	 6-110 4.4-88	 12-240 9.6-192

Standard model:
Delivery incl. tube cassette for tube with inner-∅ 4.8 mm and wall thickness 1.6 mm.

Type	Art. No.	Pack Qty.	€
Cyclo II with 1-channel pump head, 3 rolls	**Y374.1**	1	1360,95
Cyclo II with 1-channel pump head, 6 rolls	**EP74.1**	1	1328,70
Cyclo II with 2-channel pump head, 3 rolls	**EP75.1**	1	1430,85
Cyclo II with 2-channel pump head, 6 rolls	**EP76.1**	1	1586,70
Accessories:			
Tube cassette for tube inner-∅ 1.6 mm	**Y375.1**	1	107,00
Tube cassette for tube inner-∅ 3.2 mm	**Y376.1**	1	107,00

Peristaltic pumps

Tube pumps Sci-Q 323

By Watson-Marlow. Particularly suitable for applications in the laboratory and for research.

- Expansion and end pump head with 4 rolls for lower pulsation is available as an accessory
- Flow rate up to 2000 ml/min with 3 rolls
- Flow rate up to 1600 ml/min with 4 rolls
- Can be expanded with additional pump heads to up to 6 parallel channels
- Hose can be inserted quickly and easily with the flip-top-pump head
- Digital speed control
- Manually steerable
- Easy to read display and wipeable membrane keyboard
- Chemically stable housing
- Maintenance-free, quiet motor
- For use with 1.6 mm thick hoses (please order separately)

Technical specifications:

Hose-ID (mm)	0.5	0.8	1.6	3.2	4.8	6.4	8.0
3-Roll-head: Flow rate (ml/min)	0.45-12	1.1-28	4.1-110	15-400	33-880	54-1400	75-2000
4-Roll-head: Flow rate (ml/min)	0.45-12	0.90-24	3.8-100	13-340	29-760	45-1200	60-1600
Max. number of pump heads (at 0.5 bar)	6	6	4	2	2	1	1

rpm	15-400 min^{-1} (adjustable in increments of 5)
Ideal for temperatures	5-40 °C
Noise levell	<70 dBA
Weight	4.7 kg
Dimensions (H x L x W)	225 x 230 x 132 mm
Current	230 V, 50/60 Hz - change-over to 120 V

Delivery incl. one 3-roll-end-pump head.

Art. No.	Pack Qty.	€
Y545.1 *	1	3546,45

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Extension pump head, 3-roll	**Y546.1**	1	440,75
Extension pump head, 4-roll	**Y547.1**	1	440,75
End-piece pump head, 4-roll	**Y548.1**	1	440,75

Peristaltic pumps set Hei-FLOW

By Heidolph. For conveying liquids.

- Analog speed adjustment
- Constant speed even under varying load
- Reversible direction of rotation (ccw/cw)
- Stackable housing (max. 2 pump drives)
- Pump drives Hei-FLOW Advantage 01 with maximum speed button for faster filling and drainage of tubing

Characteristics of the pump head:

- For tubing wall thickness of 1.6 mm
- Tubing outer diameters of between 4 mm and 9.5 mm are freely selectable
- Low pulsation is ensured by 5 rollers
- Easy and quick tubing replacement
- Stainless steel rollers and roller mounts

Technical specifications:

Type (Hei-FLOW)	**① Value 01**	**② Advantage 01**
Delivery rate (ml/min)	0.8-413	0.4-409
Speed (rpm)	10-120	5-120
Control accuracy (%)	±2	±0.5
Analog interface	no	yes
Motor power (W)	71	100
Weight excluding pump head (kg)	6.8	8.2
Dimensions W x D x H (mm)	166 x 256 x 225	

Flow rates are dependent on tubing size (wall thickness 1.6 mm):

Inner ∅ (mm)	0.8	1.7	3.1	4.8	6.3
Outer ∅ (mm)	4.0	4.9	6.3	8.0	9.5
Delivery rate Value 01 (ml/min)	0.8-9	3-41	11-134	25-292	36-413
Delivery rate Advantage 01 (ml/min)	0.4-9	2-40	5-126	12-233	17-409

Delivery incl. pump head SP quick 1.6 and 1 m of Tygon® and silicone rubber tubing (CH22.1 with inner ∅ 3.1 mm, EL51.1 with inner ∅ 0.8 mm).

Type	Art. No.	Pack Qty.	€
① Hei-FLOW Value 01	**CH22.1** *	1	2358,00
② Hei-FLOW Advantage 01	**EL51.1** *	1	2812,00

* Longer delivery times possible. Please check with our Sales Department.

Silicone pump hoses

Platinum treated silicone hose for hose pumps. Autoclavable. Ultra-smooth surface prevents bacterial growth and sediments or residue from sticking. Wall thickness 1.6 mm.

Innner ∅ (mm)	Outside ∅ (mm)	Art. No.	Pack Qty. (m)	€
0,5	3,7	**CH23.1**	5	41,85
0,8	4,0	**CH24.1**	5	41,85
1,6	4,8	**CH25.1**	5	59,15
3,2	6,4	**CH26.1**	5	59,15
4,8	8,0	**CH27.1**	5	68,80
6,4	9,6	**CH28.1**	5	77,95
8,0	11,2	**CH29.1**	5	96,45

Hei-FLOW Precision peristaltic pumps

By Heidolph.
For conveying and metering liquids.

Pump drives

- Digital display
- Dispensing volume 0.1-9999 ml
- Intermittent dispensing
- Simple calibration of delivery and dispensing volumes
- With maximum speed button for faster filling and drainage of tubing
- Constant speed even under varying load
- Reversible direction of rotation (ccw/cw)
- Stackable housing (max. 2 pump drives)
- Analog and digital (RS 232) interfaces
- Hei-FLOW Precision 01 pump drive suitable for multichannel operation

Technical specifications of the pump drives:

Hei-FLOW model	Precision 01	Precision 06
Delivery rate in single-channel mode (ml/min)	0.02-409	2-2072
Speed (rpm)	5-120	24-600
Control accuracy (%)	±0.5	
Multichannel operation possible	yes	no
Motor power (W)	100	
Weight excluding pump head (kg)	8.3	7.7
Dimensions W x D x H (mm)	166 x 256 x 225	

Modular design:
pump drive, pump head and pump hose are freely combinable, please order separately.

Type	Art. No.	Pack Qty.	€
Hei-FLOW Precision 01 pump drive	**CYC4.1**	1	3057,00
Hei-FLOW Precision 06 pump drive	**CYC5.1**	1	2951,00

Pump heads for Hei-FLOW Precision

1-channel pump head SP quick for Hei-FLOW Precision 01 and 06
- For standard tubing with a wall thickness of 1.6 mm
- Tubing outer diameters of between 4 mm and 9.5 mm are freely selectable
- Low pulsation is ensured by 5 rollers
- Easy and quick tubing replacement
- Stainless steel rollers and roller mounts

Flow rates are dependent on tubing size (wall thickness 1.6 mm):

Inner ∅ (mm)	0.6	1.7	3.1	4.8	6.3
Delivery rate (ml/min) Precision 01 Precision 06	 0.38-9 2-33	 2-40 8-186	 5-126 26-653	 12-233 59-1529	 17-409 89-2072

Type	Art. No.	Pack Qty.	€
1-channel pump head SP quick (SWS 1.6 mm)	**CYC6.1**	1	471,00

4-channel pump head for Hei-FLOW Precision 01
- For use with up to 4 hose cassettes, with snap lock for easy insertion during operation
- Low pulsation is ensured by 8 rollers
- For 2 stopper hoses with a wall thickness of 0.9 mm
- Tubing outer diameters of between 0.2 mm and 2.8 mm are freely selectable
- To feed and convey different volumes, hoses of different diameter can be inserted into the hose cassette
- Roller pressure can be adjusted using an adjustment screw

Flow rates are dependent on tubing size (wall thickness 0.9 mm):

Inner ∅ (mm)	0.2	0.5	0.9	1.4	2.8
Delivery rate (ml/min) Precision 01	 0.02-0.49	 0.08-2	 0.24-6	 0.60-14	 2-36

For multichannel operation of Hei-FLOW Precision 01, an adapter for multichannel pump heads and 1 to 4 hose cassettes (please order separately) are required in addition to the 4-channel pump head.

Type	Art. No.	Pack Qty.	€
① Adapter for multichannel pump heads	**CYC7.1**	1	167,00
② 4-channel pump head	**CYC8.1**	1	785,00
③ Hose cassette	**CYC9.1**	1	250,00

Accessories for Hei-FLOW Precision 01 in multichannel operation

2-stopper hoses (2 x 105 stoppers)

Type	Art. No.	Pack Qty.	€
PharMed®, ID 0.2 mm, L 400 mm	**CYE0.1**	1	92,75
PharMed®, ID 0.5 mm, L 400 mm	**CYE1.1**	1	92,75
PharMed®, ID 0.9 mm, L 400 mm	**CYE2.1**	1	92,75
PharMed®, ID 1.4 mm, L 400 mm	**CYE3.1**	1	93,35
PharMed®, ID 2.8 mm, L 400 mm	**CYE4.1**	1	92,80

Extension hoses for stopper hoses

Type	Art. No.	Pack Qty.	€
PharMed®, ID 0.2 mm, L 2 m	**CYE5.1**	1	24,95
PharMed®, ID 0.5 mm, L 2 m	**CYE6.1**	1	21,85
PharMed®, ID 0.9 mm, L 2 m	**CYE7.1**	1	21,85
PharMed®, ID 1.4 mm, L 2 m	**CYE8.1**	1	28,80
PharMed®, ID 2.8 mm, L 2 m	**CYE9.1**	1	21,85

Hose connector made of PTFE for connecting stopper and extension hoses

Type	Art. No.	Pack Qty.	€
For hoses with ID 0.2 to 2.8 mm	**CYH0.1**	1	48,00

▶ Hoses for single-channel pump heads, see page 388
▶ Hoses for multi-channel pump heads, see page 388

HiClass rotarus® peristaltic pumps

By Hirschmann. The stainless-steel housing makes this pump ideal for use in pharmaceuticals and food production.
Choose from two different motor versions: 50i series for low flow rates or high viscosity media and 100i series for high flow rates.
Available with single-channel pump head or multichannel pump head. Alternatively, up to 3 single-channel pump heads can be connected in a daisychain for multichannel operation.

- Control panel directly on pump housing for quick and easy input of basic functions
- Quick-change pump heads
- Reversible direction of rotation (CW / CCW)
- Load-based speed control
- Suitable for continuous duty
- Stackable
- PC connectivity via USB and RS 232 ports

Technical data on pump drives:

Motor version	50i series	100i series
Motor power (W)	50	85
Speed range (RPM)	0.2-100	5.0-500
Delivery rate depending on pump head (ml/min)	0.0005-1200	0.025-6900
Steps (RPM)	0.1	
Total power consumption (W)	60	90
Protection rating	IP 65	
Weight (kg)	approx. 7.3	approx. 10.1
Dimensions (H x W x D) mm	220 x 100 x 205	220 x 100 x 270
Power supply	115-240 V/ 50-60 Hz	

Technical data on pump models:

rotarus® model	Standard	flow	volume
Control panel on pump housing	x	x	x
External control panel with touchscreen	-	x	x
Memory for 20 methods	-	x	x
Calibration function	-	x	x
Pumps by speed	x	x	x
Pumps by flow rate	-	x	x
Pumps by target volume (feeding)	-	-	x
Autom. pump head detection	-	x	x
Autom. hose detection	-	x	x
Hose lifetime monitoring	-	x	x
Autom. hose leak and blockage detection	-	x	x

Characteristics of pump heads:

1-channel pump head	- 3 stainless steel rollers - Hose dimensions inner ∅ 0.8-12 mm, wall thickness 1.6 mm - Cascadable - Head and hose data recognition by RFID
4-channel pump head	- 8 Polysulfon rollers - Hose dimensions inner ∅ 0.19-2.79 mm, variable wall thickness - Variable contact pressure - Head and hose data recognition by RFID

Delivery rates in dependence on hose size:

- **1-channel pump head**
  (with standard pump hoses, wall thickness 1.6 mm):

Inner ∅ (mm)	Delivery rate **50i series** per channel (ml/min)	**Delivery rate 100i series** per channel (ml/min)
1.6	0.08-40	1.9-200
3.2	0.32-160	0.8-850
8.0	1.7-840	42-3900
11.1	2.8-1500	69-5400

- **4-channel pump head** (with stopper hoses):

Inner ∅ (mm)	Delivery rate **50i series** (ml/min)	**Delivery rate 100i series** (ml/min)
0.19	0.001-0.40	0.021-0.90
0.25	0.0017-0.85	0.043-2.1
1.42	0.026-13.0	0.66-32.0
2.79	0.048-22.7	1.7-82.1

Modular design:
pump drive, pump head and pump hose are freely combinable (please order separately). Pump hoses are fitted with a chip which allows for automatic detection and lifetime monitoring of the rotarus® flow and rotarus® volume models. Alternatively, hoses can be used without a chip, in which case, however, the "automatic hose detection" and "hose lifetime monitoring" functions will not be available.

Pump drives

Type	Art. No.	Pack Qty.	€
rotarus® standard 50i	**AXN5.1**	1	2128,50
rotarus® standard 100i	**AXN6.1**	1	2666,00
rotarus® flow 50i	**AXN7.1**	1	2773,50
rotarus® flow 100i	**AXN8.1**	1	3096,00
rotarus® volume 50i	**AXN9.1**	1	3311,00
rotarus® volume 100i	**AXP0.1**	1	3526,00

Pump heads

Type	Art. No.	Pack Qty.	€
① 1-channel pump head rotarus® PK 10-16	**AXP1.1**	1	1058,90
② 4-channel pump head rotarus® MFK 4-8	**AXP2.1**	1	1245,95

Accessories for HiClass rotarus® peristaltic pumps

Standard pump hoses with chip for single-channel pump heads

Type	Art. No.	Pack Qty.	€
PharMed® BPT, ID 1.6 mm, L 7.5 m	**AXP3.1**	1	126,85
PharMed® BPT, ID 3.2 mm, L 7.5 m	**AXP4.1**	1	146,20
PharMed® BPT, ID 8.0 mm, L 7.5 m	**AXP5.1**	1	153,75

Stopper hoses (2 104 stoppers) with chip for multichannel pump heads

Type	Art. No.	Pack Qty.	€
PharMed® BPT, ID 0.25 mm, L 381 mm	**AXP6.1**	6	67,60
PharMed® BPT, ID 1.42 mm, L 381 mm	**AXP7.1**	6	67,60
PharMed® BPT, ID 2.79 mm, L 381 mm	**AXP8.1**	6	67,60

Extension hoses for stopper hoses

Type	Art. No.	Pack Qty.	€
PharMed® BPT, ID 0.25 mm, L 3 m	**AXP9.1**	1	44,95
PharMed® BPT, ID 1.42 mm, L 3 m	**AXT0.1**	1	44,95
PharMed® BPT, ID 2.79 mm, L 3 m	**AXT1.1**	1	44,95

Footswitch

Type	Art. No.	Pack Qty.	€
For starting and stopping	**AXT2.1**	1	91,40

Rotilabo®-piston pump CR-KP292

Compact pump for vacuum and pressure applications.
Suitable for pumping air and neutral gases.

Applications:
pressure filtration of aqueous solutions, use in vacuum ovens, vacuum drying and gas sampling.

Technical specifications:

Delivery rate	9.2 l/min
End vacuum (abs.)	292 mbar
Pressure	3.3 bar
Motor power	25 W
Connections for hose ID	6 mm
Dimensions (L x W x H)	194 x 114 x 191 mm
Weight	2.0 kg
Power supply	230 V, 50 Hz

Art. No.	Pack Qty.	€
CYA9.1	1	310,70

Conversion table for delivery rates

m^3/s	m^3/h	l/min	l/s
1	3600	60000	1000
0.28×10^{-3}	1	16.6667	0.2778
16.67×10^{-6}	0.06	1	0.0167
1×10^{-3}	3.6	60	1

Rotilabo®-diaphragm vacuum pump CR-MV100

For conveying and compressing neutral and aggressive gases and vapours in accordance with the resistance of the given materials.
Continuous manual vacuum adjustment.

Application areas: suitable for vacuum filtration, vacuum drying and solid phase extraction.

Technical specifications:

Delivery rate	10 l/min
End vacuum (abs.)	100 mbar
Motor power	48 W
Connections for hose ID	6 mm
Vacuum regulators	Needle valve
Measuring range / scaling	1000 to 1 mbar / 50 mbar
Dimensions (W x D x H)	144 x 198 x 244 mm
Weight	2.7 kg
Power supply	90-260 V; 50/60 Hz

Materials of pump parts in contact with media:

Seal	EPDM
Hose nozzle / connecting part	PP
Valve	FKM
Diaphragm	PTFE-coated
Hose / separator	PVC
Connector head / pump head	Ryton

Delivery incl. vacuum metering block with pressure gauge and exhaust silencer.

Art. No.	Pack Qty.	€
ECK4.1	1	774,00

Accessories:

Hose nozzle for hoses ID 8 mm	**HLY8.1**	1	21,80

- For Woulff' bottles see page 178
- For tubes see page 384
- Vacuum regulators see page 377
- Desiccators see page 56
- Filter systems see page 511

Membrane controlled vacuum pumps

LABOPORT®-membrane vacuum pumps

By KNF. Ideal for pumping and evacuating **air and neutral or slightly aggressive or corrosive gases and vapours.**

- Thermal switch and power fuse
- Gas and ambient temperature limit: 40 °C
- Suitable for continuous operation
- Very quiet and has minimal vibration
- Voltage frequency: 230 V, 50 Hz

Optional accessories:
- Fine regulator head: For adjustment of the vacuum. Scale: 50/100 mbar increments
- Silencer for all pump types to be assembled on delivery side
- Suction filter for K517.1, Y371.1 and L110.1, to be assembled on intake side

Technical specifications:

Type	Output (l/min)	Vacuum abs. (mbar)	Overpress. (bar)	Power (W)	Weight (kg)	Connectors for hose ID (mm)
N86KN.18	6.0	100	2.4	60	1.9	4
N86KT.18	5.5	160	2.5	60	1.9	4
N811KN.18	11.5	240	2.0	65	2.5	6
N816.3KN.18	16	15	0.5	100	3.95	6
N816.3KT.18	16	20	0.5	100	3.95	6
N816.1.2KT.18	30	160	0.5	100	3.95	6

Materials:

Type	Pump head	Membrane	Valves
N86KN.18	PPS	EPDM	FPM
N86KT.18	PPS	PTFE-coated	FFPM
N811KN.18	PPS	EPDM	FPM
N816.3KN.18	PPS	EPDM	EPDM
N816.3KT.18	PPS	PTFE-coated	FFPM
N816.1.2KT.18	PPS	PTFE-coated	FFPM

Type	Art. No.	Pack Qty.	€
N86KN.18	**K517.1**	1	341,85
N86KT.18	**Y371.1**	1	410,65
N811KN.18	**L110.1**	1	449,35
N816.3KN.18	**EH52.1**	1	686,95
N816.3KT.18	**Y372.1**	1	767,55
N816.1.2KT.18	**Y373.1**	1	783,70
Accessories:			
Silencer	**C557.1**	1	19,30
Suction filter for K517.1, Y371.1 and L110.1	**C558.1**	1	17,15
Hose stems for hose inner ∅ 8 mm	**EL44.1**	1	6,35
Fine control valve for K517.1, Y371.1, L110.1	**HC49.1**	1	73,55
Fine control valve for EH52.1 and Y372.1	**NP66.1**	1	88,70

Membrane controlled vacuum pumps and compressors

By KNF. Ideal for pumping, evacuating and compressing **air and neutral or slightly aggressive and/or corrosive gases and vapours.**
Generates oil-free air pressure and vacuum.
Assists in the analysis and measurement of gases.

- Pump head made of aluminium
- All AN models have a neoprene diaphragm, AT models (T789.1) are PTFE coated
- Max. gas and ambient temperature: 40 °C
- Units have been designed for continuous operation
- Very quiet
- Gas tight
- Non-corroding
- Following order numbers come with noise absorption and hose support C561.1, T356.1
- Power supply: 230 V/50 Hz

Technical specifications:

Type	Output (l/min)	Vacuum abs. (mbar)	Overpress. (bar)	Power (W)	Weight (kg)	Connection for tube ID (mm)
N022AN.18	15	100	4	100	4.0	6
N026.3AN.18	22	20	-	170	5.8	9
N035.3AN.18	30	13	-	300	11.3	9
N026.1.2AN.18	39	100	2	170	5.8	9
N035.1.2AN.18	55	100	4	300	11.3	9
N035.1.2AT.18	50	100	4	300	11.3	9

Type	Art. No.	Pack Qty.	€
N022AN.18	**C559.1** *	1	631,05
N026.3AN.18	**C561.1** *	1	919,15
N035.3AN.18	**T356.1** *	1	979,35
N026.1.2AN.18	**C560.1** *	1	943,85
N035.1.2AN.18	**T357.1** *	1	1013,75
N035.1.2AT.18	**T789.1** *	1	1277,10
Accessories:			
Noise absorption for C560.1, T357.1, T789.1	**T842.1** *	1	21,40

* Longer delivery times possible. Please check with our Sales Department.

Membrane controlled vacuum pumps

LABOPORT® chemically resistant membrane vacuum pumps

By KNF.
For conveying and evacuating **aggressive gases and vapours**.

Applications: for vacuum filtration, drying, distillation, gel drying, SPE, rotation evaporator, vacuum furnace.

- Inner, media-contact area ATEX-compliant acc. to "ATEX II 2GB IIB+H2 T3X internal atmosphere only"
- High gas density
- Permissible media and ambient temperature +5 to +40 °C
- Max. operating pressure 1 bar
- Suitable for continuous duty
- Connections for hose with ID 10 mm
- Power supply: 230 V/50 Hz

Materials:
- Pump head: TFM™ PTFE
- Diaphragm: PTFE-coated
- Valves: FFPM

Models N810.3FT.18G, N820.3FT.18G, N840.3FT.18G with integrated gas ballast valve.

Technical specifications:

Type	Output (l/min)	End vacuum (mbar abs.) without/with gas ballast	Power (W)	Weight (kg)
N810FT.18	10	100 / -	100	5.9
N810.3FT.18	10	8 / -	90	6.9
N810.3FT.18G	10	8 / ≤30	90	6.9
N820FT.18	20	100 / -	130	7.1
N820.3FT.18	20	8 / -	120	9.3
N820.3FT.18G	20	8 / ≤15	120	9.3
N840FT.18	34	100 / -	180	10.3
N840.3FT.18	34	8 / -	245	12.6
N840.3FT.18G	34	8 / ≤12	245	12.6

Type	Art. No.	Pack Qty.	€
N810FT.18	**T350.1** *	1	914,85
N810.3FT.18	**T351.1** *	1	1366,35
N810.3FT.18G	**HKC7.1** *	1	1366,35
N820FT.18	**N149.1** *	1	1154,55
N820.3FT.18	**C563.1** *	1	1699,60
N820.3FT.18G	**HKC8.1** *	1	1699,60
N840FT.18	**T352.1** *	1	1405,05
N840.3FT.18	**C564.1** *	1	1859,75
N840.3FT.18G	**HKC9.1** *	1	1901,70

* Longer delivery times possible. Please check with our Sales Department.

LABOPORT® SD automatic drying vacuum pumps for humid gases

By KNF. Chemically consistent, **for highly aggressive and corrosive gases and steam.**
The pump blows condensed fluid out of the pump heads at a high speed during evacuation. The vacuum in the vessel remains constant.

Applications:
Ideal for e.g. steam sterilizers or for vacuum drying on vacuum drying cabinets to accelerate evacuation time considerably.

- With PTFE pump heads, PTFE-coated membranes, FFPM valves
- Two heads
- High steam and condensate compatibility
- Gas tight, leak rate approx. 6 x 10^{-3} mbar x l/s
- Max. gas and ambient temperature: +40 °C
- With thermal switch and main fuse
- Hose connection ID 10 mm
- Power supply: 230 V/50 Hz

Technical specifications:

Type	N820.3FT.40.18	N840.3FT.40.18
Flow rate (l/min)	20	34
Final vacuum (mbar)	10	
Overpressure (bar)	1	
Weight (kg)	9.6	12.9

Type	Art. No.	Pack Qty.	€
N820.3FT.40.18	**Y369.1** *	1	2012,40
N840.3FT.40.18	**Y370.1** *	1	2423,05

* Longer delivery times possible. Please check with our Sales Department.

Membrane controlled vacuum pumps

Membrane controlled vacuum pump N920 KT.29.18 G

By KNF. For all applications which require **high suction speed at low pressure.**
For delivering and sucking air, gases and vapours, for withdrawing and evacuating samples from containers or systems.

Properties:
- **Flow rate can be adjusted** by regulating the speed with the potentiometer
- Very quiet and low on vibration
- Membrane stabilizing system for high suction speed at low vacuum range
- Model N920KT.29.18G with integrated gas ballast valve
- Max. gas and ambient temperature 40 °C
- Power supply: ~90-240 V, 50/60 Hz

Application range:
For a variety of procedures and processes, e.g. in laboratories, which need to be performed under vacuum conditions. Can also be used in the semiconductor and pharmaceutical industry, chemical and analytic engineering.

Technical specifications:

Output (l/min)	21
Final vacuum (abs.mbar) - without gas ballast - with gas ballast	 2.0 5.0
Max. working overpressure (bar)	0.5
Power output (W)	135
Adapters for hose inner-∅ (mm)	10
Weight (kg)	8.6
Pump head	PPS
Membrane	PTFE-coated
Valves	FFPM

Art. No.	Pack Qty.	€
EP19.1 *	1	2434,90

Accessories:

Muffler/suction filter	**EP20.1** *	1	24,70

* Longer delivery times possible. Please check with our Sales Department.

ME 1 and ME 1C vacuum membrane pumps

By Vacuubrand. Ideal for pumping and evacuating gases and vapours. High specific resistance (especially ME 1C).

Applications:
vacuum filtration for sample preparation in chemical, microbiology, waste water and other analytical processes.

- Simple to use with central power switch mounted on pump housing
- Whisper quiet and very low vibration
- Requires minimal benchtop space
- Long membrane lifetime
- Weight 5 kg
- Dimensions: L 247 x W 121 x H 145 mm
- Finely adjustable vacuum regulation valves are optionally available for ME 1 and ME 1C with manual vacuum control via leakage air. Regulation valve rotates in different directions for optimal visibility.

Technical specifications:

Model	ME 1	ME 1C
Number of heads / stages	1/1	
Max. pumping speed at 50/60 Hz (m^3/h) or (l/min)	0.7/0.85 or 11.7/14.2	
Vacuum abs.(mbar)	100	
Max. abs. back pressure (EX) (bar)	1.1	
Connection suction side (mm)	Hose nozzle DN 6/10	Hose nozzle DN 10
Connection pressure side (mm)	Silencer / G ⅛″	Hose nozzle DN 10
Rated motor power (kW)	0.04	
Parts contacting media	Aluminium, PTFE	ETFE, PTFE

Type	Art. No.	Pack Qty.	€
ME 1	**NA17.1**	1	634,25
ME 1C	**NA18.1**	1	838,50

Accessories:

Vacuum regulation valve with manometer for ME 1	**NA19.1**	1	117,20
Vacuum regulation valve with manometer for ME 1C	**NA20.1**	1	246,20

Membrane controlled vacuum pumps

Membrane pumps MD 1 and MD 1C

By Vacuubrand. For evacuating and conveying gases down to an extremely low end vacuum.

- **Three-stage, for high suction even at low pressures**
- Very quiet and low vibration
- Long service life
- Easy to replace membrane and valve

Available in two designs:
- **MD 1**: Wide range of applications for neutral gases
- **MD 1C**: Especially for aggressive gases through the use of chemical-resistant fluoroplastics, as well as excellent condensate compatibility due to built-in gas ballast valve

Technical specifications:

Model	MD 1	MD 1C
Number of heads / stages	4/3	4/3
Max. pumping speed at 50/60 Hz - in (m^3/h) - in (l/min)	 1.2 / 1.4 20 / 23.3	 1.3 / 1.5 21.7 / 25
End vacuum abs. (mbar) - with gas ballast	1.5 -	2 4
Max. counterpressure abs. (bar)	1.1	1.1
Motor power (W)	80	80
Connection - Suction side - Pressure side	 Hose nozzle DN 6 mm Silencer G 1/8″	 Hose nozzle DN 8-10 mm Hose nozzle DN 8 mm
Dimensions without grip L x W x H (mm)	 303 x 143 x 163	 316 x 143 x 175
Weight (kg)	6.5	6.9
Power connection (V, Hz)	230, 50/60	230, 50/60

Type	Art. No.	Pack Qty.	€
MD 1	**ETY5.1** *	1	1435,15
MD 1C	**HC95.1** *	1	2451,00

* Longer delivery times possible. Please check with our Sales Department.

Membrane controlled pump ME 4 NT

By Vacuubrand.
Ideal for analytic applications with **non-aggressive gases**, for the laboratory and industrial use.

- Continuous, oil-free pumping of gases
- Very low leakage rate due to extremely tight coupling technology
- Highly flexible **FPM**-double membranes with tissue reinforcement for long membrane life
- Compact drive system for extremely quiet and smooth running
- High life-cycle
- Easy changing of membrane and valve

Technical specifications:

Max. suction speed 50/60 Hz (m^3/h) or (l/min)	4.0/4.4 or 67/73
Final pressure (mbar abs.)	70
Max. pressure difference between intake and outlet (bar)	2
Connection at suction side, hose shaft (mm)	10
Pressure side	Sound absorbers
Motor output (kW)	0.18
Dimensions L x W x H (mm)	243 x 239 x 198
Weight (kg)	11

Type	Art. No.	Pack Qty.	€
ME 4 NT	**KH50.1**	1	1338,40

Rotary vane pumps

MPC-series membrane controlled pumps

By Welch Vacuum. Ideal for conveying and compressing **neutral and aggressive gases and vapours.**
Application range: In physical and chemical laboratories for vacuum-filtration, -distillation, -drying, etc.

- Connection-/pump head made of PTFE with carbon fiber reinforcement
- Gasket EPDM, Screw connectors PVDF, valves PEEK, membrane disk NBR, connecting elements PP
- Max. supply pressure / max. outlet pressure 1 bar
- Inlet-/Outlet side for tube interior-∅ 8 mm
- Max. ambient level 40 °C
- Max. operating gas-temperature 80 °C
- Main supply 230 V, 50/60 Hz

Technical specifications:

Type	MPC 101 Z (2-stage)	MPC 301 Z (2-stage)	MPC 601 T (3-stage)
Pumping capacity (l/min)	16.7	38.3	75
Final vacuum (mbar)	<8	<8	<2
Power (kW)	0.06	0.18	0.37
Weight (kg)	6.5	11.2	18.3
Dimensions W x D x H (mm)	195 x 235 x 145	230 x 265 x 169	230 x 380 x 169

Type	Art. No.	Pack Qty.	€
MPC 101 Z	**CE38.1** *	1	1220,15
MPC 301 Z	**CE39.1** *	1	1660,90
MPC 601 T	**CE40.1** *	1	3294,90

* Longer delivery times possible. Please check with our Sales Department.

Rotary vane pump packages CRVpro series

By Welch Vacuum.
Complete package with two-stage rotary vane pumps.

Advantages:
- Low operating temperature due to enhanced cooling geometry
- Coating of the pump body and the oil container as protection against chemical vapours
- Low oil consumption and corrosion inhibitor due to low heat development during operation
- Large oil reservoir reduces the concentration of chemicals, whereby the oil change intervals are increased

Applications:
- Freeze dryer (CRVpro 4/6/8)
- Vacuum centrifuge (CRVpro 6)
- Vacuum furnaces (CRVpro 8)
- Schlenk Technology (CRVpro 4)
- Glove Box (CRVpro 8)

Technical specifications:

Type	CRVpro 4	CRVpro 6	CRV pro 8
Pumping speed (at 50 Hz) - m^3/h - l/min	 3.8 63	 5.1 85	 7.3 122
Ultimate total pressure - without gas ballast (mbar) - with gas ballast (mbar)	2 x 10^{-37} x 10^{-2}		
Connection flange DN	16 KF		
Sound level at 50 Hz (dB (A))	50		
Oil filling (l)	1.15	1.15	1.0
Motor power at 50 Hz (kW)	0.37		
Weight (kg)	21	22	22.5
Dimensions: W x D x H (mm)	463 x 157 x 230		

Delivery incl. oil mist separator AKD 16, 2-way ball valve, adapter flange DN16KF-10/8 mm, vacuum hose (1.5 m), oil change set incl. 2 x 1 l oil, clamping and centring rings.

Type	Art. No.	Pack Qty.	€
Pump package CRVpro 4	**HKE0.1** *	1	2456,40
Pump package CRVpro 6	**HKE1.1** *	1	2682,15
Pump package CRVpro 8	**HKE2.1** *	1	3058,40

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Vacuum pump oil for CRVpro series (1 l)	**HKE3.1**	1	26,80

- For Woulff' bottles see page 178
- Tubes from page 384
- Vacuum regulators see page 377
- Desiccators see page 56

Rotary vane pumps

XS rotary vacuum pumps

By Vacuubrand. For pressure ranges up to 10^{-3} mbar.

Advantages:

- High suction capacity, even at low ultimate pressure
- High water vapour tolerance
- Active corrosion protection against ingress of corrosive gases and oil components at standstill through vacuum-tight oil circuit
- New circulation lubrication system
- Compact design and low weight
- Starts reliably even at low temperatures
- Long oil change intervals thanks to high usable oil volume
- Easy maintenance thanks to telescopic design

① Single-stage version

Technical specifications:

Type	RE 2.5
Suction capacity	2.3 / 2.8 m^3/h
Ultimate total pressure - without gas ballast - with gas ballast	 2 x 10^{-3} mbar 1 x 10^{-2} mbar
Water vapour tolerance	40 mbar
Min./max. oil fill	0.18 / 0.51 l
Connection - Suction side - Pressure side	 DN 16 small flange DN 10 hose nozzle
Dimensions (L x W x H)	308 x 125 x 190 mm
Weight	10.2 kg
Motor power	0.18 kW
Power supply	230 V, 50/60 Hz

Delivery incl. oil fill, thermal motor circuit-breaker, power cord (2 m long), clamping and centring ring for suction piece.

Type	Art. No.	Pack Qty.	€
RE 2.5	**CE14.1** *	1	1510,40

* Longer delivery times possible. Please check with our Sales Department.

② Two-stage version

Technical specifications:

Type	RZ 2.5	RZ 6	RZ 9
Suction capacity (m^3/h)	2.3 / 2.8	5.7 / 6.8	8.6 / 9.9
Ultimate total pressure - without gas ballast (mbar) - with gas ballast (mbar)	 2 x 10^{-3} 1 x 10^{-2}	 2 x 10^{-3} 1 x 10^{-2}	 2 x 10^{-3} 1 x 10^{-2}
Water vapour tolerance (mbar)	40		
Min./max. oil fill (l)	0.1 / 0.28	0.34 / 0.73	0.2 / 0.8
Connection - Suction side - Pressure side	 DN 16 small flange DN 10 hose nozzle		 DN 25 small flange DN 25 hose nozzle
Dimensions L x B x H (mm)	308 x 125 x 190	370 x 142 x 207	460 x 152 x 232
Weight (kg)	11.4	16.4	24,2
Motor power (kW)	0.18	0.3	0.37
Power supply	230 V, 50/60 Hz		

Delivery incl. oil fill, thermal motor circuit-breaker, power cord (2 m long), clamping and centring ring for suction piece - can also be used for exhaust port with RZ 9.

Type	Art. No.	Pack Qty.	€
RZ 2.5	**CE15.1** *	1	2069,40
RZ 6	**HC94.1** *	1	2644,50
RZ 9	**CTL2.1** *	1	3450,75

* Longer delivery times possible. Please check with our Sales Department.

XS rotary pumps packages

By Vacuubrand.

Package 1 + 2

Delivery incl.:

- Two-stage pump with oil fill
- Exhaust filter FO for removing oil mist
- Butterfly valve VS 16 with extremely low leakage rate and low gas release
- PP adapter, small flange DN 16 on DN 10 hose nozzle. Clamping and centring rings

Package 3

Delivery incl.:

- Two-stage pump with oil fill
- Exhaust filter FO for removing oil mist
- Butterfly valve VS 16 with extremely low leakage rate and low gas release
- PP adapter, small flange DN 16 on DN 10 hose nozzle. Clamping and centring rings
- Set comprising vacuum meter DCP 3000 with pressure transducer VSK 3000

Type	Art. No.	Pack Qty.	€
Package 1 incl. RZ 2.5 + FO + VS 16 + SW DN 10	**NA10.1** *	1	2375,75
Package 2 incl. RZ 6 + FO + VS 16 + SW DN 10	**NA11.1** *	1	2848,75
Package 3 incl. RZ 6 + FO + VS 16 + SW DN 10 + set comprising DCP 3000 and VSP 3000	**CTL3.1** *	1	3843,15

* Longer delivery times possible. Please check with our Sales Department.

Vacuum meter

Accessories for XS rotary pumps

By Vacuubrand.

① **Exhaust filter FO**
Provides optimal protection against oil-polluted air in the laboratory.
Receptacle made of PMP, highly resistant to chemicals.

Type	Art. No.	Pack Qty.	€
FO for RE 2.5, RZ 2.5 and RZ 6	**N404.1** *	1	307,45
FO for RZ 9	**CTL4.1** *	1	361,20

② **VS butterfly straight way valves**
Made of stainless steel.

Type	Art. No.	Pack Qty.	€
VS 16, KF DN 16	**CTL5.1** *	1	340,80
VS 25, KF DN 25	**CTL6.1** *	1	408,50

PP adapter from small flange (KF) to hose nozzle (SW)
For connecting hoses with inner ∅ 10 or 15 mm to the pumps.
*1 The smaller inner ∅ may result in a loss of suction.

Type	Art. No.	Pack Qty.	€
PP adapter from KF 16 to SW 10	**CTL7.1** *	1	20,65
PP adapter from KF 25 to SW 10*1	**CTL8.1** *	1	28,60
PP adapter from KF 25 to SW 15	**CTL9.1** *	1	30,10

AK suction side separator
Retains particles and liquid droplets, e.g. when used on drying cabinets. Fits directly onto suction port. Clear catch tank allows optimal condensation control. Single condensate outlet.

Type	Art. No.	Pack Qty.	€
③ AK for RE 2.5, RZ 2.5	**CTN0.1** *	1	267,70
AK for RZ 6	**CTN1.1** *	1	321,45
④ AK for RZ 9	**CTN2.1** *	1	334,35

⑤ **Main flow oil filter for RZ 9**
Filters microparticles out of the oil. This extends oil life and reduces servicing requirements. The maintenance indicator saves unnecessary filter changes.

Type	Art. No.	Pack Qty.	€
Main flow oil filter for RZ 9	**CTN3.1** *	1	447,20

Clamping and centring rings
For attaching valves, hose nozzles etc. A single clamping ring and a single centring ring of the same size are required to ensure that a proper connection is made.

Type	Art. No.	Pack Qty.	€
Aluminium clamping ring KF DN 10/16	**CTN4.1** *	1	20,35
Outer centring ring KF DN 10/16 with NBR seal	**CTN5.1** *	1	8,50
Aluminium clamping ring KF DN 20/25	**CTN6.1** *	1	20,45
Outer centring ring KF DN 20/25 with NBR seal	**CTN7.1** *	1	9,65

Pump oil

Type	Art. No.	Pack Qty.	€
1 l pump oil	**N406.1** *	1	32,60

* Longer delivery times possible. Please check with our Sales Department.

Vacuum regulator VAR and vacuum meter VAC

The units are connected to an vacuum pump in series on the pressure side.
- Connections for hose with inside ∅ 8 mm
- Stand mounting possible (using spring clamps on the back of the device)

① **Vacuum regulator VAR**
With regulator for controlling and maintaining the vacuum.
Continuously variable for variable vacuum level.

② **Vacuum meter VAC**
Ideal for displaying the current vacuum level.

Technical specifications:

Measuring range	1020 to 0 mbar
Graduation	10 mbar
Dimensions (W x D x H)	80 x 80 x 150 mm

Type	Art. No.	Pack Qty.	€
Vacuum regulator VAR	**Y457.1**	1	212,85
Vacuum meter VAC	**NA03.1**	1	149,45

NEW

Vacuum measuring device DVR 2pro

By Vacuubrand. Chemical-resistant materials in area in contact with media for excellent long-term stability and accuracy.
- Integrated ceramic membrane pressure sensor (aluminium oxide)
- Digital pressure display, with additional analogue representation
- Selectable pressure unit (mbar, hPa, torr)
- Measuring principle: capacitive, absolute pressure measurement independent of gas type
- Automatic switch-off after 1 to 600 min or continuous operation
- Max. media temperature: +40 °C (for continuous operation)
- Adjustable measuring cycle: automatic, 1x per 3 s, 1 x per 1 s or 3 x per 1 s

Technical specifications:

Measuring range	1060 to 1 mbar (hPa) 795 to 1 torr
Measurement accuracy	<±1 mbar/hPa/torr
Vacuum connection	Small flange KF DN 16 Staged hose fast DN 6/10 mm Hose connection for PTFE hoses (ID 8, OD 10 mm)
Dimensions L x W x H (mm)	115 x 115 x 90 mm
Weight	approx. 400 g

Delivery incl. 9 V block battery (alkaline-manganese), vacuum connection parts and stand rod.

Art. No.	Pack Qty.	€
HTE7.1	1	639,65

Accessories:

E-Block 9 V battery	**1025.1**	1 piece	4,85

Vacuum meter for coarse and fine vacuum

By Welch Vacuum. Digital multi-range vacuum meter for measuring absolute pressure in the coarse and fine vacuum ranges. With chemically resistant combined sensor (PIEZO/PIRANI) for corrosive and aggressive gases and vapours.

- Automatic changeover between capacitive and PIRANI measuring ranges
- Temperature compensated for operating temperatures from 0 to +60 °C
- Calibration of individual measured values
- With clamp for attaching to stand rods ∅ 8-12 mm.
- Battery or mains operation

Technical specifications:

Measuring range	1050 to 10^{-3} mbar absolute pressure
Resolution	1 mbar (1050 to 100 mbar) 0.5 mbar (99 to 1 mbar) 0.1 mbar (0.9 to 0.1 mbar) 0.01 mbar (0.09 to 0.01 mbar) 0.001 mbar (0.009 to 0.001 mbar)
Measuring principle	capacitive acc. to PIRANI
Measurement accuracy capacitive acc. to PIRANI	 0.8 % full scale (5 to 1050 mbar) ±20 % of displayed value
Reproduction uncertainty	<0.5 %
Measuring lead	3 m
Dimensions L x W x H (mm) Display unit Sensor	 80 x 36 x 125 mm 80 x 40 x 40 mm
Weight	0.7 kg
Power supply	90-260 V, 50/60 Hz

Delivery incl. power adapter (9 V/200 mA), hose nozzle DN 8-10, clamp and 9 V battery.

Art. No.	Pack Qty.	€
CNL1.1	1	878,30

Vacuum meter DCP 3000 with pressure transducer

By Vacuubrand. LCD graphic display with digital pressure indicator and bar graph representation. Different units (mbar, hPa, Torr) can be set. Separate pressure transducer with measurement cable for flexible positioning of meter (cable length 2 m). Can be used as a tabletop unit or with a support.

Technical specifications:

Model	**① Pressure transducer VSK 3000**	**② Pressure transducer VSP 3000**
Measuring ranges	1080 to 0.1 mbar 810 to 0.1 Torr	1 x 10^3 to 1 x 10^{-3} mbar 75 x 10^2 to 1 x 10^{-3} Torr
Measuring accuracy	<±1 mbar	±15 % of displayed value within the 0.01 to 10 mbar range
Resolution	0.1 mbar	10 % of displayed decade
Vacuum connection	for hoses with IDs 6, 8 or 10 mm	
Measuring principle	capacitive	Heat conduction according to PIRANI
Sensor material, contacting medium	Aluminium oxide ceramic	
Dimensions of display unit (L x W x H)	124 x 124 x 114 mm	
Weight	440 g	
Mains connection	100-230 V, 50/60 Hz	

Delivery incl. DCP 3000 vacuum meter with desired pressure transducer, measuring cable and support.

Type	Art. No.	Pack Qty.	€
Vacuum meter DCP 3000 with pressure transducer VSK 3000	**LY74.1**	1	1150,25
Vacuum meter DCP 3000 with pressure transducer VSP 3000	**LY75.1**	1	1128,75

Accessories:

Replacement/additional pressure transducer VSK 3000	**LY76.1**	1	422,50
Replacement/additional pressure transducer VSP 3000	**LY77.1**	1	392,40
Extension leads for pressure transducers VSK 3000 and VSP 3000, 10 m	**LY78.1**	1	93,20

Vacuum controllers CVC 3000 detect

By Vacuubrand. Two-point vacuum regulator with integrated ceramic diaphragm vacuum sensor.

- Backlit LCD graphic display with bargraph
- "Detect" function for automatic boiling pressure detection
- Vacuum measurement is integrated within the valve block - direct connection of CVC 3000 detect between pump and vacuum application
- Ten programs with vacuum and time presets, each storable in ten program steps
- Process time is adjustable from 1 to 1440 min
- Integrated venting valve - easy pressure equalisation or ventilation with inert gas at the end of the process
- Non-return valve - no interference with adjacent applications using a shared vacuum source

Technical data:

Measuring ranges	1081 to 0.1 mbar 810 to 0.1 Torr
Measurement accuracy	<±1 mbar
Resolution	0.1 mbar
Vacuum connection	For hoses with ID 6/10 mm
Venting valve, connection	For hoses with ID 4-5 mm
Measuring principle	Capacitive, absolute pressure measurement independent of gas type
Display unit dimensions (L x W x H)	181 x 162 x 174 mm
Weight	1.5 kg
Power supply	100-230 V, 50/60 Hz

Delivery incl. vacuum controller CVC 3000 detect with vacuum valve, venting valve, non return valve, power supply and ① bench stand or ② stand mount.

Type	Art. No.	Pack Qty.	€
① CVC 3000 detect benchtop unit	**AEP6.1**	1	2047,90
② CVC 3000 detect stand-mounted unit	**AEP7.1**	1	2047,90

SC 920 G vacuum pump system with remote control

By KNF. Chemical-resistant, suitable for aggressive and corrosive gases and vapours.

- Can be controlled via a PC or remote control
- Increased safety: No need to open the fume cupboard to operate the vacuum system
- LCD screen displays actual and target values
- Automatic boiling point detection and boiling point tracking using integrated ramp function
- High recovery rates even with solutions that have very low boiling points
- Delivery rate (in %) can be adjusted via speed
- Integrated gas ballast valve
- Quiet operation

Technical specifications:

Delivery rate	max. 21 l/min
End vacuum abs. without gas ballast with gas ballast	 max. 2 mbar max. 5 mbar
Tube connection	ID 10 mm
Receiving flask	Made of coated glass (implosion-resistant), capacity: 500 ml
Port	Mini USB
Dimensions (W x H x D)	366 x 423 x 294 mm
Total weight	15.2 kg
Power supply	100-240 V, 50/60 Hz

Materials of pump parts in contact with media:

Pump head	PPS
Diaphragms	PTFE-coated
Valves	FFPM
Seals	FPM
Tube shafts	PVDF

Radio remote control:

Display	LCD
Operation	Touchscreen/push-and-turn dial
Range	max. 50 m
Power supply	Batteries (4 x 1.2 V 2500 mAh AA) or power supply
Dimensions (W x H x D)	90 x 205 x 55 mm
Weight	0.51 kg

Delivery incl. radio remote control with batteries and power supply, 2 receiving flasks, 2 flask clamps, USB cable for connecting to a PC and software (compatible with Windows).

Art. No.	Pack Qty.	€
EHP1.1	1	4569,85

Chemical-resistant LABOXACT®-SEM vacuum systems

By KNF. Ideal for application with rotary evaporators.

Design:
- **Digital-vacuum meter**, shows the current pressure in the system
- **Fine control valve** for infinitely adjustable vacuum regulation
- **Safety ventilation valve** enables the piston to be aired at any time to stop evaporation
- **Separate On/Off-switch** for pump
- **Inert gas supply**
- Connection for hose-ID 10 mm
- Power supply 230 V, 50 Hz
- Comes completely assembled

Advantages:
- Safe monitoring of evaporation
- High recovery rate, even when using low boiling solvents
- The closed system allows for gentle distillation
- Infinitely variable regulation of vacuum via fine control valve
- Once the desired vacuum has been achieved, the fine regulator valve can be closed and the pump switched off
- Maintenance-free and quiet

Delivery incl. base plate, separator, condenser, fine control valve, vacuum meter (digital), safety ventilation valve, cables and tubes.

Chemical-resistant LABOPORT®-SC vacuum systems

By KNF. With separator, condenser and vacuum-controller.
For laboratories which require a clean and controlled vacuum.

Examples of applications:
- Vacuum distillation and -filtration
- Rotary evaporators
- Vacuum drying
- Vacuum impregnation
- Gel drying, etc.

Design:
- **Vacuum-Controller** for controlled vacuum processes
- The control unit switches the pump off or closes it, when the required vacuum has been achieved or exceeded
- Connection for hose-ID 10 mm
- Power supply 230 V, 50 Hz
- Comes completely assembled

Advantages:
- Automatic control of vacuum
- Controlled solvent recovery through high-performance condenser (delivery side)
- Collecting of particles in the system (suction side)
- Maintenance-free and quiet

Delivery incl. base plate, separator, condenser, vacuum-controller with control unit, cables and tubes.

System	Flow rate capacity (l/min)	Vacuum abs (mbar)	Overpressure (bar)	Weight (kg)	L x W x H (mm)	Integral pump type	Art. No.	Pack Qty.	€
SEM 810	10	8	-	12,1	442 x 305 x 481	N 810.3 FT.18	**AY11.1** *	1	2764,90
SEM 820	20	8	-	14,5	442 x 305 x 481	N 820.3 FT.18	**AY12.1** *	1	2965,95
SEM 840	34	8	-	17,8	442 x 305 x 481	N 840.3 FT.18	**AY13.1** *	1	3327,15
SEM 842	34	2	-	18,6	442 x 305 x 481	N 842.3 FT.18	**AY14.1** *	1	4262,40
SC 810	10	8	1	13,6	397 x 289 x 506	N 810.3 FT.18	**AY15.1** *	1	4291,40
SC 820	20	8	1	16,0	397 x 289 x 506	N 820.3 FT.18	**AY16.1** *	1	4488,15
SC 840	34	8	1	19,3	417 x 289 x 506	N 840.3 FT.18	**AY17.1** *	1	4573,05
SC 842	34	2	1	20,1	417 x 289 x 506	N 842.3 FT.18	**AY18.1** *	1	5815,75

* Longer delivery times possible. Please check with our Sales Department.

Laboratory vacuum system LVS 105 T-10 ef

By Welch Vacuum. Specially designed for rotary evaporators, distillation, filtration, vacuum ovens and vacuum drying. Chemical resistant diaphragm vacuum pump and vacuum controller. To provide a freely selectable vacuum of ±1 mbar, pump speed is continuously adapted to the gas load.

Advantages:
- Faster process results are ensured by constant evaporation and degassing
- Automatic vacuum adjustment and control
- Integrated solvents library with stored distillation-specific parameters or freely adjustable boiling points
- Multilingual digital display (languages include DE, FR, EN and ES)
- Low-noise operation through speed reduction

Pump parts materials in contact with media:

Seal	EPDM
Screw coupling / terminals	PP, PVDF
Valve	PEEK
Diaphragm	PTFE backing
Vacuum hose	PTFE
Connector head / pump head	PTFE with carbon fibre reinforcement

Technical specifications:

Delivery rate	20 l/min
Vacuum abs.	<2.0 mbar
Max. inlet/outlet pressure	1 bar
Connections for ID hoses	8 mm
Output	830 W
Dimensions (W x D x H)	250 x 260 x 435 mm
Weight	9.5 kg
Power supply	90-240 V, 50/60 Hz

Delivery incl. chemical resistant diaphragm pump with gas ballast valve, built-in controller, ecoflex control unit, suction-side separator with 500 ml round bottom flask, pressure-side coil condenser with 500 ml round bottom flask and safety valve.

Art. No.	Pack Qty.	€
NH35.1 *	1	3434,65

* Longer delivery times possible. Please check with our Sales Department.

Safety suction system biovac 106

By Welch Vacuum. For safe and precise extraction of liquids, and non-explosive supernatants from microscopic slides, Petri dishes and other containers.

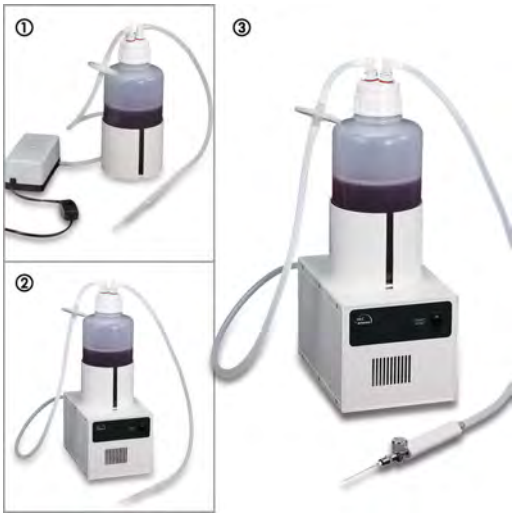
- Incl. highly durable chemical-resistant membrane pump
- The connection between the membrane pump and the handpiece are made with quick-coupling with double-sided stop valve
- Different pipettes or glass tips can be inserted via pipettor holder. Delivery includes 8-channel-suction screen
- Integrated 2 l drain bottle (autoclavable) with built-in float valve, closes automatically once max. filling level has been reached
- Has an integrated filter holder for the membrane filter between the drain bottle and membrane pump
- Membrane filters with max. 0.22 µm pore size, ∅ 55 mm can be used. Comes equipped ex works with: PTFE filter, 0.22 µm, ∅ 55 mm
- If desired, the pump can also be switched on/off via foot switch (available as an optional accessory)

Technical specifications:

Suction speed	0.72 m^3/h or 12 l/min
Ultimate pressure	<100 mbar
Max. supply pressure	1 bar
Max. outlet pressure	1 bar
Ambient temperature	+10 to +40 °C
Media temperature	max. +40 °C
Dimensions (W x D x H)	357 x 145 x 277 mm
Weight	8 kg
Current	50/60 Hz, 115 or 230 V (adjustable)

Type	Art. No.	Pack Qty.	€
Biovac 106 incl. extension	**KH49.1** *	1	1750,10
Foot switch	**EP49.1** *	1	149,45

* Longer delivery times possible. Please check with our Sales Department.



Vacuum safety extraction systems AZ, AC, AA

By Hettich Benelux. For safe vacuum extraction of liquid residues.

Basic equipment:
- Vacuum pump
- Collecting bottle made of PP, vacuum resistant, autoclavable
- Screw cap with 2 quick release couplings for right sealing of the collecting bottle after the hoses are disconnected
- Aeration insert for pressure equalisation during autoclaving of collecting bottle
- Safety filter to protect the vacuum pump and environment
- 3 m silicone rubber hose for placing extraction system away from the workbench

Technical specifications:

Type	① AZ02 / AZ04	② AC02 / AC04	③ AA02 / AA04
Suction capacity (l/min)	8	25	17
End vacuum (abs.) (mbar)	700	250	100
Additional sampling points (optional)	-	1	1 to 3
Housing dimensions W x D x H (mm)	75 x 170 x 60	170 x 220 x 155	170 x 220 x 155
Weight (kg)	1.5	4.5	5.5
Power supply	230 V, 50 Hz		

① Type AZ
- Simple system for extraction of small volumes
- Attachment of Pasteur pipettes or aspiration pipettes directly to the hose
- Please order metal stand for the collecting bottle separately

② + ③ Type AC/AA
- Lacquered aluminium housing
- Compact design, safety bottle holder mounted on high-performance vacuum pump
- Suitable for multiple sampling points

③ Additional features of type AA
- Handle with trumpet valve AH 01 for attaching various suction instruments and a mechanical flow rate control system; incl. adapter for Pasteur pipettes, adapter for 1 ml pipette tips and angle adapter
- Vacuum pump with automatic cut-out. The pump cuts out automatically on completion of extraction and when the terminal vacuum is reached

Image	Type	Capacity of collecting bottle (l)	Art. No.	Pack Qty.	€
①	AZ 02	2	**CE30.1** *	1	428,95
①	AZ 04	4	**CE31.1** *	1	450,45
②	AC 02	2	**HA39.1** *	1	993,30
②	AC 04	4	**HA40.1** *	1	1015,90
③	AA 02	2	**CE32.1** *	1	1444,80
③	AA 04	4	**CE33.1** *	1	1455,55

* Longer delivery times possible. Please check with our Sales Department.

Accessories for extraction systems AZ, AC and AA

By Hettich Benelux.

*1 Recommended for AZ system
*2 Included with AA system
*3 Recommended for AZ/AC systems

Image	Type	Art. No.	Pack Qty.	€
-	Metal stand for 2 l bottle *1	**EA38.1**	1	80,65
-	Metal stand for 4 l bottle *1	**EA39.1**	1	82,80
①	Handle with trumpet valve AH 01, incl. adapter for Pasteur pipettes, adapter for 1 ml pipette tips, angle adapter *2	**HA41.1**	1	197,80
-	Footswitch AF 01 for switching pump on and off *3	**EA40.1**	1	220,40
②	Adapter for pipette tips	**CE34.1**	1	21,00
③	Adapter incl. suction rake	**CE35.1**	1	62,35
④	Suction rake	**CE36.1**	1	14,85
-	Rotilabo® Y-pieces for connecting additional sampling point	**E772.1**	10	12,85
⑤	Spare cover for EA36.1	**PL94.1**	1	112,90
⑤	Spare cover for EA37.1	**PL95.1**	1	123,65
-	2 l spare bottle with quick closures	**EA36.1**	1	180,60
-	4 l spare bottle with quick closures	**EA37.1**	1	197,80
⑥	Spare elbow hose nozzle with quick closures	**KA53.1**	1	19,15
-	Spare safety filter (Millex®-FG)	**CY06.1**	10	130,10

S

Aspiration pipettes

Made of **PS**. **Sterile.** Pipettes without cotton stopper, without graduation. Suitable for vacuum applications and liquid handling where high precision is not required. Safe alternative to pasteurizing pipettes made of glass.

Volume (ml)	Packaging	Length (mm)	Art. No.	Pack Qty.	€
2	individually wrapped	271	**NA41.2**	200	21,45
10	individually wrapped	295	**NA42.1**	200	57,00

BioChemVacuuCenter BVC liquid extraction stations

By Vacuubrand. Safe, exact and effective extraction of liquids in all laboratory areas (chemistry, biochemistry and biology).
- Anatomically shaped VHC extraction handle with continuous tube, mechanism does not come into contact with fluids
- With swivelling pipette holder, for left and right handed users
- Lockable button for continuous extraction, µl precision extraction using thumbwheel
- Simultaneous extraction at 2 workstations is possible by connecting an optional second extraction handle
- Hydrophobic protective filter with 0.2 µm pore size for protection of the pump unit and the environment

① **BVC Basic**
- Without vacuum pump, for connecting to external vacuum sources
- With mechanical vacuum control for optimal working vaccum

② + ③ **BVC Control and BVC Professional**
- With high-performance, chemical resistant diaphragm pump ME 1C
- Continuous fine adjustment of vacuum/suction power electronically via touch panel
- Continuous vacuum with minimised pumping times by automatic pump activation/deactivation
- Very low noise level for a comfortable working environment

③ **BVC Professional**
- Also included: non-contact level sensor for electronic monitoring of the fluid level in the collection bottle
- Self-closing PVDF quick couplings for safe bottle changing

Note: when the quick couplings are fitted, unscrew the cap before autoclaving and place it on the bottle.

Technical specifications of diaphragm pump ME 1C:

Max. vacuum abs.	150 mbar (shutoff vacuum)
Max. suction capacity at 50/60 Hz	0.7/0.85 m^3/h or 11.7/14.2 l/min
Motor rating	0.04 kW

Delivery incl.:
BVC Basic
Housing, 4 l **PP** collection bottle (vacuum resistant, autoclavable), sterilisable protective filter (0.2 µm pore size), extraction handle VHC^{pro} (autoclavable), 3 adapters to hold various pipettes and tips, silicone rubber tube (2 m long).
BVC Control and BVC Professional
Also included: diaphragm pump and operating unit
BVC Professional
Also included: level sensor and quick couplings.

Optional
2 l borosilicate glass bottle for working with chemically aggressive solutions, plastic casing protects against mechanical damage and minimises loss of fluid in the event of glass breakage. An adapter is available to securely hold the glass bottle in the BVC Control and BVC Professional pump units. Self-closing quick couplings, made for PVDF for convenient and safe bottle changing.

Type	Art. No.	Pack Qty.	€
BVC Basic	**XE35.1** *	1	774,00
BVC Control	**XE36.1** *	1	1591,00
BVC Professional	**XE37.1** *	1	2096,25

Accessories:

4 l PP collection bottle (incl. lid with hose nozzles, protective filter and hose piece for connecting to the BVC)	**XE38.1** *	1	231,15
2 l borosilicate glass collection bottle (incl. lid with hose nozzles, protective filter and hose piece for connecting to the BVC)	**XE39.1** *	1	312,85
Adapter for 2 l glass bottle	**XE40.1** *	1	45,40
Replacement/second suction handle VHC^{pro} (incl. suction hose L 2.5 m, adapter for various pipettes/tips, wall mounting bracket)	**CYA7.1** *	1	143,00
Add-on kit for second VHC (hose clamp and inlet tube)	**XE41.1**	1	39,90
VHC^{pro} 8-channel adapter for pipette tips with ejector (tip size 2-200 µl or 5-300 µl, suitable for 96-well microtiter plates)	**CYA8.1** *	1	328,95
Millex®-FG	**CY06.1**	10	130,10
Quick coupling for connecting the VHC extraction handle to the collection bottle	**XE42.1** *	1	105,80
Quick coupling for connecting the pump to the collection bottle	**XE43.1** *	1	90,35

* Longer delivery times possible. Please check with our Sales Department

Aspirator

By Brand. Bottle-top suction device, e.g. for cell culture. For safe and quick suction of liquid residue from bottles, test tubes and other storage.
Items that touch the sample are made of **PP, PE and EPDM**.
- A vacuum pump is not required
- A vacuum is generated by pressing down the piston
- Suction volume per piston stroke max 25 ml
- Vacuum can be regulated with hand regulator
- GL 45 thread (with GL 45/32 and GL 45/S 40 thread adapters)
- Adapter and suction tube are autoclavable
- Can be disassembled easily for cleaning and maintenance
- Can also be used with pipettor tips, pasteur pipettes or capillary pipettes
- Incl. spare dosing unit

Art. No.	Pack Qty.	€
Y526.1	1	216,10

Water jet pumps

Water jet pump

Made of **PP**, ideal for sucking up liquids and vapours and for producing a vacuum. With integral non-return valve. Can be detached for easy cleaning.

Tap connection via:

Coupling nut R¾″ or
reducing adapter R½″ or
hose connection (olive) with outer-∅ 10-12 mm
Vacuum connection: Olive with outer-∅ 6-9 mm

Please order following accessories separately:
Adapters from R¾″ on M22 x 1 (perlator thread), with seal.

Technical specifications:

Water consumption	approx. 190 l/h at 3.5 bar flow pressure
Pump capacity	approx. 400 l air/h at 3.5 bar flow pressure
Max. vacuum at 3.5 bar water pressure	approx. 16 mbar at +12 °C approx. 24 mbar at + 20 °C
Length of water jet pumps at R¾″-connection	approx. 210 mm

Type	Art. No.	Pack Qty.	€
Water jet pump	**7366.1**	1	46,25
Adapter with Perlator thread	**N876.1**	1	11,95

Low pressure-water jet pumps

Made of nickel-plated brass with plastic sleeve. With vacuum strength 16 mbar (at 0.5 bar and +14 °C). Water consumption 4-12 l/min.
With integral no-return valve. Dimensions: H 185 x W 80 mm.
Weight approx. 250 g. Pump capacity at 5 bar water pressure 2.5 l/min.
Connection suction nozzle 9-14 mm.

Model	Art. No.	Pack Qty.	€
With tubing connection and 2 hose clips	**9660.1**	1	167,00
With ½″ thread connection (20 mm)	**9661.1**	1	176,00
With ¾″ thread connection (26 mm)	**9662.1**	1	176,00

Rotilabo®-rubber tubes

Temperature range -10 to +50 °C. Red, made of natural rubber, not pressure resistant. Hardness: 45 Shore A.

Standard tubes

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
5	8	1,5	**0674.1**	10	16,10
6	10	2,0	**0675.1**	10	21,45
6	10	2,0	**0675.2**	25	46,50
8	12	2,0	**0676.1**	10	25,70
8	12	2,0	**0676.2**	25	55,50
10	14	2,0	**0677.1**	10	28,50
12	17	2,5	**T981.1**	12	45,15
14	20	3,0	**T982.1**	12	63,45
16	22	3,0	**T983.1**	12	81,70
20	28	4,0	**T984.1**	5	54,85

Vacuum tubes

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
5	15	5,0	**0678.1**	5	26,75
6	16	5,0	**0679.1**	5	28,95
6	16	5,0	**0679.2**	25	115,05
8	18	5,0	**0680.1**	5	34,55
8	18	5,0	**0680.2**	25	138,70
10	20	5,0	**0681.1**	5	36,35
12	22	5,0	**T985.1**	5	52,70
15	31	8,0	**T986.1**	5	105,35

Rotilabo®-rubber tubing set

The set contains the following rubber tubes:

Standard lab tubes, each 10 m long:
Inner ∅ 6 mm, outer ∅ 10 mm
Inner ∅ 8 mm, outer ∅ 12 mm

Vacuum tubes, each 5 m long:
Inner ∅ 6 mm, outer ∅ 16 mm
Inner ∅ 8 mm, outer ∅ 18 mm

Art. No.	Pack Qty. (assortment)	€
H279.1	1	96,65

▶ Tubing accessories see page 391

Programme extension!

Rotilabo®-PE tubes

Temperature range -40 to +80 °C, hard, odorless, transparent.

Innner Ø (mm)	Outside Ø (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
1	1,8	0,4	**9583.1**	25	11,75
1	1,8	0,4	**9583.2**	100	31,10
2	4	1	**9584.1**	25	21,30
2	4	1	**9584.2**	100	61,85
3	5	1	**9585.1**	25	31,20
4	6	1	**9586.1**	25	25,70
5	7	1	**9587.1**	25	26,65
6	8	1	**9589.1**	25	28,40
7	9	1	**9591.1**	25	33,40
8	10	1	**9593.1**	25	37,10
9	11	1	**9594.1**	10	19,05
10	12	1	**9595.1**	10	21,85
12	14	1	**9596.1**	10	23,50

A 121 °C

Rotilabo®-FEP-tubes

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

Innner Ø (mm)	Outside Ø (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
0,8 (1/32″)	1,58 (1/16″)	0,4	**C022.1**	10	20,90
1,58 (1/16″)	3,18 (1/8″)	0,8	**Y504.1**	5	32,15
2,0	4,0	1,0	**C023.1**	10	51,55
3,96 (5/32″)	6,35 (1/4″)	1,2	**Y505.1**	5	52,90
4,0	6,0	1,0	**C024.1**	10	81,20
4,35 (11/64″)	6,35 (1/4″)	1,0	**Y506.1**	5	45,70
6,0	8,0	1,0	**C025.1**	5	55,85
6,35 (1/4″)	9,52 (3/8″)	1,59	**Y507.1**	5	105,90
8,0	10,0	1,0	**C026.1**	5	70,85
9,52 (3/8″)	12,7 (1/2″)	1,59	**Y508.1**	5	132,25
10,0	12,0	1,0	**C027.1**	5	85,90

A 121 °C

Flex-tubes

Temperature range from -270 to +260 °C. Made of **PFA**, transparent. Resistant to chemicals, suitable for vacuums, pore-free. Autoclavable. Flexible, therefore ideal for narrow spaces and thermical extensions of length. The 40 mm long cylindrical endpieces can be connected e.g. to olives.

Connection inner-Ø (mm)	Connection outer-Ø (mm)	Art. No.	Pack Qty. (m)	€
6	8	**Y484.1**	1	82,20
8	10	**Y485.1**	1	84,85
10	12	**Y486.1**	1	95,00
14	16	**Y487.1**	1	117,20
16	18	**Y488.1**	1	166,65
18	20	**Y489.1**	1	163,40

A 121 °C

Rotilabo®-PTFE tubes

Temperature range -200 to +260 °C, rigid, anti-adhesive, with low water absorption, chemical-proof, gas permeant. Hardness: 55 Shore D. Autoclavable.

Innner Ø (mm)	Outside Ø (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
2	3	0,5	**1173.1**	5	15,30
2	4	1	**1174.1**	5	21,30
4	6	1	**1175.1**	5	25,30
5	7	1	**1176.1**	5	29,90
6	8	1	**1177.1**	5	35,45
8	10	1	**1178.1**	5	43,55
10	12	1	**1179.1**	5	46,15
12	14	1	**XX06.1**	5	50,00

Rotilabo®-safety gas tubes

For supplying Bunsen burners that operate using gas in accordance with DIN 30665. With non-buckling, elastic coupling sleeve, suitable for all three gas groups acc. to DVGW-Worksheet G 260, controlled and tested as per DIN-DVGW-Reg.-No. DG - 4607 AU 2366.
Not suitable for connection to gas cylinders. Inner-∅ 9 mm.

Length (mm)	Art. No.	Pack Qty.	€
50	**1716.1**	1	36,10
60	**A268.1**	1	37,75
75	**1717.1**	1	42,05
100	**1718.1**	1	48,60
125	**A269.1**	1	54,80
150	**1719.1**	1	57,60
200	**A270.1**	1	71,35
300	**A271.1**	1	106,10

Rotilabo®-PVC tubes

Temperature range -20 to +60 °C, flexible, fully transparent.
Hardness: 75 ±5 Shore A. Free of DEHP.

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
1	1,8	0,4	**9724.1**	100	34,85
2	4	1	**9725.1**	100	25,40
3	5	1	**9726.1**	100	28,85
4	7	1,5	**9727.1**	100	45,70
5	8	1,5	**9730.1**	100	54,80
6	10	2	**9732.1**	50	49,15
7	11	2	**9733.1**	50	62,25
8	12	2	**9736.1**	50	64,45
12	16	2	**XX05.1**	50	79,75

Rotilabo®-gas tubing

For laboratory gas burners that operate using gas in acc. with DIN 30665. Ideal for all 3 gas types, which are described in the German Municipal Services (DVGW). Pamphlet G260. Acc. to DIN 30664 Part 1, without casing and armouring.
Suitable for pressures up to 100 mbar.
Tested as per DIN-DVGW- Reg.- No. NG - 4607 AU 2362.
Not suitable for connection to gas cylinders!
∅-inner 9.5 mm, ∅-outer 14 mm.

Length (m)	Art. No.	Pack Qty.	€
5	**E485.1**	1	49,40

PVC-pressure tubes with tissue insert

By Nalgene®. Max. working temperature -21 to +82 °C. Clear, shore-hardness 65. Gas- or chemically sterilisable. Very good flexibility and pliable. Tasteless and approved for the food industry (FDA-approval). Suitable when working under pressure, for weak acids, alkaline solutions and salt solutions.
Inner-∅ and maximum working pressure are marked on tube.

∅ inside (mm (inch))	Wall thick-ness (mm)	Max. pressure at 23 °C (bar)	Max. pressure at 52 °C (bar)	Art. No.	Pack Qty. (m)	€
4,8 (3⁄16)	2.4	19	9,5	**CA88.1**	15	81,70
6,4 (1⁄4)	2.4	19	9,5	**CA89.1**	15	85,50
7,9 (5⁄16)	2.4	19	9,5	**CA90.1**	15	89,25
9,5 (3⁄8)	2.4	17	8,6	**CA91.1**	15	92,45
12,7 (1⁄2)	3.2	15,8	7,9	**CA92.1**	15	122,55
15,9 (5⁄8)	3.2	15,8	7,9	**CA93.1**	15	186,00
19,0 (3⁄4)	3.2	12	6	**CA94.1**	15	209,65
25,4 (1)	4,0	9,6	4,8	**CA95.1**	15	295,65

▶ Tubing accessories from page 391
▶ Hose brushes see page 1166

Tubing

A 121 °C

Rotilabo®-silicone tubes

Temperature range -60 to +200 °C (for short periods up to +260 °C).
Hardness: 60 Shore A, soft, flexible, slightly opaque.
Suitable for peristaltic pumps. Autoclavable.

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
0,5	2,5	1	**9554.1**	25	20,35
1	1,8	0,4	**9555.1**	25	14,95
1	3	1	**9556.1**	25	19,25
1,5	3,5	1	**9557.1**	25	18,10
2	4	1	**9559.1**	25	20,35
2	6	2	**9560.1**	25	45,15
2,5	4,5	1	**9561.1**	25	25,75
3	5	1	**9562.1**	25	26,80
3	6	1,5	**9563.1**	25	39,25
3	7	2	**9565.1**	25	56,55
4	6	1	**9566.1**	25	31,40
4	7	1,5	**9568.1**	25	45,15
4	8	2	**N874.1**	25	67,75
4	8	2	**N875.1**	5	16,10
5	7	1	**9569.1**	25	42,90
5	8	1,5	**9571.1**	25	55,90
6	9	1,5	**9572.1**	25	61,30
6	10	2	**9573.1**	10	37,45
7	10	1,5	**9574.1**	10	30,80
7	11	2	**9575.1**	10	41,10
8	11	1,5	**9576.1**	10	35,70
8	12	2	**9577.1**	10	45,70
9	12	1,5	**9578.1**	10	41,00
9	13	2	**9580.1**	10	51,10
10	14	2	**9581.1**	10	52,90
12	16	2	**T975.1**	5	30,05
14	20	3	**T976.1**	5	52,60
16	21	2,5	**T977.1**	5	47,85
18	24	3	**T978.1**	5	54,85
20	26	3	**T979.1**	5	68,80

Rotilabo®-vacuum silicone tubes

Temperature range -60 to +180 °C (for short periods up to +260 °C).
Hardness: 55 Shore A, thick-walled, opaque. Autoclavable.

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
3	9	3	**9737.1**	5	31,00
4	12	4	**9738.1**	5	40,35
5	15	5	**9740.1**	5	57,65
6	12	3	**9742.1**	5	37,95
7	15	4	**9744.1**	5	62,90
8	16	4	**9746.1**	5	69,45
10	20	5	**9747.1**	5	87,10
12	22	5	**T980.1**	5	96,25

A 121 °C

Silicone tubes Versilic®

By Saint-Gobain. Temperature range from -50 to +200 °C (short-term to +220 °C). Transparent, hardness 60 Shore A. Autoclavable. With peroxide cross-linked silicone. Biologically inert (USP XXIII Class 6), have no inhibitory effect on cell cultures. In compliance with following standards:

- European pharmacopoeia
- Biological tests, US-Pharmacopeia Class VI
- Biocompatibility requirements of Standard ISO 10993, (General toxic irritation and sensitization, cytotoxicity, haemocompatibility)
- FDA
- Produced under GMP-conditions, ISO 9001 and EN 13485

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
1,0	3,0	1.0	**HC61.1**	50	44,70
2,0	4,0	1.0	**HC62.1**	50	61,50
3,0	5,0	1.0	**HC63.2**	10	37,60
3,0	5,0	1.0	**HC63.1**	50	65,80
3,0	6,0	1.5	**HC64.2**	10	41,20
3,0	6,0	1.5	**HC64.1**	50	96,25
4,0	6,0	1.0	**HC65.2**	10	38,20
4,0	6,0	1.0	**HC65.1**	50	74,15
5,0	8,0	1.5	**HC66.2**	10	49,10
5,0	8,0	1.5	**HC66.1**	25	66,10
6,0	9,0	1.5	**HC67.2**	10	56,60
6,0	9,0	1.5	**HC67.1**	25	75,15
6,0	12,0	3.0	**HC68.2**	10	132,25
6,0	12,0	3.0	**HC68.1**	25	166,65
7,0	10,0	1.5	**HC69.2**	10	64,30
7,0	10,0	1.5	**HC69.1**	25	84,40
8,0	12,0	2.0	**HC70.2**	10	100,55
8,0	12,0	2.0	**HC70.1**	25	127,95
8,0	14,0	3.0	**HC71.1**	25	203,20
10,0	14,0	2.0	**HC72.2**	10	112,90
10,0	14,0	2.0	**HC72.1**	25	146,20
10,0	18,0	4.0	**HC73.1**	25	320,35

Silicone pump tubes

Working temperature -20 to +80 °C. Clear. Hardness 60 ±5 Shore A. Autoclavable. **Platinum-treated silicone hose for hose pumps**. Ultra-smooth surface prevents bacterial growth and sediments or residue from sticking. Acc. to USP Category VI, Eur.Ph. 6.5: 3.1.9 and FDA-Regulations 21 CFR 177.2600.

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
0,5	3,7	1.6	**CH23.1**	5	41,85
0,8	4,0	1.6	**CH24.1**	5	41,85
1,6	4,8	1.6	**CH25.1**	5	59,15
3,2	6,4	1.6	**CH26.1**	5	59,15
4,8	8,0	1.6	**CH27.1**	5	68,80
6,4	9,6	1.6	**CH28.1**	5	77,95
8,0	11,2	1.6	**CH29.1**	5	96,45

A 121 °C

Pharmed®-tubes

By Saint-Gobain. Max. working temperature +135 °C, yellowish-brown, made of TPE, hardness 64 Shore. Excellent for fermentative processes, cultivation of cell cultures etc. Special tube **for peristaltic pumps**. Good chemical resistance. Low gas permeability and high ageing stability. Autoclavable.

∅ inside (mm (inch))	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
0,5 (0,02)	3,7	1,6	**Y534.1**	7,5	82,25
0,8 (1/32)	4,0	1,6	**Y535.1**	7,5	98,05
1,6 (1/16)	4,8	1.6	**H191.1**	7,5	127,95
3,2 (1/8)	6,4	1.6	**H192.1**	7,5	126,85
4,8 (3/16)	8,0	1.6	**H193.1**	7,5	126,85
6,4 (1/4)	9,5	1.6	**H194.1**	7,5	149,45
8,0 (5/16)	11,2	1.6	**H195.1**	7,5	160,20
9,5 (3/8)	15,9	3.2	**H196.1**	7,5	246,20
12,7 (1/2)	19,0	3.2	**H197.1**	7,5	299,95

A 121 °C

Tygon®-hoses LMT-55

By Saint-Gobain. Temperature range from -50 to +74 °C. Transparent, DEHP-free, hardness 55 (Shore A).
Smooth, polished inner wall. Good chemical resistance to many inorganic solutions. Autoclavable.

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
1,6 (1/16″)	3,2 (1/8″)	0,8 (1/32″)	**CAN7.1**	15	19,90
1,6 (1/16″)	4,8 (3/16″)	1,6 (1/16″)	**CAN8.1**	15	38,70
2,4 (3/32″)	5,6 (7/32″)	1,6 (1/16″)	**CAN9.1**	15	48,60
3,2 (1/8″)	6,4 (1/4″)	1,6 (1/16″)	**CAP0.1**	15	57,65
4,8 (3/16″)	7,9 (5/16″)	1,6 (1/16″)	**CAP1.1**	15	81,50
6,4 (1/4″)	9,6 (3/8″)	1,6 (1/16″)	**CAP2.1**	15	93,65
6,4 (1/4″)	11,1 (7/16″)	2,4 (3/32″)	**CAP3.1**	15	148,35
7,9 (5/16″)	11,1 (7/16″)	1,6 (1/16″)	**CAP4.1**	15	110,75
7,9 (5/16″)	12,7 (1/2″)	2,4 (3/32″)	**CAP5.1**	15	160,20
9,6 (3/8″)	12,7 (1/2″)	1,6 (1/16″)	**CAP6.1**	15	127,95
9,6 (3/8″)	15,9 (5/8″)	3,2 (1/8″)	**CAP7.1**	15	235,45

A 121 °C

PharMed® BPT stopper hoses for peristaltic pumps

By Saint-Gobain. With biocompatible fluid surface specially for micro-biological applications. Temperature stable from -50 to +135 °C. Natural colours. Impervious to UV rays and light. Low gas permeability. In accordance with USP class VI, ISO 10993 and FDA. Hardness: 64 Shore A. Autoclavable.

Stopper hoses
- 2 stoppers
- Stopper spacing: 152 mm
- Overall length: 381 mm

Innner ∅ (mm)	Outside ∅ (mm)	Wall thick-ness (mm)	Colour code	Art. No.	Pack Qty.	€
0,51	2,31	0.90	orange/yellow	**CYN7.1**	6	70,00
0,76	2,46	0.85	black/black	**CYN8.1**	6	70,00
0,89	2,56	0.85	orange/orange	**CYN9.1**	6	70,00
1,52	3,22	0.85	yellow/blue	**CYP0.1**	6	70,00
2,06	3,76	0.85	violet/violet	**CYP1.1**	6	70,00
2,79	4,49	0.85	violet/white	**CYP2.1**	6	70,00

Extension hoses for stopper hoses
- Length: 3 m

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
0,51	2,31	0.90	**CYP3.1**	1	34,95
0,76	2,46	0.85	**CYP4.1**	1	34,95
0,89	2,56	0.85	**CYP5.1**	1	34,95
1,52	3,22	0.85	**CYP6.1**	1	34,95
2,06	3,76	0.85	**CYP7.1**	1	34,95
2,79	4,49	0.85	**CYP8.1**	1	34,95

Tygon® LMT-55 stopper hoses for peristaltic pumps

By Saint-Gobain. Temperature range from -50 to +74 °C. Transparent, DEHP-free, hardness 55 Shore A. Smooth, polished inner wall. Good chemical resistance to many inorganic solutions. Autoclavable.

Stopper hoses
- 2 stoppers
- Stopper spacing: 152 mm
- Overall length: 381 mm

Innner ∅ (mm)	Outside ∅ (mm)	Wall thick-ness (mm)	Colour code	Art. No.	Pack Qty.	€
0,51	2,31	0.90	orange/yellow	**CYP9.1**	12	41,40
0,76	2,46	0.85	black/black	**CYT0.1**	12	41,40
0,89	2,56	0.85	orange/orange	**CYT1.1**	12	41,40
1,52	3,22	0.85	yellow/blue	**CYT2.1**	12	41,40
2,06	3,76	0.85	violet/violet	**CYT3.1**	12	41,40
2,79	4,49	0.85	violet/white	**CYT4.1**	12	41,40

Extension hoses for stopper hoses
- Length: 10 m

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
0,51	2,31	0.90	**CYT5.1**	1	55,05
0,76	2,46	0.85	**CYT6.1**	1	55,05
0,89	2,56	0.85	**CYT7.1**	1	55,05
1,52	3,22	0.85	**CYT8.1**	1	55,05
2,06	3,76	0.85	**CYT9.1**	1	55,05
2,79	4,49	0.85	**CYX0.1**	1	55,05

A 121 °C

Tygon®-hoses S3™ E-3603

By Saint-Gobain. Temperature range from -46 to +74 °C. Transparent. DEHP-free. FDA-compliant. Hardness 56 shore A.
Very smooth, polished inner wall. Good chemical resistance. Autoclavable.

Standard tubes
For normal laboratory applications; also suitable for coolers, incubators and peristaltic pumps.

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
1,6 (1/16″)	3,2 (1/8″)	0,8 (1/32″)	**YL81.1**	15	20,45
1,6 (1/16″)	4,8 (3/16″)	1,6 (1/16″)	**YL82.1**	15	40,45
2,4 (3/32″)	4,0 (5/32″)	0,8 (1/32″)	**EHE7.1**	15	25,45
3,2 (1/8″)	4,8 (3/16″)	0,8 (1/32″)	**YL83.1**	15	29,80
3,2 (1/8″)	6,4 (1/4″)	1,6 (1/16″)	**YL84.1**	15	59,60
4,8 (3/16″)	6,4 (1/4″)	0,8 (1/32″)	**YL85.1**	15	40,45
4,8 (3/16″)	8,0 (5/16″)	1,6 (1/16″)	**YL86.1**	15	83,35
6,4 (1/4″)	9,6 (3/8″)	1,6 (1/16″)	**YL87.1**	15	94,10
6,4 (1/4″)	11,2 (7/16″)	2,4 (3/32″)	**YL88.1**	15	152,65
9,6 (3/8″)	12,7 (1/2″)	1,6 (1/16″)	**YL89.1**	15	131,15
9,6 (3/8″)	14,3 (9/16″)	2,4 (3/32″)	**YL90.1**	15	166,65
9,6 (3/8″)	15,9 (5/8″)	3,2 (1/8″)	**YL91.1**	15	242,95
12,7 (1/2″)	15,9 (5/8″)	1,6 (1/16″)	**YL92.1**	15	158,05
12,7 (1/2″)	17,5 (11/16″)	2,4 (3/32″)	**YL93.1**	15	213,95
12,7 (1/2″)	19,1 (3/4″)	3,2 (1/8″)	**YL94.1**	15	289,20
19,0 (3/4″)	25,4 (1″)	3,2 (1/8″)	**YL95.1**	15	369,80

Vacuum tubes
For use with, for example, dessicators, filtration systems and vacuum pumps.

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
4,8 (3/16″)	14,4 (9/16″)	4,8 (3/16″)	**YL96.1**	15	290,25
6,4 (1/4″)	15,9 (5/8″)	4,8 (3/16″)	**YL97.1**	15	339,70
9,6 (3/8″)	22,3 (7/8″)	6,4 (1/4″)	**YL98.1**	15	550,40
12,7 (1/2″)	28,7 (1-1/8″)	8,0 (5/16″)	**YL99.1**	15	882,60

A 121 °C

Versilon™-hoses 2001

By Saint-Gobain. Temperature range -78 to +57 °C, transparent, made of **TPO**. Hardness 69 Shore A. Autoclavable.
Doesn't contain plasticizers and oils. Very flexible, extremely good chemical resistance, durable. Increased durability when used **in peristaltic pumps**. Acc. to FDA-requirements.

∅ inside (mm (inch))	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
1,6 (1/16)	4,8	1,6	**EL12.1**	15	99,05
3,2 (1/8)	6,4	1,6	**EL13.1**	15	130,10
4,8 (3/16)	8,0	1,6	**EL14.1**	15	141,90
6,4 (1/4)	9,6	1,6	**EL15.1**	15	267,70
8,0 (5/16)	11,2	1,6	**EL16.1**	15	295,65
9,5 (3/8)	12,7	1,6	**EL17.1**	15	321,45

Tygon®-hoses E-1000 Ultra-Soft

By Saint-Gobain. Transparent, DEHP-free. Operating temperature -55 to +52 °C. Hardness: 40 Shore A. Soft, pliable, stays flexible even at low temperatures (-55 °C). Good alternative to silicone tubing with good chemical resistance. Suitable for general laboratory applications and peristaltic pumps.

∅ inside (mm (inch))	∅ outside (mm (inch))	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
1,6 (1/16)	4,8 (3/16)	1.6	**TP79.1**	15	60,55
3,2 (1/8)	6,4 (1/4)	1.6	**TP80.1**	15	88,10
4,8 (3/16)	8,0 (5/16)	1.6	**TP81.1**	15	120,40
6,4 (1/4)	9,6 (3/8)	1.6	**TP82.1**	15	119,35
6,4 (1/4)	12,7 (1/2)	3.2	**TP83.1**	15	237,60
8,0 (5/16)	11,2 (7/16)	1.6	**TP84.1**	15	170,95
9,6 (3/8)	12,7 (1/2)	1.6	**TP85.1**	15	203,20
12,7 (1/2)	15,9 (5/8)	1.6	**TP86.1**	15	235,45

Tygon®-hoses 2375

By Saint-Gobain. Temperature range from -59 to +54 °C.
Flexible, made of **TPO**. Hardness 75 Shore, transparent, without plasticizer. Suitable for extreme chemical applications. Resists acids, bases, ketones (methyl ethyl ketone), salts and alcohols. The smooth inside wall minimise particle deposits.

∅ inside (mm (inch))	∅ outside (mm (inch))	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
1,6 (1/16)	4,8 (3/16)	1.6	**NA64.1**	15	98,90
3,2 (1/8)	6,4 (1/4)	1.6	**NA65.1**	15	123,65
4,8 (3/16)	8,0 (5/16)	1.6	**NA66.1**	15	136,55
6,4 (1/4)	9,6 (3/8)	1.6	**NA67.1**	15	149,45
8,0 (5/16)	11,2 (7/16)	1.6	**NA68.1**	15	166,65
9,5 (3/8)	12,7 (1/2)	1.6	**NA69.1**	15	184,90
12,7 (1/2)	19,1 (3/4)	3.2	**NA70.1**	15	382,70

Rotilabo®-Viton®-tubes

Temperature range -10 to +200 °C. **Fluorocaoutchouc (FPM)**, black. Highly resistant to ozone and weather as well as to benzene and mineral oils. Hardness approx. 75 Shore A.

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
4	6	1	**EX14.1**	5	39,70
5	7	1	**EX15.1**	5	50,20
6	8	1	**EX16.1**	5	53,65
7	9	1	**EX17.1**	5	80,65
8	11	1.5	**EX18.1**	5	109,65
9	13	2	**EX19.1**	5	145,15
10	14	2	**EX20.1**	5	155,90

Rotilabo®-butyl hoses

Made of **butyl rubber (IIR)**, black, without inlay. Approx. 8x less air diffusion than other natural rubber hoses. Good chemical resistance. Durometer: 60 Shore A. Temperature resistant up to 100 °C.

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
3	7	2	**TE85.1**	5	25,95
6	10	2	**TE86.1**	5	32,20
6	14	4	**TE87.1**	5	48,55

Tygon®-hoses F-4040-A

Max. operating temperature +74 °C. For conveying petrol, kerosine, fuel oil and glycol-based coolants. No swelling and hardening. Ozone and UV resistant. Yellowish, transparent. Hardness: 57 Shore A.

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
3,2 (⅛″)	6,4 (¼″)	1.6 (1⁄16″)	**AEC4.1**	15	70,45
4,8 (3⁄16″)	8,0 (5⁄16″)	1.6 (1⁄16″)	**AEC5.1**	15	91,60
6,4 (¼″)	9,6 (⅜″)	1.6 (1⁄16″)	**AEC6.1**	15	107,00
8,0 (5⁄16″)	11,2 (7⁄16″)	1.6 (1⁄16″)	**AEC7.1**	15	125,80
9,6 (⅜″)	12,7 (½″)	1.6 (1⁄16″)	**AEC8.1**	15	147,30
12,7 (½″)	15,9 (⅝″)	1.6 (1⁄16″)	**AEC9.1**	15	213,95

Versilon™-tubes F-5500-A

By Saint-Gobain. Temperature range -51 to +204 °C, **fluor caoutchouc**, black, hardness 60 Shore A. Excellent resistance against caustic chemils, oils, benzenes, solvents and most acids. Resistant to ozone, sunlight and weather, tearproof and hard-wearing. Their pliability and elasticity make them suitable **for peristaltic pumps**.

∅ inside (mm (inch))	∅ outside (mm (inch))	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
1,6 (1⁄16)	3,2 (⅛)	0,8	**EY77.1** *	15	182,75
3,2 (⅛)	6,4 (¼)	1,6	**EY78.1** *	15	506,35
4,8 (3⁄16)	8,0 (5⁄16)	1,6	**EY79.1** *	15	671,90
6,4 (¼)	9,6 (⅜)	1,6	**EY80.1** *	15	849,25
8,0 (5⁄16)	11,2 (7⁄16)	1,6	**EY81.1** *	15	1105,10
9,5 (⅜)	12,7 (½)	1,6	**EY82.1** *	15	1123,40

* Longer delivery times possible. Please check with our Sales Department.

Tygon®-hoses A-60-G

By Saint-Gobain. Temperature range -60 to 135 °C. From **TPE**, Hardness 61 shore A. Black. Suitable **for peristaltic pumps** and for chemical and industrial applications. Ozone-stable. Long service life, extremely weatherproof. Lower gas permeability than rubber tubes. Very high resistance to anorganic liquids.

∅ inside (mm (inch))	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
1,6 (1⁄16)	4,8	1,6	**AH61.1**	15	57,00
3,2 (1⁄8)	6,4	1,6	**AH62.1**	15	55,90
4,8 (3⁄16)	8,0	1,6	**AH63.1**	15	69,90
6,4 (1⁄4)	9,6	1,6	**AH64.1**	15	66,45
6,4 (1⁄4)	11,2	2,4	**AH65.1**	15	98,40
8,0 (5⁄16)	11,2	1,6	**AH66.1**	15	88,70
9,5 (3⁄8)	12,7	1,6	**AH67.1**	15	93,45
11,1 (7⁄16)	14,3	1,6	**AH68.1**	15	188,15
12,7 (1⁄2)	17,5	2,4	**AH69.1**	15	201,05

Iso-Versinic® Fluoroelastomer-tubes

By Saint-Gobain. Temperature range from -20 to +200 °C (short-term to +300 °C). **Fluor caoutchouc**, black, hardness 60 Shore A (HC36.1 and HC37.1), hardness 70 Shore A (HC38.1 to HC42.1). Suitable for delivering very aggressive chemicals and for demanding applications in the laboratory and industry. Good resistance against hydrocarbons, oils, strong acids, oxidants, aromatic and chloric solvents. Non-aging and weatherproof. Flameproof.

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
3,0	5,0	1,0	**HC36.1**	5	75,80
4,0	6,0	1,0	**HC37.1**	5	77,95
5,0	8,0	1,5	**HC38.1**	5	117,20
6,0	9,0	1,5	**HC39.1**	5	131,15
7,0	10,0	1,5	**HC40.1**	5	151,60
8,0	12,0	2,0	**HC41.1**	5	229,00
10,0	14,0	2,0	**HC42.1**	5	268,75

Tubing accessories

Fastening tool

Made of metal. For fastening and cutting cable ties. The corrugated cable ties or fasteners are secured in a single operation and then cut.
The required tension can be individually set.
Colour: blue or red.
Assorted ties Art. No. 1729.1 and 1735.1.

Art. No.	Pack Qty.	€
H977.1	1	90,20

Rotilabo®-ties

Made of **PA**. Temperature stable from -40 to +85 °C.
Suitable for fastening tool H977.1.

Length (mm)	Width (mm)	For binding to max	Art. No.	Pack Qty.	€
180	4,5	∅ 50 mm	**1729.1**	100	10,55
102	2,5	∅ 22 mm	**1735.1**	100	5,35

Rotilabo®-tubing gauge

Ideal for determining inner or outer ∅ of hoses, glass tubes, etc.
For inner ∅ from 1-25 mm. For outer ∅ from 1.5-21 mm.
With easy-to-read engraved numbers. Dimensions: W 90 x L 165 mm.

Art. No.	Pack Qty.	€
4892.1	1	7,05

Tube cutter

For all tubes with ∅ max. 13 mm.

Type	Art. No.	Pack Qty.	€
Tube cutter	**6737.1**	1	20,00
Spare blades for tube cutter	**6738.1**	5	36,35

Rotilabo®-hose- and tube-cutter

Made of stainless steel 18/10, with high gloss finish.
Ideal for cutting hoses and centrifuge tubes of max. outer ∅ 10 mm.
Blade length 2.5 cm. Total length 10 cm.
Delivery incl. artificial leather case.

Art. No.	Pack Qty.	€
CK56.1	1	21,15

Rotilabo®-tube clamps

Made of **POM**. Resistant against UV-rays and with good chemical properties. Temperature stable from -40 to +90 °C (and short-term up to +110 °C).

Suitable for hoses with outer ∅ (mm)	Art. No.	Pack Qty.	€
6,0 - 6,5	**EX50.1**	10	4,25
9,0 - 10,0	**EX51.1**	10	4,25
10,0 - 11,0	**EX52.1**	10	4,25
11,0 - 12,0	**EX53.1**	10	4,25
12,0 - 14,0	**EX54.1**	10	4,25
13,0 - 15,0	**EX55.1**	10	4,25
15,0 - 17,0	**EX56.1**	10	4,25
17,0 - 19,0	**EX57.1**	10	4,25
18,0 - 20,0	**EX58.1**	10	4,95
20,0 - 22,0	**EX59.1**	10	4,95
23,0 - 25,0	**EX61.1**	10	4,95

Hose clamps, coloured

Made of **PVDF**. Steel band, galvanised. Continuously variable flow control for flexible hoses. Temperature stable up to max. 140 °C.

For hoses with outer ∅ up to 10 mm

Colour	Art. No.	Pack Qty.	€
red	**YE68.1**	1	3,20
yellow	**YE69.1**	1	3,20
blue	**YE70.1**	1	3,20
green	**YE71.1**	1	3,20

For hoses with outer ∅ up to 15 mm

Colour	Art. No.	Pack Qty.	€
red	**YE72.1**	1	4,85
yellow	**YE73.1**	1	4,85
blue	**YE74.1**	1	4,85
green	**YE75.1**	1	4,85

For hoses with outer ∅ up to 20 mm

Colour	Art. No.	Pack Qty.	€
red	**YE76.1**	1	6,35
yellow	**YE77.1**	1	6,35
blue	**YE78.1**	1	6,35
green	**YE79.1**	1	6,35

Worm drive hose clamps

Stainless steel band (1.4016), galvanised screw.

Suitable for hoses with outer ∅ (mm)	Art. No.	Pack Qty.	€
8-12	**AEH1.1**	10	12,15
10-16	**AEH2.1**	10	12,15
12-20	**AEH3.1**	10	13,90
16-27	**AEH4.1**	10	14,55
20-32	**AEH5.1**	10	14,90

Rotilabo®-tube clips

Ideal for securing hoses on pipes and stopcocks. With phosphor bronze band, anti-magnetic and mostly resistant to agressive liquids and vapours. Conductive.

Span range (mm)	Art. No.	Pack Qty.	€
5-10	**N042.1**	10	27,60
7-12	**N043.1**	10	27,60
9-14	**N044.1**	10	27,60
12-17	**5252.1**	10	27,60
17-22	**0784.1**	10	27,60
22-27	**N045.1**	10	27,60
25-30	**0785.1**	10	27,60

Rotilabo®-tube clamps

Made of nickel-plated steel, with pressed knurled screw. Temperature stable to +150 °C.

Span (mm)	Art. No.	Pack Qty.	€
10	**0564.1**	6	14,95
15	**0565.1**	6	24,55
20	**0566.1**	6	30,65

Tubing accessories

Rotilabo®-pinchcock

Made of **high-grade steel** with spring clip. Excellent for closing elastic tubes with an outer ∅ of 10 to 15 mm. Variably adjustable clamp for permanent opening if necessary. Tube is fixed securely to pinchcock via clamp. Single-handed operation possible.
Delivery incl. silicon tube 20 cm.

Art. No.	Pack Qty.	€
H452.1	1	10,70

Rotilabo®-tube clamps

Made of **PBT**. One-hand operation, can be operated with one hand. Variably adjustable up to total closing of tube.
Easy on tubes, can be sterilized to +160 °C.

for hose ∅ (mm)	Colour	Art. No.	Pack Qty.	€
14	red	**1158.1**	12	49,45
10	blue	**1159.1**	12	48,40
6	yellow	**1160.1**	12	46,25
4,5	red	**1161.1**	12	29,00

Pinchcocks according to Mohr

Made of nickel-plated brass. One-hand operation.
Ideal for shutting off flexible hoses.

Length (mm)	for hose ∅ (mm)	Art. No.	Pack Qty.	€
50	20	**KY01.1**	5	29,25
60	25	**KY02.1**	5	30,65
70	30	**KY03.1**	5	31,45
80	35	**KY04.1**	5	32,80

Rotilabo®-tube clamping screws

Acc. to Hoffmann. Made of chrome-plated metal, for fine regulation.
Hinged bottom bar can be swung open.

Width/height of outlet approx. (mm)	Art. No.	Pack Qty.	€
12/11	**1585.1**	5	16,70
17/16	**1586.1**	5	17,10
20/16	**1587.1**	5	17,75
25/16	**1588.1**	5	19,20
30/16	**1589.1**	5	19,90

Rotilabo®-clamping scissors

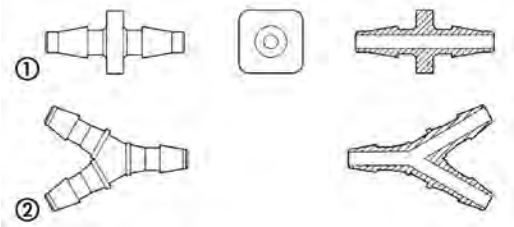
Made of fibre-glass reinforced **PA**. Ideal for clamping and holding tubing, etc. Mostly resistant to chemicals, highly robust and heat stable to +130 °C.

Length (mm)	Design	Art. No.	Pack Qty.	€
110	with fine concrete edges	**LH90.1**	10	12,85
130	with offset jaws	**N141.1**	10	11,00

Rotilabo®-tube clamps

For cut-off or setting flexible hoses with outer ∅ of up to 15 mm.
Width of clamping jaws 20 mm.

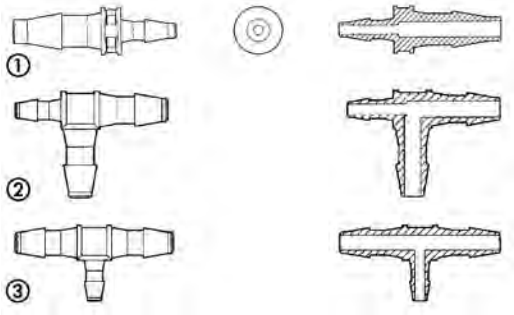
Material	Art. No.	Pack Qty.	€
① Polysulfone (autoclavable)	**T764.1**	5	42,90
② Delrin	**T765.1**	5	38,60



Rotilabo®-mini-tubing connectors

Made of **PP**, transparent.

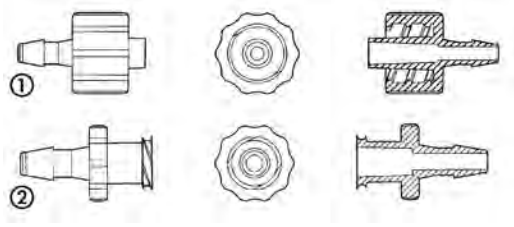
Model	Type	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
①	straight	1,6	**CT33.1**	10	15,60
①	straight	2,4	**CT34.1**	10	15,60
①	straight	3,2	**CT35.1**	10	15,60
②	Y-shape	1,6	**CT36.1**	10	17,10
②	Y-shape	2,4	**CT37.1**	10	17,10
②	Y-shape	3,2	**CT38.1**	10	17,75



Rotilabo®-mini tubing reducers

Made of **PP**, transparent.

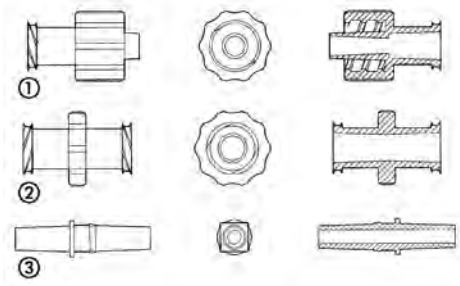
Model	Type	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
①	straight	1,6 - 4,0	**CT42.1**	10	17,10
①	straight	2,4 - 4,0	**CT43.1**	10	17,10
①	straight	3,2 - 4,0	**CT44.1**	10	17,10
①	straight	1,6 - 4,8	**CT45.1**	10	17,10
①	straight	2,4 - 4,8	**CT46.1**	10	17,10
①	straight	3,2 - 4,8	**CT47.1**	10	20,00
①	straight	4,0 - 4,8	**CT48.1**	10	20,35
②	T-shape	1,6 - 2,4 - 2,4	**CT49.1**	10	22,40
②	T-shape	1,6 - 3,2 - 3,2	**CT50.1**	10	23,60
②	T-shape	2,4 - 3,2 - 3,2	**CT51.1**	10	23,60
③	T-shape	1,6 - 2,4 - 1,6	**CT52.1**	10	22,40
③	T-shape	1,6 - 3,2 - 1,6	**CT53.1**	10	23,60
③	T-shape	2,4 - 1,6 - 2,4	**CT54.1**	10	22,40
③	T-shape	2,4 - 3,2 - 2,4	**CT55.1**	10	23,60
③	T-shape	3,2 - 1,6 - 3,2	**CT56.1**	10	23,60
③	T-shape	3,2 - 2,4 - 3,2	**CT57.1**	10	23,60



Rotilabo®-Luer-tubing connectors

Made of **PP**, transparent.
LLM: Luer Lock male
LLF: Luer Lock female

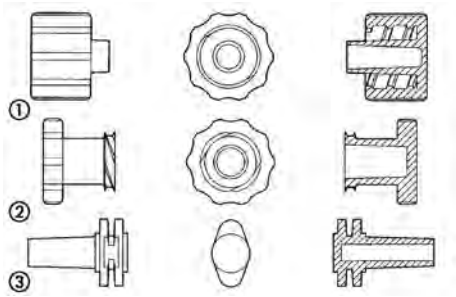
Model	Luer-fitting	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
①	LLM	1,6	**CT58.1**	10	12,85
①	LLM	2,4	**CT59.1**	10	12,85
①	LLM	3,2	**CT60.1**	10	12,85
①	LLM	4,0	**CT61.1**	10	12,85
②	LLF	1,6	**CT62.1**	10	12,85
②	LLF	2,4	**CT63.1**	10	12,85
②	LLF	3,2	**CT64.1**	10	12,85
②	LLF	4,0	**CT65.1**	10	12,85



Rotilabo®-Luer-connectors

Made of **PP**, transparent.
LLM: Luer Lock male; LM: Luer male
LLF: Luer Lock female LF: Luer female

Model	Luer-fitting	Art. No.	Pack Qty.	€
①	LLM on LF	**CT66.1**	10	15,00
②	LLF on LLF	**CT67.1**	10	15,00
③	LM on LM	**CT68.1**	10	15,00



Rotilabo®-Luer-stoppers

Made of **PP**, transparent.
LLM: Luer Lock male; LM: Luer male
LLF: Luer Lock female LF: Luer female

Model	Luer-fitting	Art. No.	Pack Qty.	€
①	LLM for LLF	**CT69.1**	10	9,45
②	LLF for LLM	**CT70.1**	10	11,75
③	LM-slip for LF	**CT71.1**	10	11,30

Tubing connectors

121 °C

Rotilabo®-T-shapes

Made of **PP**, natural, transparent. Autoclavable.

Outside ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
4	3	**E763.1**	10	8,50
6	4-5	**E764.1**	10	9,65
8	6-7	**E765.1**	10	8,25
10	8-9	**E766.1**	10	10,50
12	10-11	**E767.1**	10	11,65
14	12-13	**E768.1**	10	14,90
16	14-15	**E769.1**	10	17,65

121 °C

Rotilabo®-L-shapes 90°

Made of **PP**, natural, transparent. Autoclavable.

Outside ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
4	3	**E784.1**	10	6,25
6	4-5	**E785.1**	10	6,75
8	6-7	**E786.1**	10	9,35
10	8-9	**E787.1**	10	10,25
12	10-11	**E788.1**	10	12,40
14	12-13	**E789.1**	10	15,00
16	14-15	**E790.1**	10	19,25

121 °C

Rotilabo®-cross pieces

Made of **PP**, natural, transparent. Autoclavable.

Outside ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
4	3	**E777.1**	10	15,60
6	4-5	**E778.1**	10	16,40
8	6-7	**E779.1**	10	17,15
10	8-9	**E780.1**	10	20,05
12	10-11	**E781.1**	10	21,20
14	12-13	**E782.1**	10	23,15

121 °C

Rotilabo®-Y-pieces

Made of **PP**. Autoclavable.

Natural, translucent, with straight ends.

Outside ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
4	3	**E770.1**	10	8,55
6	4-5	**E771.1**	10	10,70
8	6-7	**E772.1**	10	12,85
10	8-9	**E773.1**	10	15,00
12	10-11	**E774.1**	10	19,30
14	12-13	**E775.1**	10	19,90
16	14-15	**E776.1**	10	22,60

White, with conical ends.

Outside ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
4 / 5	3-5	**TT50.1**	10	13,50
5,5 / 7	5-7	**TT51.1**	10	15,60
7 / 9	7-9	**TT52.1**	10	17,85
10 / 11,5	9-11	**TT53.1**	10	19,50
12 / 14	11-13	**TT54.1**	10	21,15
14 / 15,5	13-15	**TT55.1**	10	24,70

Rotilabo®-tubing connectors assortment

Consists of the most commonly used tube connectors (**PP/PE**) in different sizes.

Delivery incl. T-shape, Y-shape, straight connectors (mm, inches) and straight reduction connectors. Includes 25 individual parts.

Art. No.	Pack Qty. (assortment)	€
H975.1	1	22,40

Rotilabo®-tubing connectors

Made of **HDPE**. Solid design, white.

Outlet ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
7	10	**E797.1**	10	12,85
9	12	**E798.1**	10	13,95
15	19	**E799.1**	10	15,00
20	25	**E800.1**	10	9,15

A 121 °C

Rotilabo®-reducing connectors

Made of **PP**, white with conical ends.
Temperature stable to max. +130 °C. Length 87 mm. Autoclavable.

Connector I outer-∅ (mm)	Connector II outer-∅ (mm)	outlet (mm)	Art. No.	Pack Qty.	€
8-12	4-8	4,6/1,6	**E801.1**	10	15,70
12-16	4-8	7,5/1,6	**E802.2**	10	17,15
12-16	8-12	7,5/4,6	**E803.1**	10	19,30

A 121 °C

Rotilabo®-tubing connectors

Made of **PP**, white with conical ends. Autoclavable.

Outlet ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
2	4-5	**E791.1**	10	8,30
3	5-7	**E792.1**	10	9,60
4	8-10	**E793.1**	10	10,15
6	10-12	**E794.1**	10	11,75
8	12-14	**E795.1**	10	13,15
10	14-16	**E796.1**	10	16,45

A 121 °C

Universal tubing connectors

Suitable for tubes with inner ∅ from 4 / 8 to 17 mm. With conical ends.
Autoclavable.

Model	Material	Art. No.	Pack Qty.	€
①	PP	**Y523.1**	10	20,00
②	PVDF	**Y524.1**	10	29,50

Material DURAN®

Hose connector made of glass

Made of DURAN®.

① **T-pieces with straight connectors**. Total length 115 mm.

Outside ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
8	6-8	**EKH1.1**	1	4,75
10	8-10	**EKH2.1**	1	7,40

② **Y-pieces with straight connectors**. Total length 115 mm.

Outside ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
8	6-8	**EKH3.1**	1	5,05
10	8-10	**EKH4.1**	1	8,00

③ **Universal connector with conical connectors**. Total length 110 mm.

Outside ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
6-14	6-14	**EKH5.1**	1	7,55

Rotilabo®-check valves

Made of **PP**, natural/transparent. Ideal for liquids. Consists of 2 parts.
Prevents pressure drop or backflow. With conical ends.
Temperature stable to +100 °C.

Length (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
60	7,8-10	**E804.1**	5	17,10
70	9,5-12,5	**E805.1**	5	26,45

Tubing connectors

Rotilabo®-tubing quick disconnectors

Made of **PE**, natural/transparent. High sealing quality. Easy to disconnect. With conical ends. Temperature stable to +100 °C.

Outlet ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
2	4-5	**E806.1**	10	15,00
3	6-7	**E807.1**	10	17,15
4	8-9	**E808.1**	10	19,10
6	9-12	**E809.1**	10	20,65
7	11-14	**E810.1**	10	24,50

A 121 °C

Metal tube connectors

Made of high-quality nickel-plated and bright chromium-plated brass. Can be autoclaved at 134 °C. Ideal for connecting needles, syringes and stopcocks with tubing. Extensions for Luer-Lock female (LLF) and male (LLM) fittings.

Tube connection inner-∅	Art. No.	Pack Qty.	€
① 1,5 mm LLF	**P334.1**	1	12,40
④ 3,0 mm LLF	**P335.1**	1	10,55
② 1,5 mm LLM	**P336.1**	1	14,55
③ 3,0 mm LLM	**P343.1**	1	11,80

A 121 °C

Metal tube extensions, conical

Made of high-quality nickel-plated and bright chromium-plated brass. Can be autoclaved at 134 °C. Ideal for connecting needles, syringes and stopcocks with tubing. Extensions for Luer-Lock female (LLF) and male (LLM) fittings.

Tube connection inner-∅	Art. No.	Pack Qty.	€
① 2-6 mm LLF	**P337.1**	1	24,20
③ 5-9 mm LLF	**P338.1**	1	24,20
② 2-6 mm LLM	**P341.1**	1	24,75
④ 5-9 mm LLM	**P342.1**	1	26,45

Quick-release couplings

For easy, leak-free connection and disconnection of hoses. With hose connectors. Optionally with shut-off, stops the flow automatically upon disconnection. Can be sterilised with gamma rays.

Technical specifications:

Flow opening NW	3.2 mm
Operating temperature	0 to +71 °C
Operating pressure	Vacuum up to 8.3 bar
Materials in contact with media	PP, EPDM and stainless steel

① Female connection, straight

For hoses with inner ∅ (mm)	Shut-off	Art. No.	Pack Qty.	€
1,6	without	**HAH5.1**	1	13,80
1,6	with	**HAH6.1**	1	15,05
3,2	without	**HAH7.1**	1	13,55
3,2	with	**HAH8.1**	1	15,05
6,4	without	**HAH9.1**	1	13,80
6,4	with	**HAK0.1**	1	15,05

② Male connection, straight

For hoses with inner ∅ (mm)	Shut-off	Art. No.	Pack Qty.	€
1,6	without	**HAK1.1**	1	4,95
1,6	with	**HAK2.1**	1	13,55
3,2	without	**HAK3.1**	1	5,00
3,2	with	**HAK4.1**	1	13,60
6,4	without	**HAK5.1**	1	5,00
6,4	with	**HAK6.1**	1	13,60

③ Male connection, angled

For hoses with inner ∅ (mm)	Shut-off	Art. No.	Pack Qty.	€
3,2	without	**HAK7.1**	1	10,60
3,2	with	**HAK8.1**	1	15,00
6,4	without	**KA53.1**	1	19,15
6,4	with	**HAK9.1**	1	15,00

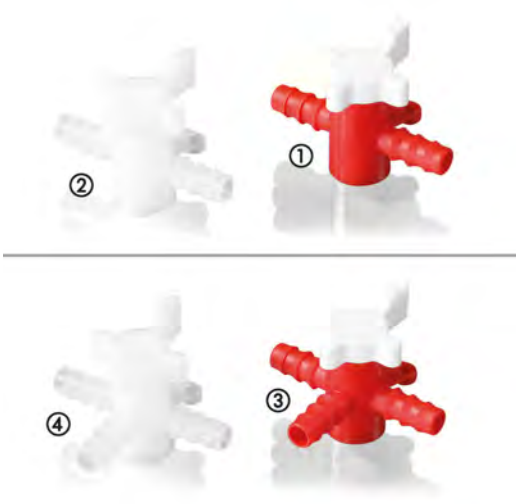
A 121 °C

Metal stopcocks

Made of high-quality brass, nickel-plated and bright chromium-plated. Can be autoclaved at 134 °C. Luer-Lock female (LLF) to male (LLM), 3-way cocks female on the side. Suitable or pressures to max. 3 bar.

Design	Art. No.	Pack Qty.	€
① 2-way cock	**P339.1**	1	38,70
② 3-way cock	**P340.1**	1	46,25

Tubing connectors



Rotilabo® hose valves

For the transfer of liquids or gases. Max. pressure 1 bar. Operating temperature +5 to +40 °C. Available in various materials: PVDF (natural colours) offers better chemical resistance than PP/PE (red/white).

2-way valves

Material	Outlet ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
① PP/PE	4	5-7	**1015.1**	1	7,50
① PP/PE	6	7-9	**1016.1**	1	8,55
① PP/PE	8	9-11	**1017.1**	1	9,65
① PP/PE	8	11-13	**CPH6.1**	1	9,65
② PVDF	4	5-7	**1761.1**	1	13,45
② PVDF	6	7-9	**1762.1**	1	15,60
② PVDF	8	9-11	**1763.1**	1	18,40
② PVDF	8	11-13	**CPH7.1**	1	16,10

3-way valves

Material	Outlet ∅ (mm)	For hoses with inner ∅ (mm)	Art. No.	Pack Qty.	€
③ PP/PE	4	5-7	**1018.1**	1	12,85
③ PP/PE	6	7-9	**1019.1**	1	14,85
③ PP/PE	8	9-11	**1020.1**	1	16,80
③ PP/PE	8	11-13	**CPH8.1**	1	16,10
④ PVDF	4	5-7	**1766.1**	1	20,70
④ PVDF	6	7-9	**1767.1**	1	22,60
④ PVDF	8	9-11	**1768.1**	1	24,75
④ PVDF	8	11-13	**CPH9.1**	1	21,45

▶ For different tubes, see page 385

Rotilabo®-tubing connectors

Made of natural coloured **PE**.
Stopcock connectors, pressure load to 0.3 bar.

Connection	Outside ∅ (mm)	Length (mm)	Weight (g)	Art. No.	Pack Qty.	€
Both sides ⅜″ (outer-∅ 10 mm)	10	70	6	**1622.1**	5	20,65
Both sides ½″ (outer-∅ 14 mm)	14	95	17	**1623.1**	5	25,40

Rotilabo®-tubing sleeve connectors

Keck system, made of **PBT**, with **EPDM** seal. Outer ∅ 9 mm, length 43 mm. Lightblue. Adapters for tubing sleeve connectors - Keck system, white. Outlet 8 mm.

Type	Art. No.	Pack Qty.	€
Rotilabo®-tubing sleeve connectors	**0354.1**	10	28,50
Rotilabo®-tubing connectors	**0343.1**	5	17,15

Rotilabo®-tubing connectors system Keck

Made of **PBT** with **EPDM** flat seal. Ideal for fast, safe and leakproof connections of tubing to glass hose connectors and glass threads. High chemical resistance. Temperature stable to max. +130 °C.

For glass olives (clamp. ring, thread cap, tubing sleeve connector, seals)

suitable for	Tubing sleeve connector outer-∅ (mm)	Art. No.	Pack Qty.	€
GL 14 (Schott) yellow	9	**H072.1**	10	77,00

For glass thread (thread cap, tubing sleeve connector, seals)

suitable for	Tubing sleeve connector outer-∅ (mm)	Art. No.	Pack Qty.	€
GL 14 (Schott) yellow	9	**H075.1**	10	60,75

Draincocks

Made of **PE**, with separate air vent canal. With variable speed regulation of flow. Sealing made of aveolite. Not suitable for glass threads.

Lock	Art. No.	Pack Qty.	€
DIN 45	**X530.1**	3	23,90
DIN 50	**X531.1**	3	29,00
DIN 51	**5665.1**	3	22,05
DIN 61	**5666.2**	4	29,60

FLUXX®-dispensing taps

Made of **PE**. The patented ventilation system allows easy, clean and fast filling and transfer of fluids without gurgling.

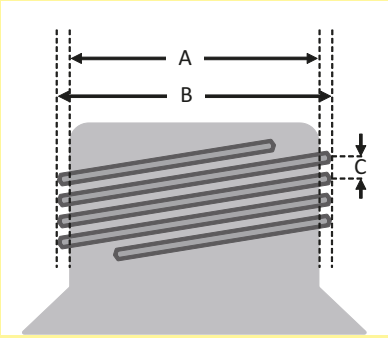
- Dispenses fluids cleanly and empties containers completely
- High leak tightness

Not suitable for glass threads.

Cap size	Outlet ∅ (mm)	Art. No.	Pack Qty.	€
DIN 51/DIN 40	13	**T358.1**	3	11,30
DIN 61/DIN 40	13	**T359.1**	3	13,05

Information on threads

The thread on a drum is defined, among other things, by diameter (A and B) and thread pitch (C). The values given in the table give a rough indication of the thread type, however this cannot reliably be determined by measuring the thread using a sliding caliper alone. Manufacturer-specific threads are also available in addition to the standard threads. The drum supplier can generally provide information on the thread type.



We will be happy to provide you with information on containers which you purchase through us.

Thread	Diameter excl. thread A (mm)	Diameter incl. thread B (mm)	Thread pitch C (mm)
DIN 38	34.6	36.6	9
DIN 40	38.8	42.2	4
DIN 45	41.1	44.7	4
DIN 50	46.1	50.1	4
DIN 51	50.2	54.8	5
DIN 60	55.3	60.3	6
DIN 61	55.6	60.5	5
DIN 71	67.0	72.3	7

Spouts

Flexible **PE** pouring tube with snap lid, screwed into a screw cap. With Alkozell seal and riser tube for smooth pouring. Not suitable for glass-threads.

Lock	Art. No.	Pack Qty.	€
DIN 45	**TE90.1**	2	16,70
DIN 51	**TE91.1**	2	16,70
DIN 61	**TE92.1**	2	18,25

Compact draincock

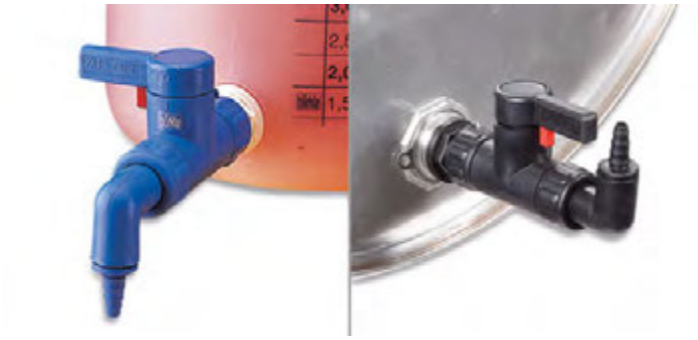
Made of **PP**, seals made of **PE/PTFE**. Tightly closing. Connection with R¾″ cap nut. Easy to open and close. Can be operated single-handed. Space-efficient design: tap does not protrude beyond base of the container and need not be removed when storing the container.
Optimized drainage spout for uniform, non-splashing flow.

Art. No.	Pack Qty.	€
PE42.1	1	15,00

Air drum draincock

Made of **PE**. Self-venting. Thread connector outside ¾″. NW 13 mm.
Suitable for Rotitainer®-cans in combination with adapter P944.1.

Colour	Art. No.	Pack Qty.	€
white/red	**Y496.1**	3	16,05



Draincocks

By Bürkle. Tightly closing. With ¾″-internal screw thread.
Easy to open and close. Can be operated single-handed.
With rotatable anti-drip and dosing scale.
Delivery incl. smaller drainage spout (outer-∅ 6-8 mm) for narrow bottle mouths. Adapter for ¾″-internal screw thread (only for Art. No. LP75.1).

Image	Material	Seal	Conductivity	Art. No.	Pack Qty.	€
①	PP	PE/PTFE	no	**2683.1**	1	24,20
②	PA	PTFE	yes	**LP75.1**	1	27,90

Adapters

For	Art. No.	Pack Qty.	€
Inner thread coarse, ∅ approx. 2.2 cm (e.g. Bürkle, Hünersdorf)	**P215.1**	1	7,00
Inner thread coarse, ∅ approx. 2.05 cm (e.g. Bürkle, Kautex)	**P216.1**	1	7,00
Barrel inner thread, cylindric, R¾″ ∅ 2.55 cm	**P217.1**	1	7,00
Coarse thread, inner, Tri-Sure® 2″	**P218.1**	1	15,00
Fine thread, inner, 2″	**P219.1**	1	15,00

Drum ball valve

Made of **PP**. For drums in horizontal position with threaded connection. Inlet thread ¾″ inside, outlet thread ¾″ outside. Sealing with threading tape. Supplied without hose nozzle, please order separately.

Type	Art. No.	Pack Qty.	€
Drum ball valve	**P943.1**	1	53,70
Hoze nozzle, curved 90°, ∅ 12 mm	**P946.1**	1	3,50
Hoze nozzle, straight, ∅ 12 mm	**P947.1**	1	2,45
Thread adapter Tri-Sure® fine-pitch thread, suitable for Rotitainer®	**P944.1**	1	10,45
Thread adapter Tri-Sure® 2″, coarse-pitch thread	**P945.1**	1	3,35

Spigot extension set

Extends the distance between the spigot and the wall of the container.
Suitable for air drum draincock Art.-No. Y496.1 and barrel ball valve P943.1.
A set consists of:
1 Pipe extension 150 mm, material **PP**, 2 x ¾″
1 Bosshead, material **PP**, inner thread 2 x ¾″
2 Flat gaskets for inner thread ¾″

Art. No.	Pack Qty. (set)	€
AH28.1	2	21,45

- PTFE-thread tape see page 1177
- Rotilabo®-space-saving canister see page 96

Canister pumps

Dosing pumps with screw cap

Made of **HDPE.** For canisters 10 to 30 l with matching DIN-closure.

Lock	Delivery rate (ml/stroke)	Length lifting tube (mm)	Art. No.	Pack Qty.	€
DIN 50	30	175	**P241.1**	1	13,95
DIN 60	100	398	**P242.1**	1	60,85

Siphon with stopcock

By Bürkle. Made of **LDPE/PVC**. Stopcock made of **PP**.
For rapid filling of aqueous fluids.
Delivery rate: 9 l/min, immersion depth: 100 cm, hose inner ∅: 15 mm.
Delivery incl. hose with kink protection and lifting eye.

Art. No.	Pack Qty.	€
YC59.1	1	51,55

Pump-it® canister pump

By Bürkle. Ideal for rapid and clean emptying of canisters and small barrels. Exact dosing, no dripping. Please order matching thread adapter separately. For liquids up to a maximum viscosity of 500 mPa · s at 20 °C.

Technical specifications:

Flow rate	max. 6 l/min
Material pump	PP
Material seals	FKM
Thread	64 mm (BSI)
Weight	310 g
Size	60 cm
Lifting tube length	100 cm

Art. No.	Pack Qty.	€
1601.1	1	123,65

Accessories for Pump-it®-canister pump

Made of **PP**.

Thread adapters for inner threads

Image	Thread	Art. No.	Pack Qty.	€
①	2″ steel-fine thread	**1603.1**	1	16,05
②	2″ Mauser-coarse thread	**1604.1**	1	16,05
③	2″ Tri-Sure®-coarse thread	**1606.1**	1	16,05

Thread adapters for outer threads

Image	Thread	Art. No.	Pack Qty.	€
④	DIN 60	**1605.1**	1	21,00
⑤	DIN 51	**H071.1**	1	22,60
⑥	DIN 61	**T236.1**	1	25,70

Thread adapter set, consists of one each of 1603.1 (blue), 1604.1 (green), 1606.1 (brown), 1605.1 (black) and H071.1 (black).

Art. No.	Pack Qty.	€
1602.1	1	57,00

Telescope transporting tube 52 - 104 cm

Art. No.	Pack Qty.	€
1607.1	1	13,90

OTAL®-Dispensing pumps

By Bürkle. Foot/hand pumps work on using air pressure.
Foot pumps with bellows and air hose for filling containers standing at a distance. Stoppers made of **PVC**.
Foot or hand pumps available in different designs:

- Telescope feed tube made of **PP** or **PVDF**; PVDF has better chemical resistance than PP
- With outlet pipe or with flexible hose with stopcock

Technical specifications:

Model	Foot pumps	Hand pumps
For containers max.	approx. 120 l	approx. 60 l
Flow rate	26 or 12 l/min	
Telescope feed tube, max. immersion depth	70 cm	
Air hose, length	1.5 m	-
Outlet pipe, length	20 cm	
PVC-stoppers for bung width from	∅ 30 to 70 mm	

Foot pumps

Type	Feed tube	Flow rate capacity (l/min)	Art. No.	Pack Qty.	€
① with bent outlet pipe	PP, ∅ 18 mm	26	**1847.1**	1	94,60
② with bent outlet pipe	PVDF, ∅ 16 mm	16	**HT03.1**	1	149,45
③ Hose with stopcock	PP, ∅ 12 mm	12	**AN74.1**	1	92,35

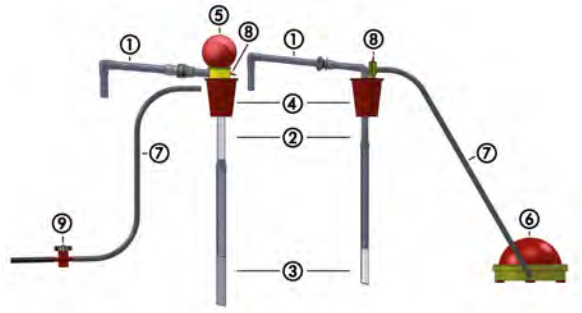
Hand pumps

Type	Feed tube	Flow rate capacity (l/min)	Art. No.	Pack Qty.	€
④ with bent outlet pipe	PP, ∅ 18 mm	26	**1720.1**	1	79,45
⑤ with bent outlet pipe	PVDF, ∅ 16 mm	20	**HT04.1**	1	141,90
⑥ Hose with stopcock	PP, ∅ 12 mm	12	**AN75.1**	1	78,40

Mini-dispensing pump

Made of **PP**. With standard stopper for openings of ∅ 20 to 36 mm.
Ideal for filling smaller amounts. Flow rate max. 4 l/min.
Transporting tube: length 45 cm, ∅ 10 mm.

Art. No.	Pack Qty.	€
E335.1	1	53,35



Spare parts for OTAL® filling pumps

By Bürkle.

*A pipe set consists of an outlet elbow, riser tube, draw tube (330 mm) and connecting pieces.

Image	Type	Art. No.	Pack Qty.	€
①	Outlet elbow ∅ 18 mm	**K630.1**	1	20,40
①	Outlet elbow ∅ 12 mm	**ANX7.1**	1	16,70
②	Riser tube ∅ 18 mm, L 410 mm	**K628.1**	1	20,35
②	Riser tube ∅ 12 mm, L 410 mm	**ANX8.1**	1	16,70
③	Draw tube ∅ 18 mm, L 330 mm	**K629.1**	1	10,70
③	Draw tube ∅ 18 mm, L 900 mm	**K631.1**	1	20,75
③	Draw tube ∅ 12 mm, L 330 mm	**ANX9.1**	1	8,40
-	Pipe set ∅ 18 mm*	**H983.1**	1	42,80
-	Pipe set ∅ 16 mm, all-PVDF*	**ANY0.1**	1	47,25
-	Pipe set ∅ 12 mm*	**ANY1.1**	1	30,65
④	PVC plug for ∅ 18 mm, red	**N553.1**	1	19,25
④	PVC plug for ∅ 16 mm, red	**ANY2.1**	1	19,90
④	PVC plug for ∅ 12 mm, red	**ANY3.1**	1	19,90
⑤ + ⑧	Hand pump ball with stop valve	**P675.1**	1	44,10
⑥	Foot pump (without PVC hose and stop valve)	**P677.1**	1	46,15
⑦	PVC hose, L 1.5 m	**P676.1**	1	13,95
⑧	Stop valve for hand pumps and foot pumps	**P678.1**	1	19,30
⑨	2-way valve	**1017.1**	1	9,65

Gas-tight barrel and container pump

By Bürkle. Made of **PP**, with tubing made of **PVC**. Pump capacity 200 ml/stroke. Gases emerging from the container are led back to the main container with the aid of a gas dispensing tube, preventing contamination of surroundings while pumping. Also attach a stopcock to the gas and liquid line. Universal adapter for openings from 30 to 70 mm. Ideal for container heights from 40 to 70 cm. Tubing length approx. 120 cm.

Art. No.	Pack Qty.	€
E013.1	1	240,80

Barrel pumps

Barrel pumps made of PP

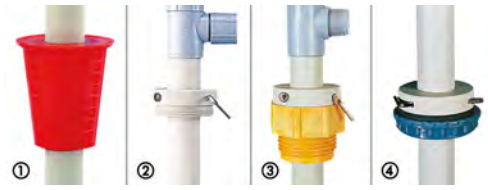
By Bürkle. For safe dispensing of liquids from barrels, canisters and tanks. Available either with rigid funnel or with flexible dispensing tube **(PVC)** with stopcock. Immersion tube ∅ 32 mm. Barrel screw connections must be ordered separately.

With curved nozzle

Immersion depth (mm)	Total length (mm)	Delivery rate (ml/stroke)	Art. No.	Pack Qty.	€
500	600	200	**Y958.1**	1	148,35
650	740	230	**Y959.1**	1	148,35
800	900	260	**Y960.1**	1	153,75
1000	1090	300	**Y961.1**	1	169,85
1250	1340	300	**Y962.1**	1	190,30
1500	1590	300	**Y963.1**	1	196,75

With dispensing tube and stopcock

Immersion depth (mm)	Total length (mm)	Delivery rate (ml/stroke)	Art. No.	Pack Qty.	€
500	600	200	**Y964.1**	1	149,45
650	740	230	**Y965.1**	1	149,45
800	900	260	**Y966.1**	1	153,75
1000	1090	300	**Y967.1**	1	169,85
1250	1340	300	**Y968.1**	1	190,30
1500	1590	300	**Y969.1**	1	195,65



Accessories for barrel pumps PP and PTFE

By Bürkle.

Image	Type	Art. No.	Pack Qty.	€
-	Discharge tube for barrel pumps PP Y958.1 ff	**Y970.1**	1	34,20
-	Discharge hose, PVC, 1.2 m with stopcock; for barrel pumps PP Y964.1 ff	**1788.1**	1	30,65
①	Barrel plug, PVC, for hole-∅ 40 to 70 mm	**9276.1**	1	23,60
②	Barrel screw joint made of PP, for 2″ fine steel thread	**1789.1**	1	31,75
③	Barrel screw joint made of PP, for 2″ internal fine steel thread and adapter for Tri-Sure® internal course thread	**T243.1**	1	39,25
④	Container screw joint with locknut (2″ fine steel thread); for attaching in any position; 60 mm mounting hole	**T244.1**	1	37,10
-	Barrel adapter made of PP, internal thread DIN 51-2″BSP	**YK28.1**	1	22,60
-	Barrel adapter made of PP, internal thread DIN 61-2″BSP	**YK29.1**	1	19,25

PTFE barrel pumps

By Bürkle. Made of **PTFE** and **FEP**. Excellent chemical resistance for safe filling of ultrapure and aggressive liquids. Stopcock stops liquids from dripping and prevents hazardous vapours from escaping. Immersion tube ∅ 32 mm. Please order barrel screw fittings separately.

① With discharge tube

Immersion depth (mm)	Delivery rate (ml/stroke)	Art. No.	Pack Qty.	€
600	270	**LY53.1**	1	428,95
950	400	**AH27.1**	1	453,65

② With outlet hose

Immersion depth (mm)	Delivery rate (ml/stroke)	Art. No.	Pack Qty.	€
600	270	**NH33.1**	1	418,20
950	400	**NH34.1**	1	453,65

Acid and alkali pumps

Made of **PP**, **PTFE**, **Hastelloy**. Battery operated. Ideal for safe emptying and transfering of water-like liquids (for most acids and alkalis etc.). General purpose and easy-to-use. High flow rate (up to 6 l/min) and light (weight approx. 500 g including batteries). ∅ of dip tube 25 mm. 2 rechargeable batteries (Mono 1.5 V) are recommended for use. **Delivery without** battery (please order separately).

Suction pipe length (mm)	Art. No.	Pack Qty.	€
400	**E490.1**	1	396,70
600	**E491.1**	1	413,90

Accessories:

Battery Mono D	**X228.2**	2	18,25

Solvent pumps

Mini solvent pump

By Bürkle. Hand pump for small drums up to 5 l.

- For high-purity fluids as well as flammable media
- Parts in contact with media are made from **PTFE** and **stainless steel**
- Delivery rate: approx. 1.8 l/min
- Earthing cable connection for dissipating electrostatic charge
- Works on the over-pressure principle, pressure relief valve protects against excessive pressure build-up
- Transfer of medium at the touch of a button
- Integrated spout (outer ∅ 7 mm) prevents dripping and allows for hose attachment
- With GL 45 thread

Delivery incl. earthing cable and PTFE riser tube (inner ∅ 6 mm, wall thickness 1 mm, length 400 mm).

Art. No.	Pack Qty.	€
APE4.1	1	421,40

Accessories:

Threaded adapter, PTFE, GL 45 / S 40	**APE5.1**	1	33,15
Threaded adapter, ETFE, GL 45 / GL 38	**APE6.1**	1	33,15
Threaded adapter, ETFE, GL 45 / GL 32	**APE7.1**	1	33,15

Roth antistatic-set

Prevents fire and explosion caused by electrostatic charge. Consists of two insulated cables 3 mm / 3 m with vice grip wrenches on both sides and a blank copper wire 2 mm / 3 m with a vice grip wrench on one side.

Art. No.	Pack Qty.	€
0213.1	1	53,70

Solvent pump

For filling of high-purity liquids.

- **Delivery incl.** two immersion tubes for 10 l and 25 l stainless steel drums with 2″ steel fine pitch thread
- Fixed drainage elbow with stopcock
- Pump can be shut off hermetically by two ball valves
- Works according to excess pressure principle

Note: the drum and the pump must be grounded using the Roth antistatic set (Art. No. 0213.1) during filling of flammable liquids.

Technical specifications:

For drum sizes	10 l and 25 l
Immersion depths	275 mm and 435 mm
Overall length incl. pump ball	450 mm and 600 mm
Weight	approx. 1.2 kg
Compression gland thread type	2" steel fine pitch thread
Parts with media contact	Stainless steel (1.4301) and PTFE

Art. No.	Pack Qty.	€
N103.1	1	403,15

Warning:
Corrosion through acidification can occur when using chlorinated solvents. If the required safety precautions are taken (immediate washing and removal from drum), the pump can be carefully used, with such solvents. Not for use with acids.
To prevent crystallization, pump should be rinsed with water after use with alkalis.

Solvent pumps

Sekuroka® stainless steel safety pumps

For filling of flammable liquids.
- Immersion tube is infinitely adjustable to drum depth
- Near-complete emptying of drums
- Works according to piston stroke principle
- Removable drainage elbow for connecting a drainage hose with stopcock (please order separately)

Note: the drum and the pump must be grounded using the Roth antistatic set (Art. No. 0213.1) during filling of flammable liquids.

Technical specifications:

Model	Type I	Type II
For drum size (l)	up to 50	up to 200
Delivery rate (ml/stroke)	140	200
Immersion depth (mm)	570	910
Overall length (mm)	680	1020
Weight (kg)	1.2	1.8
Compression gland thread type	2" steel fine pitch thread	
Parts with media contact	Stainless steel (1.4301, 1.4305) and PTFE	

Type	Art. No.	Pack Qty.	€
I	**N502.1**	1	223,60
II	**N503.1**	1	245,10

Accessories for stainless steel safety pump

Drainage hose with stopcock
DN 8 ball valve made of stainless steel, 12.8 mm bushing.

Art. No.	Pack Qty.	€
T276.1	1	211,25

Drum plug made of PVC for openings from 40 to 70 mm.

Art. No.	Pack Qty.	€
9276.1	1	23,60

Replacement parts set : knurled bush, two O-rings, guide bush, stop neck, disc

Art. No.	Pack Qty.	€
9599.1	1	29,60

Solvent pumps, foot operated

By Bürkle. For filling drums with high purity liquids such as solvents.
- A compression gland and stopcock allow the drum and pump to be hermetically sealed
- Immersion tube is infinitely adjustable to drum depth
- Available in two types:
  ① With discharge tube
  ② With outlet hose and stopcock

Note: the drum and the pump must be grounded using the Roth antistatic set (Art. No. 0213.1) during filling of flammable liquids.

Technical specifications:

Delivery rate	approx. 20 l/min
Immersion depth	950 mm
Overall length	1485 mm
For drum sizes up to	220 l
Weight	Type ① approx. 3.5 kg / ② approx. 4.4 kg
Compression gland thread type	2" steel fine pitch thread
Parts with media contact	Stainless steel (1.4301) and PTFE

Design	Art. No.	Pack Qty.	€
① With discharge tube	**CPT5.1**	1	476,25
② With outlet hose and stopcock	**CPT6.1**	1	637,50

Electro barrel pumps

Barrel pumps AccuOne and EnergyOne

By Bürkle.

- Parts in contact with medium are made of **Hastelloy C**, **PP, PVDF** and **PTFE**
- Unique hybrid system allows fast and versatile filling of liquids, the supply units can be changed to use either with battery or power pack.
- The drive can be disconnected easily via a clip lock. This makes it possible to use one drive for filling at several stationary pump stations.
- Flow rate 12 l/min. Can be regulated continuously via TouchPanel from 0.4 l/min to 12 l/min
- Please order barrel screw fittings separately
- Drainage hose with nozzle is optionally available. Drainage hose connection ¾″

AccuOne

- Barrel pump driven by rechargeable battery (offers versatility and independence from the power supply)
- Lithium-ion rechargeable battery, 14.4 V, 1.5 Ah
- Up to 600 litres of delivery volume per battery charge
- Weight 750 g

Delivery incl. fixed drainage elbow, rechargeable battery and power outlet adapter.

Immersion depth (mm)	Art. No.	Pack Qty.	€
500	**PL80.1**	1	482,70
700	**PL81.1**	1	497,75
1000	**PL82.1**	1	511,70

EnergyOne

- Outlet operated barrel pump (offers versatility and independence from the battery charge)
- Power outlet adapter 230 V
- Unlimited filling duration
- Weight 580 g

Delivery incl. fixed drainage elbow, power outlet adapter and international socket adapter.

Immersion depth (mm)	Art. No.	Pack Qty.	€
500	**PL83.1**	1	409,60
700	**PL84.1**	1	422,50
1000	**PL85.1**	1	436,45

Accessories:

Rechargeable battery without outlet adapter	**PL86.1**	1	119,35
Outlet adapter	**PL87.1**	1	65,70
Outlet adapter incl. plug	**PL88.1**	1	134,40
Outlet hose with nozzle	**PL89.1**	1	75,15
Pump station with immersion pipe length 500 mm	**PL90.1**	1	136,55
Pump station with immersion pipe length 700 mm	**PL91.1**	1	138,70
Pump station with immersion pipe length 1000 mm	**PL92.1**	1	145,15
Barrel screw joint made of PP, for 2″ fine steel thread	**1789.1**	1	31,75
Container screw joint with locknut (2″ fine steel thread); for attaching in any position; 60 mm mounting hole	**T244.1**	1	37,10
Barrel plug, PVC, for hole-∅ 40 to 70 mm	**9276.1**	1	23,60
Mauser 2″, coarse thread, inside	**PL93.1**	1	39,25
Barrel screw joint made of PP, for 2″ internal fine steel thread and adapter for Tri-Sure® internal course thread	**T243.1**	1	39,25

Electro barrel pumps

By Lutz. For pumping liquid media out of bulk storage containers.

Application:

- **Set 1 and 2**: **aqueous liquids**, diluted acids and alkaline solution, hydrogen peroxide etc.
- **Set 3**: low-viscosity **alkaline** solution, sodium hydroxide, potassium hydroxide, ammonia water, formic acid, acetic acid, etc.
- **Set 4**: most **concentrated acids and alkaline solutions** such as hydrochloric acid, sulphuric acid, hydrofluoric acid etc.
- **Set 5 Explosion-proof**: **highly flammable hydrocarbons** such as ethanol, gasoline, isopropanol, kerosine, methanol, crude petroleum, etc.
- **Set 6 Explosion-proof: explosive liquids** such as acetone, concentrated Formic acid, ethyl acetate, buthyl acetate, concentrated Acetic acid, nicotine, toluene, styrene, etc.

Technical specifications:

Set	1	2	3	4	5 Explosion-proof	6 Explosion-proof
Motor explosion-proof	no				yes	
Output (W)	200		500	575	460	
Immersion depth of pipe (mm)	650	1000				
Material of nozzle	PP		PP/FEP	PVDF	Brass / PTFE	Niro / FEP
Material of immersion pipe	PP			PVDF	Stainless steel	
Flow rate max (l/min)	75		85	80	95	
Delivery height max (mWs)	7		19	17	14	
Density max (kg/dm³)	1.3		1.4	1.8	1.6	
Viscosity max (mPas)	300			800	350	
Cable length (m)	3	5				
Mains supply	230 V AC / 50 Hz					

Set 1 and 2:
Delivery incl. 1.5 m PVC-tube ¾", one-hand nozzle valve PP, hanging device.
Set 3:
Delivery incl. 2.0 m PVC-coil tube¾" (DN 19), nozzle PP, barrel adapter (PP).
Set 4:
Delivery incl. 2.0 m special chemical tube ¾" (DN 19), nozzle PVDF, barrel adapter (PP).
Set 5 explosion-proof:
Delivery incl. 2.0 m solvent tube ¾" (DN 19) conductive hose attachments, nozzle brass/PTFE, potential equalization cable, barrel adapter PP, safety plug not explosion-proof. All-purpose motor, explosion-proof in compliance with type of protection II 2 G EEx de IIC T6 (ATEX), stainless steel pumping station, explosion-proof Ex II 1/2 G IIB T4 (ATEX).
Set 6 explosion-proof:
Delivery incl. 2.0 m chemical tube ¾" (DN 19) conductive hose attachments, nozzle Niro/FEP, potential equalization cable, barrel adapter PP, safety plug not explosion-proof, all-purpose motor, explosion-proof in compliance with type of protection II 2 G EEx de IIC T6 (ATEX), stainless steel pumping statio, explosion-proof Ex II 1/2 G IIB T4 (ATEX).

Model	Art. No.	Pack Qty.	€
Set 1	**KH51.1** *	1	639,65
Set 2	**KH52.1** *	1	674,05
Set 3	**KA12.1** *	1	1037,40
Set 4	**X352.1** *	1	2080,15
Set 5 Ex	**KA13.1** *	1	2295,15
Set 6 Ex	**KA14.1** *	1	2950,90

* Longer delivery times possible. Please check with our Sales Department.

Mini-Dispenser Piccolo

By Vitlab. With two fixed volumes. Ideally suited to dispensing long series. Manual push-button delivery, automatic refilling. Good chemical resistance thanks to high-quality materials, but not suitable for vapourous media.

- Precise media delivery
- Freely rotatable discharge tube on the bottle
- Choice of 2 fixed volumes
- Thread GL 28
- **Parts in contact with media:** PTFE, FEP, ETFE, PFA, borosilicate glass, Pt-Ir

Volume (µl)	Accuracy (%)	Precision (%)	Art. No.	Pack Qty.	€
100 / 250	2.0	0.4	**Y697.1**	1	225,75
500 / 1000	1.0	0.2	**Y698.1**	1	225,75
1000 / 2000	1.0	0.2	**Y699.1**	1	225,75

Accessories:

Threaded adapter, PP, GL 28/32	**Y700.1**	1	15,00

Material
DURAN®

Automatic pipettes

Dispenser made of DURAN®, adjusted to „Ex“. Neck NS 29/32. Inscription in green overglaze colour. Ideal for dosing suspensions. Please order bottle separately.

Volume (ml)	Tolerance (±ml)	Art. No.	Pack Qty.	€
5	1,0	**Y446.1**	1	53,00
10	1,0	**Y447.1**	1	55,05
20	2,0	**Y448.1**	1	58,70
25	2,5	**Y449.1**	1	61,75
50	5,0	**Y450.1**	1	82,70
100	10	**Y451.1**	1	85,95

Accessories:
Narrow neck storage bottles of soda-lime glass, clear, acc. to DIN 12036, ISO 4796. With glass stopper NS 29/32.

Volume (ml)	Art. No.	Pack Qty.	€
1000	**H058.1**	1	14,55

A 121 °C

Rotilabo® II dispenser

- Direct displacing piston with wiping PFA lip seal reduces crystallisation of liquids
- Improved volume adjustment due to internal toothed strip, volumes can be set quickly and precisely
- Valve block rotatable by 360° on the bottle, with GL 45 thread
- Swivelling cap does not obstruct dispensing
- Vent valve with safety bulb closes dosing channel when vent cannula not fitted
- Screwable ventilation stoppers for quick assembly of a drying tube
- Telescopic intake tube, infinitely adjustable to different bottle heights
- Suitable for calibration in conjunction with measuring instrument inspection according to ISO 9001 and GLP; change to factory calibration is displayed
- Autoclavable at 121 °C (2 bar), according to DIN EN 285, without disassembly
- Marked as DE-M, according to DIN EN ISO 8655-5

Materials in contact with media: Borosilicate glass, Al_2O_3 ceramic, ETFE, FEP, PFA, PTFE, platinum-iridium, PP (cap)

Usage limits: Temperature from +15 °C to +40 °C, steam pressure up to max. 500 mbar, kinematic viscosity up to 500 mm^2/s, density up to 2.2 g/cm^3

Specifications of supplied threaded adapters and suction tubes:

Nominal capacity (ml)	Bottle thread adapter	Suction tube, length (mm)
2, 5, 10	GL 25, GL 28/S 28, GL 32, GL 38, S 40	125-240
25, 50. 100	GL 32, GL 38, S 40	170-330

Delivery incl. certificate of quality, telescopic suction tube, assembly spanner and threaded adapter made of PP.

Volume (ml)	Graduations (ml)	Accuracy/coefficient of variation (±µl)	Art. No.	Pack Qty.	€
0,2-2	0.05	10 / 2	**HAC6.1**	1	266,60
0,5-5	0.10	25 / 5	**HAC7.1**	1	266,60
1-10	0.20	50 /10	**HAC8.1**	1	274,15
2,5-25	0.50	125 / 25	**HAC9.1**	1	352,60
5-50	1.0	250 / 50	**HAE0.1**	1	384,85
10-100	1.0	500 / 100	**HAE1.1**	1	524,60

Accessories for Rotilabo® II dispenser

Telescopic suction tubes
Made of FEP.

Type	Art. No.	Pack Qty.	€
Length 125-240 mm, for dispensers with volumes of 2, 5, 10 ml	**KAK3.1**	1	22,05
Length 170-330 mm, for dispensers with volumes of 25, 50, 100 ml	**KAK4.1**	1	27,55

Dispensette® *S* / Dispensette® *S* Organic

By BRAND. For accurate dispensing aggressive and non-aggressive media. Suitable for sterile dispensing.

Models:
- ① **Digital** - Easy-to-read digital display via mechanical counting mechanism; Easy Calibration technology for quick calibration
- ② **Analog** - Quick adjustment of dispensing volume, safe and reliable volume setting through internal rack
- ③ **Fix** - Non-adjustable dispensing volume for routine applications

Features:
- Easy dispensing and quick ventilation through floating piston
- Rapid ventilation through improved fluid mechanics
- Valves without additional seals for easier cleaning
- Rotates through 360°, valve block with GL 45 thread
- Dispensing syringe with swivel-mounted screw cap for protection against media contact
- Telescopic suction tube adjustable to different bottle sizes
- Recirculation valve prevents loss of reagent and allows quick, bubble-free ventilation
- DE-M approved
- Suitable for calibration in conjunction with measuring instrument inspection according to ISO 9011 and GLP
- Alteration of factory calibration is indicated
- Easy to disassemble for cleaning
- Fully autoclavable at 121 °C
- Microfilter can be connected to the ventilation opening for sterile dispensing

Limits of use:
Max. vapour pressure 600 mbar; max. viscosity 500 mm^2/s; max. temperature 40 °C; max. density 2.2 g/cm^3.

Limits of error:

Nominal volume (ml)	Accuracy (±µl)	Variation coefficient (±µl)
1	6	2
2	10	2
5	25	5
10	50	10
25	125	25
50	250	50
100	500	100

Delivery incl.: certificate of quality, telescopic suction tube, recirculation valve and recirculation tube, assembly spanner and threaded adapter made of PP.

Specifications of supplied threaded adapters and suction tubes:

Nominal capacity (ml)	Bottle thread adapter	Suction tube length (mm)
1, 2, 5, 10	GL 24-25, GL 28/S, GL32-33, GL 38, S 40	125-240
25, 50. 100	GL 32-33, GL 38, S 40	170-330

Dispensette® S

Range of applications:
colour code: red. For dispensing aggressive reagents directly from the supply bottle: e.g. concentrated alkalis and acids such as H_3PO_4. H_2SO_4 (excluding, e.g., HCl, HNO_3 and HF), saline solutions and a wide range of organic solvents.

Materials in contact with media:
borosilicate glass, Al_2O_3 ceramics, platinum-iridium, ETFE, FEP, PFA, PTFE and PP.

Dispensette® S, Digital

Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
0,2-2	0,01	**ECL4.1**	1	382,70
0,5-5	0,02	**ECL5.1**	1	382,70
1-10	0,05	**ECL6.1**	1	382,70
2,5-25	0,1	**ECL7.1**	1	478,40
5-50	0,2	**ECL8.1**	1	496,65

Dispensette® S, analog

Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
0,2-2	0,05	**ECL9.1**	1	338,65
0,5-5	0,1	**ECN0.1**	1	338,65
1-10	0,2	**ECN1.1**	1	338,65
2,5-25	0,5	**ECN2.1**	1	435,40
5-50	1,0	**ECN3.1**	1	468,70
10-100	1,0	**ECN4.1**	1	629,95

Dispensette® S, Fix

Volume (ml)	Art. No.	Pack Qty.	€
1	**ECN5.1**	1	338,65
2	**ECN6.1**	1	338,65
5	**ECN7.1**	1	338,65
10	**ECN8.1**	1	338,65

Dispensette® S Organic

Range of applications:
colour code: yellow. Ideal for dispensing organic solvents, e.g. chlorinated and fluorinated hydrocarbons such as trichlorofluoroethane and dichloromethane, acids such as concentrated HCl and HNO_3 (excluding HF) as well as for trifluoroacetic acid (TFA), tetrahydrofuran (THF) and peroxides.

Materials in contact with media:
borosilicate glass, Al_2O_3-ceramics, tantalum, ETFE, FEP, PFA, PTFE and PP.

Dispensette® S Organic, analog

Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
0,5-5	0,1	**ECN9.1**	1	338,65
1-10	0,2	**ECP0.1**	1	338,65
2,5-25	0,5	**ECP1.1**	1	433,25
5-50	1,0	**ECP2.1**	1	468,70
10-100	1,0	**ECP3.1**	1	629,95

Telescopic suction tubes

By Brand. For Dispensette®, seripettor® *pro* and Titrette®.
Made of FEP, individually adjustable length.

Nominal capacity (ml)	Outer ∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
1 / 2 / 5 / 10	6	70-140	**PP81.1**	1	13,55
1 / 2 / 5 / 10	6	125-240	**PP82.1**	1	18,10
1 / 2 / 5 / 10	6	195-350	**PP83.1**	1	25,95
1 / 2 / 5 / 10	6	250-480	**PP84.1**	1	20,20
25 / 50 / 100	7,6	170-330	**PP85.1**	1	25,95
25 / 50 / 100	7,6	250-480	**PP86.1**	1	26,75

seripettor®/seripettor® *pro* dispenser

By Brand.

- Dispensing: push plunger down, fills automatically
- Suitable for serial dispensing by means of flexible dispensing hose made of PTFE with safety handle, length approx. 800 mm (please order separately)
- **Suitable for dispensing sterile media:** screw the valve block with suction tube onto the filled bottle, seal the valve block with the cap, attach the autoclavable sterile filter (0.2 µm) at the side and autoclave at 121 °C. Remove the cap from the valve block under clean bench conditions, screw in the sterile dispensing unit and attach the actuating unit
- If the snug fitting plunger seal is worn, the dispensing unit can be interchanged
- GL 45 thread

Materials in contact with media:

- seripettor®: FEP, PP, PE, EPDM
- seriipettor ® pro: PP, PE, Borosilicate glass, Al_2O_3-ceramic , ETFE, PFA, FEP, PTFE, Pt-Ir

Limits of use: 15 to 40 °C, vapour pressure max. 500 mbar, max. density 2.2 g/cm³, viscosity 300 mm²/s (2 ml device), 150 mm²/s (10 ml device) or 75 mm²/s (25 ml device)

Limits of error:

Nominal volume (ml)	Accuracy (±µl)	Variation coefficient (±µl)
2	24	4
10	120	20
25	300	50

Delivery incl. dispensing syringe, suction tube, replacement dispensing unit and PP adapter (GL 32, S 40).

seripettor®

For dispensing aqueous solutions, buffer solutions, culture media, diluted, non-oxidising acids and agars up to max. 60 °C.

Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
0,2-2	0,04	**PP91.1**	1	144,05
1-10	0,2	**PP92.1**	1	144,05
2,5-25	0,5	**PP93.1**	1	170,95

seripettor® *pro*

For dispensing aqueous solutions, buffer solutions, culture media, acids (e.g. concentrated HCl), polar solvents (e.g. acetone), etheric oils and UV-sensitive media.

Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
0,2-2	0,04	**PP94.1**	1	252,65
1-10	0,2	**HX64.1**	1	266,60
2,5-25	0,5	**HX65.1**	1	356,90

Accessories:

① 2 ml dispensing unit, non-sterile	**PP95.1**	3	28,95
① 10 ml dispensing unit, non-sterile	**HX66.1**	3	29,40
① 25 ml dispensing unit, non-sterile	**HX67.1**	3	41,35
① 2 ml dispensing unit, **sterile**	**PP96.1**	7	69,90
① 10 ml dispensing unit, **sterile**	**HX68.1**	7	73,55
① 25 ml dispensing unit, **sterile**	**HX69.1**	5	77,90
② 2 + 10 ml dispensing hose, flexible with handle	**HX70.1**	1	82,80
② 25 ml dispensing hose, flexible with handle	**HX71.1**	1	85,40
Syringe filter "RC", 0.2 µm pore size	**EE80.1**	100	122,00

Dispensette® S Trace Analysis, analog

By Brand.

Range of applications:

- For accurate dispensing of highly pure media in trace analysis
- Dispensing of metal traces, usually in the low ppb range - or even in the ppt range, depending on application
- The established cleaning process for use in trace analysis is explained in the operating instructions
- Usable as a hydrofluoric acid dispenser with platinum-iridium valve spring

Models:

- Dispensing needle with recirculation valve: prevents loss of reagent and allows fast, bubble-free ventilation
- Dispensing needle without recirculation valve: prevents contamination of the bottle contents

Features:

- Depending on requirements, the spring material is made of platinum-iridium or tantalum
- Valves without additional ring seals for easier cleaning
- Dispensing plunger with snug fitting seal
- Complete dispensing unit is easy to replace in case of wear
- Reliable volume control through inner rack mechanism
- Rotates through 360°, valve block with GL 45 thread
- Dispensing needle with swivel-mounted screw cap for protection against media contact
- Telescopic suction tube adjustable to different bottle sizes
- DE-M approved
- Suitable for calibration in conjunction with measuring instrument inspection according to ISO 9011 and GLP
- Alteration of factory calibration is indicated
- Microfilter can be connected for sterile dispensing

Materials in contact with media:
High-purity plastics (PTFE, ETFE, PCTFE, FEP and PFA), sapphire valves, platinum-iridium or tantalum spring material.

Limits of use:
Max. vapour pressure 600 mbar; max. viscosity 500 mm²/s; max. temperature +40 °C; max. density 3.8 g/cm³.

Limits of error:

Nominal volume (ml)	Accuracy (±µl)	Variation coefficient (±µl)
10	50	10

Delivery incl. certificate of quality, telescopic suction tube, assembly spanner and threaded adapter GL 28 / S 28 (ETFE), GL 32 (ETFE) and S 40 (PTFE). Version with recirculation valve also includes a recirculation tube.

Type	Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
Platinum-iridium, without RDV	1-10	0,2	**ECX1.1**	1	689,10
Platinum-iridium, with RDV	1-10	0,2	**ECX2.1**	1	733,15
Tantalum, without RDV	1-10	0,2	**ECX3.1**	1	689,10
Tantalum, with RDV	1-10	0,2	**ECX4.1**	1	733,15

Accessories for Dispensette® S TA, analog

Replacement dispensing unit with retaining ring

Easy replacement with no need for additional tools. Nominal capacity 10 ml. Calibrated, including certificate of quality.

Art. No.	Pack Qty.	€
ECX5.1	1	333,25

Dispenser FORTUNA® POLYFIX®

By Poulten & Graf.
- Conformity certified
- Precision dispensing plunger
- Quick adjustment with easy action
- Rotatable fine adjustment
- GL 32 thread

Delivery incl. dispensing syringe set, suction hose made of PTFE, two GL 40 and GL 45 threaded adapters made of PP.

With glass plunger and clear glass cylinder.
For dispensing aqueous media.

Volume (ml)	Graduations (ml)	Tolerance (±ml)	Art. No.	Pack Qty.	€
2-10	0,2	0,04	**P312.1**	1	135,45
10-50	1,0	0,2	**P313.1**	1	152,65

With PTFE-encased plunger and clear glass cylinder.
For dispensing weak acids and alkalis.

Volume (ml)	Graduations (ml)	Tolerance (±ml)	Art. No.	Pack Qty.	€
2-10	0,2	0,04	**PK97.1**	1	179,55
10-50	1,0	0,2	**PK98.1**	1	197,80

With glass plunger and brown glass cylinder.
For dispensing light-sensitive media.

Volume (ml)	Graduations (ml)	Tolerance (±ml)	Art. No.	Pack Qty.	€
2-10	0,2	0,04	**PK99.1**	1	180,60
10-50	1,0	0,2	**PL00.1**	1	198,90

Bottle holder for dispensers

By Brand. **Made of PP.** For secure attachment of bottle top dispensers or digital burettes during work with small storage bottles. Completely made from plastic and therefore ideal for trace analysis and use in aggressive environments (e.g. acid vapours in extractor). Base plate L 220 x W 160 mm, length of stand rod 325 mm. Weight: approx. 1.1 kg.

Art. No.	Pack Qty.	€
CNN2.1	1	169,85

Dispenser FORTUNA® OPTIFIX® series

By Poulten & Graf.

Properties:
- Ergonomic design with colour-code system
- Resistant to abrasion, UV radiation, acids and acid vapours
- Valve block without metal springs; no contamination of the dispensed liquid
- Quick volume adjustment with easy action and rotatable fine adjustment
- Visually recognisable dosing direction
- Screws directly onto bottle with thread GL 32
- Easy to dismantle and clean.
- Conformity testing acc. to DIN EN ISO 8655-5

Tolerances:

Nominal capacity (ml)	Accuracy (±ml)	Variation coefficient (±ml)
2	0.012	0.004
5	0.030	0.010
10	0.060	0.020
30	0.180	0.060
50	0.300	0.100
100	0.600	0.200
200	1.200	0.400
300	1.800	0.600
500	3.000	1.000

Dispenser FORTUNA® OPTIFIX® BASIC

For dosing **aqueous media, crystallizing substances and diluted acids and alkaline solutions.**
Dispensing cylinder made of glass, plastic-coated.
Dosing cylinder made of glass, PTFE-coated. Autoclavable.

Delivery incl. suction hose made of PTFE, two threaded adaptors (GL 40 and GL 45) made of PP.

Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
0,5-2	0.1	**E821.1**	1	304,25
1-5	0.1	**E822.1**	1	304,25
2-10	0.2	**E823.1**	1	304,25
5-30	0.5	**E824.1**	1	418,20
10-50	1	**E825.1**	1	457,95
20-100	2	**E826.1**	1	769,70
40-200	5	**E827.1**	1	1152,40
60-300	5	**E828.1**	1	1607,15
100-500	5	**E829.1**	1	1801,70

Dispenser FORTUNA® OPTIFIX® SOLVENT

For dosing **solvents and low-viscosity media (up to 100 mPa · s).**
Dispensing cylinder made of glass, plastic-coated.
Dosing piston made of glass, without coating. Autoclavable.

Delivery incl. suction hose made of PTFE, two threaded adaptors (GL 40 and GL 45) made of PP.

Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
0,5-2	0.1	**E833.1**	1	303,15
1-5	0.1	**E834.1**	1	303,15
2-10	0.2	**E835.1**	1	303,15
5-30	0.5	**E836.1**	1	428,95
10-50	1	**E837.1**	1	457,95
20-100	2	**E838.1**	1	769,70
40-200	5	**E839.1**	1	1144,90
60-300	5	**E840.1**	1	1617,90
100-500	5	**E841.1**	1	1812,45

Dispenser FORTUNA® OPTIFIX® SAFETY

For dosing **strong acids and aggressive chemicals**.
Dispensing cylinder made of glass, plastic-coated.
Dosing cylinder made of glass, PTFE-coated with sealing lip.

Delivery incl. suction hose made of PTFE, two threaded adaptors (GL 40 and GL 45) made of PTFE.

Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
0,5-2	0.1	**E842.1**	1	395,60
1-5	0.1	**E843.1**	1	395,60
2-10	0.2	**E844.1**	1	395,60
5-30	0.5	**E845.1**	1	542,90
10-50	1	**E846.1**	1	593,40
20-100	2	**E847.1**	1	841,75

Dispenser FORTUNA® OPTIFIX® SAFETY S

For dispensing **fuming acids and other aggressive chemicals as well as odorous liquids**.
Dispensing cylinder made of glass, plastic-coated.
Dispensing piston made of glass, PTFE-coated with sealing lip.
With safety stopcock at the output channel and additional safety valve in the ventilation tube.

Delivery incl. suction hose made of PTFE, two threaded adaptors (GL 40 and GL 45) made of PTFE.

Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
0,5-2	0.1	**PL11.1**	1	487,00
1-5	0.1	**PL12.1**	1	487,00
2-10	0.2	**PL13.1**	1	487,00
5-30	0.5	**PL14.1**	1	657,90
10-50	1	**PL15.1**	1	708,45
20-100	2	**PL16.1**	1	955,70

Dispenser FORTUNA® OPTIFIX® HF

For dispensing **highly aggressive and toxic chemicals (e.g. liquid acid).**
Dispensing cylinder made of PTFE.
Dosing cylinder made of glass, PTFE-coated with sealing lip.

Delivery incl. suction hose made of PTFE, two threaded adaptors (GL 40 and GL 45) made of PTFE.

Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
1-5	0.1	**PL17.1**	1	708,45
2-10	0.2	**PL18.1**	1	708,45
6-30	0.5	**PL19.1**	1	1052,45
10-50	1	**PL20.1**	1	1568,45

Thread-adapters for all FORTUNA® OPTIFIX® dispensers

For dispensers with thread GL 32.

Thread (drum)	Material	Art. No.	Pack Qty.	€
GL 45	PTFE	**L903.1**	1	76,90
GL 25	PP	**L896.1**	1	12,50
GL 38	PP	**L897.1**	1	13,90
GL 40	PP	**L898.1**	1	15,35
GL 45	PP	**L899.1**	1	16,15

Thread adapters for dispenser

Material	Thread (drum)	Thread (Dispenser)	Art. No.	Pack Qty.	€
Fluororubber	GL 40	GL 45	**P321.1**	1	21,45
PTFE	S38-430, suitable for ex. for AE00.3, HN44.3, HN60.3, HN54.1	GL 45	**KY68.1**	1	55,70

▶ Further thread adapters see p. 52

A 121 °C

Dispensers ceramus® classic

By Hirschmann.

- **Ceramic piston:** no wear by friction, no swelling, no thermal problems, high chemical stability
- Variable volume setting
- Suction tube is screwed on tightly, therefore completely leakproof
- Absolutely reproducible work
- Quick and safe setting of volume
- Parts can be replaced easily
- Thread A32
- Without dismantling, steam sterilizable at 121 °C/2 bar
- Certificate of conformity

Delivery incl. 3 thread adapters (A28/S40/A45), 1 installation wrench, certificate of quality.

Volume (ml)	Graduations (ml)	Tolerance (±ml)	Art. No.	Pack Qty.	€
0,2-1	0,05	0,01	**1591.1**	1	285,95
0,4-2	0,05	0,02	**1592.1**	1	285,95
1-5	0,10	0,05	**1593.1**	1	285,95
2-10	0,25	0,10	**1594.1**	1	285,95
5-30	0,50	0,30	**1595.1**	1	376,25
10-60	1,00	0,60	**1596.1**	1	411,75

A 121 °C

Dispensers made of PP

By Hirschmann. With glass flask for dosing aqueous and organic media. Sterilisable up to 121 °C, with A32 screw thread. Certificate of conformity.

Delivery incl. 3 thread adapters (A28, S40, A45), certificate of quality.

Volume (ml)	Graduations (ml)	Tolerance (±ml)	Art. No.	Pack Qty.	€
2-10	0,25	0,10	**P207.1**	1	210,70
10-60	1,00	0,60	**P208.1**	1	305,30

A 121 °C

ceramus® dispenser

By Hirschmann.

- **Media backflow system**
- **Ceramic piston:** no wear by friction, no swelling, no thermal problems, high chemical stability
- Suction tube is screwed on tightly, therefore completely leakproof
- The dispenser on the bottle is freely rotatable
- Luer-Lock connection on the back
- Ergonomic grip
- Quick and safe setting of volume
- Absolutely reproducible work
- Parts can be replaced easily
- A45 thread
- Without dismantling, steam sterilizable at 121 °C / 2 bar
- Certificate of conformity

Delivery incl. 3 thread adapters (A32/A38/S40), 1 assembly wrench, with certificate of quality.

Variable volume setting

Volume (ml)	Graduations (ml)	Tolerance (±ml)	Art. No.	Pack Qty.	€
0,2-1	0,05	0,01	**T300.1**	1	327,90
0,4-2	0,05	0,02	**T301.1**	1	327,90
1-5	0,10	0,05	**T302.1**	1	327,90
2-10	0,25	0,10	**T303.1**	1	327,90
5-30	0,50	0,30	**T304.1**	1	420,35
10-60	1,00	0,60	**T305.1**	1	455,80

Fixed volume setting

Volume (ml)	Tolerance (±ml)	Art. No.	Pack Qty.	€
1	0,01	**T326.1**	1	318,20
2	0,02	**T327.1**	1	318,20
5	0,05	**T328.1**	1	318,20
10	0,10	**T329.1**	1	318,20
25	0,25	**T330.1**	1	405,30
50	0,5	**T331.1**	1	431,10

Special version for problematic media

For dosing hydrofluoric acid and other problematic media.
Pistons, cylinders, valve seats and balls made of ceramic, valve springs made of plating/iridium.

Volume (ml)	Graduations (ml)	Tolerance (±ml)	Art. No.	Pack Qty.	€
2-10	0,25	0,1	**T306.1**	1	831,00

Digital dispenser

Ultra / Ultra HF dispenser

For dispensing highly pure acids and alkalis.
Suitable for use in ultra trace analysis.

Features:
- **Free of metals**
- Made of high quality and highly pure plastics (PTFE, TFM and PFA)
- Calibrated and mechanically tested for precision and accuracy
- 38-430 thread (fits ROTIPURAN® Ultra products)

Special features of Ultra dispenser:
- Acid cleansed
- Manufactured in cleanroom (class 100)

Special features of Ultra HF dispenser:
- Specially for dispensing hydrofluoric acids
- Also suitable for analytical acids

When using bottles with a GL45 thread, please order fastening for dispenser KK11.1 separately.

Model	Volume (ml)	Graduation (ml)	Tolerance (±ml)	Art. No.	Pack Qty.	€
Ultra	0,5-5	0,5	0,02	**KK97.1**	1 piece	2428,45
Ultra HF	0,5-5	0,5	0,02	**KK98.1**	1 piece	1998,45

Accessories for Ultra/Ultra HF dispenser

Bottle holder

Stabilises bottles when using a dispenser. The four-screw system is suitable for both square bottles and round bottles. The bottle holder is designed for ROTIPURAN® Supra and Ultra bottles with capacities from 250 ml to 2 litres. Also suitable for bottles with a diameter from approx. 7,0 cm to 11,5 cm.

Product	Art. No.	Pack Qty.	€
Bottle holder	**KK99.1**	1 piece	103,10

Fastening for Ultra/Ultra HF dispenser to GL45

Made of PTFE. For bottles with GL45 thread, specially for the use of ROTIPURAN® Supra products with Ultra and Ultra HF dispensers.

Product	Art. No.	Pack Qty.	€
Fastening for ROTIPURAN® Supra (GL45)	**KK11.1**	1 piece	293,40

▶ Further accessories for the opus® dispenser see p. 418

Digital dispenser opus® dispenser

By Hirschmann. For motor-driven dosing directly from the lab bottle. Microprocessor-controlled piston stroke system guarantees highest accuracy and precise, reproducible results.
- Safe and easy handling via external touch screen with clearly arranged menu keys; with quick-cal function for simple calibration of other temperatures or other media
- High media flexibility thanks to highly resistant, inert materials (ECTFE, borosilicate glass 3.3, Hastelloy, FEP, PTFE)
- Media carrying parts are steam sterilisable (121 °C)
- Time-controlled serial dosing up to 9999 reruns, enables integration in automated process runs
- Methods memory for 9 different procedures
- Media feedback system for ventilation without loss of reagent
- Universal Luer-connection for dry pipes, filters etc.
- Can be battery or socket operated (storage batteries not included in the delivery; please order separately)
- Stepper function for delivery of up to 10 different partial quantities
- Sucking and draining speeds can be set
- 4 languages (G, E, F, S) integrated by default
- Optional system platform for secure standing, please order separately

Technical specifications:

Model	10 ml	20 ml	50 ml
Basic unit			
Volume range	0.010 to 99.999 ml	0.10 to 200 ml	1.00 to 500 ml
Resolution	<1 µl		<2 µl
Maximum piston stroke	10 ml	20 ml	50 ml
Dispenser accuracy	R = 0.6 %, CV = 0.2 %		
Stepper accuracy	R = 0.5 % CV = 0.2 %		R = 0.5 %, CV = 0.2 %
Working temperature range	+4 to +40 °C		
Connection voltage	230 V, plug-in power pack 15 V, 850 mA		
Dimensions (W x D x H)	63 x 80 x 320 mm		
Weight	660 g		
Control panel:			
Touch screen	3.5″ with 320 x 240 pixels		
PC interface	USB or RS 232		
Dimensions (W x D x H)	110 x 130 x 55 mm		
Weight without storage battery	230 g		

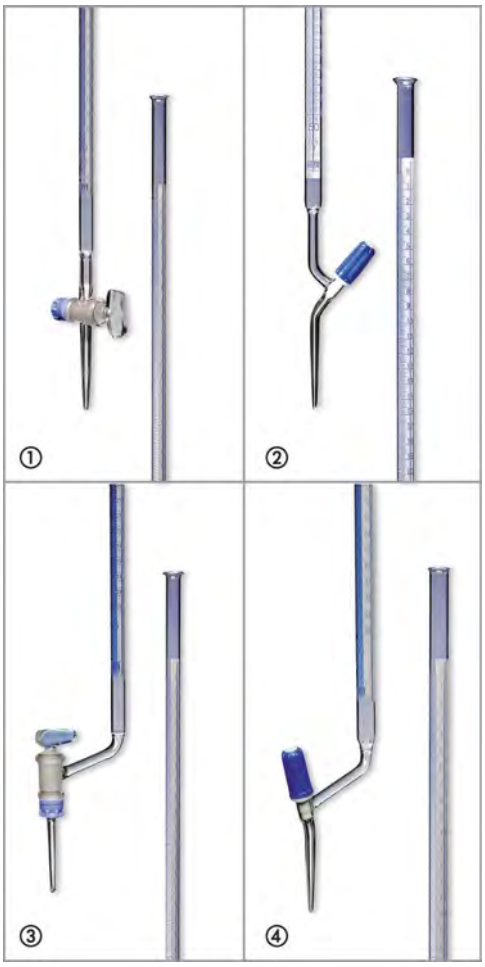
Delivery incl. digital dispenser opus® dispenser with A 45 internal thread, thread adapters A 32, A 38 and S 40, suction hose, feedback hose, output unit dispenser, spanner for fixing valve, touch screen panel, power supply unit, data power cable, certificate of quality according to DIN EN ISO 8655.

Model	Art. No.	Pack Qty.	€
10 ml	**PA71.1** *	1	1796,35
20 ml	**LK06.1** *	1	1796,35
50 ml	**LK07.1** *	1	1796,35

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Battery	**LK16.1**	1	102,50
Touch screen film (protective film for display)	**PA72.1**	2	8,55
System platform	**LK15.1**	1	127,95



Material
DURAN®

Burettes with Schellbach stripes, Class B

By Hirschmann. Made of DURAN®. With line graduations.
Scale length 500 mm.
Blue graduations.

① **With straight glass stopcock NS 12.5/28.** Acc. to DIN EN ISO 385.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,03	**ET57.1**	2	79,70
25	0,05	0,045	**ET58.1**	2	79,70
50	0,1	0,075	**ET59.1**	2	80,60

② **With straight valve spout and PTFE-spindle.** Acc. to DIN EN ISO 385.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,03	**ET60.1**	2	104,75
25	0,05	0,045	**ET61.1**	2	104,75
50	0,1	0,075	**ET62.1**	2	104,75

③ **With glass stopcock on the side NS 12.5/28.** Acc. to DIN EN ISO 385.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,03	**ET78.1**	2	89,50
25	0,05	0,045	**ET79.1**	2	89,50
50	0,1	0,075	**ET80.1**	2	89,50

④ **With valve spout on the side and PTFE-spindle.** Acc. to DIN EN ISO 385.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,03	**ET81.1**	2	126,85
25	0,05	0,045	**ET82.1**	2	126,85
50	0,1	0,075	**ET83.1**	2	126,85

▶ Material for stands and burette holders see page 216

▶ Greases see page 1171

Spare spouts for burettes

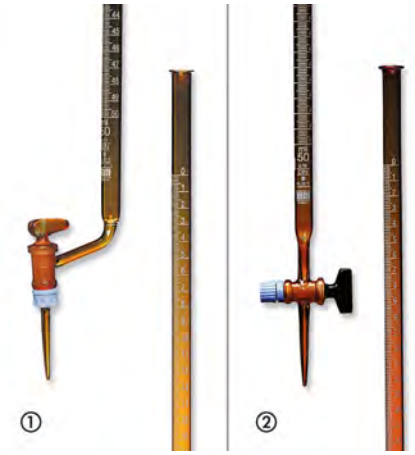
By Hirschmann. Made of DURAN®. Clear glass.

① **Side burette stopcocks with glass plugs.**

For burettes (ml)	Art. No.	Pack Qty.	€
10	**AC73.1**	1	25,30
25	**AC74.1**	1	25,30
50	**AC75.1**	1	25,30

② **Side valve spouts with PTFE-spindle.**

For burettes (ml)	Art. No.	Pack Qty.	€
2-50	**AC78.1**	1	36,15



Material
DURAN®

Burettes, Class B

By Hirschmann. Made of DURAN®. **Brown glass**. With line graduations.
Scale length 500 mm.
White graduations.

① **With side glass stopcock.** Acc. to DIN EN ISO 385.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,03	**ET84.1**	2	126,85
25	0,05	0,045	**ET85.1**	2	126,85
50	0,1	0,075	**ET86.1**	2	126,85

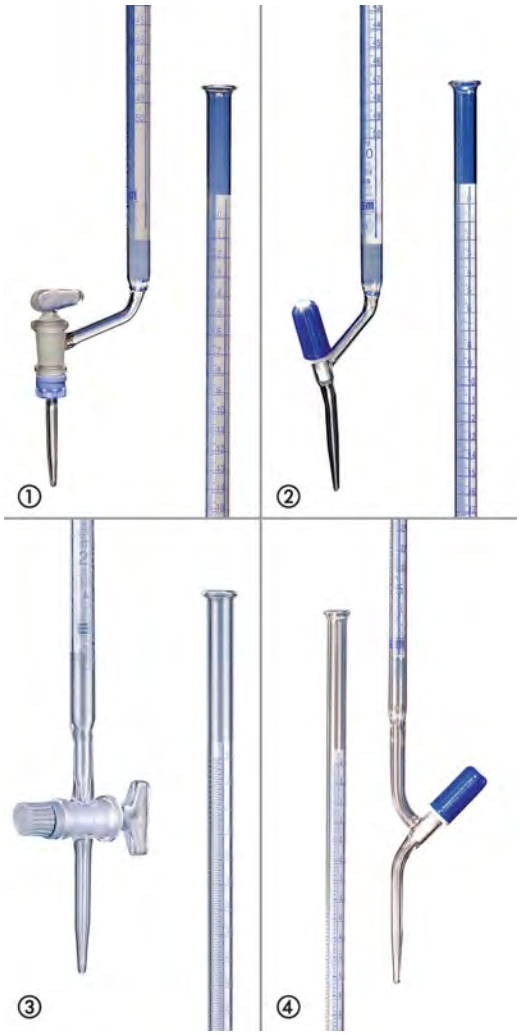
② **With straight glass stopcock.** Acc. to DIN EN ISO 385.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,03	**ET63.1**	2	108,60
25	0,05	0,045	**ET64.1**	2	108,60
50	0,1	0,075	**ET65.1**	2	108,60

Plastic burettes

Acc. to DIN 12700. Class B. With 0.1 ml line graduations.
Burette tube of transparent **PVC**. Burette stopcock of clear **PMP**, with self-lubricating **FEP** plugs. Reduced risk of breakage and injury.
Suitable for routine use.

Volume (ml)	Schellbach stripes	Height (mm)	Art. No.	Pack Qty.	€
25	no	570	**9717.1**	1	81,30
50	no	740	**XC74.1**	1	84,90



Material DURAN®

Burettes with Schellbach stripes, Class AS

By Hirschmann. Made of DURAN®. **Certificate of Conformity**, with dated batch identification and principal point ring graduation. Adjusted to ex. **Blue graduations.** Scale length 500 mm.

① **With glass stopcock on the side** NS 12.5/28. Acc. to DIN EN ISO 385.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,02	**T736.1**	2	122,55
25	0,05	0,03	**T737.1**	2	122,55
50	0,1	0,05	**T738.1**	2	122,55

② **With valve spout on the side and PTFE-spindle.** Acc. to DIN EN ISO 385.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,02	**T739.2**	2	158,05
25	0,05	0,03	**T740.2**	2	158,05
50	0,1	0,05	**T741.2**	2	158,05

③ **With straight glass stopcock** NS 12.5/28. Acc. to DIN EN ISO 385.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,02	**ET66.1**	2	108,60
25	0,05	0,03	**ET67.1**	2	108,60
50	0,1	0,05	**ET68.1**	2	108,60

④ **With straight valve spout and PTFE-spindle.** Acc. to DIN EN ISO 385.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,02	**ET69.1**	2	134,40
25	0,05	0,03	**ET70.1**	2	134,40
50	0,1	0,05	**ET71.1**	2	134,40

Material DURAN®

Burettes, Class AS

By Hirschmann. Made of DURAN®. **Brown glass.** **Certificate of Conformity**, with dated charge identification. Principal point ring graduation. Scale length 500 mm. Acc. to DIN EN ISO 385. **Graduated with white markings**.

① **With straight glass stopcock.**

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,02	**ET72.1**	2	156,95
25	0,05	0,03	**ET73.1**	2	156,95
50	0,1	0,05	**ET74.1**	2	156,95

② **With straight valve spout and PTFE-spindle.**

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,02	**ET75.1**	2	177,40
25	0,05	0,03	**ET76.1**	2	177,40
50	0,1	0,05	**ET77.1**	2	177,40

Burette bottles

By Hirschmann. For titrating apparatus. Made of soda-lime glass. With ground glass joint 29/32. Capacity 2000 ml.

Design	Volume (ml)	Art. No.	Pack Qty.	€
clear glass	2000	**ET96.1**	1	28,40
brown glass	2000	**ET97.1**	1	31,15

Rubber pump

Made of soft **PVC**. For titrating apparatus. Tube length 25 cm. Total length 34 cm.

Art. No.	Pack Qty.	€
ET98.1	1	11,80

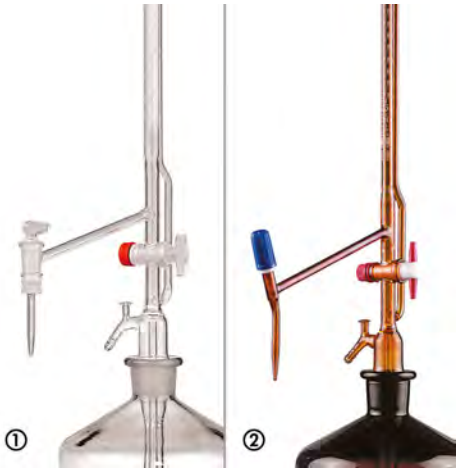
Material
DURAN®

Pellet titrating apparatus, Class B

By Hirschmann. Made of DURAN®. **Brown glass.** With line graduation. Scale length 500 mm. According to DIN EN ISO 385.
Delivery incl. 2 l glass bottle. Please order rubber pump separately.

With glass stopcock on side and intermediate valve cock. White graduation.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,03	**ET87.1**	1	235,45
25	0,05	0,045	**ET88.1**	1	235,45
50	0,1	0,075	**ET89.1**	1	235,45



① ②

Material
DURAN®

Pellet titrating apparatus, Class AS

By Hirschmann. Made of DURAN®. **Certificate of Conformity**, with dated batch identification. With axial ring division. Scale length 500 mm. Acc. to DIN EN ISO 385.
Delivery incl. 2 l glass bottle. Please order rubber pump separately.

① **With glass stop-cock on the side and intermediate stop-cock. Blue graduations.**

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,02	**ET90.1**	1	235,45
25	0,05	0,03	**ET91.1**	1	235,45
50	0,1	0,05	**ET92.1**	1	235,45

② **With PTFE-spindle stop-cock on the side and intermediate stop-cock. Brown glass, white graduations.**

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Art. No.	Pack Qty.	€
10	0,02	0,02	**ET93.1**	1	332,20
25	0,05	0,03	**ET94.1**	1	332,20
50	0,1	0,05	**ET95.1**	1	332,20

① ②

① Automatic titrating burettes

Acc. to Schilling. Made of **PE**, burette made of borosilicate glass 3.3, with Schellbach stripes. No danger of breakage and high chemical resistance. With feet on bottle for enhanced stability. With blue ring graduation, calibrated to "Ex". Press button for precise dosing, fine titration with microscrew and exact spout tip, finest droplets. Graduation corresponds to Class B (tolerances acc. to DIN ISO 385). The burette is a universal helper in laboratories, electroplating applications, water processing stations, sewage plants and in field tests, etc.

Volume (ml)	Graduations (ml)	Accuracy (±ml)	Bottle volume (ml)	Art. No.	Pack Qty.	€
5	0.05	0.015	500	**8226.1**	1	51,55
10	0.05	0.030	500	**8227.1**	1	51,55
15	0.10	0.045	500	**8228.1**	1	51,55
25	0.10	0.045	1000	**8229.1**	1	51,55
50	0.10	0.045	1000	**8230.1**	1	60,75

Accessories:

Spare bottle 500 ml	**PK05.1**	1	3,90
Spare bottle 1000 ml	**PK06.1**	1	5,95
Spare outlet nozzle	**PK07.1**	1	3,55
Spare tubing made of PE	**YT74.1**	1	7,75
Spare hose made of latex, 1 m, for lever tap	**YT75.1**	1	6,15

② Titrating burettes with splitter protection

Acc. to Schilling. Glass burette with Schellbach stripes and splitter protection coating. No danger of breakage and high chemical resistance. Enhanced stability due to foot on bottle. Calibrated to Ex. Press button for precise dosing, fine titration with micro screw and narrow spout tip, finest droplets.
Contacted materials: PE, PP, Natural rubber and borosilicate glass 3.3.

Volume (ml)	Graduations (ml)	Accuracy (±ml)	Bottle volume (ml)	Art. No.	Pack Qty.	€
15	0.1	0.045	500	**HEX0.1**	1	64,40
25	0.1	0.045	1000	**HEX1.1**	1	64,40
50	0.1	0.075	1000	**HEX2.1**	1	78,30

Digital burettes

Digital burettes continuous E and RS

By Vitlab. Pulse-free dispensing. Continuous delivery of desired volume without drawing up reserves. Easy and fatigue-free operation of the control elements. Volume dispensed per turn of the handwheels: 2.5 ml (continuous E) or 5.0 ml (continuous RS).

- Specially developed return dosing system for ventilation without loss of reagent
- Power supply with longlife, easy-to-change 1.5 V micro batteries and charge indicator
- Electronics removable as a unit, service friendly modular design
- Dispensing range 0.01 ml to 999.9 ml
- Discharge tube rotatable through 360°
- Vertically and horizontally adjustable discharge tube
- Digital burette with safety valve
- Telescopic suction tube for different bottle sizes from 200 to 350 mm
- Simple calibration program
- Connection for drying tube
- The defined limits of error according to DIN EN ISO 8655-3 are not exceeded even when dispensing partial volumes
- Not suitable for crystallising media

Delivery incl. 1 continuous E or RS digital burette (GL 45 standard thread), 3 PP adapter (GL 32, GL 38, S40), certificate of quality containing test values, 1 telescopic suction tube, 1 discharge tube, 2 1.5 V micro/AAA batteries.

Type	Volume/turn (ml)	Art. No.	Pack Qty.	€
Digital burette continuous E	2,5	**AA89.1**	1	734,25
Digital burette continuous RS	5,0	**AA90.1**	1	734,25

Accessories for digital burettes continuous E / RS

Type	Art. No.	Pack Qty.	€
Dry pipe (without filling)	**AA91.1**	1	36,35
Telescopic suction pipe made of FEP/ETFE, L 200-350 mm	**AA92.1**	1	31,90
Ejection cannula incl. reverse dosing valve	**AA93.1**	1	28,40

▶ Glass bottles see page 32

Titrette®-digital burettes

By Brand. Bottle-top burette for quick and reliable titration. High accuracy provides results within class A accuracy limits to DIN EN ISO 385.

- Smooth-acting gear for accurate trickle titration
- Lightweight and stable thanks to compact design
- Freely rotatable valve block, GL 45 thread
- Titrating tube is horizontally and vertically adjustable for flexible positioning
- Easy to use, no switching over between filling and titrating
- Can be removed for cleaning
- Can be calibrated without tools
- The next calibration due date can be stored
- The current displayed value can be stored with automatic stop
- Adjustable up to 20 ml to three decimal places
- Parts in contact with media are made of borosilicate glass, Al_2O_3, ETFE, PFA, FEP, PTFE, platinum-iridium, PP
- DE-M
- **Permissible conditions of use:** temperature +15 to +40 °C, vapour pressure up to max. 500 mbar, viscosity up to 500 mm²/s
- Optionally available with PC interface

Technical specifications:

Capacity (ml)	Partial volume (ml)	Correctness (≤%)	Variation coefficient (≤%)
10	10	0,10	0.05
10	5	0,20	0.10
10	1	1,00	0.50
25	25	0.07	0.025
25	12.5	0.14	0.05
25	2.5	0.70	0.25
50	50	0.06	0.02
50	25	0.12	0.04
50	5	0.60	0.20

Delivery incl. certificate of quality, telescopic suction tube made of FEP (170-330 mm), recirculation tube, 2 micro batteries, 3 PP threaded adapters (GL 32, S 40 and NS 29/32), 2 coloured light screens.

Type	Volume (ml)	Art. No.	Pack Qty.	€
Standard Titrette®	10	**NN43.1**	1	771,85
Standard Titrette®	25	**PP87.1**	1	794,45
Standard Titrette®	50	**PP88.1**	1	794,45
Titrette® with RS 232 port	10	**NN44.1**	1	1020,20
Titrette® with RS 232 port	25	**PP89.1**	1	1006,20
Titrette® with RS 232 port	50	**PP90.1**	1	1006,20

Accessories:

Telescopic suction tube 170-330 mm	**PP85.1**	1	25,95
Telescopic suction tube 250-480 mm	**PP86.1**	1	26,75
Battery Micro/AAA 1,5 V	**1021.2**	4 pcs.	6,40

Digital burettes opus® titration

By Hirschmann. For motor-driven titration directly from the lab bottle. Microprocessor-controlled piston stroke system guarantees highest accuracy and precise, reproducible results.

- Safe and easy handling via external touchscreen with clearly arranged menu keys; with quick-cal-function for simple calibration of other temperatures or other media
- High media flexibility thanks to highly resistant, inert materials (ECTFE, borosilicate glass 3.3, Hastelloy, FEP, PTFE)
- Media carrying parts are steam sterilisable (121 °C)
- Serial dosing function enables integration in automated process runs
- Methods memory for 9 different titration procedures
- Media feedback system for ventilation without loss of reagent
- Universal Luer-connection for dry pipes, filters etc.
- Can be battery or power operated (storage batteries not included in the delivery; please order separately)
- Possible to choose between volume pre-selection, quick and drop titration
- Sucking and draining speeds can be set
- 4 languages (G, E, F, S) integrated by default

Technical specifications:

Model	10 ml	20 ml	50 ml
Basic unit			
Volume range	0.010 to 99.999 ml	0.10 to 200 ml	1.00 to 500 ml
Resolution	<1 µl		<2 µl
Maximum piston stroke	10 ml	20 ml	50 ml
Accuracy	R = 0.2 %, CV = 0.07 %		R = 0.2 % CV = 0.07 %
Working temperature range	+4 to +40 °C		
Mains voltage	230 V, universal AC adapter 15 V, 850 mA		
Dimensions (W x D x H)	63 x 80 x 320 mm		
Weight	660 g		
Operating panel:			
Touchscreen	3.5″ with 320 x 240 pixel		
PC-interface	USB or RS 232		
Dimensions (W x D x H)	110 x 130 x 55 mm		
Weight without storage battery	230 g		

Delivery incl. digital burette opus® titration with A 45 internal thread, thread adapters A 32, A 38 and S 40, suction hose, feedback hose, output unit titration, spanner for fixing valve, touchscreen panel, power supply unit, data power cable, certificate of quality according to DIN EN ISO 8655.

Model	Art. No.	Pack Qty.	€
10 ml	**PA73.1** *	1	1459,85
20 ml	**LK08.1** *	1	1459,85
50 ml	**LK09.1** *	1	1459,85

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Battery	**LK16.1**	1	102,50
Touch screen film (protective film for display)	**PA72.1**	2	8,55
System platform	**LK15.1**	1	127,95

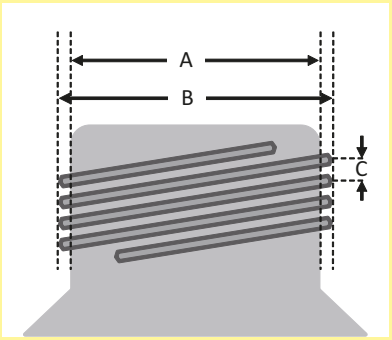
Ejection units for opus® titration and opus® dispenser

By Hirschmann. Even finer tip for extremely precise droplet titration. Variable ejection unit and spiral ejection unit with fine tip for on-demand use in almost any area of application.

Type	Art. No.	Pack Qty.	€
Ejection unit, fine	**PA74.1**	1	39,60
Flexible ejection unit, spiral shaped, inside diameter ∅ 1.5 mm	**PA75.1**	1	74,75
Ejection unit for titration, variable	**PA76.1**	1	47,30

Information on threads

The thread on a drum is defined, among other things, by diameter (A and B) and thread pitch (C). The values given in the table give a rough indication of the thread type, however this cannot reliably be determined by measuring the thread using a sliding caliper alone. Manufacturer-specific threads are also available in addition to the standard threads. The drum supplier can generally provide information on the thread type.



We will be happy to provide you with information on containers which you purchase through us.

Thread	Diameter excl. thread A (mm)	Diameter incl. thread B (mm)	Thread pitch C (mm)
DIN 38	34.6	36.6	9
DIN 40	38.8	42.2	4
DIN 45	41.1	44.7	4
DIN 50	46.1	50.1	4
DIN 51	50.2	54.8	5
DIN 60	55.3	60.3	6
DIN 61	55.6	60.5	5
DIN 71	67.0	72.3	7

Digital burettes solarus®

By Hirschmann.

- Sustainable power supply via solar cell, i.e. no batteries, no charging
- Large display, display from 0.01 to 99.99 ml
- 2-button operator guidance
- "Quick-Cal" function for individual calibration
- Bidirectional RS 232 interface
- Valves are easy to replace, valve block rotates freely, thread GL 45
- Handwheels with soft-touch surface
- No reagent loss through return system
- Parts that come into contact with medium are made of highly resistance fluoroplastics: Valve block and housing made of ECTFE, intake and output hose made of FEP
- Media-transporting parts including the output unit steam-sterilisable at 121 °C / 2 bar

Technical specifications:

Volume (ml)	Correctness (≤%)	Variation coefficient (≤%)
10	0.3	0.1
20	0.2	0.1
50	0.2	0.1

Delivery incl. basic unit with A45 screw thread and output unit, 3 thread adapters A32, A38, S40, intake hose (L 310 mm), return hose and quality certificate acc. to DIN EN ISO 8655.

Type	Art. No.	Pack Qty.	€
Basic device 10 ml	**HLY7.1** *	1	809,50
Basic device 20 ml	**Y063.1** *	1	809,50
Basic device 50 ml	**Y064.1** *	1	809,50

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Titration output unit	**X607.1**	1	28,50
Replacement return hose	**X609.1**	1	8,10
Replacement suction hose 310 mm	**L477.1**	1	13,35
Replacement suction hose 400 mm	**L478.1**	1	16,80

TitroLine® 5000

By SI Analytics. Very easy to use automatic titrator for pH and mV titration: Select saved standard method, connect electrodes and press Start. In just a few minutes, the sample is titrated and the result is displayed on the screen. Result can also be output as a PDF file to USB.

Range of applications:

- Current acid-alkali titration such as acid capacity, nitrogen according to Kjeldahl and total acid in wine and beverages (Set 2)
- Titration of chloride and sodium chloride (salt) in foods such as mustard, cheese, milk, water and other samples (Set 3)
- Current redox titration such as iodine and peroxide value, permanganate index, CSB and other applications (Set 1 + metal combination electrode Pt 62 RG)

Technical specifications:

Dosing attachment		20 ml
Volume indicator		0.000 to 9999.999 ml
Display resolution		0.005 to 0.025 ml
Dosing speed		max. 40 ml/min
Filling time		30 to 999 s (based on cylinder volume)
Dosing accuracy • systematic • random		 0.15% 0.05%
Measuring range/resolution	pH mV °C	-3.00 to 17.00 ±1900 -30 to +115
Accuracy	pH mV °C	±0.05 ±1 ±0.5
Connections	pH/mV °C	DIN 19262 2 x 4 mm Banane (NTC 30 kΩ, PT 1000)
Calibration (for pH)		Automatic 1/2/3 point calibration
Interfaces		2 x RS 232-C, 1 x USB A, 1 x USB B
Dimensions W x H x D (without shaker)		135 x 310 x 205 mm
Power supply		100 to 240 V, 50/60 Hz

Delivery incl. support rod, electrode/burette tip holder, hose kit and titration syringe, test tubes, magnetic stirrer, magnetic stirring rod, screw cap with GL 45 thread, adapter NS 14.5/M8x1, drying tube, USB data cable and mains adapter.

Set	Design	Art. No.	Pack Qty.	€
1	without electrode	**HAN4.1**	1	2929,40
2	with pH combination electrode A7780 and pH buffer set (pH 4.00 and 7.00)	**HAN5.1**	1	3128,25
3	with metal combination electrode AgCl 62 RG and connection cable	**HAN6.1**	1	3208,90

Accessories:

pH combination electrode A7780 with integrated temperature sensor and fixed cable length 1 m (DIN 19262 + Banane 1x4 mm)	**HAN7.1**	1	280,60
Metal combination electrode AgCl 62 RG with plug head, please order connection cable separately	**HAN8.1**	1	326,80
Metal combination electrode Pt 62 RG with plug head, please order connection cable separately	**HAN9.1**	1	290,25
Connection cable for metal combination electrode, length 1 m (DIN 19262)	**HAP0.1**	1	55,40

S

Disposable syringes Inject®

By B. Braun. Acc. to ISO 7886-1. 2-piece, cylinder made of **PP**, piston rod made of **PE**. **Sterile** (EO-sterilised, individually wrapped). Smudge-proof, black graduation. The scale goes beyond the nominal volume.
Safe piston stopper for smooth filling up to maximum volume.
Latex-, PVC- and silicone-free.

① **Luer-connection**

Nominal capacity (ml)	Max. volume (ml)	Graduation (ml)	Art. No.	Pack Qty.	€
2	3	0,1	**0056.1**	100	7,00
5	6	0,2	**0057.1**	100	9,35
10	12	0,5	**0058.1**	100	14,85
20	24	1,0	**0059.1**	100	20,35

② **Luer-Lock-connection, suitable for zytostatica**

Nominal capacity (ml)	Max. volume (ml)	Graduation (ml)	Art. No.	Pack Qty.	€
2	3	0,1	**EP95.1**	100	22,50
5	6	0,2	**EP96.1**	100	26,85
10	12	0,5	**EP97.1**	100	38,20
20	24	1,0	**EP98.1**	100	83,85

S

Disposable syringes Inject®-F

By B. Braun. 2-piece fine dosage syringes.
Volume 1 ml, graduation 0.01 ml.

Made of **PP/PE**. Sterile (individually wrapped), latex-free and PVC-free.
Green piston rod, black graduation, smudge-proof.

With efficiency pin on piston rod for reducing rest volume.
Centric Luer-attachment.

Volume (ml)	Graduation (ml)	Art. No.	Pack Qty.	€
1	0,01	**T987.1**	100	19,25

S

Omnifix® disposable syringes

By B. Braun. Acc. to ISO 7886-1. 3-part, made of **PP**. **Sterile** (EO-sterilized, individually wrapped). Black graduation, smudge-proof.
Reliable piston stopper prevents accidental removal of piston rod.

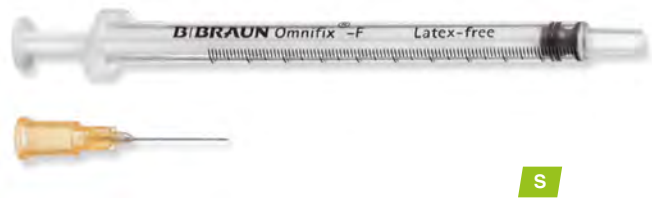
Smooth-running piston with double sealing ring for slow and bubble-free filling and injecting. Particularly ideal for dosing smaller volumes.
Made of synthetic rubber, latex-free, acc. to ISO 10993 and DIN EN 90993.
PVC-free.

① **Luer-fitting**

Volume (ml)	Graduation (ml)	Art. No.	Pack Qty.	€
3	0,1	**LY22.1**	100	9,60
5	0,2	**C537.1**	100	15,95
10	0,5	**C538.1**	100	21,30
20	1,0	**C539.1**	100	33,55
30	1,0	**T548.1**	100	88,70
50	1,0	**T549.1**	1	2,60
50	1,0	**T549.2**	100	168,80

② **Luer-Lock fitting**

Volume (ml)	Graduation (ml)	Art. No.	Pack Qty.	€
3	0,1	**LY21.1**	100	36,25
5	0,2	**C541.1**	100	41,85
10	0,5	**C542.1**	100	46,90
20	1,0	**T550.1**	100	79,55
30	1,0	**T551.1**	100	102,15
50	1,0	**T552.1**	1	2,90
50	1,0	**T552.2**	100	177,40



S

Disposable syringes Omnifix®-F

By B. Braun. 3-piece fine dosage syringes.
Volume 1 ml, graduation 0.01 ml.

Made of **PP/PS**, **sterile** (individually wrapped), latex-fee and PVC-free.
Piston stopper made of synthetic rubber, black graduation, smudge-proof.
Centric Luer-attachment.

Smooth-running with double gasket, for dosing very small volumes.
Ideal for extremely slow filling and injecting. Minimal rest volume.
Outer- ∅ 0.5 mm, length 16 mm.

Type	Art. No.	Pack Qty.	€
With needle 25 G	**0053.1**	100	36,50
Without needle	**H999.1**	100	18,10

S

Omnican®-insulin syringes

By B. Braun. Acc. to EN ISO 8537. **Sterile** (EO-sterilised).
Three piece syringe with integrated plunger stop. Latex and PVC free.
Integrated stainless steel cannula for minimal loss of fluid.
With triple facet bevel and silicone coating. ∅ 0.30 mm (30 G), L 12 mm.
Delivery incl. protective caps.

For insulin	Volume (I.E.)	Graduations (I.E.)	Art. No.	Pack Qty.	€
U-40	40	1,0	**AKN8.1**	10 x 10	35,45
U-50	50	1,0	**AKN9.1**	10 x 10	35,45
U-100	100	2,0	**AKP0.1**	10 x 10	35,45

S

Disposable syringe

By B. Braun. Three-part syringe made of **PP**, **sterile**, smooth-moving piston stopper with double seal ring. Secure piston stopper. With easy-to-read, smudge-proof graduation. Centric catheter attachment ∅ 7-10 mm.
Delivery incl. Luer adapter.

Volume (ml)	Graduation (ml)	Art. No.	Pack Qty.	€
100	2,0	**HY16.1**	1	5,70

A 121 °C

Glass syringes

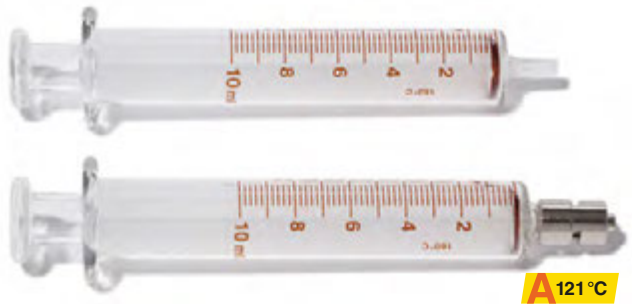
Made of borosilicate glass. With exact-fitting plunger.
Imprinted brown graduation. Autoclavable to 134 °C.

With glass cone and Luer-fitting

Volume (ml)	Graduation (ml)	Art. No.	Pack Qty.	€
1	0,05	**C676.1**	1	8,30
2	0,1	**C677.1**	1	8,30
3	0,1	**C678.1**	1	8,30
5	0,2	**C679.1**	1	8,30
10	0,2	**C680.1**	1	10,70
20	1,0	**C681.1**	1	16,10
30	1,0	**C682.1**	1	20,40
50	2,0	**C683.1**	1	36,15
100	4,0	**C684.1**	1	58,90

With metal cone and Luer-Lock-fitting

Volume (ml)	Graduation (ml)	Art. No.	Pack Qty.	€
1	0,05	**C685.1**	1	11,20
2	0,1	**C686.1**	1	11,20
3	0,1	**C687.1**	1	11,70
5	0,2	**C688.1**	1	11,70
10	0,2	**C689.1**	1	13,90
20	1,0	**C690.1**	1	20,75
30	1,0	**C691.1**	1	25,30
50	2,0	**C692.1**	1	39,70
100	4,0	**C693.1**	1	77,95



A 121 °C

Dosys™ glass syringes

By Socorex. Made of borosilicate glass. Fused brown scale, permanent and easy to read. Precision piston and cylinder can be exchanged. Impervious to fluids. Sterilisable up to 160 °C.
Suitable for: simple infusions, dilutions, sampling, viscous liquids, corrosive reagents, dyes, etc.

Glass Luer fitting

Volume (ml)	Graduation (ml)	Art. No.	Pack Qty.	€
0,1-1	0,05	**HKL8.1**	3	29,25
0,2-5	0,2	**HKL9.1**	3	29,25
1-10	0,2	**HKN0.1**	3	34,40
1-20	1	**HKN1.1**	2	35,50
10-100	10	**HKN2.1**	1	49,05

Metal Luer-Lock fitting

Volume (ml)	Graduation (ml)	Art. No.	Pack Qty.	€
0,1-1	0,05	**HKN3.1**	3	32,25
0,5-2	0,1	**HKN4.1**	3	32,25
0,2-5	0,2	**HKN5.1**	3	34,40
1-10	0,2	**HKN6.1**	3	37,65
1-20	1	**HKN7.1**	2	38,70
1-50	2	**HKN8.1**	1	43,00
10-100	10	**HKN9.1**	1	55,40
10-150	10	**HKP0.1**	1	402,05
10-200	10	**HKP1.1**	1	417,10
10-250	10	**HKP2.1**	1	432,15

S

Sterican® disposable needles

By B. Braun. Made from nickel chromium steel with silicone coating, Luer-lock fitting made of **PP**. **Sterile** (individually wrapped), 100 needles in dispenser box.

Long edge

Colour	Outer ∅ (mm)	Length (mm)	Gauge	Art. No.	Pack Qty.	€
grey	0,40	20	27 G	**X133.1**	100	5,75
brown	0,45	25	26 G	**C718.1**	100	6,90
violet	0,55	25	24 G	**X132.1**	100	5,75
blue	0,60	25	23 G	**C719.1**	100	6,90
blue	0,60	30	23 G	**X129.1**	100	5,75
blue	0,60	60	23 G	**C720.1**	100	11,00
blue	0,60	80	23 G	**C629.1**	100	16,70
black	0,70	30	22 G	**X128.1**	100	5,75
green	0,80	40	21 G	**X127.1**	100	5,75
green	0,80	50	21 G	**0060.1**	100	11,30
green	0,80	120	21 G	**C630.1**	100	30,65
yellow	0,90	40	20 G	**C721.1**	100	6,90
yellow	0,90	70	20 G	**C722.1**	100	12,15
grey	1,10	50	19 G	**C723.1**	100	11,00

Short edge

Colour	Outer ∅ (mm)	Length (mm)	Gauge	Art. No.	Pack Qty.	€
pink	1,20	40	18 G	**C724.1**	100	11,00

Blunt edge

Colour	Outer ∅ (mm)	Length (mm)	Gauge	Art. No.	Pack Qty.	€
green	0,80	22	21 G	**X134.1**	100	9,80
grey	0,40	25	27 G	**HY15.1**	100	18,95

A 121 °C

Injection needles

Suitable for all syringes with a Luer-Lock cone. Rustproof stainless steel. Autoclavable. With polished ground section.

Outside ∅ (mm)	Length (mm)	Gauge	Art. No.	Pack Qty.	€
0,45	18	26 G	**X801.1**	12	12,80
0,45	21	26 G	**X802.1**	12	12,80
0,50	23	25 G	**X803.1**	12	12,80
0,55	25	24 G	**X804.1**	12	12,80
0,60	25	23 G	**X805.1**	12	12,80
0,65	30	-	**X806.1**	12	12,80
0,70	32	22 G	**X807.1**	12	12,80
0,80	35	21 G	**X808.1**	12	12,80
0,90	38	20 G	**X809.1**	12	12,80
1,00	60	19 G	**X810.1**	12	32,05
1,20	40	18 G	**X811.1**	12	24,65

Microlitre syringes by HAMILTON

Technical specifications:

Accuracy	≤ ±1 % of nominal volume
Test pressure	0.6 MPa
Working temperature	-10 to +50 °C
Material of body	Borosilicate glass
Tip type 2	**12° grinding**, bent slightly inwards; for piercing septum, in all chromatographic methods.
Tip type 3	**90° grinding, blunt**; for HPLC-applications or for exact dosing e.g. for thin-layer chromatography.

Series 700 MICROLITER®-syringes

By HAMILTON. For dosing liquids. The piston is firmly fixed in the glass body. Needle and piston are made of stainless steel. Needle 51 mm, bent slightly inwards, sealed in wall.

Tip type 2:

Model	Volume (µl)	Pitch (µl)	Needle-∅ inside (mm)	Needle-∅ outside (mm)	Art. No.	Pack Qty.	€
701 N	10	0,1	0,13	0,47	**X033.1**	1	37,60
702 N	25	0,5	0,15	0,72	**X034.1**	1	49,40
705 N	50	1,0	0,15	0,72	**X035.1**	1	61,30
710 N	100	1,0	0,15	0,72	**X036.1**	1	72,00
725 N	250	5,0	0,15	0,72	**X038.1**	1	80,10
750 N	500	10,0	0,41	0,72	**X039.1**	1	90,85

Tip type 3:

Model	Volume (µl)	Pitch (µl)	Needle-∅ inside (mm)	Needle-∅ outside (mm)	Art. No.	Pack Qty.	€
701 NR	10	0,1	0,13	0,47	**EY37.1**	1	51,55
702 NR	25	0,5	0,15	0,72	**EY38.1**	1	53,55
705 NR	50	1,0	0,15	0,72	**EY39.1**	1	59,10
710 NR	100	1,0	0,15	0,72	**EY40.1**	1	75,15
725 NR	250	5,0	0,41	0,72	**EY41.1**	1	76,90
750 NR	500	10,0	0,41	0,72	**EY42.1**	1	89,15

Series 700 Standard-GC-syringes

By HAMILTON. For dosing liquids in autosamplers HP 7683 / HP 7673. The piston is firmly fixed in the glass body. Needle and piston are made of stainless steel. Needle 43 mm, with an 8° bevel (special tapered tip for autosampler vials) sealed in the tube wall.

Model	Volume (µl)	Needle-∅ inside (mm)	Art. No.	Pack Qty.	€
701 ASN 23S	10	0,34	**X060.1**	1	56,80
701 ASN 26S	10	0,13	**X061.1**	1	59,10

Microlitre syringes

Series 7000 MICROLITER®-syringes

By HAMILTON. For dead volume-free dosing of liquids with a very small nominal volume. The stainless steel needle and Wolfram piston are exactly coordinated. Volume dosing takes place in the needle. Needle 70 mm.

Tip type 2:

Model	Volume (µl)	Pitch (µl)	Needle-∅ outside (mm)	Art. No.	Pack Qty.	€
7000.5 KH	0,5	0,005	0,50	**X056.1**	1	119,35
7001 KH	1,0	0,01	0,47	**X057.1**	1	90,20
7002 KH	2,0	0,02	0,50	**X058.1**	1	112,90
7105 KH	5,0	0,05	0,56	**X059.1**	1	104,10

Tip type 3:

Model	Volume (µl)	Pitch (µl)	Needle-∅ outside (mm)	Art. No.	Pack Qty.	€
7000.5 KH	0,5	0,005	0,50	**EY52.1**	1	119,35
7001 KH	1,0	0,01	0,47	**EY53.1**	1	92,70
7002 KH	2,0	0,02	0,50	**EY54.1**	1	116,10
7105 KH	5,0	0,05	0,56	**EY55.1**	1	106,45

Series 1000 GASTIGHT®-syringes

By HAMILTON. For dosing liquids and media with a high vapour pressure. Glass body and piston are replaceable. With Luer-Lock-connection made of PTFE. Piston made of PTFE-coated aluminium.
Delivery without needle, please order separately.

Model	Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
1001 TLL	1,0	0,01	**X041.1**	1	78,45
1002 TLL	2,5	0,05	**X042.1**	1	75,20
1005 TLL	5,0	0,10	**X043.1**	1	91,35
1010 TLL	10,0	0,20	**X044.1**	1	100,85

Needles KF

By HAMILTON. Made of stainless steel, 51 mm, Luer-connection PCTFE, 22G. Inner-∅ 0.41 mm, outer-∅ 0.72 mm.

Tip type	Art. No.	Pack Qty.	€
2	**X045.2**	6	116,10
3	**EY43.1**	6	112,90

Series 1700 GASTIGHT®-syringes

By HAMILTON. For dosing liquids and gases. Glass body and piston are replaceable. Stainless steel pistons with PTFE-seal.
Needle made of stainless steel, 51 mm, exchangeable.

Tip type 2:

Model	Volume (µl)	Pitch (µl)	Needle-∅ inside (mm)	Needle-∅ outside (mm)	Art. No.	Pack Qty.	€
1701 RN	10	0,1	0,13	0,47	**X046.1**	1	69,35
1702 RN	25	0,5	0,15	0,72	**X047.1**	1	74,15
1705 RN	50	1,0	0,15	0,72	**X048.1**	1	74,15
1710 RN	100	1,0	0,15	0,72	**X049.1**	1	78,45
1725 RN	250	5,0	0,15	0,72	**X050.1**	1	78,35
1750 RN	500	10,0	0,41	0,72	**X051.1**	1	78,35

Tip type 3:

Model	Volume (µl)	Pitch (µl)	Needle-∅ inside (mm)	Needle-∅ outside (mm)	Art. No.	Pack Qty.	€
1701 RNR	10	0,1	0,15	0,72	**EY44.1**	1	73,00
1702 RNR	25	0,5	0,15	0,72	**EY45.1**	1	73,00
1705 RNR	50	1,0	0,15	0,72	**EY46.1**	1	75,20
1710 RNR	100	1,0	0,15	0,72	**EY47.1**	1	82,25
1725 RNR	250	5,0	0,41	0,72	**EY48.1**	1	79,50
1750 RNR	500	10,0	0,41	0,72	**EY49.1**	1	79,50

Spare needles

By HAMILTON.

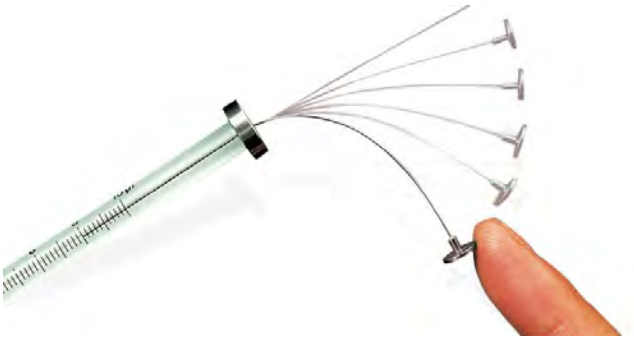
For	Art. No.	Pack Qty.	€
Tip type 2; 10 µl	**X052.2**	6	62,30
Tip type 2; 25-100 µl	**X053.2**	6	62,30
Tip type 2; 250 µl	**X054.2**	6	77,20
Tip type 2; 500 µl	**X055.2**	6	79,50
Tip type 3; 10-100 µl	**EY50.1**	6	67,70
Tip type 3; 250-500 µl	**EY51.1**	6	57,85

Microlitre syringes

A variety of models available for different applications.

- Tested up to 3.0 bar liquid pressure
- Calibrated with an accuracy of ±1 %
- Precise and easy to read scale
- Precise workmanship prevents, as far as possible, air bubbles from forming

General instructions for use:
Micolitre syringes should be washed with an organic solvent immediately after use. Drying temperature may not exceed 60 °C. When dry, the syringes should be stored at room temperature. Never touch the flask with the naked hand!



Microlitre syringes with super-elastic plunger

Cannot be permanently bent. Plunger will return into previous form.

Syringe volume 5 µl

Pitch (µl)	Needle-∅ outside (mm)	Needle-∅ inside (mm)	Length (mm)	Art. No.	Pack Qty.	€
0,1	0,52	0,13	50	**E108.1**	1	62,30

Syringe volume 10 µl

Pitch (µl)	Needle-∅ outside (mm)	Needle-∅ inside (mm)	Length (mm)	Art. No.	Pack Qty.	€
0,2	0,52	0,13	50	**E109.1**	1	39,40
0,2	0,715	0,18	51	**E111.1**	1	43,55
0,2	0,51	0,13	50	**E113.1**	1	46,10

Standard microlitre syringes

Needle with slanted tip, tight, length 50 mm. Parts that touch sample are made of high-grade steel and glass. Syringes must not be used with fluorine or highly acidic liquids.

Volume (µl)	Graduation (ml)	Unused volume (µl)	Art. No.	Pack Qty.	€
5	0,1	0,0±0,3	**E114.1**	1	44,05
10	0,1	0,9±0,3	**E115.1**	1	34,60
25	0,5	1,7±0,3	**E116.1**	1	43,30
50	1	1,7±0,3	**E117.1**	1	43,60
100	2	1,7±0,3	**E118.1**	1	50,50
250	5	3,6±0,3	**E119.1**	1	60,75
500	10	3,6±0,3	**E120.1**	1	64,75

Microlitre syringes for automatic sampler

For Agilent (HP) Model 7673A. The models with the super elastic plunger have longer working life. Needle caliber 23G, needle-∅ inner 0.15 mm, outer 0.64 mm. Needle length 43 mm, conical tip. Fixed needle.

Plunger material	Volume (µl)	Graduation (µl)	Art. No.	Pack Qty.	€
Rustproof stainless steel	5	0,1	**H136.1**	1	69,90
Rustproof stainless steel	10	0,2	**H138.1**	1	51,50
Super elastic plunger	5	0,1	**H140.1**	1	87,10
Super elastic plunger	10	0,2	**H142.1**	1	65,70

HPLC microlitre syringes

For Rheodyne-valves. Specially polished blunt needle tips ensure tight fit and prevent damage of seal and rotor. Needle length 51 mm.
Needle inner ∅ 0.18 mm, outer ∅ 0.715 mm.

Volume (µl)	Subdivisions (µl)	Art. No.	Pack Qty.	€
25	0,5	**E121.1**	1	42,80
50	1	**E122.1**	1	44,10
100	2	**E123.1**	1	48,95
250	5	**E124.1**	1	61,10
500	10	**E125.1**	1	74,85

Capillary pipettes

Microlitre syringes with plunger guide

Capacity 10 µl. Graduated in 0.1 µl steps. With slanted needle, length 50 mm, inner-∅ 0.18 mm, outer-∅ 0.52 mm. Precision ±1 %.

With variable external guide. Locking screw enables reproducible injections of same volumes.

Art. No.	Pack Qty.	€
E126.1	1	69,80

With PTFE-tube. For added plunger protection.

Art. No.	Pack Qty.	€
E127.1	1	64,00

Gastight syringes

With specially polished syringe hole and plunger needle made of PTFE. Gas- and liquid tight up to a maximum pressure of 5.0 kg/cm^2. Accuracy and reproducibility better than ±1 %. Replaceable needle with slanted tip.

Syringe with screw head fitting
Needle length 30 mm, ∅ inside 0.30 mm, ∅ outside 0.56 mm.
Unused volume 2.2 ±0.3 µl. **Needle included.**

Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
1	0,02	**E128.1**	1	147,30
2,5	0,05	**E129.1**	1	147,30
5	0,1	**E130.1**	1	147,30
10	0,2	**E131.1**	1	177,40

Syringe with Luer-Lock-fitting.
All parts in contact with media are made of borosilicate glass and PTFE. Particularly ideal for applications that require extremely inert materials.
Doesn't include needle.

Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
1	0,02	**E133.1**	1	109,65
2,5	0,05	**E134.1**	1	113,95
5	0,1	**E135.1**	1	124,70
10	0,2	**E136.1**	1	124,70

Accessories for gastight syringes

Replacement needle with screw head fitting.

Art. No.	Pack Qty.	€
E132.1	5	75,20

Needle with Luer-Lock-connector and chamfered tip.
Length 50 mm, ∅-inner 0.30 mm, ∅-outer 0.56 mm.

Art. No.	Pack Qty.	€
E137.1	5	74,75

Disposable micro hematocrit capillary tubes

By Marienfeld.
- Made of AR-GLAS®
- CE to IVD 98/79 EG
- Acc. to ISO 12772
- Length: 75 ±0.5 mm, thickness: 0.2 ±0.025 mm
- For centrifuging blood samples
- With or without heparinisation. Sodium-heparin (80 iu/ml ±30 %) applied as a thin, homogeneous film delays coagulation of blood
- Colour-coded end is fire polished to reduce centrifuge wear

With sodium heparinisation

Volume (µl)	Innner ∅ (mm)	Outside ∅ (mm)	Art. No.	Pack Qty.	€
60	0,9-1,2	1,3-1,4	**TX79.1**	10 x 100	28,85
75	1,1-1,2	1,5-1,6	**TX80.1**	10 x 100	27,85

Without heparinisation
Seal with wax immediately after filling and centrifuge.

Volume (µl)	Innner ∅ (mm)	Outside ∅ (mm)	Art. No.	Pack Qty.	€
60	0,9-1,0	1,3-1,4	**TX77.1**	10 x 100	32,20
75	1,1-1,2	1,5-1,6	**TX78.1**	10 x 100	24,70

Accessories for micro hematocrit capillary tubes

By Marienfeld. Wax plates for sealing micro hematocrit capillary tubes. Numbered from 1 to 48.

Art. No.	Pack Qty.	€
TX82.1	6	28,50

Disposable capillary pipettes minicaps

By Hirschmann.
- Made of Borosilicate glass 3.3
- Not heparinised
- Certificate of Conformity
- CE acc to IVD 98/79 EG
- In acc. with ISO 7550
- Tolerance 0,5 %
- Variation coefficient 1 %
- Independent filling via capillary action (end-to-end)

Volume (µl)	Colour code	Length (mm)	Art. No.	Pack Qty.	€
0,5	black	30-32	**L918.2**	10 x 100	92,40
1	blue	30-32	**0771.2**	10 x 100	93,50
2	red	30-32	**L919.2**	10 x 100	92,40
3	yellow	30-32	**L920.2**	10 x 100	92,40
3,33	yellow	36	**L921.2**	10 x 100	92,40
4	green	30-32	**L922.2**	10 x 100	92,40
5	white	30-32	**L923.2**	10 x 100	92,40
6,66	natural	72	**L924.2**	10 x 100	92,40
10	orange	30-32	**L925.2**	10 x 100	92,40
20	black	30 ±0,5	**L926.2**	10 x 100	92,40

A 121 °C

ringcaps® disposable capillary pipettes

By Hirschmann.
- Made of Borosilicate glass 3.3
- Not heparinised
- Comes with certificate of conformity
- CE acc. to IVD 98/79 EG
- Acc. to ISO 7550
- Length approx. 12.5 cm
- Tolerance to 5 µl 0.3 %, 0.25 %
- Variation coefficient to 5 µl 0.60 %, from 10 µl 0.50 %
- Autoclavable

Volume (µl)	No. of marks	Art. No.	Pack Qty.	€
1/2/3/4/5	5	**A756.1**	4 x 250	111,80
10	1	**A757.1**	4 x 250	103,10
20	1	**A758.1**	4 x 250	103,10
25	1	**A759.1**	4 x 250	103,10
40	1	**A760.1**	4 x 250	103,10
50	1	**A761.1**	4 x 250	103,10
100	1	**A762.1**	4 x 250	103,10
5/10	2	**A764.1**	4 x 250	102,85
20/40	2	**A765.1**	4 x 250	102,85
50/100	2	**A766.1**	4 x 250	102,85
100/200	2	**A767.1**	4 x 100	67,70

minicaps-pipettor aids

By Hirschmann. Ideal for emptying disposable capillary pipettes minicaps.

Art. No.	Pack Qty.	€
T749.1	2	6,10

ringcaps®-micropipetter pipetting aid

By Hirschmann. Manual pipetting aid for disposable capillary pipettes with ring marks (e.g. ringcaps®), with two replaceable adapters for optimal fit to the pipette size. For volumes from 1-200 µl. CE acc. to IVD 98/79 EG.

Art. No.	Pack Qty.	€
AH26.1	1	29,60

Pasteur pipettes/Disposal pipettes

S

A 121 °C

Pasteur pipettes

Made of lime soda clear glass. Hydrolytic class 3. **Sterile** or non sterile. Uniformly shaped. Wall thickness 0.55-0.8 mm.
With neck for cotton stoppers. Autoclavable.

For one-time use in serological and microbiological laboratories.
Also suitable for filling and draining NMR vials.

Without cotton stoppers, non sterile.
With open tip.

Total length (mm)	Length of tip (mm)	Tip outer ∅ (mm)	Art. No.	Pack Qty.	€
150	60	1,3	**4518.1**	1000	49,40
230	140	1,3	**4522.1**	1000	57,85
270	160	1,3	**HX77.1**	1000	117,20
300	195	1,5	**HX78.1**	500	68,00
350	230	1,5	**HX79.1**	1000	289,20

Complete with cotton stoppers, non sterile.
With open tip.

Total length (mm)	Length of tip (mm)	Tip outer ∅ (mm)	Art. No.	Pack Qty.	€
150	60	1,3	**E326.1**	1000	109,65
230	140	1,3	**E327.1**	1000	111,80

Complete with cotton stoppers, sterile.
With closed tip.

Total length (mm)	Length of tip (mm)	Tip outer ∅ (mm)	Art. No.	Pack Qty.	€
150	60	1,3	**AHA3.1**	1000	155,90
230	140	1,3	**AHA4.1**	1000	146,20

A 121 °C

Pipette bulbs

Made of silicone. Autoclavable.

*Suitable for Pasteur pipettes.

Suction capacity (ml)	Length (mm)	∅ of openings (mm)	Art. No.	Pack Qty.	€
1	40	5*	**C529.1**	10	13,45
2	53	6*	**C530.1**	5	10,60
5	56	8	**C531.1**	5	18,85
10	69	8	**C532.1**	5	30,75

NEW

DURAN WHEATON KIMBLE

A 121 °C

Pasteur pipettes

Made from borosilicate glass 5.1. For single use in microbiological and serological laboratories. Ideal for distributing aliquot quantities of liquid. Autoclavable.

- In accordance with ISO 7712
- Practically inert borosilicate glass (USP type I neutral glass)
- With neck for cotton stoppers
- Good resistance to temperature variation, suitable for transferring hot liquids
- Excellent chemical resistance to acid and alkaline solutions

Length (mm)	Volume (ml)	Pipette ∅ (mm)	Tip ∅ (mm)	Art. No.	Pack Qty.	€
150	approx. 2	6,95	approx. 1.1	**HXH7.1**	1000 (4 x 250)	48,55
230	approx. 2	6,95	approx. 1.1	**HXH8.1**	1000 (4 x 250)	52,95

S

Pasteur pipettes, plastic

Made of **PS**. **Sterile**, individually packed. With fine extended tip.
For use with pipette bulbs or as aspiration pipettes in combination with suction systems. Safe alternative to Pasteur pipettes made of glass.
Outer ∅ 6 mm, Outer ∅ Tip 1.5 mm.

Total length (mm)	Art. No.	Pack Qty.	€
145	**EKN7.1**	200 (4 x 50)	59,90
230	**EKN8.1**	200 (4 x 50)	69,80

S

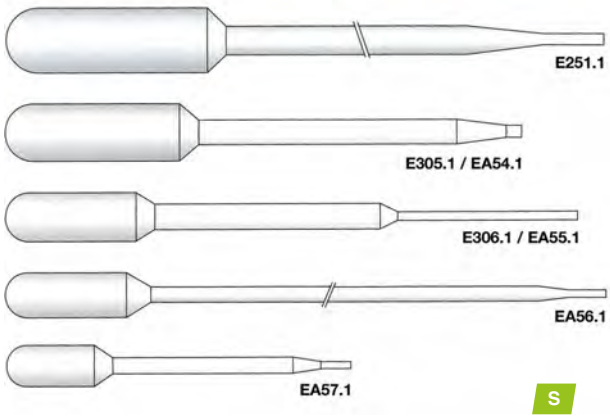
Aspiration pipettes

Made of **PS**. **Sterile.** Pipettes without cotton stopper, without graduation. Suitable for vacuum applications and liquid handling where high precision is not required. Safe alternative to pasteurizing pipettes made of glass.

Volume (ml)	Packaging	Length (mm)	Art. No.	Pack Qty.	€
2	individually wrapped	271	**NA41.2**	200	21,45
10	individually wrapped	295	**NA42.1**	200	57,00

Disposable pasteur pipettes

Made of transparent **LDPE** precision-formed, unbreakable, non toxic.
Enables precise, repeatable dosing.

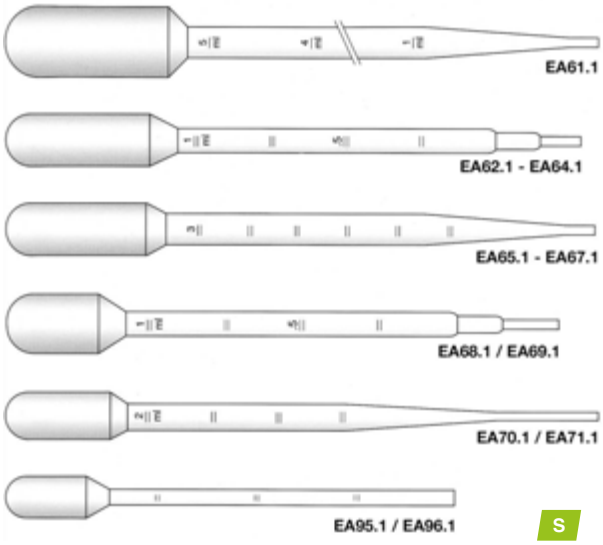


S

Standard pasteur pipettes, not graduated

Made of transparent polyethylene **(LDPE)**, **sterile** or non-sterile, precision-formed, unbreakable, non toxic and with controlled, reproducible drop size.

Design	Filling capacity (ml)	Drop size (µl)	Drops per ml	Length (mm)	Art. No.	Pack Qty.	€
non-sterile, very long	7,3	50	20	300	**E251.1**	100	32,30
sterile, single/ pack	7,3	50	20	300	**AEA7.1**	100	64,30
non-sterile, wide opening	4,8	62	16	137	**E305.1**	250	22,80
sterile, single/ pack, for cell culture, wide opening	4,8	62	16	137	**EA54.1**	250	59,15
non-sterile	3,0	34	29	155	**E306.1**	500	37,10
sterile, 10 per pack.	3,0	34	29	155	**EA55.1**	500	54,95
non-sterile, very long	2,3	40	25	225	**EA56.1**	400	27,70
sterile, single/ pack, very long	2,3	40	25	225	**AEA8.1**	400	81,65
non-sterile, short	0,9	40	25	87	**EA57.1**	500	24,20



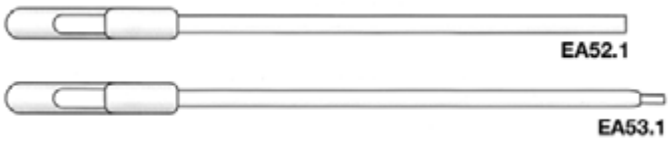
S

Disposable pasteur pipettes, graduated

Made of transparent **LDPE**, **sterile** or unsterile, precision-formed, unbreakable, non toxic and with controlled, reproducible drop size. Graduation see figure.

*A filling capacity of 1.8 ml is achieved by pressing the suction ball.
To achieve a filling capacity 2 ml, the stem must also be squeezed.

Design	Filling volume/ grad. to (ml)	Drop size (µl)	Drops per ml	Length (mm)	Art. No.	Pack Qty.	€
non-sterile	6,2/5	54	19	217	**EA61.1**	250	21,50
sterile, 20 per pack.	6,2/5	54	19	217	**AEA4.1**	240	39,35
non-sterile	3,4/1	40	25	155	**EA62.1**	500	17,65
sterile, single/pack.	3,4/1	40	25	155	**EA63.1**	500	74,00
sterile, 20 per pack.	3,4/1	40	25	155	**EA64.1**	500	36,25
non-sterile	3,2/3	50	20	155	**EA65.1**	500	16,80
sterile, single/pack.	3,2/3	50	20	155	**EA66.1**	500	74,10
sterile, 20 per pack.	3,2/3	50	20	155	**EA67.1**	500	39,70
non-sterile	2,2/1	40	25	140	**EA68.1**	500	27,15
sterile, 20 per pack.	2,2/1	40	25	140	**EA69.1**	500	42,95
non-sterile	1,8/2*	41	24	152	**EA70.1**	500	29,15
sterile, 20 per pack.	1,8/2*	41	24	152	**EA71.1**	500	48,25
non-sterile	0,8/0,3	47	21	116	**EA95.1**	500	29,85
sterile, 20 per pack.	0,8/0,3	47	21	116	**EA96.1**	500	43,60

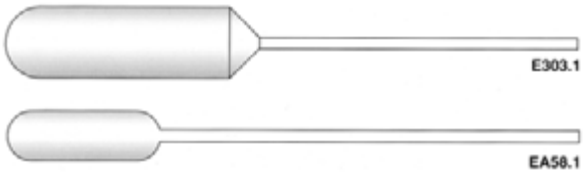


Disposable mixing pipettes, not graduated

Made of transparent **LDPE** precision-formed, unbreakable, non toxic and with controlled, reproducible drop size.

Design	Filling capacity (ml)	Drop size (µl)	Drops per ml	Length (mm)	Art. No.	Pack Qty.	€
non-sterile	0,2	50	20	124	**EA52.1**	500	23,40
non-sterile, fine	0,2	25	40	131	**EA53.1**	500	24,15

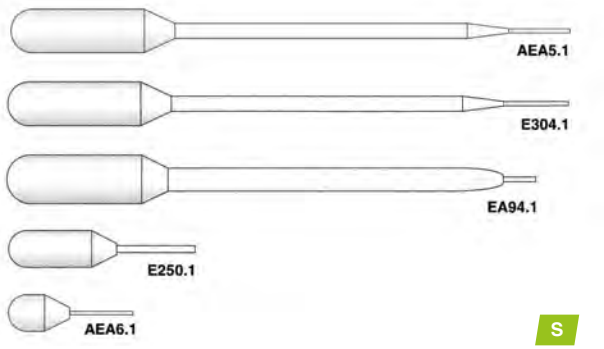
Pasteur pipettes/Disposal pipettes



Pasteur pipettes with long, thin tip, not graduated

Made of transparent polyethylene **(LDPE)**, precision-formed, unbreakable, non toxic and with controlled, reproducible drop size.

Design	Filling capacity (ml)	Drop size (µl)	Drops per ml	Length (mm)	Art. No.	Pack Qty.	€
non-sterile	8,0	52	19	155	**E303.1**	250	29,95
non-sterile	3,3	40	25	155	**EA58.1**	500	19,75



Pasteur pipettes with ultra-thin tip, ungraduated

Made of transparent polyethylene **(LDPE)** precision-formed, unbreakable, non toxic and with controlled, reproducible drop size.
Sterile or non-sterile,
Outer-∅ tip 1,1 mm (E250.1 ∅ 1.5 mm).

Design	Filling capacity (ml)	Drop size (µl)	Drops per ml	Length (mm)	Art. No.	Pack Qty.	€
sterile, single/pack.	3,5	20	50	157	**AEA5.1**	400	85,50
non-sterile	3,5	20	50	157	**E304.1**	500	48,25
non-sterile	3,3	18	55	147	**EA94.1**	500	44,10
non-sterile	1,0	22	45	51	**E250.1**	500	41,20
non-sterile	0,5	25	40	36	**AEA6.1**	500	36,25

Disposable Pasteur pipettes with bellows

Made of **PE**, with graduation and built-in bellows.

Filling capacity (ml)	Graduation (ml)	Length (mm)	Art. No.	Pack Qty.	€
1,5	0,5	134	**TT22.1**	100	15,45
5,0	1,0	195	**TT23.1**	100	17,65

Disposable pipettes

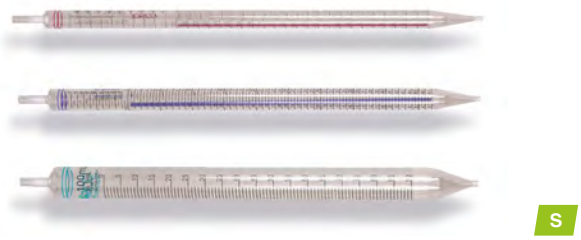
Made of biologically inert **PS** (with colour-coded cotton stopper).
Sterile or non-sterile. Easy- to- read graduation. The sterile pipettes are RNase-/DNase-free, pyrogen-free, non toxic and are not hemolytic.

Standard pipettes, length 27-30 cm. Art. No. ET25.2: Length 35 cm.

Volume (ml)	Design	Packaging	Art. No.	Pack Qty.	€
1	**sterile**	individually wrapped	**N231.1**	500	57,55
1	**sterile**	25 per pack	**N232.1**	1000	98,40
2	**sterile**	individually wrapped	**N236.1**	500	60,15
2	**sterile**	25 per pack	**N237.1**	1000	100,95
5	**sterile**	individually wrapped	**N239.2**	200	41,40
10	**sterile**	individually wrapped	**N242.1**	200	44,00
10	**sterile**	25 per pack	**N243.1**	250	50,55
10	non-sterile	loose	**N244.1**	250	42,60
25	**sterile**	individually wrapped	**N245.1**	200	109,65
25	non-sterile	loose	**ET24.1**	100	45,70
50	**sterile**	individually wrapped	**ET25.2**	100	173,10

Short pipette shaft
Length 22 cm. For working under the sterile bench.

Volume (ml)	Design	Packaging	Art. No.	Pack Qty.	€
10	**sterile**	individually wrapped	**ET27.1**	100	70,45



Single-use pipettes

Made of **PS**, transparent. **Sterile**, individually packed.
For aqueous solutions.

Volume (ml)	Art. No.	Pack Qty.	€
25	**CPP2.1**	50	112,90
50	**CPP3.1**	25	96,65
100	**CPP4.1**	10	213,95

Volumetric / Graduated pipettes

Disposable pipettes with large opening

For pipetting viscous liquids and for cell culture.
Made of biologically inert **PS** (with colour-coded cotton stopper).
Sterile. Easy-to-read graduation. RNase-/DNase-free, non-pyrogenic, non-cytotoxic and non-haemolytic.

Volume (ml)	Packaging	Art. No.	Pack Qty.	€
10	Individual	**ET30.1**	200	42,90

Disposable demeter pipettes

Dilution pipettes for bacteriological examinations in food laboratories and in the dairy products industry.
Made of biologically inert **PS** (with colour-coded cotton stopper).
Sterile. Easy-to-read graduation. RNase-/DNase-free, non-pyrogenic, non-cytotoxic and non-haemolytic.
2.2 ml pipettes graduated at 0.5 ml, 1 ml, 2 ml, 2.1 ml and 2.2 ml.

Volume (ml)	Packaging	Art. No.	Pack Qty.	€
2,2	25 per pack	**NA44.1**	1000	96,65

Plastic graduated pipettes

By Vitlab. Made of **PP**, transparent.Shatter-proof. EX-calibrated. Suction tube end outer ∅ max. 8 mm (XY60.1 10 mm). Cleaning with low alkaline cleaning agents is recommended up to a max. temperature of 60 °C in order to avoid changes in volume.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Total length (mm)	Art. No.	Pack Qty.	€
1	0.1	0,02	300	**XY57.1**	12	138,70
2	0.1	0,02	300	**XY58.1**	12	140,85
5	0.1	0,05	330	**XY59.1**	12	147,30
10	0.1	0,10	330	**XY60.1**	12	179,55
10	0.1	0,10	320	**XY61.1**	12	236,50

Plastic volumetric pipettes

By Vitlab. Made of **PP**, transparent. Shatter-proof. EX-calibrated. Cleaning with low alkaline cleaning agents is recommended up to a max. temperature of 60 °C in order to avoid changes in volume.

Volume (ml)	Limit of error (±ml)	Total length (mm)	Art. No.	Pack Qty.	€
1	0,02	300	**YA06.1**	12	135,45
2	0,02	300	**YA07.1**	12	145,15
5	0,03	300	**YA08.1**	6	131,15
10	0,04	440	**YA09.1**	6	135,45
25	0,05	450	**YA10.1**	6	145,15
50	0,10	460	**YA11.1**	6	149,45

Suction piston graduated pipettes

By Hirschmann. Made of AR-GLAS®. With principal point ring division.
With brown graduation. Graduated to tip. Zero point at the top.

Volume (ml)	Graduations (ml)	Art. No.	Pack Qty.	€
1	0,01	**T742.1**	1	18,80
2	0,02	**T743.1**	1	19,10
5	0,05	**T744.1**	1	22,40
10	0,1	**T745.1**	1	24,05
20	0,1	**T746.1**	1	29,80
25	0,1	**T747.1**	1	30,95
50	0,2	**T748.1**	1	57,65

▶ Greases see page 1171

Volumetric / Graduated pipettes

NEW

A 121 °C

BLAUBRAND® graduated pipettes, type 2, class AS

By Brand. Made of AR-GLAS®. Autoclavable.

- Upper nominal capacity
- Calibrated to 'Ex'
- Total delivery
- Graduation and inscriptions in high-contrast blue enamel paint
- In accordance with DIN EN ISO 835
- DE-M approved

Delivery incl. batch certificate.

*In addition to ISO, **In addition to ISO, not DE-M approved

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Total length ±10 (mm)	Cotton stopper end	Art. No.	Pack Qty.	€
0,5	0.01	0,006	360	no	**HXK5.1**	12	74,20
1	0.01	0,007	360	no	**HXK6.1**	12	58,70
1	0.01	0,007	360	yes	**HXK7.1**	12	78,30
1	0.1	0,007	360	no	**HXK8.1**	12	58,70
2**	0.01	0,010	360	no	**HXK9.1**	12	84,95
2	0.02	0,010	360	no	**HXL0.1**	12	58,70
2	0.02	0,010	360	yes	**HXL1.1**	12	78,30
2	0.1	0,010	360	no	**HXL2.1**	12	58,70
5	0.05	0,030	360	yes	**HXL3.1**	12	69,70
5	0.1	0,030	360	yes	**HXL4.1**	12	67,75
10	0.1	0,05	360	yes	**HXL5.1**	12	69,70
20	0.1	0,1	360	yes	**HXL6.1**	6	71,60
25	0.1	0,1	450	yes	**HXL7.1**	6	71,60
50*	0.5	0,2	450	yes	**HXL8.1**	6	117,40

NEW

A 121 °C

SILBERBRAND ETERNA graduated pipettes, type 2, class B

By Brand. Made of AR-GLAS®. Autoclavable.

- Upper nominal capacity
- Calibrated to 'Ex'
- Total delivery
- Graduation and inscriptions in ETERNA permanent amber diffusion stain
- In accordance with DIN EN ISO 835

*In addition to ISO

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Total length ±10 (mm)	Cotton stopper end	Art. No.	Pack Qty.	€
1	0.01	0,007	360	no	**HXN6.1**	12	43,25
1	0.1	0,007	360	no	**HXN8.1**	12	43,25
2*	0.01	0,010	360	no	**HXN9.1**	12	58,05
2	0.02	0,010	360	no	**HXP0.1**	12	43,90
2	0.02	0,010	360	yes	**HXP1.1**	12	48,40
5	0.05	0,030	360	yes	**HXP3.1**	12	49,05
5	0.1	0,030	360	yes	**HXP4.1**	12	45,15
10	0.1	0,05	360	yes	**HXP5.1**	12	49,05
20	0.1	0,15	360	yes	**HXP6.1**	6	46,15
25	0.1	0,15	450	yes	**HXP7.1**	6	46,15

NEW

A 121 °C

BLAUBRAND® graduated pipettes, type 2, class AS, USP

By Brand. Made of AR-GLAS®. Autoclavable.

- With cotton stopper end
- Upper nominal capacity
- Calibrated to 'Ex'
- Total delivery
- Graduation and inscriptions in high-contrast blue enamel paint
- In accordance with DIN EN ISO 835
- DE-M approved

Delivery incl. USP batch certificate.

*USP limit of error ±0.01 ml

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Total length ±10 (mm)	Art. No.	Pack Qty.	€
1*	0.01	0,007 USP	360	**HXN1.1**	12	67,10
2	0.02	0,01 USP	360	**HXN2.1**	12	67,10
5	0.05	0,02 USP	360	**HXN3.1**	12	79,35
10	0.1	0,03 USP	360	**HXN4.1**	12	79,35

A 121 °C

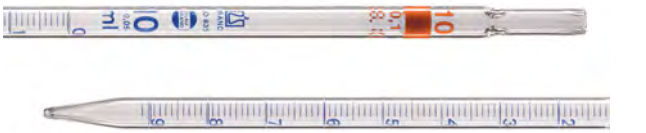
Graduated pipettes class B

By Hirschmann. Made of AR-GLAS®. Type 3. EX-adjusted. The indicated volume can be obtained via normal discharge of volumetric pipette. Graduated up to tip, zero point at the top. **Brown graduation.** Autoclavable. Acc. to DIN EN ISO 835. From 5 ml comes with cotton wool stopper ends.

*In supplementation to DIN.

Volume (ml)	Graduation (ml)	Limit of error (±ml)	Total length ±5 (mm)	Art. No.	Pack Qty.	€
0,5*	0,01	0,0075	360	**E941.1**	12	34,40
1	0,01	0,01	360	**E942.1**	12	30,45
2	0,02	0,015	360	**E943.1**	12	30,45
5	0,05	0,045	360	**E944.1**	12	44,95
5*	0,1	0,045	360	**E945.1**	12	35,05
10	0,1	0,075	360	**E946.1**	12	38,00
20*	0,1	0,15	360	**E947.1**	6	32,05
25	0,1	0,15	450	**E948.1**	6	36,15
50*	0,2	0,3	450	**E949.1**	6	59,25

Volumetric / Graduated pipettes



NEW

A 121 °C

BLAUBRAND® graduated pipettes, type 3, class AS

By Brand. Made of AR-GLAS®. Autoclavable.
- Upper zero point
- Calibrated to 'Ex'
- Total delivery
- Graduation and inscriptions in high-contrast blue enamel paint
- In accordance with DIN EN ISO 835
- DE-M approved

Delivery incl. batch certificate.

*In addition to ISO **In addition to ISO, not DE-M approved

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Total length ±10 (mm)	Cotton stopper end	Art. No.	Pack Qty.	€
0,5	0,01	0,006	360	no	**HXP8.1**	12	74,20
1	0,01	0,007	360	no	**HXP9.1**	12	58,70
1	0,01	0,007	360	yes	**HXT0.1**	12	91,40
1	0,1	0,007	360	no	**HXT1.1**	12	58,70
2**	0,01	0,010	360	no	**HXT2.1**	12	76,15
2	0,02	0,010	360	no	**HXT3.1**	12	58,70
2	0,02	0,010	360	yes	**HXT4.1**	12	91,40
2	0,1	0,010	360	no	**HXT5.1**	12	58,70
5	0,05	0,030	360	yes	**HXT6.1**	12	69,70
5	0,1	0,030	360	yes	**HXT7.1**	12	67,75
10	0,1	0,05	360	yes	**HXT8.1**	12	69,70
20	0,1	0,1	360	yes	**HXT9.1**	6	71,95
25	0,1	0,1	450	yes	**HXX0.1**	6	71,95
50*	0,5	0,2	450	yes	**HXX1.1**	6	117,40

A 121 °C

Graduated pipettes class AS

By Hirschmann. Made of AR-GLAS®. Type 3. EX-adjusted.
Certified of conformity. With principal point ring division.
Zero point at the top. Graduated to tip. With dated charge identification.
With blue graduations. Autoclavable. Acc. to DIN EN ISO 835.
From 5 ml comes with cotton stopper ends.

*In supplementation to DIN.

Volume (ml)	Graduation (ml)	Limit of error (±ml)	Total length ±5 (mm)	Art. No.	Pack Qty.	€
0,5	0,01	0,005	360	**E950.1**	12	46,70
1	0,01	0,007	360	**E951.2**	6	40,80
1	0,01	0,007	360	**E951.1**	12	46,25
2	0,02	0,01	360	**E952.2**	6	41,25
2	0,02	0,01	360	**E952.1**	12	46,25
5	0,05	0,03	360	**E953.2**	6	47,85
5	0,05	0,03	360	**E953.1**	12	51,30
5*	0,1	0,03	360	**E954.1**	12	51,20
10	0,1	0,05	360	**E955.2**	6	47,25
10	0,1	0,05	360	**E955.1**	12	51,50
20*	0,1	0,1	360	**E956.2**	3	46,15
20*	0,1	0,1	360	**E956.1**	6	50,45
25	0,1	0,1	450	**E957.2**	3	46,15
25	0,1	0,1	450	**E957.1**	6	51,30
50*	0,2	0,2	450	**E958.2**	3	79,15
50*	0,2	0,2	450	**E958.1**	6	90,55

A 121 °C

Graduated pipettes, class AS

By Hirschmann. Made of AR-GLAS®. Type 3. **Certificate of conformity included.** With dated batch identification. Zeroed at the top, with rings marking main volumes. Adjusted to EX, in acc. with DIN EN ISO 835. With permanent colour diffusion. **Brown graduated**.
From 5 ml comes with cotton stopper ends.

*In supplementation to DIN.

Volume (ml)	Graduation (ml)	Limit of error (±ml)	Total length ±5 (mm)	Art. No.	Pack Qty.	€
0,5	0,01	0,005	360	**AH36.1**	12	61,85
1	0,01	0,007	360	**AH37.1**	12	54,40
2	0,02	0,01	360	**AH38.1**	12	54,40
5	0,05	0,03	360	**AH39.1**	12	61,75
5*	0,1	0,03	360	**AH40.1**	12	60,65
10	0,1	0,05	360	**AH41.1**	12	61,10
20*	0,1	0,1	360	**AH42.1**	6	61,30
25	0,1	0,1	450	**AH43.1**	6	61,85
50*	0,2	0,2	450	**AH44.1**	6	107,30

NEW

A 121 °C

BLAUBRAND® graduated pipettes, sprue, class A

By Brand. Made of AR-GLAS®. Autoclavable.
- Upper nominal capacity
- Calibrated to 'In'
- Total delivery
- Graduation and inscriptions in high-contrast blue enamel paint
- Limits of error and tolerances according to DIN 12689
- DE-M approved

Delivery incl. batch certificate.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Total length ±10 (mm)	Art. No.	Pack Qty.	€
0,1	0.001	0,001	360	**HXL9.1**	12	77,40
0,2	0.002	0,002	360	**HXN0.1**	12	77,40

▶ For pipette containers and sterilization containers for pipettes see page 268

▶ Measuring cylinders and volumetric flasks from p. 20

Graduated pipettes, wide opening

By Hirschmann. Made of AR-GLAS®. With wide opening for tissue cultures or viscous media. Zero point at the top, graduated to the tip.
Brown graduated. From 5 ml, with cotton plug as standard.

Volume (ml)	Graduations (ml)	Limit of error (±ml)	Total length ±5 (mm)	Art. No.	Pack Qty.	€
1	0,01	0,01	360	**HLC3.1**	12	65,60
2	0,02	0,015	360	**HLC4.1**	12	65,60
5	0,1	0,045	360	**HLC5.1**	12	67,75
10	0,1	0,075	360	**HLC6.1**	12	74,75
25	0,1	0,15	450	**HLC7.1**	6	70,55

A 121 °C

Graduated pipettes for tissue culture

By Hirschmann. Made of AR-GLAS® with principal point ring division. Short form. Specially designed for use in sterile benches. With cotton stopper ends. Zero point at the bottom. Adjusted to ex. **With brown graduation.**

Volume (ml)	Graduations (ml)	Total length ±3 (mm)	Art. No.	Pack Qty.	€
1	0,1	230	**X157.1**	12	66,15
2	0,1	230	**X158.1**	12	66,15
5	0,1	230	**X159.1**	12	66,15
10	0,1	230	**X160.1**	12	79,55
25	0,2	230	**X162.1**	12	129,00

NEW

Cotton cord for pipettes

100% cotton, degreased. Lightweight design, approx. 13 g/10 m.
Use of cotton stoppers: cotton stoppers can increase the emergence time and thereby affect the accuracy of measurements. The results of tests using pipettes that were stoppered in cotton stopper machines were within the specified limits of error.

Art. No.	Pack Qty. (kg)	€
HYE6.1	1	95,35

NEW
A 121 °C

BLAUBRAND® bulb pipettes, class AS, 1 marker

By Brand. Made of AR-GLAS®. Autoclavable.
- Calibrated to 'Ex'
- Waiting time of 5 s
- Ring marks and inscriptions in high-contrast blue enamel paint
- In accordance with DIN EN ISO 648
- DE-M approved

Delivery incl. batch certificate.

Volume (ml)	Limit of error (±ml)	Total length ±10 (mm)	Art. No.	Pack Qty.	€
0,5	0,005	300	**HYA7.1**	12	75,20
1	0,008	300	**HYA8.1**	12	63,45
2	0,010	330	**HYA9.1**	12	63,45
2,5	0,010	330	**HYC0.1**	6	41,20
3	0,010	330	**HYC1.1**	6	34,30
4	0,015	400	**HYC2.1**	6	38,40
5	0,015	400	**HYC3.1**	6	37,30
6	0,015	400	**HYC4.1**	6	49,05
7	0,015	400	**HYC5.1**	6	49,05
8	0,02	440	**HYC6.1**	6	49,05
9	0,02	440	**HYC7.1**	6	49,05
10	0,02	440	**HYC8.1**	6	40,85
15	0,03	510	**HYC9.1**	6	51,30
20	0,03	510	**HYE0.1**	6	51,95
25	0,03	520	**HYE1.1**	6	52,80
30	0,03	520	**HYE2.1**	6	59,35
40	0,05	540	**HYE3.1**	6	73,55
50	0,05	540	**HYE4.1**	6	69,90
100	0,08	585 (±15 mm)	**HYE5.1**	6	96,75

Volumetric / Graduated pipettes

A 121 °C

Volumetric pipettes class AS

By Hirschmann. Made of AR-GLAS®. **Certificate of conformity included.** With dated batch identification and with volume mark.
Adjusted to EX, in acc. with DIN EN ISO 648. With permanent silver diffusion colour **graduated brown**.

*In supplementation to DIN.

Volume (ml)	Limit of error (±ml)	Total length ±10 (mm)	Art. No.	Pack Qty.	€
0,5	0,005	325	**AC84.1**	12	56,60
1	0,008	325	**AC85.1**	12	56,60
2	0,01	350	**AC86.1**	12	56,50
3*	0,01	350	**AC87.1**	6	32,20
4*	0,015	410	**AC88.1**	6	37,85
5	0,015	410	**AC89.1**	6	35,60
10	0,02	450	**AC90.1**	6	40,35
15*	0,03	520	**AC91.1**	6	42,50
20	0,03	520	**AC92.1**	6	50,35
25	0,03	530	**AC93.1**	6	50,80
30*	0,03	530	**AC94.1**	6	59,75
40*	0,05	550	**AH33.1**	6	64,45
50	0,05	550	**AH34.1**	6	63,65
100	0,08	600	**AH35.1**	6	89,80

A 121 °C

Volumetric pipettes class AS

By Hirschmann. Made of AR-GLAS®. With dated charge identification.
Certificate of conformity included. With blue graduation.
Autoclavable. EX-adjusted acc. to DIN EN ISO 648. With a ring mark.

*In supplementation to DIN.

Volume (ml)	Limit of error (±ml)	Total length ±10 (mm)	Art. No.	Pack Qty.	€
1	0,008	325	**E972.2**	6	42,50
1	0,008	325	**E972.1**	12	53,75
2	0,01	350	**E973.2**	6	46,75
2	0,01	350	**E973.1**	12	57,80
2,5	0,01	350	**HLH7.1**	6	41,90
3*	0,01	350	**E974.1**	6	31,20
5	0,015	410	**E976.2**	3	24,70
5	0,015	410	**E976.1**	6	35,25
10	0,02	450	**E977.2**	3	28,95
10	0,02	450	**E977.1**	6	38,60
15*	0,03	520	**E978.1**	6	40,35
20	0,03	520	**E979.2**	3	34,95
20	0,03	520	**E979.1**	6	46,35
25	0,03	530	**E980.2**	3	35,45
25	0,03	530	**E980.1**	6	47,70
50	0,05	550	**E983.2**	3	44,10
50	0,05	550	**E983.1**	6	63,20
100	0,08	600	**E984.2**	3	61,30
100	0,08	600	**E984.1**	6	83,85

NEW
A 121 °C

BLAUBRAND® ETERNA bulb pipettes, class AS, 1 marker

By Brand. Made of AR-GLAS®. Autoclavable.
- Calibrated to 'Ex'
- Waiting time of 5 s
- Ring marks and inscriptions in ETERNA permanent amber diffusion stain
- In accordance with DIN EN ISO 648
- DE-M approved

Delivery incl. batch certificate.

Volume (ml)	Limit of error (±ml)	Total length ±10 (mm)	Art. No.	Pack Qty.	€
1	0,008	300	**HXX2.1**	12	64,00
2	0,010	330	**HXX3.1**	12	64,00
5	0,015	400	**HXX4.1**	6	46,15
10	0,02	440	**HXX5.1**	6	39,05
20	0,03	510	**HXX6.1**	6	49,70
25	0,03	520	**HXX7.1**	6	50,65
50	0,05	540	**HXX8.1**	6	67,10

NEW
A 121 °C

BLAUBRAND® bulb pipettes, class AS, USP, 1 marker

By Brand. Made of AR-GLAS®. Autoclavable.
- Calibrated to 'Ex'
- Waiting time of 5 s
- Ring marks and inscriptions in high-contrast blue enamel paint
- In accordance with DIN EN ISO 648
- DE-M approved

Delivery incl. USP batch certificate.

*USP limit of error ±0.006 ml

Volume (ml)	Limit of error (±ml)	Total length ±10 (mm)	Art. No.	Pack Qty.	€
0,5*	0,005	300	**HXX9.1**	12	90,95
1	0,008	300	**HXY0.1**	12	70,95
2	0,010	330	**HXY1.1**	12	70,95
3	0,010	330	**HXY2.1**	6	43,55
4	0,015	400	**HXY3.1**	6	50,65
5	0,015	400	**HXY4.1**	6	43,55
6	0,015	400	**HXY5.1**	6	60,35
7	0,015	400	**HXY6.1**	6	60,35
8	0,02	440	**HXY7.1**	6	60,35
9	0,02	440	**HXY8.1**	6	60,35
10	0,02	440	**HXY9.1**	6	46,90
15	0,03	510	**HYA0.1**	6	60,10
20	0,03	510	**HYA1.1**	6	61,20
25	0,03	520	**HYA2.1**	6	62,35
30	0,03	520	**HYA3.1**	6	68,80
40	0,05	540	**HYA4.1**	6	85,90
50	0,05	540	**HYA5.1**	6	80,60
100	0,08	585 (±15 mm)	**HYA6.1**	6	107,50

Manual pipetting aids

A 121 °C

Volumetric pipettes class B

By Hirschmann. Made of AR-GLAS®. With a ring mark. EX-adjusted. **With brown graduation**. Autoclavable. Acc. to DIN EN ISO 648.

Volume (ml)	Limit of error (±ml)	Total length ±10 (mm)	Art. No.	Pack Qty.	€
1	0,012	325	**E960.1**	12	41,00
2	0,015	350	**E961.1**	12	47,30
5	0,023	410	**E964.1**	6	28,35
10	0,03	450	**E965.1**	6	35,65
20	0,045	520	**E967.1**	6	43,50
25	0,045	530	**E968.1**	6	45,15
50	0,075	550	**E969.1**	6	54,75
100	0,12	600	**E970.1**	6	75,10

Bulb pipettes Class AS, 2 volumetric markings

By Hirschmann. Made of AR-GLAS®. **Conformity certified**. With two ring markings, lower ring marking as zero point. Partial drain, volumetric marking between both markings. For media with special draining behaviour. **Brown graduated.** DIN EN ISO 648 certified.

*in addition to DIN

Volume (ml)	Limit of error (±ml)	Total length (mm)	Art. No.	Pack Qty.	€
0,5	0,005	300	**HLC8.1**	12	68,45
1	0,008	325	**HLC9.1**	12	66,35
2	0,01	350	**HLE0.1**	12	93,55
3*	0,01	350	**HLE1.1**	6	49,45
5	0,015	410	**HLE2.1**	6	54,85
10	0,02	450	**HLE3.1**	6	59,15
15*	0,03	520	**HLE4.1**	6	69,90
20	0,03	520	**HLE5.1**	6	74,10
25	0,03	530	**HLE6.1**	6	74,10
50	0,05	550	**HLE7.1**	6	88,70
100	0,08	600	**HLE8.1**	6	119,35

Multi-coloured pipette bulb

Hand-made of natural rubber. Ideal for pipetting, distributing and measuring with volumetric or graduated pipettes.

Art. No.	Pack Qty.	€
L960.1	1	15,80

Rotilabo®-safety pipette bulbs

Made of natural rubber. For volumetric and graduated pipettes. Glass ball valve is opened by pressing marked point.

Standard model
For pipettes up to 10 ml. Total length 125 mm, weight 50 g.

Art. No.	Pack Qty.	€
0251.1	1	7,45

Universal model
For pipettes up to 100 ml, with ∅ up to 9 mm. Total length 152 mm, weight 58 g.

Art. No.	Pack Qty.	€
PC78.1	1	6,75

Rotilabo®-safety pipette bulbs Flip

Made of natural rubber. With detachable safety valve. Evacuating via removable automatic valve. Can be cleaned inside. Suction and emptying with the aid of two operating points. Suitable for volumetric and graduated pipettes from 10-100 ml with ∅ from 6-8 mm.

Colour	Art. No.	Pack Qty.	€
red	**C261.1**	1	10,25
yellow	**C262.1**	1	10,25
green	**C263.1**	1	10,25
blue	**C264.1**	1	10,25
assorted (red, yellow, blue, green)	**ETY6.1**	4	39,90

Manual pipetting aids

Pipette bulbs

Made of soft PVC. Ideal for volumetric, graduated or pasteur pipettes. Neck bore ∅ 6 mm.

Suction capacity (ml)	Ball-∅ (mm)	Art. No.	Pack Qty.	€
5	25 (oval)	**C260.1**	5	16,95
7,5	30	**H616.1**	5	21,10
20	42	**H617.1**	5	22,90
30	48	**H618.1**	5	30,65
85	62	**H619.1**	2	14,20
140	72	**H620.1**	2	19,35
220	84	**H621.1**	2	24,10
340	94	**H622.1**	1	14,85

Pipette fillers pi-pump® 2500

Made of acid-resistant plastic. Safe and precise. Thumbwheel for drawing and dispensing liquid. Size 2-25 ml with venting lever for fast emptying.

Colour	Size	for pipettes up to (ml)	Art. No.	Pack Qty.	€
red	25	25	**0387.1**	1	17,75
green	10	10	**0388.1**	1	15,95
blue	2	2	**0389.1**	1	15,95
yellow	0	0,2	**0390.1**	1	16,10

Accessories:

Spare cone, rubber	**E385.1**	1	4,45

Suction cup

For Pasteur pipettes, graduated and volumetric pipettes with a capacity of up to 10 ml.

*Suitable for Pasteur pipettes

Suction capacity (ml)	Hole ∅ (mm)	Colour	Material	Art. No.	Pack Qty.	€
2	5*	red	Natural rubber	**YX53.1**	100	60,60
5	6	red	Natural rubber	**ATN7.1**	5	15,05
10	6	red	Natural rubber	**ATN8.1**	3	13,75

Pipetting aid

Head and bottom part made of synthetic rubber. Suction bulb made of PE. With 3-point operation. For graduated and volumetric pipettes from 1 to 50 ml. Can be taken apart for cleaning.
Advantage: filling can be accelerated by pulling head part.

Art. No.	Pack Qty.	€
C614.1	1	23,45

A 121 °C

Pipetting aids macro

By Brand.

- For graduated, volumetric and delivery pipettes from 0.1 to 200 ml
- Suction of up to 50 ml in 11 seconds following one-time ventilation
- Single-level operation for sucking and delivering liquid
- Spring-loaded control lever for delicate pipetting
- Blow-out function
- Drip stop via hydrophobic membrane filter (3 µm)
- Membrane filter: PP housing; PTFE membrane
- Fully autoclavable at 121 °C (2 bar) according to DIN EN 285
- Replaceable valve system

Effortless pipetting: The further up the pipette lever is operated, the faster the pipette is filled. To deliver the liquid, move the pipette lever fully downward. Even when flowing freely, the pipette's volume accuracy is not affected.

Delivery incl. spare filter.

Colour	Art. No.	Pack Qty.	€
Neutral	**X478.1**	1	55,40
blue	**X479.1**	1	55,40
magenta	**X480.1**	1	55,40
green	**X482.1**	1	55,40

Accessories:

Unsterilised spare membrane filter	**X484.1**	1	8,40
Unsterilised spare membrane filter	**X485.1**	10	58,40
Spare valve system (PP, PTFE, silicone)	**X486.1**	1	28,80
Spare adapter (silicone), length 44 mm	**AK02.1**	1	7,10

Pipette filters

NEW

Pipette controller

Manual pipette controller for precise and convenient pipetting.
- For serological, graduated and bulb pipettes from 1 to 100 ml
- Ergonomic grip
- With operating lever for liquid intake and delivery
- Blow-out function for blowing out the pipette
- Pipette holders made of polypropylene and silicone adapters, autoclavable
- Dimensions: L 230 x ∅ 54 mm

Delivery incl. membrane filter (PTFE 0.45 µm) for protection against ingress of liquids as well as two additional pipette holders in green and white for colour coding.

Art. No.	Pack Qty.	€
HYT0.1	1	53,70

Accessories:

Replacement membrane filter	**AN90.1**	5	35,30
Replacement pipette adapter, made of silicone	**TC19.1**	1	25,70

NEW

RF1000 pipette controller

Manual pipette controller for precise and convenient pipetting with one hand.
- For serological, graduated and bulb pipettes from 1 to 50 ml
- Ergonomic grip
- With operating lever for liquid intake and delivery
- Blow-out function for blowing out the pipette
- Pipette holders made of polypropylene and silicone adapters, autoclavable
- Dimensions: L 180 x W 45 x H 120 mm

Delivery incl. membrane filter (PTFE 0.45 µm) for protection against ingress of liquids.

Art. No.	Pack Qty.	€
HYT1.1	1	53,70

Accessories:

Replacement membrane filter	**AN90.1**	5	35,30
Replacement pipette adapter, made of silicone	**TC19.1**	1	25,70

pipetus® junior

By Hirschmann. **Manual pipetting aids** for all standard graduated and volumetric pipettes from 0.5-100 ml. Easy and safe to use. Weighs only 115 g. Defined lifting capacity app. 2 ml when full. With hydrophobic PTFE-membrane filter 0.2 µm for integral overflow protection.

Art. No.	Pack Qty.	€
L468.1	1	139,75

pipetus® standard

By Hirschmann. **Electric pipetting aids** consisting of ergonomically formed handle, double hose and pump with mains cable. Ideal for all standard pipettes 0.1 to 100 ml. For effective working with EX or Blow-out pipettes. Pipetting speed can be preset directly on the pump. Built-in safety valve prevents overfilling. Integral PTFE-membrane filter 0.2 µm and additional high-capacity filter on pump part.
Hose length 150 cm. Cable length 140 cm.
Connected load 220 V / 50 Hz / 2 W.

Design	Art. No.	Pack Qty.	€
without sterile filter	**1534.1**	1	250,50
with sterile filter	**B010.1**	1	292,40

Cordless pipette fillers

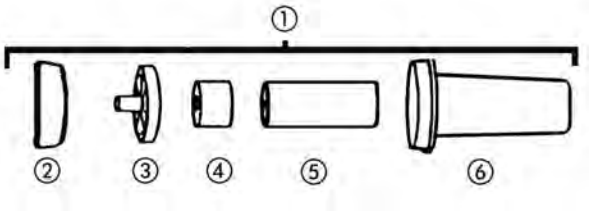
pipetus®

By Hirschmann. **Battery-operated pipetting aid**

- For pasteur-, graduated- and volumetric pipettes with volumes between 0.1 and 200 ml
- Easy-to-read colour display for optical control of all functions
- Permanent rechargeable-battery capacity display
- Preset pipetting mode (EX or Blow-out)
- Display for set pipetting speed (5 speeds available)
- Safety check valve integrated
- Non-stop working capacity up to 1 week
- Audible signal when battery capacity is under 10 %
- Recharging via charging station or directly with battery charger, overload protection
- Pipettor can be sterilized (excluding PTFE-filter) at 121 °C
- Weight 200 g

Delivery incl. 2 sterile round filters, 1 safety valve, power pointcharger and inductive charging station.

Type	Art. No.	Pack Qty.	€
pipetus®	**N472.1**	1	428,95



Spare parts for pipetus® models

By Hirschmann.

Type	Art. No.	Pack Qty.	€
① Pipette holder complete	**N473.1**	1	78,75
② Spigot nut	**N474.1**	1	16,75
③ 5 round filters	**K450.1**	1	49,40
④ Safety valve	**K451.1**	1	46,55
⑤ Rubber adapters (silicone)	**E388.1**	1	13,35
⑥ Pipette holder box	**N475.1**	1	34,80
Seal ring	**KT19.1**	5	12,40

accu-jet® *pro*

By Brand. **Battery-operated pipette controller**

- For glass and plastic pipettes from 0.1-200 ml
- Ergonomic design, excellently balanced
- Continuously-adjustable control of the pipetting speed
- Robust, powerful pump for fast filling (50 ml in 10 seconds)
- LED lights up when there are approx. two hours of battery-power left
- 8 hours of continuous pipetting with a 10 ml pipette without recharging
- Corrosion protection through active pressure compensation
- Safety valve / membrane filter against liquid penetration
- Select either gravity-delivery or motorized blow-out as liquid delivery mode
- Weight 190 g

Single-handed operation: select gravity-delivery or motorized blow-out, and adjust the motor speed range with one hand. Pipetting buttons for sensitive control of filling and dispensing rates, especially for lower volume pipettes.

Delivery incl. nickel-metal hybrid battery (230 V/50 Hz), 2 battery compartment covers, wall support, 2 spare membrane filters 0.2 µm, sterile.

Colour	Art. No.	Pack Qty.	€
dark blue	**NA54.1**	1	449,35
magenta	**NA55.1**	1	449,35
green	**NA56.1**	1	449,35
royal blue	**NA57.1**	1	449,35

Spare parts for accu-jet® *pro*

By Brand.

Type	Art. No.	Pack Qty.	€
Diaphragm filter 0.2 µm, sterile	**NA58.1**	1	8,00
Pipette adapter with check valve	**NA59.1**	1	15,20
Nickel-metal hybrid battery pack	**NA60.1**	1	18,75

▶ For graduated and volumetric pipettes, see page 430

Pipette accessories

RF 3000™ battery operated pipetting aid

Battery operated. Pipette holder made of PP, interchangeable PTFE membrane filter prevents contamination. Autoclavable.

- For glass and plastic pipettes between 1 and 100 ml
- Ergonomically shaped housing for fatigue-free working
- UV-resistant housing material
- 2 pipetting speeds (High or Low Speed)
- Gravity mode, for non-motorised fluid drainage
- 20 h continuous duty, can be used while charging is in progress
- LED-based low battery indicator
- User friendly thanks to concave shaped finger pads
- With labelling space on the side
- Five-coloured pipette holder for distinguishing between apparatus
- Additional pipette adapter for low pipetting volumes
- Weight approx. 200 g.

Delivery incl. power supply (100-240 V, 50/60 Hz), lithium ion battery, 3 spare membrane filters (PTFE 0.45 µm), 5 pipette holders, silicone-adapter, stand and wall mount.

Art. No.	Pack Qty.	€
TC16.1	1	227,90

Replacement parts for RF 3000™

Type	Art. No.	Pack Qty.	€
Replacement membrane filter	**AN90.1**	5	35,30
Replacement charger	**TC17.1**	1	66,15
Replacement lithium ion battery	**TC18.1**	1	38,60
Replacement pipette adapter, made of silicone	**TC19.1**	1	25,70
Replacement pipette holder, coloured	**TC20.1**	5	64,40

Rotilabo®-washing system for pipettes

Made of **HDPE**. Washing system for gentle cleaning of pipettes based on pipetting principle. A complete system consists of a washing unit and/or cleaning vessel and a pipette basket.

All individual components must be ordered separately.
Delivery without tube.

- ① **Washing unit** with draining siphon for automatic water change. Suitable for use with pipette baskets.
- ② **Cleaning vessel** for pre-washing pipettes or brushes with cleaning solution.
- ③ **Pipette baskets** for immersing pipettes in the cleaning vessels or washing units and for transporting the pipettes. Height of basket 300 mm. Optional extension piece is also available which enables the basket (Art. No. Y813.1) length to be extented from 650 to 870 mm.

① **Washing unit**

For pipette length (mm)	∅ x H (mm)	Art. No.	Pack Qty.	€
600	170 x 990	**Y809.1**	1	163,40
460	170 x 735	**Y810.1**	1	164,50

② **Cleaning vessel**

For pipette length (mm)	∅ x H (mm)	Art. No.	Pack Qty.	€
600	162 x 650	**Y811.1**	1	74,75
460	162 x 505	**Y812.1**	1	74,75

③ **Pipette basket**

For pipette length (mm)	∅ x H (mm)	Art. No.	Pack Qty.	€
600	145 x 650	**Y813.1**	1	39,25
460	145 x 500	**Y814.1**	1	37,30

Accessories:

Extension piece for pipette basket Y813.1	**Y815.1**	2	16,45
Silicone hose, 10 m	**9581.1**	1	52,90

Rotilabo®-drawer tray, 9 compartments

Made of **PVC**, with subdivided lengthwise. Ideal for pipettes, thermometers, columns, etc. Outer dimensions: L 355 x W 300 x H 45 mm.
Dimensions of the compartments: L 345 x W 27 mm.

Art. No.	Pack Qty.	€
8111.1	1	50,35

Rotilabo®-pipette tray

Made of **PVC**. For pipettes from 120 mm in length.
Dimensions: L 300 x W 220 x H 38 mm.

Art. No.	Pack Qty.	€
7220.1	1	19,80

Pipette cleaning container

Made from **LDPE**. For gentle cleaning of volumetric and graduated pipettes. Versatile, also suitable for storing and wetting pipettes.

① **Cleaning cylinder**
Leakproof pipette cylinder with sturdy wide base.

For	∅ x H (mm)	Art. No.	Pack Qty.	€
Cleaning basket **CXT0.1**	152 x 460	**CXP8.1**	1	118,25
Cleaning basket **CXT1.1**	152 x 610	**CXP9.1**	1	125,25

② **Cleaning basket**
Pipette basket with drainage holes. Inner foam padding prevents damage to pipettes.

For	∅ x H (mm)	Art. No.	Pack Qty.	€
Pipette length 460 mm	102 x 580	**CXT0.1**	1	150,10
Pipette length 610 mm	102 x 810	**CXT1.1**	1	163,95

① Pipette stand

Made of **PP**. 16 spaces: For 8 pipettes up to 8 mm ∅ and 8 pipettes up to 16 mm ∅. Small holes in the base allow the liquid to run out. Dimensions: L 200 x W 75 x H 150 mm. Autoclavable.

Art. No.	Pack Qty.	€
HX82.1	1	13,25

② Pipette stands with foot

Made of **PP**. 28 spaces: For 18 pipettes up to 10 mm ∅ and 10 pipettes up to 15 mm ∅. Small bore holes in the base allow the liquid do run out. Top part can also be used separately, please order base with PVC bar separately. The top section of the complete system is height-adjustable.

Type	Art. No.	Pack Qty.	€
Stand top part with 28 spaces, ∅ 175 mm	**HX80.1**	1	24,20
Foot with PVC rod, ∅ foot 230 mm	**HX81.1**	1	16,10

Pipette containers

Made of aluminium. For the storage of plastic pipettes and glassware between 160 and 480 mm in length, e.g. stirring bars, serological, Pasteur pipettes, volumetric pipettes and graduated pipettes. With silicone inner padding and lid for protection of the stored glass pipettes. Autoclavable.

Length (mm)	Art. No.	Pack Qty.	€
160-200	**CLN4.1**	1	33,10
235-305	**CLN5.1**	1	38,60
315-385	**CLN6.1**	1	41,75
315-485	**CLN7.1**	1	44,00

Rotilabo®-pipette stand

Made of **PP**. Rotating. With 94 ports of different ∅ for graduated and bulb pipettes on various sizes with a maximum ∅ of 13 mm. With reinforced base and additional turntable disk to protect pipette tips. Dimensions: H 470 mm, ∅ 230 mm.

Art. No.	Pack Qty.	€
7364.1	1	52,65

▶ For further pipette containers and sterilization containers for pipettes see page 268

Pipette combi rack

Made of **ABS**. For storage of measuring pipettes and serological pipettes under a laminar flow container or fume hood. Racks can be combined horizontally or vertically. Magnets on both sides for mounting the racks to metal walls. Inclined position of pipettes for safe storage; straight lid can be used as additional storage surface.
Dimensions: L 301 x W 100 x H 127.5 mm.
Delivery incl. three pipette racks in matching blue colour tones.

Art. No.	Pack Qty. (set)	€
NA53.1	1	82,70

Rotilabo®-Pipette racks

Robust pipette rack with 4 levels for holding graduated pipettes from 0.1 to 25 ml. Dimensions: L 291 x W 88 x H 401 mm.
- Available in two designs: Acrylic glass or ABS
- ABS-pipette racks with additional holders on both long sides for manual pipetting aids and pipette fillers

Design	Colour	Art. No.	Pack Qty.	€
Acrylic glass	colourless	**CX88.1**	1	159,10
ABS	blue	**CX89.1**	1	103,20
ABS	red	**CX90.1**	1	103,20

Rotilabo®-pipette tray

Made of **PVC**, fits most drawers. Divided lengthways into 4 parts.
Dimensions: L 420 x W 300 x H 40 mm.

Art. No.	Pack Qty.	€
7230.1	1	33,90

▶ Further drawer inserts, see page 760

Stem pipettor Acura® *manual* 810

By Socorex. **Microlitre pipettor for 1:10 dilution**

Air suspension pipettor with two pre-calibrated fixed volumes in one piston stroke enables sequential delivery of 1 and 0.1 ml of same liquid. For more flexibility, the volumes can be used either individually or together for dilution.The metal cone guarantees perfect fit of the long PP stem tips, which is of great advantage when removing samples from narrow vessels, Stomacher® - and other homogenizing bags. The Acura® manual 810 is an ideal alternative to standard graduated pipettors for serial 1:10 dilution in bacteriology.

Stem tips: Made of **PP** (inner-∅ 4 mm), **sterile.**

Protection filters: For protection against intrusion of liquid and any risk of contamination. The protection filters are easy to change and to remove.

Properties:
- Two pre-calibrated fixed volumes - no setting-up required
- Both volumes 1 and 0.1 ml can be calibrated separately from each other
- Simple carrying out of all functions
- Excellent ergonomics, light weight
- The metal shaft enables long stem tips to be used
- Justip™ system for height adjustment of tip ejection
- Simple and faultless ejection of stem tips
- Completely autoclavable at 121 °C
- Replaceable PE protection filter

Technical specifications:
The values were obtained with distilled water at a constant (±0.5 °C) room temperature between 20 and 25 °C, acc. to EN ISO 8655.

Volume (µl)	Inaccuracy (E %)	Non-precision (CV %)
100	<±2.0	<2.5
1000	<±0.5	<0.4

Volume (µl)	Tip type	Art. No.	Pack Qty.	€
100 + 1000	Stem tip	**HK00.1**	1	260,15

Accessories:

Stem tips made of PP, L 190 mm, **sterile**	**HK01.2**	1000 (40 x 25)	73,10
Protection filters made of PE	**HK02.1**	100	25,95
Pipettor stands for 3 pipettors, light grey	**EP93.1**	1	102,15
Rack pipette holder for 2 pipettes, blue	**TY58.1**	1	20,45

▶ Homogenizing bags, see page 259

Piston pipettors

A 121 °C

Micro-dispensing pipettors Acura® 865

By Socorex. Manual dispensing pipettors for serial dosing in the microliter range.

- Three-way valve enables continuous dosing
- Low weight and ergonomic design for fatigue-free working
- Easy to operate function keys
- Gentle piston stroke activation
- Large volume display window
- The valve unit can be rotated
- Liquid can be supplied from hose, syringe or optionally via the bottle
- Simple calibration system
- With customised serial number and test certificate
- Can be autoclaved fully assembled at 121 °C

Technical specifications:

Capacity (µl)	Graduation (µl)	Non accuracy (%)	Non precision (%)
5-50	0.1	5 µl <±5.0	5 µl <±2.0
		50 µl <±1.5	50 µl <±0.4
20-200	0.2	20 µl <±2.5	20 µl <±1.5
		200 µl <±1.0	200 µl <±0.3
100-1000	1	100 µl <±1.5	100 µl <±0.6
		1000 µl <±0.6	1000 µl <±0.2

Delivery incl. silicone hose, single-channel dosing cannula made of stainless steel, valve cap for drawing-off liquid from a disposable syringe.

Volume (µl)	Art. No.	Pack Qty.	€
5-50	**EP88.1**	1	406,35
20-200	**EP89.1**	1	371,95
100-1000	**EP90.1**	1	348,30

Accessories for micro dispensing pipettors Acura® 865

Ideal for sucking up liquid from bottle:

Type	Art. No.	Pack Qty.	€
Bottle with Luer-adapter, made of PP, 30 ml	**EP91.1**	1	47,25

Further accessories:

Type	Art. No.	Pack Qty.	€
8-channel cannulas made of stainless steel with Luer-lock adapter	**EP92.1**	1	155,90
Pipettor stands for 3 pipettors, light grey	**EP93.1**	1	102,15
Rack pipette holder for 2 pipettes, blue	**TY58.1**	1	20,45

S

Dispensertips Ritips®

Sterile or unsterile. Classic dispensertips, suitable for Ripette®, Ripette® pro, HandyStep®, Distriman®, Multipette® 4780 and other compatible dosing systems. Comply with DIN EN ISO 8655. Sterile models are DNA/RNase/ATP free.

Technical specifications:

Control wheel	1	2	3	4	5		
Increments	48	23	15	11	8		
Tips (ml)	Capacity (µl)					Non accuracy	Non precision
0.05	1	2	3	4	5	±2.5 %	≤5 %
0.5	10	20	30	40	50	±0.8 %	≤0.7 %
1.25	25	50	75	100	125	±0.8 %	≤0.5 %
2.5	50	100	150	200	250	±0.8 %	≤0.4 %
5.0	100	200	300	400	500	±0.4 %	≤0.3 %
12.5	250	500	750	1000	1250	±0.3 %	≤0.3 %
25.0	500	1000	1500	2000	2500	±0.2 %	≤0.3 %
50.0	1000	2000	3000	4000	5000	±0.2 %	≤0.2 %

*Optimal use only in combination with 10 µl pipettor tips

Unsterile

Volume (ml)	Art. No.	Pack Qty.	€
0,05*	**H679.1**	100	95,70
0,5	**H680.1**	100	68,80
1,25	**H681.1**	100	68,80
2,5	**H682.1**	100	68,80
5	**H683.1**	100	68,80
12,5	**H684.1**	100	68,80
25	**H685.2**	25	23,15
50	**H686.2**	25	23,15

Sterile (bioclean®, individually wrapped)

Volume (ml)	Art. No.	Pack Qty.	€
0,5	**H688.1**	100	116,10
1,25	**H689.1**	100	116,10
2,5	**H690.1**	100	116,10
5	**H691.1**	100	116,10
12,5	**H692.1**	100	116,10
25	**H693.2**	25	39,05
50	**H694.2**	25	38,70

Accessories:

Adapter for 25 ml dispenser tips, red	**CKX5.1**	1	5,70
Adapter for 50 ml dispenser tips, grey	**CKX6.1**	1	5,70

Piston pipettors

Ripette®

Adjustable piston pipettor for serial pipetting in the voume range from 1 µl to 5 ml without refilling, with up to 48 dispensing settings.
Tested to DIN EN ISO 8655, with Certificate of Conformity.
Easy to operate setting device cuts down on fatigue during long-term use.
Light, robust construction, ergonomic design.

Technical specifications:

Program	1	2	3	4	5
Number of steps	48	23	15	11	8
Tip size (ml)	**Dispensing volume (µl)**				
0.05	1	2	3	4	5
0.10	2	4	6	8	10
0.20	4	8	12	16	20
0.50	10	20	30	40	50
1.00	20	40	60	80	100
1.25	25	50	75	100	125
2.50	50	100	150	200	250
5.00	100	200	300	400	500
10.00	200	400	600	800	1000
12.50	250	500	750	1000	1250
25.00	500	1000	1500	2000	2500
50.00	1000	2000	3000	4000	5000

Delivery incl. adapter for 50 ml dispenser tips.

Type	Art. No.	Pack Qty.	€
Ripette® red	**H768.1**	1	213,95
Ripette® pink	**HLK5.1**	1	213,95
Ripette® blue	**HLK6.1**	1	213,95
Ripette® gray	**HLK7.1**	1	213,95

Accessories:

Adapter for 25 ml dispenser tips, red	**CKX5.1**	1	5,70
Adapter for 50 ml dispenser tips, grey	**CKX6.1**	1	5,70

Ripette® pro

Manual series dispenser with sight glass for easy tip selection and setting the dispensing volume.

- Stroke setting wheel with 10 positions
- 10 program numbers and 12 tip sizes give you a choice of 120 different setting options
- Straightforward display of stroke setting and dispensing volume in sight glass
- Anatomical design, easy-action dispensing button, low weight
- Good chemical resistance
- Suitable for Dispenser tips, Ritips® professional, PD-Tips from Brand, Combitips®, Combitips® plus
- Includes a certificate of quality
- Conformity certified, with serial number

Technical specifications:

Program	1	2	3	4	5	6	7	8	9	10
Number of steps	50	25	16	12	10	8	7	6	5	5
Tip size (ml)	**Dispensing volume (µl)**									
0.05	1	1,5	2	2,5	3	3,5	4	4,5	5	5,5
0.10	2	4	6	8	10	12	14	16	18	20
0.20	4	8	12	16	20	24	28	32	36	40
0.50	10	20	30	40	50	60	70	80	90	100
1.00	20	40	60	80	100	120	140	160	180	200
1.25	25	37,5	50	62,5	75	87,5	100	112,5	125	137,5
2.50	50	100	150	200	250	300	350	400	450	500
5.00	100	200	300	400	500	600	700	800	900	1000
10.00	200	400	600	800	1000	1200	1400	1600	1800	2000
12.50	250	375	500	625	750	875	1000	1125	1250	1375
25.00	500	1000	1500	2000	2500	3000	3500	4000	4500	5000
50.00	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000

Delivery incl. adapter for 50 ml dispenser tips.

Art. No.	Pack Qty.	€
YK24.1	1	263,40

Accessories:

Adapter for 25 ml dispenser tips, red	**CKX5.1**	1	5,70
Adapter for 50 ml dispenser tips, grey	**CKX6.1**	1	5,70

Piston pipettors

HandyStep® S

By Brand. Manual multi-dispenser for fast, repetitive dispensing of liquids. The PD-Tips allow volumes of between 2 µl and 5 ml to be dispensed in up to 49 steps with a single filling. HandyStep® S and PD-Tips work on the positive displacement principle. High viscosity, high density and high vapour pressure liquids can be dispensed with extremely high precision. Direct displacement allows contamination-free operation since no aerosols are formed.

Properties:
- Ergonomic design
- Stroke length setting wheel with 9 positions
- Easy tip attachment - the PD-Tips are inserted straight from below
- Safe tip removal at the touch of a button - no need to touch the dispenser tips
- Easy-to-read display, no battery required
- Innovative plastics provide increased resistance to chemicals
- For use with PD-Tips, Combitips®, Combitips® plus, Ritips®, Repet Tips, Encode™ Tips and other compatible tips
- Working temperature range: 15 to 40 °C
- Maintenance free, factory calibrated
- Includes a certificate of quality
- DE-M approved

Technical specifications:
(accuracy table for HandyStep® S when used in combination with PD-Tips)

PD tip size	Volume range (µl)	Accuracy≤± % stroke adjustment = % of nominal capacity		Variation coefficient ≤± % stroke adjustment =% of nominal capacity	
		10 %	2 %	10 %	2 %
0.1 ml	2-10	1.6	8.0	2.0	5.0
0.5 ml	10-50	0.8	4.0	0.6	1.4
1.0 ml	20-100	0.8	4.0	0.4	1.0
1.25 ml	25-125	0.8	4.0	0.3	0.8
2.5 ml	50-250	0.7	3.5	0.2	0.8
5.0 ml	100-500	0.5	2.5	0.2	0.6
10.0 ml	200-1000	0.4	1.5	0.2	0.5
12.5 ml	250-1250	0.3	1.5	0.2	0.4
25 ml	500-2500	0.3	1.5	0.2	0.4
50 ml	1000-5000	0.3	1.5	0.15	0.4

Limits of error referred to the dispensing volume set according to PD-tip size with the instrument, tip, environment and distilled water at a constant temperature of 20 °C and under smooth and steady operation. This test is performed in accordance with DIN EN ISO 8655-5. The nominal capacity ist the maximum volume printed on the PD-tip.

Delivery incl. shelf/rack mount and 3 PD tips: 0.1, 1 and 10 ml.

Art. No.	Pack Qty.	€
EH21.1	1	167,70

HandyStep® electronic

By Brand. Microprocessor-controlled, storage battery operated hand-held dispenser. Ergonomic design enables fatigue-proof serial dosing.

Three functions:
- Dispensing
- Automatic dispensing (the unit calculates the temporal mean value between three dispensing stages and automatically continues working at the same rhythm)
- Pipetting

Properties:
- Variable volume adjustment between 1 µl and 50 ml
- Automatic size recognition of PD-Tips from Brand with type coding
- One-hand operation
- Can be used with almost all other standard dispenser tips
- With Certificate of Quality
- DE-M approved

Technical data:
(table of accuracy for HandyStep® electronic in combination with PD-tips).

PD-tip size	Volume range	Subdivisions	Nominal volume (Accuracy ≤±%)		Nominal volume (Variation coefficient ≤%)	
			100 %	10 %	100 %	10 %
0.1 ml	1 µl-100 µl	0.1 µl	1.0	1.6	0.5	2.0
0.5 ml	5 µl-100 µl 100 µl-500 µl	0.1 µl 1 µl	0.9	0.9	0.25	1.0
1.25 ml	12.5 µl-100 µl 100 µl-1000 µl 1 ml-1.25 ml	0.5 µl 1 µl 10 µl	0.6	0.9	0.15	0.6
2.5 ml	25 µl-1000 µl 1 ml-2.5 ml	1 µl 10 µl	0.5	0.8	0.1	0.4
5.0 ml	50 µl-1000 µl 1 ml-5 ml	1 µl 10 µl	0.5	0.8	0.08	0.3
12.5 ml	125 µl-1000 µl 1 ml-10 ml 10 ml-12.5 ml	5 µl 10 µl 100 µl	0.4	0.5	0.08	0.25
25 ml	250 µl-10 ml 10 ml-25 ml	10 µl 100 µl	0.3	0.3	0.08	0.25
50 ml	500 µl-10 ml 10 ml-50 ml	10 µl 100 µl	0.3	0.3	0.08	0.25

Limit of error referred to the nominal capacity and partial volumes according to PD tip with the instrument, environment and distilled water at a constant temperature of 20 °C and under smooth and steady operation. The limits of error specified in ISO 8655 are not exceeded. The nominal capacity is the maximum volume printed on the PD tip.

Delivery incl. charging station with power adapter (230 V/50 Hz) and NiMH battery pack (can be recharged in unit or separately).

Type	Art. No.	Pack Qty.	€
HandyStep® electronic	**EH22.1**	1	664,35
Accessories:			
Spare-NiMH storage battery pack	**EH44.1**	1	42,50
Spare charging station, without power unit	**EH45.1**	1	137,60
Spare power unit	**EH46.1**	1	65,50

S

PD-Tips

By Brand. Precision dispenser tips with patented type coding, **PP** cylinder, **HDPE** piston (0.1 ml made of LCP). Suitable for various compatible metering systems, e.g. HandyStep® electronic, Gilson® Repetman®, Rainin AutoRep™ E (with automatic size recognition); HandyStep®, Rainin AutoRep™ M, Eppendorf® Multipette® 4780 and EDOS® 5221 (without automatic size recognition). In conformity with ISO 8655, with batch certificate.

Technical specifications:

Setting of stroke	1	1.5	2	2.5	3	3.5	4	4.5	5
Number of steps	49	32	24	19	15	13	11	10	9
PD-Tips (ml)	Dosing volume (µl)								
0.1	2	3	4	5	6	7	8	9	10
0.5	10	15	20	25	30	35	40	45	50
1	20	30	40	50	60	70	80	90	100
1.25	25	37.5	50	62.5	75	87.5	100	112.5	125
2.5	50	75	100	125	150	175	200	225	250
5.0	100	150	200	250	300	350	400	450	500
10	200	300	400	500	600	700	800	900	1000
12.5	250	375	500	625	750	875	1000	1125	1250
25	500	750	1000	1250	1500	1750	2000	2250	2500
50	1000	1500	2000	2500	3000	3500	4000	4500	5000

Non-sterile

Volume (ml)	Design	Art. No.	Pack Qty.	€
0,1		**EH23.1**	100	79,90
0,5		**EH24.1**	100	72,80
1		**PP97.1**	100	76,85
1,25		**EH25.1**	100	72,80
2,5		**EH26.1**	100	72,80
5		**EH27.1**	100	72,80
10		**PP98.1**	100	76,85
12,5		**EH28.1**	100	72,80
25	incl. 1 adapter	**EH29.1**	50	41,25
50	incl. 1 adapter	**EH30.1**	25	22,55

Sterile (endotoxin-free, individually wrapped)

Volume (ml)	Design	Art. No.	Pack Qty.	€
0,1		**EH31.1**	100	158,05
0,5		**EH32.1**	100	137,60
1		**PP99.1**	100	137,60
1,25		**EH33.1**	100	137,60
2,5		**EH34.1**	100	137,60
5		**EH35.1**	100	137,60
10		**PT00.1**	100	137,60
12,5		**EH36.1**	100	137,60
25	incl. 1 adapter	**EH37.1**	25	40,60
50	incl. 1 adapter	**EH38.1**	25	41,70

Bio-Cert® model (**sterile**, DNA-/RNase-/ATP- and endotoxin-free, individually wrapped)

Volume (ml)	Design	Art. No.	Pack Qty.	€
0,1		**EH39.1**	100	174,15
0,5		**EH40.1**	100	153,75
1		**PT01.1**	100	153,75
1,25		**EH41.1**	100	153,75
2,5		**EH42.1**	100	153,75
5		**EH43.1**	100	153,75
10		**PT02.1**	100	153,75
12,5		**EH50.1**	100	153,75
25	incl. 1 adapter	**EH51.1**	25	43,75
50	incl. 1 adapter	**EH55.1**	25	45,15

Accessories:

Spare adapter, **sterile**	**EH57.1**	5	22,35
Spare adapter, non-sterile	**EH56.1**	10	20,65

PD-Tip-set

20 PD-tips in sizes of 0.5, 1, 1.25, 2.5, 5, 10 and 12.5 ml.

Art. No.	Pack Qty. (set)	€
CNT1.1	1	103,10

Stepper™ 411

By Socorex. For precise serial pipetting.

- 4-finger activation function eliminates thumb fatigue
- Stop mechanism: Self-locking mechanism prevents false delivery
- Dose range: 53 volumes from 10 to 5000 µl
- Only 3 different tip sizes, colour-coded
- Up to 73 doses per filling
- Enables fast work rates, up to 2 doses per second
- Individually calibrated with test certificate

An separate adjustable head of matching colour is available for each tip size; it displays the dosing volume and number for a filled tip.

Type	Art. No.	Pack Qty.	€
Stepper	**6952.1**	1	290,25

Accessories:

Stand for one stepper	**6993.1**	1	53,75
Adapter for 37.5 ml tips	**P198.1**	5	12,85

Ecostep™ disposable tips for Stepper™ 411

By Socorex. Made of **PP**, colour coded, autoclavable.

Volume (ml)	Range (µl)	Graduation (µl)	Art. No.	Pack Qty.	€
0,75	10-100	5	**6953.1**	100	117,20
3,75	50-500	25	**6969.1**	100	117,20
37,50	500-5000	250	**6987.1**	100	159,10

Positive displacement pipettors

Piston pipettors, digital Transferpettor

By Brand. **Positive displacement pipettors for difficult media**

For foaming media (e.g. tenside solutions), high-vapor-pressure media (e.g. alcohols, ether, hydrocarbons), viscous media and high-density media (e.g. concentrated protein solutions, oils, resins, fats, glycerine, mercury, sulphuric acid).

Unlike air displacement pipettes, the Transferpettor piston is in direct contact with the aspirated liquid to be expelled. This principle always provides precise, reproducible results, regardless of the pipetting speed and the ambient conditions. Capillaries and tips can be reused, since the minimal residual wetting is negligible for most applications. Where carry-over is not permitted, such as with infectious or radioactive media, an air displacement pipette with disposable tips should be used.

Range of application:

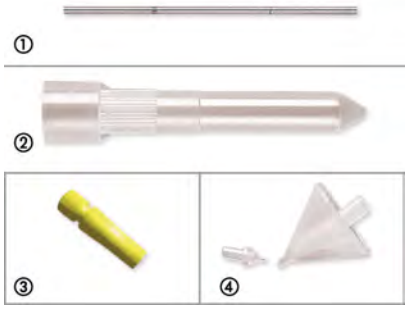
- Media with densities up to 13.6 g/cm^3
- Viscosity up to 140 000 mm^2/s (depending on size of apparatus)
- Vapour pressure up to 500 mbar
- Working temperature range 15 to 40 °C

DE-M approved, with Certificate of Quality.

Technical specifications:

Capacity (µl)	Correctives (%)	Variation coefficient (%)
2.5-10	10 µl ≤1.0	10 µl ≤ 0.8
5-25	25 µl ≤0.8	25 µl ≤ 0.5
10-50	50 µl ≤0.6	50 µl ≤ 0.4
20-100	100 µl ≤0.6	100 µl ≤0.4
100-500	500 µl ≤0.5	500 µl ≤ 0.2
200-1000	1000 µl ≤0.5	1000 µl ≤ 0.2
1000-5000	5000 µl ≤0.5	5000 µl ≤ 0.2
2000-10 000	10 000 µl ≤0.5	10 000 µl ≤ 0.2

Volume (µl)	Pitch (µl)	Colour code	Art. No.	Pack Qty.	€
2,5-10	0,01	orange	**NA87.1**	1	360,15
5-25	0,1	2 x white	**NA88.1**	1	360,15
10-50	0,1	green	**NA89.1**	1	360,15
20-100	0,1	blue	**NA90.1**	1	360,15
100-500	1,0	green	**NA91.1**	1	360,15
200-1000	1,0	yellow	**NA92.1**	1	360,15
1000-5000	10,0	red	**NA93.1**	1	360,15
2000-10 000	10,0	orange	**NA94.1**	1	360,15



Accessories for digital Transferpettor

By Brand. DE-M approved.

Caps

Image	Type	for capacity (µl)	Colour code	Art. No.	Pack Qty.	€
①	Glass	1, 2, 5	white	**NA95.1**	100	33,30
①	Glass	10	orange	**NA96.1**	100	33,30
①	Glass	20	black	**NA97.1**	100	33,30
①	Glass	25	2 x white	**NA98.1**	100	33,30
①	Glass	50	green	**NA99.1**	100	33,30
①	Glass	100 / 200	blue / red	**PA00.1**	50	17,85
②	PP	100-500	green	**PA01.1**	10	28,60
②	PP	200-1000	yellow	**PA02.1**	10	28,60
②	PP	1000-5000	red	**PA03.1**	10	28,60
②	PP	2000-10 000	orange	**PA04.1**	10	28,60

Seals

Image	Type	for capacity (µl)	Art. No.	Pack Qty.	€
③	PTFE	20, 25	**PA05.1**	3	17,95
③	PTFE	50	**PA06.1**	3	17,95
③	PTFE	100, 200	**PA07.1**	3	17,95
④	PE	100-500	**PA08.1**	10	22,55
④	PE	200-1000	**PA09.1**	10	22,55
④	PE	1000-5000	**PA10.1**	10	22,55
④	PE	2000-10 000	**PA11.1**	10	22,80

Repair sets, conformity certification

Type	for capacity (µl)	Art. No.	Pack Qty.	€
Set	1, 2, 5	**PA12.1**	1	30,85
Set	10	**PA13.1**	1	31,10
Set	20, 25	**PA14.1**	1	34,85
Set	50	**PA15.1**	1	34,85
Set	100, 200	**PA16.1**	1	34,85

Transferpettor stations

By Brand. For storing 2 or 4 devices, incl. accessories.

Image	for capacity (µl)	Art. No.	Pack Qty.	€
⑤	500-10 000	**PA17.1**	1	107,30
⑥	max. 200	**PA18.1**	1	127,95

Positive displacement pipettors

Positive displacement pipettes MICROMAN® E

By Gilson. Positive displacement system without air cushion between sample and piston prevents contamination as well as aerosol formation and produces precise and reproducible pipetting results. Caps fit straight out of the box, pistons and capillaries lock into place automatically ("QuickSnap System").

For difficult-to-process media, e.g.:
- Viscous media, e.g. oils, glycerol, gel loading buffer
- Media with a high vapour pressure (acetone, hexane or other solvents)
- Sterile media
- PCR/qPCR preparations
- Radioactive media
- Cold/warm solutions

Advantages:
- QuickSnap system for easy handling
- Volume lock for safe pipetting
- Ergonomically designed and comfortable handle
- Lightweight and narrow CP tips for narrow vessels

Conformity certified to DIN EN ISO 8655 with inspection certificate.
CE/IVD approved.

Technical specifications:

Model	Capacity (µl)	Systematic deviation (µl)	Random deviation (µl)
M10E	1	±0.09	≤0.03
	5	±0.10	≤0.03
	10	±0.15	≤0.06
M25E	3	±0.25	≤0.08
	10	±0.27	≤0.08
	25	±0.30	≤0.10
M50E	20	±0.34	≤0.20
	50	±0.70	≤0.30
M100E	10	±0.50	≤0.20
	50	±0.75	≤0.30
	100	±1.00	≤0.40
M250E	50	±1,50	≤0.30
	100	±1.70	≤0.30
	250	±2.50	≤0.50
M1000E	100	±3.00	≤1.60
	500	±5.00	≤2.50
	1000	±8.00	≤4.00

Model	Volume (µl)	Art. No.	Pack Qty.	€
M10E	1-10	**CTT1.1**	1	263,40
M25E	3-25	**CTT2.1**	1	263,40
M50E	20-50	**CTT3.1**	1	263,40
M100E	10-100	**CTT4.1**	1	263,40
M250E	50-250	**CTT5.1**	1	263,40
M1000E	100-1000	**CTT6.1**	1	263,40

S

CP-tips for MICROMAN® E positive displacement pipettes

By Gilson. Made of **PP** and polyester (types CP100/CP100ST and CP250/CP250ST are made of PP and PE). **Sterile** or non-sterile. Sterile versions free of detectable DNA, RNA, DNase, RNase, ATP and pyrogens. Capillary Piston Tips, suitable for Gilson MICROMAN® and MICROMAN® E.

Type	For model	Volume (µl)	Packaging	Art. No.	Pack Qty.	€
CP10	M10E	1-10	in rack, non-sterile	**CTT7.1**	192	68,80
CP10ST	M10E	1-10	in rack, **sterile**	**CTT8.1**	192	79,35
CP25	M25E	3-25	bulk-packed (bag), non-sterile	**CTT9.1**	200	62,80
CP25	M25E	3-25	in rack, non-sterile	**CTX0.1**	960	326,30
CP25ST	M25E	3-25	in rack, **sterile**	**CTX1.1**	576	236,30
CP50	M50E	20-50	bulk-packed (bag), non-sterile	**CTX2.1**	200	62,80
CP50	M50E	20-50	in rack, non-sterile	**CTX3.1**	960	326,30
CP50ST	M50E	20-50	in rack, **sterile**	**CTX4.1**	576	236,30
CP100	M100E	10-100	in rack, non-sterile	**CTX5.1**	192	68,80
CP100ST	M100E	10-100	in rack, **sterile**	**CTX6.1**	192	79,35
CP250	M250E	50-250	bulk-packed (bag), non-sterile	**CTX7.1**	200	62,80
CP250	M250E	50-250	in rack, non-sterile	**CTX8.1**	960	326,30
CP250ST	M250E	50-250	in rack, **sterile**	**CTX9.1**	576	236,30
CP1000	M1000E	100-1000	in rack, non-sterile	**CTY0.1**	182	68,80
CP1000ST	M1000E	100-1000	in rack, **sterile**	**CTY1.1**	182	79,35

Microlitre pipettors, Roth

Accessories for Rotilabo®-microlitre pipettors

Type	Art. No.	Pack Qty.	€
Rack mount for 1 pipettor	**TA28.1**	1	16,45
Table stand, rotatable, for 6 pipettors	**TA29.1**	1	79,30
Filter for 5 ml pipettor	**TA30.1**	25	8,55
Filter for 10 ml pipettor	**TA31.1**	25	14,00
Silicone fat for pipettors up to 1000 µl	**TA32.1**	1	12,55
Silicone fat for 5 ml/10 ml pipettors	**TA33.1**	1	16,45

Rotilabo®-microlitre pipettors

Robust quality pipettors with variable volume for routine work and demanding applications.

- Ergonomic finger rest for comfortable handling and one-handed operation
- Separate tip eject button
- Central, large pipettor button for smooth piston movement
- Separate volume adjustment, for left and right handed users
- Easy-to-read display
- Integrated calibration function for easy adjustment without tools
- Corrosion-resistant piston and ejector
- Slim shaft
- DE-M approved, with certificate of quality
- CE-IVD-approved
- Completely autoclavable at 121 °C (2 bar) according to DIN EN 285
- A filter for protection of the pipettors is optional with volumes of 5 ml and higher, please order separately

Technical specifications:

Volume (µl)	Accuracy* (%)	Variation coefficient* (%)
0.5-10	10 µl <±1.0	10 µl≤0.5
2-20	20 µl <±0.8	20 µl≤0.4
10-100	100 µl <±0.6	100 µl≤0.2
20-200	200 µl <±0.6	200 µl≤0.2
100-1000	1000 µl <±0.6	1000 µl≤ 0.2
500-5000	5000 µl <±0.6	5000 µl≤ 0.2
1000-10 000	10 000 µl <±0.6	10 000 µl≤ 0.2

* Calibrated to deliver ‚Ex'. Error limits are based on the nominal capacity (= maximum volume) indicated on the instrument, obtained with instrument and distilled water at equilibrium with ambient temperature at 20 °C, during smooth, steady operation. The error limits are within the limits of DIN EN ISO 8655-2. A = Accuracy, CV = Coefficient of variation.

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,5-10	0,01	20	**TA21.1**	1	231,15
2-20	0,02	200	**TA22.1**	1	209,65
10-100	0,1	200/300	**TA23.1**	1	209,65
20-200	0,2	200/300	**TA24.1**	1	218,25
100-1000	1	1000	**TA25.1**	1	209,65
500-5000	5	5000	**TA26.1**	1	229,00
1000-10 000	10	10 000	**TA27.1**	1	237,60

▶ Qualitatively high-value pipettor tips from page 463

Rotilabo®-microlitre pipettors

Suitable pipettor tips				Pipettors Art.-No. (****.1)					
Volume range of tips	Tip No.			TA21	TA22 TA23	TA24	TA25	TA26	TA27
0,1-10 µl	28			x					
	32	33		x					
	63			x					
	43	45		x					
0,5-10 µl	34			x					
	46			x					
0,1-20 µl	20	21		x					
	56	60		x					
1-20 µl	29			x					
	47			x					
1-50 µl	22			x					
1-100 µl	48			x	x				
1-200 µl	3	4	5		x	x			
	23	24			x	x			
	30				x	x			
	35	36			x	x			
	37	38			x	x			
	66	67	68		x				
	52				x				
1-300 µl	25				x	x			
	39					x			
	51					x			
	57	61				x			
100-1250 µl	9	10					x		
	26	27					x		
	31						x		
	40	41	42				x		
	53	54					x		
1-5 ml	17							x	
1-10 ml	19								x

Microlitre pipettors, BRAND

Microlitre pipettors Transferpette® electronic

By BRAND. Microprocessor-controlled piston pipettors.

- Ergonomic control for easy operation
- Height-adjustable finger rest for optimal position of hand to operating keys
- 5 functions: pipetting, mixing, reverse pipetting, dispensing, gel-electrophoresis mode
- High pipetting speed
- 8-hour continuous pipetting possible
- Ready for use during charging cycle
- Referesh mode for increasing battery life
- Slim pipette shaft enables pipetting in narrow tubes
- Easy Calibration Function - adjusting without tools
- Pipettor shaft is completely autoclavable
- DE-M approved
- With Certificate of Quality
- CE/IVD-compliant

Technical specifications 1-channel:

Capacity (µl)	Accuracy (%)	Variation coefficient (%)
0.5-10	10 µl ≤±1.0	10 µl ≤0.4
2-20	20 µl ≤±1.0	20 µl ≤0.4
10-200	200 µl ≤±0.8	200 µl ≤0.2
50-1000	1000 µl ≤±0.6	1000 µl ≤0.2
250-5000	5000 µl ≤±0.6	5000 µl ≤0.2

Technical specifications 8- /12-channel:

Capacity (µl)	Accuracy (%)	Variation coefficient (%)
0,5-10	10 µl ≤±1.2	10 µl ≤0.8
1-20	20 µl ≤±1.0	20 µl ≤0.5
5-100	100 µl ≤±0.8	100 µl ≤0.25
10-200	200 µl ≤±0.8	200 µl ≤0.25
15-300	300 µl ≤±0.6	300 µl ≤0.25

1-channel, with power supply unit 230 V/50 Hz

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,5-10	0,01	10/20	**CH82.1**	1	346,15
2-20	0,02	20	**AA39.1**	1	346,15
10-200	0,2	200/300	**AA40.1**	1	346,15
50-1000	1	1000/1250	**AA41.1**	1	346,15
250-5000	5	5000	**CH83.1**	1	346,15

1-channel, without power supply unit

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,5-10	0,01	10/20	**CH84.1**	1	328,95
2-20	0,02	20	**AA42.1**	1	328,95
10-200	0,2	200/300	**AA43.1**	1	328,95
50-1000	1	1000/1250	**AA44.1**	1	328,95
250-5000	5	5000	**CH85.1**	1	328,95

8-channel, with power supply unit 230 V/50 Hz

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,5-10	0,01	10/20	**CNL2.1**	1	835,30
1-20	0,02	10/20	**CNL3.1**	1	835,30
5-100	0,1	200/300	**CNL4.1**	1	835,30
10-200	0,2	200/300	**CNL5.1**	1	835,30
15-300	0,5	200/300	**CNL6.1**	1	835,30

12-channel, with power supply unit 230 V/50 Hz

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,5-10	0,01	10/20	**CNL7.1**	1	898,70
1-20	0,02	10/20	**CNL8.1**	1	898,70
5-100	0,1	200/300	**CNL9.1**	1	915,90
10-200	0,2	200/300	**CNN0.1**	1	898,70
15-300	0,5	200/300	**CNN1.1**	1	898,70

Accessories:

3-stands incl. power unit 230 V, 50 Hz	**AA45.1**	1	174,15

▶ Further pipettor tips from page 463

Microlitre pipettors Transferpette® electronic

Suitable pipettor tips				Pipettors Art.-No. (****.1)				
Volume range of tips	Tip. No.			CH82 CH84 CNL2 CNL3 CNL7 CNL8	AA39 AA42	AA40 AA43 CNL4 CNL5 CNL6 CNL9 CNN0 CNN1	AA41 AA44	CH83 CH85
0,1-10 µl	1			x				
	28			x	x			
	32	33			x			
	43	45			x			
	63				x			
0,5-10 µl	33				x			
	46			x	x			
1-20 µl	20	21		x	x			
	29				x			
	47					x		
	56	60		x	x			
1-100 µl	48					x		
1-200 µl	6					x		
	23	24				x		
	30					x		
	35	36				x		
	37	38				x		
	52					x		
	66	67	68			x		
1-300 µl	8					x		
	25					x		
	39					x		
	51					x		
	57	61				x		
100-1000 µl	26	27					x	
	31						x	
	40	41					x	
	53						x	
1-5 ml	16	17						x

Microlitre pipettors, BRAND

121 °C

Microlitre pipettes Transferpette® S

By BRAND. Manual positive displacement pipettes for demanding applications.

- Anatomically shaped finger hook for comfortable handling
- Central pipetting button and separate ejection function
- One-handed operation for both left and right handers
- Corrosion-resistant piston and ejector
- Fully autoclavable at 121 °C (2 bar), acc. to DIN EN 285
- DE-M approved
- CE mark (IVD)
- Volume change protection
- Multichannel pipettes with freely rotatable pipetting unit (360°)

Transferpette® S, variable:
- 4-digit volume display for maximum precision, always clearly visible
- Featuring Easy Calibration technology for readjustment without special tools

Technical specifications:

Model	Volume (µl)	Correctives* (%)	Variation coefficient* (%)
D-1	0.1-1	1 µl ≤±2.0	1 µl ≤1.2
D-2.5	0.1-2.5	2.5 µl ≤±1.4	2.5 µl ≤0.7
D-10	0.5-10	10 µl ≤±1.0	10 µl≤ 0.8
D-20	2-20	20 µl ≤±0.8	20 µl≤0.4
D-50	5-50	50 µl ≤±0,8	50 µl ≤0,3
D-100	10-100	100 µl ≤±0.6	100 µl≤0.2
D-200	20-200	200 µl ≤±0.6	200 µl≤0.2
D-1000	100-1000	1000 µl ≤±0.6	1000 µl≤ 0.2
D-5000	500-5000	5000 µl ≤±0.6	5000 µl≤ 0.2
D-10000	1000-10000	10000 µl ≤±0.6	10000 µl ≤0.2

F-10	10	≤±1.0	≤0.5
F-20	20	≤±0.8	≤0.4
F-25	25	≤±0.8	≤0.4
F-50	50	≤±0.8	≤0.4
F-100	100	≤±0.6	≤0.2
F-200	200	≤±0.6	≤0.2
F-500	500	≤±0.6	≤0.2
F-1000	1000	≤±0.6	≤0.2

M8-10/M12-10	0.5-10	10 µl ≤±1.6	10 µl≤1.0
M8-50/M12-50	5-50	50 µl ≤±0.8	20 µl≤0.4
M8-100/M12-100	10-100	100 µl ≤±0.8	100 µl ≤0.3
M8-200/M12-200	20-200	200 µl ≤±0.8	200 µl ≤0.3
M8-300/M12-300	30-300	300 µl ≤±0.6	300 µl ≤0.3

*Adjusted to 'Ex'. Margins of error refer to the nominal volume (= max. volume) printed on the instrument, assuming that the instrument, ambient air and distilled water are at the same temperature (20 °C), and that the instrument is operated evenly and smoothly.

1-channel, variable

Delivery incl. certificate of quality and shelf/rack mount.

Model	Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
D-1	0,1-1	0,001	10/20	**HL21.1**	1	280,60
D-2,5	0,1-2,5	0,002	10/20/50	**CNN3.1**	1	280,60
D-10	0,5-10	0,01	10/20/50	**HL22.1**	1	280,60
D-20	2-20	0,02	200/300	**HL23.1**	1	247,25
D-50	5-50	0,05	200/300	**ECX8.1**	1	248,35
D-100	10-100	0,1	200/300	**HL24.1**	1	247,25
D-200	20-200	0,2	200/300	**HL25.1**	1	247,25
D-1000	100-1000	1	1000/1250	**HL26.1**	1	247,25
D-5000	500-5000	5	5000	**HL27.1**	1	280,60
D-10 000	1000-10 000	10	10 000	**HL28.1**	1	280,60

1-channel, fixed volume

Delivery incl. certificate of quality and shelf/rack mount.

Model	Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
F-10	10	Fix	20	**HL34.1**	1	170,95
F-20	20	Fix	200	**HL35.1**	1	170,95
F-25	25	Fix	200	**CNN4.1**	1	169,85
F-50	50	Fix	200	**HL36.1**	1	170,95
F-100	100	Fix	200	**HL37.1**	1	170,95
F-200	200	Fix	200	**HL38.1**	1	170,95
F-500	500	Fix	1000/1250	**HL39.1**	1	170,95
F-1000	1000	Fix	1000/1250	**HL40.1**	1	170,95

8-channel, variable

Delivery incl. certificate of quality, 2 x TipBox filled with BRAND® pipette tips, 1 shelf/rack mount, 1 reagent reservoir, 1 set of FKM shaft seals, 1 assembly key and silicone oil.

Model	Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
M8-10	0,5-10	0,01	10/20	**CNN5.1**	1	642,85
M8-50	5-50	0,1	200/300	**CNN6.1**	1	641,80
M8-100	10-100	0,2	200/300	**CNN7.1**	1	641,80
M8-200	20-200	0,2	200/300	**CNN8.1**	1	641,80
M8-300	30-300	0,5	1000/1250	**CNN9.1**	1	641,80

12-channel, variable

Delivery incl. certificate of quality, 2 x TipBox filled with BRAND® pipette tips, 1 shelf/rack mount, 1 reagent reservoir, 1 set of FKM shaft seals, 1 assembly key and silicone oil.

Model	Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
M12-10	0,5-10	0,01	10/20	**CNP0.1**	1	735,30
M12-50	5-50	0,1	200/300	**CNP1.1**	1	735,30
M12-100	10-100	0,2	200/300	**CNP2.1**	1	735,30
M12-200	20-200	0,2	200/300	**CNP3.1**	1	735,30
M12-300	30-300	0,5	1000/1250	**CNP4.1**	1	735,30

Accessories:

Table stand for Transferpette® S, 6 holders	**HL32.1**	1	70,35
Shelf holder for Transferpette® S, 1 holder	**HL33.1**	1	13,65

▶ Pipette stands see page 461

A 121 °C

Starter kits Transferpette® S, variable

Delivery incl. 3 Transferpette® S, variable, 3 boxes filled with pipette tips and 3 shelf holders.

Type	Model	Art. No.	Pack Qty.	€
Micro starter kit	D-1, D-10, D-100	**HL29.1**	1	763,25
Standard starter kit	D-10, D-100, D-1000	**NA40.1**	1	708,45
Midi starter kit	D-20, D-200, D-1000	**HL30.1**	1	721,35
Macro starter kit	D-1000, D-5000, D-10 000	**HL31.1**	1	763,25

Pipette tip coding

Pipette tip No.	Pipette tip designation	Pipette tip type	Catalogue page
1-19	Standard	Standard quality for general laboratory applications	463-465
20-27	Pipette tips by Brand	Pipette tips produced in a cleanroom environment	466
28-31	Filter tips by Brand	Pipette tips with aerosol filter produced in a cleanroom environment	467
32-42	MµltiPrecision	Pipette tips by Sorenson	468-469
43-54	MµltiGuard	Pipette tips by Sorenson with aerosol filter	470-471
55-62	Mµlti OneTouch	Pipette tips by Sorenson with flexible stem	472
63-68	MµltiFlex	Gelloading pipette tips by Sorenson	473
69-70	Cell Saver Tips	Pipette tips with large opening	474

Transferpette®/Transferpette® S

Suitable pipettor tips				Pipettors Art.-No. (****.1)							
Volume range of tips	Tip No.			HL21 HL34	HL22 CNN5 CNP0	HL23 ECX8 HL24 HL35 HL36 HL37	CNN6 CNN7 CNN8 CNN9 CNP1 CNP2 CNP3 CNP4	HL25 HL38	HL26 HL39 HL40	HL27	HL28
0,1-10 µl	28			x	x						
	32	33			x						
	63				x						
	43	45			x						
0,5-10 µl	34				x						
	46				x						
0,1-20 µl	21			x	x						
	56			x	x						
	60				x						
1-20 µl	29				x						
	47				x						
1-50 µl	22				x						
1-100 µl	48				x	x					
1-200 µl	3	4	5			x	x	x			
	23	24				x	x	x			
	30					x	x	x			
	35	36				x	x	x			
	37	38				x	x	x			
	66	67	68			x	x				
	52					x	x				
1-300 µl	25					x	x	x			
	39							x			
	51							x			
	57	61						x			
100-1250 µl	9	10							x		
	26	27							x		
	31								x		
	40	41	42						x		
	53								x		
1-5 ml	16	17								x	
1-10 ml	19										x

Microlitre pipettors, Gilson

Pipetman® Neo

By Gilson. Infinitely adjustable air cushion pipettor.
Robust, durable, precise and easy to maintain.

- Grease-free sealing system
- Clip tip ejector made of metal for easy dismantling and secure grip
- Multichannel pipettes with patented piston stroke mechanism which eliminates differences in volume between individual channels
- With Certificate of Conformity in accordance with DIN EN ISO 8655 with Test Protocol
- CE-mark in accordance with IVD

Technical specifications:

Model	Volume (µl)	Systematic error (± µl)	Random deviation (≤ µl)
P2N	0,2 0,5 2	0,024 0,025 0,03	0,012 0,012 0,014
P10N	1 5 10	0,025 0,075 0,1	0,012 0,03 0,04
P20N	2 10 20	0,1 0,1 0,2	0,03 0,05 0,06
P20N 8x20 12x20	2 10 20	0,1 0,2 0,4	0,08 0,1 0,2
P100N	10 50 100	0,35 0,4 0,8	0,1 0,12 0,15
P200N	20 100 200	0,5 0,8 1,6	0,2 0,25 0,3
P200N 8x20 12x20	20 100 200	0,5 1 2	0,25 0,4 0,6
P1000N	100 500 1000	3 4 8	0,6 1 1,5

1-channel

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,2-2	0,002	10	**HY83.1**	1	281,65
1-10	0,02	10	**HY84.1**	1	281,65
2-20	0,02	200	**HY85.1**	1	238,65
10-100	0,2	200	**HY86.1**	1	238,65
20-200	0,2	200	**HY87.1**	1	238,65
100-1000	2,0	1000	**HY88.1**	1	238,65

8-channel

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
2-20	0,02	200	**TT05.1**	1	643,95
20-200	0,2	200	**TT06.1**	1	643,95

12-channel

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
2-20	0,02	200	**TT07.1**	1	776,15
20-200	0,2	200	**TT08.1**	1	776,15

Pipetman® Neo starter kits

Delivery incl. 3 microliter pipettes Pipetman® Neo, 2 or 3 boxes filled with pipette tips and 3 single pipette holders.

Type	Model	Art. No.	Pack Qty.	€
Starter kit Neo	P20N, P200N, P1000N	**NA61.1**	1	718,10
PCR kit Neo	P10N, P100N, P1000N	**NA62.1**	1	838,50

Accessories for Pipetman® Neo

Type	Art. No.	Pack Qty.	€
Single pipette holder, 1 holder	**HY79.1**	1	15,00
Multi channel pipettor holder, 1 holder	**TT09.1**	1	33,00
Pipette carousel, 7 holders	**HY80.1**	1	98,40
Coloris™ Clips (5 colours, sorted)	**HY81.1**	10	13,45

Gilson multichannel pipettors Pipetman® Neo

Suitable pipettor tips	Pipettors Art.-No. (****.1)				
Volume range of tips	Tip No.			TT05 TT07	TT06 TT07
1-20 µl	47			x	
1-100 µl	48			x	
1-200 µl	4				x
	23	24		x	x
	35				x
	36	37	38	x	x
	49				x
	50				x
1-350 µl	7				x
	39			x	x
	57	61			x
40-350 µl	8				x

Microlitre pipettors, Gilson

Pipetman® G

By Gilson. Variable air-displacement pipette offering one of the lowest pipetting forces on the market. Equipped with a clip ejector made of metal for an easy tip removal. These pipette models are noted for their robustness, accuracy, ease of maintenance and long life.

- Easy dismantling and maintenance
- Despite the low pipetting force, the initial pressure point is easy to feel during pipetting
- P5000G and P10 ml G pipettes come with a protective filter which protects the piston and prevents contamination
- Conformity certified to DIN EN ISO 8655 with inspection certificate
- CE mark to IVD

Technical specifications:

Model	Capacity (µl)	Systematic deviation (± µl)	Random deviation (± µl)
P2G	0.2 0.5 2	0.024 0.025 0.03	0.012 0.012 0.014
P10G	1 5 10	0.025 0.075 0.1	0.012 0.03 0.04
P20G	2 10 20	0.1 0.1 0.2	0.03 0.05 0.06
P100G	10 50 100	0.35 0.4 0.8	0.1 0.12 0.15
P200G	20 100 200	0.5 0.8 1.6	0.2 0.25 0.3
P1000G	100 500 1000	3 4 8	0.6 1 1.5
P5000G	500 2500 5000	12 15 30	3 5 8
P10 ml G	1 ml 5 ml 10 ml	30 40 60	6 10 16

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,2-2	0,002	10	**TP68.1**	1	268,75
1-10	0,02	10	**TP69.1**	1	268,75
2-20	0,02	200	**TP70.1**	1	227,90
10-100	0,2	200	**TP71.1**	1	227,90
20-200	0,2	200	**TP72.1**	1	227,90
100-1000	2,0	1000	**TP73.1**	1	227,90
1000-5000	2,0	5000	**TP74.1**	1	268,75
1-10 ml	20,0	10 ml	**TP75.1**	1	268,75

Pipetman® G Starter Kits

Delivery incl. 3 Pipetman® G microlitre pipettes, 2 boxes filled with pipette tips, 3 single-pipette holders and 3 plastic ejectors.

Type	Model	Art. No.	Pack Qty.	€
Starter Kit G	P20G, P200G, P1000G	**TP76.1**	1	666,50
Micro Volume Kit G	P2G, P10G, P100G	**TP77.1**	1	757,90

Accessories for Pipetman® G + L

Type	Art. No.	Pack Qty.	€
Single pipette holder, 1 holder	**HY79.1**	1	15,00
Pipette carousel, 7 holders	**HY80.1**	1	98,40
Coloris™ Clips (5 colours, sorted)	**HY81.1**	10	13,45
Protective filter for P5000 and P10 ml	**HY78.1**	100	26,85
Pipette grease for Pipetman® M, L and G (1 g)	**TP78.1**	1	19,25

Gilson microlitre pipettors Pipetman®Neo / Pipetman® G

Suitable pipettor tips				Pipettors Art.-No. (****.1)							
Volume range of tips	Tip No.			HY83 TP68	HY84 TP69	HY85 TP70	HY86 TP71	HY87 TP72	HY88 TP73	TP74	TP75
0,1-10 µl	1			x	x						
	28			x							
	32	33	34	x	x						
	43	44	45	x	x						
	63	64	65	x	x						
0,5-10 µl	46				x						
0,1-20 µl	20			x							
	56	60		x	x	x					
1-20 µl	47					x					
1-100 µl	48					x					
1-200 µl	4	5	6			x	x	x			
	35	36	37			x	x	x			
	38					x	x	x			
	66	67	68			x	x	x			
	50							x			
	52						x				
1-300 µl	39					x	x	x			
	51						x	x			
	57	61						x			
100-1000 µl	9	10							x		
	40	41	42						x		
	53	54							x		
	58	62							x		
1-5 ml	14									x	
1-10 ml	19a										x

Microlitre pipettors, Gilson

Pipetman® L

By Gilson. Lightweight and safe yet robust quality pipette.
Pipette with greatly reduced pipetting forces - increases throughput without compromising on comfort.

- Patented Lock/Unlock System for safe pipetting
- The set volume is locked during the first pipetting operation
- Easy release of the volume adjustment lock
- Ergonomic handle
- Adjustable tip ejector for left- and right-handed users
- Plastic tip ejector
- 2D identification code
- Completely autoclavable

Technical specifications:

Model	Capacity (µl)	Systematic deviation (± µl)	Random deviation (± µl)
P2LA	0.2 0.5 2	0.024 0.025 0.03	0.012 0.012 0.014
P10LA	1 5 10	0.025 0.075 0.1	0.012 0.03 0.04
P20LA	2 10 20	0.1 0.1 0.2	0.03 0.05 0.06
P100LA	10 50 100	0.35 0.4 0.8	0.1 0.12 0.15
P200LA	20 100 200	0.5 0.8 1.6	0.2 0.25 0.3
P1000LA	100 500 1000	3 4 8	0.6 1 1.5
P5000LA	500 2500 5000	12 15 30	3 5 8
P10 ml LA	1 ml 5 ml 10 ml	30 40 60	6 10 16

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,2-2	0,002	10	**TP97.1**	1	281,65
0,5-10	0,02	10	**TP98.1**	1	281,65
2-20	0,02	200	**TP99.1**	1	281,65
10-100	0,2	200	**TT00.1**	1	281,65
50-200	0,2	200	**TT01.1**	1	281,65
100-1000	2,0	1000	**TT02.1**	1	281,65
1000-5000	2,0	5000	**TT03.1**	1	281,65
1-10 ml	20,0	10 ml	**TT04.1**	1	281,65

Starter kits Pipetman® L

Delivery incl. 3 Pipetman® L microlitre pipettes, 2 boxes filled with pipette tips and 3 pipette holders.

Type	Model	Art. No.	Pack Qty.	€
Starter kit L	P20LA, P200LA, P1000LA	**CTY2.1**	1	812,70
Micro Volume Kit L	P2LA, P10LA, P100LA	**CTY3.1**	1	847,10

Accessories for Pipetman® G + L

Type	Art. No.	Pack Qty.	€
Single pipette holder, 1 holder	**HY79.1**	1	15,00
Pipette carousel, 7 holders	**HY80.1**	1	98,40
Coloris™ Clips (5 colours, sorted)	**HY81.1**	10	13,45
Protective filter for P5000 and P10 ml	**HY78.1**	100	26,85
Pipette grease for Pipetman® M, L and G (1 g)	**TP78.1**	1	19,25

Gilson microlitre pipettors Pipetman® L

Suitable pipettor tips				Pipettors Art.-No. (****.1)							
Volume range of tips	Tip No.			TP97	TP98	TP99	TT00	TT01	TT02	TT03	TT04
0,1-10 µl	1			x	x						
	28			x							
	32	33	34	x	x						
	43	44	45	x	x						
	63	64	65	x	x						
0,5-10 µl	46				x						
0,1-20 µl	20			x							
	56	60		x	x	x					
1-20 µl	47					x					
1-100 µl	48					x					
1-200 µl	4	5	6			x	x	x			
	35	36	37			x	x	x			
	38					x	x	x			
	66	67	68			x	x	x			
	50							x			
	52						x				
1-300 µl	39					x	x	x			
	51						x	x			
	58	62						x			
100-1000 µl	9	10							x		
	40	41	42						x		
	53	54							x		
	58	62							x		
1-5 ml	14									x	
1-10 ml	19a										x

Microlitre pipettors, Socorex

A 121 °C

Micro/macrolitre pipettors Calibra® *digital*

By Socorex. A reliable pipette line noted for its mechanical precision, ergonomics and user friendliness. The setting ring (step gauge) minimises the risk of maladjustment during pipetting and keeps adjustment work to a minimum.

- Super-fast volume adjustment
- Fully autoclavable
- Separate tip ejector
- Narrow shaft, light weight and soft piston action for optimal ease of use
- Attractive colour coding caps for differentiation between the various pipettes
- Resistant to shock, heat, chemicals and UV light
- Each pipette is individually calibrated and delivered with an inspection certificate

Multichannel pipettors:
- Turns on the handpiece by 360° and can be adjusted as desired

Technical specifications:

Type	Capacity (µl)	Inaccuracy	Imprecision
822	**0.2 - 2**	0.5 µl <±6 % 2 µl <±2 %	0.5 µl <±5 % 2 µl <±1.5 %
822	**1-10**	1 µl <±2.5 % 10 µl <±1 %	1 µl <±2 % 10 µl <±0.5 %
822	**2 - 20**	2 µl <±2.5 % 20 µl <±1 %	2 µl <±1.7 % 20 µl <±0.5 %
822	**10 - 100**	10 µl <±1.5 % 100 µl <±0.8 %	10 µl <±1 % 100 µl <±0.2 %
822	**20 - 200**	20 µl <±1.5 % 200 µl <±0.6 %	20 µl <±0.6 % 200 µl <±0.2 %
822	**100 - 1000**	100 µl <±1.5 % 1000 µl <±0.5 %	100 µl <±0.5 % 1000 µl <±0.2 %
832	**200 - 2000**	0.2 ml <±1.5 % 2 ml <±0.5 %	0.2 ml <±0.5 % 2 ml <±0.2 %
832	**1000 - 10000**	1 ml <±1.5 % 10 ml <±0.5 %	1 ml <±0.3 % 10 ml <±0.15 %
852	**1 - 10**	1 µl <±5.0 % 10 µl <±2.0 %	1 µl <±5.0 % 10 µl <±1.5 %
852	**10 - 100**	10 µl <±1.0 % 100 µl <±0.7 %	10 µl <±1.0 % 100 µl <±0.4 %
852	**20 - 200**	20 µl <±0.9 % 200 µl <±0.7 %	20 µl <±0.6 % 200 µl <±0.3 %

Micro/macrolitre pipettors Calibra® *digital* 822/832

Model	Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
1-channel	0,2-2	0,1	10	**K307.1**	1	307,45
1-channel	1-10	0,05	10	**K308.1**	1	307,45
1-channel	2-20	0,1	200	**K309.1**	1	324,65
1-channel	10-100	0,5	200	**K310.1**	1	324,65
1-channel	20-200	1,0	200	**K311.1**	1	324,65
1-channel	100-1000	5,0	1000	**K312.1**	1	324,65
1-channel	200-2000	10,0	2000	**K313.1**	1	344,00
1-channel	1000-10000	100,0	10000	**K314.1**	1	344,00

Multichannel pipettors Calibra® *digital* 852

Model	Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
8-channel	1-10	0,05	10	**P320.1**	1	837,45
8-channel	10-100	0,5	200, 300	**L662.1**	1	785,85
8-channel	20-200	1,0	200, 300	**L663.1**	1	785,85
12-channel	10-100	0,5	200, 300	**L664.1**	1	900,85
12-channel	20-200	1,0	200, 300	**L665.1**	1	900,85

Disposable filters

For Calibra®-pipettors. Filter K317.1 is also suitable for 10 ml Acura pipettes. Protect against contamination of the pipettor and sample.

For	Material	Art. No.	Pack Qty.	€
Pipettes 2 ml,	Cellulose	**K316.1**	250	40,85
Pipettors 10 ml	PP	**K317.1**	100	34,40

Pipettor stands

By Socorex. Made of **PA**. For max. 3 one-/ or multichannel pipettors from Socorex, Models Calibra® and Acura®. Suitable for microdispenser pipettors Acura® 865 and stem pipettors Acura® manual 810.

Art. No.	Pack Qty.	€
EP93.1	1	102,15

Air cushion-piston pipettors Calibra® *digital*

Suitable pipettor tips				Pipettors Art.-No. (****.1)						
Volume range of tips	Tip No.			K307	K308	K309	K310 K311	K312	K313	K314
0,1-10 µl	32				x					
	43	45		x	x					
	63	64	65	x	x					
0,5-10 µl	2			x	x					
	34			x	x					
	46			x	x					
1-20 µl	47						x			
1-100 µl	48						x			
1-200 µl	3						x			
	5	6				x	x			
	35	36				x	x			
	37	38				x	x			
	52					x	x			
	66	67	68			x	x			
1-300 µl	39						x			
100- 1000 µl	9	10						x		
	40	41						x		
	53							x		
0,1-2 ml	12								x	
1-10 ml	18									x

Multichannel pipettors Calibra® *digital*

Suitable pipettor tips				Pipettors Art.-No. (****.1)	
Volume range of tips	Tip No.			P320	L662 L663 L664 L665
0,1-10 µl	32			x	
	63	64	65	x	
0,5-10 µl	2			x	
	34			x	
1-200 µl	3	5	6		x
	35	36			x
	37	38			x
	66	67	68		x
1-300 µl	39				x

Microlitre pipettors, Socorex

A 121 °C

Acura®-microlitre pipettes *manual* XS 826

By Socorex. Features: see Acura® 825 microlitre pipettes.

Additional features:

- Innovative calibration system (Swift-Set)
- Tamper-proof seal label for protection of the calibrator
- Outstanding ergonomic profile
- Extremely gentle pipetting action, easier on the hands
- Reduced weight (to 83 from 88 g)
- Reduced stem length allows optimised instrument guidance
- Conical stem end for easy access to reaction vessels

Technical specifications:

Capacity (µl)	Inaccuracy (%)	Non-precision (%)
0.1-2	0.5 µl <±6.0 2.0 µl <±2.0	0.5 µl <5.0 2.0 µl <1.5
0.5-10	1.0 µl <±2.5 10 µl <±1.0	1.0 µl <1.8 10 µl <0.5
1-10	1.0 µl <±2.5 10 µl <±1.0	1.0 µl <2.5 10 µl <0.7
2-20	2.0 µl <±2.5 20 µl <±1.0	2.0 µl <1.7 20 µl <0.5
5-50	5.0 µl <±1.5 50 µl <±1.0	5.0 µl <1.0 50 µl <0.4
10-100	10 µl <±1.5 100 µl <±0.8	10 µl <1.0 100 µl <0.2
20-200	20 µl <±1.5 200 µl <±0.8	20 µl <0.6 200 µl <0.2
100-1000	100 µl <±1.5 1000 µl <±0.5	100 µl <0.5 1000 µl <0.2

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,1-2	0,002	10	**TX47.1**	1	315,00
0,5-10	0,01	10	**TX48.1**	1	315,00
1-10	0,01	200	**TX49.1**	1	293,50
2-20	0,02	200	**TX50.1**	1	293,50
5-50	0,1	200	**TX51.1**	1	293,50
10-100	0,1	200	**TX52.1**	1	293,50
20-200	0,2	200	**TX53.1**	1	293,50
100-1000	1	1000	**TX54.1**	1	293,50

TwiXS Packs

Delivery incl. 2 Acura® *manual* XS pipettes, shelf/rack mount for 2 pipettes and inspection certificate.

Set	Design	Art. No.	Pack Qty. (set)	€
①	0.1-2 / 2-20 µl	**TX55.1**	1	546,10
②	0.5-10 / 10-100 µl	**TX56.1**	1	546,10
③	2-20 / 20-200 µl	**TX57.1**	1	546,10
④	5-50 / 20-200 µl	**TX58.1**	1	546,10
⑤	10-100 / 100-1000 µl	**TX59.1**	1	546,10
⑥	20-200 / 100-1000 µl	**TX60.1**	1	546,10

Rack pipette holder

By Socorex. Made of **PC**. For two Calibra® or Acura® pipettes.
With self-adhesive strips for secure adhesion to many surfaces.

Art. No.	Pack Qty.	€
TY58.1	1	20,45

Micro-/macrolitre pipettors Acura® /Acura® XS

Suitable pipettor tips				Pipettors Art.-No. (****.1)									
Volume range of tips	Tip No.			AT26 TX47	AN94 AN95 AN96 AT27 TX48	AT28 AT29 TX49 TX50	AN97 AN98 AN99 AP00 AP01 AT30 AT32 TX51 TX53	AT31 TX52	AP02 AP03 AP04 AT33 TX54	AP06 AP07 AT34	AP05	AP08 AT35
0,1-10 µl	32				x							
	43	44		x	x							
	63	64	65	x	x							
0,5-10 µl	2			x	x							
	34			x	x							
	46			x	x							
1-20 µl	47						x	x				
	56	60		x								
1-100 µl	48						x	x				
1-200 µl	3						x					
	4	5	6			x	x	x				
	35	36				x	x					
	37	38				x	x					
	52					x	x	x				
	66	67	68			x	x	x				
1-300 µl	57						x	x				
100-1000 µl	9	10							x			
	40	41							x			
	53								x			
	58	62							x			
0,1-2 ml	12										x	
1-5 ml	15									x		
1-10 ml	18											x

Multichannel pipettors Acura® 855, variable

Suitable pipettor tips				Pipettors Art.-No. (****.1)		
Volume range of tips	Tip No.			AT43 AT46	AT44 AT47	AT45 AT48
0,1-10 µl	32			x		
	43	44		x		
	63	64	65	x		
0,5-10 µl	2			x		
	34			x		
	46			x		
1-20 µl	47	51			x	
1-100 µl	48				x	
1-200 µl	3				x	
	5	6			x	
	35	36			x	
	37	38			x	
	52				x	
	66	67	68		x	
1-300 µl	39				x	
40-350 µl	8					x

Microlitre pipettors, Socorex

A 121 °C

Micro-/macrolitre pipettors Acura®

By Socorex. Acura® the manual range of pipettors excels for its speedy and reliable volume setting. It possesses all the features typical for the new generation of instruments and offers extremely high pipetting comfort.

- Completely autoclavable
- Lightweight
- Extremely gentle piston activation
- Separate, large tip ejector button
- Easy tip ejection
- Slim pipettor shaft
- All function buttons are easy to operate
- Justip™-tip adjustment-system enables exact adjustment of shaft height
- Innovative and rapid calibration system with integral spanners
- Original serial number and control certificate

Multichannel pipettors:
- Housing can be rotated by 360° for optimal working comfort
- Step-by-step tip ejection

Technical specifications Acura® 825/835, variable:

Typ	Capacity (µl)	Non accuracy (%)	Non precision (%)
825	**0.1-2**	0.5 µl <±6.0 2.0 µl <±2.0	0.5 µl <5.0 2.0 µl <1.5
825	**0.5-10**	1.0 µl <±2.0 10 µl <±1.0	1.0 µl <1.8 10 µl <0.5
825	**1-10**	1.0 µl <±2.0 10 µl <±1.0	1.0 µl <2.5 10 µl <0.7
825	**2-20**	2.0 µl <±2.0 20 µl <±1.0	2.0 µl <1.7 20 µl <0.5
825	**5-50**	5.0 µl <±1.4 50 µl <±1.0	5.0 µl <1.0 50 µl <0.5
825	**10-100**	10 µl <±1.0 100 µl <±0.8	10 µl <1.0 100 µl <0.2
825	**20-200**	20 µl <±1.0 200 µl <±0.8	20 µl <0.6 200 µl <0.2
825	**100-1000**	100 µl <±0.7 1000 µl <± 0.5	100 µl <0.5 1000 µl <0.2
835	**500-5000**	500 µl <±1.0 5000 µl <±0.7	500 µl <0.6 5000 µl <0.4
835	**1000-10 000**	1000 µl <±0.8 10 000 µl <±0.5	1000 µl <0.4 10 000 µl <0.2

Technical specifications Acura® 855, multichannel pipettors:

Capacity (µl)	Non accuracy (%)	Non precision (%)
0.5-10	1 µl <±3.5 10 µl <±1.5	0.5 µl <3.0 10 µl <1.0
5-50	5 µl <±1.0 50 µl <±0.8	5 µl <1.0 50 µl <0.4
40-350	40 µl <±1.0 350 µl <±0.8	40 µl <0.6 350 µl <0.3

Technical specifications Acura® 815/835 F, fix volume:

Capacity (µl)	Non accuracy (%)	Non precision (%)
1 **5** **10**	<±2.0 <±1.4 <±0.7	<2.0 <1.0 <0.7
20 **25** **50**	<±0.7 <±0.7 <±0.7	<0.5 <0.6 <0.5
100 **200** **250**	<±0.7 <±0.7 <±0.7	<0.3 <0.4 <0.4
500 **1000** **2000**	<±0.7 <±0.6 <±0.8	<0.3 <0.2 <0.5
2500 **5000** **10 000**	<±0.8 <±0.7 <±0.5	<0.5 <0.4 <0.2

Acura® 825/835 variable

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,1-2	0,002	10	**AT26.1**	1	277,35
0,5-10	0,01	10	**AT27.1**	1	277,35
1-10	0,01	200	**AT28.1**	1	261,25
2-20	0,02	200	**AT29.1**	1	261,25
5-50	0,1	200	**AT30.1**	1	261,25
10-100	0,1	200	**AT31.1**	1	261,25
20-200	0,2	200	**AT32.1**	1	261,25
100-1000	1,0	1000	**AT33.1**	1	261,25
500-5000	10,0	5000	**AT34.1**	1	284,90
1000-10 000	10,0	10 000	**AT35.1**	1	284,90

Acura® 855, multichannel pipettors 8-channel

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,5-10	0,01	10	**AT43.1**	1	710,60
5-50	0,10	200, 300	**AT44.1**	1	667,60
40-350	0,40	350	**AT45.1**	1	667,60

Acura® 855, multichannel pipettors 12-channel

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,5-10	0,01	10	**AT46.1**	1	818,10
5-50	0,10	200, 300	**AT47.1**	1	766,50
40-350	0,40	350	**AT48.1**	1	766,50

Acura® 815/835F, fix volume

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
1	Fix	10	**AN94.1**	1	178,45
5	Fix	10	**AN95.1**	1	178,45
10	Fix	10	**AN96.1**	1	178,45
20	Fix	200, 300	**AN97.1**	1	178,45
25	Fix	200, 300	**AN98.1**	1	178,45
50	Fix	200, 300	**AN99.1**	1	178,45
100	Fix	200, 300	**AP00.1**	1	178,45
200	Fix	200, 300	**AP01.1**	1	178,45
250	Fix	1000	**AP02.1**	1	178,45
500	Fix	1000	**AP03.1**	1	178,45
1000	Fix	1000	**AP04.1**	1	178,45
2000	Fix	2000	**AP05.1**	1	212,85
2500	Fix	5000	**AP06.1**	1	212,85
5000	Fix	5000	**AP07.1**	1	212,85
10 000	Fix	10 000	**AP08.1**	1	212,85

TrioPack Acura® 825 and 835

Delivery incl. 3 Acura® pipettes and inspection certificate.

Set	Design	Art. No.	Pack Qty. (set)	€
①	0.1-2 / 0.5-10 / 5-50 µl	**TY62.1**	1	729,95
②	0.1-2 / 2-20 / 20-200 µl	**TY63.1**	1	713,80
③	1-10 / 5-50 / 20-200 µl	**TY64.1**	1	699,85
④	0.5-10 / 10-100 / 100-1000 µl	**TY65.1**	1	713,80
⑤	1-10 / 10-100 / 100-1000 µl	**TY66.1**	1	699,85
⑥	2-20 / 20-200 / 100-1000 µl	**TY67.1**	1	699,85
⑦	5-50 / 20-200 / 100-1000 µl	**TY68.1**	1	699,85
⑧	10-100 / 100-1000 µl / 0.5-5 ml	**TY69.1**	1	721,35
⑨	100-1000 µl / 0.5-5 / 1-10 ml	**TY70.1**	1	745,00

A 121 °C

Air cushion-piston pipettors mLINE®, variable

By Sartorius. mLINE®-one-channel pipettors require very little force for pipetting or tip ejection and are characterized by their extremely low weight.

- Completely autoclavable once the Safe-Cone-filter has been removed.
- Ergonomic design enables fatigue-free operation
- Thermo-insulation of inner components improves accuracy
- Easy-to-read display
- Opti-load tip loading mechanism for simple tip ejection
- The start knob makes automatic Safe-Cone filter ejection possible
- Ergonomically designed bow-shaped finger rest with ID-window for individual marking
- Five different coloured knob covers for colour coding
- Certificate of conformity, with test protocol
- Safe-Cone filter prevents contamination of pipettor and sample material (suitable for pipettes from 10 µl on). Please order separately.

Technical specifications:

Volume (µl)	Test volume (µl)	Inaccuracy (%)	Non-precision (%)
0.1-3	0.3 1.5 3	10 2.4 1.3	6 1.6 0.8
0.5-10	0.5 1 5 10	5.00 2.50 1.50 1.00	4.00 1.50 1.00 0.60
2-20	2 10 20	3.00 1.20 0.90	2.00 1.00 0.40
10-100	10 50 100	2.00 1.00 0.80	1.00 0.40 0.15
20-200	20 100 200	2.00 0.80 0.60	0.80 0.30 0.15
100-1000	100 500 1000	1.50 0.70 0.60	0.70 0.25 0.20
500-5000	500 2500 5000	1.50 0.60 0.50	0.60 0.30 0.15

Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,1-3	0,002	10/20	**KC10.1**	1	280,00
0,5-10	0,01	10/20	**AN21.1**	1	280,00
2-20	0,02	200, 300	**AN22.1**	1	280,00
10-100	0,1	200, 300	**AN23.1**	1	280,00
20-200	0,2	200, 300	**AN24.1**	1	280,00
100-1000	1	1000	**AN25.1**	1	280,00
500-5000	10	5000	**AN26.1**	1	280,00

Revolving stand

By Sartorius. Made of **ABS**. For 6 Sartorius-pipettors, series mLINE®.

Art. No.	Pack Qty.	€
AL16.1	1	121,00

Air cushion-piston pipettors mLINE®, variable

Suitable pipettor tips				Pipettors Art.-No. (****.1)					
Volume range of tips	Tip No.			KC10	AN21	AN22 AN23	AN24	AN25	AN26
0,1-10 µl	1			x					
	28			x	x				
	32	33		x	x				
	43	45		x	x				
	63	64	65	x	x				
0,5-10 µl	34			x	x				
	46			x	x				
0,1-20 µl	20				x				
	47						x		
	56	60		x	x				
1-200 µl	4	5				x	x		
	6					x			
	35	36				x	x		
	37	38				x	x		
	49	52					x		
	66	67	68			x	x		
1-300 µl	39					x	x		
	51						x		
	57	61					x		
100-1000 µl	9	10						x	
	26	27						x	
	40	41						x	
	53							x	
50-1250 µl	42							x	
	58	62						x	
1-5 ml	13								x

Safe-Cone-Filters

For Sartorius-pipettes from 10 µl. The replaceable filters serve as a barrier against liquid permeation and harmful vapours and therefore also protect the pipettor interior, e.g. against radioactive, biologically dangerous or corrosive samples. They also protect against cross-contamination.
The safe-cone-filters should be replaced at regular intervals (after 50-250 pipetting actions) or immediately in the event of overpipetting.
Two models available:
Safe-Cone-Filter Plus for highly demanding applications such as cell culture, bacteriological and virological work and in microbiology.
Safe-Cone-Filter Standard for normal applications to prevent against contamination of the pipettor and the sample material.

Filter type	∅ (mm)	Art. No.	Pack Qty.	€
Standard (max 20 µl)	1,83	**AN27.1**	50	57,70
Standard (up to 100 µl)	2,51	**X230.1**	50	61,50
Standard (max 200 µl)	3,15	**X229.1**	50	61,50
Standard (max 1000 µl)	5,33	**K776.1**	50	50,80
Standard (max 10 ml)	6,73	**K777.1**	50	57,95
Plus (max 100 µl)	2,51	**AL18.1**	50	67,00
Plus (max 200 µl)	3,15	**AL19.1**	50	67,00
Plus (max 1000 µl)	5,33	**AL20.1**	50	67,00
Plus (max 10 ml)	6,73	**AL21.1**	50	67,00

Microlitre pipettors, Sartorius

A 121 °C

Microlitre pipettors Proline® Plus, variable

By Sartorius. Suitable for all types of routine laboratory applications.
Ergonomic design allows fatigue-free operations and minimizes work effort.

- Fully autoclavable when Safe-Cone filters are removed
- Robust, yet light and easy to use
- Volume setting by click stops, easy-to-read display
- Thermal insulation of inside components for improved accuracy
- Highly resistant to chemicals and UV light
- Multichannel pipettes with Optiload tip loading mechanism
- Compatible with numerous tips
- Long shaft for narrow laboratory tubes
- Easy to clean; no tools required for disassembling
- With calibrating tools for easy self-calibration
- Suitable for both left-handed and right-handed users
- Replaceable Safe-Cone filter to prevent contamination of pipette and sample (for pipettes from 10 µl). Please order separately.
- High-level accuracy and precision according to ISO 8655
- CE/IVD marking
- Individual Certificate of Quality

Technical specifications singlechannel:

Capacity (µl)	Test capacity (µl)	Inaccuracy (%)	Non-precision (%)	Safe-Cone Filter Standard	Safe-Cone-Filter Plus
0.1-3	3 0.3	1.30 10.00	0.80 6.00	-	-
0.5-10	10 0.5	1.00 5.00	0.60 4.00	-	-
2-20	20 2	0.90 3.00	0.40 2.00	AN27.1	-
10-100	100 10	0.80 2.00	0.15 1.00	X230.1	AL18.1
20-200	200 20	0.60 2.00	0.15 0.80	X229.1	AL19.1
100-1000	1000 100	0.60 1.00	0.20 0.40	K776.1	AL20.1
500-5000	5000 500	0.50 2.00	0.20 0.60	K777.1	AL21.1
1-10 ml	10000 1000	0.60 3.00	0.20 0.60	K777.1	AL21.1

Technical specifications multichannel:

Capacity (µl)	Test capacity (µl)	Inaccuracy (%)	Non-precision (%)	Safe-Cone Filter Standard	Safe-Cone Filter Plus
0.5-10	10 5 1	1.50 2.50 4.00	1.00 2.50 4.00	-	-
10-100	100 50 10	0.70 1.00 3.00	0.25 0.70 1.50	X230.1	AL18.1
30-300	300 150 30	0.60 1.00 2.00	0.25 0.50 1.00	X229.1	AL19.1

1-channel

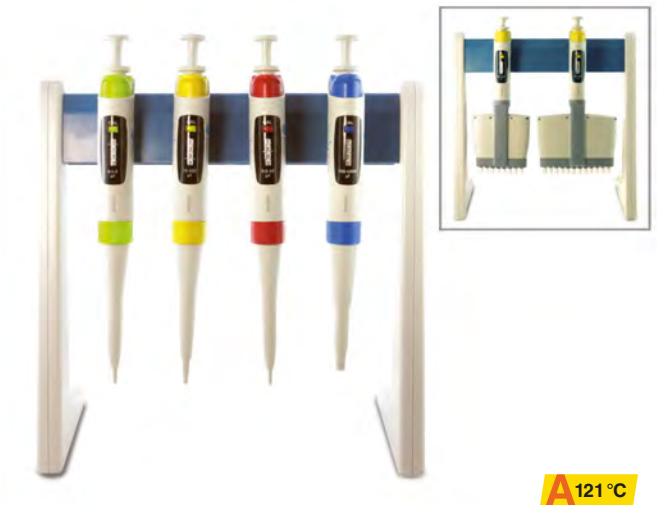
Type	Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
1-channel	0,1-3	0,002	10	**NA71.1**	1	220,00
1-channel	0,5-10	0,01	10	**NA72.1**	1	220,00
1-channel	2-20	0,02	200, 300	**NA73.1**	1	220,00
1-channel	10-100	0,10	200, 300, 350	**NA74.1**	1	220,00
1-channel	20-200	0,20	200, 300, 350	**NA75.1**	1	220,00
1-channel	100-1000	1,00	1000	**NA76.1**	1	220,00
1-channel	500-5000	10,00	5000	**NA77.1**	1	220,00
1-channel	1-10 ml	20,00	10000	**NA78.1**	1	220,00

Multichannel

Type	Volume (µl)	Pitch (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
8-channel	0,5-10	0,01	10	**NA79.1**	1	645,00
8-channel	10-100	0,10	200, 300, 350	**NA80.1**	1	645,00
8-channel	30-300	0,20	300, 350	**NA81.1**	1	645,00
12-channel	0,5-10	0,01	10	**NA82.1**	1	704,00
12-channel	10-100	0,10	200, 300, 350	**NA83.1**	1	704,00
12-channel	30-300	0,20	300, 350	**NA84.1**	1	704,00

Microlitre pipettors Proline® Plus

Suitable pipettor tips				Pipettors Art.-No. (****.1)								
Volume range of tips	Tip No.			NA71	NA72	NA73	NA74 NA75	NA76	NA77	NA78	NA79 NA82	NA80 NA81 NA83 NA84
0,1-10 µl	1			x							x	
	28			x	x							
	32			x	x						x	
	33				x						x	
	43	44	45	x	x						x	
	63	64	65	x	x							
0,5-10 µl	2				x							
	46			x								
1-20 µl	20			x	x							
	47						x					
	56	60		x	x							
1-100 µl	48						x					
1-200 µl	4	5	6		x	x	x					
	35	36			x	x	x					
	37	38			x	x	x					
	52						x					
	66	67	68		x	x						
1-300 µl	39				x	x	x					x
	51						x					
	57	61					x					
100-1000 µl	9	10						x				
	40	41						x				
	53							x				
50-1250 µl	42							x				
	54							x				
	58	62						x				
1-5 ml	13	15							x			
1-10 ml	19									x		



OneTouch Pro microlitre pipettes

By Sorenson. Air cushion pipettes for routine laboratory work.
Fully compatible with OneTouch pipette tips. Pipette design matches the colour of the tips to enable quick identification.

- Ergonomic design means the pipettes are comfortable to use
- Smooth tip release
- Quick volume adjustment, even when wearing gloves
- Volume change protection
- Very lightweight to make pipetting extremely comfortable
- UV-resistant body
- Fully autoclavable

Single-channel

Volume (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
0,1-2	3	**HAP5.1**	1	209,65
0,5-10	20	**HAP6.1**	1	209,65
2-20	350	**HAP7.1**	1	209,65
10-100	350	**HAP8.1**	1	209,65
20-200	350	**HAP9.1**	1	209,65
100-1000	1250	**HAT0.1**	1	209,65

8-channel

Volume (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
1-10	20	**HAT1.1**	1	478,40
5-50	350	**HAT2.1**	1	478,40
20-200	350	**HAT3.1**	1	478,40
50-300	350	**HAT4.1**	1	478,40

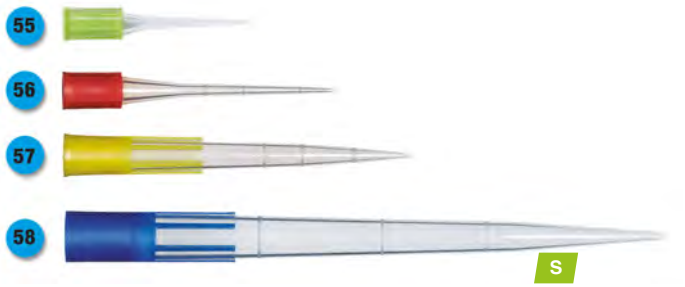
12-channel

Volume (µl)	Tip type (µl)	Art. No.	Pack Qty.	€
1-10	20	**HAT5.1**	1	628,90
5-50	350	**HAT6.1**	1	628,90
20-200	350	**HAT7.1**	1	628,90
50-300	350	**HAT8.1**	1	628,90

▶ Mµlti® One Touch filter tips see page 472

Mµlti® OneTouch

- **Sterile** or non-sterile
- **Elastic shaft** made of TPE, rigid body made of PP
- Graduated
- Tips in plastic rack are autoclavable
- **RNase-/DNase-** and **pyrogen-free**
- **Free of human DNA** and **PCR inhibitors**



55 Mµlti® OneTouch 0.1-3 µl

Green shaft. Compatible with numerous commonly available pipette models.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
0,1-3	Plastic rack, non-sterile	**HAT9.1**	10 x 96	55,80
0,1-3	Plastic rack, **sterile**	**HAX0.1**	10 x 96	57,85

56 Mµlti® OneTouch 0.1-20 µl

Red shaft. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Roth, Sartorius, Socorex.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
0,1-20	Plastic rack, non-sterile	**KT09.1**	10 x 96	60,55
0,1-20	Plastic rack, **sterile**	**KT10.1**	10 x 96	64,40
0,1-20	Cardboard rack, **sterile**	**KT11.1**	10 x 96	64,40

57 Mµlti® OneTouch 1-350 µl

Yellow shaft. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Roth, Sartorius, Socorex.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
1-350	Plastic rack, non-sterile	**KP90.1**	10 x 96	60,55
1-350	Plastic rack, **sterile**	**KP91.1**	10 x 96	64,40
1-350	Cardboard rack, **sterile**	**KP92.1**	10 x 96	64,40

58 Mµlti® OneTouch 50-1250 µl

Blue shaft. Suitable for Eppendorf, Finnpipette®, Gilson, Sartorius, Socorex.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
50-1250	Plastic rack with hinged lid, non-sterile	**KT14.1**	8 x 96	60,55
50-1250	Plastic rack with hinged lid, **sterile**	**KT15.1**	8 x 96	64,40
50-1250	Cardboard rack, **sterile**	**KT16.1**	12 x 64	71,95

Pipette carousels Twister™ universal 336

By Socorex. Made of **PA**, coloured parts made of **PC**. Carousel stand for six pipettes of all well-known brands. 360° axial rotation allows easy access to instruments.

Colour	Art. No.	Pack Qty.	€
blue	**TX62.1**	1	120,40
green	**TX63.1**	1	120,40
orange	**TX64.1**	1	120,40
grey	**TX65.1**	1	120,40
red	**TX66.1**	1	120,40
white	**TX67.1**	1	120,40
yellow	**TX68.1**	1	120,40

Flip & Grip™-pipette carousels

Carousel stands for the most common pipette brands. Holds up to 12 single-channel pipettes (6 on the handle + 6 attached to the pipetting button) or 3 multichannel plus 3 single-channel pipettes. With heavy base for secure positioning on laboratory benchtops. Pipette holder can be bolted upside down under a rack for space-saving storage.
Dimensions: ∅ 332 mm x H 193 mm.

Colour	Art. No.	Pack Qty.	€
blue	**XT82.1**	1	75,15
mint green	**XT83.1**	1	75,15
magenta	**XT84.1**	1	75,15

Pipette carousels

Made of **ABS**. Suitable for all standard models. Holds up to 8 single-channel pipettes or 4 multi-channel pipettes vertically in order to prevent contamination. Custom colour scheme thanks to interchangeable upper sections. Inserts can be removed from the upper level to make space for larger pipettes. Can be cleaned with soap/water and standard laboratory disinfectants.

Delivery incl. white frame, 8 single-colour lower sections and 2 x 8 coloured upper sections and grip. Delivered unassembled.

Upper section colour	Lower section colour	Art. No.	Pack Qty.	€
blue/green	blue	**HYP7.1**	1	98,50
violet/transparent	violet	**HYP8.1**	1	98,50
transparent/sorted (violet, yellow, red, orange, green, grey, transparent, blue)	transparent	**HYP9.1**	1	98,50

Rotilabo®-pipettor stand

Made of acrylic glass. Suitable for all standard pipettors.
Secure and stable stand, breakproof.
Dimensions: W 280 x H 165 x D 80 mm. ∅ of openings 20 mm.

Art. No.	Pack Qty.	€
A804.1	1	104,15

NEW

Rotilabo®-pipettor stands

Made of acrylic glass. Suitable for all conventional pipettes with finger support. Rubber feet for stability.

Type	Art. No.	Pack Qty.	€
4 slots	**HEC1.1**	1	39,25
1 slot	**HEC2.1**	1	23,55

NEW

Wall holders for microlitre pipettes

Made of **ABS**. For vertical storage of two microlitre pipettes. Suitable for all standard brands, both single-channel pipettes and multi-channel models. For narrow pipettes, the upper part of the pipette holder can be reduced in size using the inserts provided.

Delivery incl. 2 mounting plates together with 6 lower sections (2 x blue, 2 x green, 2 x colourless) and 6 upper sections (2 x blue, 2 x green, 1 x violet, 1 x yellow) which can be used in any combination for fastening the pipettes.
Delivery without mounting material.

Art. No.	Pack Qty.	€
HYP6.1	2	38,50

Table-pipettor stands

By Socorex. Made of **PA**. Ideal for 7 standard microlitre pipettors. Space-saving.

Colour	Art. No.	Pack Qty.	€
light grey	**T277.1**	1	97,85
ice-blue	**T278.1**	1	97,85
mint green	**T279.1**	1	97,85
vanilla-yellow	**T280.1**	1	97,85

Pipettor stands

Made of **ABS**. Suitable for holding 6 small pipettes.
Top cut-out: W 25 mm, bottom cut-out: W 20 mm.

Art. No.	Pack Qty.	€
N949.1	1	40,35

Pipettor tips, standard

Made of PP. Autoclavable.

1 Standard MIKRO 0.1-10 µl

Colourless, graduated. Suitable for Brand, Sartorius. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
0,1-10	bulk-packed (bag), non-sterile	**K138.1**	1000	18,85
0,1-10	in MultiTray-insert, non-sterile	**KE22.1**	10 x 96	39,75
0,1-10	in hinged lid rack, non-sterile	**CLC9.1**	10 x 96	48,30

2 Standard KRISTALL 0.5-20 µl

Colourless, short. Suitable for Eppendorf, Sartorius, Socorex. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
0,5-20	bulk-packed (bag), non-sterile	**9260.1**	1000	19,05
0,5-20	in MultiTray-insert, non-sterile	**CLE0.1**	10 x 96	40,55
0,5-20	in hinged lid rack, non-sterile	**CLE1.1**	10 x 96	47,20

3 Standard UNIVERSAL 10-100 µl

Yellow. Suitable for Roth, Brand, Eppendorf, Socorex. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
10-100	bulk-packed (bag), non-sterile	**2395.2**	500	8,95
10-100	in inverted tray rack, non-sterile	**CLX9.1**	10 x 96	42,50

4 Standard UNIVERSAL 10-200 µl

Yellow. Suitable for Brand, Gilson, Roth, Sartorius. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
10-200	bulk-packed (bag), non-sterile	**5889.2**	500	8,95
10-200	in inverted tray rack, non-sterile	**CLY0.1**	10 x 96	44,10

5 Standard UNIVERSAL 10-200 µl

Yellow, graduated. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
10-200	bulk-packed (bag), non-sterile	**B007.2**	500	13,15
10-200	in inverted tray rack, non-sterile	**CLY1.1**	10 x 96	44,10

6 Standard UNIVERSAL 5-200 µl

Colourless, graduated. Suitable for Brand, Eppendorf, Gilson, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
5-200	bulk-packed (bag), non-sterile	**B002.1**	1000	18,25
5-200	in inverted tray rack, non-sterile	**CPX3.1**	10 x 96	60,50

7 Standard UNIVERSAL 1-300 µl

Colourless. Suitable for Brand, Eppendorf, Gilson, Sartorius. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
1-300	bulk-packed (bag), non-sterile	**XC75.1**	1000	21,45
1-300	in MultiTray, non-sterile	**XC76.1**	10 x 96	42,95
1-300	Hinged racks, non-sterile	**XC77.1**	10 x 96	52,65

8 Standard UNIVERSAL 40-350 µl

Colourless. Suitable for Socorex. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
40-350	bulk-packed (bag), non-sterile	**AT49.1**	1000	72,05
40-350	in rack, non-sterile	**AT50.1**	10 x 96	126,85

9 Standard UNIVERSAL 100-1200 µl

Colourless. Suitable for Brand, Eppendorf, Gilson, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
100-1200	bulk-packed (bag), non-sterile	**B006.1**	1000	15,00
100-1200	in MultiTray-insert, non-sterile	**KE23.1**	16 x 60	47,20
100-1200	in hinged lid rack, non-sterile	**CLE2.1**	10 x 60	38,20

10 Standard UNIVERSAL 100-1200 µl

Blue. Suitable for Brand, Eppendorf, Gilson, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
100-1200	bulk-packed (bag), non-sterile	**2679.1**	1000	12,85
100-1200	in MultiTray-insert non-sterile	**KE24.1**	16 x 60	47,85
100-1200	in hinged lid rack, non-sterile	**CLE3.1**	10 x 60	34,40

11 Standard 50-1200 µl

Colourless. Suitable for Sartorius eLINE® LP85.1 and LP89.1. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
50-1200	bulk-packed (bag), non-sterile	**LT33.2**	480	23,90
50-1200	in hinged lid rack, non-sterile	**LT34.1**	10 x 96	82,50

The pipette tip fitting tables for all microlitre pipettor models can be found on pages 448-459.

Fitting information is provided as general recommendations.
It is recommended that a check be made by the user.
Pipette tip samples are available on request.

Pipettor tips, standard

Made of PP. Autoclavable.

A 121 °C

12 Standard MAKRO 0.1-2 ml

By Gilson Colourless. Length 115 mm. Suitable for Eppendorf, Socorex. Autoclavable.

Volume (ml)	Packaging	Art. No.	Pack Qty.	€
0,1-2	bulk-packed (bag), non-sterile	**K315.1**	250	48,40

13 Standard MAKRO 1-5 ml

By Gilson Colourless. Length 134 mm. Suitable for Sartorius, Socorex, Labmate and Roth. Autoclavable.

Volume (ml)	Packaging	Art. No.	Pack Qty.	€
1-5	bulk-packed (bag), non-sterile	**CX70.1**	300	32,05
1-5	in rack, non-sterile	**XP91.1**	1 x 50	25,45

14 Standard MAKRO 1-5 ml

By Gilson Colourless. Length 120 mm. Suitable for Starlab, Gilson, Oxford. Autoclavable.

Volume (ml)	Packaging	Art. No.	Pack Qty.	€
1-5	bulk-packed (bag), non-sterile	**5846.1**	250	22,55
1-5	in rack, non-sterile	**XP92.1**	1 x 50	25,45

15 Standard MAKRO 1-5 ml

By Gilson Colourless. Graduated. Suitable for Eppendorf, Sartorius, Socorex. Autoclavable.

Volume (ml)	Packaging	Art. No.	Pack Qty.	€
1-5	bulk-packed (bag), non-sterile	**AT51.1**	2 x 250	93,55
1-5	in rack, non-sterile	**AT52.1**	2 x 50	73,35

16 Standard MAKRO 1-5 ml

By Gilson Colourless. Length 148 mm. Suitable for Finnpipette® and Brand. Autoclavable.

Volume (ml)	Packaging	Art. No.	Pack Qty.	€
1-5	bulk-packed (box), non-sterile	**6946.1**	75	13,95
1-5	bulk-packed (bag), non-sterile	**6946.2**	500	51,50
1-5	in rack, non-sterile	**XP93.1**	1 x 50	25,45

17 Standard 0.5-5 ml

By Gilson Transparent. Length 160 mm. Suitable for Roth, Brand. CE-Identification (IVD). Autoclavable.

Volume (ml)	Packaging	Art. No.	Pack Qty.	€
0,5-5	bulk-packed (bag), non-sterile	**HL73.1**	200	24,30
0,5-5	in TipBox for 5 ml tips, non-sterile	**HL74.1**	1 x 28	43,70

18 Standard MAKRO 1-10 ml

By Gilson Colourless. Length 150 mm. Suitable for Socorex and Finnpipette®. Autoclavable.

Volume (ml)	Packaging	Art. No.	Pack Qty.	€
1-10	bulk-packed (bag), non-sterile	**E736.1**	100	38,85
1-10	in hinged lid rack, non-sterile	**PC77.1**	1 x 24	27,85

19 Standard MAKRO 1-10 ml

By Gilson Transparent. Length 156.5 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Sartorius. CE-Identification (IVD). Autoclavable.

Volume (ml)	Packaging	Art. No.	Pack Qty.	€
1-10	bulk-packed (bag), non-sterile	**HL75.1**	100	22,75
1-10	in TipBox for 10 ml tips, non-sterile	**HL76.1**	1 x 18	54,70

19a Standard MACRO 1-10 ml

By Gilson Colourless. Length 160 mm. Suitable for Gilson. Autoclavable.

Volume (ml)	Packaging	Art. No.	Pack Qty.	€
1-10	bulk-packed (bag), non-sterile	**HTA0.1**	200 (4 x 50)	45,60
1-10	rack, non-sterile	**HTA1.1**	1 x 30	114,70

Pipette tip coding

Pipette tip No.	Pipette tip designation	Pipette tip type	Catalogue page
1-19	**Standard**	Standard quality for general laboratory applications	463-465
20-27	**Pipette tips by Brand**	Pipette tips produced in a cleanroom environment	466
28-31	**Filter tips by Brand**	Pipette tips with aerosol filter produced in a cleanroom environment	467
32-42	**MpltiPrecision**	Pipette tips by Sorenson	468-469
43-54	**MpltiGuard**	Pipette tips by Sorenson with aerosol filter	470-471
55-62	**Mplti OneTouch**	Pipette tips by Sorenson with flexible stem	472
63-68	**MpltiFlex**	Gelloading pipette tips by Sorenson	473
69-70	**Cell Saver Tips**	Pipette tips with large opening	474

▶ To find appropriate tips for each pipettor and appropriate pipettors for every tip - refer to the fitting table on page 458

TipBox 5 ml / 10 ml

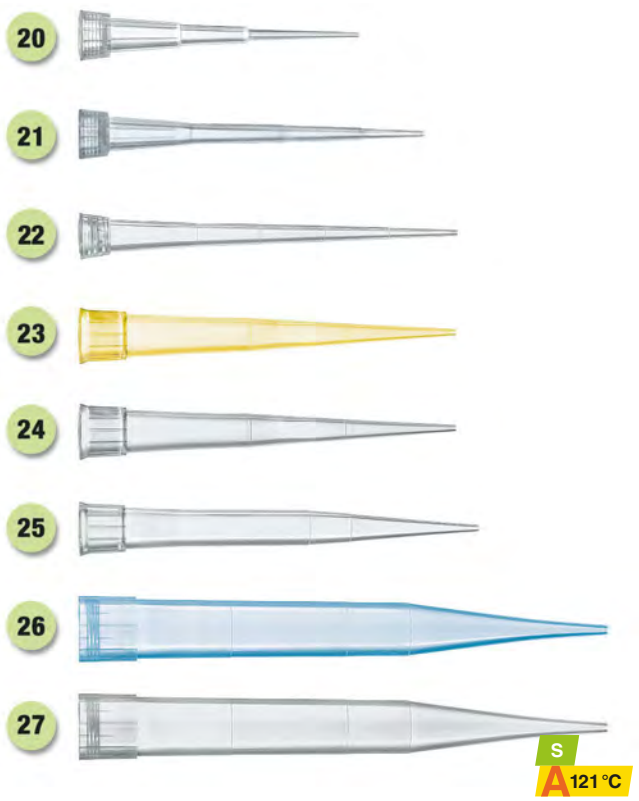
By Brand.

- Made of **PP**
- Non-sterile
- Round with lid
- For 5 ml or 10 ml pipettor tips
- Filled with pipettor tips (HL74.1 (17), HL76.1 (19))
- Autoclavable

Art. No.	Pack Qty.	€
HL74.1	1 x 28	43,70
HL76.1	1 x 18	54,70

Pipette tips, Brand

- **Sterile** or non-sterile.
- Produced in a cleanroom environment, automatically palletised and packaged
- High-quality polypropylene types, free of DiHEMDA and Oleamid
- Produced without plasticizer, cadmium-free colour pigments
- Graduated for quick volume identification
- **Palletised tips and filter tips free of DNA, RNases, endotoxins and ATP**
- **Sterile tips incl. BIO-CERT® grade packaging**: **sterile** in accordance with ISO 11 137 and AAMI guidelines, an SAL of 10^{-6} is guaranteed, with certificate
- Autoclavable at 121 °C (2 bar), acc. to DIN EN 285
- CE marked in accordance with IVD directive 98/79 EC



20 pipette tips Brand 0.1-20 µl

By Brand. Colourless. Length 37 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. Specially designed for nanoscale applications. CE mark (IVD). Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
0,1-20	Standard	bag-packed (bag), non-sterile	**AL17.1**	1000	32,15
0,1-20	Standard	palletised, non-sterile	**ALT4.1**	10 x 96	59,85
0,1-20	Standard	in TipBox, non-sterile	**HL65.1**	5 x 96	47,30
0,1-20	Standard	in TipBox, **sterile**	**ALT5.1**	10 x 96	107,40
0,1-20	Ultra Low Retention	in TipBox, non-sterile	**ALT6.1**	5 x 96	62,60
0,1-20	Ultra Low Retention	in TipBox, **sterile**	**ALT7.1**	10 x 96	120,40

21 Brand pipette tips 0.5-20 µl

By Brand. Colourless. Length 46 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
0,5-20	Standard	bag-packed (bag), non-sterile	**HKA4.1**	1000	30,65
0,5-20	Standard	palletised, non-sterile	**HKA5.1**	10 x 96	50,65
0,5-20	Standard	in TipBox, non-sterile	**HKA6.1**	5 x 96	45,15

22 pipette tips Brand 1-50 µl

By Brand. Colourless. Length 50 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 2.5 µl, 10, 25 and 50 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
1-50	Standard	bag-packed (bag), non-sterile	**ALT8.1**	1000	19,60
1-50	Standard	palletised, non-sterile	**ALT9.1**	10 x 96	55,65
1-50	Standard	in TipBox, non-sterile	**ALX0.1**	5 x 96	48,70
1-50	Standard	in TipBox, **sterile**	**ALX1.1**	10 x 96	105,30
1-50	Ultra Low Retention	in TipBox, non-sterile	**ALX2.1**	5 x 96	57,25
1-50	Ultra Low Retention	in TipBox, **sterile**	**ALX3.1**	10 x 96	123,65

23 pipette tips Brand 2-200 µl

By Brand. Yellow. Length 50 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 20 µl and 100 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
2-200	Standard	bag-packed (bag), non-sterile	**HL67.1**	1000	20,10

24 pipette tips Brand 2-200 µl

By Brand. Colourless. Length 50 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 20 µl and 100 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
2-200	Standard	palletised, non-sterile	**ALX4.1**	10 x 96	51,85
2-200	Standard	in TipBox, non-sterile	**HL68.1**	5 x 96	42,05
2-200	Standard	in TipBox, **sterile**	**ALX5.1**	10 x 96	98,10
2-200	Ultra Low Retention	in TipBox, non-sterile	**ALX6.1**	5 x 96	54,85
2-200	Ultra Low Retention	in TipBox, **sterile**	**ALX7.1**	10 x 96	112,90

25 pipette tips Brand 5-300 µl

By Brand. Colourless. Length 53 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 50 µl, 100 µl and 300 µl graduations for quick volume identification. Thin-walled tip, suitable for reverse pipetting. Ideal for working with multichannel pipettes. CE mark (IVD). Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
5-300	Standard	bag-packed (bag), non-sterile	**ALX8.1**	1000	23,25
5-300	Standard	palletised, non-sterile	**ALX9.1**	10 x 96	51,85
5-300	Standard	in TipBox, non-sterile	**ALY0.1**	5 x 96	46,80
5-300	Standard	in TipBox, **sterile**	**ALY1.1**	10 x 96	97,05
5-300	Ultra Low Retention	in TipBox, non-sterile	**ALY2.1**	5 x 96	54,85
5-300	Ultra Low Retention	in TipBox, **sterile**	**ALY3.1**	10 x 96	112,90

26 pipette tips Brand 50-1000 µl

By Brand. Blue. Length 70 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 250 µl, 500 µl and 1000 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
50-1000	Standard	bag-packed (bag), non-sterile	**HL70.1**	2 x 500	23,60
50-1000	Standard	bag-packed (bag), non-sterile	**HL70.2**	10 x 500	95,80

27 pipette tips Brand 50-1000 µl

By Brand. Colourless. Length 70 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 250 µl, 500 µl and 1000 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
50-1000	Standard	palletised, non-sterile	**ALY4.1**	10 x 96	52,80
50-1000	Standard	in TipBox, non-sterile	**HL71.1**	5 x 96	43,25
50-1000	Standard	in TipBox, **sterile**	**ALY5.1**	10 x 96	108,60
50-1000	Ultra Low Retention	in TipBox, non-sterile	**ALY6.1**	5 x 96	56,95
50-1000	Ultra Low Retention	in TipBox, **sterile**	**ALY7.1**	10 x 96	127,95

Ultra Low Retention pipette tips

The surfaces of the Ultra Low Retention tips by Brand are produced through a special, patented physicochemical process. The homogeneous, defect-free surfaces thus produced have extremely low surface tension - over 50 % less than PTFE. This significantly reduces sample loss and provides substantially higher reproducibility when working with critical medias.

- Ideal for biological samples that contain detergents such as Triton® X-100, SDS, Tween etc.
- No additives that can be leached out! No siliconisation of the surface!
- High chemical resistance. Ideal for working with solvents
- Autoclaved at 121 °C (2 bar) without any detrimental effect on material properties

Palletised pipette tips TipRacks

By Brand.
- Palletised pipette tips in refill units (TipRacks)
- Produces less waste than filled TipBoxes
- Tips and filter tips up to 1000 µl, free from DNA, RNase, endotoxins and ATP
- **Delivery incl.** transfer aid for easy transfer in TipBoxes

A 121 °C

TipBox

By Brand.
- Made of **PP**
- With flap-/slip lid
- Stackable
- Available in two different heights
- Low form for 96 tips max. 300 µl (HL65.1 (2), HL68.1 (9))
- Tall form for 100 tips max. 1000 µl or 1250 µl (HL71.1 (15))
- Filled with pipettor tips
- Autoclavable

Art. No.	Pack Qty.	€
HL65.1	5 x 96	47,30
HL68.1	5 x 96	42,05
HL71.1	5 x 96	43,25

Filter tips

Non-self sealing filter tips by Brand have a PE filter that is free from chemical additives. The combination of pore diameter and filter length prevents the passage of aerosols to the tip shaft. The filter reliably serves this function. On the other hand, a liquid can pass very slowly should it accidentally come into contact with the filter. Since the filter does not swell, the sample can be recovered from the filter by simply actuating the pipette's blow-out function, or by centrifugation if necessary.
This is a major advantage when working with valuable samples. An added advantage is that the sample is protected from contamination as the filter contains no additives!

Filter tips, Brand

28 filter tips Brand 0.1-1 µl

By Brand. Colourless. With PE filter. Length 37 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. Specially designed for nanoscale applications. CE mark (IVD). Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
0,1-1	Standard	bulk-packed (bag), non-sterile	**ALY8.1**	960	88,55
0,1-1	Standard	palletised, non-sterile	**ALY9.1**	10 x 96	112,90
0,1-1	Standard	in TipBox, **sterile**	**ANA0.1**	10 x 96	141,90
0,1-1	Ultra Low Retention	in TipBox, non-sterile	**ANA1.1**	5 x 96	79,15
0,1-1	Ultra Low Retention	in TipBox, **sterile**	**ANA2.1**	10 x 96	188,15

29 filter tips Brand 1-20 µl

By Brand. Colourless. With PE filter. Length 50 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. CE mark (IVD). Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
1-20	Standard	bulk-packed (bag), non-sterile	**ANA3.1**	960	83,65
1-20	Standard	palletised, non-sterile	**ANA4.1**	10 x 96	104,05
1-20	Standard	in TipBox, **sterile**	**ANA5.1**	10 x 96	134,40
1-20	Ultra Low Retention	in TipBox, non-sterile	**ANA6.1**	5 x 96	67,10
1-20	Ultra Low Retention	in TipBox, **sterile**	**ANA7.1**	10 x 96	156,95

30 filter tips Brand 5-200 µl

By Brand. Colourless. With PE filter. Length 50 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 20 µl and 100 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
5-200	Standard	bulk-packed (bag), non-sterile	**ANA8.1**	960	75,85
5-200	Standard	palletised, non-sterile	**ANA9.1**	10 x 96	92,05
5-200	Standard	in TipBox, **sterile**	**ANC0.1**	10 x 96	118,25
5-200	Ultra Low Retention	in TipBox, non-sterile	**ANC1.1**	5 x 96	66,45
5-200	Ultra Low Retention	in TipBox, **sterile**	**ANC2.1**	10 x 96	138,70

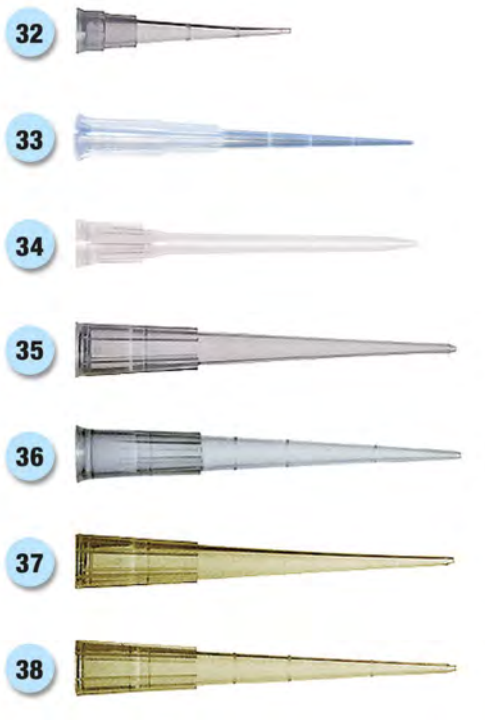
31 filter tips Brand 50-1000 µl

By Brand. Colourless. With PE filter. Length 70 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 250 µl, 500 µl and 100 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
50-1000	Standard	bulk-packed (bag), non-sterile	**ANC3.1**	960	96,40
50-1000	Standard	palletised, non-sterile	**ANC4.1**	10 x 96	112,90
50-1000	Standard	in TipBox, **sterile**	**ANC5.1**	10 x 96	136,55
50-1000	Ultra Low Retention	in TipBox, non-sterile	**ANC6.1**	5 x 96	73,55
50-1000	Ultra Low Retention	in TipBox, **sterile**	**ANC7.1**	10 x 96	147,30

Pipettor tips, Sorenson MµltiPrecision

- **Sterile** or non-sterile
- Positioning rings in tip neck for better grip on the pipettor
- Very high transparency
- Tapered tip
- **Free of RNAse/DNAse** and **pyrogens**
- **Free of human DNA** and **PCR inhibitors**
- Colourless tips free of metals and cadmium
- Autoclavable



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32 Mµlti® MICRO ULTRA G 0.1-10 µl

Colourless, graduated. Suitable for Brand, Eppendorf, Gilson, Roth, Sartorius, Socorex. Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
0,1-10	Standard	bulk-packed (bag), unsterile	**P866.1**	1000	26,85
0,1-10	Standard	Racks, unsterile	**P867.1**	10 x 96	66,05
0,1-10	Standard	Racks, **sterile**	**P868.1**	10 x 96	70,00
0,1-10	LowBinding	bulk-packed (bag), unsterile	**NL51.1**	1000	35,30
0,1-10	LowBinding	Racks, unsterile	**X590.1**	10 x 96	65,50
0,1-10	LowBinding	Rack, **sterile**	**PC91.1**	10 x 96	71,50

33 Mµlti® Long Reach 0.1-10 µl

Colourless, graduated. Length 45.1 mm. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Roth, Sartorius, Socorex. Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
0,1-10	Standard	bulk-packed (bag), non-sterile	**KP26.1**	1000	28,50
0,1-10	Standard	Racks, non-sterile	**KP27.1**	10 x 96	60,85
0,1-10	Standard	Racks, **sterile**	**KP28.1**	10 x 96	69,85

34 Mµlti® CRYSTAL 0.5-10 µl

Colourless. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Roth, Sartorius, Socorex. Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
0,5-10	Standard	bulk-packed (bag), non-sterile	**2393.1**	1000	28,30
0,5-10	Standard	Racks, non-sterile	**8144.1**	10 x 96	73,65
0,5-10	Standard	Racks, **sterile**	**8148.1**	10 x 96	80,55
0,5-10	LowBinding	bulk-packed (bag), non-sterile	**NL52.1**	1000	33,30
0,5-10	LowBinding	Racks, non-sterile	**X591.1**	10 x 96	65,50
0,5-10	LowBinding	Rack, **sterile**	**PC92.1**	10 x 96	72,35

35 Mµlti® UNIVERSAL 1-200 µl

Colourless. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Vol.(µl)	Design	Packaging	Art. No.	Pack Qty.	€
1-200	Standard	bulk-packed (bag), non-sterile	**7058.1**	1000	17,10
1-200	Standard	Racks, non-sterile	**8151.1**	10 x 96	46,05
1-200	Standard	Racks, **sterile**	**8154.1**	10 x 96	55,70

36 Mµlti® UNIVERSAL 1-200 µl

Colourless, graduated. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Roth, Sartorius, Socorex. Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
1-200	Standard	bulk-packed (bag), non-sterile	**PP71.1**	1000	25,20
1-200	Standard	Racks, non-sterile	**EC33.1**	10 x 96	45,70
1-200	Standard	Racks, **sterile**	**EL96.1**	10 x 96	54,65
1-200	LowBinding	bulk-packed (bag), non-sterile	**NL53.1**	1000	28,50
1-200	LowBinding	Racks, non-sterile	**X592.1**	10 x 96	49,25
1-200	LowBinding	Rack, **sterile**	**PC93.1**	10 x 96	59,15

37 Mµlti® UNIVERSAL 1-200 µl

Yellow. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Roth, Sartorius, Socorex. Autoclavable.

Vol.(µl)	Design	Packaging	Art. No.	Pack Qty.	€
1-200	Standard	bulk-packed (bag), non-sterile	**8156.1**	1000	16,05
1-200	Standard	Racks, non-sterile	**8157.1**	10 x 96	45,90
1-200	Standard	Racks, **sterile**	**8159.1**	10 x 96	50,65

38 Mµlti® UNIVERSAL 1-200 µl

Yellow, graduated. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Vol. (µl)	Design	Packaging	Art. No.	Pack Qty.	€
1-200	Standard	bulk-packed (bag), non-sterile	**E707.1**	1000	25,40
1-200	Standard	Racks, non-sterile	**NL55.1**	10 x 96	45,15
1-200	Standard	Racks, **sterile**	**NL56.1**	10 x 96	51,20

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Mµlti®-Racks

By Sorenson.
- With slip lid
- Stackable
- Empty
- Autoclavable

Art. No.	Pack Qty.	€
T688.1	10	32,95

Pipettor tips, Sorenson Mµlti®Precision

- **Sterile** or non-sterile
- Positioning rings in tip neck for better grip on the pipettor
- Very high transparency
- Tapered tip
- **Free of RNAse/DNAse** and **pyrogens**
- **Free of human DNA** and **PCR inhibitors**
- Colourless tips free of metals and cadmium
- Autoclavable

39 MµlTi® UNIVERSAL 1-300 µl

Transparent. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
1-300	Standard	bulk-packed (bag), non-sterile	**KC07.1**	1000	22,00
1-300	Standard	Racks, non-sterile	**KC08.1**	10 x 96	45,50
1-300	Standard	Racks, **sterile**	**KC09.1**	10 x 96	54,50

40 MµlTi® UNIVERSAL 100-1000 µl

Colourless. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
100-1000	Standard	bulk-packed (bag), non-sterile	**8163.1**	1000	25,60
100-1000	Standard	Racks, non-sterile	**8164.1**	10 x 100	54,75
100-1000	Standard	Racks, **sterile**	**8165.1**	10 x 100	65,40
100-1000	LowBinding	bulk-packed (bag), non-sterile	**NL54.1**	1000	29,05
100-1000	LowBinding	Racks, non-sterile	**X594.1**	10 x 100	58,30
100-1000	LowBinding	Rack, **sterile**	**PC94.1**	10 x 100	63,55

41 MµlTi® UNIVERSAL 100-1000 µl

Blue. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
100-1000	Standard	bulk-packed (bag), non-sterile	**8160.1**	1000	27,20
100-1000	Standard	Racks, non-sterile	**8161.1**	10 x 100	53,70
100-1000	Standard	Racks, **sterile**	**8162.1**	10 x 100	61,25

42 MµlTi® UNIVERSAL 50-1250 µl

Colourless, graduated. Length 103 mm. Suitable for Eppendorf, Finnpipette®, Gilson, Oxford, Sartorius. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
50-1250	Standard	bulk-packed (bag), non-sterile	**NL57.1**	768	25,65
50-1250	Standard	Hinged lid racks, non-sterile	**EL23.1**	8 x 96	62,30
50-1250	Standard	Hinged lid racks, **sterile**	**EL24.1**	8 x 96	80,10

The pipette tip fitting tables for all microlitre pipettor models can be found on pages 448-459.

Fitting information is provided as general recommendations.
It is recommended that a check be made by the user.
Pipette tip samples are available on request.

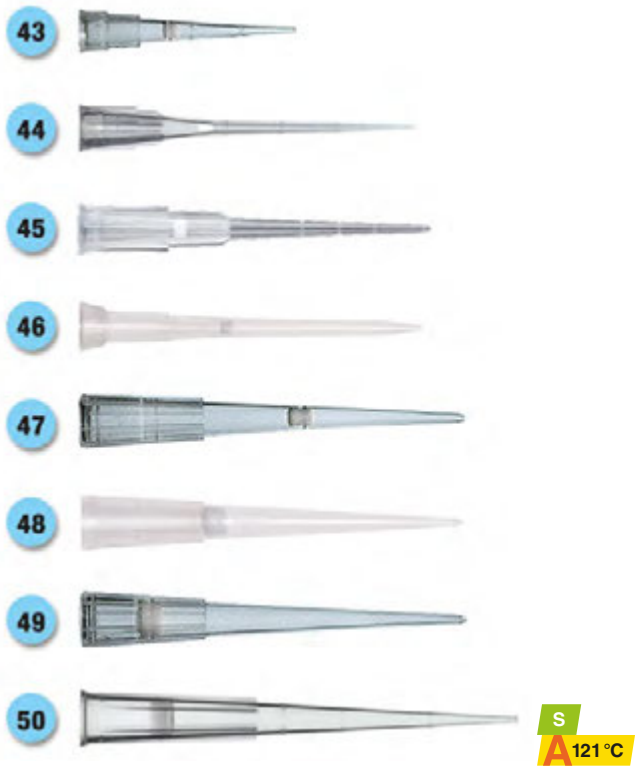
MµltiLowBinding® pipettor tips

- **Surface optimized** through **LowBinding polymer coating** for minimum sample adhesion
- Maximum accuracy on quantitive analysis **minimizes sample loss** and reduces absolute error
- Chemically resistant coating
- Loseless pipetting of DNA, peptides, proteins, highly viscous samples
- Without the use of disruptive silicones

Conventional tip **LowBinding tip**

Filtertips, Sorenson MµltiGuard®-tips

- **Sterile**
- Specially developed **hydrophobic membranes for protection against contamination** from bio-hazardous, toxic or radioactive substances
- Made of completely inert material - to eliminate "incorrect signals" during PCR experiments
- **Free of RNAse/DNAse** and **pyrogens**
- **Free of human DNA** and **PCR inhibitors**
- Autoclavable



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43 MµltiGuard® tips 0.1-10 µl

Colourless, with aerosol filter, graduated. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
0,1-10	Standard	Racks, **sterile**	**T613.1**	10 x 96	76,35
0,1-10	LowBinding	Racks, **sterile**	**X595.1**	10 x 96	96,25

44 MµltiGuard® tips 0.1-10 µl

Colourless, graduated. Extra long. With aerosol filter. Length 45 mm. Suitable for Eppendorf, Finnpipette®, Gilson, Oxford, Sartorius. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
0,1-10	Standard	Hinged lid rack, **sterile**	**EL28.1**	10 x 96	79,50

45 MµltiGuard® tips 0.1-10 µl

Colourless, with aerosol filter, graduated, long. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
0,1-10	Standard	Racks, **sterile**	**Y816.1**	10 x 96	91,95

46 MµltiGuard® tips 0.5-10 µl

Colourless, with aerosol filter. Suitable for Brand, Eppendorf, Gilson, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
0,5-10	Standard	Racks, **sterile**	**A567.1**	10 x 96	82,80
0,5-10	LowBinding	Racks, **sterile**	**X596.1**	10 x 96	96,25

47 MµltiGuard® tips 1-20 µl

Colourless, with aerosol filter. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
1-20	Standard	Racks, **sterile**	**9770.1**	10 x 96	82,80
1-20	LowBinding	Racks, **sterile**	**X597.1**	10 x 96	96,25

48 MµltiGuard® tips 1-100 µl

Colourless, with aerosol filter. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
1-100	Standard	Racks, **sterile**	**XC78.1**	10 x 96	87,10

49 MµltiGuard® tips 1-200 µl

Colourless, with aerosol filter. Suitable for Finnpipette®, Oxford, Sartorius. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
1-200	Standard	Racks, **sterile**	**9771.1**	10 x 96	82,80

50 MµltiGuard® NX 1-200 µl

Colourless, graduated. With aerosol filter. Length 59 mm.
Suitable for Eppendorf, Finnpipette®, Gilson, Oxford. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
1-200	LowBinding	Racks, **sterile**	**EL27.1**	10 x 96	104,85

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Mµlti®-hinged lid racks

By Sorenson.
- With hinged lid
- Stackable
- Empty, for tips 10/200 µl
- Autoclavable

Art. No.	Pack Qty.	€
T689.1	10	32,95

Filtertips, Sorenson MµltiGuard®-tips

- **Sterile**
- Specially developed **hydrophobic membranes for protection against contamination** from bio-hazardous, toxic or radioactive substances
- Made of completely inert material - to eliminate "incorrect signals" during PCR experiments
- **Free of RNAse/DNAse** and **pyrogens**
- **Free of human DNA** and **PCR inhibitors**
- Autoclavable

51 MµltiGuard® tips 1-300 µl

Colourless, graduated, with aerosol filter. Length 77 mm. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Sartorius. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
1-300	Standard	Racks, **sterile**	**KL03.1**	10 x 96	95,90
1-300	LowBinding	Racks, **sterile**	**KL04.1**	10 x 96	101,95

52 MµltiGuard® tips 1-200 µl

Colourless, graduated. With aerosol filter. Length 77,8 mm. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
1-200	Standard	Racks, **sterile**	**H698.1**	10 x 96	79,50
1-200	LowBinding	Rack, **sterile**	**X599.1**	10 x 96	96,25

53 MµltiGuard® tips 100-1000 µl

Colourless, with aerosol filter. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
100-1000	Standard	Racks, **sterile**	**9773.1**	10 x 100	82,80
100-1000	LowBinding	Rack, **sterile**	**X601.1**	10 x 100	96,25

54 MµltiGuard®-tips 50-1250 µl

Colourless, graduated. With aerosol filter. Length 102 mm. Suitable for Eppendorf, Finnpipette®, Gilson, Oxford, Sartorius. Autoclavable.

Volume (µl)	Design	Packaging	Art. No.	Pack Qty.	€
50-1250	Standard	Hinged lid racks, **sterile**	**EL25.1**	8 x 96	81,70

The pipette tip fitting tables for all microlitre pipettor models can be found on pages 448-459.

Fitting information is provided as general recommendations.
It is recommended that a check be made by the user.
Pipette tip samples are available on request.

MµltiLowBinding® pipettor tips

- **Surface optimized** through **LowBinding polymer coating** for minimum sample adhesion
- Maximum accuracy on quantitive analysis **minimizes sample loss** and reduces absolute error
- Chemically resistant coating
- Loseless pipetting of DNA, peptides, proteins, highly viscous samples
- Without the use of disruptive silicones

Conventional tip **LowBinding tip**

Pipettor tips, Sorenson MµLti® OneTouch

Only one tip required for numerous pipettor models

- **Sterile** or non-sterile
- **Elastic shaft** made of TPE, rigid body made of PP
- Graduated
- Tips in plastic rack are autoclavable
- **RNase-/DNase-** and **pyrogen-free**
- **Free of human DNA** and **PCR inhibitors**
- With or without **aerosol filter**

55 MµLti® OneTouch 0.1-3 µl

Green shaft. Compatible with numerous commonly available pipette models.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
0,1-3	Plastic rack, non-sterile	**HAT9.1**	10 x 96	55,80
0,1-3	Plastic rack, **sterile**	**HAX0.1**	10 x 96	57,85

56 MµLti® OneTouch 0.1-20 µl

Red shaft. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Roth, Sartorius, Socorex.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
0,1-20	Plastic rack, non-sterile	**KT09.1**	10 x 96	60,55
0,1-20	Plastic rack, **sterile**	**KT10.1**	10 x 96	64,40
0,1-20	Cardboard rack, **sterile**	**KT11.1**	10 x 96	64,40

57 MµLti® OneTouch 1-350 µl

Yellow shaft. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Roth, Sartorius, Socorex.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
1-350	Plastic rack, non-sterile	**KP90.1**	10 x 96	60,55
1-350	Plastic rack, **sterile**	**KP91.1**	10 x 96	64,40
1-350	Cardboard rack, **sterile**	**KP92.1**	10 x 96	64,40

58 MµLti® OneTouch 50-1250 µl

Blue shaft. Suitable for Eppendorf, Finnpipette®, Gilson, Sartorius, Socorex.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
50-1250	Plastic rack with hinged lid, non-sterile	**KT14.1**	8 x 96	60,55
50-1250	Plastic rack with hinged lid, **sterile**	**KT15.1**	8 x 96	64,40
50-1250	Cardboard rack, **sterile**	**KT16.1**	12 x 64	71,95

59 MµLti® OneTouch 0.1-3 µl

Green shaft with aerosol filter. Compatible with numerous commonly available pipette models.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
0,1-3	Plastic rack, **sterile**	**HAX1.1**	10 x 96	93,00

60 MµLti® OneTouch 0.1-20 µl

Red shaft with aerosol filter. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Roth, Sartorius, Socorex.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
0,1-20	Plastic rack, **sterile**	**KT12.1**	10 x 96	107,40
0,1-20	Cardboard rack, **sterile**	**KT13.1**	10 x 96	107,40

61 MµLti® OneTouch 1-350 µl

Yellow shaft with aerosol filter. Suitable for Brand, Eppendorf, Finnpipette®, Roth, Sartorius, Socorex.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
1-350	Plastic rack, **sterile**	**KP93.1**	10 x 96	107,40
1-350	Cardboard rack, **sterile**	**KP94.1**	10 x 96	107,40

62 MµLti® OneTouch 50-1250 µl

Blue shaft with aerosol filter. Suitable for Eppendorf, Finnpipette®, Gilson, Sartorius, Socorex.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
50-1250	Plastic rack with hinged lid, **sterile**	**KT17.1**	8 x 96	107,40
50-1250	Cardboard rack, **sterile**	**KT18.1**	12 x 64	107,40

Ecological cardboard box racks

- Cardboard raw material from sustainable forestry
- Ink print on a soja base
- Used racks can be folded, easy to recycle
- Reduce plastic waste

Pipettor tips, Sorenson MµltiMiniFlex®-tips, MµltiFlex®-tips

- **Sterile** or non-sterile
- Suitable for **loading SDS page protein gels, horizontal agarose** and **DNA sequencing gels**
- Precise pipetting of minute samples at the lower end of the micron range (restriction enzyme digestion, nick translation, enzyme assay, immune precipitation and DNA sequencing reaction)
- For checking the precision of pipettors: (63)-(65) graduation with 2 µl, (66)-(68) graduation of 5 µl
- **Free of RNAse/DNAse** and **pyrogens**
- **Free of human DNA** and **PCR inhibitors**
- Autoclavable

63 MµltiMiniFlex® tips 0,1-10 µl

Colourless, round. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
0,1-10	Rack	**A569.1**	200	33,15
0,1-10	Rack, sterile	**NL58.1**	200	35,70

64 MµltiMiniFlex® tips 0.1-10 µl

Colourless, flat 0.4 mm. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Sartorius, Socorex. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
0,1-10	Racks, unsterile	**A570.1**	200	65,60

65 MµltiMiniFlex® tips 0.1-10 µl

Colourless, flat 0.2 mm. Suitable for Eppendorf, Finnpipette®, Gilson, Oxford, Sartorius, Socorex. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
0,1-10	Racks, unsterile	**A571.1**	200	89,80

66 MµltiFlex®-tips 1-200 µl

Colourless, round. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
1-200	bulk-packed (bag)	**Y419.1**	1000	46,25
1-200	Rack, non-sterile	**6144.1**	200	34,20
1-200	Rack, sterile	**NL60.1**	200	38,60

67 MµltiFlex®-tips 1-200 µl

Colourless, flat 0.4 mm. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
0,5-200	Racks, non-sterile	**6128.1**	200	65,05

68 MµltiFlex®-tips 1-200 µl

Colourless, flat 0.2 mm. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Roth, Sartorius, Socorex. Autoclavable.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
0,5-200	Racks, non-sterile	**6124.1**	200	87,65

The pipette tip fitting tables for all microlitre pipettor models can be found on pages 448-459.

Fitting information is provided as general recommendations.
It is recommended that a check be made by the user.
Pipette tip samples are available on request.

Cell-Saver Tips
Pipettor tips
with large opening

- Made of **PP**
- **Sterile** or non-sterile
- With extra-large opening for the protection of cells
- Suitable for pipetting of suspensions or for viscous liquids
- With or without **aerosol filter**
- **RNase/DNase free**
- **Filter tips free of human DNA, pyrogen free**
- Autoclavable

69 Cell-Saver 1-200 µl

Colourless. Suitable for Roth, Brand, Eppendorf, Gilson.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
1-200	bulk-packed (bag), non-sterile	**AEA9.1**	1000	41,60

70 Cell-Saver 100-1000 µl

Colourless, **with aerosol filter**. Suitable for Eppendorf, Finnpipette®, Gilson, Rainin®, Sartorius.

Volume (µl)	Packaging	Art. No.	Pack Qty.	€
100-1000	Racks, **sterile**	**CHC6.1**	6 x 96	88,70

Gel Cutting Tips
Pipette tips
for cloning applications

- Made of **PP**
- For cutting DNA or protein bands out of agarose or SDS-PAGE gels
- Suitable for most commonly available 1000 µl pipettes
- Ideal for precision cutting of protein bands, which can be transferred to a reaction vial using a pipette plunger
- **RNase/DNase free**
- Autoclavable

71 Gel Cutting Tips 4 x 1 mm

Colourless.

Packaging	Art. No.	Pack Qty.	€
bulk-packed (bag), non-sterile	**CHA9.1**	250	175,25
in rack, non-sterile	**CHC0.1**	5 x 48	356,90

72 Gel Cutting Tips 6.5 x 1 mm

Colourless.

Packaging	Art. No.	Pack Qty.	€
bulk-packed (bag), non-sterile	**CHC1.1**	250	175,25
in rack, non-sterile	**CHC2.1**	5 x 48	356,90

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MµltI®-Tip stations

By Sorenson. 5-tier pipettor tip station made of **PP**.
Ideal for loading multichannel pipettors.

- 960 pipettor tips in one MµltI®-Tip station
- Each with 2 x 96 (=192) pipettor tips per tier
- Lid can be placed over half of tier (96 tips) to avoid any risk of contamination
- Made of 100 % recycling plastic
- Space-saving

Models:
- **Sterile** or non-sterile
- MµltI®Precision® quality
- MµltiLowBinding®-pipettor tip quality
- Graduated
- Volume range: 0.1-10 µl and 1-200 µl

Vol. (µl)	Type	Design	Art. No.	Pack Qty.	€
0,1-10	MµltiLowBinding®, colourless, extra long	**sterile**	**EL29.1**	5 x 960	214,50
0,1-10	MµltI®Precision®, colourless, extra long	non-sterile	**EL30.1**	5 x 960	194,60
1-200	MµltI®Precision®, yellow	**sterile**	**EL33.1**	5 x 960	184,90
1-200	MµltI®Precision®, yellow	non-sterile	**EL34.1**	5 x 960	184,90

A 121 °C

Platinum Reload System
Refill systems for pipettor tips

By Sorenson. Pipettor tips in pre-assembled inserts. Easy to use: transfer the inserts with tips into the empty rack, and the tips are ready for use. Top quality MµltI-Precision. Reusable racks with hinged lid, stackable. Free of human DNA and PCR inhibitors, RNase/DNase free and pyrogen free. Autoclavable.

Starter Kits Reload System
Delivery incl. Reload System and 10 racks (8 racks for PK21.1).

Type	Art. No.	Pack Qty.	€
0.1-10 µl (tip No. 32)	**PK18.1**	10 x 96	59,15
1-200 µl (tip No. 37, yellow)	**PK19.1**	10 x 96	56,65
1-200 µl (tip No. 38, colourless)	**NL65.1**	10 x 96	53,65
1-300 µl (tip No. 39	**PK20.1**	10 x 96	75,15
50-1250 µl (tip No. 42)	**PK21.1**	8 x 96	63,35

Refill sets Platinum Reload System

Type	Art. No.	Pack Qty.	€
0.1-10 µl (tip No. 32)	**PK22.1**	4 x 960	134,40
1-200 µl (tip No. 37, yellow)	**PK23.1**	4 x 960	122,55
1-200 µl (tip No. 38 colourless)	**NL66.1**	4 x 960	121,50
1-200 µl (tip No. 35, colourless, LowBinding)	**NL67.1**	4 x 960	138,70
1-300 µl (tip No. 39)	**PK24.1**	4 x 960	160,20
50-1250 µl (tip No. 42)	**PK25.1**	4 x 768	176,30

A 121 °C

MµltI®-QuickRack Transfer System

By Sorenson. **Refill system for pipettor tips**

For filling empty racks with 96 pipettor tips. Simply place the transfer plate in the top layer of the tips, lift the tips and place them into the available rack - now they're ready. Tips are autoclavable and RNase/DNase-free.

Type	Art. No.	Pack Qty.	€
QuickRack 0.1-10 µl MIKRO colourless (Tip No. 31)	**NL61.1**	10 x 96	36,25
QuickRack 0.1-10 µl colourless (Tip No. 32)	**KP34.1**	10 x 96	37,85
QuickRack with tips 1- 200 µl colourless (Tip No. 34)	**T686.1**	10 x 96	32,45
QuickRack with tips 1- 200 µl yellow (Tip No. 36)	**T687.1**	10 x 96	32,45
Standard boxes, empty	**T688.1**	10	32,95
Racks with hinged lid, empty	**T689.1**	10	32,95

A 121 °C

MµltI®-hinged lid racks

By Sorenson.
- With hinged lid
- Stackable
- Empty, for tips 10/200 µl
- Autoclavable

Art. No.	Pack Qty.	€
T689.1	10	32,95

Pipettor tip overview table

Suitable refill boxes for pipettor tips at a glance!

Other boxes for pipette tips are listed under the respective tip types.

Boxes for pipettor tips, empty		Suitable pipettor tips (Tip-No.)								
Box name	**Art. No. Box + insert**	1	2	3	4 5 6	20	32	33	34	35 37 38
Multibox with transfer racks 10/200 µl	2681.1 + H609.1	x	x	x	x	x	x		x	
MµlTi®-Racks with slip lid, 10/200 µl	T688.1	x		x	x	x	x	x		x
MµlTi®-Racks with hinged lid, 10/200 µl	T689.1	x		x	x	x	x	x		x

Boxes für pipettor tips, filled		Suitable pipettor tips (Tip no.)												
Box name	**Art. No.**	1 2	3	8	15	17	19	20	23	26	32	35 37 38	40 41	66
TipBox (low form), 20 µl	HL65.1	x						x			x			
TipBox (low form), 200 µl	HL68.1		x						x			x		
Rack for Mµltiflex-tips 200 µl	6144.1													x
Rack for tips 350 µl	AT50.1			x										
TipBox (high Form), 1000 µl	HL71.1									x				
MµlTi®-Rack with slip lid, 1000 µl	8161.1, 8162.1												x	
TipBox 5 ml	HL74.1					x								
TipBox 10 ml	HL76.1						x							
Rack for tips 5 ml	AT52.1				x									

A 121 °C

Rotilabo®-Multibox

Made of **PC**.
- Without rack insert
- With sliding lid
- For pipettor tips in racked insert or MultiTray-insert
- Temperature stable from -135 to +125 °C
- Stackable
- Dimensions: 12 x 7.5 x 9 cm
- Repeatedly autoclavable

Art. No.	Pack Qty.	€
2681.1	1	18,25

Rack inserts for Rotilabo®-Multibox

Made of **PP**, empty. For tips 0.1-10 µl and 0.1-200 µl (format 8 x 12).

Art. No.	Pack Qty.	€
H609.1	5	9,15

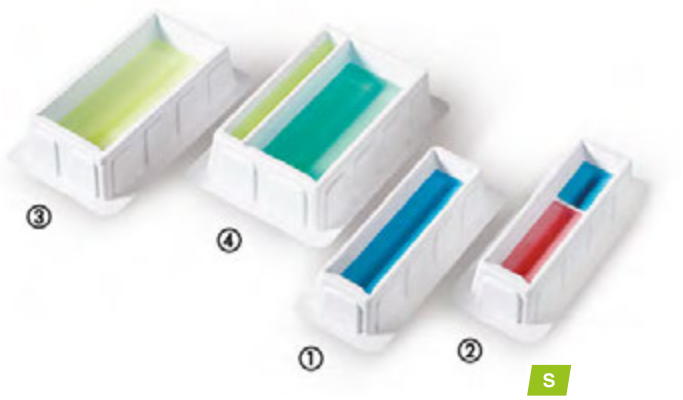
A 121 °C

MµlTi®-Racks

By Sorenson.
- With slip lid
- Stackable
- Empty, for tips 10/200 µl
- Autoclavable

Art. No.	Pack Qty.	€
T688.1	10	32,95

Reagent reservoirs



S

Single-use reagent reservoir

- Made of **PS**, colour: white
- **Sterile** or non-sterile
- With conical overflow channel on base for minimal reagent loss
- Graduated volume markings on the inner wall
- Reinforced side walls and wider base for better stability

Volume: 25 ml

Image	Design	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
①	non-sterile	146 x 57 x 26	**CYN5.1**	100 (10 x 10)	85,50
①	**sterile**	146 x 57 x 26	**HT65.1**	100 (10 x 10)	96,65
①	**sterile**, 1 per pack	146 x 57 x 26	**HT66.1**	50 (50 x 1)	91,40
②	subdivided, non-sterile	146 x 57 x 26	**CYN4.1**	100 (10 x 10)	85,50
②	subdivided, **sterile**	146 x 57 x 26	**HT67.1**	100 (10 x 10)	96,25
②	subdivided, **sterile**, 1 per pack	146 x 57 x 26	**HT68.1**	50 (50 x 1)	84,85

Volume: 100 ml

Image	Design	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
③	non-sterile	146 x 83 x 32	**CYN6.1**	100 (10 x 10)	138,70
③	**sterile**	146 x 83 x 32	**HT69.1**	100 (10 x 10)	116,10
③	**sterile**, 1 per pack	146 x 83 x 32	**HT70.1**	50 (50 x 1)	100,85
④	with side 20 ml reservoir, **sterile**	146 x 102 x 32	**HT71.1**	100 (10 x 10)	112,90

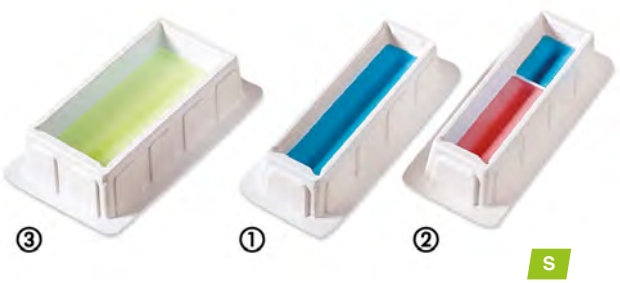
S

Single-use reagent reservoir

Made of **PS**. **Sterile** or non-sterile.

- Compatible with 8 and 12-channel pipettes
- Robust design for safe handling
- V-shaped base for non-loss pipetting
- Graduations on the inside wall
- Spouts at the corners
- **RNase-/DNase free, pyrogen-free**

Volume (ml)	Design	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
25	non-sterile	147 x 61 x 25	**EKT6.1**	100	36,90
25	**sterile**	147 x 61 x 25	**EKT7.1**	100 (20 x 5)	45,50
25	**sterile**	147 x 61 x 25	**EKT8.1**	50 (50 x 1)	32,60
50	non-sterile	147 x 76 x 28	**EKT9.1**	100	39,00
50	**sterile**	147 x 76 x 28	**EKX0.1**	100 (20 x 5)	49,90
50	**sterile**	147 x 76 x 28	**EKX1.1**	50 (50 x 1)	34,75
100	non-sterile	147 x 80 x 32	**EKX2.1**	100	41,20
100	**sterile**	147 x 80 x 32	**EKX3.1**	100 (20 x 5)	51,80
100	**sterile**	147 x 80 x 32	**EKX4.1**	50 (50 x 1)	36,90



S

Single-use reagent reservoirs Bio-pure™

- Made of **biodegradable PET**, colour: white
- **Sterile**
- With conical overflow channel on base for minimal reagent loss
- Reinforced side walls and wider base for better stability
- Model ② is suitable for 4 and 8 channel pipettes through partitions

Image	Vol. (ml)	Design	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
①	25	10 per pack	146 x 57 x 26	**AXC7.1**	100	93,45
②	25	subdivided, 10 per pack	146 x 57 x 26	**AXC8.1**	100	93,45
③	100	10 per pack	146 x 83 x 32	**AXC9.1**	100	121,50

S

Rotilabo®-liquid reservoirs

Sterile (individually wrapped) or non-sterile. With special design for 4, 8 and 12 channel pipettors. The bevelled sides and V-shaped base enable almost total withdrawal of liquid. Sterile vessels are individually wrapped. **Sterile designs are DNAse/RNase-free and non-pyrogenic.**

Volume (ml)	Material	Design	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
55	PVC	non-sterile	143 x 70 x 25	**E830.2**	100	96,25
55	PS	**sterile**	143 x 70 x 25	**E831.2**	80	175,25

Reagent reservoirs

Reagent reservoirs

Made from transparent **PP**. **Sterile** or non-sterile.
- Volume: 175 ml
- With graduations of 25, 50, 75, 100, 125 and 150 ml
- Good stability
- Reusable
- Compatible with 8 and 12 channel pipettes
- Removable lids, easy to open
- Autoclavable

Type	Design	Art. No.	Pack Qty.	€
with lid	**sterile**	**APX0.1**	100 (20 x 5)	203,20
with lid	non-sterile	**APX1.1**	100 (10 x 10)	144,05
without lid	**sterile**	**APX2.1**	100 (20 x 5)	178,45
without lid	non-sterile	**APX3.1**	100 (10 x 10)	120,40

Reagent reservoir for 8-channel pipettors

Made of **PS**, colour: white. Single compartments with round base for minimal reagent loss. Capacity per well approx. 7 ml.

Art. No.	Pack Qty.	€
NA12.1	100	79,45

Multi-channel pipettor Trifill reservoirs

Made of **PP**, white. Autoclavable. Trifill is a combination of three reservoir units. With V-shaped, graduated liquid container, volume max. 50 ml, and 8- and 12-space liquid reservoirs.

Max. filling capacity of 5 ml per numbered, V-shaped chamber.

Art. No.	Pack Qty.	€
AA87.1	10	37,95

Reagent reservoir for 8/12-channel pipettes

Made of **PP**. **Sterile** or non-sterile, individually packed.
With 12 numbered, V-shaped wells. Capacity per well approx. 5 ml.
Temperature stable from -80 to +121 °C. Autoclavable.
Delivery incl. lid.

Design	Art. No.	Pack Qty.	€
sterile	**EKT4.1**	20	36,95
non-sterile	**EKT5.1**	50	49,90

▶ Multi-channel pipettors see page 449

S

Microtitration plates BRAND*plates*®

By Brand. Manufactured in accordance with ANSI/SBS standards 1 to 4 - 2004 to ensure compatibility when carrying out manual processes and, in particular, automatic processes.

- 96 well standard format
- Clearly distinguishable by embossed alphanumeric colour code: grey for standard plates, blue for immunology, orange for the cell culture
- **Free of endotoxins, DNase, DNA, RNase, non-cytotoxic**

Microtiter plates pureGrade™ S

Made of transparent **PS**. Untreated surface.

- **Sterile** (individually packed, with cover) or non-sterile
- Chimney shaped 96 well cavities, with alphanumeric labelling
- F profile (flat bottom shape) for precision optical measurements
- Sterile type is ideal for bacteriological assays
- Non-sterile type designed, in particular, for homogeneous assays, screenings and storage

Volume per well (µl)	Type	Art. No.	Pack Qty.	€
350	F-profile, **sterile**	**XT64.1**	50	126,85
350	F-profile, non-sterile	**CNP7.1**	100	104,60

Microtitration plates immunoGrade™

Made of **PS**. For optimal binding of IgG.

- Non-sterile
- Highest binding capacity for molecules with hydrophilic and hydrophobic regions
- Ideal surface for most standard ELISA assays
- Suitable for solid phase immunoassays
- Equivalent to high-binding products from other manufacturers

Volume per well (µl)	Type	Art. No.	Pack Qty.	€
350	transparent, F-bottom	**XT66.1**	100	170,95
330	white, U-bottom	**XT67.1**	100	333,25
350	white, C-bottom	**XT68.1**	100	307,45
330	black, U-bottom	**XT69.1**	100	333,25
350	black, C-bottom	**XT70.1**	100	307,45
330	black, transparent F-bottom	**XT71.1**	100	827,75

Microtitration plates pureGrade™ UV

Made of **UV polymer**, slightly hydrophilised. **PS** frame.

- Non-sterile
- Bottom: UV-transparent film, wall thickness 25 µm
- Transmission at 240 nm is 80 %
- Suitable for the determination of nucleic acid and protein concentrations (at 260 and 280 nm respectively)

Volume per well (µl)	Type	Art. No.	Pack Qty.	€
350	F-bottom	**XT65.1**	50	705,20

Microtitration plates cellGrade™

Made of **PS**.

- **Sterile** (individually packed, with cover)
- Standard plate for cultivating adherent cell cultures
- PS surface with various freely accessible chemical groups, e.g. carboxyl and hydroxyl groups
- Surface is hydrophilic (untreated PS is non-hydrophilic)
- Serum constituents are bound to the free chemical groups which allow indirect adhesion of cells

Volume per well (µl)	Type	Art. No.	Pack Qty.	€
350	transparent, F-bottom	**CNP6.1**	50	146,20
350	white, F-bottom	**XT72.1**	50	267,70
350	black, F-bottom	**XT73.1**	50	267,70
330	white, with transparent F-bottom	**XT74.1**	50	643,95
330	black, with transparent F-bottom	**XT75.1**	50	643,95

Microtitration plates, inertGrade™

Made of **PS**.

- **Sterile** (individually packed, with cover)
- Suitable for cultivating suspension cell cultures
- Ideal for cell cultures if cell adhesion is to be avoided
- Optimised surface properties minimise cell binding, protein absorption, enzyme activation and cellular activation
- This allows, for example, premature differentiation of stem cells to be inhibited

Volume per well (µl)	Type	Art. No.	Pack Qty.	€
330	96 well, transparent, U-bottom	**XT76.1**	40	493,45
350	96 well, transparent, F-bottom	**XT77.1**	40	493,45

Covers for microtitration plates BRAND*plates*®

By Brand. Made of transparent **PS**. Non-sterile.
For protection against contamination and evaporation.
Type 1, for 96 well standard plates
Type 2, for microtitration plates with transparent bottom, pureGrade™.

Type	Condensation rings	Height (mm)	Art. No.	Pack Qty.	€
1	Yes	8	**XT79.1**	100 (20 x 5)	73,80
1	No	8	**XT80.1**	100 (20 x 5)	74,00
2	No	4,5	**XT81.1**	50 (5 x 10)	71,55

Overview of microtitration plates BRANDplates®

BRAND*plates*® Microtitration plates in 96 well standard format have a so-called chimney shape. The individual wells are separated from one another by a gap so as to avoid contamination. This, in combination with the condensation rings on the cover, significantly reduces evaporation.

U-bottom
Round bottomed wells. Since the wells do not have corners, this bottom shape is ideal for mixing and washing samples. Applications for this bottom shape include agglutination tests.

F-bottom
Flat bottom shape. F bottom is mainly used for precision optical measurements and is ideal for colorimetric determination, but also for microscopy. F bottom can, for example, also be used in cell culture.

C-bottom
Flat bottom shape with raised corners. C bottom combines the advantages of the U and F bottoms. Raised corners allow much better sample mixing in the wells. The flat bottom in the centre of the wells also allows precision optical measurements to be performed. C bottom is ideal for immunoassays in which optical measurement and thorough sample mixing are key factors influencing the precision of the test result.

Transparent
Transparent plates are ideal for precision optical measurements because of their excellent optical properties. This is why these plates are mainly used for colorimetric assays, but also in cell culture and storage.

White
White pigmented plates are optimised for luminescence measurements. Due to their white coloration, the plates provide maximum reflection of luminescence signals and minimise well-to-well crosstalk.

Black
Black pigmented plates are optimised for fluorescence measurements. Due to their black coloration, the plates minimise autofluorescence (even at low wavelengths) and well-to-well crosstalk.

Microtitration plates with transparent bottom
These plates are made of white or black PS and have a transparent bottom made of PS. Generally, these plates are suitable for applications requiring a transparent bottom, such as luminescence and fluorescence measurements. The transparent bottom provides a clear view of the well contents and enables transmitted light measurements to be performed. In addition, the plates can be examined directly under a microscope, which is particularly important for cell-bottomed applications. The white or black pigmented structure of the frame minimises well-to-well crosstalk.

Cell culture plates

Made of **PS**. **Sterile** (Gamma sterilised), individually packed, with cover. Hydrophilic, negatively-charged surface through plasma treatment for uniform cell adhesion and cell growth.

- F profile (flat-shaped base)
- Optically clear for good cell visualisation
- Increased well edge reduces evaporation
- Condensation rings in the lid reduce cross-contamination
- Alphanumeric numbering
- Non-pyrogenic

Wells	Volume per well (ml)	Art. No.	Pack Qty.	€
6	17	**EKX5.1**	100	149,00
12	6,8	**EKX6.1**	100	159,00
24	3,5	**EKX7.1**	100	159,00
96	0,39	**EKX8.1**	100	159,00

Cell culture Multiwell plates

By Greiner Bio-One. Made of **PS**. **Sterile** (individually packed, cover plate for adherent cell cultures). TC-surface treated. Non-pyrogenic. **Free of detectable DNase, RNase and human DNA. Free of detectable endotoxins, free of zytotoxic substances.** Alphanumeric well coding. F-bottom. Max. centrifuging: 4800 x g.

Wells	Growth surface per well (cm^2)	Working volume per well (ml)	Art. No.	Pack Qty.	€
6	9,6	2-5	**CE54.1**	100	189,20
12	3,9	2-4	**CE55.1**	100	238,65
24	1,9	0,5-1,5	**CE56.1**	100	210,70
48	1,0	0,5-1	**CE57.1**	100	277,35
96	0,34	0,025-0,34	**KL43.1**	100	222,55

Microtest plates, sterile

Made of **PS** and **PE**. **Sterile** (Gamma sterilized), individually packed, with cover.

- F profile (flat-shaped base)
- Optically clear for good visualization
- Increased rim edge reduced evaporation
- Condensation rings in the lid reduce cross-contamination
- Alphanumeric numbering
- Non-pyrogenic

Wells	Volume per well (ml)	Art. No.	Pack Qty.	€
96	0,39	**EKL9.1**	100	210,00

Rotilabo®-microtest plates, black

Made of **PS**. Black plates for low background and reduced light scatter during applications in fluorescence microscopy. With 96 alphanumerically coded cavities with flat bottom. "Chimney top" well design reduces the risk of contamination. SBS dimensions. **RNase, DNase and human DNA free.**

Volume per well (µl)	Art. No.	Pack Qty.	€
350	**CEK8.1**	100	335,40

Accessories:

Cover plates	**CEK9.1**	80	124,70

Rotilabo®-polypropylene microtest plates

Made of **PP**. With 96 wells in a round U-profile for maximum sample recovery with reduced capillary effect. SBS dimensions, suitable for robot systems. Good chemical resistance, e.g. against DMSO, phenol and chloroform.
RNase, DNase and human DNA free. Autoclavable.

Volume per well (µl)	Art. No.	Pack Qty.	€
350	**CEL3.1**	100	167,70

Accessories:

Silicone rubber sealing mats	**CEL4.1**	50	224,70

Rotilabo®-microtest plates

Made of transparent **PS**. With 96 alphanumerically coded cavities. Different base profiles available. Produced under sterile working conditions. Stackable.
Dimensions: L 128 x W 85 x H 15 mm.

Delivery without cover plate, please order separately.

Type	Volume per well (µl)	Art. No.	Pack Qty.	€
① U-profile (round)	345	**9291.1**	100	47,20
② V-profile (conical)	335	**9292.1**	100	53,70
③ F-profile (flat)	405	**9293.1**	100	58,05

Cover plates for Rotilabo®-microtest plates

Made of **PS**. Prevents contaminations and liquid loss.

Art. No.	Pack Qty.	€
9297.1	100	42,95

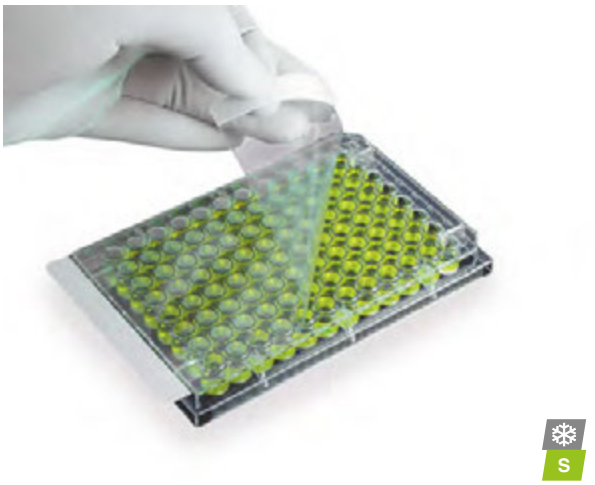
6-well macroplates

Made of **PS**. For all bacteriological applications which require a subdivided culture dish. Simple and space-saving alternative to six conventional 35 mm petri dishes.
Dimensions: L 128 x W 85 x H 20 mm.

- Manufactured under aseptic conditions
- With 6 alphanumeric-labelled wells, well ∅ 35 mm
- Working volume 2-5 ml
- Maximum well volume: 15 ml
- Centrifugable to 4500 g
- Temperature stable from -20 to approx. +60 °C

Art. No.	Pack Qty.	€
ATC0.1	100	85,90

▶ For multichannel pipettors, see page 449
▶ Labels for microtiter plates, see page 709



Rotilabo®-sealing films for microtest plates

Self-adhesive. **Sterile** or unsterile. Minimizes cross-contamination of samples during handling and transport. With perforated ends for simple and speedy application.

Types 1 and 2
Made of **polyester**. Also suitable for ELISA-plates. Minimize evaporation. Type 1 can be pierced with a single-channel pipettor.

Type 3
Made of **aluminium-coated paper**. Good diffusion barrier. Produced under almost germ-free conditions.

Technical specifications:

Type	**1**	**2**	**3**
Thickness (µm)	25	50	65
Dimensions L x W (mm)	141 x 79.4	146 x 79.4	130 x 78
Temperature-stable (°C)	-40 to +120	-40 to +120	-20 to +80
Piercable	yes	no	no

Type	Design	Art. No.	Pack Qty.	€
1	non-sterile	**H769.1**	100	73,65
1	**sterile**	**H770.1**	100	97,85
2	non-sterile	**EN76.1**	100	49,35
2	**sterile**	**EN77.1**	100	73,65
3	non-sterile	**X172.1**	100	40,35

Rotilabo®-384-well microtest plates

Made of **PS**. With 384 alphanumerically coded cavities with flat bottom. Working volume 120 µl. SBS dimensions. Black plates for low background and reduced light scatter during applications in fluorescence microscopy. Reduced capillary effect thanks to rounded corners.
RNase, DNase and human DNA free.

Colour	Art. No.	Pack Qty.	€
colourless	**CEL0.1**	100	306,40
black	**CEL1.1**	100	319,30
Accessories:			
Cover plates	**CEL2.1**	100	167,70

Gas-permeable sealing film

Self-adhesive film, made on a polyurethane base.

- **Sterile** and non-cytotoxic
- For sealing microtitre plates
- Prevents contamination from cavity to cavity
- Ensures an even exchange of oxygen and carbon dioxide
- Excellent for aerobic cell cultures, biological and immunological cellular preparation and selection, screening, etc.
- Does not inhibit cellular growth or the separation of human fibroblasts
- FDA-tested

Technical specifications:

Thickness	25 µm
Dimensions (L x W)	153 x 78 mm
Temperature-resistant	-80 to +100 °C
Pierceable	yes

Art. No.	Pack Qty.	€
T093.1	100	137,60

Rotilabo®-cling film for cell cultures

Made of **rayon. Sterile** or non-sterile. Self-adhesive hydrophobic cling film for cell culture and deep well plates.

- Gas-permeable, for a steady exchange of air and carbon dioxide
- Minimises evaporation and cross-contamination
- With perforated ends for simple and speedy application
- Non-cytotoxic

Technical specifications:

Thickness	114 µm
Dimensions (L x W)	142.9 x 82.6 mm
Temperature-resistant	-20 to +80 °C
Pierceable	yes

Design	Art. No.	Pack Qty.	€
non-sterile	**EN84.1**	100	87,00
sterile	**EN85.1**	50	61,10

Protective sheets on rolls

Made of polyester, self-adhesive. For sealing micro test plates. Minimises cross-contamination of samples during incubation, transportation and temporary storage. Also suitable for ELISA plates. Without intermediate paper backing, for fast handling. 100 individual sheets per roll.

Technical specifications:

Thickness	38 µm
Dimensions of individual sheet (L x W)	122 x 79 mm
Heat resistant	-40 to +120 °C
Pierceable	no

Art. No.	Pack Qty. (roll)	€
APT6.1	2	105,90

Dispenser for protective sheets on rolls

Made of PP. Handy dispenser for fast dispensing and application of protective sheets on rolls. Dimensions: L 80 x W 105 mm.
Delivery incl. 2 rolls of protective sheets (APT6.1).

Art. No.	Pack Qty.	€
APT7.1	1	113,95

Rotilabo®-sealing roller

Frame made of **metal**, with **rubber** roller. For more effective sealing of microtest-, PCR- and Deep-Well-plates with sealing foil or sealing mats because the roller presses them on more evenly.
Roll width: 100 mm, ∅ roll: 30 mm.

Art. No.	Pack Qty.	€
HE23.1	1	39,35

Labels for microtest plates

Made of chemically inert polyester. Tearproof. Sticks to all plastic types without drying out or falling off. Useable during steam sterilisation, in waterbaths, freezers (to max. -40 °C), etc. Almost all types of markers and pens may be used for labelling. Dimensions: 6 x 38 mm, therefore excellent for use on the sides of microtest plates or petri dishes. Per roll 1000 labels.

Art. No.	Pack Qty.	€
K435.1	1	42,50

Riplate® deepwell plates

Made of **PP**. **Sterile** (individually packed) or non-sterile. Suitable for all conventional automation systems, 1 and 2 ml plates suitable for multi-channel pipettes.
Riplate® plus with increased well. Reduction of cross-contamination, enhanced fusing or sealing with adhesive film.
Riplate® medio for sample storage, requires 50 % less storage space due to increased height.
Black plates for light-sensitive applications.

- Alphanumeric well identification
- Includes angled corner for proper orientation
- Stackable
- SBS dimensions
- Optimised base structure minimises specimen losses
- Temperature stable up to -85 °C
- Centrifugable to 3000 x g

Applications: High Throughput Screening (HTS), general analysis necessitating the use of a stock plate; serial dilution; reagent transfer; cell and tissue cultures; specimen storage.

Technical specifications:

Type	Total vol./well (µl)	Working vol./well (µl)	Plate format	L x W x H (mm)	Design/well base
Riplate® RW 1 ml	1200	50-1000	8 x 12	127.3 x 84.7 x 41.2	round/round
Riplate® RW 1 ml	1200	50-1000	8 x 12	127.8 x 85.5 x 41.0	round/round
Riplate® medio 1 ml	1200	50-1000	8 x 12	127.8 x 85.5 x 27.0	round/round
Riplate® sw 2 ml	2500	50-2400	8 x 12	127.8 x 85.5 x 44.0	rectangular/ round
Riplate® sw 2 ml	2200	1900	8 x 12	127.8 x 85.5 x 44.0	round/round
Riplate® sw 5 ml	5000	50-4900	8 x 6	127.8 x 85.5 x 44.0	rectangular/ V-shaped
Riplate® sw 10 ml	10 000	50-9900	4 x 6	127.8 x 85.5 x 44.0	rectangular/ V-shaped

Type	Design	Art. No.	Pack Qty.	€
Riplate® RW 1 ml	non-sterile	**EN06.1**	20	92,80
Riplate® RW 1 ml plus	non-sterile	**TC21.1**	20	85,60
Riplate® 1 ml medio	non-sterile	**TC22.1**	32	132,25
Riplate® sw 2 ml	non-sterile	**EN07.1**	20	98,50
Riplate® sw 2 ml	**sterile**	**YP61.1**	10	73,45
Riplate® rw 2 ml	non-sterile	**CEX7.1**	20	93,50
Riplate® sw 5 ml	non-sterile	**EN08.1**	20	110,75
Riplate® sw 5 ml	**sterile**	**YP62.1**	10	78,95
Riplate® sw 10 ml	non-sterile	**TC23.1**	20	110,75

Accessories for riplate® deepwell plates

Sealing mats

For	Design	Art. No.	Pack Qty.	€
riplate® 1 ml / riplate® 1 ml plus	non-sterile	**EN09.1**	20	52,60
riplate® 1 ml medio / riplate® rw 2 ml	non-sterile	**CEX8.1**	20	52,65
riplate® sw 2 ml	non-sterile	**EN10.1**	20	53,60
riplate® sw 5 ml	non-sterile	**TC24.1**	20	58,50
riplate® sw 10 ml	non-sterile	**TC25.1**	20	62,05

Deepwell plates Riplate® magnetic

Made of **PP**. For cleaning, mixing, centrifuging samples. For storing and preparing substances. For cleaning proteins as well as for DNA extraction via automatic magnet separation. Corresponds to the SBS standard (Society for Biomolecular Screening).

- Resistant to common chemicals. solvents and alcohols
- High stability also when centrifuging
- Cylindrical wells for optimum sample mixing
- Slightly raised rim of the well prevents cross-contamination
- Alphanumeric marking for registering and identifying the samples
- Production under clean room conditions Class 8

Applications:
Developed especially for automatic magnetic separation machines: An automated magnetic separator is often used to purify proteins and to extract DNA. This technology that is based on magnetic particles enables fast and efficient preparation of samples with high throughput. In order to perform this separation process reproducibly in the long-term, precise plastic plates made of ultrapure polypropylene were developed, the Riplate® magnetic. Production under Class 8 clean room conditions ensures the sustainability of these products as well as reliable analysis results.

Suitable for:
KingFisher™ 96 Flex Magnetic Particle Processors.

Type	Total volume/ well (ml)	Working volume/ well (µl)	Art. No.	Pack Qty.	€
Riplate® 96 SRW magnetic, 0.2 ml	20	20-100	**HLK2.2**	60	245,10
Riplate® 96 SRW magnetic, 2 ml	2000	20-1000	**HLK3.2**	60	252,65
Riplate® 96 tip comb	-	-	**HLK4.2**	60	349,40

❄❄ A 121 °C S

Autotube racks

Made of **PP**, **sterile** or non-sterile. Ideal for storing, transporting and freezing samples as well as for use in many biological tests, e.g. PCR, radio immunoassays (RIA), enzyme immunoassays (EIA) or cell growth studies. Racks can be removed from their base, e.g. for homogeneous heating of vials in a water bath.

- 1.2 ml vials, made of PP, arranged in microtitration plate format 8 x 12
- Suitable for working with multichannel pipettors
- With alphanumeric marking on outside of rack
- Label inside rack
- Temperature stable up to -90 °C
- Autoclavable

Delivery without cap strips. Please order separately.

Type	Art. No.	Pack Qty.	€
Rack with 96 vials, non-sterile	**EC05.1**	10	64,30
Rack with 96 vials, **sterile**	**EC06.1**	10	68,70

S

Refill vials and caps for Autotube racks

1.2 ml vials made of **PP**, cap strips made of **PE**. **Sterile** or non-sterile.
Only vials are autoclavable.

Type	Art. No.	Pack Qty.	€
Vials, 1.2 ml, individual, loose, non-sterile	**EC07.1**	960	26,90
Vials, 1.2 ml, 8 vial strips, individual, loose, non-sterile	**YC41.1**	120	23,65
Cap strips, 8 cap strips, individual, loose, non-sterile	**EC08.1**	120	21,40
Cap strips, 8 cap strips, loose, **sterile**	**EC09.1**	120	22,60

▶ Multichannel pipettors see page 449
▶ Reagent reservoirs see page 477

❄❄ A 121 °C

Micro Racks

Made of **PP**, with lid. Racks with 96 micro tubes, filled or unfilled.
Tubes are optionally available with a number code on the base or uncoded.
Pressure tested for leak tightness.

Reusable micro racks

- SBS standard micro test plate format (8 x 12)
- For use with micro tubes
- Angled corner on rack for clear positioning of refill unit
- Sides can be labelled, e.g. with a barcode
- Suitable for use in combination with automatic dispensing systems and robots
- Racks are stackable and suitable for stacker systems
- Temperature-resistant up to -80 °C. Autoclavable

Volume (ml)	Type	L x W x H (mm)	Art. No.	Pack Qty.	€
0,65	filled, coded	127,76 x 85,48 x 20,4	**XK05.1**	50	450,45
0,65	unfilled	127,76 x 85,48 x 20,4	**XK06.1**	5	21,45
1,2	filled, coded	127,76 x 85,48 x 28,4	**XK08.1**	50	450,45

❄❄ A 121 °C

Micro Tubes

Made of **PP**, with round base. As single tubes or 8 tube strips for use in micro racks.

Volume (ml)	∅ x H (mm)	Type	Art. No.	Pack Qty.	€
0,65	8.3 x 28	individually wrapped	**XK10.1**	5 x 1000	181,70
0,65	8.3 x 28	8 tube strip	**XK11.1**	5 x 120	188,15
1,2	8.3 x 44,1	individually wrapped	**XK12.1**	5 x 1000	181,70
1,2	8.3 x 44,1	8 vial strip	**XK13.1**	5 x 120	188,15

❄❄ A 121 °C

Sealing accessories for micro tubes

Made of **TPE**. For sealing 0.65 and 1.2 ml micro tubes.
Can be punctured with syringe needles for sampling and filling.

Type	Art. No.	Pack Qty.	€
8 tube cap strip	**XK18.1**	1000	165,55
8 x 12 sealing mats	**XK19.1**	100	227,90

Rotilabo®-sealing films for PCR-plates

Made of **PP** or **aluminium**. Self-adhesive. **Sterile** or non-sterile.
For sealing PCR-plates.
- Suitable for use in thermocyclers
- Perforated ends for simple and speedy application
- **Nucleic acid-free**
- **RNase-/DNase-free**

Technical specifications:

Type	**1**	**2**
Material	aluminium	PP
Thickness (µm)	38	50
Dimensions L x W (mm)	142.9 x 82.6	135.1 x 79.4
Temperature stability (°C)	-80 to +120	-40 to +125
Piercable	yes	no

Type	Design	Art. No.	Pack Qty.	€
1 (Alu)	non-sterile	**EN80.1**	100	95,15
1 (Alu)	**sterile**	**EN81.1**	50 (2 x 25)	78,30
2 (PP)	non-sterile	**EN82.1**	100	76,35
2 (PP)	**sterile**	**EN83.1**	100	97,85

Sealing films for RT PCR

Made from optically clear polyester; with strong, non-absorbent and non-fluorescent adhesive.
Suitable for ELISA, real-time qPCR applications and protein crystallisation.
Plastic backing film, easily removable.
Length between perforations: 121.9 mm.
RNase-, DNase- and Nucleic acid-free.

Technical specifications:

Material	Polyester
Thickness	50 µm
Dimensions (L x W)	142.9 x 79.4 mm
Heat resistant	-40 to +120 °C

Art. No.	Pack Qty.	€
APT8.1	100	125,25

Sealing films with special adhesive

Made from optically clear polyolefin; with inert, encapsulated silicone adhesive. The initially non-tacky adhesive is activated by applying pressure to the PCR plate, thus providing a perfectly tight seal, while the area directly above the wells is unchanged. The high optical clarity in these areas ensures reproducible results. Low autofluorescence, suitable for ELISA, quantitative DNA amplification, real-time qPCR applications and protein crystallisation. Length between perforations: 113 mm.
DNase, RNase and DNA free. Resistant to DMSO.

Technical specifications:

Material	Polyolefin
Thickness	50 µm
Dimensions (L x W)	139.7 x 78.6 mm
Heat resistant	-70 to +100 °C

Art. No.	Pack Qty.	€
APT9.1	100	186,00

Rotilabo®-PCR trays

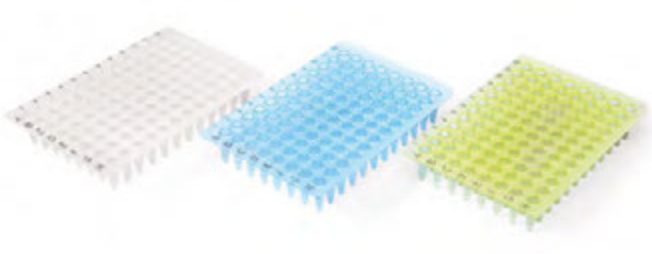
Made of **PP**. With black alphanumeric print for sample differentiation. Thin-walled for optimal heat transfer between thermocycler and sample. Cavities with raised edge to aid covering with PCR film. Suitable for most standard thermocyclers. **RNase, DNase and human DNA free**. Autoclavable.

Design	Filling volume (µl)	Working volume (µl)	Art. No.	Pack Qty.	€
Standard, with half frame	300	250	**CEN0.1**	50	144,05
Low profile, with full frame	200	150	**CEN1.1**	50	144,05

96-well PCR trays, with frame

By Brand.
- Made of thin PP
- Blue, alphanumeric coding
- Cut corner for easier orientation
- Even, fast and precise heat transfer
- Smooth, inert container inner
- Reduced formation of enzymes and nucleic acids
- Reliable sealing with associated sealing mats
- Frame suitable for labelling
- Suitable for real-time PCR
- **Free from DNase/RNase, DNA and endotoxins**
- Autoclavable at 121 °C (2 bar), according to DIN EN 285

Design	Filling volume (µl)	Cut corner	Art. No.	Pack Qty.	€
Standard	200	A12	**EYT4.1**	50 (10 x 5)	167,70
Low profile, higher frame	150	A1	**EYT5.1**	50 (10 x 5)	167,70



A 121 °C

Rotilabo®-PCR trays

Made of **PP**, without frame. With black alphanumeric print for sample differentiation. Volume 0.3 ml (max. working volume 250 µl, max. filling volume 300 µl). Thin-walled for optimal heat transfer between thermocycler and sample. Cavities with raised edge to aid covering with PCR film.
Suitable for most standard thermocyclers.
RNase, DNase and human DNA free. Autoclavable.

Colour	Art. No.	Pack Qty.	€
colourless	**CEL7.1**	50	143,00
blue	**CEL8.1**	50	145,15
yellow	**CEL9.1**	50	145,15

A 121 °C

Rotilabo®-PCR trays, with partitioning

Made of **PP**, without frame. With perforation, separable into individual PCR strips or smaller trays. With black alphanumeric print for sample analysis. Volume 0.3 ml (max. working volume 250 µl, max. filling volume 300 µl). Thin-walled for optimal heat transfer between thermocycler and sample. Cavities with raised edge to aid covering with PCR film.
Suitable for most standard thermocyclers.
RNase, DNase and human DNA free. Autoclavable.

Art. No.	Pack Qty.	€
CEN2.1	50	154,75

A 121 °C

96-well PCR trays without frame

By Brand.
- Made of thin PP
- Blue, alphanumeric coding
- Cut corner for easier orientation
- Even, fast and precise heat transfer
- Smooth, inert container inner
- Reduced formation of enzymes and nucleic acids
- Reliable sealing with associated sealing mats
- Suitable for all current thermocyclers
- Suitable for real-time PCR
- **Free from DNase/RNase, DNA and endotoxins**
- Autoclavable at 121 °C (2 bar), according to DIN EN 285

Design	Filling volume (µl)	Cut corner	Art. No.	Pack Qty.	€
Standard	200	A12	**HAE6.1**	50 (10 x 5)	167,70
Low profile	150	H12	**HAE7.1**	50 (10 x 5)	167,70

A 121 °C

PCR trays, 24-/48-/384-well

By Brand.
- Made from **PP**, extra-thin, even wall thickness, for optimal heat transfer and short cycle times
- Thin-walled PCR trays for constant, fast and precise heat transfer
- Tubes have smooth and inert inner surfaces to minimise binding of enzymes and nucleic acids
- Wells have raised rims for protection against cross-contamination and reliable sealing with suitable sealing mats
- Suitable for all standard quantitative real-time thermocyclers
- **DNase, DNA and RNase free**
- Autoclavable

24/48/96-well PCR trays

0.2 ml tubes.

Design	Art. No.	Pack Qty.	€
24-well, without rack	**XT94.1**	40 (8 x 5)	67,65
48-well, without rack	**XT95.1**	20 (4 x 5)	65,60

384-well PCR trays

40 µl tubes, for specimen volumes ranging from 2 to 30 µl. The trays can be filled using conventional multichannel pipettes or robot systems.

Design	Art. No.	Pack Qty.	€
384-well, with complete rack	**XT98.1**	50 (5 x 10)	267,70

PCR-trays and containers

121 °C

Mμlti®-Rigid Ultra Plates

By Sorenson. Made of **PP**. One-piece plates in microtitre plate format (8 x 12). Supplied with 96 extremely thin-walled micro-centrifuge tubes 0.2 ml. Thin walls guarantee steady heat transfer and shorter cycle duration during PCR-experiments. Can be easily closed with micromats, lid strips, or sealing foil. With alphanumeric coding for easy sample identification. Fit all standard thermocyclers. **DNase/RNase free**. Autoclavable.

Colour	Art. No.	Pack Qty.	€
natural	**N421.1**	25	107,40
red	**N422.1**	25	107,40
blue	**N423.1**	25	107,40
green	**N424.1**	25	107,40
yellow	**N425.1**	25	107,40

PCR products for real time PCR

By Brand.

- Made of **PP**, white. For qPCR
- Significantly better results than clear 8-tube strips or trays in fluorescence measurements.
- Evenly dyed with titanium dioxide in combination with smooth surfaces for optimal reflection of fluorescence signals.

PCR tube strips (8 tubes per strip)

0.2 ml tubes. Separate clear caps, flat, easy to open and close (please order separately). Tubes have tab at one end. Capped strips with a small lip on the side of each cap for careful, contamination-free opening.

Design	Art. No.	Pack Qty.	€
Tubes without capped strips	**XX01.1**	125	103,80
8 cap strips, flat	**XT93.1**	125	38,45

96-well PCR trays

0.2 ml tubes.

Design	Art. No.	Pack Qty.	€
Without rack	**XX02.1**	50	207,50
With half rack	**XX03.1**	50	207,50

121 °C

PCR-strips 12 tubes

Made of **PP**. Volume 0.2 ml. Autoclavable.

- PCR-micro-centrifuge strips with 12 micro-centrifuge tubes
- Thin-walled PCR-tubes guarantee optimal temperature exchange during heating and cooling PCR-cycles
- **Certified DNase-, RNase- and DNA-free**

Delivery without lid strips, please order separately.

Colour	Volume (ml)	Art. No.	Pack Qty.	€
colourless	0,2	**EL74.1**	125	124,70

Accessories for PCR-strips 12 tubes

Lid strips made of **PP**. Curved lids. Suitable for PCR-centrifuge strips each with 12 centrifuge tubes. Autoclavable.

Colour	Art. No.	Pack Qty.	€
colourless	**EL79.1**	125	53,55

121 °C

PCR-strips 8 tubes

Made of **PP**. Volume 0.2 ml. Autoclavable.

- PCR-micro-centrifuge strips with 8 micro-centrifuge tubes
- **Lids, which can be opened or closed individually**, are available in two designs: flat or curved
- Flat lid puncturable with cannula
- Extremely thin-walled PCR-tubes guarantee optimal temperature exchange when heating and cooling during PCR-cycles
- **DNase-, RNase- and DNA-free**

Tubes with lids for individual attachment (flat)

Colour	Art. No.	Pack Qty.	€
colourless	**CH87.1**	125	109,65
blue	**CH88.1**	125	109,65
green	**CH89.1**	125	109,65
red	**CH90.1**	125	109,65
yellow	**CH91.1**	125	109,65

Tubes with lids for individual attachment (curved)

Colour	Art. No.	Pack Qty.	€
colourless	**CH92.1**	125	109,65
blue	**CH93.1**	125	109,65
green	**CH94.1**	125	109,65
red	**CH95.1**	125	109,65
yellow	**CH96.1**	125	109,65

A 121 °C

Rotilabo®-8-strip PCR reaction vials

Made of **PP**. colourless, with numberings from 1 to 8 for sample differentiation (type ③ not numbered). Volume 0.2 ml (max. working volume 250 µl, max. filling volume 300 µl). Thin-walled for optimal heat transfer between thermocycler and sample. Suitable for most standard thermocyclers. **RNase, DNase and human DNA free**. Autoclavable. **Delivery incl.** cap strips (flat or convex) or attachable single caps.

Type	Art. No.	Pack Qty.	€
① PCR strips with convex cap strips	**CEN3.1**	125	97,95
② PCR strips with flat cap strips	**CEN4.1**	125	97,95
③ PCR strips, attachable flat single caps	**CEN5.1**	120	98,10

A 121 °C

PCR-strips 8 tubes with attached lid

Made of **PP**. Capacity 0.2 ml. Autoclavable.

- PCR-micro-centrifuge strips with 8 micro-centrifuge tubes
- **Attached lid strips** enable easy opening and closing
- Lids curved
- Thin-walled PCR-tubes guarantee optimal temperature exchange when heating and cooling during PCR-cycles
- **DNase-, RNase- and DNA-free**

Colour	Volume (ml)	Art. No.	Pack Qty.	€
colourless	0,2	**CK82.1**	125	98,90
blue	0,2	**CK83.1**	125	98,90
green	0,2	**CK84.1**	125	98,90
pink	0,2	**CK85.1**	125	98,90
yellow	0,2	**CK86.1**	125	98,90

A 121 °C

PCR-reaction vials

By Brand.

- Made of **PP**. Colourless. Extra-thin, even wall thickness, for optimal heat transfer and short cycle times
- Made of high-grade pure plastics containing no additives
- Produced under clean room conditions according to ISO 14 644-1 Class 5, 7 and 8
- **DNase, DNA- and RNase free**
- Suitable for all standard thermocyclers
- Caps are easy to open and close
- Autoclavable at 121 °C (2 bar), according to DIN EN 285
- **Containers with flat lids, suitable for real-time PCR**

① PCR-individual vials with attached cap

Convex or flat cap, tight-fitting for minimal loss of fluid through evaporation.

② PCR-vials, 8 tube strips with attached cap strip

Convex cap.

③ PCR-vials, 8 tube strips with attached single caps

Flat single cap for optimal protection against contamination.

④ PCR-vials, 8 tube strips with separate 8 cap strip

Vials with retaining tab on one end.
Cap strip with convex or flat cap and small step on side of each cap for careful, contamination-free opening.

Type	Design	Vol. (ml)	Art. No.	Pack Qty.	€
①	Vials, attached convex caps	0,2	**XT86.1**	1000	65,90
①	Vials, attached flat caps	0,2	**XT87.1**	1000	54,95
①	Vials, attached flat caps	0,5	**XT88.1**	1000	49,65
②	Vials, 8 tube strips, attached convex cap strips	0,2	**XT89.1**	125	133,70
③	Vials, 8 tube strips, attached flat single caps	0,2	**XT90.1**	120	140,85
④	Vials, 8 tube strips + 8 pack of cover strips, curved	0,2	**HAE8.1**	250	217,15
④	Vials, 8 tube strips + 8-pack of cover strips, flat	0,2	**HAE9.1**	250	217,15
④	Vials, 8 tube strips, without cap	0,2	**XT91.1**	125	92,45
④	8 cap strips, convex	0,2	**XT92.1**	125	31,20
④	8 cap strips, flat	0,2	**XT93.1**	125	38,45

▶ Pipettor tips see page 463
▶ Microlitre pipettors see page 448
▶ Cooling racks for PCR-trays and containers see page 250

Microcentrifuge tubes

Mµlti®-UltraStrips 8-tubes

By Sorenson. Made of thin-walled **PP**. **Sterile** (incl. lid strips) or non-sterile. 8 micro-centrifuge tubes with 200 µl per strip. Fit all standard thermocyclers, e.g. Perkin Elmer, Biometra. The SafeSeal® design of the caps ensures tight closing. Due to the very smooth and transparent inner and outer surfaces, even the smallest volumes are clearly visible.
RNase-/DNase-free, pyrogen-free. Autoclavable.

Colour	Design	Art. No.	Pack Qty.	€
colourless	**sterile**	**E712.1**	120	173,10
red	**sterile**	**E713.1**	120	170,95
colourless	non-sterile	**E717.1**	120	158,05

Lid strips, curved

For closing Mµlti®-Ultra Plates and Mµlti®Ultra Strips 0.2 ml.

Design	Art. No.	Pack Qty.	€
cannot be pierced, curved lid	**H997.1**	120	77,40

PCR reaction vials, strip of 8, low profile

By Brand. Made of **PP**. Volume 0.15 ml. PCR reaction vial strip with 8 interconnected vials. Flat single caps attached, highly transparent and so suitable for real time PCR.
DNase, DNA- and RNase free.

Art. No.	Pack Qty.	€
CNT0.1	120	145,15

Rotilabo®-PCR reaction vials 0.2 ml

Made of **PP**. Colourless. Volume 0.2 ml (max. working volume 250 µl, max. filling volume 300 µl). Thin-walled for optimal heat transfer between thermocycler and sample. Suitable for all standard thermocyclers.
RNase, DNase and human DNA free. Autoclavable.

Type	Art. No.	Pack Qty.	€
① PCR tubes with convex cap	**CEL5.1**	1000	55,90
② PCR tubes with flat cap	**CEL6.1**	1000	55,90

Mµlti®-Ultra PCR tubes 0.2 ml

By Sorenson. Made of **PP**. With flat lid. Extremely thin walls enable heat to be transferred more quickly and more evenly.
Fits all standard thermocyclers.
Pyrogen free, DNase- /RNase-free and autoclavable.

Colour	Art. No.	Pack Qty.	€
natural	**H560.1**	1000	108,60
red	**H561.1**	1000	108,60
blue	**H562.1**	1000	108,60
green	**H563.1**	1000	108,60
yellow	**H564.1**	1000	108,60

Mµlti®-Ultra PCR tubes 0.65 ml

By Sorenson. Made of clear **PP**. Very thin walls enable heat to be transferred more quickly and more evenly. Can be centrifuged up to 10 000 x g. Flat, roughened lid for labelling. The piercing area in the lid makes the transfer of hazardous materials with a syringe easier.
DNase- and RNase-, endotoxin- and heavy metal-free. Autoclavable.

Art. No.	Pack Qty.	€
A774.1	1000	57,65

Rotilabo®-microcentrifuge tubes

Made of **PP**. Capacity 1.5 ml. With dull finish labelling area. Graduated. Can be centrifuged up to 18 000 x g.
Temperature stable from -70 °C to 121 °C. Autoclavable.

Colour	Art. No.	Pack Qty.	€
colourless	**4182.1**	1000	17,15
red	**4189.1**	1000	19,15
blue	**4190.1**	1000	19,15
yellow	**4204.1**	1000	19,15
green	**4209.1**	1000	19,15
assorted colours (5 x 1000 pieces)	**5913.1**	5000	82,25

Microcentrifuge tubes

Rotilabo® reaction vials

Made of **PP**. **Sterile** or non-sterile.
- With graduations
- Additional volume above the last graduation allows for liquid expansion
- Matt labelling space on the side and on the lid
- Ergonomic lid, easy and safety opening and closing
- One-handed operation with quick-release lock
- Puncturable lid
- **RNase/DNase-free, pyrogen-free, PCR inhibitor-free, metal-free**
- Centrifugability:
  Fixed angle rotor: 25 000 x g
  Tilting rotor: 70 000 x g

Temperature stable from -20 to +121 °C. Autoclavable.

Volume (ml)	Colour	Design	Art. No.	Pack Qty.	€
1,5	colourless	**sterile**	**ENE8.1**	1000	24,55
1,5	colourless	non-sterile	**ENE9.1**	1000	22,60
1,5	black	non-sterile	**ENH0.1**	1000	24,20
2,0	colourless	**sterile**	**ENH1.1**	1000	26,90
2,0	colourless	non-sterile	**ENH2.1**	1000	24,75

Mircocentrifuge tubes 1.5 ml

By Brand. Made of **PP**. **Sterile** or non-sterile. Volume 1.5 ml, graduated.

- Centrifugable up to 20 000 x g at 20 °C, max. 20 min
- With mat-finished labelling area on the side
- Lid membrane ∅ 8.5 mm, with a uniform thickness of approx. 0.3 mm, can be pierced by analyzer
- **BIO-CERT®-quality**, **sterile** and free from endotoxins, DNA, RNase and ATP, with batch certificate

Dimensions: outer ∅ 10.75 x H 40.8 mm. Autoclavable.

*Brown reaction vials are ideal for light-sensitive reactions.

Colour	Design	Art. No.	Pack Qty.	€
natural BIO-CERT®	**sterile**	**CH75.1**	30 x 15	103,50
natural	non-sterile	**CH76.1**	500	15,75
natural	non-sterile	**CNT2.1**	3000	77,55
yellow	non-sterile	**CH77.1**	500	16,75
blue	non-sterile	**CH78.1**	500	16,75
green	non-sterile	**CH79.1**	500	16,75
orange	non-sterile	**CH80.1**	500	16,75
brown (amber)*	non-sterile	**CH81.1**	500	16,75

Rotilabo®-safety reaction tubes

Made of **PP**. Colourless, with graduations and labelling space.
Tight plug seat, e.g. for applications under thermal stress.
Cap membrane is pierceable. Vessel base of 2.0 ml tubes is rounded on the inside to enhance pellet formation. Centrifugable to 18000 x g.
Heat resistant from -70 to 121 °C. Autoclavable.

Volume (ml)	Art. No.	Pack Qty.	€
0,5	**XC62.1**	1000	15,00
1,5	**XC63.1**	1000	18,25
2,0	**NA16.1**	1000	17,75

Reaction vials with lid lock

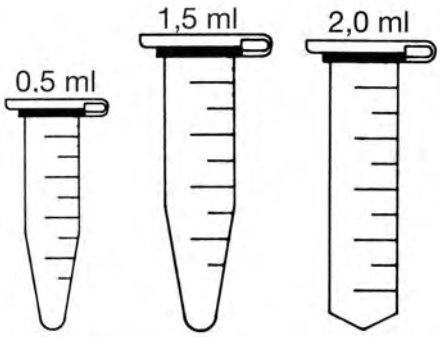
By Brand. Made of **PP**. Additional lid lock for extra tightness, prevents unintentional opening of the lid. The wide lid rim allows easy handling using only one hand. With frosted labelling space and graduations for reading the approximate volume.

- Manufactured from high quality medical grade polypropylene
- Produced under cleanroom conditions to ISO 14 644-1 Class 8
- **Free of RNase, DNase, DNA and endotoxins**
- Centrifugable to 30 000 x g.
- Autoclavable at 121 °C and 2 bar (DIN EN 285)

Volume (ml)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
0,5	10	30	**CNT3.1**	500	25,25
1,5	10,75	40,8	**CNT4.1**	1000	42,80
2,0	12,8	40	**CNT5.1**	500	26,20

▶ Stands for centrifuge tubes see page 237

Microcentrifuge tubes



121 °C

Mμlti®-safety microcentrifuge tubes

SafeSeal® Tubes

- By Sorenson
- Can be centrifuged up to 25 000 x g
- Highly transparent **PP**
- Graduated at 250 µl
- Etched labelling surface
- Tightly fitting cap
- Flat lid, suitable for labelling
- **LowBinding version:** Surface-optimized with a polymer coating, thereby minimal adhesion of sample
- Colour range: red, blue, green, yellow, lilac
- Temperature stable from -80 to 121 °C
- Autoclavable

- **RNase/DNase-free**
- **Human-DNA-free**
- **PCR-inhibitor-free**
- **Pyrogen-free**

Nominal capacity (ml)	Filling capacity (ml)	Colour	Art. No.	Pack Qty.	€
0,5	0,65	natural	**7060.1**	1000	23,15
0,5	0,65	assorted colours	**7096.1**	1000	49,35
0,5	0,65	clear, LowBinding	**7137.1**	1000	81,20
1,5	1,7	colourless	**7080.1**	1000	32,15
1,5	1,7	assorted colours	**7110.1**	1000	52,25
1,5	1,7	clear, LowBinding	**7154.1**	1000	81,20
2,0	2,0	colourless	**7083.1**	800	47,15
2,0	2,0	assorted colours	**N457.1**	800	56,80
2,0	2,0	clear, LowBinding	**7181.1**	1000	89,25

121 °C

Rotilabo®-microcentrifuge tubes

Made of **PP**. Colourless, temperature stable from -90 to +121 °C, autoclavable. Can be centrifuged up to 17 000 x g.

Image	Volume	Design	Art. No.	Pack Qty.	€
①	250 µl	not graduated	**EA82.1**	1000	57,65
③	500 µl	graduated	**EA83.1**	1000	47,20
④	1,5 ml	graduated	**EA84.1**	1000	53,65
⑤	1,9 ml	graduated	**EA85.1**	1000	68,80

Rotilabo®-microcentrifuge tubes

Made of **LDPE**. Colourless, not graduated.
Temperature stable from -90 to +121 °C

Image	Volume	Art. No.	Pack Qty.	€
②	400 µl	**EA86.1**	1000	57,00

121 °C

Microcentrifuge tubes 1.5 ml, without lid

Made of **PP**. Colourless. Volume 1.5 ml. Autoclavable.

- Centrifugable up to 6000 x g at 20 °C, max. 20 min
- With dull finish labelling area on the side
- Outer-∅ x total height: 11 x 39.5 mm

Art. No.	Pack Qty.	€
CK05.2	1000	23,60

Microcentrifuge tubes

Rotilabo®-microcentrifuge tubes, black

Made of **PP**, black. 1.5 ml, graduated. Autoclavable. Temperature stable from -80 to +121 °C. Can be centrifuged up to 15 000 x g.
Ideal for storing light-sensitive samples.

Art. No.	Pack Qty.	€
AA80.1	500	24,70

Mµlti®-safety microcentrifuge tubes 2 ml

By Sorenson. Made of **PP**. With special design for alleviating sample removal, particularly during DNA-/RNA-centrifugation.

- Flat lid with piercing zone for syringes
- Can be centrifuged up to 15 000 x g
- Temperature stable from -80 to +121 °C
- Flat lid and rough surface for easy marking of tubes
- **DNase-/RNase-free**
- Autoclavable

Art. No.	Pack Qty.	€
E708.1	1000	53,25

Microcentrifuge tubes 2 ml

By Brand. Made of **PP**. Volume 2 ml, graduated.

- Centrifugable up to 20 000 x g at 20 °C, max. 20 min
- With dull finish labelling area on the side
- The lid membrane, which is approx. 0.3 mm thick throughout, can be pierced by the analyzer
- **Free of RNase, DNase, DNA and endotoxins**
- Autoclavable

Colour	Art. No.	Pack Qty.	€
colourless	**CK06.1**	500	31,35

Safety reaction tubes 5 ml

Made of **PP. Sterile** (packed individually) or non-sterile.

- Tight closing seal
- Graduated
- Labelling space on side of vessel and lid
- Centrifugable to 21 000 x g
- Temperature stable from -80 to +100 °C
- **RNase, DNase/human DNA free**
- **PCR Inhibitor-free, ATP-free**
- **Free of pyrogenics**
- **CE/IVD-compliant**

Colour	Design	Art. No.	Pack Qty.	€
colourless	**sterile**	**HNY1.1**	50 (50 x 1)	65,60
colourless	non-sterile	**HNY2.1**	100	20,35

5 ml reaction vials

Made of **PP**. **Sterile** or non-sterile. Autoclavable.

- Easy to open lock for simple handling
- Labelling space on side of vessel and lid
- Centrifugable to 5000 g
- **RNase-/DNase free, pyrogen-free**
- Vial ∅ 15 mm (incl. edge 18 mm) x H 61 mm
- Temperature stable from -90 to +121 °C

Colour	Design	Art. No.	Pack Qty.	€
colourless	**sterile**	**EKY3.1**	200 (10 x 20)	44,20
colourless	non-sterile	**EKY4.1**	200	33,90
blue	non-sterile	**EKY5.1**	200	33,90
green	non-sterile	**EKY6.1**	200	33,90
yellow	non-sterile	**EKY7.1**	200	33,90
pink	non-sterile	**EKY8.1**	200	33,90
black	non-sterile	**EKY9.1**	200	33,90

Microcentrifuge tubes

Rotilabo®-microcentrifuge tubes 5 ml

Made of **PP**, graduated. Autoclavable.

- Leak-tight closure
- Labelling space on side of vessel and lid
- Centrifugable to 5000 g
- Temperature resistant in the range -80 to 121 °C
- Vessel-∅ 15 (incl. rim 18 mm) x H 60 mm

Colour	Art. No.	Pack Qty.	€
colourless	**PE68.1**	250	48,40
black	**PE69.1**	250	48,40

Mµlti®-lid locks

By Sorenson. For microcentrifuge tubes 1.5/1.7 ml. Tubes are closed securely in water baths, autoclaves, ice baths, liquid nitrogen.

Art. No.	Pack Qty.	€
T600.1	100	22,50

SnapTwist™-reaction vials

Made of **PP**. **RNase, DNase, DNA and pyrogen free.** Autoclavable.

- **Timesaving closure:** just press to safely seal vial, twist just a ¼ turn to open.
- With clear polished surface
- Leak-proof lip seal on closure
- Conical reaction vials are centrifugable up to 20 000 x g
- Temperature stable from -90 to +100 °C

Vials with fitted screw cap, sterile

Volume (ml)	Design	Art. No.	Pack Qty.	€
1,5	Conical, with transparent lid	**ATC4.1**	500	178,45

Vials without cap, non sterile

Volume (ml)	Design	Art. No.	Pack Qty.	€
1,5	Free-standing	**YK13.1**	1000	61,25
1,5	Conical	**YK14.1**	1000	61,25
1,8	Free-standing	**YK15.1**	1000	61,25
1,8	Conical	**YK16.1**	1000	61,25

Lids for SnapTwist™-reaction vials

Made of **HDPE**. Lid inserts for identification are optional (CK72.1ff). Non-autoclavable.

Colour	Art. No.	Pack Qty.	€
transparent	**YK17.1**	1000	70,95
blue	**YK18.1**	1000	70,95
green	**YK19.1**	1000	70,95
violet	**YK20.1**	1000	70,95
red	**YK21.1**	1000	70,95
yellow	**YK22.1**	1000	70,95
white	**YK23.1**	1000	70,95

Rotilabo®-sealing clips

For microcentrifuge tubes. Safe closure of vessels during boiling or freezing. With grip end for easy loading and removal of tubes. Reusable. Assorted colours.

For containers	Art. No.	Pack Qty.	€
0,5 ml	**N216.1**	100	42,95
1,5 / 2 ml	**N217.1**	100	42,95

Rotilabo®-microcentrifuge tube openers

Opens and closes 0.2- to 2.2-ml-tubes. The opener only touches the outer edge of the lid thereby reducing the risk of contamination. Assorted colours.

Art. No.	Pack Qty.	€
AA94.1	10	16,00

Screw Cap tubes

Screw cap tubes, brown

Made of **PP**. Autoclavable.

- Volume 0.5 / 1.5 / 2.0 ml
- Brown screw cap tubes for storage of light-sensitive samples
- Temperature stable from -196 to 121 °C
- Conical micro-centrifuge tubes can be centrifuged up to 20 000 x g
- **RNase-/DNase-/DNA- and pyrogen free**
- Screw-on lid made of PP with silicone sealing
- Only 1¼ turns needed for speedy opening and closing of lid
- Lid inserts are also available for easy identification (see CK72.1 ff.)

Delivery without lids, please order separately!

Volume (ml)	Design	Art. No.	Pack Qty.	€
0,5	self-standing	**CK47.1**	1000	85,50
1,5	self-standing	**CK48.1**	1000	85,50
1,5	conical	**CK49.1**	1000	85,50
2,0	self-standing	**CK50.1**	1000	85,50
2,0	conical	**CK51.1**	1000	85,50

Screw-on lids with silicone sealing

Made of **HDPE**. Suitable for screw cap tubes, brown.

Colour	Design	Art. No.	Pack Qty.	€
red	attached	**CK52.1**	1000	117,20
white	attached	**CK53.1**	1000	117,20
brown	loose	**AEK2.1**	1000	113,95
red	loose	**CK54.1**	1000	110,75
white	loose	**CK55.1**	1000	110,75

Lid inserts

Made of **PP**. For colour-coded, easy identification of reaction vials (Art. No. CK47.1 ff, CK57.1 ff).

Colour	Art. No.	Pack Qty.	€
blue	**CK72.1**	500	14,65
yellow	**CK73.1**	500	14,65
red	**CK74.1**	500	14,65
white	**CK75.1**	500	14,65
green	**CK76.1**	500	14,65
assorted colours	**CK77.1**	500	14,65

Rotilabo®-screw cap tubes with hang-on screw lid

Made of **PP**. With hang-on (PP) screw lid with silicone seal. **Sterile** or non-sterile. Autoclavable.

- Volume: 0.5 / 1.5 / 2.0 ml
- Clear, optionally available with subdivisions and labelling space
- Only 1¼ turns are needed for speedy opening and closing of the lid
- Temperature stable from -196 to +121 °C
- Outer-∅ x total height: 13 x 47 mm
- Conical micro-centrifuge tubes can be centrifuged up to 20 000 x g
- Lid inserts are also available for easy identification (see CK72.1 ff.)
- **RNase-/DNase-/DNA- and pyrogen free**

Microcentrifuge tubes with hang-on screw lid (separately packed) - non-sterile

Volume (ml)	Type	Graduations	Art. No.	Pack Qty.	€
0,5	self-standing	no	**CK57.1**	1000	159,10
1,5	self-standing	no	**CK58.1**	1000	159,10
1,5	conical	no	**CK59.1**	1000	159,10
2,0	self-standing	no	**CK60.1**	1000	159,10
2,0	conical	no	**CK61.1**	1000	159,10

Microcentrifuge tubes with hang-on screw lid (attached) - sterile

Volume (ml)	Type	Graduations	Art. No.	Pack Qty.	€
0,5	self-standing	no	**CK62.1**	500	110,75
1,5	self-standing	no	**CK63.1**	500	110,75
1,5	conical	no	**CK64.1**	500	110,75
2,0	self-standing	no	**CK65.1**	500	110,75
2,0	conical	no	**CK66.1**	500	110,75

Graduated microcentrifuge tubes with hang-on screw lid (attached) - sterile

Volume (ml)	Type	Graduations	Art. No.	Pack Qty.	€
0,5	self-standing	yes	**CK67.1**	500	145,15
1,5	self-standing	yes	**CK68.1**	500	145,15
1,5	conical	yes	**CK69.1**	500	145,15
2,0	self-standing	yes	**CK70.1**	500	145,15
2,0	conical	yes	**CK71.1**	500	145,15

Screw Cap tubes

NEW

121 °C

Reaction vials with septum screw cap

By Sarstedt. Made from transparent **PP**.
Unscrewed closure attached with O-ring seal made of EPDM.

- With knurling, for single-handed insertion into suitable stands
- Without graduation and labelling field
- Centrifuges up to 20 000 x g
- In accordance with IATA requirements
- Autoclavable

Volume (ml)	Design	∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
1,5	conical	10,8	44	**HPX3.1**	500	63,35
2,0	conical	10,8	44	**HPX4.1**	500	63,35
2,0	self-standing	10,8	44	**HPX5.1**	500	63,35

S

121 °C

Reaction tubes with screw cap

Made of **PP**. **HDPE** screw cap with **TPS** ring seal. Autoclavable.

- **Sterile**
- Conical bottomed vessels are centrifugable up to 25 000 x g
- 1.5 and 2.0 ml reaction vials with labelling space
- Temperature resistant in the range -80 to +121 °C
- Screw cap ∅ 13 mm
- **RNase-/DNase free, pyrogen-free**
- CE-IVD compliant

Volume (ml)	Type	Graduations	Vessel ∅ x H (mm)	Art. No.	Pack Qty.	€
0,5	Conical	none	8 x 47	**XC79.1**	200	41,85
0,5	Free-standing	none	10,5 x 48	**XC80.1**	200	41,85
1,5	Conical	up to 1.0 ml	10,5 x 47	**XC81.1**	200	41,85
1,5	Free-standing	up to 1.0 ml	10,5 x 48	**XC82.1**	200	41,85
2,0	Conical	up to 1.2 ml	11,5 x 47	**XC83.1**	200	41,85
2,0	Free-standing	up to 1.2 ml	10,5 x 48	**XC84.1**	200	41,85

S

121 °C

Reaction vials with screw cap

Made of **PP**. **Sterile** or non sterile. Ideal for storage in freezers, applications in a boiling water bath or for centrifuging. Tight sealing due to combination of lip seal and silicone ring in cap. Single-handed opening in suitable racks (e.g. AEN2.1ff) through longitudinal grooves on the upper edge and locking system on self-standing vials.

- With graduations and large labelling space
- Quick opening and closing with only 1 ¼ turns of cap
- Conical vials, centrifugable up to 20 000 x g
- Thick-walled for high stability
- Excellent visual clarity
- Outer ∅ x overall height: 13 x 47 mm
- **RNase/DNase/DNA and pyrogen free**
- Temperature stable from -196 to +121 °C
- Autoclavable

Vials with screw cap, sterile

Volume (ml)	Design	Art. No.	Pack Qty.	€
0,5	Freestanding	**AET3.1**	500 (10 x 50)	134,40
1,5	Freestanding	**AET4.1**	500 (10 x 50)	134,40
1,5	Conical	**AET5.1**	500 (10 x 50)	130,10
2,0	Freestanding	**AET6.1**	500 (10 x 50)	134,40

Vials without cap, non sterile

Volume (ml)	Design	Art. No.	Pack Qty.	€
0,5	Freestanding	**AET7.1**	1000	101,65
1,5	Freestanding	**AET8.1**	1000	101,65
1,5	Conical	**AET9.1**	1000	101,65
2,0	Freestanding	**AEX0.1**	1000	101,65

Caps for reaction vials, non sterile

Flat caps, suitable for automatic packaging machines.
With lip seal and integrated silicone ring. Suitable for vials AET7.1ff.

Colour	Art. No.	Pack Qty.	€
yellow	**AEX1.1**	1000	104,75
red	**AEX2.1**	1000	104,75
green	**AEX3.1**	1000	104,75
blue	**AEX4.1**	1000	104,75
white	**AEX5.1**	1000	104,75
transparent	**AEX6.1**	1000	104,75
sorted (200 pc. in each colour: yellow, red, green, blue, white)	**AEX7.1**	1000	104,75

Reaction vials with septum screw caps

Made of **PP**.
- With graduations and labelling space
- Conical tubes, centrifugable up to 20 000 x g
- Outer ∅ x height: 11 x 44 mm
- **RNase/DNase/DNA and pyrogen free**
- Temperature stable from -196 to +121 °C
- Autoclavable

Reaction vials, graduated, without closure

Volume (ml)	Design	Art. No.	Pack Qty.	€
1,5	Freestanding	**AEK4.1**	1000	107,30
1,5	Conical	**AEK5.1**	1000	107,30
2,0	Freestanding	**AEK6.1**	1000	97,85

Screw caps with septum

Made of **PP**. Tight sealing due to integrated PTFE/silicone septum. Easy to pierce with pipette tips or cannulas. Suitable for vials AEK4.1ff.

Art. No.	Pack Qty.	€
AEK7.1	250	116,10

True North® cryo vials

Made of **PP**. **Sterile.** Lid and vessel with identical ∅ (13 mm), therefore also suitable for 10 x 10 cryo box format. Suitable for storage in deep freezers or liquid nitrogen (gas phase). Temperature stable from -196 to +121 °C. Autoclavable.

- Lid with external thread and silicon seal
- With labelling space and graduations
- **RNase/DNase-free, non-pyrogenic and non-cytotoxic**

Volume (ml)	Type	Length (mm)	Art. No.	Pack Qty.	€
2	Sorted (lid colour blue, red, green, violet, grey)	49	**TP67.1**	500 (10 x 50)	160,20
2	transparent	49	**XT57.1**	500 (10 x 50)	160,20

Cryo tubes Cryo.s™

By Greiner Bio-One. Made of transparent **PP**, USP class VI-certified. **Sterile**. Temperature stable from -196 to +121 °C

- For sample storage at -20 °C, -80 °C and in the gas phase above LN_2
- Suitable for shipping via air freight
- With white, scratch-resistant label field
- CE mark (CE/IVD)
  Free of detectable DNase, RNase and human DNA
  Free of detectable endotoxins, free of zytotoxic substances
- Free of heavy metals
- Colour of screw cap: natural

Delivery incl. 150 (volume 1-2 ml) and/or 100 (volume 5 ml) cap inserts for additional marking of the closures.

Inner thread, with silicone seal

Volume (ml)	Design	Length (mm)	∅ (mm)	Art. No.	Packaging	Pack Qty.	€
1	Star foot	42	12.5	**HLX0.1**	100/bag	500	181,70
2	Conical bottom	48	12.5	**HLX1.1**	100/bag	500	181,70
2	Star foot	48	12.5	**HLX2.1**	100/bag	500	181,70
5	Conical bottom	86	12.5	**HLX3.1**	50/bag	300	123,65

Outer thread

Volume (ml)	Design	Length (mm)	∅ (mm)	Art. No.	Packaging	Pack Qty.	€
2	Star foot	47	12.5	**HLX4.1**	100/bag	500	181,70
3	Star foot	83	12.5	**HLX5.1**	50/bag	300	123,65

NEW

Laboratory markers

By edding. Suitable for fine, precise labelling of smooth and transparent surfaces, such as slides, reaction vials, Petri and laboratory dishes.
- Colour black
- Extremely fast-drying, abrasion and light-resistant
- Waterproof, odourless ink
- Permanent on plastic
- Removable from glass with acetone, ethanol, isopropanol and methyl ethyl ketone
- Temperature stable up to -183 °C
- Heat resistant up to +500 °C

Type	Design	Line width (mm)	Art. No.	Pack Qty.	€
8014	Round tip, fine	1	**HPE1.1**	10	25,60
8015F	Round tip, extra fine	0,75	**HPE2.1**	10	25,60

Screw Cap tubes

Cryogenic vials

Made of **PP**. **Sterile** (gamma-sterilised). ∅ 12.5 mm. Autoclavable. Suitable for the storage of cell cultures, sera, blood components, bacteriological cultures and other liquids at low temperatures in fridges or nitrogen tanks. Temperature stable up to -196 °C (suitable for storing samples in the liquid nitrogen gas phase).

- **RNase/DNase/DNA and pyrogen free**
- Vertical strip => easy-grip cap
- 1¼ turn closure => fast opening and closing
- **White labelling space** and coloured cap inserts => easy sample identification (please order cap inserts separately)
- Freestanding vessels with thread on base => **suitable for single-handed use** in racks with locking system
- Cap and vessel made from same material (PP) => **uniform expansion of contents**, no danger of explosion
- High transparency => **sample is easily visible**
- Round inside bottom => contents **can be completely drained**

With internal thread and silicone seal

Takes up little storage space.
Vials with round bottom centrifugable up to 17 000 x g

Volume (ml)	Type	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
1,2	Freestanding	43	12,5	**E308.1**	100	34,95
2	Freestanding	49	12,5	**E309.1**	100	34,95
2	Round bottom	48	12,5	**E310.1**	100	34,95
4	Round bottom	72	12,5	**E311.1**	100	40,35
4	Freestanding	78	12,5	**E312.1**	100	40,35
5	Round bottom	92	12,5	**E313.1**	100	42,50

With outer thread and lip seal

Vials with round bottom centrifugable up to 17 000 x g

Volume (ml)	Type	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
1,2	Freestanding	43	12,5	**E290.1**	100	28,95
2	Round bottom	48	12,5	**E291.1**	100	28,95
2	Freestanding	49	12,5	**E292.1**	100	28,95
3	Freestanding	72	12,5	**E293.1**	100	30,00
4	Freestanding	78	12,5	**E294.1**	100	32,70
5	Freestanding	92	12,5	**E295.1**	100	36,35

With outer thread and silicone seal

Vials with round bottom centrifugable up to 17 000 x g.
Article P168.1 with **HDPE** cap.

Volume (ml)	Type	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
1,2	Freestanding	43	12,5	**E314.1**	100	38,20
2	Round bottom	48	12,5	**E315.1**	100	38,20
2	Freestanding	49	12,5	**E316.1**	100	38,20
3	Freestanding	72	12,5	**E317.1**	100	41,40
4	Freestanding	78	12,5	**E318.1**	100	41,40
5	Freestanding	92	12,5	**E319.1**	100	42,80
10	Freestanding	84	17	**P168.1**	50	25,70
10	Freestanding	84	17	**P168.2**	500 (10 x 50)	246,20

With outer thread, lip seal and silicone seal

Vials with round bottom centrifugable up to 17 000 x g.

Volume (ml)	Type	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
1,2	Freestanding	43	12,5	**AEH6.1**	100	36,55
2	Round bottom	48	12,5	**AEH7.1**	100	36,55
2	Freestanding	49	12,5	**AEH8.1**	100	36,55
3	Freestanding	72	12,5	**AEH9.1**	100	39,75
4	Freestanding	78	12,5	**AEK0.1**	100	42,90
5	Freestanding	92	12,5	**AEK1.1**	100	45,90

Rotilabo®-aluminium holders

Ideal for storing max. 5 cryo vials 1.2 ml or 2 ml in liquid nitrogen containers and Dewar vessels. Length 290 mm.

Art. No.	Pack Qty.	€
P169.1	12	13,95

Cap inserts for cryo vials

For colour coding and simple identification of samples.
Suitable for 1.2 to 5 ml cryo vials (Art. no. E308.1ff).

Colour	Art. No.	Pack Qty.	€
white	**E320.1**	500	16,70
blue	**E321.1**	500	16,70
red	**E322.1**	500	16,70
green	**E323.1**	500	16,70
yellow	**E324.1**	500	16,70
sorted (5 x 100 pieces)	**E325.1**	500	16,70

▶ For stands for cryo vials, see page 239
▶ For matching cryo boxes, see page 243

Cryo-labels on sheets

Made with acrylate. Sticks to plastic, glass or metal without drying out or peeling off. Glass and metal surfaces must be completely free of grease. Can also be used in boiling water baths, in refrigerators, under cryo-conditions (liquid nitrogen). Temperature stable from **-196 to +100 °C**. Can be removed without leaving any traces. Sheets are printable with a laser printer.

Sheet size (US-Letter) 21.6 x 27.9 cm.

White

Length (mm)	Width (mm)	For	Labels/ Sheet	Art. No.	Pack Qty. (Sheet)	€
38	6	Microtiter-plates	156	**X545.1**	20	78,50
24	13	0.5 ml tubes	119	**X547.1**	20	78,50
33	13	1.5-2 ml tubes	85	**X548.1**	20	78,50
25	25	Microscope slides	80	**EL06.1**	20	74,75
38	19	Cryo-vials	60	**X549.1**	20	78,50
64	13	0.5-2 ml tubes	60	**EL07.1**	20	74,75
43	19	Cryo vials	52	**EL08.1**	20	74,75
29	44	Centrifuge tubes	42	**EL09.1**	20	74,75
67	25	Racks, boxes	30	**X550.1**	20	78,50
76	51	Bottles, glasses	12	**X551.1**	20	78,50

Cryo-labels on the roll, colour white

White, for manually marking

Length (mm)	Width (mm)	For	Labels/ Roll	Art. No.	Pack Qty. (roll)	€
24	13	0.5 ml tubes	1000	**HX56.1**	1	41,40
38	19	Cryo vials	1000	**L673.1**	1	40,85
33	13	1.5-2 ml tubes	1000	**L672.1**	1	40,85

Laboratory markers

By Marienfeld. Permanent marker suitable for nearly all surfaces made of glass, plastic and paper. Suitable for indelible labelling of microscope slides, embedding cassettes and Petri dishes.

- Ultrafine tip
- High-contrast black ink
- Writes without pretreatment of surfaces
- Waterproof, resistant to most laboratory chemicals
- Odourless
- Non-toxic
- Non-dry, long-lasting

Art. No.	Pack Qty.	€
CET9.1	12	37,45

Filtration, Water Purification and Dialysis

Analyse machines	539
Bottle Top filter systems, disposable	511
Centrifuge filter systems	510
Chromatography accessories	548
Dialysis accessories	560
Dialysis systems	556
Dialysis tubular membranes	551
Distilling devices	541
Extraction thimbles	538
Filter holders	520
Filter papers for qualitative analysis	529
Filter papers for quantitative analysis	533
Filter devices made of plastic, glass or stainless steel	515
Filter papers for special applications	535
Filter units	508
Folded filters	532
Glass / quartz fibre filter papers	527
Ion exchange devices	541
Membrane filters	521
Pure water systems	545
Rotisol®	538
Round filters	527
SPE columns	550
SPE vacuum blocks	550
Spray bottles and atomizers	549
Syringe filters	500
TLC spray devices	549
Water purification	541

Syringe filters

Rotilabo®-syringe filters

With hydrophilic or hydrophobic membranes.

Hydrophilic membrane: Polyethersulfone (PES)
For removing finest particles from **aqueous** solutions.

Hydrophilic membrane: Cellulose mixed ester (CME = Cellulose acetate and -nitrate)
For clear filtration of **aqueous** solutions.

Hydrophilic membrane: Polyvinylidene fluoride (PVDF)
For clear filtration of **aqueous and slightly organic** solutions.

Hydrophilic membrane: Nylon
For clear filtration of **aqueous and organic** solutions.

Hydrophobic membrane: Polytetrafluoroethylene (PTFE)
For clear filtration of **organic** solutions and for air filtration.

Technical specifications:

Nominal-∅ (mm)	**13**	**25**	**33**
Sample capacity (ml)	up to 10	up to 100	up to 100
Dead capacity (µl)	<15	<100	<80
Max. Input pressure (bar)	10	5	8.6
Max. operating temperature (°C)	45	45	45
Filter surface (cm^2)	0,8	3,9	4,52
Connection	Luer-Lock inlet / Luer outlet		

Non-sterile, nominal-∅ 13 mm, ∅ outer 19 mm

Pore size (µm)	Membrane material	Material housing	Art. No.	Pack Qty.	€
0,20	nylon	PP	**CCX8.1**	100	137,60
0,45	nylon	PP	**CCX9.1**	100	137,60
0,22	PVDF	PP	**CCY0.1**	100	137,60
0,45	PVDF	PP	**CCY1.1**	100	137,60
0,20	PTFE	PP	**CCY2.1**	100	137,60
0,45	PTFE	PP	**CCY3.1**	100	137,60

Non-sterile, nominal-∅ 25 mm, ∅ outer 29 mm

Pore size (µm)	Membrane material	Material housing	Art. No.	Pack Qty.	€
0,20	PTFE	PE	**P815.1**	100	139,75
0,45	PTFE	PE	**P816.1**	100	139,75
5,0	PTFE	PE	**P817.1**	100	139,75
0,22	CME	PVC	**P818.1**	100	133,30
0,45	CME	PVC	**P819.1**	100	133,30
0,8	CME	PVC	**P820.1**	100	133,30

Non-sterile, ∅ outer 33 mm. Increased speed of flow due to larger filter surface and higher allowable operating pressure.

Pore size (µm)	Membrane material	Material housing	Art. No.	Pack Qty.	€
0,22	PES	co-polymer	**P821.1**	100	133,30
0,20	Nylon	PP	**KY61.1**	100	138,70
0,45	Nylon	PP	**KY64.1**	100	138,70
0,22	PVDF	PP	**KY62.1**	100	138,70
0,45	PVDF	PP	**KY63.1**	100	138,70

S

Rotilabo®-syringe filters

Sterile (individually packed), ∅ **outer 33 mm**.
Luer-Lock inlet/Luer outlet.

Polyethersulfone (PES):
For ultra-quick filtration of tissue culture media, additives and other aqueous solutions.

Cellulose mixed ester (CME):
For filtration of additives, tissue culture media, antibiotics.

Polyvinylidene fluoride (PVDF):
For filtration of protein solutions, tissue culture media, additives, antibiotics, alcoholic solutions.

Pore size (µm)	Membrane material	Material housing	Art. No.	Pack Qty.	€
0,22	CME	acrylic polymer	**KH54.1**	50	72,90
0,45	CME	acrylic polymer	**KH55.1**	50	72,90
0,22	PVDF	acrylic polymer	**P666.1**	50	74,20
0,45	PVDF	acrylic polymer	**P667.1**	50	74,20
0,22	PES	acrylic polymer	**P668.1**	50	74,20

Rotilabo®-fibre glass syringe filters

Ideal for pre-filtration of samples with high particle load.
Retention range 1-2 µm, free from binding agents. **Non-sterile.**

Technical specifications:

Membrane ∅ (mm)	**15**	**25**	**30**
Housing ∅ (mm)	20	30	34
Housing	ultrasound welded	injection moulded	
Housing material	PP		PC
Sample volume (ml)	1-10	10-100	> 100
Dead volume (µl)	< 25	< 65	< 170
Total filtration capacity (ml)	0.335	0.6	0.864
Filtration area (mm^2)	177	490	707
Max. operating pressure (bar)	7	7	6
Inlet connection	Luer-Lock		
Outlet connection	Luer Slip		

Membrane ∅ (mm)	Material housing	Pack Qty.	Art. No.	€
15	PP	100	**KC98.1**	62,80
25	PP	100	**KC99.1**	106,05
30	PC	100	**KE00.1**	167,70

Syringe filters

S

Rotilabo®-syringe filters, PP or PC

With pressure and chemical resistant casings made of PP or PC.
Sterile (individually packed) or non-sterile.

Regenerated cellulose (RC)
Hydrophilic membrane with low non-specific protein adsorption (<10 µg/cm²). For filtration of biological solutions as well as sample preparation and degassing of eluants for HPLC.
Good resistance to aqueous and organic solutions.

Polytetrafluoroethylene (PTFE)
Hydrophobic membrane for filtration of aggressive chemicals, acids and nonpolar solvents. Low resistance to gas flow allows applications in air and gas filtration (e.g. for ventilation tasks and sterile gas exchange).

Polyvinyl difluoride (PVDF)
Slightly hydrophobic membrane for clear and sterile filtration of organic and partially organic solutions. Protein adsorption 125 µg/cm².

Polyamide (Nylon)
For filtration of HPLC and GC solvents as well as for the clarification and sterile filtration of aqueous, alkaline and organic solutions.
Hydrophilic, resistant to many solvents. High mechanical stability.

Polypropylene (PP)
Low-hydrophobic all-round membrane for aqueous and organic media.

Polyether sulfone (PES)
Hydrophilic membrane with low protein binding (< 20 µg/cm²) and high flow rates. Suitable for aqueous and partially organic media, e.g. for biological sample preparation.

Cellulose ester composite (CME)
Hydrophilic membrane with high non-specific adsorption capacity for preparation of aqueous media samples and for separation of microbiological substances (bacteria, fungi, etc.).

Cellulose acetate (CA)
Hydrophilic membrane with very low protein adsorption (3.8 µg/cm²) for biological samples (e.g. enzyme solutions, biological macromolecules) as well as for clear and sterile filtration of aqueous solutions.

Technical specifications:

Membrane ∅ (mm)	**15**	**25**	**30**
Housing ∅ (mm)	20	30	34
Housing	ultrasound welded	injection moulded	
Housing material	PP		PC
Sample volume (ml)	1-10	10-100	> 100
Dead volume (µl)	< 25	< 65	< 170
Total filtration capacity (ml)	0.335	0.6	0.864
Filtration area (mm²)	177	490	707
Max. operating pressure (bar)	7	7	6
Inlet connection	Luer-Lock		
Outlet connection	Luer Slip		

Non-sterile, ∅ 15 mm, housing made of PP, ultrasonic welded, colourless

Pore size (µm)	Membrane material	Colour code	Art. No.	Pack Qty.	€
0.2	RC	colourless	**KC90.1**	100	102,15
0.45	RC	colourless	**KC91.1**	100	102,15
0.2	Nylon	colourless	**KC92.1**	100	71,50
0.45	Nylon	colourless	**KC93.1**	100	71,50
0.2	PTFE	colourless	**KC94.1**	100	71,50
0.45	PTFE	colourless	**KC95.1**	100	71,50
0.2	PVDF	colourless	**KC96.1**	100	90,60
0.45	PVDF	colourless	**KC97.1**	100	90,60

Sterile, ∅ 15 mm, housing made of PP, ultrasonic welded, colourless

Pore size (µm)	Membrane material	Colour code	Art. No.	Pack Qty.	€
0,2	RC	colourless	**PA49.1**	100	119,35
0,45	RC	colourless	**PA50.1**	100	119,35
0,2	Nylon	colourless	**PA51.1**	100	87,10
0,45	Nylon	colourless	**PA52.1**	100	87,10
0,2	PTFE	colourless	**PA53.1**	100	87,10
0,45	PTFE	colourless	**PA54.1**	100	87,10
0,2	PVDF	colourless	**PA55.1**	100	103,75
0,45	PVDF	colourless	**PA56.1**	100	103,75
0,2	PP	colourless	**PA57.1**	100	102,15
0,45	PP	colourless	**PA58.1**	100	102,15
0,2	PES	colourless	**PA59.1**	100	83,35
0,45	PES	colourless	**PA60.1**	100	83,35
0,2	CME	colourless	**PA63.1**	100	87,10
0,45	CME	colourless	**PA64.1**	100	87,10

Non-sterile, ∅ 25 mm, housing made of PP, with coloured rim

Pore size (µm)	Membrane material	Colour code	Art. No.	Pack Qty.	€
0.2	CA	light grey	**KC60.1**	100	120,40
0.45	CA	grey	**KC61.1**	100	116,10
0.2	RC	orange	**KC62.1**	100	163,40
0.45	RC	red	**KC63.1**	100	170,95
0.2	Nylon	yellow	**KC64.1**	100	123,65
0.45	Nylon	light orange	**KC65.1**	100	123,65
0.2	PTFE	magenta	**KC66.1**	100	134,40
0.45	PTFE	purple	**KC67.1**	100	134,40
0.2	PVDF	violet	**KC68.1**	100	131,15
0.45	PVDF	blue	**KC69.1**	100	131,15
0.2	PES	blue	**NA21.1**	100	112,90

Sterile, ∅ 25 mm, housing made of PP with coloured rim

Pore size (µm)	Membrane material	Colour code	Art. No.	Pack Qty.	€
0.2	CA	light grey	**KC70.1**	100	137,60
0.45	CA	grey	**KC71.1**	100	134,40
0.2	RC	orange	**KC72.1**	100	192,45
0.45	RC	red	**KC73.1**	100	189,20
0.2	Nylon	yellow	**KC74.1**	100	149,45
0.45	Nylon	light orange	**KC75.1**	100	149,45
0.2	PTFE	magenta	**KC76.1**	100	149,45
0.45	PTFE	purple	**KC77.1**	100	149,45
0.2	PVDF	violet	**KC78.1**	100	164,50
0.45	PVDF	blue	**KC79.1**	100	164,50

Non-sterile, ∅ 30 mm, housing made of PC with coloured rim

Pore size (µm)	Membrane material	Colour code	Art. No.	Pack Qty.	€
0.2	CA	light grey	**KC80.1**	100	187,05
0.45	CA	grey	**KC81.1**	100	195,65
0.2	RC	orange	**KC82.1**	100	246,20
0.45	RC	red	**KC83.1**	100	246,20
0.2	Nylon	yellow	**KC84.1**	100	188,15
0.45	Nylon	light orange	**KC85.1**	100	188,15
0.2	PTFE	magenta	**KC86.1**	100	194,60
0.45	PTFE	purple	**KC87.1**	100	194,60
0.2	PVDF	violet	**KC88.1**	100	219,30
0.45	PVDF	blue	**KC89.1**	100	219,30

Rotilabo®-syringe filters Mini-Tip

Non-sterile, 15 mm, housing made of PP, ultrasonic welded, colourless.
Ideally suited for HPLC-samples. The Mini-Tip opening is ideal for filtering in very small sample containers or vials.

Regenerated cellulose (RC)
Hydrophilic membrane with low non-specific protein adsorption (<10 µg/cm²). For filtration of biological solutions as well as sample preparation and degassing of eluants for HPLC.
Good resistance to aqueous and organic solutions.

Polytetrafluoroethylene (PTFE)
Hydrophobic membrane for filtration of aggressive chemicals, acids and nonpolar solvents. Low resistance to gas flow allows applications in air and gas filtration (e.g. for ventilation tasks and sterile gas exchange).

Polyvinyl difluoride (PVDF)
Slightly hydrophobic membrane for clear and sterile filtration of organic and partially organic solutions. Protein adsorption 125 µg/cm².

Polyamide (Nylon)
For filtration of HPLC and GC solvents as well as for the clarification and sterile filtration of aqueous, alkaline and organic solutions.
Hydrophilic, resistant to many solvents. High mechanical stability.

Cellulose acetate (CA)
Hydrophilic membrane with very low protein adsorption (3.8 µg/cm²) for biological samples (e.g. enzyme solutions, biological macromolecules) as well as for clear and sterile filtration of aqueous solutions.

Technical specifications:

Membrane ∅ (mm)	**15**
Housing ∅ (mm)	20
Housing	ultrasound welded
Housing material	PP
Sample volume (ml)	1-10
Dead volume (µl)	< 25
Total filtration capacity (ml)	0.335
Filtration area (mm²)	177
Max. operating pressure (bar)	7
Inlet connection	Luer-Lock
Outlet connection	Luer Slip

Pore size (µm)	Membrane material	Art. No.	Pack Qty.	€
0,2	RC	**PP41.1**	100	102,15
0,45	RC	**PP42.1**	100	102,15
0,2	Nylon	**PP43.1**	100	69,90
0,45	Nylon	**PP44.1**	100	69,90
0,2	PTFE	**PP45.1**	100	69,90
0,45	PTFE	**PP46.1**	100	69,90
0,2	PVDF	**PP47.1**	100	93,55
0,45	PVDF	**PP48.1**	100	93,55
0,2	CA	**PP52.1**	100	68,40
0,45	CA	**PP53.1**	100	68,40

A 121 °C

Cameo™ syringe filters

Non-sterile.

Nylon
Hydrophilic. Good chemical resistance, very low extractable substances content. For the filtration of organic solvents, for HPLC sample preparation and for sterile and clear filtration of biological media. High protein binding (approx. 120 µg/cm²).

Cellulose acetate (CA)
Hydrophilic. Very low protein binding (approx. 3.8 µg/cm²). For sterile filtration of biological media (proteins, enzymes, buffer, cell culture etc.), as well as for particle extraction from aqueous and alcohol-based solutions.

PTFE
Hydrophobic. Excellent chemical resistance.
For filtration of aggressive substances, solvent, gases and aerosols.

Technical specifications:

Membrane ∅ (mm)	**17**	**25**	**30**
Housing material	PP	Acrylic	PP
Sample volume (ml)	approx. 10	approx. 100	approx. 120
Retention capacity (µl)	< 15	< 60	< 60
Filtration area (cm²)	1,4	4,1	4,8
Max. working temperature (°C)	80	55	80
Max. working pressure (bar)	8	5	8
Autoclavable	yes	no	yes
Connection	Luer lock inlet / Luer outlet		

Non-sterile, membrane-∅ 17 mm, outer ∅ 22 mm

Pore size (µm)	Membrane material	Art. No.	Pack Qty.	€
0.22	PTFE	**A075.2**	50	88,70
0.45	PTFE	**A076.2**	50	88,70

Non-sterile, membrane ∅ 30 mm, outer ∅ 34 mm

Pore size (µm)	Membrane material	Art. No.	Pack Qty.	€
0.22	CA	**AH52.1**	50	100,00
0.45	CA	**AH53.1**	50	100,00
0.8	CA	**AH54.1**	50	100,00
0.22	Nylon	**A068.2**	50	81,60
0.45	Nylon	**A069.2**	50	81,60
1.2	Nylon	**AH50.1**	50	100,00
5,0	Nylon	**A070.2**	50	81,60
0.22	PTFE	**A077.2**	50	100,00
0.45	PTFE	**A078.2**	50	100,00

▶ Luer-connectors see page 394
▶ Membrane filters see page 521

Millex®-filter units

By MERCK MILLIPORE.

Hydrophilic PES membrane
- For filtration of aqueous solutions

Durapore® membrane (hydrophilic PVDF)
- For clear filtration of aqueous and slightly organic solutions, membrane has very low protein binding ratios

Hydrophilic nylon membrane
- For clear filtration of aqueous and organic solutions

Hydrophilic LCR (PTFE) membrane
- Low protein binding for clear filtration of aqueous and organic solutions

Hydrophobic Fluoropore (PTFE) membrane
- For clear filtration of organic solvents

Technical specifications:

Membrane ∅ (mm)	4	13	25	33
Type	non-sterile			
Housing material	HDPE			PP
Specimen volume (ml)	up to 1	up to 10	up to 100	
Dead volume (µl)	< 10	< 25	< 100	
Filtration surface area (cm^2)	0.1	0.65	3.9	4,5
Max. inlet pressure (bar)	14	7	7	8,6
Max. working temperature (°C)	45			
Inlet connection	Luer-Lock connector			
Outlet connection	Luer cone connector, stepped	Luer/*Luer cone connector with extended outlet	Luer connector	

① Millex®-filter units, 4 mm

Type	Pore size (µm)	Membrane material	Art. No.	Pack Qty.	€
Millex®-GV	0.22	PVDF	**XE04.1**	100	193,50
Millex®-HV	0.45	PVDF	**XE05.1**	100	195,65
Millex®-LG	0.2	Hydrophilic PTFE	**XE06.1**	100	193,50
Millex®-LH	0.45	Hydrophilic PTFE	**XE07.1**	100	193,50
Millex®-FG	0.2	Hydrophobic PTFE	**XE08.1**	100	187,05
Millex®-FH	0.45	Hydrophobic PTFE	**XE09.1**	100	187,05

② Millex®-filter units, 13 mm

Incl. a Luer or *Luer cone connector with extended outlet allowing filtration into vessels with small openings.

Type	Pore size (µm)	Membrane material	Art. No.	Pack Qty.	€
Millex®-GP	0.22	PES	**XE10.1**	100	254,80
Millex®-HP	0.45	PES	**XE11.1**	100	254,80
Millex®-GV	0.22	PVDF	**XE12.1**	100	272,00
Millex®-GV	0.22*	PVDF	**XE13.1**	100	281,65
Millex®-HV	0.45	PVDF	**XE14.1**	100	272,00
Millex®-HV	0.45*	PVDF	**XE15.1**	100	281,65
Millex®-GN	0.2	Nylon	**XE16.1**	100	255,85
Millex®-GN	0.2*	Nylon	**XE17.1**	100	261,25
Millex®-HN	0.45	Nylon	**XE18.1**	100	255,85
Millex®-HN	0.45*	Nylon	**XE19.1**	100	261,25
Millex®-LCR	0.45	Hydrophilic PTFE	**XE20.1**	100	302,10
Millex®-LCR	0.45*	Hydrophilic PTFE	**XE21.1**	100	317,15
Millex®-FG	0.2	Hydrophobic PTFE	**XE22.1**	100	266,60
Millex®-FG	0.2*	Hydrophobic PTFE	**XE23.1**	100	288,10
Millex®-FH	0.45	Hydrophobic PTFE	**XE24.1**	100	266,60
Millex®-FH	0.45*	Hydrophobic PTFE	**XE25.1**	100	288,10

③ Millex®-filter units, 25 mm

Type	Pore size (µm)	Membrane material	Art. No.	Pack Qty.	€
Millex®-LCR	0.45	Hydrophilic PTFE	**XE26.1**	50	225,75
Millex®-FG	0.2	Hydrophobic PTFE	**XE27.1**	50	265,55
Millex®-FH	0.45	Hydrophobic PTFE	**XE28.1**	50	220,40

Millex®-filter units, 33 mm

Type	Pore size (µm)	Membrane material	Art. No.	Pack Qty.	€
Millex®-GP	0.22	PES	**XC98.1**	50	198,90
Millex®-HP	0.45	PES	**XC99.1**	50	190,30
Millex®-GV	0.22	PVDF	**XE00.1**	50	199,95
Millex®-HV	0.45	PVDF	**XE01.1**	50	204,25
Millex®-GN	0.20	Nylon	**XE02.1**	50	194,60
Millex®-HN	0.45	Nylon	**XE03.1**	50	194,60

S

Millex®-filter units 33 mm

By MERCK MILLIPORE.

CE-certified, sterile (individually packed).

Mixed Cellulose Ester (MCE) membrane
- Application: 0.2 µm filter units for the sterilisation of aqueous solutions, large pore sizes for prefiltration and clear filtration
- Colour code: blue
- Working capacity: max. 100 ml

Durapore® membrane (hydrophilic PVDF)
- Application: sterilisation of aqueous and protein solutions, syringe filter with lowest protein binding ratio
- Colour code: yellow
- Working capacity: max. 100 ml

Millipore Express® membrane (PES)
- Application: sterilisation of tissue culture media and additives, buffers, protein solutions, virus suspensions, DNA and other aqueous solutions
- Colour code: green
- Working capacity: max. 200 ml

Technical specifications:

Membrane ∅	33 mm
Type	**sterile** (individually packed)
Housing material	Modify acrylic
Dead volume	<100 µl
Filtration surface area	4.5 cm^2
Max. inlet pressure	10 bar
Max. working temperature	45 °C
Inlet connection	Luer-Lock
Outlet connection	Luer

Type	Pore size (µm)	Membrane material	Art. No.	Pack Qty.	€
Millex®-GS	0.22	MCE	**XC55.1**	50	159,10
Millex®-HA	0.45	MCE	**XC56.1**	50	161,25
Millex®-AA	0.8	MCE	**XC57.1**	50	160,20
Millex®-VV	0.1	PVDF	**XC58.1**	50	191,35
Millex®-GV	0.22	PVDF	**XC59.1**	50	189,20
Millex®-HV	0.45	PVDF	**XC60.1**	50	189,20
Millex®-GP	0.22	PES	**XC61.1**	50	189,20
Millex®-HP	0.45	PES	**XE79.1**	50	175,25

CHROMAFIL® syringe filters

By Macherey-Nagel.

- For clear or sterile filtration of liquids or gases, as well as for preparation of samples for use in HPLC, GC, ICP, AAS, TOC, DOC, IR, NMR, photometry, spectroscopy, etc.
- Compacted **PP** housing with very low extractable substances content and good chemical resistance.
- Autoclavable at 121 °C and 1.1 bar for 30 min.

Technical specifications:

Membrane ∅ (mm)	**3**	**15**	**25**
Outer ∅ (mm)	approx. 6	approx. 25	approx. 30
Sample volume (ml)	≤1	1-5	5-100
Dead capacity (µl)	approx. 5	approx. 35	approx. 80
Max. inlet pressure (bar)	CHROMAFIL®: 6; CHROMAFIL® Xtra: 12		
Max. operating temperature (°C)	55		
Filtration area (cm^2)	approx. 0.07	approx. 1.6	approx. 4.9
Connection	Luer lock inlet/Luer or Mini-Spike outlet (MS)		

S
A 121 °C

CHROMAFIL® CA and CA Xtra

By Macherey-Nagel. Hydrophilic cellulose acetate membrane for filtration of aqueous solutions. Ideal for use with biological macromolecules, water soluble oligomers and polymers.
Extremely low protein binding capacity (21 µg per 25-mm filter).

CA, non-sterile

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
CA-20/25	0.20	25	**XH38.1**	100	122,00
CA-20/25	0.20	25	**XH38.2**	400	488,00
CA-45/25	0.45	25	**XH39.1**	100	122,00
CA-45/25	0.45	25	**XH39.2**	400	488,00

CA sterile (individually packed)

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
CA-20/25 (S)	0.20	25	**XH42.1**	50	95,00
CA-45/25 (S)	0.45	25	**XH43.1**	50	95,00

CA Xtra, non-sterile

Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
CA-20/25	0.20	25	**XH44.1**	100	122,00
CA-20/25	0.20	25	**XH44.2**	400	488,00

CHROMAFIL® RC and RC Xtra

By Macherey-Nagel. Regenerated cellulose hydrophilic membrane with very low adsorption. For filtration of aqueous and organic-aqueous solutions. Protein binding capacity: 84 µg per 25-mm filter. Non-sterile.

RC

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
RC-20/15 MS	0.20	15	**XH45.1**	100	122,00
RC-20/15 MS	0.20	15	**XH45.2**	800	976,00
RC-45/15 MS	0.45	15	**XH46.1**	100	122,00
RC-45/15 MS	0.45	15	**XH46.2**	800	976,00
RC-20/25	0.20	25	**EE80.1**	100	122,00
RC-20/25	0.20	25	**EE80.2**	400	488,00
RC-45/25	0.45	25	**EE81.2**	400	488,00
RC-45/25	0.45	25	**EE81.1**	100	122,00

RC Xtra

Uncoloured, low bleed 100% PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
RC-20/25	0.20	25	**XH47.1**	100	122,00
RC-20/25	0.20	25	**XH47.2**	400	488,00
RC-45/25	0.45	25	**XH48.1**	100	122,00
RC-45/25	0.45	25	**XH48.2**	400	488,00

CHROMAFIL® MV and MV Xtra

By Macherey-Nagel. Hydrophilic cellulose ester composite membrane with very low adsorption for the filtration of aqueous and polar solutions. Non-sterile.

MV

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
MV A-20/25	0.20	25	**XH49.1**	100	122,00
MV A-20/25	0.20	25	**XH49.2**	400	488,00
MV A-45/25	0.45	25	**XH50.1**	100	122,00
MV A-45/25	0.45	25	**XH50.2**	400	488,00

MV Xtra

Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
MV-20/25	0.20	25	**XH51.1**	100	122,00
MV-20/25	0.20	25	**XH51.2**	400	488,00
MV-45/25	0.45	25	**XH52.1**	100	122,00
MV-45/25	0.45	25	**XH52.2**	400	488,00

CHROMAFIL® PVDF and PVDF Xtra

By Macherey-Nagel. Hydrophilic PVDF membrane for polar and nonpolar solutions, water soluble oligomers, proteins and other polymers.
Protein binding capacity: 82 µg per 25-mm filter. Non-sterile.

PVDF

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
PVDF-20/15 MS	0.20	15	**XH69.1**	100	122,00
PVDF-45/15 MS	0.45	15	**XH70.1**	100	122,00

PVDF Xtra

Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
Xtra PVDF-20/25	0.20	25	**XH71.1**	100	122,00
Xtra PVDF-45/25	0.45	25	**XH72.1**	100	122,00

Syringe filters

121 °C

CHROMAFIL® PES Xtra

By Macherey-Nagel. Hydrophilic PES membrane for aqueous and slightly organic solutions. Very low adsorption of proteins, good resistance to acids and bases. Protein binding capacity: 29 µg per 25-mm filter.
Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size. Non-sterile.

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
PES-20/25	0.20	25	**XH73.1**	100	122,00
PES-20/25	0.20	25	**XH73.2**	400	488,00
PES-45/25	0.45	25	**XH74.1**	100	122,00
PES-45/25	0.45	25	**XH74.2**	400	488,00
PES-500/25	5.0	25	**XH75.1**	100	122,00
PES-500/25	5.0	25	**XH75.2**	400	488,00

CHROMAFIL® PET and PET Xtra

By Macherey-Nagel. Hydrophilic PET all-round membrane for polar and nonpolar solutions. Ideal for filtering eluents from water and organic solvents for HPLC and for the preparation of samples for TOC/DOC determination.
Non-cytotoxic, does not inhibit the growth of micro-organisms and higher eucaryotic cells. Non-sterile.

PET

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
PET-20/15 MS	0.20	15	**P300.1**	100	122,00
PET-45/15 MS	0.45	15	**P301.1**	100	122,00
PET-20/25	0.20	25	**P298.1**	100	122,00
PET-20/25	0.20	25	**P298.2**	400	488,00
PET-45/25	0.45	25	**P299.1**	100	122,00
PET-45/25	0.45	25	**P299.2**	400	488,00

PET Xtra

Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
PET-20/25	0.20	25	**XH76.1**	100	122,00
PET-20/25	0.20	25	**XH76.2**	400	488,00
PET-45/25	0.45	25	**XH77.1**	100	122,00
PET-45/25	0.45	25	**XH77.2**	400	488,00

CHROMAFIL® GF/PET

By Macherey-Nagel. Hydrophilic PET all-round membrane for polar and nonpolar solutions. Ideal for filtering eluents from water and organic solvents.
Recommended for solutions with a high suspended matter load or high viscosity solutions; the glass-fibre membrane removes coarse particulate matter and prevents clogging of the membrane. This improves filtration efficiency, increases filtrate yield and aids clarification of solutions with a high particulate matter load. Non-sterile.

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
GF/PET-20/25	1.0/0.20	25	**EE78.1**	100	154,00
GF/PET-45/25	1.0/0.45	25	**EE79.1**	100	154,00

121 °C

CHROMAFIL® Nylon PA and PA Xtra

By Macherey-Nagel. PA (nylon) membrane for the filtration of medium polar organic-aqueous liquids. Non-sterile.

PA

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
AO-20/3	0.20	3	**XH53.1**	100	148,00
AO-45/3	0.45	3	**XH54.1**	100	148,00
AO-20/15 MS	0.20	15	**XH55.1**	100	122,00
AO-45/15 MS	0.45	15	**XH56.1**	100	122,00
AO-20/25	0.20	25	**XH57.1**	100	122,00
AO-20/25	0.20	25	**XH57.2**	400	488,00
AO-45/25	0.45	25	**XH58.1**	100	122,00
AO-45/25	0.45	25	**XH58.2**	400	488,00

PA Xtra

Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
PA-20/25	0.20	25	**XH59.1**	100	122,00
PA-20/25	0.20	25	**XH59.2**	400	488,00
PA-45/25	0.45	25	**XH60.1**	100	122,00
PA-45/25	0.45	25	**XH60.2**	400	488,00

CHROMAFIL® PTFE and PTFE Xtra

By Macherey-Nagel. Hydrophobic PTFE membrane for nonpolar liquids and gases. Highly resistant to solvents, acids and bases. Non-sterile.
Note: the membrane can be wetted with water by rinsing with alcohol and subsequently with water.

PTFE

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
O-20/3	0.20	3	**XH61.1**	100	148,00
O-45/3	0.45	3	**XH62.1**	100	148,00
O-20/15 MS	0.20	15	**XH63.1**	100	122,00
O-45/15 MS	0.45	15	**XH64.1**	100	122,00
O-20/25	0.20	25	**XH65.1**	100	122,00
O-20/25	0.20	25	**XH65.2**	400	488,00

PTFE Xtra

Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
PTFE-20/25	0.20	25	**XH66.1**	100	122,00
PTFE-20/25	0.20	25	**XH66.2**	400	488,00
PTFE-45/25	0.45	25	**XH67.1**	100	122,00
PTFE-100/25	1.0	25	**XH68.1**	100	122,00

▶ Glass syringes see page 421
▶ Disposable syringes see page 420

Syringe filters

SPARTAN®-syringe filters

By Whatman. Certified for HPLC.
Hydrophilic. Specially developed for purifying HPLC-samples.
Ideal for filtering aqueous and organic solutions.

Technical specifications:

Membrane-∅ (mm)	**13**	**30**
Sample capacity (ml)	max. 5	max. 100
Dead capacity (µl)	10	50
Filter surface (cm^2)	0.75	5.7
Max. working pressure (bar)	7.0	
Max. working temperature (°C)	80	
Connection	Luer-Lock inlet / Luer outlet	

Nominal-∅ 13 mm, ∅ outer 17 mm

Pore size (µm)	Membrane material	Colour code	Material housing	Art. No.	Pack Qty.	€
0,2	reg. Cellulose	dark brown	PP	**5989.2**	100	208,00
0,45	reg. Cellulose	light brown	PP	**5992.2**	100	208,00

Nominal-∅ 30 mm, ∅ outer 34 mm

Pore size (µm)	Membrane material	Colour code	Material housing	Art. No.	Pack Qty.	€
0,2	reg. Cellulose	dark brown	PP	**5824.2**	100	240,00
0,45	reg. Cellulose	light brown	PP	**0062.2**	100	237,00

ReZist®-syringe filters

By Whatman. **Hydrophobic.** Ideal for ventilation, gas filtration and HPLC-sample preparation of organic solvents. Luer-Lock inlet/Luer outlet.

Membrane-∅ 30 mm, outer 34 mm

Pore size (µm)	Membrane material	Colour code	Material housing	Art. No.	Pack Qty.	€
0,2	PTFE	white	PP	**5994.2**	100	326,00
0,45	PTFE	green	PP	**5996.2**	100	326,00
1	PTFE	yellow	PP	**5998.2**	100	326,00
5	PTFE	grey	PP	**6000.2**	100	326,00

Millex®-PTFE-filter units IC

By MERCK MILLIPORE. **IC-certified.**
Specially designed for sample preparation in ion chromatography.

- Low extractable substances content
- Low-binding hydrophilic PTFE membrane
- For clear filtration of aqueous and slightly organic solutions

Technical specifications:

Membrane ∅ (mm)	**13**	**25**
Type	**non-sterile**	
Housing material	HDPE	
Sample volume (ml)	up to 10	up to 100
Dead volume (µl)	< 25	< 100
Max. inlet pressure (bar)	7	
Max. working temperature (°C)	45	
Inlet connection	Luer-Lock	
Outlet connection	Luer	

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
Millex®-LG	0,20	13	**XE82.1**	100	304,25
Millex®-LG	0,20	25	**XE83.1**	50	244,05
Millex®-LH	0,45	13	**XE84.1**	100	309,60
Millex®-LH	0,45	25	**XE85.1**	50	299,95

S

PTFE-inline filter

For gas filtration, ventilation and venting as well as for filtration of large amounts of liquid.

Technical specifications:

Housing material	PP, ultrasonically welded
Diaphragm	PTFE (hydrophobe)
Filtration area	17.35 cm^2
Inlet and outlet connection	staged hose connection (∅ 6-12 mm)

Non-sterile

Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
0,2	47	**HLL7.1**	50	384,85
0,45	47	**HLL8.1**	50	384,85

Sterile, individually packed

Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
0,2	47	**HLL9.1**	50	427,85
0,45	47	**HLN0.1**	50	427,85

A 121 °C

Millex®-PTFE-filter units

By MERCK MILLIPORE. For sterile filtration of gases, sterile venting of containers and for sterilisation and clear filtration of organic solutions. Also suitable for preventing ingress of fluid contamination in following pumps an other instruments.

Technical specifications:

Version	**non-sterile**
Housing material	PP
Membrane	PTFE
Filtration surface	19.6 cm^2
Max. temperature	121 °C
Max. pressure	4 bar
Input and output connection	graded hose connection (Latex) (∅ 6-13 mm) with Luer-cone inside

Type	Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
Millex®-FG	0,22	50	**CY06.1**	10	130,10
Millex®-FH	0,45	50	**CY07.1**	10	130,10
Millex®-FA	1.0	50	**CY08.1**	10	130,10

Millex®-fibre-glass filter units

By MERCK MILLIPORE. Ideal for prefiltrering difficult-to-filter solutions and liquids with high particle densities. Protects downstream membranes from rapid blocking. Retention range ca. 2,0 µm.

Technical specifications:

Membrane-∅	**25 mm**	**50 mm**
Model	**unsterile**	
Filtration volume (ml)	100	4000
Housing material	PVC	
Membrane	Fibre-glass	
Filtration surface (cm^2)	3.9	19.6
Dead volume (µl)	<100	<1000
Max. working temperature (°C)	45	
Max. pressure (bar)	5	4.1
Input connection	female Luer-Lock inside	graded hose connection with Luer-cone inside
Output connection	male Luer-cone outside	graded hose connection (∅ 6-13 mm) with Luer-cone inside

Type	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
Millex®-AP	25	**CY09.1**	50	111,80
Millex®-AP	50	**CY10.1**	10	61,85

Millex®-HPF filter units

By MERCK MILLIPORE.
For clear filtration of solutions with a high particle load prior to instrument based assay.

- With graduated glass fibre prefilter (10.0 to 0.7 µm)
- Two to four times the throughput of syringe filters without a prefilter
- Polyethylene housing with a low extractable substances content

Hydrophilic nylon membrane
- With glass fibre prefilter for clear filtration of aqueous and slightly organic solutions with a high particle load

Durapore® membrane (hydrophilic PVDF)
- Very low protein binding
- With glass fibre prefilter for clear filtration of protein solutions with a high particle load

Hydrophilic PTFE membrane
- Low protein binding
- With glass fibre prefilter for clear filtration of aqueous and organic solutions with a high particle load

Technical specifications:

Membrane ∅	**25 mm**
Type	**non-sterile**
Housing material	HDPE
Specimen volume	up to 100 ml
Dead volume	< 250 µl
Filtration surface area	3.9 cm^2
Max. inlet pressure	7 bar
Max. working temperature	45 °C
Inlet connection	Luer-Lock
Outlet connection	Luer

Type	Pore size (µm)	Membrane material	Art. No.	Pack Qty.	€
Millex®-GN	0,2	Nylon	**XE30.1**	50	188,15
Millex®-HN	0,45	Nylon	**XE31.1**	50	206,40
Millex®-HV	0,45	PVDF	**XE32.1**	50	206,40
Millex®-LLG	0,2	PTFE	**XE33.1**	50	192,45
Millex®-LCR	0,45	PTFE	**XE34.1**	50	190,30

S

Millex®-PES-filter units

By MERCK MILLIPORE. Express® (PES) membranes, with low protein binding and high flow speed. For sterile filtration of cell culture media or other aqueous solutions. Filling cone optional, reduces the risk of contamination.

Technical specifications:

Version	**sterile**
Housing material	MBS
Membrane	PES
Filtration surface	19.6 cm^2
Dead volume	< 1000 µl after emptying with air
Max. temperature	45 °C
Max. pressure	3.4 bar
Input and output connection	graded hose connection (∅ 6-13 mm) and Luer-cone inside

Type	Membrane ∅ (mm)	Filtration-volume (l)	Pore size (µm)	Art. No.	Pack Qty.	€
Millex®-GP	50	4	0,22	**CY11.1**	10	134,40
Millex®-GP with filling cone	50	4	0,22	**CY12.1**	10	149,45

Filter units

S

Sterivex™-filter units

By MERCK MILLIPORE. For sterile filtration of aqueous liquids for volumes up to 1 or 2 l. Filter units can be operated with syringes or hose pumps. Filling cone optional, to reduce the risk of contamination.

Technical specifications:

Model	**sterile** (gamma sterilised)
Housing material	Eastar®
Filtration surface	10 cm^2
Dead volume	< 200 µl after emptying with air
Max. temperature	45 °C
Max. pressure	3 bar
Input connection	female Luer-Lock
Output connection	with or without filling cone (male Luer-Lock)

Durapore® (PVDF) membrane with extremely low protein binding, filtration volume 1 l.

Type	Pore size (µm)	Art. No.	Pack Qty.	€
Sterivex™-GV with filling cone	0,22	**CT79.1**	10	143,00
Sterivex™-GV without filling cone	0,22	**CT80.1**	15	173,10
Sterivex™-HV with filling cone	0,45	**CT81.1**	10	143,00
Sterivex™-HV without filling cone	0,45	**CT82.1**	15	173,10

Millipore Express® (PES) membrane with low protein binding and high rate of flow, filtration volume 2 l.

Type	Pore size (µm)	Art. No.	Pack Qty.	€
Sterivex™-GP with filling cone	0,22	**CT83.1**	10	133,30
Sterivex™-GP without filling cone	0,22	**CT84.1**	15	173,10

S

Steripak™-filter units

By MERCK MILLIPORE. **For sterile filtration of volumes up to 20 l.** With Millipore Express® (PES) membranes with high rates of flow and low protein binding. **Sterile** and ready-to-use in operations with hose pumps or pressure chambers.

- The filling cone on the output side of unit makes the sterilisation process safer
- Manual air vent prevent air blocking of membrane
- For sterile filtration of tissue culture media, buffers and other aqueous solutions

Technical specifications:

Version	**sterile**
Housing material	SAN
Membrane	PES (hydrophilic polyether sulfone)
∅	76 mm
Dead volume	< 2700 µl after emptying with air
Max. temperature	45 °C
Max. pressure	5.2 bar (in direction of flow)
Input connection	graded hose connection (∅ 6-8 mm)
Output connection	graded hose connection and filling cone

Millipore Express® (PES) membrane
With low protein formation and high flow speed, **sterile**.

Filtrationvolume (l)	Pore size (µm)	Filtration surface (cm^2)	Art. No.	Pack Qty.	€
10	0,22	100	**CT85.1**	3	168,80
20	0,22	200	**CT86.1**	3	208,55

▶ Tube pumps see page 365
▶ Vacuum pumps see page 370

Centrifuge filter systems

S

Ultrafree filtration systems for laboratory centrifuges

By MERCK MILLIPORE. **Sterile** or non-sterile. Centrifuge filter systems for sample volumes of 0.5 or 2.0 ml. Use in fixed-angle rotors for 1.5 or 15 ml sample tubes. Filter unit and collector tube are made of PP.

- **Hydrophilic Durapore® PVDF membrane:** extremely low protein binding. Suitable for removal of particulate matter and precipitate from aqueous samples, and for protein and nucleic acid applications
- **Hydrophilic PTFE membrane:** for removal of precipitate from solvent-based samples

Technical specifications:

Type	Ultrafree-MC	Ultrafree-CL
Volume of filter insert, max. (ml)	0.5	2
Volume of collection tube (ml)	1.5	5
Centrifugable to	12000 x g	5000 x g
Dead volume (µl)	5	30
Membrane surface area (cm^2)	0.2	0.8
Outer ∅ (mm)	11	16.3
Length (mm)	45	77

Procedure:
- Open the attached lid of the filter unit
- Place the insert in the housing
- Close the filtration unit and place it in the centrifuge
- On completion of centrifuging, remove the filtration unit, open the lid and remove the insert
- The insert contains the residue and the sealable housing contains the filtrate

Ultrafree-MC to 0.5 ml, PVDF membrane

Pore size (µm)	Design	Colour code	Art. No.	Pack Qty.	€
0.1	non-sterile	orange	**T341.1**	25	135,45
0.22	non-sterile	yellow	**T342.1**	25	135,45
0.22	sterile	yellow	**XH78.1**	50	255,85
0.45	non-sterile	red	**T343.1**	25	135,45
0.65	non-sterile	purple	**T344.1**	25	135,45
0.65	sterile	purple	**XH79.1**	50	250,50
5.0	non-sterile	dark green	**XH80.1**	100	424,65

Ultrafree-MC to 0.5 ml, PTFE membrane

Pore size (µm)	Design	Colour code	Art. No.	Pack Qty.	€
0.2	non-sterile	yellow	**XH81.1**	25	163,40
0.45	non-sterile	red	**XH82.1**	25	163,40

Ultrafree-CL to 2.0 ml, PVDF membrane

Pore size (µm)	Design	Colour code	Art. No.	Pack Qty.	€
0.1	non-sterile	orange	**T345.1**	25	166,65
0.22	non-sterile	yellow	**T346.1**	25	166,65
0.22	sterile	yellow	**XH83.1**	50	303,15
0.45	non-sterile	red	**T347.1**	25	166,65
0.65	non-sterile	purple	**XH84.1**	25	166,65
5.0	non-sterile	dark green	**XH85.1**	25	166,65

Ultrafree-CL to 2.0 ml, PTFE membrane

Pore size (µm)	Design	Colour code	Art. No.	Pack Qty.	€
0.22	non-sterile	yellow	**XH86.1**	25	166,65
0.45	non-sterile	red	**XH87.1**	25	166,65

S

Steriflip®-vacuum filter units

By MERCK MILLIPORE. **Sterile filter units for volumes of up to 50 ml.**

- **Millipore Express® PES membrane** with high flow rate and low protein binding: for routine sterile filtration of tissue culture media, sera, buffers and other aqueous solutions
- **Durapore® PVDF membrane** with very low protein binding: For sterile and clear filtration of aqueous solutions
- **Hydrophilic Nylon mesh filter:** for removing coarse particulate matter

Technical specifications:

Type	sterile
Housing material	MBS/PP (modified acrylic/PP) housing
Filtration area	7 cm^2
Filtration volume	max. 50 ml
Membrane surface area (cm^2)	0.2
Dead volume	600 µl
Max. operating temperature	45 °C

Procedure:
- Connect the filter unit to the centrifuge tube containing the sample. Rotate the filter unit through 180° and apply vacuum.
- An alternative option: screw the funnel attachment onto the sterile filter unit, fill with sample and apply vacuum
- No need for filtrate transfer - Steriflip® filter unit filters directly into a sterile 50 ml centrifuge tube

Delivery incl. sterile filter units with connected 50 ml centrifuge tube and lid (each packed separately) and a single tube holder (blue).
The 50 ml centrifuge tube and funnel attachment are optional (please order separately).

Membrane material	Pore size (µm)	Art. No.	Pack Qty.	€
PES	0.22	**X348.1**	25	169,85
PVDF	0.22	**XE99.1**	25	192,45
PVDF	0.45	**XH00.1**	25	192,45
Nylon mesh	20	**XH01.1**	25	191,35
Nylon mesh	40	**XH02.1**	25	191,35
Nylon mesh	60	**XH03.1**	25	191,35
Nylon mesh	100	**XH04.1**	25	191,35

Accessories:

50 ml centrifuge tube	**N462.1**	500	137,60
Funnel attachment, 50 ml, PP, non-sterile	**XH05.1**	25	111,80

Bottle-Top filter systems

S

Steritop™-bottle top filters

By MERCK MILLIPORE.

- Casing made of polystyrene
- **Sterile**
- For sterile filtration of tissue culture media, serum, additives, buffers and other aqueous solutions
- Low protein binding
- High flow rates, short filtration times
- Can be used with screw thread bottles 45 mm suitable for vacuum or GL 45
- Filtration surface 40 cm^2

MILLIPORE Express® PLUS (PES)-membrane

Pore size (µm)	Funnel capacity (ml)	Art. No.	Pack Qty.	€
0.22	150	**X334.1**	12	89,15
0.22	250	**X335.1**	12	107,30
0.22	500	**X336.1**	12	130,10
0.22	1000	**X337.1**	12	207,50

Durapore® (PVDF)-membrane

Pore size (µm)	Funnel capacity (ml)	Art. No.	Pack Qty.	€
0.22	500	**CT99.1**	12	130,10

S

Stericup®-bottles

By MERCK MILLIPORE.

Filtrate collecting bottles for Steritop™ and Stericup® filter systems.

Made of PS. **Sterile.** Screw cap made of PE. Thread 45 mm.

Volume (ml)	Art. No.	Pack Qty.	€
250	**CX04.1**	12	52,15
500	**CX05.1**	12	66,65
1000	**CX06.1**	12	106,45

S

Stericup®-vacuum filter systems

By MERCK MILLIPORE.

Combination of bottle top filter and collecting bottle.

- For routine sterile filtration of tissue culture media, serum, additives and other aqueous solutions
- Low protein binding
- High flow rates, short filtration times
- For volumes of 150 to 1000 ml
- The compact form makes it ideal for use under laminar flow conditions
- 0.1 µm pore size for mycoplasma-precipitation
- Bottles are stackable

Technical specifications:

Membrane	**Express® Plus Membrane (PES)**	**Durapore® (PVDF)-Membrane**
Pore size (µm)	0.1 / 0.22	0.22 / 0.45
Design	**sterile**	
Housing material/Lid	PS/PE	
Membrane-∅ (mm)	73	
Filtration surface (cm^2)	40	
Max. temperature (°C)	50	
Connection	Vacuum tube connection ∅ 6.5 - 12 mm	

MILLIPORE Express® PLUS (PES)-membrane

Pore size (µm)	Funnel capacity (ml)	Dripbottle (ml)	Art. No.	Pack Qty.	€
0,1	250	250	**CX01.1**	12	141,90
0,22	150	150	**X338.1**	12	107,00
0,22	250	250	**X339.1**	12	127,95
0,22	500	500	**X340.1**	12	193,50
0,22	500	1000	**X341.1**	12	268,75
0,22	1000	1000	**X342.1**	12	279,50

Durapore® (PVDF)-membrane with extremely low protein binding

Pore size (µm)	Funnel capacity (ml)	Dripbottle (ml)	Art. No.	Pack Qty.	€
0,22	150	150	**CT87.1**	12	106,45
0,22	250	250	**CT88.1**	12	133,30
0,22	500	500	**CT89.1**	12	201,05
0,22	500	1000	**CT90.1**	12	273,05
0,22	1000	1000	**CT91.1**	12	283,80
0,45	150	150	**CT92.1**	12	106,45
0,45	250	250	**CT93.1**	12	131,15
0,45	500	500	**CT94.1**	12	199,95
0,45	1000	1000	**CT96.1**	12	288,10

Bottle-Top filter systems

S

Filter units with cellulose nitrate membrane

By Nalgene®. Triton-free cellulose nitrate membrane **(CN)** with excellent active surface properties and high flow rates for aqueous solutions. For cold-sterilization, clear-filtration, pre-filtration and ultra-filtration of buffers, microbiological nutrient media and other aqueous solutions.

Design:
- Green colour coding
- Filter units made of PS
- Graduated filter tops and filter bottles
- With quick-connect tube adapter and cotton stopper
- Leakproof screw-cap
- Filtration units are non pyrogenic, non cytotoxic and **sterile**

*each box contains 12 glass fiber preliminary filters

Pore size (µm)	Membrane ∅ (mm)	Volume (ml) Filter top/ Filter bottle	Colour of membrane/Grid	Art. No.	Pack Qty.	€
0,2	50	150/150	white/none	**AC48.1**	12	116,10
0,45	50	150/150	white/green	**AC49.1**	12	116,10
0,8	50	150/150	white/black	**AC50.1**	12	116,10
0,2	50	250/250	white/none	**AC51.1**	12	127,95
0,45	50	250/250	white/green	**AC52.1**	12	127,95
0,8	50	250/250	white/black	**AC53.1**	12	127,95
0,2*	75	500/500	white/none	**AC54.1**	12	210,70
0,45*	75	500/500	white/green	**AC55.1**	12	210,70
0,8*	75	500/500	white/black	**AC56.1**	12	210,70
0,2*	75	500/1000	white/none	**AC57.1**	12	256,95
0,45*	75	500/1000	white/green	**AC58.1**	12	256,95
0,8*	75	500/1000	white/black	**AC59.1**	12	256,95

S

Filter units with SFCA-membrane

By Nalgene®. Membranes made from cellulose acetate that is free of active surface agents (SF**CA**) with extremely low protein binding and low viscosity. SFCA is ideal when working with tissue culture and when filtering protein-containing serum as there are no active surface agents in the membranes which could have a toxic effect on the cells.

Design:
- Yellow colour coding
- Filter units made of PS
- Graduated filter tops and filter bottles
- With quick-connect tube adapter and cotton stopper
- Leakproof screw-cap
- Filtration units are non pyrogenic, non cytotoxic and **sterile**

*each box contains 12 glass fiber preliminary filters

Pore size (µm)	Membrane ∅ (mm)	Volume (ml)	Art. No.	Pack Qty.	€
0,2	50	150	**AC23.1**	12	120,40
0,45	50	150	**AC24.1**	12	120,40
0,2	50	250	**AC25.1**	12	130,10
0,45	50	250	**AC26.1**	12	130,10
0,2*	75	500	**AC27.1**	12	212,85
0,45*	75	500	**AC28.1**	12	212,85
0,2	90	500	**AC29.1**	12	255,85
0,45	90	500	**AC30.1**	12	255,85
0,2	90	1000	**AC31.1**	12	310,70
0,45	90	1000	**AC32.1**	12	310,70

S

Filtrate bottles for bottle-top-filter

By Nalgene®. Made of **PS**. Thread 45 mm. Screw cap made of PE, closed with 1½ turns. Non-pyrogen, non-cytotoxic, γ-**sterile. Suitable for all bottle-top filters and filtration devices, Art. No. AC08.1 to AC59.1.**

Volume (ml)	Art. No.	Pack Qty.	€
150	**AC60.1**	24	111,80
250	**AC61.1**	24	123,65
500	**AC62.1**	12	88,70
1000	**AC63.1**	12	127,95

S

Bottle-top filters with SFCA-membrane

By Nalgene®. Filter with SF**CA**-membrane for screwing on bottles with 45 mm thread or GL 45. The leakproof screw-on top enables vacuum filtration directly into a sterile bottle.

Design:
- Yellow colour coding
- Graduated filter top
- Quick-connect tube adapter for tubes with inner ∅ 6-8 mm
- Leakproof screwing for vacuum filtration
- Filtration units are non pyrogenic, non cytotoxic and **sterile**

Pore size (µm)	Membrane ∅ (mm)	Volume (ml)	Art. No.	Pack Qty.	€
0,2	50	150	**AC33.1**	12	90,20
0,45	50	150	**AC34.1**	12	90,20
0,2	75	500	**AC35.1**	12	127,95
0,45	75	500	**AC36.1**	12	127,95
0,2	90	1000	**AC37.1**	12	213,95

Bottle-Top filter systems

S

Filter units with PES-membrane

By Nalgene®. With hydrophilic Polyethersulfone membranes **(PES)** for biological sterile filtrations. Low protein binding properties, high chemical stability and high flow rates. No undesired substances are released in the media as the membranes contain no active surface agents or softeners.

Design:
- Blue colour coding
- Filter units made of PS
- Graduated filter tops and filter bottles
- With quick-connect tube adapter and cotton stopper
- Leakproof screw-cap
- Filtration units are non pyrogenic, non cytotoxic and **sterile**

*with Supor® PES-Membrane

Pore size (µm)	Membrane ∅ (mm)	Volume (ml)	Art. No.	Pack Qty.	€
0,2*	50	150	**AC08.1**	12	115,05
0,45	50	150	**AC09.1**	12	123,65
0,2*	50	250	**AC10.1**	12	130,10
0,45	50	250	**AC11.1**	12	138,70
0,2*	75	500	**AC12.1**	12	203,20
0,45	75	500	**AC13.1**	12	212,85
0,2*	90	500	**AC14.1**	12	241,90
0,45	90	500	**AC15.1**	12	252,65
0,2*	90	1000	**AC16.1**	12	260,15
0,45	90	1000	**AC17.1**	12	274,15

S

Bottle-top filters with PES-membrane

By Nalgene®. Filter with **PES**-membrane for bottles with 45 mm thread or GL45. The leakproof screw top enables vacuum filtration directly into a sterile bottle.

Design:
- Blue colour coding
- Graduated filter top
- Quick-connect tube adapter for tubes with inner ∅ 6-8 mm
- Leakproof screwing for vacuum filtration
- Filtration units are non pyrogenic, non cytotoxic and **sterile**

*with a Supor® PES-Membrane

Pore size (µm)	Membrane ∅ (mm)	Volume (ml)	Art. No.	Pack Qty.	€
0,2*	50	150	**AC18.1**	12	89,90
0,45	50	150	**AC19.1**	12	95,70
0,2*	75	500	**AC20.1**	12	117,20
0,45	75	500	**AC21.1**	12	123,65
0,2*	90	1000	**AC22.1**	12	239,75

S

Filter units with nylon membrane

By Nalgene®. Suitable for sterile filtration of nutrient media or sensitive cell and tissue cultures. Alcohol-resistant **nylon** membranes with extremely low content (<0.5 weight percentage) of extractable substances and high flow rates at short filtration times. Hydrophilic and free from active surface agents.

Design:
- Red colour coding
- Filter units made of PS
- Graduated filter tops and filter bottles
- With quick-connect tube adapter and cotton stopper
- Leakproof screw-cap
- Filtration units are non pyrogenic, non cytotoxic and **sterile**

*each box contains 12 glass fiber preliminary filters

Pore size (µm)	Membrane ∅ (mm)	Volume (ml) Filter top/ Filter bottle	Art. No.	Pack Qty.	€
0,2	50	150/150	**AC38.1**	12	145,15
0,45	50	150/150	**AC39.1**	12	145,15
0,2	50	250/250	**AC40.1**	12	153,75
0,45	50	250/250	**AC41.1**	12	153,75
0,2*	75	500/500	**AC42.1**	12	245,10
0,45*	75	500/500	**AC43.1**	12	245,10
0,2*	75	500/1000	**AC44.1**	12	299,95
0,45*	75	500/1000	**AC45.1**	12	299,95
0,2	90	500/500	**AC46.1**	12	299,95
0,2	90	1000/1000	**AC47.1**	12	342,95

Bottle-Top filter systems

Filter funnels

By Nalgene®. Made of **PSF**. Graduated.
Suitable for use with 47 to 50 mm diaphragms. Autoclavable.
Delivery incl.
suction sleeve, fits suction bottles with neck inner ∅ 30 to 38 mm.

Funnel capacity (ml)	Art. No.	Pack Qty.	€
250	**ATC8.1**	1	138,70
500	**ATC9.1**	1	192,45

Replacement suction sleeves

Made of thermoplastic elastomer. Outer ∅ 40 mm at top, 28 mm at bottom.
Height 30 mm, wall thickness 3 mm.

Art. No.	Pack Qty.	€
ATE0.1	6	62,25

Reusable filtration systems

By Nalgene®. Filter holders with filtrate bottle made of **PSF**,
with graduation.
Suitable for vacuum filtration with 47 mm or 50 mm membranes.
2 tube connectors for tubes with inner-∅ 6-8 mm.
With cap for sterile storage of filtrate. Autoclavable.
Delivery incl. filter holder and -bottle.

Volume of upper part (ml)	Volume of collecting bottle (ml)	Art. No.	Pack Qty.	€
250	250	**KA84.1**	1	135,45
500	500	**KA85.1**	1	196,75
500	1000	**KA86.1**	1	246,20

Reusable bottle-top filter holders

By Nalgene®. Made of **PSF**. For screwing on vacuum-tight bottles with thread size 33 mm or 45 mm.Filter holder with 45 mm thread, also suitable for bottles with thread GL 45. Suitable for vacuum filtration with 47 mm or 50 mm membranes. With graduation. Tube connection for tubes with inner-∅ 6-8 mm. Autoclavable.

Volume of upper part (ml)	for thread (mm)	Art. No.	Pack Qty.	€
500	33	**KA89.1**	1	196,75
500	45	**KA90.1**	1	196,75

▶ Vacuum and compression-proof screw neck bottles see page 40

Filter units and filter holder

DURAN WHEATON KIMBLE

Material DURAN®

A 121 °C

Filters made of DURAN®

- Interchangeable filter plates available in 4 different porosities
- Easy and safe removal of filtered medium
- Filter plates can be cleaned on both sides
- Attention: insert disc between two Viton®-seals
- Optional: Slit sieve plates can be inserted into 250 ml filters to hold membrane and paper filters

Delivery incl. Filter attachment made of DURAN® with PP funnel and 2 Viton®-sealing gaskets.

Please order filter plates separately.

Volume (ml)	for plate (mm)	Thread (mm)	Filtershaft outer ∅ (mm)	Art. No.	Pack Qty.	€
30	24	28	10	**1631.1**	1	19,15
250	50	54	12	**1632.1**	1	45,30
1000	90	95	18	**CT08.1**	1	103,00

Slit sieve plate

Ideal as holder for membrane and paper filters with ∅ 47 mm. Suitable for 1632.1.

Art. No.	Pack Qty.	€
N886.1	1	24,65

Filter plates

With glass rim.

For 30-ml unit; for filter-∅ 25 mm.

Porosity	Art. No.	Pack Qty.	€
1 (100-160 µm)	**1633.1**	1	25,15
2 (40-100 µm)	**1634.1**	1	25,15
3 (16-40 µm)	**1635.1**	1	25,15
4 (10-16 µm)	**1636.1**	1	27,30

For 250-ml unit; for filter-∅ 50 mm.

Porosity	Art. No.	Pack Qty.	€
1 (100-160 µm)	**1637.1**	1	35,30
2 (40-100 µm)	**1638.1**	1	35,30
3 (16-40 µm)	**1639.1**	1	35,30
4 (10-16 µm)	**1640.1**	1	37,40

For 1000-ml unit; for filter-∅ 90 mm.

Porosity	Art. No.	Pack Qty.	€
1 (100-160 µm)	**CT09.1**	1	47,60
2 (40-100 µm)	**CT10.1**	1	47,60
3 (16-40 µm)	**CT11.1**	1	47,60
4 (10-16 µm)	**CT12.1**	1	50,90

Spare filter attachments made of DURAN®

For filters.

For volumes (ml)	for plate (mm)	Thread (mm)	Art. No.	Pack Qty.	€
30	24	28	**CX98.1**	1	12,90
250	50	54	**CX99.1**	1	37,00
1000	90	95	**CY00.1**	1	95,35

Spare sealing gaskets made of Viton®

For filters made of DURAN®.

For volumes (ml)	for plate (mm)	Thread (mm)	Art. No.	Pack Qty.	€
30	24	28	**CT13.1**	10	12,55
250	50	54	**CT14.1**	10	32,70
1000	90	95	**CT15.1**	10	64,80

DURAN WHEATON KIMBLE

A 121 °C

25 mm vacuum filtration unit

By Wheaton. Made of borosilicate glass according to ASTM E 438 Type I, Class A. For filtration of small volumes, e.g. in microbiology or particle analysis. For filter diameters of 25 mm. Autoclavable.

Delivery incl. 15 ml funnel attachment, funnel bottom section with glass frit as filter support (porosity 40-60 µm), aluminium bracket and silicone stopper. Please order flask separately.

Art. No.	Pack Qty.	€
EYA0.1	1	188,15

Replacement parts and accessories for 25 mm vacuum filtration unit

Type	Art. No.	Pack Qty.	€
15 ml funnel attachment	**EYA1.1**	1	56,20
50 ml funnel attachment	**EYA2.1**	1	73,75
Funnel bottom section with glass frit	**EYA3.1**	1	99,30
Aluminium bracket	**EYA4.1**	1	53,75
Silicone stopper (∅ at base 24 mm, ∅ at top 28 mm, height 25 mm, bore ∅ 8.5 mm)	**EYA5.1**	6	71,85
125 ml flask with vacuum connection (∅ 6 mm)	**EYA6.1**	1	54,10

Filter units and filter holder

DURAN WHEATON KIMBLE
A 121 °C

47 mm vacuum filtration unit

By Wheaton. Made of borosilicate glass according to ASTM E 438 1 Type I, Class A. For filtration of volumes up to approx. 1 litre, e.g. in microbiology or particle analysis. For filter diameters of 47 mm. Autoclavable.

Delivery incl. 300 ml funnel attachment, funnel bottom section with glass frit (porosity 40-60 µm) as filter support, aluminium bracket and silicon stopper. Please order flask separately.

Art. No.	Pack Qty.	€
EYA7.1	1	195,65

Replacement parts and accessories for 47 mm vacuum filtration unit

Type	Art. No.	Pack Qty.	€
100 ml funnel attachment	**EYA8.1**	1	69,45
300 ml funnel attachment	**EYA9.1**	1	78,25
500 ml funnel attachment	**EYC0.1**	1	85,65
1000 ml funnel attachment	**EYC1.1**	1	95,55
Funnel bottom section with glass frit	**EYC2.1**	1	112,90
Aluminium bracket	**EYC3.1**	1	61,15
Silicone stopper (∅ at base 33 mm, ∅ at top 41 mm, H 25 mm, ∅ of bore 14 mm)	**EYC4.1**	6	80,65
1000 ml flask with vacuum connection (∅ 6 mm)	**EYC5.1**	1	90,75
2000 ml flask with vacuum connection (∅ 6 mm)	**EYC6.1**	1	132,25

Material DURAN®
A 121 °C

Vacuum filter system GV 050/0

By Whatman. Made of DURAN®. Non-corrosive, biologically inert and autoclavable to 121 °C and 1.1 bar overpressure (20 mins).
For filter-∅ 47-50 mm and prefilter ∅ 37 mm. Filtershaft-∅ ~14.75 mm.

Applications: in analytic biochemical and radiochemical operations or for particle control in micro-electronics.

Delivery incl. 250 ml vessel, fritted glass disc as filter support, glass support, spring clamp, a rubber lid and PTFE-ring.

Art. No.	Pack Qty.	€
H434.1	1	352,00

Spare parts for filter system GV 050/0

Glass vessel 250 ml

Art. No.	Pack Qty.	€
H427.1	1	113,00

Base made of glass for rubber stopper

Art. No.	Pack Qty.	€
X812.1	1	76,00

Glass frit ∅ 40 mm

Art. No.	Pack Qty.	€
H430.1	1	51,00

PTFE-centering ring, inner-∅ 40 mm, outer-∅ 57 mm

Art. No.	Pack Qty.	€
H431.1	1	19,65

Spring clamp

Art. No.	Pack Qty.	€
H433.1	1	117,00

Filter units and filter holder

Vacuum filtration units

Made of borosilicate glass. For coarse and membrane filtration, residue analysis, particulate monitoring, microbiology as well as filtration of alkaline and aggressive media.
Suitable for use with filter papers, membrane filters or glass filters.
Temperature stable up to +180 °C. Autoclavable.

- Parts in contact with media are made of glass and PTFE, suitable for universal use, biologically inert and corrosion resistant
- Scaled reservoir for easier metering and evaluation
- Plates are optionally available in porosity grades of 1-4, which means they are also suitable for analytical filtration
- Fast and easy to clean

Technical specifications:

Model	Filtration unit 1000 ml	Filtration unit 2000 ml
Funnel capacity (ml)	250	500
Bottle capacity (ml)	1000	2000
Filter size ∅ (mm)	47 / 50	
Connections	Olive, suitable for hoses of 5-8 mm inner ∅	

Delivery incl. slotted sieve plate as filter holder and glass filter plate, por. grade 2.

Type	Art. No.	Pack Qty.	€
DURAN®-filtration unit, 1000 ml / 250 ml	**XT09.1**	1	470,00
DURAN®-filtration unit, 2000 ml / 500 ml	**HKL5.1**	1	552,00

DURAN®-adapter from NS 45/40 to GL 45 for vacuum filtration unit
Made of **PTFE**. Allows use of the DURAN®-filtration unit (NS 45/40 connection) with vacuum resistant GL 45 laboratory bottles.

Type	Art. No.	Pack Qty.	€
DURAN®-adapter NS 45/40	**CCX4.1**	1	98,35

Accessories:

Replacement reservoir with scale, 250 ml	**XT10.1**	1	116,00
Replacement reservoir with scale, 500 ml	**HKL6.1**	1	134,00
Replacement PTFE adapter plate	**XT11.1**	1	78,50
Replacement clamp (anodised aluminium)	**XT12.1**	1	96,30
Replacement attachment NS 45/40	**XT13.1**	1	119,00
Replacement DURAN®-suction bottle NS 45/50, 1000 ml	**XT14.1**	1	60,45
Replacement DURAN®-suction bottle NS 45/50, 2000 ml	**HKL7.1**	1	146,00
Replacement plastic hose connection with silicone seal, straight, GL 14, outer- ∅ 8.6 mm	**L992.1**	2	3,35
Replacement screw caps, red, PBT, GL 14, hole ∅ 9.5 mm	**L993.1**	2	3,60
Replacement DURAN®-slotted sieve plate, ∅ 48 mm	**N886.1**	1	24,65
DURAN®-glass filter plate, ∅ 50 mm, por. grade 1 (100-160 µm)	**1637.1**	1	35,30
DURAN®-glass filter plate, ∅ 50 mm, por. grade 2 (40-100 µm)	**1638.1**	1	35,30
DURAN®-glass filter plate, ∅ 50 mm, por. grade 3 (16-40 µm)	**1639.1**	1	35,30
DURAN®-glass filter plate, ∅ 50 mm, por. grade 4 (10-16 µm)	**1640.1**	1	37,40

47 mm vacuum filtration unit with ground glass joint

By Wheaton. Made of borosilicate glass in accordance with ASTM E 438 Type I, Class A. For filtration of solvents, acids, bases and other aggressive liquids. For filter diameters of 47 mm. Autoclavable.

Delivery incl. 500 ml funnel attachment, funnel bottom section with ground joint sleeve 40/35, vacuum connection (∅ 6 mm) and glass frit (porosity 40-60 µm) as filter support, aluminium bracket and 2000 ml flask.

Art. No.	Pack Qty.	€
EYC7.1	1	550,40

Replacement parts and accessories for 47 mm vacuum filtration unit

Type	Art. No.	Pack Qty.	€
100 ml funnel attachment	**EYA8.1**	1	69,45
300 ml funnel attachment	**EYA9.1**	1	78,25
500 ml funnel attachment	**EYC0.1**	1	85,65
1000 ml funnel attachment	**EYC1.1**	1	95,55
Funnel bottom section with glass frit, vacuum connection (∅ 6 mm) and 40/35 ground joint sleeve	**EYC8.1**	1	216,10
Aluminium bracket	**EYC3.1**	1	61,15
Flask with core 40/35, 1000 ml	**EYC9.1**	1	160,20
Flask with core 40/35, 2000 ml	**EYE0.1**	1	236,50

Filter units and filter holder

Material
DURAN®
A 121 °C

Vacuum filter unit GV 050/2

By Whatman. Made of DURAN®. With glass frit as filter support. Especially suitable for analysis of microscopic residue, particle control, filtration of alkaline and aggressive solutions and buffer solutions for HPLC. Biologically inert and non-corrosive. Autoclavable.

Technical specifications:

Funnel capacity	250 ml
Flask capacity	1000 ml
For filters ∅	47/50 mm
Connectors	suitable for tubes 5 - 8 mm ∅ inner
Size (Length x ∅)	450 x 135 mm (without clip)
Weight	1122 g

Art. No.	Pack Qty.	€
5986.1	1	589,00

Spare parts for filter unit GV 050/2

Glass vessel 250 ml

Art. No.	Pack Qty.	€
H427.1	1	113,00

Glass frit ∅ 40 mm

Art. No.	Pack Qty.	€
H430.1	1	51,00

PTFE-centering ring, inner-∅ 40 mm, outer-∅ 57 mm

Art. No.	Pack Qty.	€
H431.1	1	19,65

Spring clamp

Art. No.	Pack Qty.	€
H433.1	1	117,00

Bottom part with ground-in sleeve NS 45

Art. No.	Pack Qty.	€
H428.1	1	152,00

Erlenmeyer 1000 ml with ground cone NS 45

Art. No.	Pack Qty.	€
H429.1	1	164,00

Plastic-olive, straight

Art. No.	Pack Qty.	€
L992.1	2	3,35

Screw cap for plastic olive GL 14

Art. No.	Pack Qty.	€
L993.1	2	3,60

DURAN
WHEATON
KIMBLE
A 121 °C

90 mm vacuum filtration unit

By Wheaton. Made of borosilicate glass in accordance with ASTM E 438 Type I, Class A.
For filtration of large volumes of particle-laden or viscous liquids.
For filter diameters of 90 mm. Autoclavable.

Delivery incl. 1000 ml funnel attachment with screw clip, funnel bottom section, glass frit (porosity 40-60 µm) as filtering support and silicon stopper. Please order flask separately.

Art. No.	Pack Qty.	€
EYE1.1	1	564,40

Replacement parts and accessories for 90 mm vacuum filtration unit

Type	Art. No.	Pack Qty.	€
1000 ml funnel attachment with screw clip	**EYE2.1**	1	235,45
Funnel bottom section	**EYE3.1**	1	211,80
122 µm stainless steel frit	**EYE5.1**	1	312,85
1575 µm PTFE frit	**EYE6.1**	1	164,50
Silicone stopper (∅ at base 33 mm, ∅ at top 41 mm, H 25 mm, ∅ of bore 14 mm)	**EYC4.1**	6	80,65
1000 ml flask with vacuum connection (∅ 6 mm)	**EYC5.1**	1	90,75
2000 ml flask with vacuum connection (∅ 6 mm)	**EYC6.1**	1	132,25

Filter units and filter holder

DURAN WHEATON KIMBLE

A 121 °C

90 mm vacuum filtration unit with ground glass joint

By Wheaton. Made of borosilicate glass in accordance with ASTM E 438 Type I, Class A.
For filtration of large volumes, HPLC solvents and other aggressive liquids. For filter diameters of 90 mm. Autoclavable.

Delivery incl. 1000 ml funnel attachment with screw clip, funnel bottom section with 40/35 ground joint sleeve, vacuum connection (∅ 6 mm) and glass frit (porosity 40-60 µm) as filtering support. Please order flask separately.

Art. No.	Pack Qty.	€
EXP5.1	1	650,40

Replacement parts and accessories for 90 mm vacuum filtration unit

Type	Art. No.	Pack Qty.	€
1000 ml funnel attachment with screw clip	**EYE2.1**	1	235,45
Funnel bottom section with vacuum connection (∅ 6 mm) and 40/35 ground joint sleeve	**EXP6.1**	1	283,80
40-60 µm glass frit	**EYE4.1**	1	249,40
122 µm stainless steel frit	**EYE5.1**	1	312,85
1575 µm PTFE frit	**EYE6.1**	1	164,50
Flask with core 40/35, 1000 ml	**EYC9.1**	1	160,20
Flask with core 40/35, 2000 ml	**EYE0.1**	1	236,50

- Membrane vacuum pumps see page 371
- Vacuum tubes see page 389
- Tubing accessories see page 391
- Filter crucibles see page 174
- Fritted filter funnel see page 173

MV 050/0 MV 050A/0

A 121 °C

Vacuum filter units - Series MV 050

By Whatman. Made of stainless steel, chemically resistant against a lot of aqueous and organic solutions.
For **membrane filter 47/50 mm** and pre-filter 40 mm.
The devices have a punched sieve to support filtering.
Alternative use of steel frits, please order separately. Autoclavable.

Type	Funnel capacity (ml)	∅ x H (mm)	Art. No.	Pack Qty.	€
MV 050/0, with spring clamp	500	110 x 320	**CC09.1**	1	906,00
MV 050A/0, with quick-close	500	110 x 320	**CC10.1**	1	991,00

Accessories:

Stainless steel frit with ring, pore size 80 µm	**CC12.1**	1	87,90

Suction dome

With tubing olive made of PP and stoppers made of natural rubber, with 9-mm-bore hole. Screw plug sizes GL 45. Autoclavable to 121 °C.
Vacuum-/compression-proof screw thread bottle please order separately.

Art. No.	Pack Qty.	€
CC56.1	1	36,50

Accessories:

DURAN®-pressure plus-screw thread bottle, 250 ml	**CK34.1**	1	8,95
DURAN®-pressure plus-screw thread bottle, 500 ml	**CK35.1**	1	12,00
DURAN®-pressure plus-screw thread bottle, 1000 ml	**H995.1**	1	14,30

A 121 °C

Multiple vacuum filter units AS-series

By Whatman. Stainless steel holder for 3 or 6 attachments, complete with 500 ml-stainless steel attachments. Each attachment can be operated with a separate stopcock. With quick-lock system. The devices are heat-stable up to 180 °C and autoclavable. Only suitable for vacuum, connection via tube olive for tubes with inner-∅ 8-10 mm.
For **filter 47/50 mm** and 40 mm prelimenary filter.
Delivery incl. punched sieve to support filtering.
Applications: microbiological quality control, residual analysis and series filtration.

Type	Art. No.	Pack Qty.	€
Three-fold filter unit AS 310/3	**CC32.1** *	1	3339,00
Six-fold filter unit AS 610/3	**CC33.1** *	1	5922,00

* Longer delivery times possible. Please check with our Sales Department.

Filter units and filter holder

A 121 °C

Filter holders for syringes

By Whatman. Made of **polysulfone** or **stainless steel**.
With silicone-O-ring. Suitable for repeated use with membrane-, paper-, or glass fiber round filters.
Maximal presure laod 7 bar.
Temperature stable: Polysulfone 180 °C; Stainless steel 200 °C.
Connections: Luer or tubing olive (outer-∅ 11 mm), unscrewble.
Application:
For clear and sterile filtration of biological media, reagents and buffer solutions as well as for aqueous solutions and gases.

Polysulfone

Filter holders	Filters-∅ (mm)	Connections (Input/output)	∅ x H (mm)	Art. No.	Pack Qty.	€
FP 025/1	25	Luer-Lock/Luer	30 x 34	**CC19.1**	10	120,00
FP 050/0	47/50	Luer-Lock/tubing olive	65 x 80	**CC20.1**	1	71,50
FP 050/1	47/50	Tubing olive/tubing olive	65 x 95	**CC21.1**	1	71,50

Stainless steel

Filter holders	Filters-∅ (mm)	Connections (Input/output)	∅ x H (mm)	Art. No.	Pack Qty.	€
FM 025/0	25	Luer-Lock/Luer	30 x 26	**CC23.1**	1	243,00

In-Line filter holder

By MERCK MILLIPORE.
Made of reinforced **PP**, **Nylon** hand knobs. For 47 mm filter discs.
For pressure filtration of liquids or gases.
- Suitable for multiple use
- With stepped hose connectors

Technical specifications:

Filter ∅	47 mm
Filtration area	13.8 cm^2
Max. inlet pressure	5.5 bar
Max. working temperature	70 °C
Dimensions: L x ∅	12 x 7.6 cm
Prefilter ∅	42 mm (thick depth prefilter) or 47 mm (membrane filter)
Inlet/outlet fittings	1/4″ NPTF: connector for 6 mm to 9.5 mm tubing ID

Art. No.	Pack Qty.	€
XE95.1	1	255,85

Accessories:

Replacement O-rings (silicone rubber)	**XE96.1**	6	141,90
Spare filter holder plates, 47 mm, PP	**XE92.1**	1	27,85
Hand knobs, Nylon	**XE98.1**	3	80,55

▶ PTFE tubes see page 385

A 121 °C

Swinnex®-filter holders

By MERCK MILLIPORE.
Made of **PP**. For the filtration, purification or sterile filtration of small quantities of fluid using a syringe. Swinnex® 47 mm filter holder can also be used with a hose connector.
- For 13. 25 and 47 mm filter discs
- Autoclavable with the filter inserted
- Suitable for multiple use

Technical specifications:

Type	Swinnex® 13	Swinnex® 25	Swinnex® 47
Gaskets	Silicone rubber		
Max. differential pressure (bar)	3.5		5
Dimensions: L x ∅ (cm)	3.5 x 1.7	3.7 x 3.2	5.4 x 5.7
Filter ∅ (mm)	13	25	47
Prefilter ∅ (mm)	10 (thick depth prefilter)	22 (thick depth prefilter)	42 (thick depth prefilter) or 47 (membrane filter)
Filtration area (cm^2)	0.7	3.4	13.8
Inlet connection	Luer-Lock		1/4″-NPTM/ female Luer lock
Outlet connection	Luer		1/4″-hose connection/ female Luer lock

Type	Art. No.	Pack Qty.	€
Swinnex® 13	**XE86.1**	10	96,75
Swinnex® 25	**XE87.1**	12	199,95
Swinnex® 47	**XE88.1**	8	459,05

Accessories:

Spare silicone rubber gaskets for Swinnex®, 13 mm	**XE89.1**	100	64,00
Spare silicone rubber gaskets for Swinnex®, 25 mm	**XE90.1**	100	135,45
Spare filter holder plates, 25 mm, PP	**XE91.1**	30	220,40
Spare filter holder plates, 47 mm, PP	**XE92.1**	1	27,85
Spare silicone rubber O-rings for Swinnex®, 47 mm	**XE93.1**	10	71,95
Spare silicone rubber O-rings for Swinnex®-bottom section, 47 mm	**XE94.1**	5	70,85

❄❄❄ A 121 °C

Syringe filter adapters

Made of **PTFE**. No release of trace elements into the media to be filtered. Filter membrane can be replaced easily by simply unscrewing it. Luer-Lock connection on both sides. Pressure resistant to max 2 bar. Autoclavable. Anti-adhesive surface enables easy cleaning.
Please order filter membranes separately.

Filter membrane ∅ (mm)	Filter surface (cm^2)	Outer ∅ (mm)	Art. No.	Pack Qty.	€
13	0,78	21	**Y933.1**	1	206,40
25	3,80	34	**Y934.1**	1	223,60

Membrane filters

A 121 °C

Flow-through filters

Made of **PTFE**. Suitable for overpressure or vacuum up to about 5 bar. No release of trace elements into media to be filtered. Filter membrane can be replaced easily by unscrewing the sample funnel. Plastic tubing can be connected with olives. Matching adapter for 2 x tube sizes included. Autoclavable. Anti-adhesive surface allows easy cleaning.
Delivery without filter membranes, please order separately.

Filter membrane ∅ (mm)	Filter surface (cm^2)	Filter surface (cm^2)	for hose with outer ∅ (mm)	Art. No.	Pack Qty.	€
25	3,1	GL 14	3,2 and 6	**Y935.1**	1	321,45
47	13,8	GL 18	6 and 8	**Y936.1**	1	385,95
90	52,0	GL 25	8 and 10	**Y937.1**	1	697,70

❄❄❄ A 121 °C

PTFE filter membranes

Hydrophobic made of micro-porous PTFE. Thickness of membrane is 0.2 mm. Temperature range from -200 to 250 °C. Autoclavable.
Suitable for syringe filter adapters (Y933.1-Y934.1) and flow-through filters (Y935.1-Y936.1).

Filter membranes ∅ 13 mm

Pore size (µm)	Art. No.	Pack Qty.	€
0,05	**Y938.1**	10	28,15

Filter membranes ∅ 25 mm

Pore size (µm)	Art. No.	Pack Qty.	€
0,05	**Y943.1**	10	40,70

Filter membranes ∅ 47 mm

Pore size (µm)	Art. No.	Pack Qty.	€
0,05	**Y948.1**	10	64,10
0,2	**Y949.1**	10	56,65
0,45	**Y950.1**	10	67,85
1	**Y951.1**	10	51,90
5	**Y952.1**	10	52,25

S A 121 °C

Membrane filters

Hydrophilic. **Sterile** or non-sterile.

Nitrocellulose
High flow rates. Biologically inert, non-cytotoxic. Maximum usage temperature 180 °C. Protein binding approx. 160 µg/cm^2. Autoclavable. Wide range of applications: gravimetric analysis, particle analysis, microbiological analysis, sterile filtration of aqueous solutions.

Nylon
Very low extractable substances content, wetting agent free. Good chemical resistance, polyester reinforcement for higher mechanical stability. Protein binding approx. 120 µg/cm^2. Maximum usage temperature 180 °C.
Application: solvent filtration (HPLC), sample preparation (HPLC, GC), sterile filtration of aqueous and organic solutions.

Track etched polycarbonate
Exact pore size, very smooth surface. Very low extractable substances content. Low protein binding <5 µg/cm^2, incineration residue approx. 0.92 µg/cm^2. Maximum usage temperature 140 °C. Autoclavable.
Application: particle analysis, microscopy, electron microscopy.

Nitrocellulose, non-sterile

Danger H228

Pore size (µm)	∅ (mm)	Art. No.	Pack Qty.	€
0.22	47	**A009.1**	100	96,70
0.45	47	**A012.1**	100	95,25
0.45	90	**A014.1**	25	61,10
1.2	47	**A021.1**	100	101,95

Nitrocellulose, **sterile,** individually packed, with mesh

Danger H228

Pore size (µm)	∅ (mm)	Art. No.	Pack Qty.	€
0.45	47	**A023.1**	200	93,00

Nylon, non-sterile

Pore size (µm)	∅ (mm)	Art. No.	Pack Qty.	€
0.22	47	**A026.1**	100	100,00
0.45	47	**A031.1**	100	100,00
0.45	13	**A029.1**	100	64,45

Track etched polycarbonate, non-sterile

Pore size (µm)	∅ (mm)	Art. No.	Pack Qty.	€
0.2	25	**A044.1**	100	66,55
0.45	25	**A045.1**	100	65,60
0.45	47	**A046.1**	100	95,15

Membrane filters

S A 121 °C

Cellulose mixed ester membrane filters

By Whatman. Versatile hydrophilic membrane made of mixed ester of cellulose acetate and cellulose nitrate. **Applications:** e.g. sterile and clear filtration, particle separation and analysis, microbiological analysis, counting germs, yeasts, fungi and particles, foodstuffs biology, airborne pollutant measurements etc.
Max. usage temperature 130 °C. Autoclavable.

- High dirt absorbing capacity prevents rapid clogging of the membrane
- Uniform membrane structure ensures high flow rates
- Very smooth and even surface aids microscopic evaluation
- Biologically inert and free of surfactants

Gridded membranes **(line spacing 3.1 mm)** make it easier to count particles and microorganisms; the dyes used are non-toxic and free of antibacterial substances.

Non-sterile

Danger H228

Pore size (µm)	∅ (mm)	Surface	Art. No.	Pack Qty.	€
0.2	47	white	**NH80.1**	100	130,00
0.2	142	white	**ECT7.1**	25	152,00
0.45	47	white	**NH81.1**	100	130,00
0.45	47	white, gridded	**NH82.1**	100	130,00
0.45	142	white	**ECT8.1**	25	152,00

Sterile, individually packed

Danger H228

Pore size (µm)	∅ (mm)	Surface	Art. No.	Pack Qty.	€
0.2	47	white	**NH83.1**	100	142,00
0.2	47	white, gridded	**NH84.1**	100	142,00
0.45	47	white	**NH85.1**	100	142,00

S A 121 °C

Cellulose nitrate membrane filters

By Whatman. Versatile hydrophilic standard membrane.
Applications: filtration of aqueous solutions, sample preparation, microbiological studies etc. High stability and flexibility, low extractable substances content. Max. usage temperature 80 °C. Autoclavable.
Gridded membranes **(line spacing 3.1 mm)** make it easier to count particles and microorganisms; the dyes used are non-toxic and free of antibacterial substances.

Non-sterile

Danger H228

Pore size (µm)	∅ (mm)	Surface	Art. No.	Pack Qty.	€
0.1	47	white	**NH68.1**	100	181,00
0.2	47	white	**NH69.1**	100	158,00
0.2	142	white	**ECT9.1**	25	248,00
0.45	47	white	**NH70.1**	100	152,00
0.45	47	white, gridded	**NH71.1**	100	168,00
0.45	142	white	**ECX0.1**	25	242,00
0.65	47	white	**NH72.1**	100	168,00
0.8	47	white	**NH73.1**	100	159,00
1	47	white	**NH74.1**	100	169,00
3	47	white	**NH75.1**	100	169,00
5	47	white	**NH76.1**	100	157,00

Sterile, individually packed

Danger H228

Pore size (µm)	∅ (mm)	Surface	Art. No.	Pack Qty.	€
0.2	47	white	**NH77.1**	100	104,00
0.45	47	white, gridded	**NH78.1**	100	102,00
0.45	47	white, gridded	**NH79.1**	200	151,00

A 121 °C

RC-membrane filters

By Whatman. Made of regenerated cellulose with PP-support. ∅ 50 mm, thickness 155 µm. Suitable for aqueous and organic media. Hydrophilic. Autoclavable at 121 °C.

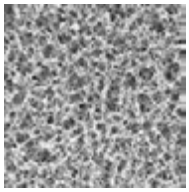
Pore size (µm)	Art. No.	Pack Qty.	€
0,2	**5987.1**	100	248,00
0,45	**5988.1**	100	248,00

- ▶ Other membrane filters see page 526
- ▶ For vacuum and compression proof screw neck bottles, see page 40
- ▶ Vaccuum tubes see page 389

Membrane filters

General overview of Millipore®-membrane filters

Membrane type	Membrane-properties	Proteinbinding	For aqueous samples	For alcohol samples	For organic solutions	Flow rate
CME (Cellulose mixed ester)	hydrophilic	high	yes	no	no	medium
Nylon	hydrophilic	high	yes	no	yes	high
PES	hydrophilic	low	yes	no	no	very high
Polycarbonate	hydrophilic	low	yes	yes	no	low
PTFE	hydrophobic	low	no	yes	yes	high
PTFE	hydrophilic	low	yes	yes	yes	high
PVDF	hydrophobic	high	no	yes	no	medium
PVDF	hydrophilic	very low	yes	yes	no	medium



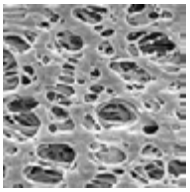
A 121 °C

Cellulose mixed ester (CME) membrane filters

By MERCK MILLIPORE. **Standard membrane filter hydrophilic for a broad range of applications**

- **Application:** Sewage filtration and sterile filtration of liquids, air and particle analysis, contamination analysis of fuel and hydraulic liquids to determine particle load, biological applications e.g. harvesting or washing cells, microdialysis
- Material: cellulose nitrate and cellulose acetate
- Protein binding: 150 µg/cm²
- Membrane strength: 105-150 µm
- Colour: white
- **Surface: smooth or gridded**
- Autoclavable

Pore size (µm)	Membrane ∅ (mm)	Surface	Art. No.	Pack Qty.	€
0,025	13	smooth	**CY35.1**	100	236,50
0,025	25	smooth	**CY36.1**	100	301,00
0,025	47	smooth	**CY37.1**	100	381,65
0,025	90	smooth	**CY38.1**	25	351,55
0,22	13	smooth	**CY39.1**	100	111,80
0,22	25	smooth	**CY40.1**	100	127,95
0,22	47	smooth	**CY41.1**	100	168,80
0,22	90	smooth	**CY42.1**	100	449,35
0,45	13	smooth	**CY43.1**	100	110,75
0,45	13	gridded	**CY44.1**	100	124,70
0,45	25	smooth	**CY45.1**	100	116,10
0,45	25	gridded	**CY46.1**	100	137,60
0,45	47	smooth	**CY47.1**	100	167,70
0,45	47	gridded	**CY48.1**	100	188,15
0,45	90	smooth	**CY49.1**	100	444,00
0,65	13	smooth	**CY50.1**	100	110,75
0,65	25	smooth	**CY51.1**	100	129,00
0,65	47	smooth	**CY52.1**	100	175,25
0,65	90	smooth	**CY53.1**	25	140,85
0,8	13	smooth	**CY54.1**	100	111,80
0,8	13	gridded	**CY55.1**	100	119,35
0,8	25	smooth	**CY56.1**	100	125,80
0,8	25	gridded	**CY57.1**	100	138,70
0,8	47	smooth	**CY58.1**	100	168,80
0,8	47	gridded	**CY59.1**	100	179,55
0,8	90	smooth	**CY60.1**	100	410,65
8,0	13	smooth	**CY61.1**	100	104,30
8,0	25	smooth	**CY62.1**	100	126,85
8,0	47	smooth	**CY63.1**	100	173,10
8,0	90	smooth	**CY64.1**	25	152,65



A 121 °C

PES-membrane filters

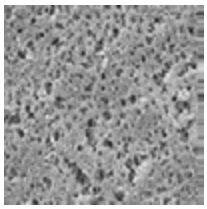
By MERCK MILLIPORE.
Surface-modified hydrophilic polyethersulfone

- **Application:** ultrafast filtration of tissue culture media, buffers and other aqueous solutions
- High flow rates and high output
- Low protein binding
- Membrane strength: ≥ 150 µm and ≤ 200 µm
- Colour: white
- Surface: smooth
- Autoclavable

Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
0,22	13	**CX07.1**	100	125,80
0,22	25	**CX08.1**	100	154,80
0,22	47	**CX09.1**	100	213,95
0,22	90	**CX10.1**	50	258,00
0,22	142	**XA42.1**	50	471,95
0,45	13	**XA43.1**	100	117,20
0,45	25	**XA44.1**	100	155,90
0,45	47	**XA45.1**	100	198,90
0,45	90	**XA46.1**	50	232,20
0,45	142	**XA47.1**	50	482,70

Microdialysis by Membrane Filter (Drop Dialysis)

Microvolumes of sample (5-100 µl) can also be dialysed by membrane filter discs made of cellulose mixed ester (pore size 0,025 µm, Art. No. CY35.1-CY37.1):
Fill a Petri dish with dialysis buffer. Place the membrane filter disc on the surface of the solution (shiny side up, avoid bubbles under the filter) by using a stainless steel forceps. Float the membrane for ca. 5 min until it is completely soaked. Pipette the sample on the center of the filter. Due to the open pore structure of the membrane filter and the high surface-to-volume ratio the dialysis is done within a short time (mostly < 30 min). To avoid evaporation of the sample seal the Petri dish tightly during the procedure. In this way the sample volume remains nearly constant.

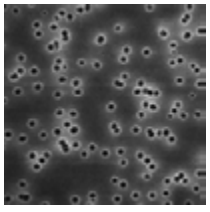


Nylon membrane filters

By MERCK MILLIPORE.
Hydrophilic nylon membrane filter with high solvent compatibility.

- **Applications:** sterile filtration, bioassays, filtration of solvents, clear filtration of aqueous solutions, particle separation and analysis
- Membrane thickness: 170 µm
- Colour: white
- Surface: smooth
- Wettability: hydrophilic
- Sterilisation: compatible with gamma or EO sterilisation
- Max. working temperature: 75 °C

Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
0.20	25	**XA48.1**	100	144,05
0.20	47	**XA49.1**	100	176,30
0.45	25	**XA50.1**	100	138,70
0.45	47	**XA51.1**	100	191,35
0.8	25	**XA52.1**	100	117,20
0.8	47	**XA53.1**	100	159,10
1.2	25	**XA54.1**	100	117,20
1.2	47	**XA55.1**	100	161,25



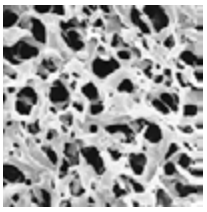
A 121 °C

Polycarbonate-membrane filters

By MERCK MILLIPORE. **Smooth surface facilitates suitable for microscopic analysis**

- **Application:** chemotaxis studies, analysing beverages, sterility tests, cell culture-/cell biology, bioassays, cytology, environmental/air analysis, epifluorescence (black membranes)
- Material Polycarbonate film, hydrophilic, non-hygroscopic
- Membrane strength: 9-10 µm
- Max. operating temperature: 140 °C, autoclavable
- Colour: white or black

Pore size (µm)	Membrane ∅ (mm)	Colour	Art. No.	Pack Qty.	€
0,1	13	white	**CY17.1**	100	337,55
0,1	25	white	**CY18.1**	100	296,70
0,1	47	white	**CY19.1**	100	446,15
0,22	13	white	**CY20.1**	100	125,80
0,22	25	white	**CY21.1**	100	191,35
0,22	47	white	**CY22.1**	100	231,15
0,22	90	white	**CY23.1**	30	179,55
0,22	13	black	**CY24.1**	100	130,10
0,22	25	black	**CY25.1**	100	292,40
0,22	47	black	**CY26.1**	100	439,70
0,4	13	white	**CY28.1**	100	131,15
0,4	25	white	**CY29.1**	100	226,85
0,4	47	white	**CY30.1**	100	242,95
0,4	90	white	**CY31.1**	30	186,00
0,4	13	black	**CY32.1**	100	129,00
0,4	25	black	**CY33.1**	100	225,75
0,4	47	black	**CY34.1**	100	560,10



A 121 °C

PVDF-membrane filters, hydrophilic

By MERCK MILLIPORE. **Surface-modified polyvinylidene fluoride with minimal protein bonding**

- **Applications:** sterile filtration of protein solutions, tissue culture media, additives, antibiotics and alcoholic solutions; removal of particles, biological assays (e.g. recipe-bonding studies, TCA-precipitation)
- Protein binding: 4 µg/cm^2
- Membrane strength: approx. 125 µm
- Colour: white
- Surface: smooth
- Max. working temperature: 85 °C
- Autoclavable

Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
0,1	13	**CX11.1**	100	120,40
0,1	25	**CX12.1**	100	147,30
0,1	47	**CX13.1**	100	213,95
0,1	90	**CX14.1**	50	313,90
0,22	13	**CX15.1**	100	125,80
0,22	25	**CX16.1**	100	153,75
0,22	47	**CX17.1**	100	213,95
0,22	90	**CX18.1**	50	292,40
0,45	13	**CX19.1**	100	125,80
0,45	25	**CX20.1**	100	152,65
0,45	47	**CX21.1**	100	213,95
0,45	90	**CX22.1**	50	325,75
0,65	13	**CX23.1**	100	125,80
0,65	25	**CX24.1**	100	150,50
0,65	47	**CX25.1**	100	198,90
0,65	90	**CX26.1**	50	289,20
5,0	13	**CX27.1**	100	123,65
5,0	25	**CX28.1**	100	153,75
5,0	47	**CX29.1**	100	237,60

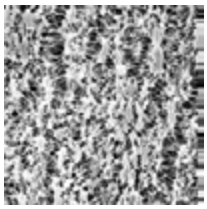
PVDF-membrane filters, hydrophobic

By MERCK MILLIPORE. **Hydrophobic polyvinylidene fluoride**

- **Applications:** clear filtration of air/gases, sterile filtration of gases
- Protein binding: 150 µg/cm^2
- Membrane strength: approx. 125 µm
- Colour: white
- Surface: smooth
- Max. working temperature: 85 °C
- Autoclavable

Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
0,1	47	**CX31.1**	100	280,60
0,22	13	**CX32.1**	100	170,95
0,22	25	**CX33.1**	100	213,95
0,22	47	**CX34.1**	100	302,10
0,22	90	**CX35.1**	50	393,45
0,45	13	**CX36.1**	100	182,75
0,45	25	**CX37.1**	100	213,95
0,45	47	**CX38.1**	100	309,60
0,45	90	**CX39.1**	50	401,00

Membrane filters



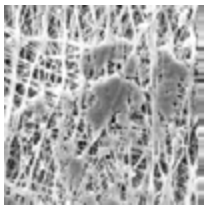
A 121 °C

PTFE-membrane filters, hydrophilic

By MERCK MILLIPORE. **Hydrophilic PTFE enables filtration of aqueous solutions without previous wetting. Can be used with all standard HPLC-solvents**

- **Application:** clear filtration of acids, bases, cryogenic liquids and fuel, analysis of hydraulic liquids RNA-isolation
- Very low ionic extractables suitable for IC
- Membrane: hydrophilic
- Membrane strength: 150 µm
- Max. working temperature: 130 °C, autoclavable
- Colour: white

Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
0,45	13	**CX67.1**	100	280,60
0,45	25	**CX68.1**	100	389,15
0,45	47	**CX69.1**	100	497,75



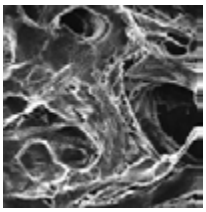
A 121 °C

PTFE-membrane filters with laminated support

By MERCK MILLIPORE. **Hydrophobic membrane filters made of PTFE (polytetrafluoroethylene) - bonded to a high-density polyethylene support**

- **Application:** clear filtration of acids, alkali, solvents and alcoholic solutions, gas-/air filtration, UV-spectroscopy
- If wetted beforehand with methanol or ethanol, aqueous solutions can also be filtered.
- Membrane strength: 150 µm
- Max. operating temperature: 130 °C, autoclavable
- Colour: white

Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
0,22	13	**CX44.1**	100	268,75
0,22	25	**CX45.1**	100	378,40
0,22	47	**CX46.1**	100	466,55
0,22	90	**CX47.1**	50	674,05
0,5	13	**CX48.1**	100	270,90
0,5	25	**CX49.1**	100	367,65
0,5	47	**CX50.1**	100	482,70
0,5	90	**CX51.1**	50	731,00
1.0	13	**CX52.1**	100	278,45
1.0	25	**CX53.1**	100	368,75
1.0	47	**CX54.1**	100	454,75
3,0	25	**CX56.1**	100	408,50
3,0	47	**CX57.1**	100	518,15
3,0	90	**CX58.1**	25	502,05



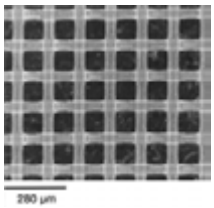
A 121 °C

PTFE-membrane filters without support structure

By MERCK MILLIPORE. **Hydrophobic PTFE-membrane filters**

- **Application:** Filtration under extreme chemical or thermal conditions, clear filtration of acids, lyes, cryogenic liquids and fuels, analysis of hydraulic liquids, RNA-isolation
- If wetted beforehand with methanol or ethanol, aqueous solutions can also be filtered.
- Membrane strength: 130-140 µm
- Max. operating temperature: 260 °C, autoclavable
- Colour: white

Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
5,0	13	**CX59.1**	100	295,65
5,0	25	**CX60.1**	100	333,25
5,0	47	**CX61.1**	100	536,45
5,0	90	**CX62.1**	25	416,05
10,0	13	**CX63.1**	100	291,35
10,0	25	**CX64.1**	100	321,45
10,0	47	**CX65.1**	100	505,25
10,0	90	**CX66.1**	25	408,50



Nylon mesh filters

By MERCK MILLIPORE.

Hydrophilic nylon mesh filter with high solvent compatibility.

- **Applications:** collection of algae and cells, particle analysis, separation of large particles, background filter for use in monitoring by automatic particle imaging systems, prefiltration of solvents, monitoring of contamination in paints and lacquers
- Colour: white
- Surface: smooth
- Wettability: hydrophilic
- Sterilisation: compatible with gamma or EO sterilisation
- Max. working temperature: 100 °C

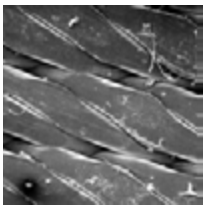
Round filter

Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
10	25	**XA56.1**	100	94,10
10	47	**XA57.1**	100	117,20
10	90	**XA58.1**	50	238,65
11	25	**XA59.1**	100	118,25
11	47	**XA60.1**	100	141,90
11	90	**XA61.1**	50	273,05
20	25	**XA62.1**	100	117,20
20	47	**XA63.1**	100	139,75
20	90	**XA64.1**	50	307,45
30	25	**XA65.1**	100	118,25
30	47	**XA66.1**	100	139,75
30	90	**XA67.1**	50	273,05
41	25	**XA68.1**	100	118,25
41	47	**XA69.1**	100	145,15
41	90	**XA70.1**	50	273,05
60	25	**XA71.1**	100	118,25
60	47	**XA72.1**	100	139,75
60	90	**XA73.1**	50	276,30
80	25	**XA74.1**	100	118,25
80	47	**XA75.1**	100	140,85
80	90	**XA76.1**	50	273,05
100	25	**XA77.1**	100	118,25
100	47	**XA78.1**	100	140,85
100	90	**XA79.1**	50	273,05
120	25	**XA80.1**	100	118,25
120	47	**XA81.1**	100	140,85
120	90	**XA82.1**	50	273,05
140	25	**XA83.1**	100	118,25
140	47	**XA84.1**	100	139,75
140	90	**XA85.1**	50	255,85
160	25	**XA86.1**	100	118,25
160	47	**XA87.1**	100	140,85
160	90	**XA88.1**	50	273,05
180	25	**XA89.1**	100	118,25
180	47	**XA90.1**	100	139,75
180	90	**XA91.1**	50	273,05

Filterrolls

Dimensions: W 30 x L 300 cm

Pore size (µm)	Art. No.	Pack Qty.	€
11	**XA92.1**	1	531,05
20	**XA93.1**	1	506,35
41	**XA94.1**	1	488,05
60	**XA95.1**	1	487,00
100	**XA96.1**	1	506,35
160	**XA97.1**	1	575,15



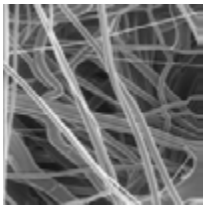
PP mesh filters

By MERCK MILLIPORE.

Hydrophilic PP mesh filter made of 100 % pure polypropylene

- **Application:** clear filtration, collection of cells and protein precipitates, separation of large particles, analysis of particulate impurities
- Colour: white
- Surface: smooth
- Wettability: hydrophilic
- Sterilisation: compatible with gamma or EO sterilisation
- Max. working temperature: 100 °C

Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
25	25	**XC04.1**	100	127,95
25	47	**XC05.1**	100	173,10
45	25	**XC06.1**	100	132,25
45	47	**XC07.1**	100	169,85



PP prefilters

By MERCK MILLIPORE.

Hydrophobic PP prefilter made of 100 % pure polypropylene

- **Application:** prefilter with high particle retention capacity, high dirt holding capacity and low pressure drop. Suitable for filtration of numerous organic solvents.
- Filter type: deep-bed filter
- Colour: white
- Surface: smooth
- Wettability: hydrophobic
- Sterilisation: compatible with gamma or EO sterilisation
- Max. working temperature: 90 °C

Pore size (µm)	Membrane ∅ (mm)	Art. No.	Pack Qty.	€
0,6	47	**XA98.1**	100	151,60
1,2	47	**XA99.1**	100	151,60
2,5	47	**XC00.1**	100	151,60
5	47	**XC01.1**	100	161,25
10	47	**XC02.1**	100	169,85
30	47	**XC03.1**	100	158,05

Glass and quartz fibre filters

NEW

Glass fibre filter Rotilabo®

Made of 100 % borosilicate fibres, free of binding agents, with fast flow rates, high charging capacity and excellent retention capacity. Temperature stable to 500 °C.

Technical specifications:

Type	Thickness (mm)	Retention range (µm)	Surface weight (g/m²)	Filtration speed acc. to Herzberg (s)
CR259	0.26	up to 1.6	52	60
CR260	0.70	up to 1.0	143	200
CR261	0.26	up to 1.2	52	100
CR262	0,53	up to 2.7	120	30
CR263	0.45	up to 0.7	75	310
CR264	0.28	up to 1.5	65	60

Type	∅ (mm)	Art. No.	Pack Qty.	€
CR259	25	**HTK7.1**	100	15,50
CR259	47	**HTK8.1**	100	20,00
CR259	55	**HTK9.1**	100	22,60
CR259	70	**HTL0.1**	100	31,05
CR259	90	**HTL1.1**	100	42,40
CR259	110	**HTL2.1**	100	53,55
CR259	125	**HTL3.1**	100	74,75
CR259	150	**HTL4.1**	100	93,00
CR260	25	**HTL5.1**	100	40,00
CR260	47	**HTL6.1**	100	61,20
CR260	50	**HTL7.1**	50	30,35
CR260	55	**HTL8.1**	50	30,65
CR260	70	**HTL9.1**	100	105,35
CR260	90	**HTN0.1**	100	131,15
CR260	110	**HTN1.1**	25	36,35
CR261	25	**HTN2.1**	100	17,50
CR261	47	**HTN3.1**	100	22,60
CR261	50	**HTN4.1**	100	27,95
CR261	55	**HTN5.1**	100	29,05
CR261	70	**HTN6.1**	100	34,65
CR261	90	**HTN7.1**	100	46,80
CR261	110	**HTN8.1**	100	59,15
CR261	125	**HTN9.1**	100	83,85
CR261	150	**HTP0.1**	100	104,55
CR262	47	**HTP1.1**	50	15,05
CR262	70	**HTP2.1**	50	25,80
CR262	90	**HTP3.1**	50	36,05
CR263	25	**HTP4.1**	100	33,35
CR263	47	**HTP5.1**	100	38,85
CR263	70	**HTP6.1**	100	69,90
CR263	90	**HTP7.1**	50	57,00
CR263	110	**HTP8.1**	50	77,95
CR264	47	**HTP9.1**	100	23,15
CR264	90	**HTT0.1**	100	51,60
CR264	110	**HTT1.1**	100	65,60
CR264	125	**HTT2.1**	100	92,70

Glass fibre filter paper - Round filters

By Whatman. Made of borosilicate glass fibre and inorganic bonding agents.

Properties:

- Chemically resistant to most organic and inorganic solvents, aggressive chemicals and concentrated bases (Not resistant to hydrofluoric acid)
- Constant weight, also in case of fluctuations in air humidity
- Mechanically stable (limited bending resistance)

Filter units and clamping fixtures must have flexible sealings.

Type GF 6

- Filtration speed low
- Retention rate: 99.97 %
- Retention range: <1 micron
- Surface weight: 80 g/m²

Application: environmental analysis, biology, physics, beverage industry.

Use: Gas/air monitoring, water and waste water investigations.

∅ (mm)	Type	Thickness (µm)	Art. No.	Pack Qty.	€
25	GF 6	350	**AY36.1**	200	51,90
47	GF 6	350	**AY39.1**	200	76,00
50	GF 6	350	**AY40.1**	200	84,70
55	GF 6	350	**AY41.1**	100	78,50
70	GF 6	350	**AY42.1**	100	98,50
90	GF 6	350	**AY43.1**	100	136,00
100	GF 6	350	**AY44.1**	100	215,00
110	GF 6	350	**AY45.1**	100	221,00
125	GF 6	350	**AY46.1**	100	231,00
150	GF 6	350	**AY47.1**	100	318,00
185	GF 6	350	**AY48.1**	100	355,00
200	GF 6	350	**Y716.1**	100	411,00
240	GF 6	350	**AY49.1**	100	464,00

Type GF 8

- Filtration speed high
- Retention rate: 99 %
- Retention range: 3 µm
- Surface weight: 80 g/m²

Application: environmental analysis, industry

Use: Determining PCB, DDE, DDT, furane and dioxin levels in the air.

∅ (mm)	Type	Thickness (µm)	Art. No.	Pack Qty.	€
90	GF 8	350	**AY51.1**	100	135,00

Type GF 92

- Filtration speed medium
- Surface weight: 70 g/m²
- Retention range: 2-3 µm

Application: environmental analysis, biology, beverage industry.

Use: Membrane pre-filter, soot extraction from gas analysers.

∅ (mm)	Type	Thickness (µm)	Art. No.	Pack Qty.	€
47	GF 92	350	**AY55.1**	200	119,00
50	GF 92	350	**AY56.1**	200	122,00
100	GF 92	350	**AY57.1**	100	177,00
135	GF 92	350	**AY58.1**	100	280,00
142	GF 92	350	**AY59.1**	100	286,00

Glass and quartz fibre filters

A 121 °C

Glass fibre round filters

By Macherey-Nagel. Made of borosilicate fiber glass. With organic binders or binder-free. Enable speedy filtering, yet with high retaining power. Very good resistance against most organic and anorganic solvents (not resistant against hydrofluoric acid). Temperature max. 200 °C.

Technical specifications:

Filter type	Binder	Speed air (s)	Retaining range (µm)	Grammage (g/m²)
MN 85/70	organic	15	max 0.6	70
MN 85/70 BF	without	15	max 0.6	70

Type MN 85/70

Application: Most commonly used fiber glass filter for standard applications with high mechanical stability.

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
25	MN 85/70	0,35	**EN17.1**	100	12,60
37	MN 85/70	0,35	**EN18.1**	100	15,60
40	MN 85/70	0,35	**EN19.1**	100	16,90
45	MN 85/70	0,35	**EN20.1**	100	16,90
55	MN 85/70	0,35	**EN21.1**	100	17,95
70	MN 85/70	0,35	**EN22.1**	100	22,50
90	MN 85/70	0,35	**EN23.1**	100	29,75
110	MN 85/70	0,35	**EN24.1**	100	36,95
125	MN 85/70	0,35	**EN25.1**	100	45,80
150	MN 85/70	0,35	**EN26.1**	100	60,50
185	MN 85/70	0,35	**EN27.1**	100	84,30
200	MN 85/70	0,35	**EN28.1**	100	126,00
240	MN 85/70	0,35	**EN29.1**	100	126,00
270	MN 85/70	0,35	**EN30.1**	100	148,00
320	MN 85/70	0,35	**EN31.1**	100	201,00

Type MN 85/70 BF

Usage: as a prefilter in the membrane filtration of particle-laden media.

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
25	MN 85/70 BF	0,35	**HK45.1**	100	21,80
37	MN 85/70 BF	0,35	**HK46.1**	100	27,60
45	MN 85/70 BF	0,35	**HK47.1**	100	29,60
55	MN 85/70 BF	0,35	**HK48.1**	100	32,40
70	MN 85/70 BF	0,35	**HK49.1**	100	39,70
90	MN 85/70 BF	0,35	**HK50.1**	100	52,80
110	MN 85/70 BF	0,35	**HK51.1**	100	66,70
125	MN 85/70 BF	0,35	**HK52.1**	100	83,50
150	MN 85/70 BF	0,35	**HK53.1**	100	112,00
185	MN 85/70 BF	0,35	**HK54.1**	100	159,00
240	MN 85/70 BF	0,35	**HK55.1**	100	225,00
270	MN 85/70 BF	0,35	**HK56.1**	100	271,00

Quartz fibre round filters MN QF-10

By Macherey-Nagel. Made of pure quartz fibres without bonding agents. High chemical resistance to organic and inorganic solvents, acids (except hydrofluoric acid) and alkalis. For filtration of aggressive media, in trace analytics, emission control, airborne dust analytics etc.
Extremely low content of metal trace elements.
Filter speed (in compliance with DIN 53137): <5 s.
Surface weight: 85 g/m², retention range: up to 0.3 µm.
Temperature stable up to 950 °C.

∅ (mm)	Thickness (mm)	Art. No.	Pack Qty.	€
45	0.46	**EN12.1**	100	176,00
47	0.46	**EN13.1**	100	176,00
50	0.46	**EN14.1**	100	180,00
90	0.46	**EN15.1**	100	437,00

- Glass wool see chapter Chromatography!
- Filtering flasks and filter crucibles from p. 174

Filter papers for qualitative analysis

Rotilabo®-round filters

Filter paper for **qualitative analysis**. Made of 100 % cellulose.
Ash content 0.06 %.

Type 111A

Very fast filtration time, filtration speed according to DIN 53137: 10 s
Surface weight: 80 g/m², retention range: 12-15 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
25	111A	0,16	**XP31.1**	100	5,50
47	111A	0,16	**XP32.1**	100	5,50
55	111A	0,16	**AP58.1**	100	5,55
70	111A	0,16	**AP59.1**	100	6,10
90	111A	0,16	**AP60.1**	100	7,45
110	111A	0,16	**AP61.1**	100	8,10
125	111A	0,16	**AP62.1**	100	10,20
150	111A	0,16	**AP63.1**	100	12,35
185	111A	0,16	**AP64.1**	100	14,90
240	111A	0,16	**AP65.1**	100	23,55

Type 112A

Fast filtration time, filtration speed according to DIN 53137: 20 s
Surface weight: 80 g/m², retention range: 8-12 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
47	112A	0,16	**XP34.1**	100	5,50
55	112A	0,16	**AP66.1**	100	5,55
70	112A	0,16	**AP67.1**	100	6,10
90	112A	0,16	**AP68.1**	100	7,45
110	112A	0,16	**AP69.1**	100	8,10
125	112A	0,16	**AP70.1**	100	10,20
150	112A	0,16	**AP71.1**	100	12,30
185	112A	0,16	**AP72.1**	100	15,00
240	112A	0,16	**AP73.1**	100	23,60

Type 113A

Medium-fast filtration time, filtration speed according to DIN 53137: 50s
Surface weight: 87 g/m², retention range: 5-8 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
47	113A	0,16	**XP36.1**	100	5,50
55	113A	0,16	**AP74.1**	100	5,55
70	113A	0,16	**AP75.1**	100	6,15
90	113A	0,16	**AP76.1**	100	7,45
110	113A	0,16	**AP77.1**	100	8,15
125	113A	0,16	**AP78.1**	100	10,20
150	113A	0,16	**AP79.1**	100	12,35
185	113A	0,16	**AP80.1**	100	14,90
240	113A	0,16	**AP81.1**	100	23,60

Type 114A

Slow filtration time, filtration speed according to DIN 53137: 100s
Surface weight: 80 g/m², retention range: 3-5 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
47	114A	0,15	**XP38.1**	100	5,50
55	114A	0,15	**AP82.1**	100	5,30
70	114A	0,15	**AP83.1**	100	5,75
90	114A	0,15	**AP84.1**	100	6,95
110	114A	0,15	**AP85.1**	100	7,65
125	114A	0,15	**AP86.1**	100	8,15
150	114A	0,15	**AP87.1**	100	11,25
185	114A	0,15	**AP88.1**	100	13,65
240	114A	0,15	**AP89.1**	100	21,50

Type 115A

Very slow filtration time, filtration speed according to DIN 53137: 180s
Surface weight: 80 g/m², retention range: 2-3 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
47	115A	0,14	**XP40.1**	100	5,05
55	115A	0,14	**AP90.1**	100	5,30
70	115A	0,14	**AP91.1**	100	5,75
90	115A	0,14	**AP92.1**	100	6,95
110	115A	0,14	**AP93.1**	100	7,65
125	115A	0,14	**AP94.1**	100	8,15
150	115A	0,14	**AP95.1**	100	11,25
185	115A	0,14	**AP96.1**	100	13,65
240	115A	0,14	**AP97.1**	100	21,50

Type 601A

Slow filtration time, filtration speed according to DIN 53137: 88s
Surface weight: 73 g/m², retention range: 5-13 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
55	601A	0,16	**AP98.1**	100	5,55
70	601A	0,16	**CA04.1**	100	5,85
90	601A	0,16	**AT00.1**	100	5,90
100	601A	0,16	**AT01.1**	100	6,35
110	601A	0,16	**AT02.1**	100	6,35
125	601A	0,16	**AT03.1**	100	6,75
150	601A	0,16	**AT05.1**	100	8,20
185	601A	0,16	**AT06.1**	100	10,00
210	601A	0,16	**AT08.1**	100	11,65
240	601A	0,16	**AT09.1**	100	13,30
250	601A	0,16	**AT10.1**	100	13,30
320	601A	0,16	**AT11.1**	100	19,35
330	601A	0,16	**AT12.1**	100	19,60
400	601A	0,16	**AT13.1**	100	27,90

Filter papers for qualitative analysis

Filter papers - round filters

By Macherey-Nagel. For **qualitative analysis**. Not chemically treated. Ash content 0.1 - 0.2 %. Filtration time complies with DIN 53137.

Type MN 615, medium filtering
Thin filter paper for standard use. Particulary for filtration of water, saline solutions, surface weight 70 g/m², thickness 0.16 mm. Filtration time 22 s. Retention range: 4-12 µm.

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
55	MN 615	0,16	**L870.1**	100	5,15
70	MN 615	0,16	**L871.1**	100	5,15
90	MN 615	0,16	**L872.1**	100	5,90
110	MN 615	0,16	**L873.1**	100	7,95
125	MN 615	0,16	**L874.1**	100	8,70
150	MN 615	0,16	**L875.1**	100	11,50
185	MN 615	0,16	**L876.1**	100	15,90
240	MN 615	0,16	**L877.1**	100	25,30

Type MN 616, medium filtering
Ideal for sediments such as sulphides, lead chromate, calcium oxalate. Surface weight 85 g/m², thickness 0.20 mm. Filtration time 27 s. Retention range: 4-12 µm.

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
55	MN 616	0,2	**L878.1**	100	5,90
70	MN 616	0,2	**L879.1**	100	5,90
90	MN 616	0,2	**L880.1**	100	8,20
110	MN 616	0,2	**L881.1**	100	10,50
125	MN 616	0,2	**L882.1**	100	12,60
150	MN 616	0,2	**L883.1**	100	16,00
185	MN 616	0,2	**L884.1**	100	22,60
240	MN 616	0,2	**L885.1**	100	37,10

Type MN 619 eh, slow filtering
Dense filters for fine sediments. Surface weight 85 g/m², thickness 0.17 mm. Filtration time 140 s. Retention range: 2-4 µm.

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
55	MN 619 eh	0,17	**L886.1**	100	5,90
70	MN 619 eh	0,17	**L887.1**	100	5,90
90	MN 619 eh	0,17	**L888.1**	100	8,20
110	MN 619 eh	0,17	**L889.1**	100	10,50
125	MN 619 eh	0,17	**L890.1**	100	12,60
150	MN 619 eh	0,17	**L891.1**	100	16,00
185	MN 619 eh	0,17	**L892.1**	100	22,60
240	MN 619 eh	0,17	**L893.1**	100	37,10

Rotilabo®-Büchner funnels

Made of glazed porcelain. Excellent resistance to acids and bases. Temperature stable up to 1000 °C.

Volume (ml)	for filter paper ∅ (mm)	∅ Filter plate (mm)	Height (mm)	Tube length (mm)	Art. No.	Pack Qty.	€
35	45	48	24	43	**XX44.1**	1	13,85
70	55	62	30	64	**XX45.1**	1	16,10
120	70	77	35	64	**XX46.1**	1	19,20
240	90	97	40	71	**XX47.1**	1	26,65
400	110	116	49	83	**XX48.1**	1	33,15
600	125	130	52	85	**XX49.1**	1	41,75
1000	150	156	59	96	**XX50.1**	1	55,50
2000	185	192	74	117	**XX51.1**	1	74,30
4000	240	248	90	117	**XX52.1**	1	170,95
7000	290	296	105	130	**XX53.1**	1	410,65
10 000	320	334	120	133	**XX54.1**	1	514,95

A 121 °C

Rotilabo®-suction bottles

Made of borosilicate glass 3.3. With glass hose connection. ∅ 10 mm. Autoclavable.

Volume (ml)	Bottle ∅ (mm)	Neck inner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	70	24	105	**NY65.1**	1	25,75
250	85	35	145	**NY66.1**	1	30,65
500	105	35	175	**NY67.1**	1	34,30
1000	135	45	230	**NY68.1**	1	49,45
2000	165	60	255	**NY69.1**	1	55,30

DURAN WHEATON KIMBLE
A 121 °C

GUKO set

Made of **EPDM**. Conical rubber seals for suction bottle. Temperature resistant in the range -45 to +150 °C. Autoclavable.
Delivery incl. 8 Gukos, size 22, 29, 36, 44, 53, 63, 73, 84 mm.

Art. No.	Pack Qty. (set)	€
PK84.1	1	37,50

Filter papers for qualitative analysis

Rotilabo®-filter papers

100 % cellulose quality filter papers. High absorbency.
Standard filter paper with a smooth surface for analysis. Colour white.
Larger sizes are ideal as surface protection paper or working surface.

Type 600
Weight 64 g/m², thickness 0.15 mm. Retention 10-20 µm.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
420	520	**XP43.1**	500	65,70
500	500	**XP44.1**	500	74,40
600	600	**XP45.1**	500	107,50

Type 601
Weight 73 g/m², thickness 0.16 mm. Retention 5-13 µm.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
450	450	**XP46.1**	500	180,60
460	570	**XP47.1**	100	42,05

Type 122
Weight 73 g/m², thickness 0.17 mm. Retention 17-30 µm.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
520	520	**XP48.1**	500	169,85
600	600	**XP49.1**	500	199,95

NEW

Filter papers

By Macherey-Nagel. Alpha cellulose content approx. 95%.
Format 58 x 58 cm.

Type MN 713, medium filtration speed
General purpose technical filter paper.
Weight 70/m², filtration time 20 s.

Thickness (mm)	Art. No.	Pack Qty.	€
0,15	**HPL1.1**	100	76,90

Type MN 615, medium filtration speed
Quality standard paper for numerous applications.
Weight 70 g/m², filtration time 22 s, ash content 0.1 %,
retention range 4-12 µm.

Thickness (mm)	Art. No.	Pack Qty.	€
0,16	**HPL2.1**	100	127,00

Type MN 617, fast filtration speed
Quality filter paper for fast filtration of coarse deposits.
Weight 85 g/m², filtration time 9 s, ash content 0.1 %,
retention range 7-12 µm.

Thickness (mm)	Art. No.	Pack Qty.	€
0,2	**HPL3.1**	100	187,00

Type MN 640 w, fast filtration speed, ash-less
Quantitative filter paper for fast filtration of coarse deposits.
weight 85 g/m², filtration time 9 s, ash content <0.01 %,
retention range 7-12 µm.

Thickness (mm)	Art. No.	Pack Qty.	€
0,2	**HPL4.1**	100	473,00

Type MN 640 m, medium filtration speed, ash-less
Quantitative standard paper for numerous applications.
Weight 85 g/m², filtration time 27 s, ash content <0.01 %,
retention range 4-12 µm.

Thickness (mm)	Art. No.	Pack Qty.	€
0,2	**HPL5.1**	100	473,00

Type MN 640 d, slow filtration speed, ash-less
Quantitative filter paper for fine and very fine deposits.
Weight 85 g/m², filtration time 140 s, ash content <0.01 %,
retention range 2-4 µm.

Thickness (mm)	Art. No.	Pack Qty.	€
0,17	**HPL6.1**	100	473,00

Filter papers for qualitative analysis

Rotilabo®-folded filters

Filter paper for **qualitative analysis**. Made of 100 % cellulose. Ash content 0.06 %.

Type 113P
Medium filtration speed, filtration speed acc. to DIN 53137: 50 s
Surface weight: 87 g/m², retention range: 5-8 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
70	113P	0,16	**CA05.1**	100	26,80
90	113P	0,16	**CA06.1**	100	26,80
110	113P	0,16	**CA07.1**	100	27,70
125	113P	0,16	**CA08.1**	100	29,95
150	113P	0,16	**CA09.1**	100	31,10
185	113P	0,16	**CA10.1**	100	34,30
210	113P	0,16	**CA11.1**	100	42,00
240	113P	0,16	**CA12.1**	100	47,70
270	113P	0,16	**CA13.1**	100	55,35
320	113P	0,16	**CA14.1**	100	73,95

Type 600P
Fast filtration speed, filtration speed acc. to DIN 53137: 30 s
Surface weight: 64 g/m², retention range: 13 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
70	600P	0,15	**CA15.1**	100	15,25
100	600P	0,15	**CA16.1**	100	16,70
110	600P	0,15	**CA17.1**	100	17,50
125	600P	0,15	**CA18.1**	100	17,95
150	600P	0,15	**CA20.1**	100	18,50
185	600P	0,15	**CA21.1**	100	20,40
240	600P	0,15	**CA23.1**	100	24,70
320	600P	0,15	**CA25.1**	100	32,15
400	600P	0,15	**CA27.1**	100	46,60
450	600P	0,15	**CA28.1**	100	65,70
500	600P	0,15	**CA29.1**	100	72,40

Type 601P
Slow filtration speed, filtration speed acc. to DIN 53137: 130 s
Surface weight: 73 g/m², retention range: 5-13 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
70	601P	0,16	**AY73.1**	100	17,50
100	601P	0,16	**AY74.1**	100	20,00
110	601P	0,16	**AY75.1**	100	20,70
125	601P	0,16	**AY76.1**	100	20,75
150	601P	0,16	**AY78.1**	100	22,70
185	601P	0,16	**AY79.1**	100	24,30
240	601P	0,16	**AY81.1**	100	28,65
320	601P	0,16	**AY83.1**	100	42,25
400	601P	0,16	**AY85.1**	100	56,45
450	601P	0,16	**AY86.1**	100	80,75
500	601P	0,16	**AY87.1**	100	102,90

Filter papers – folded filters

By Macherey-Nagel. For **qualitative analysis**. Ash content approx. 0.1 %. Alpha cellulose content approx. 95 %.

Type MN 615 ¼, medium filtration speed
General purpose thin filter paper. Especially suited to filtering water and saline solutions. Surface weight 70 g/m². Filtration time in accordance with DIN 53137: 22 s. Retention efficiency: >4 µm.

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
70	MN 615 ¼	0,16	**A795.1**	100	24,50
90	MN 615 ¼	0,16	**A796.1**	100	24,50
110	MN 615 ¼	0,16	**A797.1**	100	24,50
125	MN 615 ¼	0,16	**A798.1**	100	24,50
150	MN 615 ¼	0,16	**A799.1**	100	24,50
185	MN 615 ¼	0,16	**A800.1**	100	26,80
210	MN 615 ¼	0,16	**A801.1**	100	38,95
240	MN 615 ¼	0,16	**Y856.1**	100	38,70
270	MN 615 ¼	0,16	**Y857.1**	100	44,90
320	MN 615 ¼	0,16	**Y858.1**	100	55,20
380	MN 615 ¼	0,16	**Y859.1**	100	80,50

Type MN 617 ¼, quick filtration speed
For quickly filtering out coarse deposits. Surface weight 85 g/m². Filtration time in accordance with DIN 53137: 92 s. Retention efficiency: 7 -12 µm.

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
70	MN 617 ¼	0,2	**EEY9.1**	100	27,60
90	MN 617 ¼	0,2	**EHA0.1**	100	27,60
110	MN 617 ¼	0,2	**EHA1.1**	100	27,60
125	MN 617 ¼	0,2	**EHA2.1**	100	27,60
150	MN 617 ¼	0,2	**EHA3.1**	100	27,60
185	MN 617 ¼	0,2	**EHA4.1**	100	33,50
240	MN 617 ¼	0,2	**EHA5.1**	100	49,90
270	MN 617 ¼	0,2	**EHA6.1**	100	59,30
320	MN 617 ¼	0,2	**EHA7.1**	100	77,40
385	MN 617 ¼	0,2	**EHA8.1**	100	110,00

Type MN 619 eh ¼, slow filtration speed
For filtering out fine and ultra-fine deposits. Surface weight 85 g/m². Filtration time in accordance with DIN 53137: 140 s. Retention efficiency: 2 -4 µm.

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
70	MN 619 eh ¼	0,17	**EHA9.1**	100	27,10
90	MN 619 eh ¼	0,17	**EHC0.1**	100	27,10
110	MN 619 eh ¼	0,17	**EHC1.1**	100	27,10
125	MN 619 eh ¼	0,17	**EHC2.1**	100	27,10
150	MN 619 eh ¼	0,17	**EHC3.1**	100	27,10
185	MN 619 eh ¼	0,17	**EHC4.1**	100	33,50
240	MN 619 eh ¼	0,17	**EHC5.1**	100	49,90
270	MN 619 eh ¼	0,17	**EHC6.1**	100	59,30
320	MN 619 eh ¼	0,17	**EHC7.1**	100	76,25
385	MN 619 eh ¼	0,17	**EHC8.1**	100	110,00

▶ Analysis funnels from page 171
▶ Filter stands see page 172

Filter papers for quantitative analysis

Rotilabo®-round filters

Filter paper for **qualitative analysis**. Made of 100 % cellulose.
Ash content 0.007 %.

Type 11A
Equivalent black band.
Very fast filtration time, filtration speed according to DIN 53137: 10 s
Surface weight: 84 g/m², retention range: 12-15 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
15	11A	0,18	**XP13.1**	100	6,40
42,5	11A	0,18	**XP15.1**	100	6,40
47	11A	0,18	**XP16.1**	100	6,40
55	11A	0,18	**AP18.1**	100	7,15
70	11A	0,18	**AP19.1**	100	8,05
90	11A	0,18	**AP20.1**	100	11,40
110	11A	0,18	**AP21.1**	100	15,00
125	11A	0,18	**AP22.1**	100	18,60
150	11A	0,18	**AP23.1**	100	24,70
185	11A	0,18	**AP24.1**	100	34,65
240	11A	0,18	**AP25.1**	100	69,75

Type 12A
Fast filtration time, filtration speed acc. to DIN 53137: 20 s
Surface weight: 84 g/m², retention range: 8-12 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
55	12 A	0,17	**AP26.1**	100	7,00
70	12 A	0,17	**AP27.1**	100	8,20
90	12 A	0,17	**AP28.1**	100	11,40
110	12 A	0,17	**AP29.1**	100	15,00
125	12 A	0,17	**AP30.1**	100	18,60
150	12 A	0,17	**AP31.1**	100	24,70
185	12 A	0,17	**AP32.1**	100	34,60
240	12 A	0,17	**AP33.1**	100	69,80

Type 13A
Equivalent white band.
Medium-fast filtration time, filtration speed according to DIN 53137: 50 s
Surface weight: 84 g/m², retention range: 5-8 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
15	13A	0,16	**XP20.1**	100	6,40
42,5	13A	0,16	**XP22.1**	100	6,40
47	13A	0,16	**XP23.1**	100	6,40
55	13A	0,16	**AP34.1**	100	7,00
70	13A	0,16	**AP35.1**	100	8,05
90	13A	0,16	**AP36.1**	100	11,40
110	13A	0,16	**AP37.1**	100	15,00
125	13A	0,16	**AP38.1**	100	18,60
150	13A	0,16	**AP39.1**	100	24,70
185	13A	0,16	**AP40.1**	100	34,60
240	13A	0,16	**AP41.1**	100	69,80

Type 14A
Slow filtration time, filtration speed acc. to DIN 53137: 100 s
Surface weight: 84 g/m², retention range: 3-5 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
55	14A	0,15	**AP42.1**	100	7,00
70	14A	0,15	**AP43.1**	100	8,05
90	14A	0,15	**AP44.1**	100	10,70
110	14A	0,15	**AP45.1**	100	15,00
125	14A	0,15	**AP46.1**	100	18,60
150	14A	0,15	**AP47.1**	100	24,70
185	14A	0,15	**AP48.1**	100	34,75

Type 15A
Equivalent blue band.
Very slow filtration time, filtration speed according to DIN 53137: 180 s
Surface weight: 84 g/m², retention range: 2-3 µm

Membrane ∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
15	15A	0,14	**XP27.1**	100	6,40
47	15A	0,14	**XP30.1**	100	6,40
55	15A	0,14	**AP50.1**	100	7,00
70	15A	0,14	**AP51.1**	100	8,05
90	15A	0,14	**AP52.1**	100	10,70
110	15A	0,14	**AP53.1**	100	15,00
125	15A	0,14	**AP54.1**	100	18,60
150	15A	0,14	**AP55.1**	100	24,70
185	15A	0,14	**AP56.1**	100	34,60
240	15A	0,14	**AP57.1**	100	69,80

Forceps for filter paper

Made of 18/10 stainless steel. For handling filter papers, cover slips and other flat objects. Width 12 mm, length 125 mm.

Art. No.	Pack Qty.	€
C828.1	1	10,45

▶ Further forceps from page 317

Filter papers for quantitative analysis

Filter papers - round filters MN 640

By Macherey-Nagel. For **quantitative analysis.** Made of noble cellulose washed in acid and linters with α cellulose content of over 95 %. Ash content <0.01 %. Temperature stable up to +130 °C. gsm substance 85 g/m². Filtration time acc. to DIN 53137.

Type MN 640 w
Quick filtering, filtration time 9 s. Equivalent black band.
Soft filter, loosely structured. Ideal for coarses sediments such as ferric/aluminium hydroxide, bismuth/copper/ferric sulphide, nickel/ diacetyldioxine, etc. Standard filter for Si-analysis. Retention range: >8 µm.

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
55	MN 640 w	0,2	**EEX7.1**	100	9,90
70	MN 640 w	0,2	**A780.1**	100	13,10
90	MN 640 w	0,2	**A781.1**	100	18,95
110	MN 640 w	0,2	**A782.1**	100	27,40
125	MN 640 w	0,2	**A783.1**	100	31,50
150	MN 640 w	0,2	**A784.1**	100	42,50
185	MN 640 w	0,2	**EEX8.1**	100	64,25
240	MN 640 w	0,2	**EEX9.1**	100	104,00
320	MN 640 w	0,2	**EEY0.1**	100	180,00

Type MN 640 m
Medium filtering, filtration time 27 s. Equivalent white band.
Ideal for sediments such as sulphides, lead chromate, calcium oxalate. Typical fields of application: Gravimetric analysis, quantitative analysis of residue and purification processes. Retention range: >4 µm.

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
55	MN 640 m	0,2	**EEY1.1**	100	9,90
70	MN 640 m	0,2	**A785.1**	100	13,10
90	MN 640 m	0,2	**A786.1**	100	18,95
110	MN 640 m	0,2	**A787.1**	100	27,50
125	MN 640 m	0,2	**A788.1**	100	31,50
150	MN 640 m	0,2	**A789.1**	100	42,50
185	MN 640 m	0,2	**EEY2.1**	100	64,25
240	MN 640 m	0,2	**EEY3.1**	100	104,00
320	MN 640 m	0,2	**EEY4.1**	100	180,00

Type MN 640 d
Slow filtering, filtration time 140 s. Equivalent blue band.
Dense filters for all fine and extra fine sediments. Retention range: >2 µm.

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
55	MN 640 d	0,2	**EEY5.1**	100	9,90
70	MN 640 d	0,2	**A790.1**	100	13,10
90	MN 640 d	0,2	**A791.1**	100	18,95
110	MN 640 d	0,2	**A792.1**	100	27,40
125	MN 640 d	0,2	**A793.1**	100	31,50
150	MN 640 d	0,2	**A794.1**	100	42,50
185	MN 640 d	0,2	**EEY6.1**	100	64,25
240	MN 640 d	0,2	**EEY7.1**	100	104,00
320	MN 640 d	0,2	**EEY8.1**	100	180,00

Hard filter papers

Ash-free for **quantitative analysis**.
α cellulose content of over 95 %, ash content approx. 0.002 %.
Made of high-purity acid washed cotton linter pulp and cellulose mixed with a small quantity consolidating resin. Free of minerals and metal ions.
High stability and resistance, very high wet strength.
Precipitates can be removed easily with no fibres.
For analytical applications, routine quantitative and gravimetric methods.
Highly recommended for vacuum and pressure filtration, determination of metal ions, and filtration of acidic and alkaline solutions.
Resistant to sulphuric and nitric acids (up to 40 % at 50 °C) and alkalis (up to 10 % at 20 °C).

Technical specifications:

Type	Herzberg filtration rate (s)	Retention range (µm)	Weight (g/m²)	Thickness (mm)
1505	50	12-25	88	0.17
1506	170	4-12	90	0.16
1507	600	≤2	90	0.14

Type 1505, fast filtering

∅ (mm)	Art. No.	Pack Qty.	€
90	**NL29.1**	100	28,80
110	**NL30.1**	100	33,85
125	**NL31.1**	100	37,55
150	**NL32.1**	100	47,20

Type 1506, medium fast filtering

∅ (mm)	Art. No.	Pack Qty.	€
90	**NL37.1**	100	28,80
110	**NL38.1**	100	33,85
125	**NL39.1**	100	37,55
150	**NL40.1**	100	47,70

Type 1507, slow filtering

∅ (mm)	Art. No.	Pack Qty.	€
70	**NL44.1**	100	26,90
90	**NL45.1**	100	28,80
110	**NL46.1**	100	33,85
125	**NL47.1**	100	37,55
150	**NL48.1**	100	47,45
185	**NL49.1**	100	79,80
240	**NL50.1**	100	130,10

- ▶ Buchner funnels, see page 173
- ▶ Filtering flasks, see page 175
- ▶ Filter units, see page 515

Special filter papers

Phosphate-free round filters

By Macherey-Nagel. Phosphate-free filter papers for soil analysis and P-analysis in iron and steel works.

Technical specifications:

Filtertype	Speed acc. to DIN 53137 (s)	Thickness (mm)	Weight (g/m²)
MN 619 G	100	0.17	75
MN 616 G	22	0.20	85
MN 617 G	9	0.20	85

Type MN 619 G, slow filtering

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
55	MN 619 G	0,17	**HK04.1**	100	4,90
70	MN 619 G	0,17	**HK05.1**	100	4,90
90	MN 619 G	0,17	**HK06.1**	100	6,15
110	MN 619 G	0,17	**HK07.1**	100	8,50
125	MN 619 G	0,17	**HK08.1**	100	9,55
150	MN 619 G	0,17	**HK09.1**	100	12,95
185	MN 619 G	0,17	**HK10.1**	100	17,40
240	MN 619 G	0,17	**HK11.1**	100	27,60
320	MN 619 G	0,17	**HK12.1**	100	44,20
400	MN 619 G	0,17	**HK13.1**	100	76,20

Type MN 616 G, medium filtering

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
55	MN 616 G	0,20	**HK14.1**	100	6,15
70	MN 616 G	0,20	**HK15.1**	100	6,15
90	MN 616 G	0,20	**HK16.1**	100	8,50
110	MN 616 G	0,20	**HK17.1**	100	10,70
125	MN 616 G	0,20	**HK18.1**	100	12,80
150	MN 616 G	0,20	**HK19.1**	100	16,40
185	MN 616 G	0,20	**HK20.1**	100	22,60
240	MN 616 G	0,20	**HK21.1**	100	37,10
320	MN 616 G	0,20	**HK22.1**	100	64,30
400	MN 616 G	0,20	**HK23.1**	100	109,00

Type MN 617 G, quick filtering

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
55	MN 617 G	0,20	**HK24.1**	100	6,15
70	MN 617 G	0,20	**HK25.1**	100	6,15
90	MN 617 G	0,20	**HK26.1**	100	8,20
110	MN 617 G	0,20	**HK27.1**	100	10,50
125	MN 617 G	0,20	**HK28.1**	100	12,60
150	MN 617 G	0,20	**HK29.1**	100	16,00
185	MN 617 G	0,20	**HK30.1**	100	22,60
240	MN 617 G	0,20	**HK31.1**	100	37,10
320	MN 617 G	0,20	**HK32.1**	100	64,30
400	MN 617 G	0,20	**HK33.1**	100	109,00

Phosphate-free folded filters MN 280 ¼

By Macherey-Nagel. Folded filters with high purification and smooth surface, made of acid-washed and phosphate-free filter papers. For analysis of available plant nutrients (Mg, Mn, Cu, Zn, Co, B, Mo) and soil analysis. Slow filtering.

Technical specifications:

Type	Speed acc. to DIN 53137 (s)	Thickness (mm)	Weight (g/m²)
MN 280 ¼	100	0.18	75

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
110	MN 280 ¼	0,18	**HK34.1**	100	51,70
125	MN 280 ¼	0,18	**HK35.1**	100	51,70
150	MN 280 ¼	0,18	**HK36.1**	100	51,70
185	MN 280 ¼	0,18	**HK37.1**	100	68,20
240	MN 280 ¼	0,18	**HK38.1**	100	88,20

Folded filters for analysing fats MN 615 ff ¼

By Macherey-Nagel. For analysing fats. Filter papers are practically free from fats and resins. Ether-soluble residue < 0.1 mg in filters with ∅ 270 mm. Medium filtering.

Technical specifications:

Type	Surface	Weight (g/m²)
MN 615 ff ¼	smooth	70

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
110	MN 615 ff ¼	0,16	**HK80.1**	100	56,80
125	MN 615 ff ¼	0,16	**HK81.1**	100	56,80
150	MN 615 ff ¼	0,16	**HK82.1**	100	56,80
185	MN 615 ff ¼	0,16	**HK83.1**	100	64,20
240	MN 615 ff ¼	0,16	**HK84.1**	100	100,00
270	MN 615 ff ¼	0,16	**HK85.1**	100	116,00

Special filter papers

Nitrogen poor filter papers

By Macherey-Nagel. With low nitrogen content.
Ideal for nitrogen and protein analyses.
For analysis of the dry substance and for filtration of samples for all N-parameters. Approved by the EBC (European Brewery Convention) for malt analysis in breweries and malt houses.

Technical specifications:

Type	Surface	Speed acc. to DIN 53137 (s)	Weight (g/m²)
MN 614 ¼	grained	25	75
MN 620 ¼	grained	25	75

Type MN 614 ¼, medium filtering
Bleached. Suitable for filtration of essential oils, emulsions, essences, etc.

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
55	MN 614 ¼	0,25	**HK57.1**	100	24,20
70	MN 614 ¼	0,25	**HK58.1**	100	24,20
90	MN 614 ¼	0,25	**HK59.1**	100	24,20
110	MN 614 ¼	0,25	**HK60.1**	100	24,20
125	MN 614 ¼	0,25	**HK61.1**	100	24,20
150	MN 614 ¼	0,25	**HK62.1**	100	24,20
185	MN 614 ¼	0,25	**HK63.1**	100	28,20
240	MN 614 ¼	0,25	**HK64.1**	100	42,20
320	MN 614 ¼	0,25	**HK65.1**	100	59,50
400	MN 614 ¼	0,25	**HK66.1**	100	95,20

Type MN 620 ¼
Unbleached. For ex. for removing carbonic acid before analysis.

∅ (mm)	Type	Thickness (mm)	Art. No.	Pack Qty.	€
70	MN 620 ¼	0,26	**HK67.1**	100	19,80
90	MN 620 ¼	0,26	**HK68.1**	100	19,80
110	MN 620 ¼	0,26	**HK69.1**	100	19,80
125	MN 620 ¼	0,26	**HK70.1**	100	19,80
150	MN 620 ¼	0,26	**HK71.1**	100	19,80
185	MN 620 ¼	0,26	**HK72.1**	100	24,20
240	MN 620 ¼	0,26	**HK73.1**	100	32,70
320	MN 620 ¼	0,26	**HK74.1**	100	48,60
385	MN 620 ¼	0,26	**HK75.1**	100	67,60
400	MN 620 ¼	0,26	**HK76.1**	100	75,70

Rotilabo®-blotting paper blocks

Highly absorptive paper for removing excess liquid from small samples or microscopic preparations.
Surface weight 73 g/m². Dimensions: L 100 x W 37 mm.

Art. No.	Pack Qty.	€
XP50.1	1 block à 50 sheets	5,55

Phase separating paper - round filters MN 616 WA

By Macherey-Nagel. Silicone-impregnated paper for **qualitative analysis**.
The hydrophobic surface separates water from non water-miscible liquids.
Suitable for filtration of portions. Surface weight: 85 g/m².
Temperature stable to +120 °C. Mostly solvent consistant.

Membrane ∅ (mm)	Thickness (mm)	Art. No.	Pack Qty.	€
125	0,2	**1284.1**	100	22,95

Rotilabo®-activated carbon filter papers

Filter papers for clear filtration and brightening of dark urine for polarimetric determination of sugar, clear filtration of dyed liquids as well as filtration of galvanic baths.

Proportion of activated carbon 35 %, ash content 0.06 %, no binding medium.

Filtering speed in accordance with DIN 53137: 65 s
Retention: 5 µm
Grammage: 160 g/m²
Thickness: 0.42 mm

∅ (mm)	Design	Art. No.	Pack Qty.	€
55	round	**HC15.1**	100	9,70
70	round	**HC14.1**	100	12,40
90	round	**HC16.1**	100	12,85
110	round	**HC17.1**	100	31,35
140	round	**HC18.1**	100	31,35
150	round	**HC19.1**	100	31,35
185	round	**HC20.1**	100	38,25
210	round	**HC21.1**	100	63,70

Disposable sieves

Made of water repellant card with a nylon screen fabric.
For liquids of different consistencies, e.g. paints and lacquers.
Height 12 cm, ∅ top approx. 16 cm.

Mesh size (µm)	Mesh type	Colour	Art. No.	Pack Qty.	€
125	super fine	blue	**TA93.1**	125	31,65
150	extra-fine	turquoise	**AXL8.1**	125	31,55
190	fine	yellow	**TA92.1**	125	28,30
260	medium	orange	**TA91.1**	125	29,05
1000	coarse	white	**AXL9.1**	125	42,50

Special filter papers

Rotilabo®-germ testing paper

Folded, moisture-resistant germ testing paper for carrying out germ resistance tests, e.g. for root vegetable seeds.
Grammage: 160 g/m². Format: width 110 mm, fold depth 20 mm, double folds (50 units), length 2 m.

Art. No.	Pack Qty.	€
AT14.1	1	4,10

Rotilabo®-test flakes

Untreated cellulose flakes for impregnating with active ingredient solution. Suitable for determining resistance to antiobiotics or chemotherapeutic media in bacteria culture and pathogenic organisms.
Made of 100 % cotton linter, good absorption, grammage: 290 g/m², thickness: 0.75 mm.

∅ (mm)	Art. No.	Pack Qty.	€
6	**KA07.1**	1000	17,35
9	**KA08.1**	1000	22,10
12	**KA09.1**	1000	28,85
12,7	**KA10.1**	1000	28,90
25	**KA11.1**	1000	73,65

Rotilabo®-activated carbon filters

For filtration of organic solutions and acids, ambient air and various gases.
Filter material: Activated carbon granulate. Housing made of **PC**.
Temperature stable up to max. 70 °C, pressure resistant up to max. 2 bar.
For tube connections with inner-∅ 6.3 mm. Dimensions: ∅ 26 x 82 mm.

Art. No.	Pack Qty.	€
HC24.1	10	94,75

Cotton wool

Made of 100 % cotton, perforated. For filtering and cleaning.

Type	Art. No.	Pack Qty.	€
perforated	**0571.1**	1,1 kg (14 x 80 g)	24,65
not perforated	**PE40.1**	700 g (7 x 100 g)	13,95

Rotilabo®-absorbent papers

Bench-Top Protection Paper

Highly absorbent white paper, coated on one side with water-resistant PE. Suitable as a protective working surface for lab tops or for lining cupboards and drawers. Protects surfaces against chemicals, dirt and contamination. Also suitable for analytical and isotope laboratories.

Weight: 144 g/m², absorbency approx. 250-280 g/m²

Cut	Size	Art. No.	Pack Qty.	€
Sheets	48 cm x 60 cm	**1941.1**	100	182,00
Roll	48 cm x 100 m	**1959.1**	1	268,00
Roll	60 cm x 100 m	**1006.1**	1	325,00

Weight: 125 g/m², absorbency approx. 170 g/m²

Cut	Size	Art. No.	Pack Qty.	€
Sheets	42 cm x 52 cm	**HY90.1**	100	62,50
Sheets	46 cm x 57 cm	**HY91.1**	100	67,60
Sheets	50 cm x 60 cm	**HY92.1**	100	90,70
Roll	49 cm x 50 m	**HY93.1**	1	90,50
Roll	60 cm x 50 m	**HY94.1**	1	108,60
Roll	92 cm x 50 m	**HY95.1**	1	145,15

Weight: 225 g/m², absorbency approx. 200 g/m²

Cut	Size	Art. No.	Pack Qty.	€
Sheets	46 cm x 57 cm	**HY96.1**	50	67,75
Sheets	50 cm x 60 cm	**HY97.1**	50	61,90
Roll	49 cm x 50 m	**HY98.1**	1	169,85
Roll	60 cm x 50 m	**HY99.1**	1	206,40
Roll	92 cm x 50 m	**KA00.1**	1	293,50

▶ Blotting papers see chapter electrophoresis!

Extraction thimbles

NEW

Extraction sleeves Rotilabo®

Made of 100 % cellulose, free of grease, high mechanical strength and high retention capacity. Ideal for many extraction systems.

Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
19	90	**HTH3.1**	25	52,15
20	80	**HTH4.1**	25	59,15
22	80	**HTH5.1**	25	53,75
26	60	**HTH6.1**	25	59,15
28	80	**HTH7.1**	25	59,15
30	80	**HTH8.1**	25	59,15
30	100	**HTH9.1**	25	59,15
33	80	**HTK0.1**	25	56,45
33	94	**HTK1.1**	25	73,35
33	100	**HTK2.1**	25	60,75
33	118	**HTK3.1**	25	64,35
34	130	**HTK4.1**	25	87,75
41	123	**HTK5.1**	25	84,90
43	123	**HTK6.1**	25	104,30

Extraction thimbles, cellulose

By Macherey-Nagel. For Soxhlet and other extractions. Also suitable for extracting solid or liquid particles from the air and from gases.
Extraction thimbles as per DIN 12449 are suitable for extractors according to DIN 12602 and 12604.

* (acc. to DIN 12449)

Outside ∅ (mm)	Innner ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
23	20	80	**H202.1**	25	73,30
25*	22	80	**H203.1**	25	73,30
26	23	100	**H204.1**	25	73,30
27	24	60	**H205.1**	25	73,30
31	28	80	**H206.1**	25	73,30
32	29	100	**H207.1**	25	85,70
33	30	80	**H208.1**	25	73,30
36*	33	94	**H209.1**	25	87,90
33	30	100	**H210.1**	25	87,90
34	31	118	**H211.1**	25	106,00
36*	33	205	**L867.1**	25	144,00
52*	48	230	**L868.1**	25	193,00
61*	57	315	**L869.1**	25	287,00

- Funnels from page 165
- Filter stands see page 173
- Soxhlet extractors see page 159

Glass fibre extraction thimbles type MN 649

By Macherey-Nagel. Micro glass fibres consist of binder-free borosilicate glass, short term temperature stability up to 500 °C. The thimbles have high chemical resistance, a very high separation capacity and a very high particle retention capacity.
Suitable for emission measurement at high temperatures and for the separation of dust particles or aerosols from gases or air flows.
Extraction thimbles according to DIN 12449 are suitable for extractors with defined nominal volumes in accordance with DIN 12602 and 12604.

*(acc. to DIN 12449)

Outside ∅ (mm)	Innner ∅ (mm)	Height (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
17	15	50	1,0	**CYH8.1**	25	136,00
18	16	100	1,0	**CYH9.1**	25	136,00
25*	22	80	1,5	**CYK0.1**	25	136,00
26	23	90	1,5	**CYK1.1**	25	136,00
26	23	100	1,5	**CYK2.1**	25	136,00
30	27	80	1,5	**CYK3.1**	25	136,00
31	28	60	1,5	**CYK4.1**	25	136,00
31	28	120	1,5	**CYK5.1**	25	161,00
33	30	150	1,5	**CYK6.1**	25	199,00
36	33	80	1,5	**CYK7.1**	25	136,00
36	33	90	1,5	**CYK8.1**	25	164,00
36*	33	94	1,5	**CYK9.1**	25	164,00
36	33	100	1,5	**CYL0.1**	25	164,00
36	33	118	1,5	**CYL1.1**	25	198,00
36*	33	205	1,5	**CYL2.1**	25	266,00
36	35	150	1,5	**CYL3.1**	25	232,00
47	43	123	2,0	**CYL4.1**	25	252,00
52*	48	230	2,0	**CYL5.1**	25	353,00
61*	57	315	2,0	**CYL6.1**	25	535,00
79	75	330	2,0	**CYL7.1**	25	605,00

Rotisol®

Universal alcoholic solvent, extraction agent, mobile phase, and elution medium, for dehydrating in histology, recrystallisation, etc.
Mixable with water.
Ingredients:
dehydrated ethanol ~99 % · acetone ~5 % · methyl ethyl ketone ~1 % · Flp 12 °C · Kp 56-80 °C · D ~0.79 · highly flammable.

Danger H225-H319-EUH066

Art. No.	Pack Qty.	€
7917.3	1 l	19,90
7917.1	2,5 l	34,95
7917.2	25 l	193,40

Analytical sieve machines

Analytical sieve machines, HAVER EML 200 Premium series

By Haver & Boecker. For sieve analysis in accordance with ISO 2591-1. Measuring range 20 µm-125 mm. Suitable for analytical sieves with ∅ 50 to 203 mm.

- Fast and easy to operate
- Amplitude is adjustable in 0.1 mm increments
- Intermittent operation or continuous operation
- Memory for storing various sieve modes (49 memory slots)
- Ethernet interface
- Optional TwinNut rapid clamping system allows easier and faster replacement of sieves without time-consuming screwing

Additional features of EML 200 Premium Remote model:

Unit with protection class IP 54 and separate control unit for wall mounting allows the additional option of wet sieving.

Technical specifications:

Type	EML 200 Premium	EML 200 Premium Remote
Suitable for dry sieving	yes	yes
Suitable for wet sieving	no	yes
Type of motion	Three-dimensional	
Shaking amplitude (mm)	0.1 to 3.0	
Timer (min)	1 to 99 or continuous operation	
Intermittent operation (s)	1 to 99	
Min. load capacity	3 analytical sieves with usable height 50 mm and 1 sieve pan	
Max. load capacity	9 analytical sieves with usable height 50 mm or 8.7 kg sieve stack weight	
Dimensions W x D x H (mm)	295 x 385 x 880	
Weight (kg)	38	
Power supply	110-230 V, 50-60 Hz	

① **Analytical sieve machines EML 200 Premium**
Delivery incl. clamping system (2 M20 guide bars, 660 mm long, 2 tensioning nuts) as well as machine cover with window.
Delivery without sieve pan (please order separately).

Type	Art. No.	Pack Qty.	€
EML 200 Premium with Classic clamping system	**ECE6.1**	1	2827,25
EML 200 Premium with rapid TwinNut clamping system	**ECE7.1**	1	2975,60

② **Analytical sieve machines EML 200 Premium Remote**
Delivery incl. separate control unit with wall mount and connecting cable, clamping system (2 M20 guide bars, 660 mm long, 2 tensioning nuts), machine cover with full-cone nozzle and window, water plug with socket and PVC water hose (3 m).
Delivery without sieve pan (please order separately).

Type	Art. No.	Pack Qty.	€
EML 200 Premium Remote with Classic clamping system	**ECE8.1**	1	3278,75
EML 200 Premium Remote with TwinNut rapid clamping system	**ECE9.1**	1	3427,10

Accessories for dry sieving
(EML 200 Premium and Premium Remote)

Type	Art. No.	Pack Qty.	€
Sieve pan for dry sieving, ∅ 200 x H 50 mm, stainless steel	**ECC7.1**	1	50,45
Replacement machine cover with window	**ECE3.1**	1	178,45

Accessories for wet sieving
(EML 200 Premium Remote only)

Type	Art. No.	Pack Qty.	€
Sieve pan with outlet and PVC hose for wet sieving	**ECH0.1**	1	160,20
Replacement machine cover with full-cone nozzle and window	**ECH1.1**	1	311,75
PVC hose (½″), 3 m	**ECH2.1**	1	12,40

Spare parts for clamping systems
(EML 200 Premium and Premium Remote)

Type	Art. No.	Pack Qty.	€
Replacement guide bar Classic / TwinNut, 660 mm, M20	**ECH3.1**	1	84,95
Replacement tensioning nut for Classic system	**ECH4.1**	1	62,35
Replacement tensioning nut for TwinNut system	**ECH5.1**	1	136,55

Analytical sieve machine HAVER EML 200 Pure

By Haver & Boecker. For sieve analysis in accordance with ISO 2591-1. Standard model for dry sieving and fast and easy operation. Measuring range 20 µm-125 mm. Suitable for analytical sieves with ∅ 50 to 203 mm.

- Two amplitudes can be selected for coarse or fine materials
- Preset interval (10 s)
- Digital timer
- Anodised aluminium housing

Technical specifications:

Type of motion	Three-dimensional
Shaking amplitude	2.2 mm (coarse) or 0.9 mm (fine)
Timer	1 min or continuous operation
Min. load capacity	3 analytical sieves with usable height 50 mm and 1 sieve pan
Max. load capacity	9 analytical sieves with usable height 50 mm or 8.7 kg sieve stack weight
Dimensions (W x D x H)	295 x 385 x 900 mm
Weight	38 kg
Power supply	110-230 V, 50-60 Hz

Delivery incl. Classic "eco" clamping system (2 M16 guide bars, 660 mm long, 2 tensioning nuts) and machine cover with window.
Delivery without sieve pan (please order separately).

Art. No.	Pack Qty.	€
ECE2.1	1	2268,25

Accessories:

Sieve pan for dry sieving, ∅ 200 x H 50 mm, stainless steel	**ECC7.1**	1	50,45
Replacement machine cover with window	**ECE3.1**	1	178,45
Replacement Classic "eco" guide bar, 660 mm, M16	**ECE4.1**	1	61,30
Replacement tensioning nut for Classic "eco" system	**ECE5.1**	1	49,45

Analytical sieves

Analytical sieves ∅ 200 mm

By Haver & Boecker. Sieve frame fabricated in stainless steel with stainless steel wire mesh base. Compliant with DIN ISO 3310, ASTM E11, ISO 565, BS 410, etc. Suitable for testing granulates, powders, plastics, silicon, dyes, metal filings etc.

- Strong sieve construction for long life
- Sieve mesh retains excellent tension, even during intensive use
- Smooth frame surface avoids cross contamination
- Usable height 50 mm

Delivery incl. PVC sealing ring and Certificate of Compliance 2.1 in accordance with DIN EN 10 204.

Mesh size (mm)	Art. No.	Pack Qty.	€
0,02	**EAE7.1**	1	557,95
0,025	**EAE8.1**	1	328,95
0,032	**EAE9.1**	1	194,60
0,036	**EAH0.1**	1	187,05
0,038	**EAH1.1**	1	188,15
0,04	**EAH2.1**	1	134,40
0,045	**EAH3.1**	1	134,40
0,05	**EAH4.1**	1	109,65
0,053	**EAH5.1**	1	109,65
0,056	**EAH6.1**	1	109,65
0,063	**EAH7.1**	1	99,55
0,071	**EAH8.1**	1	99,55
0,075	**EAH9.1**	1	99,55
0,08	**EAK0.1**	1	99,55
0,09	**EAK1.1**	1	99,55
0,1	**EAK2.1**	1	99,55
0,106	**EAK3.1**	1	99,55
0,112	**EAK4.1**	1	99,55
0,125	**EAK5.1**	1	99,55
0,14	**EAK6.1**	1	99,55
0,15	**EAK7.1**	1	99,55
0,16	**EAK8.1**	1	99,55
0,18	**EAK9.1**	1	99,55
0,2	**EAL0.1**	1	99,55
0,212	**EAL1.1**	1	99,55
0,224	**EAL2.1**	1	99,55
0,25	**EAL3.1**	1	99,55
0,28	**EAL4.1**	1	99,55
0,3	**EAL5.1**	1	99,55
0,315	**EAL6.1**	1	99,55
0,355	**EAL7.1**	1	99,55
0,4	**EAL8.1**	1	99,55
0,425	**EAL9.1**	1	99,55
0,45	**EAN0.1**	1	99,55
0,5	**EAN1.1**	1	99,55
0,56	**EAN2.1**	1	99,55
0,6	**EAN3.1**	1	99,55
0,63	**EAN4.1**	1	99,55
0,71	**EAN5.1**	1	99,55
0,8	**EAN6.1**	1	99,55
0,85	**EAN7.1**	1	99,55
0,9	**EAN8.1**	1	99,55
1	**EAN9.1**	1	101,40
1,12	**EAP0.1**	1	101,40
1,18	**EAP1.1**	1	101,40
1,25	**EAP2.1**	1	101,40
1,4	**EAP3.1**	1	101,40
1,6	**EAP4.1**	1	101,40
1,7	**EAP5.1**	1	101,40
1,8	**EAP6.1**	1	101,40
2	**EAP7.1**	1	101,40
2,24	**EAP8.1**	1	101,40
2,36	**EAP9.1**	1	101,40
2,5	**EAT0.1**	1	101,40
2,8	**EAT1.1**	1	117,20
3,15	**EAT2.1**	1	117,20
3,35	**EAT3.1**	1	117,20
3,55	**EAT4.1**	1	117,20
4	**EAT5.1**	1	117,20
4,5	**EAT6.1**	1	117,20
4,75	**EAT7.1**	1	117,20
5	**EAT8.1**	1	117,20
5,6	**EAT9.1**	1	117,20
6,3	**EAX0.1**	1	117,20
6,7	**EAX1.1**	1	117,20
7,1	**EAX2.1**	1	117,20
8	**EAX3.1**	1	117,20
9	**EAX4.1**	1	117,20
9,5	**EAX5.1**	1	117,20
10	**EAX6.1**	1	117,20
11,2	**EAX7.1**	1	124,70
12,5	**EAX8.1**	1	124,70
13,2	**EAX9.1**	1	124,70
14	**EAY0.1**	1	124,70
16	**EAY1.1**	1	124,70
18	**EAY2.1**	1	124,70
19	**EAY3.1**	1	124,70
20	**EAY4.1**	1	124,70
22,4	**EAY5.1**	1	132,25
25	**EAY6.1**	1	132,25
26,5	**EAY7.1**	1	132,25
28	**EAY8.1**	1	132,25
31,5	**EAY9.1**	1	132,25
35,5	**ECA0.1**	1	132,25
37,5	**ECA1.1**	1	132,25
40	**ECA2.1**	1	132,25
45	**ECA3.1**	1	132,25
50	**ECA4.1**	1	132,25
53	**ECA5.1**	1	132,25
56	**ECA6.1**	1	132,25
63	**ECA7.1**	1	132,25
71	**ECA8.1**	1	132,25
75	**ECA9.1**	1	132,25
80	**ECC0.1**	1	132,25
90	**ECC1.1**	1	132,25
100	**ECC2.1**	1	132,25
106	**ECC3.1**	1	132,25
112	**ECC4.1**	1	132,25
125	**ECC5.1**	1	132,25

Accessories:

Sieve lid ∅ 200 mm, stainless steel	**ECC6.1**	1	123,65
Sieve pan for dry sieving, ∅ 200 x H 50 mm, stainless steel	**ECC7.1**	1	50,45
Intermediate pan ∅ 200 x H 50 mm, stainless steel	**ECC8.1**	1	88,70
Adapter ring ∅ 200 x H 50 mm, stainless steel	**ECC9.1**	1	81,10
Replacement PVC sealing ring	**ECE0.1**	1	4,85
Viton sealing ring (-15 to 200 °C)	**ECE1.1**	1	10,70

Distilling unit Monodest

Tabletip unit. For producing distilled water from tap water.
Ideal for schools, pharmacies or firms with relatively low water consumption.

Technical specifications:

Type	Monodest
Power consumption	2.500 W
Distillate amount	3.5 l/h
Cooling water amount	45 l/h
Conductivity distillate	1.5 µS/cm
Distillate temperature	80 °C
Heating element	Stainless steel
Glass parts	DURAN®
Connection	olive ∅ 12 mm
Weight	3.5 kg
In acc. with DAB norm	no
Voltage	230 V
Dimensions W x D x H	160 x 220 x 700 mm

Delivery incl. hose set.

Art. No.	Pack Qty.	€
Y367.1 *	1	1284,65

* Longer delivery times possible. Please check with our Sales Department.

Compact ion exchanger Destillo 2

For wall attachment. Ideal for deionizing water
(high purity water quality 0.1-20 µS) in small quantities.

- Very effective, handy and dependable
- Capacity approx. 50 l water per h
- Capacity of cartridge is dependent on water grade: at 10 dGH approx. 320 l, at 20 dGH approx. 160 l water. Conductivity range up to 100 µS/cm
- Current 220 V/50Hz
- Dimensions: W 115 x H 520 x D 115 mm
- Extension cord 150 cm, tap water supply with ¾″ - screw thread 150 cm, plastic outlet hose 100 cm

Delivery incl. cartridge, hoses, wall attachment and instruction manual.

Art. No.	Pack Qty.	€
0092.1	1	318,20

Disposable cartridge D 2

Pretreated against algae growth. Length 380 mm, ∅ 90 mm.
Weight app. 1400 g.

Art. No.	Pack Qty.	€
0093.1	1	74,15

Flow meters with propeller

With 2 hose connectors, length 25 mm, ∅ 6-11 mm.
Minimum flow 150 ml/min. Pressure load max. 2 bar.
Dimensions: W 90 x H 40 x D 15 mm. Weight 12 g.

Made of styrene-acrylonitrile (SAN)
For water and similar liquids.
Temperature stable up to +30 °C.

Colour	Art. No.	Pack Qty.	€
blue	**1736.1**	1	11,75
red	**E486.1**	1	11,40
black	**E487.1**	1	11,40

▶ Ion exchange resins
see chapter Chromatography!

NEW

DS 450/DS 750 ion exchanger systems

By stakpure. **Pressureless.**
Acc. to standards such as DIN EN 13060, ASTM and VDE 0510. Plastic ion exchanger systems for producing fully desalinated pure water using a mixed bed ion exchanger resin. Can be connected directly to the mains water supply. The system is rounded off by an analogue conductivity meter and tube set. Developed in-house for medical practices and small laboratories with a daily requirement of up to 15 litres. An innovative filter system protects against resin leaks, thereby ensuring a high level of product safety, including for downstream devices.

Technical specifications:

Model	DS 450	DS 750
Cartridge	disposable	**regenerable**
Flow rate (l/h)	50	100
Capacity at 10 dGH total salt content (l)	425	750
Pure water quality (µS/cm)	0.1–20	
Max. water temperature (°C)	30	
Power supply	230 V, 50-60 Hz	
Material	polyethylene	
Dimensions ∅ x H (mm)	100 x 600	175 x 470
Connection	R $^{3}/_{4}$"	
Weight approx. (kg)	3	6

Delivery incl. cartridge, analogue conductivity meter and tube set.
Model DS 450 also includes a wall mount.

Type	Art. No.	Pack Qty.	€
DS 450	**KCE7.1**	1	279,50
DS 750	**KCE8.1**	1	365,50

Accessories:

Replacement cartridges for DS 450 ion exchanger	**KCE9.1**	2	109,65
Replacement cartridge for DS 750 ion exchanger	**KCH0.1**	1	215,00

NEW

Stainless steel ion exchanger systems

By stakpure. **Pressure-resistant (up to 10 bar)** stainless steel ion exchanger cartridges, can be connected directed to the mains water.
Acc. to standards such as ASTM, CLSI, DIN EN 285, VDE 0510.
This ensures that the water quality constantly remains high.

The cost-effective way to produce fully desalinated water. In a stainless steel container, water flows through a mixed bed made of special anion and cation resins and is thereby fully desalinated and demineralised using the established ion exchanger method. For supplying ultrapure water systems, automatic analysis machines, flushing machines and autoclaves, or for industrial use with process water, battery water and cooling water.

Technical specifications:

Model	DS 1500	DS 2000	DS 2800	DS 4000
Cartridges	Pressure-resistant to max. 10 bar			
Capacity at 10 dGH total salt content (l)	1500	2000	2800	4000
Flow rate (l/h)	300	300	950	1000
Max. pressure (bar)	10			
Pure water quality (µS/cm)	0.1 to 20			
Max. water temperature (°C)	30			
Cartridge material	Stainless steel – AISI 316			
Cartridge filling	Mixed bed resin, **regenerable**			
Connection	R $^{3}/_{4}$"			
Dimensions ∅ x H (mm)	240 x 410	240 x 490	240 x 570	240 x 700
Weight (kg)	14	14	24	27

Delivery without conductivity meter (please order separately).
Compatible conductivity meters: Type AC 100 analogue or type DC 400 digital, available as an option.

Type	Art. No.	Pack Qty.	€
DS 1500	**KCE3.1** *	1	602,00
DS 2000	**KCE4.1** *	1	666,50
DS 2800	**KCE5.1** *	1	784,75
DS 4000	**KCE6.1** *	1	1053,50

* Longer delivery times possible. Please check with our Sales Department.

NEW

AC 100 analogue conductivity meter

By stakpure. For simply and reliably measuring the conductivity of pure water. The device is rounded off by an integrated measuring cell and a tube set.

- Analogue measurement data display in µS/cm
- For direct connection to ion exchanger cartridges

Technical specifications:

Measuring range	0.1 to 50 µS/cm
Dimensions (W x D x H)	93 x 123 x 170 mm
Connection	R $^3/_4$"
Power supply	230 V/50 to 60 Hz

Delivery incl. tube set consisting of 2 x 1.5 m tubes with R $^3/_4$" connections.

Type	Suitable for	Art. No.	Pack Qty.	€
AC 100	DS 1500-4000 ion exchanger	**KCH2.1**	1	268,75

NEW

DC 400 digital conductivity meter

By stakpure. For measuring the conductivity of pure and ultrapure water of ion exchanger cartridges and for monitoring closed-loop systems. A high-precision conductivity meter for continuous quality control of temperature and conductivity. Clear digital display even in the low conductivity measuring range.

- Large two-colour backlit graphic display for digitally displaying the conductivity in µS/cm or in MΩ x cm and the temperature in °C
- LED indicators: Light up green/red to indicate that the temperature and conductivity limits have been exceeded
- Continuous adjustment of the temperature and conductivity limits
- Automatic comparison before each measurement using an integrated reference resistor and temperature measurement using platinum temperature sensor
- Automatic voltage switching for international use

Technical specifications:

Conductivity measuring range	0.1 to 300 µS/cm (automatic switching at 9.99)
Temperature measuring range	0.1-99.9 °C
Temperature compensation	Automatic
Limit setting for conductivity	Any value from 0.1-30 µS/cm
Limit setting for temperature	Any value from 10-40 °C
Signals when limits are exceeded	Green/red LED indicator + buzzer (both limits can be deactivated)
Signals in the event of a fault message	Display switches between green and red
Protection rating	IP 54
Dimensions (W x D x H)	73 x 32 x 141 mm
Positioning	Wall-mounted
Connection	R $^3/_4$"
Power supply	110/230 V / 50 to 60 Hz (automatic voltage changeover)

Delivery incl. connecting cable, plug-in power supply, measuring cell and tube set consisting of 2 x 1.5 m tubes with R $^3/_4$" connections and wall mount.

Type	Suitable for	Art. No.	Pack Qty.	€
DC 400	DS 1500-4000 ion exchanger	**KCH1.1**	1	516,00

Ion exchange cartridges plastic design

By Thermo. **Pressureless.**
Provide completely demineralized water using a mixed-bed resin ion exchanger. Can be attached directly to a tap water supply. Ideal for treating small amounts of water and for supplying autoclaves, sterilizers etc. with deionized water.

- 100 % utilization of capacity
- Constantly good water quality

Technical specifications:

Model	DI 425	DI 750
Cartridge	disposable	regenerative
Rate of flow (l/h)	50	100
Capacity at 10 dGH total salt content (l)	425	750
High-purity water quality (µS/cm)	0.1 - 20	
Max. water temp. (°C)	30	
Current	230 V, 50/60 Hz	
Material	polyethylene	
Dimensions ∅ x H (mm)	100 x 600	175 x 480
Weight approx. (kg)	3	7
Connection	R $^{3}/_{4}$″	

Delivery incl. cartridge, tubing set and analogue conductivity meter.
Measuring range 0.1-50 µS/cm.
Model DI 425 additional incl. wall attachment.

Model	Art. No.	Pack Qty.	€
DI 425	**Y360.1**	1	321,45
DI 750	**Y362.1**	1	436,45

Spare cartridges for ion exchange cartridges DI 425 and DI 750

For model	Art. No.	Pack Qty.	€
DI 425	**Y361.1**	1	85,15
DI 750	**Y363.1**	1	251,55

Ion exchanger cartridges made of stainless steel

By Thermo. **Pressure-stable** (max. 10 bar) ion exchanger cartridges made of stainless steel. For simple and economical production of deionized water. Ideal for supplying high-purity water systems, dishwasher, autoclaves, sterilizers, air conditioners, steam boilers and for general laboratory applications.

Technical specifications:

Model	DI 1500	DI 2000	DI 2800	DI 4000
Capacity at 10 dGH total salt content (l)	1500	2000	2800	4000
Cartridge filling	Mixed bed resin, **regenerative**			
Max. pressure (bar)	10			
Pure water quality (µS/cm)	0.1-20			
Max. water temperature (°C)	30			
Material	Stainless steel V4A			
Connection	R ¾″			
Weight (kg)	14	18	24	27
Dimensions ∅ x H (mm)	240 x 410	240 x 490	240 x 600	240 x 700

Delivery without conductivity meter CA30.1 (please order separately).

Type	Art. No.	Pack Qty.	€
DI 1500	**HH27.1** *	1	700,90
DI 2000	**CA31.1** *	1	851,40
DI 2800	**CA32.1** *	1	925,60
DI 4000	**CA33.1** *	1	1222,30

* Longer delivery times possible. Please check with our Sales Department.

Digital conductivity meter

By Thermo. Measuring ranges: 0.055-199.9 µS/cm, from 10 µS/cm automatic switch-over to 10.00-199.9 µS/cm. With automatic temperature-compensation. Limit value alarm can be adjusted to up to 30 µS/cm, visual and audible alarm when limit value has been exceeded.
Delivery incl. PVC-tube, outside-∅ 16.5 mm, inside-∅ 10.2 mm, length 1.5 m.

Type	Art. No.	Pack Qty.	€
for models DI 1500 to DI 4000	**CA30.1** *	1	591,25

* Longer delivery times possible. Please check with our Sales Department.

NEW

OmniaPure ultrapure water systems

By stakpure.
OmniaPure – the specialist for ASTM Type I ultrapure water. For 20-100 litres of ultrapure water per day. Highest quality of ultrapure water for analytical and bioscience applications in laboratories; versatile and cost-effective to operate. The integrated pretreatment unit ensures that the results of analyses are always reliable and reduces the follow-up costs. The flexible dispenser is used to draw ASTM Type I ultrapure water. The water is drawn at the touch of a button using the dispenser's digital control system.

- OptiFill dispenser as standard
- Space-saving mounting on a laboratory bench or optionally on a wall
- Simple and cost-effective filter replacement
- With RS 232 port
- Leak sensor as standard
- Integrated pressure reducer as standard
- Ready to use, ready to connect, incl. filter cartridges

Technical specifications:

Feed water requirements: Water treated through ion exchange, reverse osmosis, deionisation or distillation	
Feed water temperature (°C)	+2 to 35
Feed water pressure (bar)	0.5-6
Inlet conductivity (µS/cm)	< 2
Turbidity (NTU)	< 1.0
Free chlorine (ppm)	< 0.05
TOC value (ppb)	< 50
Bacteria content (CFU/ml)	< 100
Carbon dioxide (ppm)	< 30
Silicate (ppm)	< 2

Ultrapure water specifications: ASTM Type I	**OmniaPure**	**OmniaPure UV/ UV-TOC**	**OmniaPure UV/UF/UV-TOC/UF**
Conductivity (µS/cm)	0.055	0.055	0.055
Resistance (MΩ x cm)	18.2	18.2	18.2
TOC value* (ppb)	5-10	1-5	1-5
TOC monitoring	-	-/yes	-/yes
Withdrawal capacity (l/min)	Up to 2	Up to 2	Up to 1.6
Endotoxins* (EU/ml)	-	-	< 0.001
RNase* (ng/ml)	-	-	0.01
DNase* (pg/µl)	-	-	< 4
Particles** (1/ml)	< 1	< 1	< 1
Bacteria content ** (CFU/ml)	< 0.1	< 0.1	< 0.1
Technical specifications			
Operating pressure (bar)	0.5–6	0.5–6	0.5–6
Rated voltage (volts/Hz)	100-240/50-60	100-240/50-60	100-240/50-60
Connected load (kW)	0.1	0.1	0.1
Rated size	R¾"	R¾"	R¾"
Ambient temperature (°C)	+2 to +35	+2 to +35	+2 to +35
Dimensions incl. OptiFill dispenser W x H x D (mm)	390 x 720 x 525	390 x 720 x 525	390 x 720 x 525
Weight (kg)	19	20	20

* depending on feed water quality, ** with 0.2 µm sterile filter capsule

Delivery incl. OmniaPure ultrapure water system, pretreatment cartridge (RO cartridge), ultrapure water cartridge, 0.2 µm sterile filter capsule, PE tube ∅ 8 mm, L 2.5 m, one PE tube ∅ 8 mm, L 2.5 m incl. inlet protection filter and R ¾" water connection adapter.
Also includes a UV lamp and/or ultrafiltration module (UF) depending on the model.

Type	Typical applications	Art. No.	Pack Qty.	€
OmniaPure	AAS, IC, ICP, buffer and media preparation	**KCC7.1** *	1	4859,00
OmniaPure UV	Ultratrace analysis, ICP-MS, HPLC, TOC analysis	**KCC8.1** *	1	5611,50
OmniaPure UV-TOC		**KCE0.1** *	1	6149,00
OmniaPure UV/UF	Molecular and microbiology, cell culture media	**KCC9.1** *	1	6149,00
OmniaPure UV-TOC/UF		**KCE1.1** *	1	6686,50

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Replacement pretreatment cartridge for OmniaPure	**KCE2.1**	1	193,50
Replacement ultrapure water cartridge	**KCA9.1**	1	344,00
Replacement UV lamp, 185/254 nm	**KCC0.1**	1	258,00
Replacement UF ultrafiltration module	**KCC1.1**	1	688,00
Replacement sterile filter capsule (0.2 µm)	**KCC2.1**	1	134,40
Optional wall mount incl. mounting parts	**KCC6.1**	1	150,50

NEW

OmniaTap pure and ultrapure water systems

By stakpure.
OmniaTap is the ideal system for when small volumes of pure and ultrapure water are required. The combination of leading-edge treatment methods enables pure and ultrapure water to be drawn from just one system. **It can be connected directly to a drinking water pipeline.** The flexible dispenser is used to draw ASTM Type I ultrapure water. The water is drawn at the touch of a button using the dispenser's digital control system. An integrated 10-litre tank with recirculation system constantly keeps the quality at the level required for ASTM Type II.
An optionally available pump station can be used to supply downstream terminal devices directly with pure water (ASTM Type II) from the pure water tank.

- Can be operated using just one hand
- Space-saving mounting on a laboratory bench or optionally on a wall
- OptiFill dispenser as standard
- TapWater set – direct connection to drinking water
- 10 l tank with recirculation system
- Tank volume display in percent
- Simple and cost-effective filter replacement
- With RS 232 port
- Leak sensor as standard
- Ready to use, ready to connect, incl. filter cartridges

Technical specifications:

Feed water requirements: Drinking water according to DIN 2000	
Feed water temperature (°C)	+2 to 35
Feed water pressure (bar)	0.5-6
Manganese, aluminium and iron content (ppm)	< 0.05
Free chlorine (ppm)	< 4
Silt density index (SDI)	Max. 3
pH range	4-11

Specifications:	OmniaTap	OmniaTap UV	OmniaTap UV/UF
ASTM Type II			
Pure water capacity at 15 °C (l/h)	6 or 12		
Conductivity (µS/cm)	0.067-0.1		
Resistance (MΩ x cm)	15-10		
Clean water tank outlet	yes		
ASTM Type I			
Conductivity (µS/cm)	0.055		
Resistance (MΩ x cm)	18.2		
TOC* value (ppb)	5-10	1-5	1-5
Withdrawal capacity (l/min)	Up to 2	Up to 2	Up to 1.6
Endotoxins* (EU/ml)	-	-	< 0.001
Particles** >0.2 µm (1/ml)	< 1		
Bacteria content** (CFU/ml)	< 0.1		
Technical specifications:			
Operating pressure (bar)	2-6		
Rated voltage (volts/Hz)	100-240 / 50-60		
Connected load (kW)	0.1		
Rated size	R ¾"		
Ambient temperature (°C)	+2 to +35		
Dimensions incl. OptiFill dispenser: W x H x D (mm)	390 x 725 x 615		
Weight (kg)	20	21	21

* depending on feed water quality, ** with 0.2 µm sterile filter capsule

Delivery incl. OmniaTap ultrapure water system with integrated 10 l tank, sterile tank overflow and vent filter, pretreatment cartridge (RO cartridge), ultrapure water cartridge, 0.2 µm sterile filter capsule, 3 x PE tubes ∅ 8 mm, L 2.5 m, R ¾" water connection adapter. Also includes a UV lamp and/or ultrafiltration module (UF) depending on the model.

Type	Typical applications	Art. No.	Pack Qty.	€
OmniaTap 6 l/h	AAS, IC, ICP, buffer and media preparation	**KCA1.1** *	1	4160,25
OmniaTap 12 l/h		**KCA2.1** *	1	5385,75
OmniaTap UV 6 l/h	Ultratrace analysis, ICP-MS, HPLC, TOC	**KCA3.1** *	1	4826,75
OmniaTap UV 12 l/h		**KCA4.1** *	1	6041,50
OmniaTap UV/UF 6 l/h	Molecular and microbiology, cell culture media	**KCA5.1** *	1	5493,25
OmniaTap UV/UF 12 l/h		**KCA6.1** *	1	6600,50

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Replacement pretreatment cartridge (RO cartridge) for OmniaTap 6 l/h	**KCA7.1**	1	236,50
Replacement pretreatment cartridge (RO cartridge) for OmniaTap 12 l/h	**KCA8.1**	1	344,00
Replacement ultrapure water cartridge	**KCA9.1**	1	344,00
Replacement UV lamp, 185/254 nm	**KCC0.1**	1	258,00
Replacement UF ultrafiltration module	**KCC1.1**	1	688,00
Replacement sterile filter capsule (0.2 µm)	**KCC2.1**	1	134,40
Replacement tank breather filter	**KCC3.1**	1	82,80
Optional OmniaTap/Lab10" treatment unit – incl. connection hose. For pretreating the feed water if it does not meet the feed requirements	**KCC4.1**	1	236,50
Optional Omnia pump station	**KCC5.1**	1	741,75
Optional wall mount incl. mounting parts	**KCC6.1**	1	150,50

Smart2Pure ultrapure water system

By Thermo.
Compact systems for the production of contamination-free water from tap water. The unit is connected **directly to the mains water supply**. Simultaneous provision of ultrapure and pure water in the following grades:

- **ASTM type I** (resistance of 18.2 MΩ x cm)
- **ASTM type II** (resistance of 10 -15 MΩ x cm)

Easy to use, space-saving design and low follow-up costs. The pre-treatment cartridge is separate from the ultrapure water cartridge. Only the used cartridge need be replaced, when necessary.

Uses:

Analytical chemistry: HPLC, GC, GC-MS, ICP-MS, AA, TOC measurements, IC
Molecular biology and microbiology: cell culture/ tissue culture, PCR, DNA sequencing, electrophoresis
Routine laboratory tasks: making up and diluting buffers and reagents, rinsing of laboratory glassware, supply of autoclaves, analysers and other laboratory equipment

Features of Smart2Pure UV:

- Combined cartridge (reverse osmosis membrane/activated charcoal) for pre-treatment of feed water
- Direct tapping of type I ultrapure water through a sterile end filter (0.2 µm)
- Integrated 6-litre tank for storing type II pure water
- Guaranteed pure water quality: the recirculation pump and sterile air filter protect from microbial contamination
- Additional pressure outlet on ultrapure water tank for supplying downstream devices
- Simple and economical change of expendables as treatment cartridges can be replaced separately
- Space-saving mounting on laboratory bench or on the wall
- UV lamp with two wavelengths of 254 and 185 nm kills bacteria, oxidises organic compounds and produces germ-free ultrapure water with a TOC content of < 5 ppb

Optional Smart2Pure UV/UF system:
UF ultra-filtration module for near-total elimination of macro-molecular contamination such as microorganisms, pyrogens (bacterial endotoxins), nucleases and particles; the combination of UV oxidation and ultra-filtration produces analytically pure water with a specific resistance of up to 18.2 MΩ cm, TOC values of < 5 ppb, pyrogen levels of < 0.001 EU/ml and RNase, DNase and DNA concentrations below the detection limit.

Technical specifications:

Drinking water requirements:	
Drinking water to DIN 2000	Manganese and iron content: < 0.05 mg/l
	Chlorine concentration: < 0.1 mg/l
	Colloid index : < 3
	Drinking water temperature: 2-35 °C
	Drinking water pressure: 1-6 bar

Pure water specifications:	**ASTM Type I**	**ASTM Type II**
Conductivity (µS/cm)	0.055	0.067-0.1
Resistance (MΩ x cm)	18.2	10-15
Permeate output for pure water at 15 °C (l/h)	-	3 or 6
Output for ultrapure water (l/min)	1.0	-
Output (models with UF filter) (l/min)	0.6	-
TOC value (ppb)	< 10	-
TOC value (models with UV lamp) (ppb)	1-5	-
Endotoxins (models with UF filter) (EU/ml)	0.001	-
Bacteria content (KbE/ml)	< 1	-
Particle content < 0.2 µm pro ml	< 1	-
Technical specifications:		
Dimensions W x D x H (mm)	305 x 400 x 545	
Weight (kg)	approx. 22	
Power supply	100-240 V / 50/60 Hz, 1.8 m mains plug	
Drinking water connection	1.5 m tubing with 8 mm outer ∅ and ¾″	
Wastewater connection	¼″ or 8 mm outer ∅, 2 m tubing, pressure-less outlet	

Delivery incl. Smart2Pure unit with integral 6-litre tank, sterile tank ventilation filter, combined cartridge (reverse osmosis membrane/activated charcoal), ultrapure water cartridge, 0.2 µm end filter, pressure retaining valve, UV lamp and/or ultra-filter (depending on model).

Type	Typical applications	Art. No.	Pack Qty.	€
Smart2Pure UV 3 l/h	Trace analysis, HPLC, IC, ICP-MS, GC-MS, TOC analysis	**HE81.1** *	1	5176,15
Smart2Pure UV 6 l/h		**HE82.1** *	1	6352,20
Smart2Pure UV/UF 3 l/h	Molecular and microbiology: PCR, DNS, IVF, monoclonal antibodies, cell culture media	**HE83.1** *	1	5824,35
Smart2Pure UV/UF 6 l/h		**HE84.1** *	1	7000,40

Accessories:

Spare pretreatment pack Smart2Pure 3 l/h	**HE85.1** *	1	298,85
Spare pretreatment pack Smart2Pure 6 l/h	**HE86.1** *	1	341,85
Spare pure water filter cartridge	**HE87.1** *	1	440,75
Spare UV-lamp	**HE88.1** *	1	310,70
Spare ultra-filtration module	**HE89.1** *	1	414,95
Spare tank air filter	**HE90.1** *	1	103,75
Wall attachments incl. mounting parts	**HE92.1** *	1	158,05
Spare sterile filter capsule 0.2 µm	**CA73.1** *	1	231,15

* Longer delivery times possible. Please check with our Sales Department.

BRITA® benchtop water filters

For optimal drinking water quality. Reduces limescale, lead, copper and chlorine content using a combination of ion exchange and activated charcoal.

- Electronic cartridge exchange indicator
- With MAXTRA Flow Control for steady flow and optimal filtration capacity
- ① MARELLA: easy to fill flip top lid
- ② FLOW: with tap easy and convenient use

Delivery incl. 1 MAXTRA water filter cartridge.

Type	Filling volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
① MARELLA	2,4	267 x 109 x 277	**XC11.1**	1	n. a.
② FLOW	8,5	217 x 307 x 224	**XC12.1**	1	n. a.

Accessories:

BRITA® MAXTRA+ water filter cartridges	**XC13.2**	4		n. a.

A 121 °C

TLC separation chamber

Made of borosilicate glass 3.3. For immersing pre-treated TLC ready-to-use 8 x 4 cm foils in solvents. Cylindrical glass beaker with loose glass lid. Inner height 100, ∅ 60 mm. Autoclavable.

Art. No.	Pack Qty.	€
0823.1	1	39,60

▶ Further separation chambers see chapter chromatography!

A 121 °C

Rotilabo®-battery jars

Made of type 3.3 borosilicate glass. Cylindrical glass beakers with rough ground rim. Autoclavable.

Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
60	120	**AYL9.1**	10	111,80
100	100	**AYN0.1**	6	77,70
100	150	**AYN1.1**	6	83,35
100	200	**AYN2.1**	6	94,55
125	125	**AYN3.1**	6	101,50
125	250	**AYN4.1**	6	110,10
150	150	**AYN5.1**	4	90,20
150	200	**AYN6.1**	1	22,90
150	250	**AYN7.1**	1	24,05
160	320	**AYN8.1**	1	39,40
200	200	**AYN9.1**	1	45,55
200	250	**AYP0.1**	1	48,65
200	300	**AYP1.1**	1	52,55
200	400	**AYP2.1**	1	55,75
240	480	**AYP3.1**	1	116,10

Capillary tubes

By Hirschmann. Made of soda-lime glass. Open at both ends.

Length (mm)	Outer ∅ (mm)	Inner ∅ (mm)	Art. No.	Pack Qty.	€
80	1,0	0,8	**EAC7.1**	10 x 100	67,55
80	1,35	0,95	**EAC8.1**	10 x 100	47,10
80	1,55	1,15	**EAC9.1**	10 x 100	49,15
90	1,0	0,8	**EAE0.1**	10 x 100	68,05
100	1,0	0,8	**EAE1.1**	10 x 100	77,30
100	1,35	0,95	**EAE2.1**	10 x 100	54,85
100	1,55	1,15	**EAE3.1**	10 x 100	50,55
120	1,0	0,8	**EAE4.1**	4 x 250	79,05
120	1,35	0,95	**EAE5.1**	4 x 250	65,05
150	1,0	0,8	**EAE6.1**	4 x 250	85,60

Material
DURAN®
A 121 °C

Test tube atomizers

Made of DURAN®. Autoclavable without rubber tube.
Delivery incl. ground joint clamp and rubber bulb.

Volume (ml)	Standard taper (NS)	Art. No.	Pack Qty.	€
6	14/23	**TK61.1**	1	48,20
12	19/26	**TK62.1**	1	49,05

Accessories:

Spare atomizer attachment for TK61.1	**TK63.1**	1	43,40
Spare atomizer attachment for TK62.1	**TK64.1**	1	46,15
Spare test tube for TK61.1	**TK65.1**	1	10,05
Spare test tube for TK62.1	**TK66.1**	1	11,15
Spare rubber bulb, incl. tube, length 20 cm	**5914.1**	1	13,85

TLC sprayer

Versatile sprayer with gas cartridge for spraying reagents and other liquids. Spray pressure: constant 4,4 bar. Eco-friendly propellant mixture of dimethyl ether, propane and isobutane. Sufficient for approx. 500 ml of liquid.
Easy to clean: unscrew cartridge, immerse uptake into vessel containing cleaning fluid and spray until the spray is free of residues.
Propellants: dimethyl ether, isobutane, propane.
Delivery incl. propellant cartridge (55 g or 94 ml), 170 ml glass reservoir bottle, suction tube and screw cap.
Danger H222-H229

Art. No.	Pack Qty.	€
YC44.1	1	14,95

Accessories:

Replacement cartridges with spray nozzle and suction tube	**YC45.1**	5	45,80
Replacement 170 ml glass bottle	**YC46.1**	1	7,35

Material
DURAN®
A 121 °C

TLC atomizers

Made of DURAN®. NS 19/26, volume 100 ml.
Overall height 160 mm. Autoclavable without rubber tube.
Delivery incl. Erlenmeyer flasks, wire joint clamps, rubber ball incl. rubber tube 25 cm.

Type	Art. No.	Pack Qty.	€
TLC atomizers complete	**0707.1**	1	64,40

Accessories:

Spare spray nozzle	**H451.1**	1	38,25
Spare rubber bulb, incl. tube, length 20 cm	**5914.1**	1	13,85

Spray diffusers

By Rixius. Made of brown glass. Volume approx. 20 ml, ∅ 29 mm, overall height with spray nozzle 98 mm. With GL 18 thread. Spray nozzle complete with cap and tube made of PE. Approx. 0.05 ml spray volume per pump action.

Art. No.	Pack Qty.	€
N145.1	3	8,55

Programme extension!

Vacuum-blocks

For **filtration** and solid **extraction**. Ideal for rapid **sample preparation**. Each tube position is equipped with a valve and can therefore be evacuated either individually or with the others. Each individual valve contains a Luer fitting, enabling filtration with a syringe filter or mounting of a disposable syringe. Inner body makes exact positioning of test tubes under each available opening.

Delivery incl.vlid, glass chamber with connector (for tubes with inner ∅ 9-10 mm) and manometer, plastic rack (with support posts and 3 interchangeable plates for tube-∅ 17, 12 or 10 mm), nylon-stopcocks, plastic valves and needles (PP, length 25 mm).

Type	Inner dimensions: L x W x H (mm)	Art. No.	Pack Qty.	€
12-place	177 x 82,5 x 171,5	**H676.1**	1	854,65
16-place	279 x 76 x 171,5	**T670.1**	1	966,45
24-place	279 x 76 x 171,5	**T678.1**	1	1180,35

Accessories for vacuum-blocks

Drying attachment
For simultaneous evaporation of between 12 and 24 eluates.
The lid has a gas connector on one side, from which the gas is fed directly to 12, 16 or 24 stations.

Type	Art. No.	Pack Qty.	€
12-station	**PL28.1**	1	479,45
16-station	**PL29.1**	1	528,90
24-station	**PL30.1**	1	532,15

Rack bases for 12-station vacuum-block

Type	Art. No.	Pack Qty.	€
Rack base for volumetric flasks	**PL31.1**	1	82,90
Rack base for autosampler vials ∅ 12 mm	**PL32.1**	1	82,90

Waste container
Made of PP.

Type	Art. No.	Pack Qty.	€
for 12-station vacuum-block	**HXC4.1**	1	178,45

Spare parts for vacuum-blocks

For 12 places (H676.1)

Type	Art. No.	Pack Qty.	€
Glass chamber	**T553.1**	1	181,70
Spare parts set incl. 1 lid, 1 seal, 12 cocks	**T554.1**	1	353,70
Lid seals	**T555.1**	2	22,50
Spare parts set incl. 1 vac. manom., 1 valve, 1 glass chamber	**T556.1**	1	535,35
Needles (polypropylene)	**T557.1**	12	42,95
Needles (stainless steel)	**T558.1**	12	141,90
Cocks (nylon)	**T559.1**	12	100,00

For 16 places (T670.1)

Type	Art. No.	Pack Qty.	€
Glass chamber	**T671.1**	1	231,15
Spare parts set incl. 1 lid, 1 seal, 12 cocks	**T672.1**	1	525,70
Lid seals	**T673.1**	2	32,15
Spare parts set incl. 1 vac. manom., 1 valve, 1 glass chamber	**T674.1**	1	606,30
Needles (polypropylene)	**T675.1**	16	53,65
Needles (stainless steel)	**T676.1**	16	170,95
Cocks (nylon)	**T677.1**	16	127,95

For 24 places (T678.1)

Type	Art. No.	Pack Qty.	€
Glass chamber	**T679.1**	1	235,45
Spare parts set incl. 1 lid, 1 seal, 12 cocks	**T680.1**	1	548,25
Lid seals	**T681.1**	2	30,00
Spare parts set incl. 1 vac. manom., 1 valve, 1 glass chamber	**T682.1**	1	750,35
Needles (polypropylene)	**T683.1**	24	83,75
Needles (stainless steel)	**T684.1**	24	245,10
Cocks (nylon)	**T685.1**	24	181,70

General spare parts for vacuum-blocks

Type	Art. No.	Pack Qty.	€
Top lid port, female Luer connector	**PL33.1**	2	15,00
Bottom lid port, male Luer connector	**PL34.1**	2	15,00

SPE columns

Made of **PP**. Can be used with vacuum block (H676.1ff) and other vacuum systems. Excellent chemical resistance. Column outlet: Luer (male).
Delivery without PE frits (please order separately).

Volume (ml)	Outside ∅ (mm)	Art. No.	Pack Qty.	€
1	8	**PX07.1**	100	49,40
3	11	**PX08.1**	100	49,40

Frits for SPE columns

Made of **PE**. Pore size 20 µm.

Type	∅ (mm)	Art. No.	Pack Qty.	€
For 1 ml PP column	6	**PX10.1**	100	18,65
For 3 ml PP column	9	**PX11.1**	100	18,65

Accessories: Luer caps

Made of **PP**. To fit standard Luer (male) outlets, and for all column and cartridge sizes.

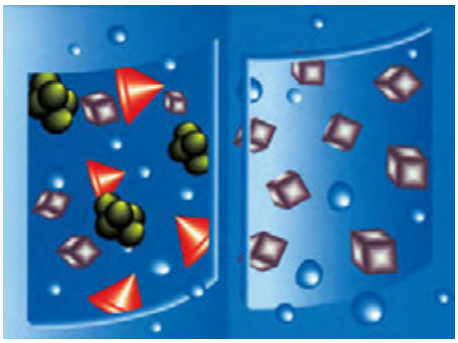
Art. No.	Pack Qty.	€
PX15.1	100	18,65

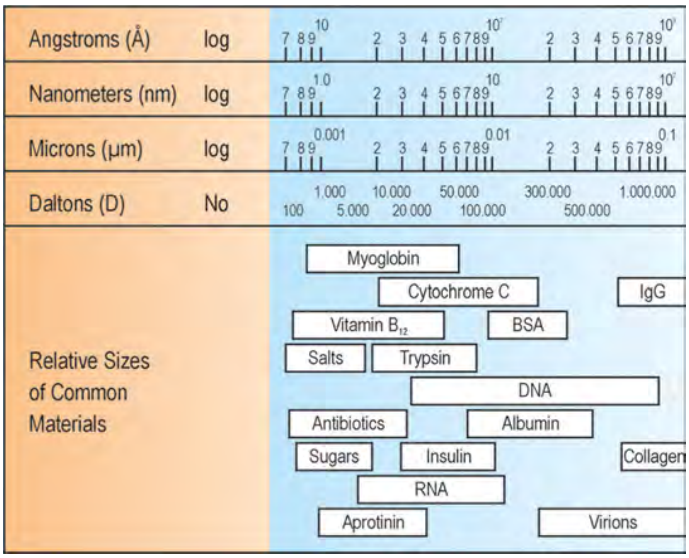
SPE empty cartridges

Made of **PP**. Fitted with 2 PE frits (pore size 20 µm).
Usable with vacuum block (H676.1ff) and other vacuum systems.
The Luer lock caps can be removed are refitted. Luer lock caps can be used to fit further cartridges, a column or a reservoir with Luer outlet (male).
Column outlet: Luer (male). Load capacity is dependent on the particle size of the sorbent.

Volume (ml)	Outside ∅ (mm)	Art. No.	Pack Qty.	€
0,7	12	**PX13.1**	100	162,35
2	12	**PX14.1**	100	181,70

Dialysis Tubular Membranes





Dialysis – Principle

Dialysis is a method used for **purifying biomolecules** according to the principle of osmosis: From a high concentration solution small solutes diffuse across a semi permeable membrane to a low concentration solution until equilibrium is reached. The pore size of the membrane allows only small solutes to pass, larger species are retained. Thus the molecules are separated. The pore size is indicated as **M**olecular **W**eight **C**ut **O**ff **(MWCO)**.

Dialysis- Examples for Applications

- Desalting
- Concentration of plasma or serum
- Buffer or pH change of samples
- Preparation of proteins for electrophoresis
- Concentration of antibodies
- Removal of contamination
- Purifying cell culture extracts
- Removal of oligosaccharides from protein solutions

Course of Dialysis

1. Fill beaker with dialysis buffer:
   In most cases the dialysis buffer equals the sample buffer, except for the molecules hold back by the membrane. The volume of the solution should be at least 100 times the sample volume.
2. Place magnetic follower into the buffer.
3. Cut dialysis tube.
   The length required depends on the following criteria:
   - Tube length for dialysis (mm) = [Vol (in µl) x 3.2] / [flat width^2 (in mm^2)]
   - Add 10 % of tube length
   - Add 40 mm for closures
4. Close one end of the preincubated tube with a closure so that at least 1 cm tubing overlaps.
5. Turn tube, open other end and fill sample. Carefully press the tubing to remove remaining air. Also close this end with a closure (1 cm overlap).
6. Place the dialysis tube into the prepared beaker, close lid and switch on stirrer.
7. The dialysis solution should be changed at least 3 times during the total dialysis process. Recommend changing after 2- 4 h, 6- 8 h and 10-14 h.
   Dialysis should be continued for at least 2 h after final change.
8. Following dialysis dry tube with a clean kim wipe, remove one clip, open the tube and remove sample with a pipette.

Filling volume for 15 cm tube length

Broadth (mm)	8	10	12	18	25	32	40	45	50	76	100	120
Tube ∅ (mm)	5	6	8	11	16	20	25	29	32	48	64	76
Filling volume (ml)	3.1	4.8	7	15	30	49	76	97	119	276	478	688

Choosing the Dialysis Membrane

Chemical resistance (residence time 17-20 h):

Regenerated cellulose: 2<pH<12, applicable when using diluted acid, base, or solvents (see table below).
Cellulose ester: 5<pH<9, use only under neutral conditions.

MWCO:

Those molecules about to be separated must have a **size ratio of approx. 25:1**.
Rule of thumb: Ideal MWCO = approx. half of molecular weight of the macromolecule left in the membrane.

Flat width:

Rule of thumb: √ [Vol (in µl) / 20] = average flat width required (mm).
The overall length of dialysis tube should not exceed 10 to 15 cm.

Choosing the Clips

The clips should be approx. 4 to 10 mm wider than the flat width of the tube.
Notice: Membranes made of cellulose ester should only be closed using Art. No 0685.1 to 0688.1.

Pretreatment of the Membranes

Wet packaged membranes (Spectra/Por® cellulose ester, Spectra/Por® 7, ZelluTrans/Roth V series)

Place tube for approx. 30 min in distilled water to remove the sodium azide and ethanol, respectively. Then rinse with distilled water.

Dry packaged membranes (Membra-Cel™, Nadir®, ZelluTrans/Roth, Spectra/Por®1-4 and Spectra/Por® 6)

For the most applications it is sufficient to soak the membrane for approx. 30 min in distilled water to remove glycerol and then to rinse it with distilled water.To remove heavy metals and sulphides place the tube in a solution of 2 % sodium bicarbonate and 1 mM EDTA and treat it as follows:

- Soak the tube at + 60 °C for 3 to 4 h. Then rinse with distilled water.
  Be careful also to rinse the inside of the tube.
- *Alternatively* incubate the tube 2 times for 10 min at approx. 95 °C. Rinse with distilled water in between incubation steps and afterwards. Be careful also to rinse the inside of the tube.

Note:
Wetted membranes may not dry out!

Dialysis Tubular Membranes

A 121 °C

ZelluTrans/Roth dialysis membranes

Made of **regenerated cellulose**.

- High-quality membranes, **dry packaged** on rolls
- Treated with glycerol to protect against brittleness
- Very low adsorption capacity (e.g. 1 µg/cm² Bovin Serum Albumin)
- Temperature stable up to +90 °C
- Good chemical resistance
- Contain low amounts of impurities, sulphides and heavy metals
- Wall thickness: 20-50 µm
- Autoclavable up to 121 ° C
  (immersed in dist. water for max. 10 min. at 1 bar)

Metal traces:

cadmium	< 0.10 ppm	nickel	< 0.10 ppm
chromium	< 0.10 ppm	zinc	6.24-12.9 ppm
copper	< 0.10 ppm	lead	0.75-0.80 ppm
iron	< 13.6 ppm		

Delivery incl. detailed instructions, disposable scissors and 2 clips.

T1: MWCO 3500, with batch specific data sheet.

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty. (roll)	€
19	12	15	**E656.1**	1	220,40
19	12	30	**E657.1**	1	308,55
46	29.3	15	**E658.1**	1	231,15
46	29.3	30	**E659.1**	1	310,70

T2: MWCO 6000-8000, with batch specific data sheet.

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty. (roll)	€
10	6.4	15	**E660.1**	1	246,20
10	6.4	30	**E661.1**	1	333,25
23	14.6	15	**E662.1**	1	159,10
23	14.6	30	**E663.1**	1	203,20
25	16	15	**E664.1**	1	163,40
25	16	30	**E665.1**	1	207,50
32	20.4	15	**E666.1**	1	165,55
32	20.4	30	**E667.1**	1	207,50
40	25.5	15	**E668.1**	1	172,00
40	25.5	30	**E669.1**	1	217,15
50	31.8	15	**E670.1**	1	248,35
50	31.8	30	**E671.1**	1	310,70

T3: MWCO 12000-14000, with batch specific data sheet.

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty. (roll)	€
10	6.4	15	**E672.1**	1	289,20
10	6.4	30	**E673.1**	1	392,40
25	16	15	**E674.1**	1	231,15
25	16	30	**E675.1**	1	321,45
33	21	15	**E676.1**	1	231,15
33	21	30	**E677.1**	1	321,45
45	28.6	15	**E678.1**	1	231,15
45	28.6	30	**E679.1**	1	321,45
76	48.4	5	**E680.1**	1	163,40
76	48.4	10	**E681.1**	1	222,55

T4: MWCO 12000-14000

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty. (roll)	€
10	6.4	30	**E682.1**	1	359,05
25	16	30	**E683.1**	1	164,50
33	21	30	**E684.1**	1	170,95
45	28.6	30	**E685.1**	1	192,45

A 121 °C

ZelluTrans/Roth V-series

Made of **regenerated cellulose**.

- **Highly pure tubing membranes in pieces (length 50 cm)**
- Free of any trace elements, glycerol, heavy metals, sulphides
- Can be used without any time-consuming cleaning procedure
- **Packaged wet** in 20 % ethanol
- Excellent for DNA/RNA applications
- Good chemical resistance
- Wall thickness: 20-30 µm
- Store at +4 to +8 °C
- Autoclavable up to 121 ° C
  (immersed in dist. water for max. 10 min. at 1 bar)

MWCO	Flat width (mm)	Art. No.	Pack Qty.	€	Art. No.	Pack Qty.	€
1000	18	**E909.1**	5	186,00	**E887.1**	10	263,40
1000	38	**E910.1**	5	186,00	**E888.1**	10	263,40
1000	45	**E911.1**	5	186,00	**E889.1**	10	263,40
2000	18	**E912.1**	5	186,00	**E890.1**	10	263,40
2000	38	**E913.1**	5	186,00	**E891.1**	10	263,40
2000	45	**E914.1**	5	186,00	**E892.1**	10	263,40
5000	18	**E915.1**	5	186,00	**E893.1**	10	263,40
5000	20	**E916.1**	5	186,00	**E894.1**	10	258,00
5000	30	**E917.1**	5	186,00	**E895.1**	10	263,40
5000	40	**E918.1**	5	169,85	**E896.1**	10	258,00
10000	10	**E919.1**	5	169,85	**E897.1**	10	258,00
10000	25	**E920.1**	5	169,85	**E898.1**	10	258,00
10000	32	**E921.1**	5	169,85	**E899.1**	10	258,00
10000	40	**E922.1**	5	169,85	**E900.1**	10	258,00
15000	10	**E923.1**	5	169,85	**E901.1**	10	258,00
15000	25	**E924.1**	5	169,85	**E902.1**	10	258,00
15000	32	**E925.1**	5	169,85	**E903.1**	10	258,00
15000	45	**E926.1**	5	169,85	**E904.1**	10	258,00
25000	12	**E927.1**	5	186,00	**E905.1**	10	270,90
25000	25	**E928.1**	5	186,00	**E906.1**	10	270,90
25000	35	**E929.1**	5	186,00	**E907.1**	10	270,90
25000	40	**E930.1**	5	186,00	**E908.1**	10	270,90

Nadir®-dialysis tubing

Made of **regenerated cellulose (cellulose hydrate)**.

Suitable for laboratory experiments. MWCO approx. 10 000–20 000 daltons. Packaged dry, glycerol content approx. 21%.

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty. (roll)	€
62,8	40	25	**5101.1**	1	53,45
62,8	40	100	**5101.2**	1	180,60
66	42	25	**5102.1**	1	53,45
66	42	100	**5102.2**	1	180,60
78,5	50	25	**5104.1**	1	53,45
78,5	50	100	**5104.2**	1	180,60

Dialysis Tubular Membranes

Dialysis membranes Spectra/Por® 1 to 4

Made of **regenerated cellulose**.

- High-quality membranes on rolls
- Temperature stable up to +60 °C
- High chemical resistance
- **Dry packaged**
- Treated with glycerol to protect against brittleness
- Contains low amounts of impurities such as sulphides and heavy metals

Metal traces:

cadmium	< 0.02 ppm	lead	2-6 ppm
chromium	0.1-0.2 ppm	magnesium	0.1-0.3 ppm
copper	0.8-1.2 ppm	nickel	1.3-1.7 ppm
iron	20-60 ppm	zinc	1.5-5 ppm

Spectra/Por® 1 - MWCO 6000 to 8000

Width 10-50 mm: Wall thickness 30-50 µm
Width 100-120 mm: Wall thickness 70 µm

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
10	6,4	15	**1954.1**	1	263,40
23	14,6	30	**1955.1**	1	272,00
32	20,4	30	**1956.1**	1	272,00
40	25,5	30	**2710.1**	1	291,35
50	31,8	30	**2711.1**	1	339,70
100	63,7	15	**2712.1**	1	411,75
120	76,4	15	**2713.1**	1	426,80

Spectra/Por® 2 - MWCO 12000 to 14000

Highly porous membranes for high dialysis rates.
Width 10-45 mm: Wall thickness 20-50 µm
Width 105-120 mm: Wall thickness 135-155 µm

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
10	6,4	15	**1958.1**	1	360,15
25	15,9	15	**1964.1**	1	360,15
45	28,6	15	**2714.1**	1	360,15
105	63,7	15	**2715.1**	1	792,30
120	76,4	15	**2716.1**	1	792,30

Spectra/Por® 3 - MWCO 3500

Wall thickness: 25-30 µm

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
18	11,5	15	**0978.1**	1	320,35
45	28,6	15	**0959.1**	1	320,35
54	34,0	15	**0983.1**	1	340,80

Spectra/Por® 4 - MWCO 12000 to 14000

Wall thickness: 20-50 µm

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
10	6,4	30	**2717.1**	1	398,85
25	15,9	30	**2718.1**	1	221,45
32	20,4	30	**2719.1**	1	238,65
45	28,6	30	**2720.1**	1	277,35
75	47,7	15	**2721.1**	1	293,50

Trial Kits Spectra/Por® 1-3

Made of **regenerated cellulose**.
Tubular membrane pieces on rolls, length 5 m, packaged dry. Ideal for small-scale dialyses and for testing membranes for special applications.

Trial Kit delivery incl.
- Tubular membrane Spectra/Por® 1, 2 or 3
- 1 pair of Spectra/Por® sealing clips made of PP (1 x with weight, 1 x without)

Spectra/Por® 1 - MWCO 6000-8000

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
32	20.4	5	**4570.1**	1	122,55
50	32	5	**4572.1**	1	134,40

Spectra/Por® 2 - MWCO 12 000-14 000

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
25	16	5	**4574.1**	1	122,55
45	29	5	**4577.1**	1	134,40

Spectra/Por® 3 - MWCO 3500

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
18	11.5	5	**4578.1**	1	122,55
54	34	5	**4579.1**	1	134,40

Dialysis tubes Membra-Cel™

By Viskase. Made of **regenerated cellulose**.
Colourless, transparent to slightly opaque, semi-permeable and seamless.
Application area: dialysis and ultrafiltration in the laboratory.

- **Exclusion limit (MWCO) 14 000**
- Dry packed, treated with glycerine
- Solid in pH range from 5 to 9
- No unspecific protein binding, protein adsorption < 1 ng/g
- Autoclavable up to +120 °C (max. 15 min, immersed in dist. water)

Flat width (mm)	∅ (mm)	Length (m)	Wall thickness (mm)	Art. No.	Pack Qty. (roll)	€
10	6	30	0.051	**1780.1**	1	170,95
10	6	152	0.051	**1781.1**	1	535,35
25	16	152	0.020	**0653.1**	1	198,90
34	22	30	0.023	**1784.1**	1	73,65
34	22	152	0.023	**0654.1**	1	212,85
44	28	30	0.020	**1785.1**	1	85,90
44	28	152	0.020	**0655.1**	1	256,95
77	49	30	0.041	**5358.1**	1	203,20

Attention:
Do not tie knots in **regenerated cellulose.**
Closure clips must be used to avoid any changing of membrane or MWCO.

Dialysis Tubular Membranes

Dialysis membranes Spectra/Por® 6

Made of **regenerated cellulose.**

- **Packaged wet** in 0.05 % sodium azide solution, on rolls
- Contain low amounts of impurities such as sulphides and heavy metals
- Wall thickness: 60-65 µm
- Store at +4 °C
- Temperature stable up to +60 °C

Metal traces:

cadmium	< 0.02 ppm	lead	2-6 ppm
chromium	0.1-0.2 ppm	magnesium	0.1-0.3 ppm
copper	0.8-1.2 ppm	nickel	1.3-1.7 ppm
iron	20-60 ppm	zinc	1.5-5 ppm

Spectra/Por® 6 MWCO 1000

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
18	11,5	10	**1966.1**	1	380,55
38	24	10	**1967.1**	1	380,55
45	29	10	**1968.1**	1	380,55

Spectra/Por® 6 MWCO 2000

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
18	11,5	10	**1973.1**	1	380,55
38	24	10	**1974.1**	1	380,55
45	29	10	**1975.1**	1	380,55

Spectra/Por® 6 MWCO 3500

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
18	11,5	10	**1976.1**	1	380,55
45	29	10	**1977.1**	1	380,55
54	34	10	**1978.1**	1	380,55

Spectra/Por® 6 MWCO 8000

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
12	7,5	10	**1924.1**	1	380,55
24	15	10	**1926.1**	1	380,55
40	25,5	10	**1934.1**	1	380,55
50	32	10	**1935.1**	1	380,55

Spectra/Por® 6 MWCO 10000

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
12	7,5	10	**1990.1**	1	380,55
24	15	10	**1991.1**	1	380,55
32	20,4	10	**1992.1**	1	380,55
45	29	10	**1996.1**	1	380,55

Spectra/Por® 6 MWCO 15000

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
12	7,5	10	**1881.1**	1	380,55
24	15	10	**1883.1**	1	380,55
32	20,4	10	**1887.1**	1	380,55
45	29	10	**1888.1**	1	380,55

Spectra/Por® 6 MWCO 25000 (opaque)

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
12	7,5	10	**1979.1**	1	380,55
28	18	10	**1981.1**	1	380,55
34	22	10	**1982.1**	1	380,55

Spectra/Por® 6 MWCO 50000 (opaque)

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
12	7,5	10	**1891.1**	1	380,55
28	18	10	**1892.1**	1	380,55
34	22	10	**1893.1**	1	380,55

Dialysis membranes Spectra/Por® 7

Made of **regenerated cellulose.**

- **Packaged wet** in 0.05 % sodium azide solution, on rolls
- **Highly pure membranes without any trace elements** such as heavy metals, sulphides, glycerol
- Can be directly used without any cleaning procedures
- Wall thickness: 60-65 µm
- Store at +4 °C
- Temperature stable up to +60 °C

Spectra/Por® 7 MWCO 1000

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
18	11.5	5	**E853.1**	1	321,45
38	24	5	**E854.1**	1	321,45
45	29	5	**E855.1**	1	321,45

Spectra/Por® 7 MWCO 2000

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
18	11,5	5	**E856.1**	1	321,45
38	24	5	**E857.1**	1	321,45
45	29	5	**E858.1**	1	321,45

Spectra/Por® 7 MWCO 3500

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
18	11,5	5	**E859.1**	1	321,45
45	29	5	**E860.1**	1	321,45
54	34	5	**E861.1**	1	321,45

Spectra/Por® 7 MWCO 8000

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
12	7,5	5	**E862.1**	1	321,45
18	11,5	5	**E863.1**	1	321,45
24	15	5	**E864.1**	1	321,45
32	20,4	5	**E865.1**	1	321,45
40	25,5	5	**E866.1**	1	321,45
50	32	5	**E867.1**	1	321,45

Spectra/Por® 7 MWCO 10000

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
12	7,5	5	**E868.1**	1	321,45
18	11,5	5	**E869.1**	1	321,45
24	15	5	**E870.1**	1	321,45
32	20,4	5	**E871.1**	1	321,45
45	29	5	**E872.1**	1	321,45

Spectra/Por® 7 MWCO 15000

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
12	7,5	5	**E873.1**	1	321,45
18	11,5	5	**E874.1**	1	321,45
24	15	5	**E875.1**	1	321,45
32	20,4	5	**E876.1**	1	321,45
45	29	5	**E877.1**	1	321,45

Spectra/Por® 7 MWCO 25000 (opaque)

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
12	7,5	5	**E878.1**	1	321,45
18	11,5	5	**E879.1**	1	321,45
28	18	5	**E881.1**	1	321,45
34	22	5	**E882.1**	1	321,45

Spectra/Por® 7 MWCO 50000 (opaque)

Flat width (mm)	∅ (mm)	Length (m)	Art. No.	Pack Qty.	€
12	7,5	5	**E883.1**	1	321,45
28	18	5	**E884.1**	1	321,45
34	22	5	**E885.1**	1	321,45

Dialysis Tubular Membranes

Dialysis membranes Spectra/Por® Biotech CE

Made of **cellulose ester (CE)**

- **High purity,** free of any trace elements, heavy metals, sulphides or glycerol
- Low membrane reactivity, therefore negligible protein and liposome adsorption
- No time-consuming cleaning process required
- Temperature stable up to +37 °C
- **Packaged wet** in 0.05 % sodium-azide solution
- Store at +4 °C
- Wall thickness:
  MWCO 100-50 000: 75-85 µm
  MWCO 100 000: ≥ 100-125 µm

MWCO 100-500

Flat width (mm)	∅ (mm)	Vol/length (ml/cm)	Length (m)	Art. No.	Pack Qty.	€
10	6,4	0,32	10	**2702.1**	1	407,45
16	10,2	0,79	10	**4594.1**	1	466,55

MWCO 500-1000

Flat width (mm)	∅ (mm)	Vol/length (ml/cm)	Length (m)	Art. No.	Pack Qty.	€
10	6,4	0,32	10	**2704.1**	1	398,85
16	10,2	0,79	10	**4596.1**	1	466,55

MWCO 3500-5000

Flat width (mm)	∅ (mm)	Vol/length (ml/cm)	Length (m)	Art. No.	Pack Qty.	€
10	6,4	0,32	10	**2708.1**	1	407,45
16	10,2	0,79	10	**4616.1**	1	466,55

MWCO 8000-10000

Flat width (mm)	∅ (mm)	Vol/length (ml/cm)	Length (m)	Art. No.	Pack Qty.	€
10	6,4	0,32	10	**4633.1**	1	407,45
16	10,2	0,79	10	**4635.1**	1	466,55

MWCO 20 000

Flat width (mm)	∅ (mm)	Vol/length (ml/cm)	Length (m)	Art. No.	Pack Qty.	€
10	6,4	0,32	10	**4643.1**	1	407,45
16	10,2	0,79	10	**4646.1**	1	466,55

MWCO 50000

Flat width (mm)	∅ (mm)	Vol/length (ml/cm)	Length (m)	Art. No.	Pack Qty.	€
10	6,4	0,32	10	**8957.1**	1	407,45
16	10,2	0,79	10	**8959.1**	1	466,55

MWCO 100000

Flat width (mm)	∅ (mm)	Vol/length (ml/cm)	Length (m)	Art. No.	Pack Qty.	€
10	6,4	0,32	10	**8960.1**	1	407,45
16	10,2	0,79	10	**8967.1**	1	466,55
24	15,2	1,80	10	**8968.1**	1	518,15

MWCO 300 000

Flat width (mm)	∅ (mm)	Vol/length (ml/cm)	Length (m)	Art. No.	Pack Qty.	€
16	10,2	0,79	10	**8977.1**	1	466,55

MWCO 1 000000

Flat width (mm)	∅ (mm)	Vol/length (ml/cm)	Length (m)	Art. No.	Pack Qty.	€
16	10,2	0,79	10	**2786.1**	1	466,55

Trial Kits Spectra/Por® Biotech CE

Made of **cellulose ester (CE)**.

Tubing membrane pieces on rolls, length 1 m, packaged moist in 0.05 % natrium azide solution. Ideal for dialysis where only a small amount of tubing is required (test runs, small-scale applications, etc.).

Sample kit delivery incl.
- Spectra/Por® Biotech CE tubular membrane
- 1 pair of Spectra/Por® universal sealing clips (red, sealing length 50 mm)

MWCO	Flat width (mm)	∅ (mm)	Vol/length (ml/cm)	Length (m)	Art. No.	Pack Qty.	€
100-500	16	10	0,79	1	**4556.1**	1	146,20
500-1000	16	10	0,79	1	**4558.1**	1	146,20
3500-5000	16	10	0,79	1	**4567.1**	1	146,20
8000-10 000	16	10	0,79	1	**4583.1**	1	146,20
20 000	16	10	0,79	1	**4584.1**	1	146,20
50 000	16	10	0,79	1	**4585.1**	1	146,20
100 000	16	10	0,79	1	**4586.1**	1	146,20
300 000	16	10	0,79	1	**4587.1**	1	146,20
1 000 000	16	10	0,79	1	**4588.1**	1	146,20

▶ For Spectra/Por® universal closures, see page 560

Appearance of dialysis membranes

Dry dialysis membranes have different appearances, dependent on pore size and wall thickness: Clear, opaque or even completely white.

Reason:
Larger MWCO membranes are made slightly thicker to maintain membrane strength when the pores are larger.
The thicker the membrane and larger the pores, the more opaque. So the different membranes look as follows:

Dry membranes with MWCO
100-1000: clear
3 500-5 000: mostly clear
8 000-10 000: slightly opaque
20 000-50 000: opaque
≥100 000: white.

When the membrane is wetted with water the effect dissapears and the membrane becomes more clear.

Spectra/Por® Float-A-Lyzer® G2

Ready-to-use Dialysis device combining efficiency, convenience and sample protection **with a sample recovery rate of 95-98 %.** The cylindrical dialysis tubing from cellulose ester is fixed to polycarbonate pieces. **Packaged dry** with glycerol to protect against brittleness. Before use the glycerol is to be removed by rinsing with distilled water for 15-30 min.

- Sample volume 1-10 ml
- The leak-proof screw-on cap allows easy for handling and in-process testing during dialysis is possible
- The tubing is made of cellulose ester with no heavy metal and sulfide contaminants, therefore, no special purification is necessary
- Low-protein and liposome binding membrane, can be used directly with biological samples
- Flotation ring improves sample buoyancy and vertical orientation during dialysis
- Available in precise MWCOs with colour-coded caps
- Several Float-A-Lyzer can be used in one vessel

Technical specifications:

Capacity	1 ml	5 ml	10 ml
Length (mm)	50	100	160
Membrane Diameter (mm)	10	10	10
Top Piece Diameter (mm)	23	23	23
Flotation Ring Diameter (mm)	38	38	38

		1 ml	5 ml	10 ml
MWCO	Colour code	Art. No.	Art. No.	Art. No.
100-500	green	**P560.1**	**P586.1**	**P599.1**
500-1000	orange	**4549.1**	**4617.1**	**4657.1**
3500-5000	black	**P564.1**	**P590.1**	**P603.1**
8000-10 000	yellow	**P566.1**	**P592.1**	**P605.1**
20 000	red	**P568.1**	**P594.1**	**P607.1**
50 000	violet	**P569.1**	**P595.1**	**P608.1**
100 000	blue	**P570.1**	**P596.1**	**P609.1**
300 000	amber	**4550.1**	**4624.1**	**4660.1**
1 000 000	pink	**4608.1**	**4653.1**	**4663.1**
Pack Qty.		12	12	12
€		140,85	153,55	156,95

Microdialysis by Membrane Filter (Drop Dialysis)

Microvolumes of sample (5-100 µl) can also be dialysed by membrane filter discs made of cellulose mixed ester (pore size 0,025 µm, Art. No. CY35.1-CY37.1):
Fill a Petri dish with dialysis buffer. Place the membrane filter disc on the surface of the solution (shiny side up, avoid bubbles under the filter) by using a stainless steel forceps. Float the membrane for ca. 5 min until it is completely soaked. Pipette the sample on the center of the filter. Due to the open pore structure of the membrane filter and the high surface-to-volume ratio the dialysis is done within a short time (mostly < 30 min). To avoid evaporation of the sample seal the Petri dish tightly during the procedure. In this way the sample volume remains nearly constant.

Spectra/Por®-dialysis cylinder

Made of PS. For use with magnetic stirrers. The tube is centred and dialysis speeded up by the stirring movement.

- MINI - for dialysis tubes and systems up to a length of 10 cm
- MAXI - for dialysis tubes and systems up to a length of 25 cm

Delivery incl. magnetic bar and cover.

Model	Volume (ml)	Height (cm)	∅ (cm)	Art. No.	Pack Qty.	€
MINI	600	12,5	11,5	**CL82.1**	1	76,35
MAXI	1800	30	11,5	**CL83.1**	1	93,55

Premade Dialysis Units

ZelluTrans/Roth Mini Dialyzer MD 100

Made of **regenerated cellulose**.

Ready-to-use dialysis unit for samples of between 10 and 100 µl.
The Mini Dialyzer consists of a U-shaped polypropylene capillary with 25 µl graduations and membranes on both sides. The filled sample forms a very thin layer over a large surface area, ensuring short dialysis times.

- Available as an **individual dialyzer** packed in a 2 ml reaction vial or as a **dialyzer strip** with 8 interconnected individual dialyzers (can be separated)
- Membranes are made of high-quality regenerated cellulose with different pore sizes (MWCO), **dry packed**
- Easy to use: can be filled with sample and emptied using any standard pipette (2-200 µl)
- Flexible: uses ranging from low-volume dialysis (in reaction vial or micro-titration plate) to high-volume dialysis (using a suitable flotation aid, as described below)
- Compatible with **96 deepwell plates (2.5 ml)**, 8-channel multichannel pipettes and standard automation systems allow simultaneous processing of up to 96 samples.

The Mini Dialyzers can are ready for use straight away - no pretreatment required. For sensitive applications, soak in water or buffer for 15 min to remove any traces of glycerine.

MWCO	Designation	Art. No.	Pack Qty.	€
3 500	Individual dialyzer in 2 ml reaction vial	**4766.1**	12	51,50
3 500	Dialyzer strip (8 connected individual dialyzers)	**4767.1**	1	39,70
6 000-8 000	Individual dialyzer in 2 ml reaction vial	**4770.1**	12	51,50
6 000-8 000	Dialyzer strip (8 connected individual dialyzers)	**4771.1**	1	39,70
12 000-14 000	Individual dialyzer in 2 ml reaction vial	**4775.1**	12	51,50
12 000-14 000	Dialyzer strip (8 connected individual dialyzers)	**4776.1**	1	44,10

ZelluTrans/Roth Mini Dialyzer MD 300

Made of **regenerated cellulose.**
Ready-to-use dialysis unit for samples of between 50 to 300 µl.
The Mini Dialyzer consists of a U-shaped polypropylene capillary with 75 µl graduations and membranes on both sides. The filled sample forms a thin layer over a large surface area, ensuring very short dialysis times.

- Available as an **individual dialyzer** packed in a 5 ml test tube or as a **dialyzer strip** with 8 interconnected individual dialyzers (can be separated)
- Membranes are made of high-quality regenerated cellulose with different pore sizes (MWCO), **dry packed**
- Easy to use: can be filled with sample and emptied using any standard pipette (100-1000 µl)
- Short dialysis times (30-480 min)
- Flexible: uses ranging from low-volume dialysis (in test tube, 96-deepwell plates, 2.5 ml) to high-volume dialysis (using a suitable flotation aid, 4768.1)

The Mini Dialyzers are ready for use straight away - no pretreatment required.
For sensitive applications, soak in water or buffer for 15 min to remove any traces of glycerine.

MWCO	Designation	Art. No.	Pack Qty.	€
3500	Individual dialyzer in 5 ml test tube	**NH91.1**	12	55,80
3500	Dialyzer strip (8 connected individual dialyzers)	**NH92.1**	1	41,90
6000-8000	Individual dialyzer in 5 ml test tube	**NH94.1**	12	55,80
6000-8000	Dialyzer strip (8 connected individual dialyzers)	**NH95.1**	1	41,90
12 000-14 000	Individual dialyzer in 5 ml test tube	**NH97.1**	12	55,80
12 000-14 000	Dialyzer strip (8 connected individual dialyzers)	**NH98.1**	1	41,90

Accessories for Mini Dialyzer MD 100 and MD 300

① **Flotation aids**, made of PE-foam, for use of the Mini Dialyzer in large dialysis vessels. Reusable.

② **PP cover film** for protection against contamination and evaporation or for storage. Self-adhesive.

Type	Art. No.	Pack Qty.	€
① Flotation aid	**4768.1**	1	6,40
② PP cover film (for 12 dialyzer strips)	**4781.1**	1	5,35

Micro dialysis capsule QuixSep®

Reusable dialysis system made of **HDPE** for fast and efficient cleaning of very small sample volumes (**50 µl to 5 ml**). Minimised sample loss, easy handling, usable with any type of membrane.

Usage:
The bottom part of the capsule (white) is filled with sample and the desired membrane is fixed in place by pressing on the capsule closure (red). The fitted capsule is placed into a buffer solution and set in rotation by a magnetic stirrer. This significantly accelerates the dialysis process; concentrations are equalised on average after 30 to 60 min per 0.1 ml of sample volume. On completion of dialysis, the dialysis membrane is pierced with a pipette tip or a syringe and the residual volume is drawn off. The micro dialysis capsule can then be cleaned and reused. During the dialysis process, the cover protects the membrane against damage, allowing multiple QuixSep® capsules to be used simultaneously in a vessel.

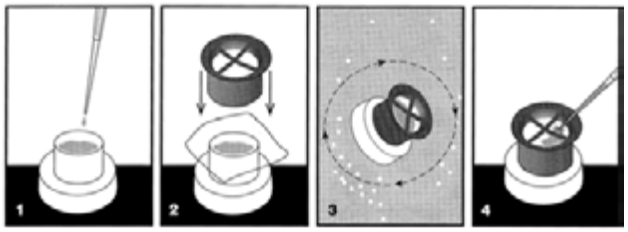
Note:
ready-fit dialysis membranes - see ZelluTrans/Roth membrane pieces for QuixSep®, Art. No. 2820.1 - 2822.1. Regenerated cellulose, available in three standard MWCO's.
If using other tube membranes, they must be trimmed to **20 x 20 mm** (for QuixSep® 0.1 to 1.0 µl) or **55 x 55 mm** (for QuixSep® with 5.0 ml volume); i.e. tubes with a flat width of at least 10 or 28 mm are required.

Max. volume (ml)	Max. width of bottom part (mm)	Max. width of cover (mm)	Capsule height (mm)	Art. No.	Pack Qty.	€
0.1	27	21	22	**H447.1**	1	59,15
0.5	27	21	22	**H448.1**	1	59,15
1.0	27	21	22	**H449.1**	1	59,15
5.0	50	48	15	**0671.1**	1	122,55
Range, each 1x 0.1 / 0.5 / 1.0 ml				**H450.1**	1	175,25

ZelluTrans/Roth dialysis membrane pieces for QuixSep®

Single-layer membrane pieces (flat sheets) made of **regenerated cellulose**, packed dry. Properties - see ZelluTrans/Roth T series of dialysis membranes (Art. No. E656.1 ff). Dimensions: 55 x 55 mm, **suitable for QuixSep® 5.0 ml micro dialysis capsules**. When using the small capsules (0.1 to 1.0 ml), the pieces can be cut into four equal parts (approx. 20 x 20 mm).
Easy preparation: soak in distilled water for approx. 20 minutes and rinse with distilled water. Use straight away since moist membranes must not be allowed to dry.

Designation	MWCO	Dimensions	Art. No.	Pack Qty.	€
Membrane pieces F1	3500	55 x 55 mm	**2820.1**	10	64,20
Membrane pieces F2	6000-8000	55 x 55 mm	**2821.1**	10	64,20
Membrane pieces F3	12 000-14 000	55 x 55 mm	**2822.1**	10	64,20



Procedure with micro dialysis capsule QuixSep®

① Fill bottom part with sample.
② Fit the desired dialysis membrane (20 x 20 mm for H447.1, H448.1 and H449.1; 55 x 55 mm for 0671.1) and press on the cover.
③ Move QuixSep® continuously in a buffer solution using the magnetic stirrer.
④ On completion of dialysis, the dialysis membrane can be pierced with a pipette tip or a syringe and the residual volume drawn off.

Chemical Compatibility of Dialysis Membranes

The list below is no guarantee of chemical compatibility. In fact, it should be used as a guide. Many other factors like temperature, concentration of solvent, duration of exposure etc. may modify the effect to the membrane.

Membranes made of cellulose ester and regenerated cellulose are to be used only with diluted solvents, maximum about 25 %.
Higher concentrations may alter the membrane.

We recommend to test the membrane compatibility under your own conditions first.

Chemical Compatibility of Dialysis Membranes

R: recommended
L: limited exposure only
NR: not recommended

	Celluloseester	Reg. Cellulose
Acetic acid (5 %)	L	R
Acetic acid (25 %)	NR	R
Acetic acid, glacial	NR	R
Acetic acid ethyl ester	NR	R
Acetone	NR	R
Acetonitril	NR	R
Ammonia (diluted)	NR	R
Ammonia (approx. 25 %)	NR	L
Amyl alcohol	L	R
Benzene	NR	R
Benzyl alcohol	NR	R
Boric acid	R	R
Butyl acetate	NR	R
Butyl-alcohol	L	R
Chlorine acetic acid	NR	R
Chloroform	L	R
Cyclohexane	L	R
Diacetone alcohol	NR	R
Dichloromethane	L	R
Dimethyl formamide	NR	L
Dimethyl sulfoxide	NR	R
Dioxane	NR	L
Ethanol (15 %)	R	R
Ethanol (95 %)	L	R
Ether	NR	R
Ethylene glycol	L	R
Ethylene oxide	NR	L
Formaldehyde (up to 30 %)	L	R
Formic acid (up to 50 %)	NR	R
Glycerol	R	R
Hexane	R	R
Hydrochloric acid (5 %)	L	R
Hydrochloric acid (up to 37 %)	NR	NR
Hydrofluoric acid (25 %)	NR	L
Hydrogen peroxide (30 %)	R	R
Iodine solution	NR	NR
Isobutyl-alcohol	R	R
Isopropanol	L	R
Isopropyl ether	L	R
Lactic acid	R	R
Methanol	L	R
Methyl acetate	NR	R

Chemical Compatibility of Dialysis Membranes

R: recommended
L: limited exposure only
NR: not recommended

	Celluloseester	Reg. Cellulose
Methyl chloride	NR	R
Methylene chloride	L	R
Methyl ethyl ketone	NR	R
Methyl isobutyl ketone	NR	R
N-Methyl-2-pyrrolidone	NR	R
Mineral oils	R	R
Monochlorobenzene	L	R
Nitric acid (5 %)	L	R
Nitric acid (min. 25 % or 6 M)	NR	NR
Nitrobenzene	NR	L
Nitropropane	NR	L
Oil of Petroleum basis	R	R
Pentane	R	R
Perchloric acid (25 %)	NR	L
Perchloroethylene	NR	R
Petroleum ether	R	R
Phenol (0.5 %)	R	R
Phenol (10 %)	NR	R
Phosphoric acid (25 %)	NR	L
Potassium hydroxide (1 N)	L	R
Potassium hydroxide (25 %)	NR	L
Potassium hydroxide (50 %)	NR	NR
Propanol	R	R
Pyridine	NR	R
Silicone oil	R	R
Sodium hydroxide (0.1 N)	L	R
Sodium hydroxide (up to 25 %)	NR	L
Sodium hydroxide (> 25 %)	NR	NR
Sodium hypochlorite	R	R
Sulfuric acid (5 %)	R	R
Sulfuric acid (25 % or 6 N)	NR	L
Tetrahydrofurane	NR	R
Toluene	R	R
Trichloro acetic acid (25 %)	NR	NR
Trichloroethylene	R	R
Triethylamine	NR	R
Trichlorobenzene	NR	NR
Trichloroethane	L	R
Urea (diluted)	NR	R
Urea (6 N)	R	R
Xylene	NR	R

ZelluTrans/Roth locking clips

Made of **PA**. For liquid-tight sealing of tube membranes.
Usage temperature -30 to +80 °C. Autoclavable.
Suitable for diaphragms made of regenerated cellulose, for diaphragms made of cellulose ester, please use universal sealing clips
(Art No. 0685.1 ff)

Sealing length (mm)	Total length (mm)	Art. No.	Pack Qty.	€
45	65	**H277.1**	10	7,50
65	90	**H278.1**	10	9,65
110	130	**P901.1**	10	15,70
150	170	**P902.2**	10	24,20

Please note:
The closure clips should be 4-10 mm longer than the width of the tubular membrane.

Spectra/Por®-universal locking clips

Made of **PA**. For liquid-tight sealing of tube membranes. Non floating.
Suitable for all membrane types, especially recommended for membranes made of cellulose ester.
Autoclavable, usage temperature 0 to 90 °C.

Sealing length (mm)	Colour	Art. No.	Pack Qty.	€
50	yellow	**0685.1**	10	93,55
70	yellow	**0686.1**	10	108,60
110	yellow	**0687.1**	10	120,40
150	yellow	**0688.1**	10	124,70

▶ Spectra/Gel™-Absorbant for concentration of dialysed biomolecules see the LifeScience-Biochemistry/Protein Isolation chapter!

Spectra/Por®-clips

Made of **PP**. Temperature stable from 0 to +121 °C. Autoclavable.
Suitable for diaphragms made of regenerated cellulose, for diaphragms made of cellulose ester, please use universal sealing clips
(Art No. 0685.1 ff)

Standard clips

Sealing length (mm)	Colour	Art. No.	Pack Qty.	€
12	orange	**0985.1**	10	96,75
23	orange	**2768.1**	10	104,30
35	orange	**0988.1**	10	108,60
55	orange	**2770.1**	10	111,80
75	orange	**2771.1**	10	113,95

Clips with weights, for upright dialysis position

Sealing length (mm)	Colour	Art. No.	Pack Qty.	€
12	white	**2773.1**	10	106,45
23	white	**2774.1**	10	117,20
35	white	**2775.1**	10	121,50
55	white	**2776.1**	10	123,65
75	white	**2777.1**	10	130,10

Combi-set (10 with weights, 10 without weights)

Sealing length (mm)	Colour	Art. No.	Pack Qty.	€
12	white/orange	**2779.1**	20	174,15
23	white/orange	**2780.1**	20	191,35
35	white/orange	**2781.1**	20	209,65
55	white/orange	**2782.1**	20	216,10
75	white/orange	**2783.1**	20	224,70

Spectra/Por®-magnetic weight locking clips

Made of **PP**. With embedded magnetic weight for use with magnetic stirrers.
- The dialysis bag is completely immersed in the buffer
- Continuous, rotary action for optimal material exchange
- No additional magnetic stirrer bar is required

Suitable for diaphragms made of regenerated cellulose, for diaphragms made of cellulose ester, please use universal sealing clips
(Art No. 0685.1 ff).

Sealing length (mm)	Colour	Art. No.	Pack Qty.	€
23	red	**4647.1**	2	74,20
35	red	**4648.1**	2	77,40
55	red	**4650.1**	2	80,65
75	red	**4652.1**	2	89,25

Dialysis accessories

A 121 °C

ZelluTrans/Roth dialysis tubing support

Made of **PP**. With labelling surface. Very sturdy.
Ideal for immersing the filled dialysis tube in larger vessels. Autoclavable.

Art. No.	Pack Qty.	€
E704.1	6	30,75

Spectra/Por®-dialysis cylinder

Made of PS. For use with magnetic stirrers.
The tube is centred and dialysis speeded up by the stirring movement.

- MINI - for dialysis tubes and systems up to a length of 10 cm
- MAXI - for dialysis tubes and systems up to a length of 25 cm

Delivery incl. magnetic bar and cover.

Model	Volume (ml)	Height (cm)	∅ (cm)	Art. No.	Pack Qty.	€
MINI	600	12,5	11,5	**CL82.1**	1	76,35
MAXI	1800	30	11,5	**CL83.1**	1	93,55

A 121 °C

ZelluTrans/Roth filling funnel

Made of **PP**. For easy filling and draining of dialysis tubes. The open end of the dialysis tube is pushed onto the funnel nozzle and held in place by a silicone strap. The holder on the funnel allows the funnel to be mounted in different containers. Snap closure. Autoclavable.

Type	For	Art. No.	Pack Qty.	€
Mini	Tubes with 10-19 mm flat width	**E709.1**	10	87,55
Maxi	Tubes with 23-45 mm flat width	**E710.1**	10	92,45

Occupational Safety & Personal Protection

Absorbers	719
Aprons	683
Body safety showers	564
Chemical protective gloves	650
Cold resistant gloves	668
Cut resistant gloves	659
Disposable gloves	636
Disposable protective clothing	680
Ear protection	610
Eye showers and eye wash bottles	566
Face safety shiels	592
Fire protection	699
First aid	692
Full view goggles	572
Foot protection	688
Gloves	638
Hazard identification signs and labels	707
Head protection	592
Heat resistant gloves	671
Lab coats	676
Marker tapes and signal bands	707
Marking, labels and signs	707
Overalls	680
Over glasses	575
Protective clothing	680
Protective mouth masks	595
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Resistance list - chemical protective gloves	650
Respiratory protection accessories	596
Safety and poison cabinets	700
Safety goggles and accessories	572
Safety shields	704
Skin protection accessories	630
Skin protection, -care, -cleansing, -disinfection	618
Tapes	707
Towel dispensers and accessories	633
UV-safety spectacles	578
Waste collectors	735
Waste disposal	722
Working gloves	665
Workwear	676

Sekuroka®-Body showers

In compliance with DIN EN 15154-1:2006, DIN 12899-3:2009 and ANSI Z 358.1-2009.

- Stable construction due to robust brass body
- Chemically resistant powder coating
- Large, maintenance-free ball stop-cock for high flow volume (at 1.5 bar 60 l/min)
- Large, easy to operate release rod
- Operative range from 1 to 10 bar water pressure
- Automatic-emptying, high-power shower head (prevents formation of bacteria and scaling)
- Maintenance-free
- Self-adhesive information label for body showers, 150 x 150 mm

Body shower model 1

DVGW certified. For wall assembly, surface inlet pipe.
Wall flange mounting. Is triggered off by pull-rod valve, which does not close automatically. Water connection ¾″ inner thread, overhang 625 mm, pull-rod length 700 mm.

Art. No.	Pack Qty.	€
EP70.1 *	1	279,50

* Longer delivery times possible. Please check with our Sales Department.

All laboratories must have a **body shower** with a drinking water supply beside the exit which contains sufficient water (at least 30 l/min) to wet all body parts immediately. The showers must meet the requirements of DIN EN 15154-1. (Laboratory guidelines "Working Safely in Laboratories – Basic Principles and Guidelines" , DGUV Information 213-850, previously BGI/GUV-I 850-0).

Body shower model 3

DVGW certified. For above the door mounting, surface inlet pipe, can be mounted on the right or left of the door, wall flange mounting. Is triggered by a pull-rod valve, which does not close automatically. Water-connection ¾″ inner thread, overhang 565 mm, distance of pull-rod valve to shower arm 500 mm, length of pull rod 700 mm.

Art. No.	Pack Qty.	€
EP72.1 *	1	396,70

* Longer delivery times possible. Please check with our Sales Department.

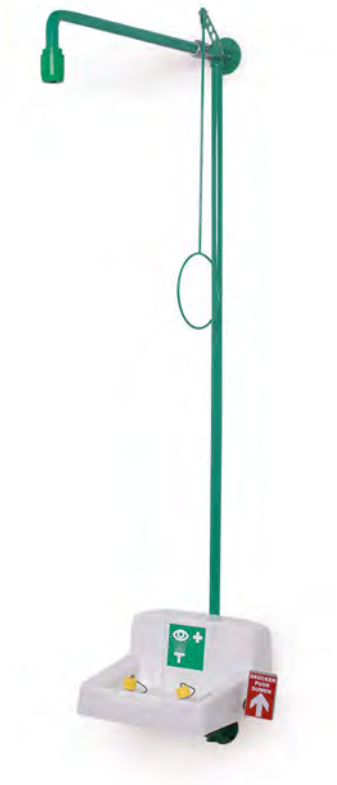
Combined emergency showers

Acc. to DIN EN 15154-1:2006, DIN EN 15154-2:2006, DIN 12899-3:2009 and ANSI Z 358.1-2009. DIN-DVGW tested and approved.

- **Emergency body shower with eye wash**
- Made of brass with chemical resistant powder coating, colour green
- Water connection: ¾″ internal thread
- Wall mounting, surface-type
- Projection: 625 mm

Image	Type	Art. No.	Pack Qty.	€
①	Emergency body shower with hand-eye wash, vertical shower head	**YP32.1**	1	729,95
②	Emergency body shower with eye wash, two 45° shower heads	**YP33.1**	1	740,70

Body showers



Body-/Eye shower model 2

Combined shower for wall mounting
- Height 205 mm, width 355 mm, depth 305 mm
- Wall-mounted shower arm ¾″ made of brass, spout projection 625 mm
- Volume flow rate 60 l/min at 1-1.5 bar flow pressure

Body shower:
- Wall flange ¾″ made of brass, water supply ¾″ inner thread
- Brass ball valve ¾″ with pull rod operation
- Pull rod with triangular handle made of steel, 700 mm long
- High-performance shower head made of chemically resistant plastic with upgraded stream, corrosion-resistant

Eye shower with basin:
- Eye and face shower with 2 shower heads and basin
- Media-bearing parts made of stainless steel 1.4301 (AISI304)
- Enclosure and basin made of unbreakable and UV-resistant ABS plastic
- Activated by pressing large stainless steel panel
- Broad-stream shower heads ensure extensive water distribution
- With integrated volume regulating valve ⅜″ outer thread
- Water supply ⅜″ outer thread, water drainage 1 ¼″ outer thread

Art. No.	Pack Qty.	€
KH53.1 *	1	891,20

* Longer delivery times possible. Please check with our Sales Department.

Emergency shower inspection

Emergency showers (body showers and eyewashes) must be inspected on a monthly basis as stipulated by laboratory guidelines "Working Safely in Laboratories – Basic Principles and Guidelines" , (DGUV Information 213-850, previously BGI/GUV-I 850-0) section 7.2. Besides the flow rate, this inspection involves a visual assessment of the water distribution through the shower head and the quality of the water.

The purpose of the regular inspections is also to ensure that the actuating valve continues to operate smoothly and water flow through the shower head is maintained. In addition, the function tests safeguard against microbial contamination. It is recommended that emergency eyewashes be operated even more frequently.

Emergency shower test trolley

Mobile catch tank on 4 castors with two recessed handles. Can be dismantled into three pieces for easy storage. Drain screw for floor drainage. Retention capacity: 30 litres. Total/ catch height 2.1 m, W 440 x D 440 mm. Aluminium tube ∅ 47 mm, connectable, non extendable. Funnel ∅ 440 mm, height 160 mm. Overall weight 7 kg.

Art. No.	Pack Qty.	€
YP27.1	1	201,05

Sekuroka®-shower tester

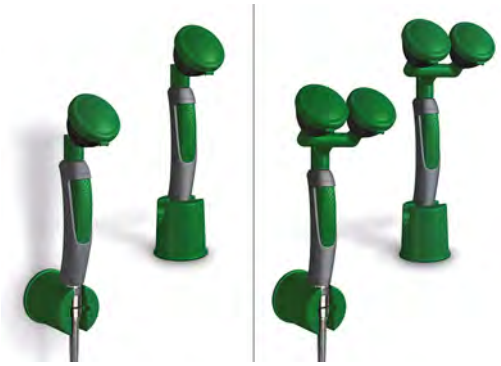
For easy checking of body showers. Consists of: synthetic hose with stitched-in opening ring, upper ∅ 28 cm, lower ∅ 12 cm, length 180 cm. 20-litre plastic bucket. Metal clamp rod, 80 cm long.

Art. No.	Pack Qty. (set)	€
T348.1	1	206,40

Sekuroka®-eye showers

In compliance with DIN EN 15154-2:2006 and ANSI Z358.1-2009. DVGW-certified.

- Rubber sleeves to protect against injury
- Dust caps open automatically when actuated
- Integral flow control ensures a steady jet of water even if water pressure varies
- With extremely wide-stream shower head for a large surface water distribution
- Large holes in the shower heads protect against scaling
- Shower heads can be removed easily for maintenance
- Self-adhesive information label for eye shower, 150 x 150 mm



Eye showers model 2

Identical to model 1 except that the **shower head is inclined at 45°**, allowing the eye bath to be used without removing it from the wall or desktop holder.

With 1 shower head

Art. No.	Pack Qty.	€
KT01.1	1	225,75

With 2 shower heads

Art. No.	Pack Qty.	€
KT02.1	1	265,55

Eye shower model 1

With a vertical shower head.

With non-automatic closing valve **for wall and vertical desk top mounting**. The release lever locks automatically, and the water can easily be shut off by releasing the lever. Made of plastic (media-conveying parts are made of brass). Silicone hose stainless steel clad, 1.5 m long. Flow rate 7 l/min per shower head at a minimum operating pressure of 1 bar. ½″ water connection, internal thread, union nut.

Art. No.	Pack Qty.	€
KT00.1	1	181,70

Premium eye showers

Tested and approved acc. to DIN EN 15154-2:2006 and ANSI Z358.1- 2009, DIN-DVGW.

- Made of stainless steel
- For bench or wall mounting
- Integrated backflow preventer
- Stainless steel sheathed drinking water tube, length 1.5 m
- Water connection ½″ internal thread

With vertical shower head

- High-performance shower head with integrated flow rate regulator: 7 l/min
- Attachment height: 77 cm (±20 cm)
- Height of shower: 21 cm

Image	Type of assembly	Art. No.	Pack Qty.	€
①	Benchtop	**YP23.1**	1	255,85
②	Wall, 20° angle wall bracket	**YP24.1**	1	255,85

With two vertical shower heads

- High-performance shower head with integrated flow rate regulator: 14 l/min
- Attachment height: 68 cm (±20 cm)
- Height of shower: 26 cm

Image	Type of assembly	Art. No.	Pack Qty.	€
③	Benchtop	**YP25.1**	1	339,70
④	Wall, 20° angle wall bracket	**YP26.1**	1	339,70

All laboratories must install an **eye shower**, which meets the requirements of DIN EN15154-2 (Laboratory guidelines "Working Safely in Laboratories – Basic Principles and Guidelines", DGUV Information 213-850, previously BGI/GUV-I 850-0). In the event of contamination or cauterization, both eyes can, therefore, be rinsed immediately and for as long as necessary with a constant supply of drinking water.

Eye wash flasks, which do meet the requirements of DIN EN15154-4, can still be used to supplement the emergency eye showers, especially those with special rinsing solution.

Eye showers

Eye shower model 3

For table assembly. Two 45° offset shower heads and distributor fork made of brass, with chemically resistant green powder coating. With large release lever, 130 mm long and big "PUSH“ sign, luminescent according to DIN 67510. Maintenance-free ball valve, 90° operation, made of stainless steel, does not close automatically, DIN-DVGW certified and approved.
Flow rate 14-16 l/min at a minimum operating pressure of 1 bar.
Water connection ½″ outer thread incl. attachment kit.
Dimensions: W (incl. lever) 240 x H 180 mm.

Art. No.	Pack Qty.	€
LP23.1	1	194,60

Eye shower model 5

For wall mounting. With stainless steel basin, diameter 275 mm, drainage connection 1 ¼″ inner thread. Two shower heads, distributor fork and wall flange (water connection ¾″ inside thread) made of brass, with chemically resistant green powder coating. With large release lever, length 240 mm and big "PUSH“ sign, luminescent according to DIN 67510.
Maintenance-free ball valve, 90° operation, made of stainless steel, does not close automatically, DIN-DVGW certified and approved.
Flow rate 14-16 l/min at a minimum operating pressure of 1 bar.
Dimensions: W (incl. lever) 425 x D 385 mm.

Art. No.	Pack Qty.	€
LP26.1	1	364,45

Eye shower model 4

For wall mounting.Two 45° offset shower heads, distributor fork and wall flange (Water connection ¾″ inner thread) made of brass, with chemically resistant green powder coating. With large release lever, 130 mm long and big "PUSH“ sign, luminescent according to DIN 67510. Maintenance-free ball valve, 90° operation, made of stainless steel, does not close automatically, DIN-DVGW certified and approved.
Flow rate 14-16 l/min at a minimum operating pressure of 1 bar.
Dimensions: W (incl. lever) 330 x D 330 mm.

Art. No.	Pack Qty.	€
LP25.1	1	246,20

Sekuroka®-eye shower Kleen Eyes® II

For connection to water spigots with outer thread M 22 x 1. Is activated by simple push of a button. Ensures continuous fresh water supply. Both hands stay free US-patent.

Sekuroka®-eye showers Kleen Eyes® II is not inconformity with DIN 15154-2, Part 2. The eye shower may only be used as a supplement to emergency eye showers in conformance with DIN 15154-2.

Automatic switch-back to normal use of tap water when turned off. Spray heads can be adjusted to desired angle. The eye-shower unit can be rotated when attached to water tap. This enables the unit to be fitted to awkwardly situated water taps and to be adjusted to the required position.

Art. No.	Pack Qty.	€
E348.1	1	105,35

Adapter for Kleen Eyes®
M 22 x 1 outer, ½″ inner. For connecting Kleen Eyes® units to water taps with ½″ outer thread.

Art. No.	Pack Qty.	€
E711.1	1	5,50

Eye shower model 6

For in-wall mounting or for replacing the cold water tap. Made of brass, with chemically stable powder coating. Spray disc made of plastic.Two wide streamm 45° offset shower heads. Release lever with 90° operation. Valve does not close automatically. Waterconnection ½″ outer thread.

Art. No.	Pack Qty.	€
KX21.1	1	212,85

Eye wash bottles

S

Disposable eye wash bottles

By Plum. Compliant with DIN EN 15154-4. Sterile. Supplied with dust cap. This easy-to-use product is designed to allow speedy rinsing of eyes in an emergency. Patented eye supports keep the eyelids open during rinsing. Duo design enables both eyes to be rinsed simultaneously.

- Sterile saline (0.9 %)
- Quick and easy use
- Directions for use on the bottle
- No contamination
- No cleaning or maintenance needed
- Shelf life 3 years (if unopened)

Note: disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of comparable quality is available!

① Eye wash bottles for one eye

Volume (ml)	Total rinsing time	Art. No.	Pack Qty.	€
200	approx. 2 min	**Y829.1**	1	11,80
500	approx. 5 min	**Y828.1**	1	18,25
1000	approx. 10 min	**LH95.1**	1	21,00

② Duo eye wash bottle for both eyes

Volume (ml)	Total rinsing time	Art. No.	Pack Qty.	€
500	approx. 2 min	**ALA8.1**	1	16,10
1000	approx. 5 min	**LY44.1**	1	27,90

Wall-mounted eye wash stations

By Plum. Wall mounting with pictogram, including one eye wash bottle.
① 1 x 500 ml sterile NaCL eye wash solution (Y828.1)
② 1 x 1000 ml sterile NaCL eye wash solution in duo bottle (LY44.1)

For eye wash use at any time in the workplace. The duo bottle allows both eyes to be rinsed simultaneously.
Pictogram dimensions: H 300 x W 90 x D 3 mm.
Delivery incl. mounting materials.

Note: Disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of equivalent quality is available!

Type	Design	Volume (ml)	Art. No.	Pack Qty.	€
①	For one eye	500	**Y830.1**	1	35,05
②	Duo, for both eyes	1000	**LY50.1**	1	41,35

S

Phosphate buffer disposable eye wash bottles

By Plum. Compliant with DIN EN 15154-4. **Sterile.** Supplied with dust cap. This easy-to-use product is designed to allow speedy rinsing of eyes in an emergency. Patented eye support keeps the eyelids open during rinsing. For speedy and effective neutralisation of acids and a wide range of alkaline substances. Duo design enables both eyes to be rinsed simultaneously.

- Neutralising phosphate buffer solution (4.9 %)
- pH-neutral (pH-value 7.4)
- No contamination
- Quick and easy use
- Directions for use on the bottle
- No cleaning or maintenance needed
- Shelf life 3 years (if unopened)
- Rinsing time approx. 2 minutes

Note: disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of comparable quality is available!

Type	Design	Volume (ml)	Art. No.	Pack Qty.	€
①	For one eye	200	**AA81.1**	1	13,95
②	Duo, for both eyes	500	**LY45.1**	1	25,75

Duo wall-mounted eye emergency station

By Plum. Wall mount with pictogram and mirror, including duo eye wash bottles:

- 1 x 1000 ml sterile NaCL eye wash solution (LY44.1)
- 1 x 500 ml sterile pH neutral phosphate buffer eye wash solution (LY45.1)

Ideal for use in workplaces where acids, bases and foreign bodies can get into the eyes.
Duo bottles come eye device for rinsing both eyes at the same time. After rinsing with the phosphate buffer solution, it is recommended that rinsing with the sodium chloride solution be continued until medical treatment is provided.

Pictogram dimensions: H 300 x W 90 x D 3 mm.

Delivery incl. mounting materials and mirror.

Note: Disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of equivalent quality is available!

Art. No.	Pack Qty.	€
LY51.1	1	64,45

Eye wash bottles

① ②

QuickSafe first aid boxes

- For keeping all your first aid materials ready to hand in one place
- Flexible and well-organised system
- Contains all the essential materials needed in an emergency
- High hygiene standard through dust-proof housing
- Robust and sturdy box made of impact-resistant plastic
- Requires little space due to compact size: H 430 x W 253 x D 92 mm

Delivery incl. mounting materials.

① **QuickSafe Box Complete**

For irrigation of eyes, wound care, minor cutting injuries and burns.
Contents:

- 2 x 500 ml sterile NaCl eye wash solution 0.9 %
- 1 x 200 ml sterile pH neutral eye wash solution
- 5 x 20 ml sterile QuickRinse eye wash ampoules
- 18 x QuickCool burn relief gel
- 1 x QuickStop wound dressing kit with 1 17 x 17 cm dressing and 2 7.5 x 12 cm dressings
- 20 x QuickClean wound cleaning tissues
- 1 x QuickFix Elastic plaster refill set with 45 plasters

Art. No.	Pack Qty.	€
ALA9.1	1	128,80

② **QuickSafe Chemical Industry**

For irrigation of eyes after accidents involving acids and bases.
Contents:

- 1 x 500 ml NaCl eye wash solution 0.9 %, Duo bottle
- 1 x 500 ml sterile pH neutral eye wash solution, Duo bottle
- 1 x 200 ml sterile pH neutral eye wash solution
- 5 x 20 ml sterile QuickRinse eye wash ampoules
- 1 x QuickFix Elastic plaster refill set with 45 plasters

Art. No.	Pack Qty.	€
ALC0.1	1	117,20

Refill eye wash bottles for the QuickSafe first aid boxes

With sterile eye wash solutions.

Type	Volume (ml)	Art. No.	Pack Qty.	€
NaCl eye wash solution 0.9 %	200	**Y829.1**	1	11,80
NaCl eye wash solution 0.9 %	500	**Y828.1**	1	18,25
NaCl eye wash solution 0.9 %, Duo	500	**ALA8.1**	1	16,10
pH neutral eye wash solution	200	**AA81.1**	1	13,95
pH neutral eye wash solution, Duo	500	**LY45.1**	1	25,75

Refill packs for QuickSafe first aid boxes

QuickClean wound cleaning tissues
Wound cleaning tissues for cleaning minor wounds and cutting injuries. Contains sterile water.

Art. No.	Pack Qty.	€
ALC1.1	20	9,65

QuickCool burn relief gel
Sachets containing pain-relieving gel for first-aid use on minor burns and scalds. Cools and relieves pain. Contains tea tree oil.

Art. No.	Pack Qty.	€
ALC2.1	18	16,70

QuickRinse eye wash ampoules
Eye wash ampoules containing 20 ml of 0.9 % sterile sodium chloride solution. For rinsing dust and dirt out of the eyes.

Art. No.	Pack Qty.	€
ALC3.1	5	10,25

QuickStop wound dressing kit
Sterile wound dressings with integrated compress. Elastic, non-adherent and skin friendly. Suitable for universal use as compressive dressing, occlusive dressing and fixed dressing. In the event of heavy bleeding, the small wound dressings can be used as an additional compress.
Kit consists of: One 3 m x 8 cm wound dressing with 17 x 17 cm compress and two 2 m x 7 cm wound dressing with 7.5 x 12 cm compresses.

Art. No.	Pack Qty.	€
ANE4.1	1	11,40

QuickFix Elastic plaster refill set with 45 plasters.
Elastic, breathable and skin-friendly 72 x 25 mm plaster strips.

Art. No.	Pack Qty.	€
LH94.1	2	15,25

All laboratories must have an **eye shower** with a drinking water supply, which meets the requirements of DIN EN15154-2 (Laboratory guidelines "Working Safely in Laboratories – Basic Principles and Guidelines" , DGUV Information 213-850, previously BGI/GUV-I 850-0).
Eye wash flasks, which do meet the requirements of DIN EN15154-4, can still be used to supplement the emergency eye showers. Should eye wash flasks be used, then preferably those with special rinsing solution.

① ②

Eye first-aid stations

By Plum. First-aid stations each containing:

- 1 x 500 ml sterile NaCL eye wash solution (Y828.1)
- 1 x 200 ml sterile pH neutral eye wash solution (AA81.1)
- Mirror
- Integrated pictogram and/or marking of eye wash direction

Two models available:
① Wall station with wall attachments:
Dimensions: H 290 x W 230 x D 80 mm.
② Dust-proof wall box: Dimensions: H 270 x W 227 x D 110 mm.
Delivery incl. wall attachment material.

Image	Design	Art. No.	Pack Qty.	€
①	Wall station with wall attachment, open	**CK43.1**	1	53,70
②	Dust-proof wall box	**CK44.1**	1	64,40

Eye wash bottles

Wall-mounted eye wash box

By Plum. Wall box with two eye wash bottles filled with 500 ml sterile NaCl eye wash solution (Y828.1). With marking of eye wash direction and mirror.
- Ideal for use in workplaces where dust and dirt accumulate (e.g. workshops)
- Easy to open for quick access in an emergency

Dimensions: H 270 x W 227 x D 110 mm.
Delivery incl. mounting materials.

Art. No.	Pack Qty.	€
Y831.1	1	61,30

Eye wash bottle station

Made of shock-proof plastic. For dust and splash-free storage of all standard eye wash bottles. Protective lid locks in place when open. Also contains mirror which enables immediate and on-the-spot application and control. Dimensions: H 236 x W 225 x D 125 mm

Suitable for storing maximum:
- 6 Sekuroka®-mini eye wash bottles (K128.1) or
- 3 disposable eye wash bottles 500 ml (Y828.1/NH43.1) or
- 6 disposable eye wash bottles 200 ml (Y829.1)

Delivery incl. screws and dowels for wall attachment.
With labels on clasp for individual marking. Contents not included.

Art. No.	Pack Qty.	€
Y832.1	1	42,95

Eye wash flask

Acc. to DIN EN 15154-4, filled with 620 ml eye wash solution (water), 2 year shelf life.
- **Refillable:** the eye wash bottle can be filled with drinking water any number of times after the first complete rinse to allow continuous rinsing until medical care is provided
- **Patented tilt valve:** allows the eye wash bottle to be drained both upwards and downwards, e.g. in a bent-forward posture or in a reclining body position

Art. No.	Pack Qty.	€
1543.1	1	26,70

Wall attachment for eye wash flask

Art. No.	Pack Qty.	€
5546.1	1	6,40

Sekuroka®-eye wash boxes

Made of plastic. For wall attachment, empty, for eye wash flask 1543.1.
Delivery without mounting materials.

Type	W x D x H (mm)	Art. No.	Pack Qty.	€
For 1 eye wash flask	320 x 180 x 78	**8120.1**	1	49,40
For 2 eye wash flasks	320 x 280 x 78	**2005.1**	1	66,55

All laboratories must install an **eye shower**, which meets the requirements of DIN EN15154-2 (Laboratory guidelines "Working Safely in Laboratories – Basic Principles and Guidelines", DGUV Information 213-850, previously BGI/GUV-I 850-0).
In the event of contamination or cauterization, both eyes can, therefore, be rinsed immediately and for as long as necessary with a constant supply of drinking water.

Eye wash flasks, which do meet the requirements of DIN EN15154-4, can still be used to supplement the emergency eye showers, especially those with special rinsing solution.

Eye wash bottles

S

Eye wash solution

Acc. to EN 15154-4. Eye wash bottle, with 500 ml 0.9 % sodium chloride solution, **sterile**, for washing foreign particles, e.g. wood and metal splinters, dust, dirt.

- Ready to use
- Eye wash bottle with ergonomically designed spray head and dust cap
- For mobile use and for refilling eye wash stations and first-aid cases

Note: Disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of equivalent quality is available!

Art. No.	Pack Qty.	€
NH43.1	1	15,60

S

Wound and eye spray

By Plum. **Sterile** 0.9 % NaCl solution (isotonic), 250 ml.
Fast and effective rinsing of small surface wounds such as scratches and cuts on the skin or dust and dirt in the eyes.

- Easy to carry with you and ready for immediate use when needed
- Easy operation with one hand, spraying possible from all directions
- Suitable for multiple use, stays sterile after opening
- Contains non-flammable aerosol
- Rinsing solution and propellant are separate, the propellant remains in the can when spraying (bag-on-valve system)
- Total spraying time of a can approx. 15 minutes
- Durable 3 years after production

Applications: industry, production, laboratories, hazardous goods transport, work in the open, rescue services and emergency aid, wherever no clean water is available immediately.

Art. No.	Pack Qty.	€
HLY6.1	1	21,95

Single eye wash station

Wall-mountable eye wash station, supplied with 1 Sekuroka® eye wash bottle, 500 ml (NH43.1). With pictograms for quick and easy use.

Delivery incl. mount for wall mounting and mounting materials.

Note: Disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of equivalent quality is available!

Art. No.	Pack Qty.	€
NH45.1	1	28,90

Eye wash box

Space-saving, dust-proof eye wash station. Filled with 2 eye wash bottles, 500 ml Sekuroka® eye wash solution (NH43.1) for rinsing out foreign particles. Suitable for wall mounting, easy to use.
Outer dimensions: approx. W 260 x H 370 x D 100 mm.

Delivery incl. mirror, pictogram and mounting materials.

Note: Disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of equivalent quality is available!

Art. No.	Pack Qty.	€
NH44.1	1	37,20

BARIKOS KS eye wash flask Mini

By Bartels + Rieger. Acc. to DIN EN 15154-4. Filled with 175 ml eye wash solution (water). Can be comfortably carried in overall pocket from one workplace to the other and is always at hand. With patented tilt valve, refillable with drinking water. Min. shelf life two years.

Art. No.	Pack Qty.	€
K128.1	1	21,40

Full view goggles

Full view safety goggles Vistamax

Acc. to **EN 166**. Can be worn over regular spectacles. With direct ventilation. Scratch-proof and non-fogging polycarbonate screen. The frame is made of transparent, stabilized PVC. With woven polyester/natural rubber headband. The full-vision goggles provide protection against flying particles of medium energy and splashes of molten metal and hot solid. Weight approx. 110 g.

Art. No.	Pack Qty.	€
5360.1	1	24,20

Full view goggles ultrasonic

By UVEX. Acc. to **EN 166 and EN 170. Also suitable for working with UV-light.** Scratchproof, non-fogging polycarbonate screen. Features flexible soft components for pressure-free fit and panoramic visual field. Also suitable for spectacle users. Wide, variably adjustable band.

Type	Art. No.	Pack Qty.	€
orange/grey	**X406.1**	1	22,50
grey/black	**X407.1**	1	22,50

Eye Protection Equipment
All laboratory staff are obliged to constantly wear goggles with sufficient side protection. When working with dangerous substances, suitable eye protection must be made available and worn. Below is an extract on the dangers of chemical injuries to the eyes. Look at DGUV information 213-850, previously BGI/GUV-I 850-0.

Full-vision goggles BLAST

By Bollé. Acc. to **EN 166** and **EN 170.** Also suitable for work with UV light. Special features: Combined with attachable "Visor" (please order separately) with same degree of protection as a face visor and improved eye protection.

- Very comfortable to wear, flexible application options
- Scratch-proof, anti-fog and antistatic PC visor
- Protects against dust, droplets, gases and splashes of molten metal
- Can be worn over spectacles
- Adjustable head strap
- Rotatable articulated hinge
- Outer channel for fluid transport
- Permits wearing of a respiratory half-mask
- 2 versions: indirect venting or gastight

Weight: protective goggles 113 g, visor 65 g.

Type	Art. No.	Pack Qty.	€
Full-vision goggles, indirect venting	**KP07.1**	1	16,05
Full-vision goggles, gastight	**KP08.1**	1	16,05
"Visor"	**KP09.1**	1	9,25

A 121 °C

COVERALL CLAVE autoclavable full-vision goggle

By Bollé. Conforms to **EN 166**. Suitable for **cleanroom** use.

- Can be worn over prescription spectacles
- Lens with hight-quality anti-fog and anti-scratch coating
- With interchangeable indirect ventilation
- Adjustable head strap
- High wearing comfort
- Weight 54 g

Art. No.	Pack Qty.	€
PK52.1	1	19,70

EN-Standards for safety spectacles
EN 166 General requirements
EN 169 Eye protection filter for welding
EN 170 UV-protection filter
EN 171 Infrared filter
EN 172 Sun-protection filter

Full view goggles

Full view goggles 9305

By UVEX. Acc. to **EN 166**. Tight, pressure-free fit. With vents. Non-fogging screen made of cellulose acetate. Headband manufactured from solid rubber. Suitable for clean-room work.

Type	Art. No.	Pack Qty.	€
Panorama goggles	**P822.1**	1	17,55
Spare screen	**P823.1**	1	9,80

Ultravision gastight full vision goggles

By UVEX. Acc. to **EN 166, EN 170**. UV lens made of transparent PC. Anti-fog on the inside, scratch-resistant and resistant to chemicals on the outside. Unrestricted side view. Also suitable as over-goggles. Frame colour yellow.

Art. No.	Pack Qty.	€
HHX4.1	1	19,15

uvex 9405 full-view safety goggles for respiratory protection masks

By UVEX. Complies with **EN 166**.

- Large, full-view goggles with all-round ventilation system
- Cellulose acetate protective visor; clear and fog-free
- Upper section of goggle body frosted to suppress light reflections
- Can be worn over corrective spectacles
- Shape at bottom has been specially flattened, making it ideal to be combined with respiratory protection masks
- Headband can be easily adjusted

Art. No.	Pack Qty.	€
EEK7.1	1	17,55

Full view goggles 6X3

By Univet. Acc. to **EN 166**.
Large panorama lens, can be worn over corrective spectacles and is compatible with half masks. Clear glass lenses made of PC with innovative double-layer anti-scratch/anti-fog coating.

- Adjustable head strap
- Indirect ventilation system ensures protection against liquid droplets and splashes
- Optional attachable face shield
- Weight of safety spectacles: 75 g

Type	Art. No.	Pack Qty.	€
Full view goggles 6X3	**ATP4.1**	1	27,35
Face visor	**ATP5.1**	1	11,70

Full view goggles ultravision

By UVEX. Acc. to **EN 166**. Panorama screen with 180° vision field. Features ventilating and deventilating system. Screen made from cellulose acetate, with non-fogging coating on screen. Wide, variably adjustable band.

Art. No.	Pack Qty.	€
X368.1	1	19,65

Full view goggles 2890

By 3M. In acc. with **EN 166, EN 170**. Also suitable for work with UV light. Clear, scratch-proof and non-fogging PC lens. Indirect ventilated. Can be worn over most prescription spectacles using grooves on each side. Wide adaptable headband with adjustable joints for perfect fit. Good compatibility with 3M half masks. Weight 41 g.

3M No.	Art. No.	Pack Qty.	€
2890	**PT44.1**	1	15,60

Full view goggles

Full view goggles 601

By Univet. Acc. to **EN 166**.
Lenses made of clear acetate, with anti-fog coating. Excellent resistance to chemicals and solvents. Soft and elastic, allows perfect adaptation to the face, with anatomically shaped nose bridge for optimum wear comfort.

- Wide and undistorted field of view
- Soft fitting, pressure-free rubber frame
- Wide, adjustable elastic head strap
- Can be worn over corrective spectacles
- Adapter available for corrective lenses
- Weight 118 g

Type	Colour	Art. No.	Pack Qty.	€
With indirect ventilation	blue	**ATP1.1**	1	22,40
Without ventilation, gastight	white	**ATP2.1**	1	22,80
Adapter for corrective lenses	transparent	**ATP3.1**	1	14,10

Wide-vision safety goggles 611 Firefighters

By Univet. Acc. to **EN 166, EN 170**. Developed for the requirements of professionals who need maximum protection when working under extreme conditions with high-tech equipment.

- Clear UV-protection double lens made of polycarbonate. With anti-scratch and anti-fog plus coating
- Double lens protects against heat, fog and impact
- Frame, safety lens and elastic band made of fireproof material
- Gas-tight protective frame offers protection against irritating gases and fine dust
- Version with quick-release closure for use with different helmet types
- Wide elastic band ensures additional stability

Application: Protection against liquids, coarse and fine dust, gas, molten metal and hot solids.

Design	Art. No.	Pack Qty.	€
Red, gas-tight	**EYY6.1**	1	40,85
Red, gas-tight, with quick-release closure	**EYY7.1**	1	46,80

Accessories:

Replacement lens	**EYY8.1**	1	16,70
Adapter for corrective lenses	**ATP3.1**	1	14,10

6X1 full view goggles

By Univet. Acc. to **EN 166**.
The perfect combination. Clear lenses made of PC with anti-scratch/anti-fog coating. The adjustable SoftPad™ side pieces can be replaced with an elastic head strap and therefore offer absolute flexibility.

- Wide lens for distortion-free field of view
- Indirect ventilation system
- Soft fitting, pressure-free rubber frame
- Adapter available for corrective lenses
- Angle and length of side pieces can be adjusted

Delivery incl. head strap.

Type	Art. No.	Pack Qty.	€
Full view goggles 6X1	**APY5.1**	1	29,50
Adapter for corrective lenses	**APY6.1**	1	8,40

Fahrenheit™-safety goggles

By 3M. Acc. to **EN 166**. PC lenses, clear, with anti-scratch and anti-fog coating. Light blue frame. Indirect ventilation, adjustable nylon head band. Suitable for wearing with corrective spectacles and respiratory half masks.
Delivery incl. microfibre bag.

3M No.	Art. No.	Pack Qty.	€
FheitAF	**AKX2.1**	1	12,10

Full-vision goggles X90

By Bollé. Acc. with **EN 166**. Small, compact full-vision goggles.

- PC lens
- Scratch-proof, anti-fog and antistatic treatment
- Wide, adjustable head strap
- Rotatable articulated hinge
- Indirect venting

Weight: 62 g

Art. No.	Pack Qty.	€
KP06.1	1	15,60

Protective goggles uvex u-sonic

By UVEX. Acc. to **EN 166, EN 170**.
Small and compact wide-vision goggle with perfect fit. Clear UV protective lens made of polycarbonate, outside scratch-proof and chemical-resistant, mist-free inside.

- Adapts perfectly to any face - ergonomic design with flexible soft components
- High-comfort fit - through light weight and low pressure
- Keeps the eyes comfortable - due to innovative ventilation system
- Ideally combinable with hard hat - due to compact geometry
- Easy and fast insertion of the additional lens for EEK5.1 through integrated magnet technology
- Weight: without additional lens 69 g

Frame colour	Design	Art. No.	Pack Qty.	€
① grey/lime	Ventilation system	**EEK3.1**	1	21,85
② black/red	Limited ventilation	**EEK4.1**	1	22,05
③ black/orange	Ventilation system, with grey additional lens (16 % glare protection) and magnetic headband	**EEK5.1**	1	28,50

Safety goggles SP1000™

In acc. with **EN 166 and EN 170**. Offers effective protection from chemical splash, impact, wind, dust and flying particles. With black frame and clear PC lens. Weight 50 g.

- With Dura-streme™ dual anti-fog/anti-scratch coating
- With indirect ventilation at the top and bottom
- High-quality foam-padded frame for first-class comfort and sealing
- Soft and flexible nose pads for easy fitting to a variety of face shapes
- Padded ear-piece tips for all-day wear comfort
- Flexible design: can be used with ear pieces or adjustable headband.

Delivery incl. ear pieces and headband.

Art. No.	Pack Qty.	€
PT41.1	1	24,95

Full vision goggles carbonvision

By UVEX. In acc. with **EN 166 and EN 170**. Also suitable for work with UV light. Colourless, scratch-proof and anti-fog PC visor. Excellent mechanical stability with high-grade, long-life headband. Very light full-vision goggles combinable with respiratory protection and safety cap. Weight 46 g.

Art. No.	Pack Qty.	€
PP31.1	1	22,05

Over-goggles 5X7

By Univet. In accordance with **EN 166, EN 170, EN 172** (only grey lens). Innovative frame design prevents overlapping of the arms and offers absolute comfort. UV-protection lenses made of polycarbonate. Orange lens: Protection against UV and blue light up to 525 nm.

- 3x length adjustable side pieces
- SoftPad™ ear pieces allow perfect adaptation to the face shape of the wearer
- Weight: 37 g

Frame colour	Lens design	Art. No.	Pack Qty.	€
① gun metal/orange	clear, anti-scratch coated	**HAA6.1**	1	15,00
② gun metal/green	clear, anti-scratch and anti-fog coating	**APY1.1**	1	19,65
③ white/blue	clear, anti-scratch and anti-fog coating	**APY2.1**	1	19,30
④ gun metal/green	grey, anti-scratch coating	**APY3.1**	1	16,10
⑤ black/orange	orange, anti-scratch and anti-fog coating	**APY4.1**	1	21,25

Protective glasses for spectacle wearers

Panorama safety goggles Armamax

Fits over regular glasses. Acc. to **EN 166**. Extra large field of vision and wide side shields. Frame and screen made of transparent polycarbonate. Weight 46 g.

Art. No.	Pack Qty.	€
1726.1	1	9,35

Goggles for spectacle wearers, super OTG

By UVEX. Acc. to **EN 166, EN 170** and **EN 172** (only Art. No. KX41.1). Can be worn over most standard spectacles.

- Highly scratch-resistant PC lens on both sides
- Hinge-free earpiece
- Flexible, soft ear pieces
- Weight 57 g

Frame colour	Lens design	Art. No.	Pack Qty.	€
blue	clear	**KX39.1**	1	20,40
black	clear	**KX40.1**	1	21,85
black	tinted grey	**KX41.1**	1	23,15

Cover glasses 9161

By UVEX. Acc. to **EN 166, EN 170**.
Also suitable for working with UV-light.
Fits over all regular spectacles. Super panorama sceen with 180° fields of vision enable unlimited side view.

Model I: Uncoated polycarbonate lens with standard side arms; autoclavable.

Model II: scratch-proof polycarbonate screen, with special side arms adjustable in 4 stages. With soft padding for pressure-free fit.

Design	Art. No.	Pack Qty.	€
Model I	**1554.1**	1	8,85
Model II	**N163.1**	1	12,85

Over-goggles OX 3000

By 3M. Acc. to **EN 160, EN 170**. Also suitable for UV work.
Comfortable over-goggles for spectacle wearers, fits over all types of spectacles.

- Clear polycarbonate lens, the coating protects against fogging, scratches, static charge and chemical influences
- Straight earpieces, 4-times adjustable, can also be used in combination with ear muffs
- The earpieces are covered with non-slip rubber for optimal comfort
- No metal parts, also suitable for electricians
- Weight 46 g

Art. No.	Pack Qty.	€
KA31.1	1	11,40

Over-goggles 2800

By 3M. Acc. to **EN 166** and **EN 170**. Lenses made of PC with UV protection, anti-scratch coating. Dark-blue frame. Can be worn as over-goggles over most types of corrective spectacles.

- 4x adjustable earpiece length
- Adjustable lens angle for perfect fit
- Soft tip ear pieces for wearing comfort
- Yellow lenses filter UV radiation and blue light up to 480 nm and increase contrast even in weak light conditions.
- Weight 38 g

Lens	3M No.	Art. No.	Pack Qty.	€
clear	2800	**KA80.1**	1	10,00
yellow	2802	**AKT8.1**	1	10,20

SQUALE UV-over-goggles

By Bollé. Acc. to **EN 166** and **EN 170**.
- Length-adjustable earpieces
- Scratch-proof and anti-fog PC visor
- Additional top and bottom protection

Weight: 43 g.
Delivery incl. thin goggles strap.

Art. No.	Pack Qty.	€
KP05.1	1	8,25

Safety goggles for visitors

Acc. to **EN 166**. Rugged over-goggles with uncoated PC lens.
Ventilated side protectors. Can be worn over corrective spectacles.

Art. No.	Pack Qty.	€
CNH1.1	1	5,95

UV-safety spectacles cosmoflex

By UVEX. Acc. to **EN 166, EN 170**. Excellent fit and low weight (33 g). Clear panes made of polycarbonate, extremely scratch-resistant. Side arms can be individually adapted in 4 stages for extreme comfort and are non-slip. Side protectors integrated in frames. Also feature covers for eyebrow area for additional protection against impurities from above. Replaceable lenses.

Art. No.	Pack Qty.	€
C523.1	1	18,75

UV-safety glasses XC

Acc. to **EN 166, EN 170**. Anti-fogging polycarbonate lens. Inclination of lens can be adjusted individually, length of side-arms is also adjustable.
Can also be used by people with glasses in combination with the special corrective lens insert (CK91.1).

Art. No.	Pack Qty.	€
CK90.1	1	20,65

Corrective insert

Can be combinded with UV-safety glasses XC (CK90.1). The insert must be adjusted individually by your optician with lenses in your normal strength.
- Can be fitted easily and safely behind the screen of the safety glasses
- The optician's lenses are protected by the safety glasses screen
- More comfortable to wear than clip-on glasses or spectacle covers

Art. No.	Pack Qty.	€
CK91.1	1	36,45

Safety glasses BX™-readers with bifocal lenses

By 3M. Compliant to **EN 166, EN 170**. **Bifocal lenses** made of clear PC, anti-scratch and anti-fog. The bottom part of the lens provides magnification for reading or precision work but at the same time still providing excellent protection against flying particles or mist.
- The lenses are deeply curved for optimal coverage of the eyes
- Soft tip temples improve wear comfort
- Soft, universal-fit nose piece
- Adjustable temple length and lens angle (3 positions)

Protection level	Focal power	Art. No.	Pack Qty.	€
2C-1.2	+1,5	**YP13.1**	1	17,15
2C-1.2	+2,0	**YP14.1**	1	17,15

UV-protection glasses

UV-safety spectacles, futura

By UVEX. Acc. to **EN 166, EN 170**. Excellent fit. Clear panes made of polycarbonate, extremely scratch-resistant and with a near unrestricted field of view. Side arms can be individually adapted in 4 stages for extreme comfort, are non-slip and with variably adjustable inclination. Weight 46 g. Replaceable lenses.

Art. No.	Pack Qty.	€
C522.1	1	17,85

Skylite UV safety spectacles

By UVEX. Acc. to **EN 166, EN 170**. Clear lenses made of polycarbonate, scratch-resistant on the inside and outside. Angle of side pieces can be adjusted. Integrated side protectors with a matt finish. Ultra-lightweight spectacles, approx. 26 g.

Frame colour	Art. No.	Pack Qty.	€
① red metallic	**CH18.1**	1	12,40
② blue	**NP29.1**	1	11,80

Safety glasses 511

By Univet. Acc. to **EN 166**. Clear lenses made of PC. Narrow type is suitable for narrow faces or students.

- Angle and length of side pieces can be adjusted
- Integrated side protection
- Weight 34 g

Type	Frame colour	Lens design	Art. No.	Pack Qty.	€
Normal type	blue	Anti-scratch coating	**APY7.1**	1	7,35
Normal type	black	Anti-fog coating	**CNH0.1**	1	9,30
Narrow type	blue	Anti-scratch coating	**APY8.1**	1	7,40

UV-safety glasses B272

By Bollé. Acc. to **EN 166** and **EN 170**.

- Scratch-proof and non-fogging PC visor
- Length-adjustable earpieces
- Adjustable visor inclination
- Additional top and bottom protection

Weight: 31 g.

Lens design	Art. No.	Pack Qty.	€
clear	**KP00.1**	1	14,20

Safety glasses Max A1

Acc. to **EN 166**. Scratchproof, non-fogging lenses made of polycarbonate. With integral side protection. Side arms can be adjusted in length and are pliable. Softpads reduce the pressure. Inclination of lens enables individual fit. Weight 34 g.

Art. No.	Pack Qty.	€
Y254.1	1	12,50

UV-safety spectacles astrospec

By UVEX. Acc. to **EN 166, EN 170**. **Scratchproof, with permanently non-fogging and antistatic lens** made of polycarbonate with integrated side protection. Lens is easy to replace. Side arms can be adjusted in length and inclined for exact fit. Soft pads at the ends of the side arms reduce pressure. Weight 36 g.

Frame colour	Art. No.	Pack Qty.	€
yellow	**9021.1**	1	14,85
spare screen	**9022.1**	1	8,85

UV-protection glasses

Safety spectacles astrospec asiatic

By UVEX. Acc. to **EN 166 and EN 170. Also suitable for working with UV-light.** Specially formed to fit asiatic heads, stop glasses from always slipping down. Clear lenses, extremely scratchproof and chemically resistant. Angle of lens can be adjusted in 3 stages and the length of the ear-piece 4 times. The ends of the ear-pieces are soft for a pressure-free fit.

Art. No.	Pack Qty.	€
AA86.1	1	14,55

Programme extension!

astrospec 2.0 safety spectacles

By UVEX. Acc. to **EN 166, EN 170**.
Clear panorama lens made of polycarbonate with UV filter and integrated side protectors.

- Flexible duo component temples and adjustable lens inclination for perfect fit
- Soft ear pieces ensure a secure fit without pressure points
- Maximum wearing comfort for all face shapes
- Also suitable for extended wear
- Extremely flat-folding and space-saving
- Weight 37 g

Frame colour	Lens design	Art. No.	Pack Qty.	€
① anthracite/blue	Scratch-resistant on the outside and inside, permanently anti-fog	**CYN0.1**	1	19,90
② black/lime	Scratch-resistant on outside and chemical resistant on inside, anti-fog	**CYN2.1**	1	19,90
③ blue/light blue	Extremely scratch- and chemical-resistant on both sides. Non-stick coating for easy cleaning	**EEK6.1**	1	17,20
④ black/grey	Long-term non-fogging, scratch-resistant and antistatic on both sides	**HYX5.1**	1	19,65

UV-safety spectacles skyper / skyper s

By UVEX. Acc. to **EN 166, EN 170**. Polycarbonate lens, clear, scratchproof. Length of side pieces and inclination of lens can be adjusted for individual fit. Also features integrated side protection in lens.
Weight 30 g or 28 g.

Skyper: larger model for broad faces

Frame colour	Art. No.	Pack Qty.	€
blue	**X451.1**	1	17,10
black	**X452.1**	1	17,10

Skyper s: smaller model for narrow faces

Frame colour	Art. No.	Pack Qty.	€
blue	**P825.1**	1	17,10

UV-safety spectacles super g

By UVEX. Acc. to **EN 166, EN 170.** Extremely light safety glasses.
Weight 18 g.

- Completely metal-free
- Fatigue-free and safe fit thanks to the barely noticeable and extremely flexible frame design
- Unique nose rest allows it be combined easily with respiratory masks
- The side-arms are comfortable and pressure-free due to XST technology (Ends of side-arms come with soft components)
- Very thin and breakproof lens made of PC
- Different types of lens coating available:
  ① Permanently non-fogging, scratchproof and antistatic.
  ② Outside highly scratchproof, inside permanently non-fogging.

Model	Frame colour	Art. No.	Pack Qty.	€
①	crystal	**HH50.1**	1	18,10
②	blue	**HH51.1**	1	19,90

UV-protection glasses

UV-safety glasses SILIUM

By Bollé. Acc. to **EN 166, EN 170** and **EN 172** (dark visor).
- Non-slip TIPGRIP earpieces and non-slip adjustable nose bridge plates
- Scratch-proof, anti-fog and antistatic PC visor
- Bendy, Flex earpiece 160 %
- Brass frame

Weight: 34 g.

Lens design	Art. No.	Pack Qty.	€
clear	**KN95.1**	1	12,85
Tinted glass, slightly dark	**KN96.1**	1	14,55

Safety glasses 506U

By Univet. Acc. to EN **166, EN 170.** Clear UV-protective lens made of PC with anti-scratch/anti-fog coating.
- Angle and length adjustable temples
- Soft ear pieces avoid pressure points
- Optimal wearing comfort and adaptation through soft, adjustable nose pad
- Weight 25 g

Frame colour	Art. No.	Pack Qty.	€
white/pink	**CNE8.1**	1	13,40
black/green	**CNE9.1**	1	12,10

NEW

SILIUM+ safety spectacles

By Bollé. Acc. to **EN 166, EN 170**.
- Clear UV lens and frame made of PC. With Bollé Platinum coating, anti-scratch on both sides, anti-fog and chemical resistant
- CSP coating: suitable for all activities. CSP is combined with the PLATINUM coating to protect against fogging for longer
- Comfortable fit thanks to straight, ergonomic and extremely flexible temples
- Slip-resistant and adjustable bridge
- Light as a feather, suitable for long periods of wear
- Weight 21 g

Lens design	Art. No.	Pack Qty.	€
clear, Platinum coating	**HYL4.1**	1	12,85
smoked glass, Platinum coating	**HYL5.1**	1	12,85
clear, CSP and Platinum coating	**HYL6.1**	1	12,85

UV-safety glasses Premium 2750

By 3M. Acc. to **EN 166, EN 170**. Clear, scratchproof and non-fogging lens made of polycarbonate. Sidearms can be adjusted 5 times in length. Soft, shaped nose piece. Weight 32 g. Can be used in combination with Sekuroka®-particle filter masks N186.1 ff., the 9300 series by 3M.

Art. No.	Pack Qty.	€
EH68.1	1	12,80

UV safety glasses Tora CCS

By 3M. Acc. to **EN 166, EN 170**. Scratchproof, fogproof PC lens. Ear protection attaches directly to the glasses, ensuring that eye and ear protection are always joined and ready for use, without tangling. The ear protection cord doubles as a spectacle cord. Very light (22 g). **Delivery without** ear protection and cord. Please order separately (ULTRAFIT TE80.1 ear plugs).

Lens design	Art. No.	Pack Qty.	€
clear	**TE79.1**	1	9,55

UV-protection glasses

UV-safety glasses Z8

Acc. to **EN 166, EN 170**. Clear, anti-fogging polycarbonate lens, also protects the area around the eyebrows. Metal side-arm. Side-arms are padded at the ends with non-slip, soft PVC. Optimal fit and good panorama view. Weight 33 g.

Art. No.	Pack Qty.	€
CY76.1	1	12,85

UV safety spectacles I-3

By UVEX. Acc. to **EN 166, EN 170, EN 172** (grey lenses).

- PC lenses - anti-fog on the inside, scratch resistant on the outside, resistant to chemicals
- Perfect vision downwards
- Adapts perfectly to any face shape, excellent wearer comfort
- Soft nose pads ensure perfect anti-slip fitting
- Metal-free construction for low weight and long life

Frame colour	Lens design	Art. No.	Pack Qty.	€
Anthracite/blue	clear	**NP27.1**	1	21,45

NEW

UV safety spectacles i-works

By UVEX. Acc. to **EN 166, EN 170.**

- UV protective lens made of PC. Anti-fog on the inside, scratch-resistant and resistant to chemicals on the outside
- Non-metallic
- Large field of view due to panoramic lens
- Soft temples, flat earpiece with opening for fastening the spectacle cord

Frame colour	Lens design	Art. No.	Pack Qty.	€
anthracite/blue	clear	**HHX0.1**	1	13,95
anthracite/green	clear	**HHX1.1**	1	14,00
black/grey	silver mirror, grey	**HHX2.1**	1	26,80
black/yellow	yellow	**HHX3.1**	1	17,75

UV-safety glasses PRISM

By Bollé. Acc. to **EN 166, EN 170** and **EN 172** (dark visor).

- Goggles 100 % polycarbonate
- Scratch-proof and anti-fog visor
- Straight earpiece
- Very light goggles, 23 g

Delivery incl. goggles strap.

Lens design	Art. No.	Pack Qty.	€
clear	**KP03.1**	1	8,25
Tinted glass, dark	**KP04.1**	1	8,25

UV-protection glasses

UV-safety glasses VIPER

By Bollé. In acc. with **EN 166** and **EN 170**.
- Very good adaptation thanks to shape and ultra-light design
- Length-adjustable earpieces
- Visor made of PC, scratch-proof; yellow tinted visor, also anti-fog
- Additionally integrated protection at upper edge of goggles

Weight: 25 g.
Delivery incl. adjustable goggles strap.

Lens design	Art. No.	Pack Qty.	€
clear	**KP01.1**	1	9,90
yellow	**KP02.1**	1	11,80

NEW

TRYON safety spectacles

By Bollé. Acc. to **EN 166**, **EN 170**.
- Clear UV lens made of PC. With Bollé Platinum coating, anti-scratch on both sides, anti-fog and chemical resistant
- Wrap-around frame in a sporty design
- More comfortable and secure fit thanks to flexible wrap-around 160° temples and slip-resistant adjustable bridge
- Weight 26 g

Frame colour	Art. No.	Pack Qty.	€
light blue/black	**HYL9.1**	1	12,85

UV-safety spectacles x-trend

By UVEX. Acc. to **EN 166, EN 170, EN 172** for HH53.1.
Large anatomically formed wrap-around lens made of PC, for extreme safety. 20 % higher coverage compared to standard glasses. Lens is highly scratch-resistant on exterior and with permanently non-fogging inner side. With anti-slip side arm surface.

Lens design	Art. No.	Pack Qty.	€
clear	**HH52.1**	1	14,90
grey	**HH53.1**	1	18,10

UV safety spectacles pheos/pheos blue

By UVEX. Acc. to **EN 166, EN 170** and **EN 172** (grey lens).
- Wide, undistorted field of vision
- Inner lenses permanently anti-fogging, outer lenses highly scratch-resistant and chemical-resistant
- Duo-spherical lenses provide optimal eye coverage at the sides
- The tips of the earpieces are fitted with anti-slip components for extra comfort and slip resistance
- Excellent ventilation
- Metal-free earpiece mechanism with an easy action
- Compatible with ear muffs, hard hats and bump caps

①+② **pheos**
PC lenses.

③ **pheos blue**
Eco-friendly safety spectacles **"Green Design"** based on natural raw materials. Made of bioplastic, which is a plastic based on organic raw materials. Fully functional safety spectacles which meets all requirements for safety and wearing comfort.

Frame colour	Lens design	Art. No.	Pack Qty.	€
① light grey/grey	clear	**XC85.1**	1	14,90
② black/green	clear	**EHT6.1**	1	19,30
③ black/grey	grey	**XC86.1**	1	16,45
④ sand/blue	clear	**XC87.1**	1	21,40

UV-protection glasses

UV safety goggles pheos s

By UVEX. In accordance with **EN 166, EN 170.**
Smaller-framed pheos safety goggles for narrower face shapes.

- Wide, borderless, undistorted field of vision
- Inner lenses permanently non-fogging, outer lenses highly scratch- and chemical-resistant
- Duo-spherical lenses provide optimal eye coverage at the sides
- The tips of the earpieces are fitted with anti-slip components for extra comfort and slip resistance
- Excellent ventilation
- Metal-free earpiece mechanism with an easy action
- Compatible with ear muffs, hard hats and bump caps

Frame colour	Lens design	Art. No.	Pack Qty.	€
① white/green	Clear	**EHT7.1**	1	19,30
② anthracite/grey	Clear	**EHT8.1**	1	19,30

NEW

RUSH+ and RUSH+ Glow safety spectacles

By Bollé. Acc. to **EN 166**, **EN 170**.

- Clear UV lens made of PC. With Bollé Platinum coating, anti-scratch on both sides, anti-fog and chemical resistant
- More comfortable fit thanks to very soft temples and slip-resistant adjustable bridge
- RUSH+ Glow: for increased safety thanks to phosphorescent temples so that they are more visible in the dark. Five minutes exposure under any light source makes the temples light up in the dark.
- Weight 28 g

Frame colour	Art. No.	Pack Qty.	€
red/black	**HYL7.1**	1	10,25
grey (phosphorescent)/black	**HYL8.1**	1	15,80

UV safety spectacles pheos cx2

By UVEX. Acc. to **EN 166, EN 170.**

- UV lens made of transparent PC. Anti-fog on the inside, scratch-resistant and resistant to chemicals on the outside
- Wide, undistorted field of vision
- Comfortable protection with directly moulded forehead piece and nose piece
- Excellent ventilation for healthy eyes
- Combinable with ear defenders, helmet and bump caps

Frame colour	Art. No.	Pack Qty.	€
black/light blue	**HHT7.1**	1	15,00
blue/grey	**HHT8.1**	1	15,00
red/gray	**HHT9.1**	1	15,00

NEW

RUSH+ SMALL safety spectacles

By Bollé. Acc. to **EN 166**, **EN 170**.

- Clear UV lens made of PC. With Bollé Platinum coating, anti-scratch on both sides, anti-fog and chemical resistant
- More comfortable fit thanks to very soft temples and slip-resistant adjustable bridge
- Extremely sporty design, ideal for narrower faces, young adults and children
- Weight 26 g

Frame colour	Art. No.	Pack Qty.	€
white/light blue	**HYN0.1**	1	10,25
white/pink	**HYN1.1**	1	10,25

Safety spectacles UVEX sportstyle

By UVEX. In acc. with **EN 166, EN 170** and **EN 172** (EHN4.1).
- Attractive UVEX design with UV protection
- Inner lenses permanently non-fogging, outer lenses highly scratch- resistant
- Soft, adjustable nose pads
- Soft, anti-slip side arm ends
- UVEX lens geometry from optimum view and perfect protection
- Extremely light, sporting design for excellent wearer comfort

Frame colour	Lens design	Art. No.	Pack Qty.	€
black/petrol	clear	**EHN2.1**	1	20,40

Safety glasses 5X1

By Univet. In accordance with **EN 166, EN 170.** Designed for optimum protection and individual adjustment. UV protective lenses made of polycarbonate.
- Distinctive “wrap-around” lens with extra protection in side eye area
- SoftPad™ ear pieces, arms adjustable in length and angle
- Soft, height-adjustable nose bridge, reduces pressure
- Suitable for long periods of wear
- In/Out lens with multi-layer, reflective coating on the outside, offers protection against glare and allows good visibility when switching between dark and bright environments

Frame colour	Lens design	Art. No.	Pack Qty.	€
① grey/green	clear, anti-scratch and anti-fog coating	**HAA7.1**	1	20,10
② grey/green/blue	In/Out, anti-scratch coating	**HAA8.1**	1	19,85

UV-safety spectacles i-vo

By UVEX. Acc. to **EN 166, EN 170 and/or EN 172** (CH15.1). Polycarbonate lens. The nanotechnology coating enhances the anti-adhesion properties, allowing aqueous and oily staining to be removed effortlessly from the lens.
- Safety spectacles for maximum comfort
- Pressure-free and comfortable fit due to soft components at sensitive zone, such as nose, forehead and ears
- Length-adjustable side arms, 5-stage inclination

Lens design	Art. No.	Pack Qty.	€
① Clear, extremely scratch-proof and chemical-resistant on both sides	**Y406.1**	1	20,80
② Clear, mist-free inside (at least 16 s), outside extremely scratch-proof and chemical-resistant	**EHT5.1**	1	21,45
③ Brown, extremely scratch-proof and chemical-resistant on both sides	**CH15.1**	1	22,05

Safety glasses 5X3

By Univet. Acc. to **EN 166, EN 170**.
Advanced frame design minimises pressure points, adapts automatically to any face shape.
- SoftPad™ side pieces and adjustable nose bridge for improved wear comfort
- Distinctive wraparound lenses made of PC
- Ventilation system
- Orange lens offers protection against UV light and blue light up to 525 nm
- Weight 31 g

Frame colour	Lens design	Art. No.	Pack Qty.	€
black/green	clear, anti-scratch coated	**APX7.1**	1	11,95
black/orange	clear, anti-scratch/anti-fog coated	**APX8.1**	1	18,85
black/orange	orange, anti-scratch/anti-fog coated	**CNH4.1**	1	19,30

UV-protection glasses

UV-safety glasses 5X6

By Univet. Acc. to **EN 166, EN 170**.
Clear UV-protective lens made of PC with anti-scratch/anti-fog coating.
Light and comfortable model, ideal for long-duration wear.
Sporty "wrap-around" design, the lens is flexibly attached to the frame.

- Length adjustable SoftPad™ side pieces
- Soft and anatomically shaped nose bridge
- Weight 26 g

Frame colour	Art. No.	Pack Qty.	€
gun metal/green	**APX9.1**	1	17,45
white/blue	**APY0.1**	1	17,05

UV-safety glasses Comfort 2740

By 3M. Acc. to **EN 166, EN 170**. Lens made of clear polycarbonate, scratchproof and non-fogging. Earpieces can be adjusted 4 times in length and in inclination and have soft ends. Weight 28 g.

Art. No.	Pack Qty.	€
EH67.1	1	11,65

UV-safety spectacles x-act

By UVEX. Acc. to **EN 166, EN 170**. Frameless glasses with large field of vision. With clear, scratchproof polycarbonate lenses. Top of the lens is also covered for additional protection against falling particles. Adjustable arm inclination allows lens to be adjusted to face shape. Weight approx. 28 g.

Art. No.	Pack Qty.	€
AA52.1	1	17,75

UV-safety glasses Maxim

By 3M. Acc. to **EN 166, EN 170.** Clear polycarbonate lens for 180° view without distortion. Coated lens protects against fogging, scratches and splashes from chemicals. Soft, adjustable nose-piece. With eyebrow protection for more comfort and protection against mechanical influences. Earpieces can be adjusted in length and inclination of lens can also be altered. Weight 28 g.

Art. No.	Pack Qty.	€
KA36.1	1	14,85

X-one UV-safety spectacles

By UVEX. Acc. to **EN 166, EN 170, EN 172** (grey lenses).
Sporty and lightweight, wide field of vision, unlimited side vision, good coverage of the eyebrows and cheeks. Weight 27 g.

Frame colour	Lens design	Art. No.	Pack Qty.	€
① colourless	clear	**NP24.1**	1	9,15
② azure blue	clear	**NP25.1**	1	9,15
③ grey-black	grey	**NP26.1**	1	9,15

UV-protection glasses

Safety glasses SecureFit 400

By 3M. Acc. to **EN 166, EN 170, EN 172** (grey lenses).
Polycarbonate UV protective lenses with anti-scratch resistance and anti-fog properties.

- Flexible frame, adapts easily to all head sizes and shapes
- Soft, adjustable nose pad for a perfect and secure fit
- Padded ear pieces reduce pressure points and thus enhance wearing comfort
- Optimal compatibility with ear muffs and fine dust masks
- Ultra lightweight - only 19 g

Frame colour	Lens	Art. No.	Pack Qty.	€
black/green	clear	**CNE6.1**	1	10,25
black/green	grey	**CNE7.1**	1	10,25

Virtua UV-safety glasses

By 3M. Acc. to **EN 166, EN 170** and **EN 172** (grey lens).
Spectacles are entirely made of polycarbonate scratchproof.
Extremely good fit. Weight 25 g.

Lens design	Art. No.	Pack Qty.	€
clear	**CY78.1**	1	6,40
grey	**CY80.1**	1	6,40

UV-safety glasses Virtua Kids

By 3M. Acc. to **EN 166, EN 170**. For small head sizes, children or adults with short interpupillary distance / narrow face.
Glasses made of polycarbonate, clear and scratchproof lens.

Art. No.	Pack Qty.	€
KA62.1	1	6,25

millennia® UV-safety glasses

Tempered safety glasses acc. to **EN 166, EN 170** and **EN 172** (P763.1).
Ergonomic frame adapts to head shape. Straight side-arms do not need to be adjusted in length or inclined, no pressure behind the ears.
Lens is optimally curved enabling undistorted vision.
Low weight (34 g).

Lens	Application
clear	High mechanical protection, filters harmful UV-rays.
yellow	Excellent contrast recognition by filtering the blue proportion of light in the visible spectrum, filters harmful UV-rays. High mechanical protection.
grey	Sun protection filter, filters UV-rays and visible light. Good colour recognition.

Delivery incl. adjustable, flexible spectacles band.

Frame colour	Lens design	Art. No.	Pack Qty.	€
blue	clear	**P758.1**	1	10,70
silver	clear	**P760.1**	1	10,70
black	yellow	**P761.1**	1	13,80
black	grey	**P763.1**	1	13,80

UV-safety glasses millennia® sport

Acc. to **EN 166, EN 170** und **EN 172** (grey lens).
Scratchproof polycarbonate lens. Same as millenia® UV-safety glasses.
Delivery incl. adjustable, flexible spectacles band.

Frame colour	Lens	Art. No.	Pack Qty.	€
blue	clear	**CA36.1**	1	10,70
black	grey	**CA35.1**	1	9,65

UV-protection glasses

UV-safety spectacles, cybric

By UVEX. Acc. to **EN 166, EN 170** and **EN 172** (AA34.1). Sporty, modern double lens optic with integral side protection. Scratchproof and non-fogging lens made of polycarbonate. Side arms can be adjusted individually in inclination and length. End of side arms are elastic for a pressure-free and comfortable fit. Weight 29 g.

Lens design	Art. No.	Pack Qty.	€
clear	**AA33.1**	1	18,85
grey	**AA34.1**	1	20,10

Safety glasses 546

By Univet. Acc. to **EN 166, EN 170.** Extremely lightweight and modern spectacle with a sporty line. Clear UV protective lenses made of PC with anti-scratch/anti-fog coating.

- Wraparound polycarbonate lens with integrated side protectors
- Temples guarantee excellent fit and wear comfort
- Non-slip soft nose pad
- Ideal for long wearing times
- Orange lens offers protection against UV and light up to 525 nm

Frame colour	Lens design	Art. No.	Pack Qty.	€
black/green	clear	**CNH2.1**	1	13,95
black/orange	orange	**CNH3.1**	1	18,05

UV-safety spectacles racer MT

By UVEX. Acc. to **EN 166, EN 170** and **EN 172** (only Art. No. KX38.1).

- Flexible metal frame
- Adjustable nosepiece
- Scratchproof, non-fogging PC lens
- Weight 40 g

Lens design	Art. No.	Pack Qty.	€
clear	**KX37.1**	1	26,80
grey	**KX38.1**	1	31,10

UV-safety glasses 2840

By 3M. Acc. to **EN 166, EN 170** and **EN 172** (KA83.1).

- Side arm length is 3-times adjustable
- Adjustable inclination of lens for individual fit
- Robust polycarbonate lens with scratchproof and non-fogging coating
- Integrated eyebrow protection for more safety
- Side arms are soft inside for a more comfortable fit
- Safety spectacles **KA83.1**, with grey lens for outside use when greater protection against sunlight is necessary
- Protective goggles **NN25.1** with orange lens, filters out UV radiation and blue wavelength light to 530 nm. Enhances contrast and focus in low light conditions
- Weight 26 g

Lens design	3M No.	Art. No.	Pack Qty.	€
① clear	2840	**KA82.1**	1	12,75
② grey	2841	**KA83.1**	1	13,10
③ orange	2846	**NN25.1**	1	15,60

EN-Standards for safety spectacles
EN 166 General requirements
EN 169 Eye protection filter for welding
EN 170 UV-protection filter
EN 171 Infrared filter
EN 172 Sun-protection filter

Special protection glasses

Autoclavable safety goggles CR

By UVEX. Acc. to **EN 166, EN 170**.
Clear lenses made of PC with UV protection, anti-fog coated on the inside, highly scratch-resistant on the outside. Autoclavable for at least 10 cycles (20 min at 121 °C). Suitable as cleanroom goggles or for critical areas.

① **Full-vision goggles ultrasonic CR**
Exceptional wear comfort even for wearers of corrective spectacles. No pressure problems even after long periods of wear due to the combination of hard and soft components. Sporty design, wide panoramic field of vision and full side protection. Indirect ventilation, adjustable silicone strap. Replaceable lens,

② **Over-goggles super OTG CR**
Fit over corrective goggles. Excellent wearability, unrestricted lateral vision. New side piece/hinge concept with soft ear pieces.

③ **Safety goggles super fit CR**
Ultra light safety glasses in sporty design. Extremely thin lens made of clear PC for maximum optical clarity. Excellent protection against mechanical risks, perfect non-slip fit.

Model	Art. No.	Pack Qty.	€
① Full-vision goggles ultrasonic CR	**ANL3.1**	1	32,15
② Over-goggles super OTG CR	**ANL4.1**	1	26,90
③ Safety goggles super fit CR	**ANL5.1**	1	26,90

UV-safety glasses LED Light Vision

By 3M. Acc. to **EN 166, EN 170**.
- Safety spectacles with height-adjustable and extremely bright LEDs
- Built-in batteries (2 x round cell batteries CR 2032), long battery life (over 50 hours)
- Illuminates dark areas and at the same time protects the eyes. Hands are free to work, e.g. for electric work, car repairs, installation work, do-it-yourself jobs, mechanical work in the dark, reading...
- With rubber padding on ear and nose-piece for extra comfort
- Non-fogging lens made of polycarbonate, also suitable for working with UV-light

Weight 61.4 g.
Delivery incl. microfiber pouch for storing and cleaning.

Art. No.	Pack Qty.	€
KA25.1	1	23,15

Safety glasses 5X9

By Univet. Acc. to **EN 166, EN 170**. The two-lens structure enables a wide selection of lens materials and filters and can thus be used in many applications. The integrated flip-up system and the lens form a unique modular system for maximum flexibility.
- Integrated side protection with ventilation system
- Arms can be adjusted in length and angle, with SoftPad™-ear pieces
- Version with elastic head band is equipped with a tight-fitting additional frame
- Version with glass lenses offers good protection against chemicals and scratches
- Weight: 52 g (glass), 35 g (polycarbonate)
- Can be combined with flip-ups with protective filters for specific requirements

Application: In chemistry labs and in environments with grinding dust.

Frame colour	Lens design	Art. No.	Pack Qty.	€
① gun metal/orange	PC, clear, anti-scratch coating	**HAA0.1**	1	17,85
② gun metal/green	Glass, clear	**HAA1.1**	1	33,60
③ with head band/ black	PC, clear, anti-scratch and anti-fog coating	**HAA2.1**	1	21,20

Accessories for safety glasses 5X9

Flip-up with protective filter for use with safety glasses 5X9.
Can be easily fitted onto the glasses frame, removed again and replaced with another filter, can be flipped up.

Green PC lenses:
IR 3: protection against UV and IR radiation and glare, which can occur during welding processes.
Application: for use in areas where welding work is taking place and when soldering. Use only for preparatory welding work. Not for welding work or flame cutting.
IR 5: optimum protection against IR radiation, high VLT for good visibility in dark environments, good colour identification (TSR), sun protection.
Application: glass work, quality control, foundries, artificial optical radiation (AOR).

Blue glass lens:
Protection against IR radiation. Absorbs yellow-orange radiation. Reduces distracting reflections caused by molten glass or metal.
Application: glass work, metallurgy, foundries.

Lens design	Art. No.	Pack Qty.	€
④ PC, green IR 3	**HAA3.1**	1	23,10
⑤ PC, green IR 5	**HAA4.1**	1	23,15
⑥ Glass, blue IR 4-5	**HAA5.1**	1	35,85

Protective glasses accessories

Welding safety goggles 5X7 over-goggles

Acc. to **EN 166, EN 170**. Protection against UV and IR radiation and glare, as often occurs during welding processes. Stage: 5.

- Innovative frame design prevents overlapping of the arms and offers absolute comfort
- PC lenses with anti-scratch and anti-fog coating, shatterproof
- 3x length adjustable side pieces
- SoftPad™ ear pieces allow perfect adaptation to the face shape of the wearer
- Weight: 37 g

Application: soldering, gas welding.

Art. No.	Pack Qty.	€
EYY9.1	1	21,45

Spectacles bag

By UVEX. Made of nylon. Suitable for all spectacles and full-view goggles.

Art. No.	Pack Qty.	€
T708.1	1	6,10

Spectacle cases with velcro fastening

By UVEX. Flexible case made of robust nylon material. Individually adjustable velcro fastening. With belt. Colour: black.

① Extension with zipper attached on the side.
Suitable for UVEX spectacles.
② Suitable for small wide-vision spectacles such as u-sonic (Art. No. EEK3.1ff) and carbonvision (Art. No. PP31.1).

Image	Suitable for	Pack Qty.	Art. No.	€
①	Spectacles	1	**EHL7.1**	10,75
②	Small wide-vision spectacles	1	**EHL8.1**	10,70

Spectacles bags

By UVEX. Very robust case with reinforced zipper and separate pocket for cleaning tissues or spare lens. With velcro fastenings for belt. Colour: black.

① Ideal for all spectacles from UVEX except Super OTG.
② Ideal for all spectacles and goggles from UVEX.

Image	Suitable for	Pack Qty.	Art. No.	€
①	Temple spectacles	1	**AA00.1**	10,15
②	Wide-vision goggles	1	**EHL9.1**	14,55

Hard-shell spectacles case

By UVEX. Innovative, fashionable design, specially adapted for models with pronounced curve (like the i-vo). With zipper, buckle and practical snap hook. Colour: black.

Art. No.	Pack Qty.	€
EHN0.1	1	11,70

Protective glasses accessories

Universal glasses strap

By 3M. Suitable for most glasses, braided, with silicone rubber band. Black, length about 45 cm.

Art. No.	Pack Qty.	€
5844.1	1	5,20

Sekuroka®-safety glasses boxes

- Made of impact resistant plastic (ABS) with rounded corners, blue or transparent
- For safe storage of safety spectacles directly in the workplace
- Protects against scratching, dust and moisture
- Suitable for all standard safety spectacles

Delivery incl. fixing hardware for wall mounting, without safety spectacles.

Box for 1 pair of safety glasses
Dimensions: W 236 x D 120 x H 120 mm

Delivery without safety label (Art. No. NK20.1 - please order separately).

Colour	Art. No.	Pack Qty.	€
blue	**N426.1**	1	12,40
transparent	**N427.1**	1	14,55

Box for 4 pairs of safety glasses
Suitable for safety glasses. Not suitable for strongly curved safety glasses (e.g. uvex i-vo).
Dimensions: W 236 x D 125 x H 225 mm.
Inner compartment: W 42 x D 64 x H 175 mm.

Delivery incl. safety label "Wear eye protection".

Colour	Art. No.	Pack Qty.	€
blue	**TY59.1**	1	54,85
transparent	**TY60.1**	1	61,30

Box for 12 pairs of safety spectacles
Ideal for storage of safety spectacles for visitors.
Insert is removable, e.g. for cleaning.
Outer dimensions: W 236 x D 200 x H 315 mm
Inner dimensions: W 230 x D 192 x H 299 mm
Inner compartment: W 63 x D 174 x H 75 mm, ∅ 98 mm

Delivery incl. safety label "Wear eye protection".

Colour	Art. No.	Pack Qty.	€
blue	**X465.1**	1	102,10
transparent	**CHL0.1**	1	106,35

Safety spectacles dispenser

Store spectacles in a clean and safe place, ideal for visitor's spectacles. Made of acrylic glass. Either separate or attached to the wall. Spectacles can also be removed individually. Clamping lid at top.
Dimensions: W 170 x D 75 x H 390 mm. Sampling port: W 17 x H 5.9 cm.

Delivery incl. wall attachment for wall assembly, without safety spectacles.

Art. No.	Pack Qty.	€
KN10.1	1	112,90

Protective glasses accessories

Mobile spectacles box

Made of sturdy plastic (ABS), blue. Portable spectacles box for safe "on the go" storage of safety spectacles, e.g. when away on a job, in industrial plants, on construction sites etc. Protects against scratching, dust and moisture. Suitable for all standard safety spectacles.

Delivery without safety spectacles.

Art. No.	Pack Qty.	€
TY61.1	1	11,30

Eyewear cleaning set

Suitable for all spectacle lenses and visors.

- Highly effective cleaning
- Anti-fog and anti-static
- Alcohol-free

Set incl. eyewear cleaner (50 ml) and 1 microfibre cloth (20 x 20 cm).

Art. No.	Pack Qty. (set)	€
EEE0.1	1	9,15

Accessories:

Eyewear cleaner in a spray can, 50 ml	**EHT4.1**	2	6,40

Spectacles cleaning station

By UVEX. Manufactured from breakproof plastic.
Can be locked with specially-made key. For wall assembly.
The station is filled with 2 x 700 sheets of silicon-free tissue wipes and 500 ml cleanser fluid with plastic pump.

Type	Art. No.	Pack Qty.	€
Spectacles cleaning station, full	**AA35.1**	1	75,05

Accessories:

Tissue wipes with 700 tissues	**AA36.1**	2	25,30
Cleaning fluid 0.5 l bottle	**AA37.1**	1	12,40
Plastic pump	**AA38.1**	1	6,70

Sekuroka®-microfibre tissues

Ideal for film-free cleaning of spectacles and optical instruments.
Washable and reusable. Dimensions: 150 x 150 mm.

Art. No.	Pack Qty.	€
E172.1	5	12,40

Sekuroka®-lens cleansing tissues

For moist cleaning of optical glasses, with active grease remover and alcohol. Clean glasses without leaving specks, anti-static and non-fogging. Very gentle, only one wipe required. Individually packed.

H228 - H319

Art. No.	Pack Qty.	€
1678.1	100	18,20

Anti-fog cleaner

Solution for cleaning spectacles and visors, prevents fogging.
Contents: 17 ml.

Art. No.	Pack Qty.	€
CNH5.1	1	14,20

699 face visor with chin protection

By Univet. Acc. to **EN 166**.
- 1 mm polycarbonate visor with 90° hinge mechanism
- Height-adjustable head frame
- Adjustable head size using elastic headband
- Exchangeable foam headband
- Can be worn with protection goggles and respiratory protection

Type	Art. No.	Pack Qty.	€
Face visor with chinguard	**ATP6.1**	1	19,30
Replacement visor lens 699	**ATP7.1**	1	9,60
Replacement chinguard made of PC	**ATP8.1**	1	3,50

UV face visor SPHERE

By Bollé. In acc. with **EN 166, EN 170**. Also suitable for work with UV light.
- Lens made of PC (2.0 mm thick), frame made of PP
- Large field of vision of 180°
- Adjustable headgear and headband
- Protection from chemical splashes
- Protection from medium energy particles (120 m/s), tested at extremely high temperatures
- Protection from hot solids and molten metals

Weight 355 g. Lens size: H 205 x W 394 mm.

Type	Art. No.	Pack Qty.	€
UV face visor SPHERE	**PT74.1**	1	25,50
Spare lens for UV face visor SPHERE PT74.1	**PT75.1**	1	13,80

Uvex face protection shields

By UVEX. Acc. to **EN 166** and **EN 170**.
Robust head support made of PA with integrated forehead protection
Comfortable adjustment to individual head size via twist fastener.
Face protection shield made of cellulose acetate, thickness 1 mm. Infinitely adjustable lift-up mechanism. For protection against low-energy particles.
Dimensions: H 195 x W 540 mm. Weight 227 g.

① Face protection shield 9705, non-coated screen

Type	Art. No.	Pack Qty.	€
Face protection shield with head cover	**EX08.1**	1	30,65
Spare screen EX08.1	**EX09.1**	1	14,55

② Face protection shield 9706, screen with anti-fog coating

Type	Art. No.	Pack Qty.	€
Face protection shield with head cover	**HLN4.1**	1	49,25
Spare screen HLN4.1	**HLN5.1**	1	27,90

UV-face visor

By Bollé. Acc. to **EN 166, EN 170. Also suitable for work with UV light.**
- Ultra-light, fold-up visor
- Anti-fog acetate protective visor, thickness 1.5 mm
- Protection against chemical splashes, electrical arcs and short circuits
- Protection against flying particles, medium energy (120 m/s)
- Adjustable head strap
- Frame and head fastener made of polypropylene

Weight: 200 g. Visor size (H x W) 190 x 290 mm.

Type	Art. No.	Pack Qty.	€
UV face visor	**KP10.1**	1	35,40
Spare visor for UV face visor KP10.1	**KP11.1**	1	30,00

Face protection shield

By 3M. Acc. to **EN 166.** Protects against all particles of medium energy flying about and liquid metal splashes. Screen made from 2 mm thick PC (230 x 370 mm), can be lifted up and locked in place. Infinitely adjustable. With soft vinyl sweat-band.

Type	Art. No.	Pack Qty.	€
Face protection shield	**T668.1**	1	33,30
Spare screen for face protection shield T668.1	**T669.1**	1	14,55

Face shield

Acc. to **EN 166**. Extremely light head support. Replaceable PC screen, pliable due to metal frame. Rotating ratchet mechanism enables width of padded head support to be individually adjusted. Ideal for protection against liquid splashes and low pressure flying particles. Dimensions of screen H 250 x W 205 mm. Height including head support 265 mm.

Type	Art. No.	Pack Qty.	€
Face shield	**E227.1**	1	31,10
Spare screen for face shield E227.1	**E228.1**	1	13,95

Hard hat with protection shield

Acc. to **EN 166** and **EN 397**. Hard hat made of white plastic, with four press studs to fasten the face protection shield. Adjustable plastic insert. Face protection shield made of polycarbonate, approx.25 cm long, can be lifted up. Weight 500 g.

Type	Art. No.	Pack Qty.	€
Hard hat with protection shield	**1475.1**	1	62,15
Replacement protection shield	**0652.1**	1	19,60
Replacement hard hat	**8405.1**	1	22,40

UV-face protection shield Bionic

Acc. to **EN 166, EN 170**.

- Large screen for good view
- Polycarbonate lens for UV-protection and good colour identification
- Scratchproof and non-fogging
- Protects against liquid splashes
- Protects against flying particles of medium energy (120 m/s), tested at extremely high temperatures
- Lenses are very easy to replace
- Individually adjustable for good fit
- Ratchet head fixture
- Frame made of robust ABS-plastic
- Soft padding on all parts that touch the head
- Skin-friendly sweatband, can be replaced and washed
- Added protection for top of head and chin
- Can be combined with respiratory protection or safety spectacles
- Very light, weight 407 g
- Dimensions: H 31 x W 24 cm

Type	Art. No.	Pack Qty.	€
UV-face protection screen Bionic	**CA34.1**	1	72,05
Spare screen for face protection screen CA34.1	**EP73.1**	1	32,20

Combined face and ear protection G500

By 3M. Acc. to EN 166, EN 352. The combination consists of yellow headgear, a clear, anti-fog PC visor and Optime™ I ear muffs (insulation value 26 dB A). Adjustable headgear for head sizes ranging from 54-62 cm. The visor protects against particles flying at a medium speed of 120 m/s.

- A practical and comfortable solution for all who need both face and ear protection
- Face visor and wide field of view
- Multiple combinations with protective glasses and clear or net visors
- Stable construction, long service life and excellent wear comfort

Delivery incl. headgear, PC visor, Optime™ I ear protectors.

Art. No.	Pack Qty.	€
YT38.1	1	60,20

Safety helmets with Uvicator™ sensor and ratchet system

By 3M. Acc. to EN 397. Made of ABS, ventilated, with headband. Designed for use in harsh environments with high safety requirements.

- Compatible with other auxiliary safety gear, such as ear defenders, visors or safety goggles.
- The Peltor™ Uvicator™ sensor indicates when the hat needs replacing.
- Short face shield allows for excellent visibility
- Ratchet system for easy adaptation to head size
- Slender, rounded shape reduces the danger of danger of getting caught on objects such as tree branches or similar obstacles
- Multiple ventilation slots make for excellent ventilation

Colour	Art. No.	Pack Qty.	€
white	**NH14.1**	1	22,85
yellow	**NH15.1**	1	22,85

Peltor™ OPTIME™ ear defenders

By 3M. Acc. to EN 352-1. With safety attachment for all hard hats with 30 mm slot system and face/ear protection G500 (YT38.1). High wearing comfort and low pressure inside ear even after extended wear.

- Lightweight design, optimal ear protection
- Constant pressure, liquid-filled sealing ring
- 2-point mounting

OPTIME™ I

Flat design. **Applications:** outdoor work, building trade, engineering, woodworking, metalworking, automobile industry, farming, chemical treatment.

OPTIME™ II

For high-noise environments, provides excellent sound insulation even at extremely low frequencies. **Applications:** outdoor work, building trade, airports.

Delivery without safety helmet, please order separately (Art. No. NH14.1f)

Model	SNR value	Art. No.	Pack Qty. (pair)	€
OPTIME™ I	26 dB	**NH12.1**	1	23,45
OPTIME™ II	30 dB	**NH13.1**	1	29,60

Protective visors, for hard hats

By 3M. Suitable for hard hats (NH14.1f) and face/ear protection G500 (YT38.1). The visor mount (NH18.1) and, if no ear defenders are attached, the hat adapter (AKT9.1) are also required for hard hats.

① **PC visor**, clear, anti-fog

Art. No.	Pack Qty.	€
NH16.1	1 pieces	16,80

② **Stainless steel mesh visor,** light reduction: 24 %, 54 g, suitable for farming, forestry and landscaping.

Art. No.	Pack Qty.	€
NH17.1	1 pieces	15,00

③ **Visor mount** for hard hats NH14.1 f.

Art. No.	Pack Qty.	€
NH18.1	1 pieces	12,35

Helmet adapter
Connector for helmets with 30 mm slot (NH14.1) for attaching the visor mount without earmuffs.

Art. No.	Pack Qty.	€
AKT9.1	1 Paar	13,95

Protection masks

Face protection shields Polysoft

By op-d-op. Ultra-light, made from ABS. Flexible, non fogging. Can also be worn over respiratory masks and glasses. With forehead padding and straps. Head-piece adapts to wearer after exposure to body temperature. Smallest head size approx. 440 mm.
Delivery incl. headgear with cord, 3 face shields and 1 mini shield.

Colour	Art. No.	Pack Qty.	€
white	**C346.1**	1	59,10
blue	**C347.1**	1	59,10
neon yellow	**C348.1**	1	59,10
neon pink	**C349.1**	1	59,10
Spare screens (6 spare screens and 6 spare mini screens)	**C350.2**	12	59,10

Face visor 710

By Univet. Acc. to **EN 166**. Lightweight face shield for liquid droplet and splash protection in medical areas.
- Clear anti-fog visor made of acetate
- Interchangeable skin-friendly terry towel lining on forehead
- Adjustable elastic head strap
- Can be worn over corrective spectacles
- Weight 97 g

Art. No.	Pack Qty.	€
APY9.1	1	39,20

Sekuroka®-wall hooks

With information sign, made of rigid plastic. W 195 x L 215 mm. Hook length 40 mm.

Information sign	Art. No.	Pack Qty.	€
Gas mask	**1091.1**	1	11,30
Apron	**1092.1**	1	11,30
Face screen	**E174.1**	1	11,30

Sekuroka®-protective masks Sanifil®

Protect against irritating, non-hazardous coarse dust.
No personal protection equipment.
Comfort, optimal fit. Weight approx. 6.2 g.

Art. No.	Pack Qty.	€
AA73.1	50	29,35

Activated carbon mask

Disposable mask with activated carbon fleece. Absorbs unpleasant odours. Free of glass fibre and skin-friendly. With adjustable aluminium nose bracket and elastic bands. Pleasant to wear with low breathing resistance. Dimensions: L 175 x W 98 mm. Individually wrapped in foil.

Art. No.	Pack Qty.	€
8401.1	10	25,75
8401.2	50	104,10

Surgical masks with SUAVEL®-Antifluid visor

By Meditrade®. Acc. to EN 14683 Model II R, 93/42EEC Class 1.
- Filtration capacity: > 99 % BFE (bacteria filtration efficiency)
- Face mask for highly contagious situations
- Splash and fluid protection for mouth, nose and eyes
- 4-layer skin friendly material with antifluid layer
- With reinforced, long nose piece
- Extra long straps for binding together
- Latex free, lint-free, non-sterile
- Colour: blue
- Disposable

Art. No.	Pack Qty.	€
CAL8.1	50	44,10

Disposable protection masks Visma®

By B. Braun.
- OP facemasks to EN 14683 type II
- Acc. to MDD 93/42/EEC class 1
- Filtration capacity ≥98 % BFE (Bacterial filtration efficiency)
- Protection for patient and wearer
- Soft textile non-woven fabric
- Glass fibre free and latex free
- 3-ply, skin friendly
- Excellent fit
- Absorbent material prevents spectacles from fogging

Visma® **ear-loop:** with rubber straps for secure fitting behind the ears
Visma® tie-on: with straps for tying

Type	Art. No.	Pack Qty.	€
Visma® ear-loop	**X458.1**	50	17,45
Visma® tie-on	**HY39.1**	50	16,70

Suavel® Protec surgical masks

By Meditrade. In accordance with EN 14683 type II.
- Three-layer disposable facemasks
- With elasticated ear loops
- Premium-quality materials ensure the masks are well tolerated by the skin
- Ultrasonic sealing: No uncomfortable seams or threads coming loose
- Reinforced nose bridge enables optimum adaptation to facial contours
- Latex- and glass fibre-free
- Colour: Green

① **Suavel® Protec**
Basic model that is extremely comfortable to wear.
Bacteria filtration efficiency (BFE) >98%.

② **Suavel® Protec Plus**
Highly effective and extremely comfortable. Extra-soft padded ear loops make the mask comfortable to wear for extended periods.
Bacteria filtration efficiency (BFE) >99%

Image	Type	Art. No.	Pack Qty.	€
①	Suavel® Protec	**EHT9.1**	50	4,85
②	Suavel® Protec Plus	**EHX0.1**	50	7,00

Medical masks

By Moldex. **All-in-one fine dust mask and medical mask**
2-way protective special masks for medical applications, emergency services, pharmaceuticals industry and foodstuffs industry.

Acc. to EN 149:2001+A1:2009 Occupational Safety Standard (EC Directive 89/686/EEC) and
EN 14683:2005 Medical Products Standard (Medical Products Directive 93/42/EEC).

Protection for the wearer
- Protects against airborne hazardous substances (FFP2 NR and FFP3 NR to Occupational Safety Standard EN 149:2001)
- Protects against chemical splashes (splash resistant type IIR to Medical Products Standard EN 14683:2005)

Environment protection
- 98 % antibacterial filtration (type II to Medical Products Standard EN 14683:2005)

All the advantages at a glance:
- Fluted filter technology: very low respiratory resistance, high absorption capacity, long life
- DuraMesh®: stable mask mesh
- ActivForm®: no nosepiece required
- Soft sealing lip and all-round strap with clip
- Packed individually
- Natural latex and PVC free
- Available in two sizes

Protection level	Size	Moldex No.	Art. No.	Pack Qty.	€
FFP2 NR D	S	3150	**XA28.1**	10	26,25
FFP2 NR D	M/L	3100	**XA29.1**	10	26,25
FFP3 NR D	S	3250	**XA30.1**	10	57,85
FFP3 NR D	M/L	3200	**XA31.1**	10	57,85

Particle filtering half masks
In accordance with European standards EN 149:2001 + A1:2009, particle filtering half masks protect the wearer **against solid and non-volatile liquid particles** and, depending on their filtration capacity, are subdivided into three classes based on OEL (Occupational Exposure Limit.

FFP1: up to 4 times OEL

FFP2: up to 10 times OEL

FFP3: up to 30 times OEL

R: Reusable
NR: Non reusable (for one work shift only)
D: Meets Dolomite Dust Test requirements. The Dolomite Dust Test is mandatory for reusable (R) masks.

smart FFP preformed masks

By Moldex. Acc. to EN 149:2001 + A1:2009

Protection against dust, aerosols and fumes

- Anatomically preformed masks - adaptable to fit different face sizes
- DuraMesh®: sturdy mask mesh keeps the mask in shape
- ActivForm®: no nosepiece required
- Klimaventil® minimises heat and moisture build-up under the mask

- With soft sealing lip
- All-round strap with clip for easy application, removal and adjustment
- Colour-coded straps: FFP1 blue, FFP2 white, FFP3 yellow

Without Klimaventil®

Protection level	Moldex No.	Art. No.	Pack Qty.	€
FFP1 NR D	2380	**EE30.1**	20	32,05
FFP2 NR D	2480	**EE31.1**	20	57,00

With Klimaventil®

Protection level	Moldex No.	Art. No.	Pack Qty.	€
FFP1 NR D	2385	**T758.1**	20	56,25
FFP2 NR D	2485	**T759.1**	20	77,20
FFP3 NR D	2505	**T760.2**	10	73,65

Fine dust masks with SoloBand®

By Moldex. Acc. to EN 149:2001 + A1:2009.

Protection against dust, aerosols and fumes

- Anatomically preformed masks - adaptable to fit different face sizes
- DuraMesh®: sturdy mask mesh keeps the mask in shape
- ActivForm®: no nosepiece required
- Klimaventil® minimises heat and moisture build-up under the mask

- FFP mask with special headband
- Easy and quick application and removal, even wearing gloves
- Soft sealing lip
- With Klimaventil®

Protection level	Moldex No.	Art. No.	Pack Qty.	€
FFP1 NR D	2395	**CT75.1**	20	59,70
FFP2 NR D	2495	**CT77.1**	20	76,90

Air and Air Plus fine dust masks

By Moldex. Acc. to EN 149:2001+A1:2009

Protection against dust, aerosols and fumes

- Anatomically preformed masks - adaptable to fit different face sizes
- DuraMesh®: sturdy mask mesh keeps the mask in shape
- ActivForm®: no nosepiece required
- Klimaventil® minimises heat and moisture build-up under the mask

- **Fluted filter technology: 260 % more filtration area**, very low respiratory resistance, high absorption capacity, long life
- All-round strap with adjustable clip for easy application, removal and adjustment
- Air fine dust masks are also available in **size S** (for small or narrow faces)
- With Klimaventil®

Air fine dust masks

Protection level	Size	Moldex No.	Art. No.	Pack Qty.	€
FFP2 NR D	S	3155	**XA32.1**	10	36,55
FFP2 NR D	M/L	3105	**XA33.1**	10	36,55
FFP3 NR D	S	3255	**XA34.1**	10	68,60
FFP3 NR D	M/L	3205	**XA35.1**	10	68,60

Air Plus fine dust masks

- Reusable FFP mask
- Soft all-round sealing lip made of a skin-friendly, washable TPE material

Protection level	Size	Moldex No.	Art. No.	Pack Qty.	€
FFP2 R D	M/L	3305	**T761.1**	5	45,15
FFP3 R D	M/L	3405	**T763.1**	5	49,30

Respiratory protection masks silv-Air

By UVEX. Acc. to EN 149:2001 + A1:2009.

- Exhalation valve reduces respiratory resistance and heat and moisture under the mask
- Integrated nose clip
- All-round comfort sealing lip
- 4-point headband attachment for comfortable and secure fit at PP32.1

Protection level	Uvex No.	Art. No.	Pack Qty.	€
FFP2 R D	7212	**XC91.1**	15	47,55
FFP3 R D	7312	**PP32.1**	5	30,75

Smart Pocket FFP masks

By Moldex. Acc. to EN 149:2001+ A1:2009.

With Klimaventil®. Protection against dust, aerosols and fumes.

- **Individually packed**
- **Ready to wear**
- Soft sealing lip
- DuraMesh®: sturdy mask mesh keeps the mask in shape
- ActivForm®: without nose piece
- Loop strap with clip for simple on, off and adjustment

Protection level	Moldex No.	Art. No.	Pack Qty.	€
FFP2 NR D	2475	**YP17.1**	10	37,05
FFP3 NR D	2575	**YP18.1**	10	62,05

Particle masks Aura™ 9300+ series

By 3M. Acc. to EN 149:2001 + A1:2009.

- Soft fleece, low weight and flat design guarantee comfortable wear; Speaking is no problem
- Integral nose piece with sweat-absorbing padding
- Can be folded flat for easy transport; individually wrapped
- Compatible with spectacles and eye protection
- Cool-Flow exhalation valves reduce breathing resistance and prevent heat accumulation under the mask
- Without natural rubber components
- **Colour-coded bands:** FFP1 yellow, FFP2 blue, FFP3 red

①-③ **Without exhalation valve**

Protection level	3M No.	Art. No.	Pack Qty.	€
FFP1 NR D	9310+	**N186.1**	20	27,90
FFP2 NR D	9320+	**N187.1**	20	52,55
FFP3 NR D	9330+	**TY71.1**	20	120,40

④-⑥ **With Cool-Flow exhalation valve**

Protection level	3M No.	Art. No.	Pack Qty.	€
FFP1 NR D	9312+	**N188.1**	10	24,85
FFP2 NR D	9322+	**N189.1**	10	36,70
FFP3 NR D	9332+	**N190.1**	10	73,00

silv-Air preformed respiratory protection masks

By UVEX. Acc. to EN 149:2001 + A1:2009.

- Optimized shape
- 4-point adjustable band for comfortable, safe fitting
- Flexible, adaptable nosepiece
- 2 extra filters with inhalation valve for lower respiratory resistance
- Larger filter surface means longer period of use
- Dolomite dust check (D)
- Soft, sealing lip all round
- Temperature control via two suction valves and one exhalation valve

Protection level	Uvex No.	Art. No.	Pack Qty.	€
FFP2 R D	7232	**XC92.1**	3	27,45
FFP3 R D	7330	**KX42.1**	3	33,35

Particle masks Aura™ 9400+

By 3M. Acc. to EN 149: 2001+A1:2009.

Specially designed to meet the requirements for **foodstuff production and processing**. Comfort features of the Aura™ 9300+ series plus:

No small parts which can become detached

- Clip-free: minimises the risk of contamination
- Inlying, adjustable nose piece: securely integrated into the mask

High recognisability

- Metal detector: integrated metallic nose piece
- Visual monitoring: blue contrast colour stands out clearly from foodstuff colours

Protection level	3M No.	Art. No.	Pack Qty.	€
FFP2 NR D	9422+	**YP12.1**	10	41,40

Two-way respiratory protection masks Aura™ 1800+ series

By 3M. Acc. to EN 149:2001 + A1:2009.
Type IIR acc. to EN 14683:2005 (Surgical Masks), acc. to 93/42/EEC, class 1.

- **Protects the user and the environment**
- Protection against particulates and aerosols
- Protection against ingress of chemical splashes, e.g. body fluid
- Suitable for lab technicians (e.g. **handling of cytostatic agents**), the pharmaceuticals industry (production of medicines), doctors, operating room nurses, emergency room staff

- Three-piece design, mask adapts to many different face shapes and sizes
- Compatible with safety spectacles
- Folded flat and individually, hygienically packed for easy portability
- Integrated nose piece with perspiration absorbent padding

Without exhalation valve

Protection level	3M No.	Art. No.	Pack Qty.	€
FFP2 NR D	1862+	**CNE4.1**	20	88,15
FFP3 NR D	1863+	**CNE5.1**	20	194,60

With special Cool-Flow exhalation valve
Specially developed, covered Cool-Flow exhalation valve reduces heat build-up in the mask and breathing resistance while protecting the environment against exhaled aerosols.

Protection level	3M No.	Art. No.	Pack Qty.	€
FFP3 NR D	1883+	**HT23.1**	8	62,90

Particle masks classical, series 8000

By 3M. Acc. to EN 149:2001 + A1:2009.
- For protection against fine dust and liquid particulates
- Dimensionally stable mask frame with flexible nose piece
- **Cool-Flow exhalation valve** reduces breathing resistance and prevents build-up of heat under the mask

Without exhalation valve

Protection level	3M No.	Art. No.	Pack Qty.	€
FFP1 NR D	8710E	**0265.1**	20	24,55
FFP2 NR D	8810	**L159.1**	20	44,05

With Cool-Flow™ exhalation valve

Protection level	3M No.	Art. No.	Pack Qty.	€
FFP1 NR D	8812	**C810.1**	10	21,00
FFP2 NR D	8822	**C811.1**	10	31,75

Particle masks comfort, series 8300

By 3M. Acc. to EN 149:2001 + A1:2009.
- For protection against fine dust and liquid particulates
- Dimensionally stable mask frame with flexible nose piece
- Soft padded fleece lining for wear comfort
- Safe tight fit even without foam insert
- **Cool-Flow exhalation valve** reduces breathing resistance and prevents build-up of heat under the mask

Without exhalation valve

Protection level	3M No.	Art. No.	Pack Qty.	€
FFP1 NR D	8310	**CNE0.1**	10	25,70
FFP2 NR D	8320	**CNE1.1**	10	23,65

With Cool-Flow exhalation valve

Protection level	3M No.	Art. No.	Pack Qty.	€
FFP1 NR D	8312	**CNE2.1**	10	27,85
FFP2 NR D	8322	**CNE3.1**	10	33,35

With Cool-Flow exhalation valve and all-round lip seal

Protection level	3M No.	Art. No.	Pack Qty.	€
FFP3 R D	8833	**EH61.1**	10	62,35

Premium particle masks

By 3M. In accordance with EN 149:2001 + A1:2009; for filtering out fine dust and liquid particles.
- **Masks have passed the Dolomite clogging test (D)** and have an all-round sealing lip, meaning they can be worn for more than one shift
- 3M™ Advanced Electret Media (AEM) is a high-performance filter material to facilitate breathing
- Consistently high filtering power
- **Cool-Flow exhalation valve** prevents heat from building up in the mask and makes breathing easier
- Reduces fogging of eye protection
- 3D preformed seal around the face makes the masks exceptionally comfortable to wear and extremely safe
- Flexible material with built-in nose profile allows the mask to adapt to any face shape
- Masks do not contain components made of latex, PVC or metal
- Held securely in place by a four-part fabric strap, which is adjustable and extra-wide
- Colour-coded according to protection factor (FFP = blue, FFP3 = red)

FFP2 R D for filtering out solid and liquid particles of noxious substances; for atmospheres with a hazardous concentration of up to 10 times the exposure limit for that hazard.

3M No.	Art. No.	Pack Qty.	€
8825+	**0266.1**	5	40,35

FFP3 R D for filtering out solid and liquid particles of toxic and highly toxic substances; for atmospheres with a hazardous concentration of up to 30 times the exposure limit for that hazard.

3M No.	Art. No.	Pack Qty.	€
8835+	**8123.1**	5	50,50

Special masks

By 3M. By 3M. Acc. to EN 149:2001 + A1:2009.

① **Odour binding masks FFP1 NR D**

Protect against fine dust up to 4-times the limit value and below the limit value **against unpleasant organic odours**.

3M No.	Art. No.	Pack Qty.	€
9913	**0936.1**	20	98,70

② **Odour binding masks FFP1 NR D with Cool-Flow exhalation valve**

Protect against fine dust up to 4-times the limit value and below the limit value **against organic odours.**

3M No.	Art. No.	Pack Qty.	€
9914	**EH58.1**	10	54,85

③ **Smog masks FFP1 NR D**

Protect against fine dust up to 4-times the limit value and below the limit value **against HF-gas and sulphur dioxide.**

3M No.	Art. No.	Pack Qty.	€
9915	**P841.1**	20	95,70

④ **Special masks FFP2 NR D with Cool-Flow exhalation valve**

Protect against fine dust up to 10-times the limit value and below the limit value **against organic odours, HF-gas and sulphur dioxide.**

3M No.	Art. No.	Pack Qty.	€
9926	**EH59.1**	10	74,20

⑤ **Ozone masks FFP2 R D with Cool-Flow exhalation valve**

Protect **against harmful fine dusts, metal fumes and ozone** up to 10-times the limit value. Ideal for welding.

3M No.	Art. No.	Pack Qty.	€
9928	**P842.1**	10	105,35

⑥ **Special masks FFP3 R D with Cool-Flow exhalation valve**

Protect against fine dust up to 30-times the limit value and below the limit value **against sour gases, HF-gas and sulphur dioxide.**

3M No.	Art. No.	Pack Qty.	€
9936	**EH60.1**	10	98,40

Particle filtering semi-masks are classified according to the filter peformance into 3 groups. These depend on the limit value of the harmful substance (up to 4 x, 10 x or 30 x value).

In accordance with norm EN 149: 2001, particle filtering semi-masks protect against solid and liquid particles. These are classified into three groups, FFP1, FFP2 and FFP3 depending on the level of the limit value.

4000 Plus-series respiratory masks

By 3M. Acc. to EN 405: 2001 + A1:2009. Ready-to-use half masks, maintenance free, comfortable and high quality. Integrated filters allow long service life. With exhalation valve, large field of vision and special head band for optimal weight distribution. Combinable with safety goggles and ear protection. Delivered in an airtight, resealable bag.

① **FFA1P2 RD**

Protects against organic gases and vapours (boiling point >65 °C) up to 1000 ppm and against solid and liquid particles up to 10x occupational exposure limit.

3M No.	Art. No.	Pack Qty.	€
4251	**9750.1**	1	26,35

① **FFABE1P3 RD**

Protects against organic and inorganic gases and vapours, as well as SO_2/HCl up to 1000 ppm and against solid and liquid particles of harmful substances up to 30x occupational exposure limit.

3M No.	Art. No.	Pack Qty.	€
4277	**C272.1**	1	34,55

① **FFA2P3 RD**

Protects against organic gases and vapours (boiling point >65 °C) up to 5000 ppm and against solid and liquid particles of harmful substances up to 30x occupational exposure limit.

3M No.	Art. No.	Pack Qty.	€
4255	**E347.1**	1	32,20

① **FFABEK1P3 RD**

Protects against organic and inorganic gases and vapours, as well as SO_2/HCl and ammonia up to 1000 ppm and against solid and liquid particles of harmful substances up to 30x occupational exposure limit.

3M No.	Art. No.	Pack Qty.	€
4279	**L162.1**	1	38,65

② **Particle prefilter for 4000 series masks**

Protects against coarse particles and extends the useful life of the mask.

3M No.	Art. No.	Pack Qty.	€
400	**AKX1.1**	10	15,00

▶ More hazard warning signs from page 714

▶ Ultrasonic bath for cleaning of respiratory mask can be found from page 1126

Alphabetical listing of harmful substances and recommended respiratory protection filters

When selecting protective breathing equipment, observe the DGUV regulations 112-190 - Use of respiratory protective devices (formerly BGR 190) !

Harmful Substance	Filter type
Acetaldehyde	AX
Acetone	AX
Acetonitril	A
Acrylaldehyde	AX
Acrylamide	A(-P3)
Acrylnitrile	A
Acrylic acid	A
Aluminium	P2
Alumimiumchloride	P2(-E)
Alumimium oxide	P2
Amine (C7-C9 aliph.)	A; B
Ammonia	K
Ammonium chloride	P2
Iso-Amyl alcohol	A
Aniline	A(-P3)
Antimony	P2
Stibine	B
Arsenous acid and its salt	P3
Arsenic trioxide (Arsenic)	P3
Arseniuretted hydrogen	B(-P3)
Artificial mineral fibres	P2
Asbestos	P2; P3
Ash	P2
Atrazine	P2
Bacteria	P2
Barium compounds soluble	P2
Cotton dust	P2
Benzene	A
Benzyl chloride	B(-P2); A(-P2)
Beryllium	P3
Biphenyl	A(-P2)
Boroxide	P2
Boric acid	(E-)P2
Bromine	B
Butane	AX
Butanol	A
Butanone	A
Butyl acetate	A
n-Butyl acrylate	A
Butyl amin	AX
Cadmium and compounds	P3
Calcium hydroxide, -sulphate, -oxide	P2
Carbon bisulphide (carbon di-sulphide)	B; A
Carbon monoxide	CO
Carbonyl chloride	B
Caustic potash	P2
Cement	P2
Chlorine	B(-P3)
Chlorbenzene	A
2-Chloro- 1,3-Butadiene	AX
Chlorinated biphenyl	(A)P2
Chloroform	AX
3-Chlorpropene	AX
Chrome(VI)-compounds	P3
Cobalt-metal, -oxide, -sulphide	P3

Harmful Substance	Filter type
Concrete (-injection guns)	P2
Cooling lubricants	P2
Copper, -vapours	P2
Cresol	A
Cyanamide	B-P2
Cyanide (e.g. potassium cyanide, etc.)	B-P3
Cyclohexane	A
Cyclohexylamine	A
Cyclopentadiene	AX
Cytostatics	P2
Diazinone	A(P2)
Dibenozodioxine, -furane	(A-)P3
Dichlorbenzene	A
1,1-Dichlorethene, 1,2 -~	AX
Dichlormethane	AX
Dichromate Na-, K-	P3
Diesel fuel	A(-P3)
Diethylamine	AX
Diethyl ether	AX
Di-isopropylether	A
Dimethoxymethane	AX
Dimethylamine	K
3,3-Dimethylbenzidine	(A-)P3
Dimethylformamiden (DMF)	A
Dimethylnitrosamine	A(-P3)
Dimethylsulfate	A(-P3)
1,4-Dioxane	A
Enzymes	P3
Ethanol	A
Ethyl acetate	A
Ethyl acrylate	A
Ethyl amine	K
Ethyl benzene	A
Ethylene glycol	A(-P29
Ethylene oxide	AX
Ethyl formiate	AX
Fluorine	B
Fluoride	P2
Fungal spores	P2
Formaldehyde	B(-P3)
Formamide	A
Formic acid	E; B
Gypsum	P2
Glass fibers	P2
Glycidole	A
Graphite	P1
Halogens	B
Halothane	AX
n-Heptane	A
Hexachlorcyclohexane	A(-P2)
n-Hexane	A
Hexane-Isomers	A
Hydrazine	K
Hydrochloric acid (hydrogen chloride)	E(-P2); B(-P2)
Hydrocyanic acid	B
Hydrogen bromide	E-P2

Harmful Substance	Filter type
Hydrogen fluoride (hydrofluoric acid)	E; B
Hydrogen peroxide	NO
Hydrogen phosphide (Phosphine)	B
Hydrogen sulphide	B
Hydrocyanic acid	B
Insekticide	A(-P3)
Iron oxide	P2
Isocyanate	B(-P3)
Isopropanol	A
Jodine	B(-P2)
Lead and compounds	P2
Lead chromate	P3
Lead vapour	P2; P3
Lime	P2
Lindane	A-P3
Magnesium oxide	P2
Magnesium vapours	P2
Maleic anhydride	A-P2
Manganese compounds	P2
Marble	P1
Mill dust	P3
Mercaptane	B
Mercury	Hg(P3)
Methanol	AX
Methoxy ethanol	A
Methyl acrylate	A
Methyl amine	K
Methyl cyclohexanol	A
Methyl ethyl ketone (MEK)	A
Methyl isobutyl ketone	A
Molybdenum compounds	P2
Naphthaline	A(-P2)
Nitric acid	E; B; NO
Nickel-metal, -oxide, -sulphide	P3
Nitrous fumes (NO, NO_2)	NO-P3
Nitrous compounds (org.)	A
N-Nitrosamine	A-P3
Octane	A
Ozone	NO
Parathion (E605)	A-P3
Perchlorethylene	A
Petrol	A
Phenol	A(-P2)
Phenylhydrazine	A(-P2)
Phosgene (Carbonylchloride)	B
Phosphorpentoxide	P2
Phosphortrichloride	B-(p2); E
Potassium hydroxide (caustic potash solution)	P2
Polychlorinated biphenyle (PCB)	(A-)P3
Pyrosulphuric dichloride	B(-P2)
Polyvinyl chloride (PVC)	P2
Pyridine	A
Quartz	P2
Quartzing fine dust	P2
Rust	P1

Harmful Substance	Filter type
Silica acid, Kieselguhr	P2
Silica glass, silica vapours	P2
Silicious carbide	P2
Silver and compounds (soluble)	P3
Sodium azide	P3
Sodium hydroxide (caustic soda)	P2
Soot	P2
Stainless steel, vapours, fine dust	P3
Stone dust (quartzing)	P2
Styrene	A
Sulphur dioxide	E
Talc	P3
Telluric, -compounds	P2
Tetrachlormethane	A
Tetrahydrofurane (THF)	A
Tin compounds (anorg.)	P2
Tin compounds (org.)	AP2
Titanium dioxide	P2
o-Toluidine	A
Toluene	A
Trichloreethylene (Tri)	A
1,2,4 Trimethylbenzene	A
Triethylamine	A; K
Turpentine oil	A
Uranium compounds	P3
Vanadium pentoxide	P3
Viruses	P3
Vinyl acetate	A
Xylene (all isomers)	A
Xylidine	A-P3
Wood dust	P2
Zinc oxide, -vapours	P2

Respiratory protection filters

By BartelsRieger Atemschutztechnik. Acc. to EN 141 (gas filters), 14387 (gas and combined filters), EN 371 (AX filters) and EN 143 (particle filters). With standard thread acc. to EN 148-1. Aluminium filter case.
Combinable with respiratory half masks and full face masks with standard thread connection.

Max. storage time of unopened gas and combination filters is 6 years after production. AX-and NO-filters are to be used once only.

Filter	Protection against:
A2	Organic gases and vapours, with boiling point above 65 °C
A2 - P3	Organic gases and vapours with boiling point above 65 °C, together with particles of toxic substances
AX	Organic gases and vapours, with boiling point under 65 °C
AXP3	Organic gases and vapours, with boiling point under 65 °C, together with particles of toxic substances
B2	Anorganic gases and vapours
B2 - P3	Anorganic gases and vapours together with particles of toxic substances
E2	Sulphur dioxide and hydrogen chloride
Hg - P3	Mercury vapours
K2	Ammonia
NO - P3	Nitrose gases, nitrogen monoxide
P3	Toxic particles
A2B2E2K2 - P3	Anorganic gases, sulphur dioxide and ammonia. Organic gases and vapours with boiling point above 65 °C as well as particles of toxic substances
A2B2E2K2Hg-P3RD	Organic and anorganic gases and vapours, sulphur dioxide, ammonia and mercury vapors together with particles of toxic and highly toxic substances

Filter type	Colour code	Weight (g)	Art. No.	Pack Qty.	€
A2	brown	180	**1270.1**	1	11,80
A2-P3	brown/white	260	**A249.1**	1	19,30
AX	brown	265	**1550.1**	1	18,15
AXP3	brown	290	**KP19.1**	1	20,55
B2	grey	200	**1271.1**	1	12,60
B2-P3	grey/white	270	**0029.1**	1	20,75
E2	yellow	250	**1277.1**	1	12,40
Hg-P3	red/white	265	**1274.1**	1	22,60
K2	green	225	**1275.1**	1	12,40
NO - P3	violet/white	370	**1224.1**	1	73,65
P3	white	115	**1225.1**	1	13,95
A2B2E2K2-P3	brown/grey/yellow/green/white	360	**0635.1**	1	23,45
A2B2E2K2Hg-P3RD	brown/grey/yellow/green/white/red	360	**KP20.1**	1	24,75

Pro2000 respiratory protection filters

Acc. to EN 141 (gas filters), EN 14387 (gas and combined filters), EN 371 (AX filters) and EN 143 (particle filters). With EN 148-1 standard thread. Suitable for respiratory half masks and full face masks with standard threads.

- Low breathing resistance
- High capacity, long life

Half masks are only suitable for filters weighing 300 g or less.

Filter type	Colour code	Weight (g)	Art. No.	Pack Qty.	€
A2	brown	190	**XK35.1**	1	13,60
A2-P3	brown/white	230	**XK36.1**	1	21,50
AX	brown	268	**XK37.1**	1	20,40
AX-P3	brown/white	310	**XK38.1**	1	24,60
B2	grey	195	**XK39.1**	1	15,40
B2-P3	grey/white	265	**XK40.1**	1	24,60
E2	yellow	305	**XK41.1**	1	21,10
reactor-Hg-P3	red/white	307	**XK42.1**	1	29,60
P3 R	white	90	**XK44.1**	1	11,30
A2B2E2K2-P3	brown/grey/yellow/green/white	370	**XK45.1**	1	29,50
A2B2E2K2-Hg-P3	brown/grey/yellow/green/red/white	370	**XK46.1**	1	29,55

Half masks 620

By BartelsRieger Atemschutztechnik. Acc. to EN 140. With EN 148-1 standard thread. **Two exhalation valves** guarantee lower exhalation resistance which is optimal for physical work.
Exchangeable components. Pull strap.
Delivery without filter, matching respiratory protection filter with standard round thread acc. to EN 148-1 as 1270.1ff, XK35.1ff please order separately.

Type	Material	Art. No.	Pack Qty.	€
① 620N	natural rubber body	**1939.1**	1	55,85
② 620S	silicone body	**9799.1**	1	70,70

Spare parts

Type	Art. No.	Pack Qty.	€
Inhalation valve discs	**N966.1**	10	6,30
Exhalation valve discs	**N967.1**	10	18,25
Straps for 1939.1	**C567.1**	1	26,85
Straps for 9799.1	**C568.1**	1	29,15

Half masks AVIVA 40

Acc. to EN 140. Single-filter half masks, combinable with respiratory protection filters with standard thread acc. to EN 148-1.
Skin-friendly thermoplastic elastomer.

- Perfect fit due to flexible inner Hybrid Reflex Seal
- User-friendly leak test function
- Easily combinable with eye protection and other PPE
- Downwards oriented respiratory filter prevents fogging of the eye protection
- Improved intelligibility due to integrated voice channel
- Comfortable and robust head harness provides better grip and is ideal for use beneath headgear
- Simple rear-fastening makes them easy to put on and take off

Delivery without filter, matching filter: 1270.1ff, XK35.1ff please order separately.

Type	Art. No.	Pack Qty.	€
Size S	**HHN8.1**	1	32,05
Size M	**HHN9.1**	1	32,05
Size L	**HHP0.1**	1	32,05

Promask full face respiratory protection masks

Acc. to EN 136. With EN 148-1 standard thread.

- Lightweight and anatomically shaped
- Special faceseal provides a comfortable and tight fit
- Clear inner mask
- Unrestricted field of vision thanks to large visor and left side fitting filter port
- With speech diaphragm
- Outstanding wearing comfort
- Easy to use

Promask Black made of halo-butyl elastomer. High chemical resistance ensures long service life.
Suitable for CBRN applications (chemical, biological, radiological, nuclear).

Promask SIL made of skin-friendly, soft yellow silicone rubber.
Delivery without filter, matching filters: 1270.1ff, XK35.1ff (please order separately).

Type	Art. No.	Pack Qty.	€
Promask Black	**XK47.1**	1	159,10
Promask SIL	**XK48.1**	1	181,70

Full view mask BRK 820

By BartelsRieger Atemschutztechnik. Acc. to EN 136, class 3. With EN 148-1 standard thread. Made of rubber and plastic, with communication membrane, replaceable polycarbonate front screen and **two exhalation valves**.
Two exhalation valves guarantee lower exhalation resistance which is optimal for physical work. 5-part strap with clamping buckles and carrying strap.
Weight approx. 610 g.
Delivery without filter, please order suitable respiratory protection filters with standard round thread acc. to EN 148-1 like 1270.1ff, XK35.1ff, separately.

Art. No.	Pack Qty.	€
1262.1	1	141,90

Spare parts for full view mask

Type	Art. No.	Pack Qty.	€
Spare screen	**0482.1**	1	26,25
Spare straps	**C566.1**	1	24,60
Inhalation valve discs	**N968.1**	10	25,95
Exhalation valve discs	**N969.1**	2	8,35

Full view mask Vision 2

Acc. to EN 136.

- Full face mask made of soft silicone rubber
- Wide field of vision (98% field of vision)
- Speech membrane
- Five-point head strap with snap buckle and padding
- Adjustable neck strap
- Full view polycarbonate visor is shock-resistant and scratchproof, also resistant to solvents, fire and heat
- Weight 630 g

Delivery without filter, matching respiratory protection filter with screw thread to EN 148-1 1270.1ff, XK35.1ff, (please order separately).

Type	Art. No.	Pack Qty.	€
Vision 2	**X541.1**	1	248,35
Spectacles holder	**X542.1**	1	75,80

① Gas filters

By 3M. Acc. to EN 141 (gas filters). The filters are fitted directly to facepiece via bayonet catch. The unique design ensures optimal weight distribution and excellent vision. Fit for respiratory masks by 3M: L167.1ff/N168.1ff/ PT45.1 f/N182.1/ HLL0.1ff.

Filter	For protection against...
A1	organic vapours with max. concentration of 1000 ppm.
A1+formaldehyde	organic vapours with max. concentration of 1000 ppm and formaldehydes.
A2	organic vapours with max. concentration of 5000 ppm.
ABE1	organic vapours, inorganic and acid gases with max. concentration of 1000 ppm.
ABEK1	organic vapours, inorganic, acid gases and ammonia derivates to max. concentration of 1000 ppm.
K1	Ammonia and derivatives with max. concentration of 1000 ppm.

Filter type	3M No.	Art. No.	Pack Qty.	€
A1	6051	**L170.1**	8	45,80
K1	6054	**L171.1**	8	53,70
A2	6055	**L172.1**	8	53,70
ABE1	6057	**L173.1**	8	51,50
A1 + formaldehyde	6075	**L174.1**	8	52,15
ABEK1	6059	**N171.1**	8	56,25

② Non-woven filter insert for protection against ingress of particles

By 3M. Acc. to EN 143 (particulate filters). Used together in combination with gas filters L170.1ff and HLK8.1f and filter holder L181.1.

Filter	For protection against...
P1R	Particles of inert substances up to 4 times the limit value.
P2R	Particles of inert substances up to 10 times (for semi-masks) / 15 times (for full masks) the limit value.
P3R	Particles of inert substances up to 30 times (for semi-masks) / 200 times (for full masks) the limit value.

Filter type	3M No.	Art. No.	Pack Qty.	€
P1R	5911	**L175.1**	30	41,40
P2R	5925	**L176.1**	20	67,70
P3R	5935	**N174.1**	20	84,85

③ Filter holders

By 3M. For combination of gas and particulate insertion filters.

3M No.	Art. No.	Pack Qty.	€
501	**L181.1**	2	5,05

Round particulate filters

By 3M. Acc. to EN 143 (particulate filters). The rounded shape enables easier assembly, as the filters can be attached in any position with the bayonet fastening. Breathing resistance was reduced by 30 %, thus enabling longer, fatigue-proof working. Fit for respiratory masks by 3M: L167.1ff/N168.1ff/PT45.1 f/N182.1/ HLL0.1ff.

Filter	For protection against...
P2R	Solid and liquid particles of harmful substances up to 10 times (for semi-masks) / 15 times (for full masks) the limit value.
P2R with active charcoal	Particles of harmful substances up to 10 times (for semi-masks) / 15 times (for full masks) the limit value, with additional protection against organic and acid gases and vapours as well as ozone below the limit value.
P3R	Solid and liquid particles of harmful substances up to 30 times (for semi-masks) / 200 times (for full masks) the limit value.
P3R with active charcoal	Particles of toxic and highly toxic substances up to 30 times (for semi-masks) / 200 times (for full masks) the limit value, with additional protection against organic and acid gases and vapours below the limit value as well as ozone up to 10 times the limit value.

Filter type	3M No.	Art. No.	Pack Qty.	€
P2R	2125	**L177.1**	20	78,40
P2R with active charcoal	2128	**L178.1**	20	90,55
P3R	2135	**L179.1**	20	93,35
P3R with active charcoal	2138	**L180.1**	20	105,90

Combined filter

By 3M. Acc. to EN 14387 (gas and combined filters). The filters can be attached directly to mask body. The new design distributes the weight evenly and offers an excellent field of view. Suitable for respiratory masks by 3M: L167.1ff/N168.1ff/PT45.1f/N182.1/HLL0.1ff.

Filter type	For protection against...
A1P3 R	Organic gases and vapours (boiling point above 65 °C) and particles
ABEK1P3 R + formaldehyde	Organic, inorganic and acidic gases, ammonia and derivatives, formaldehyde and particles
A2P3 R	Organic gases and vapours (boiling point above 65 °C) and particles
ABEK2HgP3 R* + formaldehyde	Organic vapours, inorganic and acidic gases, ammonia and derivatives, mercury vapours and formaldehyde and solid and liquid particles
AXP3 NR	Organic vapours/gases with boiling point below 65 °C; particles of toxic and extremely toxic substances up to 200 times the limit value.
AE1HgP3 R	Organic vapours, mercury vapours, chlorine gas, sulphur dioxide and acidic gases, as well as solid and liquid particles

*for full-face masks only

Filter type	3M No.	Art. No.	Pack Qty.	€
A1P3 R	6091	**HHY2.1**	4	50,35
ABEK1P3 R+formaldehyde	6092	**HHY3.1**	4	56,45
A2P3 R	6095	**HHY4.1**	4	53,70
ABEK2HgP3 R*+formaldehyde	6099	**N172.1**	4	73,65
AXP3 NR*	6098	**N173.1**	4	84,85
AE1HgP3 R*	6096	**P845.1**	4	90,30

Gas filter with indicator

By 3M. The new 3M™ 6051i and 6055i filters for protection of organic gases and vapours ensure that the filter saturation can be readily seen and read: Thanks to the innovative 3M™ technology, the filters are equipped with a consumption display.
If used properly in the corresponding environments, it displays an indicator line when the filter should be replaced.

Important warnings and instructions for use:
Whether the new **3M™ filter consumption display** is suitable as single basis for the decision for filter change management in the individual working environment, must be considered by the user prior to use!
There is a corresponding information brochure in the packaging.
To determine whether you should rely entirely on the consumption display, please also use the 3M™-ESLI software under 3M.eu/SLS.
Matches respiratory masks from 3M:
L167.1ff/N168.1ff/PT45.1f/N182.1 and HLL0.1ff.

Filter type	3M No.	Art. No.	Pack Qty.	€
A1	6051i	**HLK8.1**	8	66,30
A2	6055i	**HLK9.1**	8	78,30

Half masks series 6500 and 6500QL

By 3M. Acc. to EN 140. Light, robust and comfortable.
Strong, stable mask body with a robust but soft face seal.

- Face seal made of elastic silicone offers an optimum and comfortable fit
- Robust and adjustable headband ensures an optimum fit and high wearing comfort
- 3M™ Cool Flow™ exhalation valve reduces the breathing resistance and makes it easy to breathe
- The flat and compact design allows a wide field of vision and makes for easy cleaning of the smooth surface
- The design of the respiratory valve passes heat and moisture downwards and reduces fogging of the goggles
- Bayonet click system, compatible with 3M respiratory protection filter for numerous applications
- The 6500QL versions with "quick release" mechanism allow fast and simple removal of the mask during work breaks
- The straps and exhalation valve are available as spare parts

Delivery without filter, matching filter: L170.1ff, L177.1, HLK8.1, HHY2.1f and TE83.1f please order separately.

Type	3M No.	Art. No.	Pack Qty.	€
Size S	6501	**HLL0.1**	1	28,85
Size M	6502	**HLL1.1**	1	28,85
Size L	6503	**HLL2.1**	1	28,85
Size S	6501QL	**HLL3.1**	1	31,65
Size M	6502QL	**HLL4.1**	1	31,65
Size L	6503QL	**HLL5.1**	1	31,65

Particle filter in plastic housing

By 3M. Acc. to EN 143. Protects against solid and liquid particles in a sturdy plastic housing. Suitable for demanding applications. P3 R with activated charcoal gives additional protection against organic and acidic gases and vapours.
Fits the following respiratory masks: L167.1ff, N168.1ff, N182.1ff, PT45.1ff and HLL0.1ff.

Filter type	3M No.	Art. No.	Pack Qty.	€
P3 R	6035	**TE83.1**	20	100,55
P3 R with activated charcoal	6038	**TE84.1**	8	61,20

Half masks 6000 series

By 3M. Acc. to EN 140-1998.
- Made of elastomer material
- Easy to handle and rugged
- Extremely light (82 g) for fatigue-free working
- Low maintenance (exhalation/inhalation valves are non-interchangeable)
- Reduced breathing resistance through double filter system
- Good weight distribution
- Easy filter assembly using bayonet connection

Delivery without filter, matching respiratory protection filter: L170.1 ff/ L177.1 ff/HHY2.1 ff/HLK8.1 ff/TE83.1 ff please order separately.

Size	3M No.	Art. No.	Pack Qty.	€
S	6100	**L167.1**	1	20,40
M	6200	**L168.1**	1	20,40
L	6300	**L169.1**	1	20,40

Half masks 7500 series

By 3M. Acc. to EN 140-2001.
- Made of skin friendly//kind to the skin silicone rubber
- Rugged and highly comfortable
- With drop-down strap for quick up and down adjustment and for wearing the mask around the neck during breaks
- Reduced breathing resistance through Cool-Flow™ exhalation valve and double filter system
- Good weight distribution
- Easy filter assembly using bayonet connection
- Exchangeable components.

Delivery without filter, matching respiratory protection filter:
Art. No. L170.1 ff/L177.1 ff/L175.1 ff/HHY2.1 ff/HLK8.1 ff/TE83.1 ff.

Size	3M No.	Art. No.	Pack Qty.	€
S	7501	**PT45.1**	1	36,15
M	7502	**Y393.1**	1	35,70
L	7503	**Y394.1**	1	35,70

Full face masks 6000 series

By 3M. EN 136 compliant.
Class I: full face masks for low-load applications.
- Mask body made of skin-friendly silicone
- Scratchproof, large eyepiece
- Compact design and extremely lightweight (400 g)
- Low breathing resistance due to the double filter system
- Easy to use
- Filter assembly by bayonet connection

Delivery without filter, fitting respiratory protection filter:
Art. No. L170.1 ff/L177.1 ff/HHY2.1 ff/HLK8.1 ff/TE83.1 ff.

Type	3M No.	Art. No.	Pack Qty.	€
Full face mask, small	6700S	**N168.1**	1	124,70
Full face mask, medium	6800M	**N169.1**	1	124,70
Full face mask, large	6900L	**N170.1**	1	124,70
Spectacles holder with case	-	**P848.1**	1	80,65

Spare parts:

Type	3M No.	Art. No.	Pack Qty.	€
Inhalation valves	6893	**X621.1**	10	26,75
Exhalation valves	6889	**X620.1**	10	31,30
Head straps	6897	**X622.1**	1	24,20

Full face respiratory protection mask

By 3M. Acc. to EN 136.
Class II: full face masks for normal applications.

- Mask body made of skin friendly silicone
- Wide field of vision
- Scratch and impact resistant lens
- Lip seal ensures excellent fit
- With speech diaphragm
- Exchangeable components.
- Reduced breathing resistance through double filter system
- Easy filter assembly using bayonet connection

Delivery without filters, matching respiratory protection filters:
L170.1 ff/L177.1 ff/L175.1 ff/HHY2.1 ff/HLK8.1ff/TE83.1 ff.

Type	3M No.	Art. No.	Pack Qty.	€
Full face mask	7907S830	**N182.1**	1	256,95
Spectacles holder	-	**P849.1**	1	169,85

Spare parts for full face respiratory protection mask

Type	Art. No.	Pack Qty.	€
Inhalation valves	**N184.1**	10	26,90
Exhalation valves	**N185.1**	10	33,45
Head straps	**X623.1**	1	84,55

NEW

A2P3 starter kit for the 3M™ Jupiter™ blower unit

By 3M. Battery-powered blower unit. Air-purifying respirator. Integrated electronics constantly monitor the battery's state of charge and the air flow to the head part.

- Flat design – ideal where working space is limited
- Simple cleaning and decontamination of the smooth surfaces on blowers, belts and filters
- Extremely comfortable to wear thanks to the ergonomic shape of the blower and comfortable belt
- Visual and audible alarm when the air flow or battery power is insufficient
- Device calibration is simple and can be performed by the user themselves
- Low-maintenance
- Rechargeable eight-hour battery (nickel-metal hydride) ensures a long service life with a low net weight
- Combination filters offer protection against organic gases and vapours and against particles
- The filter covers protect the filters against coarse dirt and mechanical influences
- The prefilters extend the service life of the particulate filters

Areas of application: chemical and pharmaceutical industries, metal machining and metalworking, demolition and renovation, application of paint and varnish, agriculture and many more.

Delivery incl. Jupiter™ blower unit, comfortable belt and fastening clip, filter seals, air flow indicator and calibration tubes, 2 x A2P combination filters to separate organic gases/vapours and particles, 2 x prefilters, air hose (BT-30) with adjustable length, rechargeable eight-hour battery (NiMH) and an electronic charger.

Only for use in combination with a 3M™ head part for the Jupiter™ blower unit. Please order head part separately (KCK2.1 ff.).

3M No.	Art. No.	Pack Qty. (set)	€
JPRTU1	**KCH6.1**	1	1287,85

NEW

Respiratory filter for the 3M™ Jupiter™ blower unit

By 3M. Particulate and combination filter with filter cover, without prefilter.

Filter type	For protection against:
P3	Solid and non-volatile liquid particles
A2-P	Organic gases and vapours (boiling point above 65 °C) and particles
ABE-P	Organic, inorganic and acidic gases and vapours, as well as particles
ABEK-P3	Organic, inorganic and acidic gases and vapours, ammonia, as well as particles
Prefilter	Coarse contamination, extends the service life of the particulate filters

Filter type	3M No.	Art. No.	Pack Qty.	€
P3	4500025P	**KCH7.1**	24	467,65
A2-P	4530025P	**KCH8.1**	12	407,45
ABE-P	4561825P	**KCH9.1**	12	525,70
ABEK-P3	4530925P	**KCK0.1**	12	611,70
Prefilter	4610002P	**KCK1.1**	24	21,45

NEW

Lightweight hoods for the 3M™ Jupiter™ blower unit

By 3M. Comfortable textile universal material. Protects the face and eyes in accordance with EN 166 (protection against droplets or splashes and minor impact).

① **3M™ S133 disposable lightweight hood**
Covers the head and face.

② **3M™ S333G disposable lightweight hood**
Robust and extremely soft. Anti-static and low-lint.
Covers the head and face.

③ **3M™ Premium S655 reusable lightweight hood**
With flexible head suspension. Covers the head, face, neck and shoulders.

③ **3M™ Premium S60510 replacement hood**
Spare part for the 3M™ Premium S655 reusable lightweight hood.
Covers the head, neck and shoulders, without head suspension.

Image	Type	Size	Art. No.	Pack Qty.	€
①	S133S	S	**KCK2.1**	1	57,55
②	S333SG	S	**KCK3.1**	1	105,70
②	S333LG	L	**KCK4.1**	1	105,70
③	Premium S655	One size fits all	**KCK5.1**	1	103,20
③	S60510	One size fits all	**KCK6.1**	10	47,55

Dräger PARAT® rescue hoods

By Dräger. Acc. to EN 403:2004 (fire rescue hoods).
Protects eyes and respiratory passages.

- High-performance respiratory filter
- Easy to put on and safe to wear, allows a quick escape
- Wide field of vision for better orientation when escaping from a fire
- Also suitable for spectacle wearers and people with beards.
- Replacing the filter extends the shelf life by a further 8 years

Technical specifications:

Type	PARAT® 5530	PARAT® 7530
Filter performance	CO-P2	ABEK-CO-P3
Usable life	Min. 15 minutes	
Shelf life	16 years with replacement of filter after 8 years	
Weight (g)	720	830
Dimensions W x D x H (mm)	143 x 241 x 107	156 x 249 x 115

Delivery incl. hard case, dust and water spray protected box (IP 54) with protective seal.

Dräger PARAT® 5530 fire rescue hood
Protects the wearer against toxic conflagration gases, vapours and particles for at least 15 minutes while escaping from a fire. The filter is also approved for use against H2S (2.500 ppm) according to DIN 58647-7.

Type	Art. No.	Pack Qty.	€
Fire rescue hood PARAT® 5530	**CHK3.1**	1	250,50
Replacement filter for PARAT® 5530	**CHK4.1**	1	88,05
Wall mount for PARAT® hard case	**CHK5.1**	1	29,50

Dräger PARAT® 7530 fire and industry rescue hood
Protects the wearer against toxic industrial gases, vapours, particles and conflagration gases for at least 15 minutes while escaping from a fire. The filter is also approved for use with gas and combined filters according to DIN 58647-7 and EN 14387:2004.

Type	Art. No.	Pack Qty.	€
Fire and industry rescue hood PARAT® 7530	**CHK6.1**	1	263,40
Replacement filter for PARAT® 7530	**CHK7.1**	1	106,00
Wall mount for PARAT® hard case	**CHK5.1**	1	29,50

Replacement filter for Dräger PARAT® rescue hoods

Spare filter with replacement parts set extends the useful life of the rescue hood by a further 6 years after replacement.
Usage time: at least 15 min during escape to safety.

Filter type	Matching rescue hood	Art. No.	Pack Qty.	€
CO-P2	Dräger PARAT® C	**AH73.1**	1	90,25
ABEK P15	Dräger PARAT® 4530	**E198.1**	1	103,00

Sekuroka®-safety boxes

Made of breakproof plastic. With rounded edges. Ideal for storing protective products (spectacles, ear plugs, etc.) at work place. Protects equipment against dust, dirt and splashing. Boxes are affixed by glueing or screwing (incl. screws and dowels).With 5 label cards. Boxes have a neutral design and can be labelled with warning signs (NK21.1ff) .

Colour	W x D x H (mm)	Art. No.	Pack Qty.	€
blue	236 x 120 x 120	**N426.1**	1	12,40
transparent	236 x 120 x 120	**N427.1**	1	14,55
blue	236 x 125 x 225	**N428.1**	1	27,45
transparent	236 x 125 x 225	**N429.1**	1	32,20
blue	236 x 200 x 315	**N430.1**	1	36,05
transparent	236 x 200 x 315	**CHL1.1**	1	41,40

It is the manager's responsibility to ensure that respiratory protection equipment is maintained and checked in accordance with the instruction manual from the manufacturer. Should such recommendations not be available, the following table should be used as a guide DGUV regulations 112-190 (Maintenance and checking of respiratory protection (full masks, semi masks, quarter masks and mouth pieces)

Work to be carried out (Comments)	Deadlines					
	prior to releasing for use	prior to use	after use*)	half-yearly	every 2 years	every 6 years
Cleaning and disinfecting			x	x[2]		
Function and impermeability test	x			x[2]	x	
Valve disk change					x	x[1]
Communication membrane change						x
Gasket ring change					x	x[1]
Screw thread check (with Lehrdorn) if applicable						x**
Control by user		x				

After parts which may influence impermeability have been changed, a full check-over is essential.

1 for reserve equipment;
2 only random checks for equipment in airproof packaging.
*) Respiratory masks which are used regularly, should be cleaned and disinfected as often as required.
They should be cleaned as soon as possible after each application,, as perspiration or saliva, which dry on the valves, can interfere with their flawlessness.The equipment must be disinfected before it is handed over to another user.
**) After the first 6-year deadline, the equipment should be checked yearly for possible wear and tear.

Respiratory protection accessories

Respiratory protection storage box

By 3M. Ideal for storing 3M semi masks. Made of PE with labelling area. Height 120 mm, ∅ 210 mm.

Art. No.	Pack Qty.	€
P846.1	1	7,35

Sekuroka®-wall cabinet

Mobile, made of breakproof plastic with transparent door for safe and dust-free storage of respiratory protection products. Specially developed for light respiratory protection devices used at different locations. The robust, easy to assemble wall attachment allows for quick removal and easy transport of cupboard. Ideal for 1 full-view mask and 2 filters or 2 semi masks and 4 filters. Supplied with 2 shelves. Dimensions: W 270 x H 410 x D 140 mm. Weight approx. 1.6 kg.

Art. No.	Pack Qty.	€
H994.1	1	74,15

Sekuroka®-wall container

Ideal for gas mask and filters or for other personal protection equipment. Made of plastic, with transparent, removable snap-on lid. Dimensions: W 340 x H 430 x D 150 mm. Weight 1.2 kg.

Art. No.	Pack Qty.	€
2953.1	1	105,35

SecuCase

Carry and storage case for personal protective equipment.

Made of **PP**. Can be customised, handy for changing places of use or assembly work.

- Clean and safe storage of equipment
- Protective apparatus can be removed quickly and easily
- Including four safety symbol labels (wear eye protection, ear protection, mask and gloves)

Delivery without contents.

Size	W x D x H (mm)	Art. No.	Pack Qty.	€
Mini	260 x 74 x 210	**ALA6.1**	1	14,55
Midi	340 x 84 x 280	**ALA7.1**	1	21,45

Bag for full-face masks

By 3M. Bag for carrying and storage of full face masks. Dimensions: H x W x D: 280 x 320 x 190 mm.

3M No.	Art. No.	Pack Qty.	€
107	**AKX0.1**	1	48,95

Cleaning wipes for respiratory masks

By 3M. For quick and easy cleaning of respiratory masks. Impregnated with cleaning solution, individually packed. Dimensions: L 198 x W 92 mm.

3M No.	Art. No.	Pack Qty.	€
105	**TK43.1**	40	17,50

Ear protection

Work Safety Act for the prevention of noise and vibration (March 2007) instruct the employer to provide the employee with suitable ear protection when exposure to noise exceeds **80 dB(A)**.
Individual ear protection must be used when exposure to noise has reached or exceeds **85 dB(A)**.

Attenuation values of ear protection products:

Art. No.	H-value	M-value	L-value	SNR-value	Page
Ear plugs:					
0245.1	30	24	22	28	610
C493.1	32	29	29	33	611
EH62.1 f.	37	31	27	34	611
EH64.1 f.	27	22	20	25	613
HE94.1	27	24	22	27	614
HE97.2 f.	36	34	34	37	612
HE99.2 f.	33	30	29	33	612
K130.1	30	24	22	28	613
KA60.1	35	32	30	35	611
KN21.1 f.	36	35	34	37	611
KP16.1	34	32	31	35	612
KP17.1	26	18	12	22	612
P907.1	34	32	31	35	614
T210.1	37	34	31	37	612
TE80.1 f.	33	28	25	32	613
TE82.1	25	17	10	20	613
X556.1/Y868.1	32	29	29	33	611
XA38.2 f.	32	28	26	32	613
XC88.1 f.	28	23	19	26	611
Y861.1 f.	34	32	31	35	612
Ear plugs on band:					
1029.1					614
under the chin behind the head over the head	30 28 29	23 21 22	22 18 18	27 25 26	
A344.1					614
under the chin behind the head	27 25	19 17	17 15	23 21	
HE95.1	26	19	18	24	614
XA36.1	30	23	22	27	614
XC97.1	26	18	17	23	614
Ear muffs:					
AKX4.1	32	25	15	27	617
CT07.1	24	22	20	25	615
CT19.1	32	28	21	30	615
CT24.1	30	29	25	30	615
CT25.1	25	24	19	26	615
NH12.1	32	23	15	26	617
NH13.1	34	28	19	30	617
NH19.1	32	25	15	27	616
NH20.1	34	29	20	31	616
NH61.1	31	29	21	31	616
HLN6.1	32	24	16	27	616
HLN7.1	34	29	20	31	616
HLN8.1	35	30	25	33	616
HLN9.1	36	30	22	33	616

L-value (dB):	Sound attenuation in low frequency range approx. 63-500 Hz.
M-value (dB):	Sound attenuation in mid frequency range approx. 500-4000 Hz.
H-value (dB):	Sound attenuation in high frequency range approx. 4000-8000 Hz.
SNR-value (dB):	Average sound attenuation over total frequency range (63 to 8000 Hz).

dB (A)	Type of noise	
180	Deadly noise level	**Painful**
150	Jet engine test	
130	Impace pile driver, pneumatic riveting and drilling hammer	**Harmful**
120	Propeller engine, circular metal saw, hooter	
110	Drill, pneumatic hammer, discotheque, exxentric press, sawmill	
100	Metal processing work, compressor, pressroom and stamping	
90	Belt grinders, milling seaming machines, welding shops, heavy goods vehicles	
80	Heavy traffic, vacuum cleaner, lawnmower, EDP printer	**Annoying**
70	Cars, shouting, kitchen mixers	
60	Normal radio music, normal conversation	
50	Running tap water, typewriter	**Safe**
40	Quiet radio music	
30	Ticking of alarm clock, whispering	
20	Breathing, fine rain	
10	Rustling leaft	

Ear muffs or ear plugs?

It is not possible to say that the one is better than the other, but it is rather a question of what is more suitable under individual working conditions.
Ear plugs are usually used for protection against long-term noise (weight!), ear muffs for short-term noise and both of them together for protection against extreme short-term noise.
Past experience has shown, however, that comfort (i.e. handling) and hygiene have always played a major role when selecting the correct protection.
In order to encourage the wearing of ear protection, we recommend giving the employees the possibility to choose.

The ear protection is insulated to max. 20-40 dB(A), depending on frequency, material and anatomy. To achieve a higher level of insulation, the ear protection plugs and capsules can be combined. Ear protection plugs can be used for noise levels of up to 115 dB(A) (refer to manufacturer's information). Combinations of plugs and capsules are suitable for higher noise levels.

Ear plugs E.A.R.® Classic II

By 3M. Acc. to EN 352-2. Comfortable fit, high noise attenuation, washable. SNR-value: 28 dB.

Art. No.	Pack Qty. (pair)	€
0245.1	5	3,80

Max®-disposable ear plugs

Acc to EN 352-2. Made of polyurethane.

- Bell-shaped for very comfortable fit and high protection
- Optimised shape for simple insertion and to prevent slipping out
- Soft, soil-resisting outer shell prevents dirt deposits and guarantees improved hygiene
- Packed in pairs
- High insulating values, SNR value: 37 dB

Type	Art. No.	Pack Qty. (pair)	€
without security tear band	**KN21.1**	200	44,05
with security tear band	**KN22.1**	100	52,50

No-Touch disposable ear plugs

By 3M. Acc. to EN 352-2:2002. Made of slowly expanding foam. Pre-formed, soft plugs can be used immediately.

- No rolling up into a ball necessary! With band, practical and hygienic
- Can be combined with other personal protective equipment
- Come packed in pairs
- SNR-value: 35 dB

Art. No.	Pack Qty. (pair)	€
KA60.1	100	90,25

Disposable ear plugs

By 3M. Acc. to EN 352-2. Made of PU-foam, antiallergic, toxicologically tested and medically harmless for use in industry. Very soft and flexible for an extremely comfortable fit.The special shape enables plugs to adapt optimally to the auditory canal. The low pressure on the ears makes them particularly suitable for people with narrow auditory canals. SNR: 34 dB.

Type	3M No.	Art. No.	Pack Qty. (pair)	€
without safety band	1120	**EH62.1**	200	35,45
with safety band	1130	**EH63.1**	100	74,75

Disposable ear plugs

Acc. to EN 352-2. Made of insulating, dermatologically tested PU foam rubber (does not contain PVC). Conic shape for optimal fit in the ear canal. Nominal size 5-12 mm. Weight approx. 0.5 g. SNR-value 33 dB.

① Disposable ear plugs 303L in hand dispenser

Art. No.	Pack Qty. (pair)	€
X556.1	100	24,65

② Disposable ear plugs 304L with safety strap

Art. No.	Pack Qty. (pair)	€
C493.1	20	12,40

Ear plugs Bilsom 303L, refill pack for dispenser for wall attachment

Art. No.	Pack Qty. (pair)	€
Y868.1	200	40,35

Ear plugs xact-fit

By UVEX. Acc. to EN 352-2. These innovative plugs adapt perfectly to the ears. The design for the left and right ear is modelled on the anatomy of the ear canal. This noticeably reduces the pressure in the ear canal, even after long wearing.

- Convenient and easy to use
- Oval shape ensures optimal wearing comfort
- Foam plugs are interchangeable for maximum economy and hygiene
- Free of PVC, SNR: 26 dB

Type	Art. No.	Pack Qty. (pair)	€
Ear plugs, with cord	**XC88.1**	50	109,65
Spare plugs	**XC89.1**	250	77,75

Disposable ear plugs

By Moldex. Acc. to EN 352-2. Comfortable soft PU-foam plugs.
Ideal for work which requires constant ear protection. Soft, easy to insert.
Plugs, wall attachment and packaging are completely PVC-free.
Bright colours increase wearing acceptance.
2 models available:

① **Spark plugs:**
- Anatomically pre-formed
- SNR-value: 35 dB(A)

② **MelLows:**
- For better perception of surroundings and better communication
- Especially suitable for lower noise exposure
- SNR-value: 22 dB(A)

Delivery incl. 250 pairs in disposable dispenser station for hanging in wall attachment (please order separately), makes ear protection quickly and hygienically available at work site.

Type	Moldex No.	Art. No.	Pack Qty.	€
① Spark plugs	7825	**KP16.1**	500	54,85
② MelLows	7625	**KP17.1**	500	52,15
Wall holder incl. fixing hardware	7060	**KP18.1**	1	7,50

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Disposable ear plugs LASER LITE®

Acc. to EN 352-2. Two-tone plug made of PU. Extremely soft foam.
Plugs adapt automatically to the auditory canal.
Cause no irritation or allergies. SNR-value: 35 dB.

Packed in pairs in a practical box
(not suitable for ear plug dispenser Y862.1)

Art. No.	Pack Qty. (pair)	€
Y861.1	200	42,95

Ear plug dispenser

Made of hard, anodized aluminium. Very robust, suitable for continuous stress. Easy removal of plug by turning the crank.
Can be filled with ear plugs Y861.2 (500 pairs) and Y868.1 (200 pairs).

Delivery incl. fittings, without content.
500 pairs in the refill pack, please order separately.

Type	Art. No.	Pack Qty.	€
Dispenser	**Y862.1**	1	188,15
Refill pack for dispenser Y862.1	**Y861.2**	1	85,90

X-fit and Com4-fit ear plugs

By UVEX. Acc. to EN 352-2.
Ergonomically designed **disposable ear plugs** for mobile long-term protection. Made of allergy-free PU-foam with a synthetic elastomer.
- Pleasantly soft
- "X"-embossing for comfortable fit and reduction of pressure in the auditory canal
- Closed surface prevents impurities from entering

① **X-fit:**
- For larger auditory canals
- For high and continuous noise exposure
- Very high insulating value, SNR-value 37 dB

② **Com4-fit:**
- For smaller auditory canals
- For lower noise exposure
- SNR-value 33 dB

Type	Art. No.	Pack Qty. (pair)	€
X-fit, 6 pairs in the mini-box	**HE97.2**	84	15,95
X-fit, loose on refill box for dispenser HH01.1	**HE98.2**	300	42,90
Com4-fit, 6 pairs in the mini-box	**HE99.2**	84	15,95
Com4-fit, loose on refill box for dispenser HH01.1	**HH00.2**	300	42,90

Ear protection dispenser

By UVEX. Robust, easy-to-use dispensers
- Automatic dispensing guarantees economical removal, plugs fall out individually when turned
- Simple and hygienic refilling
- Max. filling amount 600 pairs
- Can be filled with X-fit, Com4-fit and all standard ear plugs
- Suitable for wall assembly

Delivery incl. mounting material for wall assembly, without ear plugs.

Art. No.	Pack Qty.	€
HH01.1	1	57,95

Disposable ear plugs

By 3M. Made of polyurethane, acc. to EN 352-2. Cone shaped, soft and kind to the skin. Optimal fit in the ear canal. Two pairs of plugs with **aluminium storage box.** SNR-value: 37 dB.

Art. No.	Pack Qty. (set)	€
T210.1	1	8,00

ULTRAFIT ear plugs

By 3M. Acc. to EN 352-2. Pre-moulded ear plugs made of thermoplastic elastomer. Thanks to their flat design, they are a perfect fit for any ear canal. To wash the ear plugs use warm soapy water. **Reusable.** Suitable for sensitive working areas in the foodstuffs and chemicals industries. SNR value: 32 dB.

Type	3M No.	Art. No.	Pack Qty. (pair)	€
① with safety cord	UF01000	**TE80.1**	50	116,10
② with storage box	UF01020	**TE81.1**	50	117,20

ClearE.A.R. 20 ear plugs

By 3M. Acc. to EN 352-2. Pre-moulded ear plugs. Made of soft polymer, transparent. Almost invisible when worn. Ideal fit thanks to flat shape. Short stem for easy insertion and removal. Washable and **reusable**. SNR value: 20 dB.

Delivery incl. storage box.

3M No.	Art. No.	Pack Qty. (pair)	€
UF01021	**TE82.1**	12	52,15

E.A.R. Express™-ear plugs

By 3M. Acc. to EN 352-2. Extremly comfortable fit. The foam rubber material expands slowly and insulates completely without any excessive pressure. With patented grip for easy and hygienic insertion and removal of plugs as there is no contact between fingers and plug surface. **Plugs are reusable** and easy to clean. Bright colours encourage wear. Come in handy wrapping which can be resealed daily. SNR-value: 28 dB.

Art. No.	Pack Qty. (pair)	€
K130.1	20	18,75

Reusable ear plugs

By 3M. Acc. to EN 352-2. Lamellar design for improved fit in the auditory canal and increased comfort. The soft material (monoprene) also adds to the comfort. With special recessed grips for better handling. Storage box with a belt clip for clean and safe storage during rest periods and after work. SNR-value: 25 dB.

Type	3M No.	Art. No.	Pack Qty. (pair)	€
without safety band	1261	**EH64.1**	50	68,75
with safety band	1271	**EH65.1**	50	89,25

Spark Plugs® Detect ear plugs

By Moldex. In acc. with EN 352-2. **Detectable** disposable ear protection plugs made of soft PU foam. The plug and cord both contain metal and therefore are fully detectable. Suitable for use in foodstuffs production. Available in hygienic dispenser station or with cord. SNR value: 32 dB.

Type	Moldex No.	Art. No.	Pack Qty.	€
Spark Plugs® Detect dispenser station	7859	**XA38.2**	1000	127,95
Wall holder incl. fixing hardware	7060	**KP18.1**	1	7,50

Ear protection

Ear protection plugs whisper+detec

By UVEX. Acc. to EN 352-2. Soft, able to detect **reusable ear plugs** with excellent fit inside ear channel. Especially ideal in a dirty working environment. Smooth surface prevents particles, which could cause injuries, from collecting.

- For medium noise range
- Plugs are blue for better visibility on the product line
- Detectable
- Hygienic box for clean storage
- Are always within reach
- Fast and easy to use
- Washable
- Easy to communicate
- Suitable for the food sector
- SNR-value: 27 dB

Art. No.	Pack Qty. (pair)	€
HE94.1	50	80,65

LASER-TRAK ear plugs

Sound absorbing, **able to detect**. Acc. to EN 352-2. Adapts to auditory canal and cause no irritation or allergies. Also suitable in the food industry. SNR-value: 35 dB.

Art. No.	Pack Qty. (pair)	€
P907.1	100	87,10

Clamp ear protectors E.A.R.Caps™

By 3M. Acc. to EN 352-2. With soft polyurethane plugs. Ideal for workers with changing noise exposure and for visitors. Comfortable with simple individual adaption. Can also be worn around the neck.
Weight approx. 7.6 g. SNR-value: 23 dB.

Type	Art. No.	Pack Qty.	€
Clamp ear protectors E.A.R.Caps™	**A344.1**	1	7,90
Spare plugs for clamp ear protector	**P784.1**	20	22,90

Clamp ear protectors WaveBand® 2K

By Moldex. Acc. to EN 352-2.

- Ear plug band with anatomically adapted contour
- Freedom of movement without contact noise
- Two-component design with grip points
- Comfortable, low contact pressure (only 1.2 N)
- Feather light: only 12 g
- SNR value: 27 dB

Type	Moldex No.	Art. No.	Pack Qty.	€
Clamp ear protector WaveBand® 2K	6800	**XA36.1**	1	8,20
Replacement plugWaveBand® 2K	6825	**XA37.1**	100	51,15

Clamp ear protectors x-cap / x-fold

By UVEX. Acc. to EN 352-2. PU ear protection plugs.
The lightweight alternative to ear muffs. Ideal ear protection for visitors and on-the-go use.

- For temporary noise protection
- Specially designed earpieces, excellent shape retention
- Readily available, convenient and easy to use
- Comfortable fit, easy communication
- Very light, approx. 8 g
- Colour: grey or blue

x-cap: SNR value: 24 dB.

x-fold: Foldable, i.e. handy for on-the-go use. SNR value: 23 dB.

Type	Art. No.	Pack Qty.	€
Clamp ear protector x-cap	**HE95.1**	1	7,20
Clamp ear protector x-fold	**XC97.1**	1	8,55
Replacement ear plugs for x-cap / x-fold	**HE96.1**	10	9,55

Clamp ear protector E.A.R. Reflex™

By 3M. Acc. to EN 352-2. Features ergonomically designed tilting band for multiple wearing positions. Can be worn together with other types of safety equipment. Infinitely adjustable. Can be worn under the chin, behind the neck or over the head. Extremely soft ear plugs are comfortable to wear and provide excellent attenuation. SNR-value: 26 dB.

Type	Art. No.	Pack Qty.	€
Clamp ear protector E.A.R. Reflex™	**1029.1**	1	9,90
Spare plugs for clamp ear protector	**LE06.1**	50	80,45

Ear protection

Thunder T1 ear muffs

Acc. to EN 352-1. Shape-retaining headband which adapts quickly to all head shapes using a quick-click adjustment system. Soft sealing cushions. Dielectric design for working in areas with possible electrical influence. Weight 186 g, pressure force 8.8 N. SNR-value: 30 dB.

Type	Art. No.	Pack Qty.	€
Ear muffs Thunder T1	**CT19.1**	1	21,45
Hygiene kit (spare cushions)	**CT20.1**	1	7,75

Clarity C1 ear muffs

Acc. to EN 352-1. Blocks out noise while allowing voices, signals and alarms to be heard with minimal distortion. Without electronic components. Two-part headband with well-ventilated interior, soft sealing cushions. Weight 194 g. Pressure force: 10 N. SNR-value: 25 dB.

Type	Art. No.	Pack Qty.	€
Ear muffs Clarity C1	**CT07.1**	1	24,70
Hygiene kit (spare cushions)	**X682.1**	1	9,65

Clarity C2 ear muffs

Acc. to EN 352-1. The Sound Management Technology provides uniform attenuation while allowing voices and signals to be heard with minimal distortion. 3-position universal headband for comfortable fit in the following wearing positions: over the head, behind the neck or under the chin. Can therefore be combined with other safety equipment. Dielectric design. Two-piece headband with well-ventilated interior. Weight 208 g. Pressure force: 11.6 N. SNR-value: 30 dB.

Type	Art. No.	Pack Qty.	€
Clarity C2 ear muffs	**CT24.1**	1	26,85
Hygiene kit (spare cushions, headband padding)	**X680.1**	1	12,85

Clarity C1F ear muffs, foldable

Acc. to EN 352-1. The Sound Management Technology provides uniform attenuation while allowing voices and signals to be heard with minimal distortion. Can be folded together to protect the earpieces against dust and dampness. Quick-click adjustment enables headband to adapt quickly to all head shapes and sizes. Dielectric design. Two-part headband with well-ventilated interior, soft sealing cushions. Weight 194 g. Pressure force: 11 N. SNR-value: 26 dB.

Type	Art. No.	Pack Qty.	€
Ear muffs Clarity C1F, foldable	**CT25.1**	1	26,85
Hygiene kit (spare cushions)	**X682.1**	1	9,65

Ear muffs 3M™ Peltor™ X-series

By 3M. Acc. to EN 352-1.
- Modern and attractive slim design
- Double bracket design for better balance and greater comfort
- Low weight
- Soft, wide sealing rings reduce the pressure on the ears and enhance wearing comfort
- Innovative new attenuating cushions and intermediate rings ensure improved attenuation
- Innovative, patented foam in the sealing rings for effective protection
- The cups offer abundant space inside to minimize heat and moisture
- The sealing rings and inserts are easy to replace, for easy cleaning of the cups
- The headband of the ear muffs are dielectric (electrically insulated). The metal parts of the headband are coated with a conductive material, which means that the hearing protection van also be used with a low electrical voltage (less than 440 V AC)

① **Ear muffs 3M Peltor X1**
For protection against light industry noise, lawn mowing, power drilling, etc.
SNR 27 dB, weight 184 g.

② **Ear muffs 3M Peltor X2**
For protection against moderate to high industrial noise levels including roadworks, construction etc.
SNR 31 dB, weight 220 g.

③ **Ear muffs 3M Peltor X3**
For protection against noise in the forestry industry, heavy engineering, at airports, etc.
SNR 33 dB, weight 245 g.

④ **Ear muffs 3M Peltor X4**
With slim cups For use against high noise levels in a wide range of industries.
SNR 33 dB, weight 234 g.

Type	3M No.	Art. No.	Pack Qty.	€
3M™ Peltor™ X1	X1A	**HLN6.1**	1	28,40
3M™ Peltor™ X2	X2A	**HLN7.1**	1	33,30
3M™ Peltor™ X3	X3A	**HLN8.1**	1	39,15
3M™ Peltor™ X4	X4A	**HLN9.1**	1	44,45

Accessories for ear muffs of the 3M™ Peltor™ X-series

By 3M. Hygiene kits allow hygienic and economic use of the ear muffs, since the entire hearing protection does not have to be replace in the event of contamination. Fast and easy assembly.

One set includes 2 foam cushions and 2 sealing rings.

Hygiene set for	3M No.	Art. No.	Pack Qty.	€
3M™ Peltor™ X1	HYX1	**HLP0.1**	1	13,45
3M™ Peltor™ X2	HYX2	**HLP1.1**	1	13,45
3M™ Peltor™ X3	HYX3	**HLP2.1**	1	13,45
3M™ Peltor™ X4	HYX4	**HLP3.1**	1	16,10

M1 ear muffs

By Moldex. Acc. to EN 352-1.
- High-quality ear muffs
- Soft coat material in metallic colour
- Six adjustments for perfect fit
- Soft padded metal headpiece for long wear comfort
- Collapsible: space-saving and hygienic
- SNR value: 31 dB

Type	Moldex No.	Art. No.	Pack Qty.	€
M1 ear muffs	6100	**NH61.1**	1	38,60
Hygiene set	6105	**NH62.1**	1	8,55

Peltor™ OPTIME™-ear muffs

By 3M. Acc. to EN 352-1. High wearing comfort and low pressure inside ear even after extended wear.
- Lightweight design, optimal ear protection
- Constant pressure, liquid-filled sealing ring
- 2-point mounting

OPTIME™ I
Flat design. **Applications:** outdoor work, building trade, engineering, woodworking, metalworking, automobile industry, farming, chemical treatment.

OPTIME™ II
For high-noise environments, provides excellent sound insulation even at extremely low frequencies. **Applications:** outdoor work, building trade, airports.

Model	SNR value	Art. No.	Pack Qty.	€
OPTIME™ I	27 dB	**NH19.1**	1	22,90
OPTIME™ II	31 dB	**NH20.1**	1	28,20

Peltor™ OPTIME™ ear defenders

By 3M. Acc. to EN 352-1. With safety attachment for all hard hats with 30 mm slot system and face/ear protection G500 (YT38.1). High wearing comfort and low pressure inside ear even after extended wear.

- Lightweight design, optimal ear protection
- Constant pressure, liquid-filled sealing ring
- 2-point mounting

OPTIME™ I

Flat design. **Applications:** outdoor work, building trade, engineering, woodworking, metalworking, automobile industry, farming, chemical treatment.

OPTIME™ II

For high-noise environments, provides excellent sound insulation even at extremely low frequencies. **Applications:** outdoor work, building trade, airports.

Delivery without safety helmet, please order separately (Art. No. NH14.1f)

Model	SNR value	Art. No.	Pack Qty. (pair)	€
OPTIME™ I	26 dB	**NH12.1**	1	23,45
OPTIME™ II	30 dB	**NH13.1**	1	29,60

Accessories for Peltor™ OPTIME™-ear muffs and ear defenders

By 3M. **Hygiene set.**
Delivery incl. 2 foam pads and 2 sealing rings.

suitable for	Art. No.	Pack Qty.	€
OPTIME™ I ear muffs + ear defenders	**NH21.1**	1	11,80
OPTIME™ II ear muffs + ear defenders	**NH22.1**	1	11,80

PELTOR™-Kid ear muffs

By 3M. Acc. to EN 352-1. Specially designed for sensitive children's ears. These comfortable ear muffs have an extra-slim profile and offer child-friendly wearing comfort. The unique, low head band design ensures a constant, low contact pressure. The liquid-filled, soft and wide sealing rings provide a perfect seal with a minimum of contact pressure for comfortable wearing. Matching hygiene set: NH21.1 (please order separately).
Colour: neon green, SNR value 27 dB.

Art. No.	Pack Qty.	€
AKX4.1	1	23,55

Sekuroka®-sweat absorbers

For ear muffs. Manufactured from white cotton fabric, washable. Pleasantly warm in winter and refreshingly cool in summer.

Art. No.	Pack Qty. (pair)	€
T705.1	50	75,15

Skin protection	To be applied when handling...								For skin care	For working without leaving marks	For glove-wearers	Silicone-free	Unscented	Does not contain any preservatives
	Solvents	Dil. acids + alkalis	H_2O-insoluble substances, oils and fats	H_2O-soluble substances	Cleaning agents	Coarse dirt	Dust	UV rays						
TE58.1 Baktolan® protect+ pure				x					x		x	x		
P332.1 DUALIN® cream			x	x								x		x
0543.2 Rotiprotect® skin protection cream	x	x	x				x		x					
2938.3f Marly Skin® skin protection cream	x		x	x	x	x			x	x	x			
YT47.1 HERWEDERM PROTECT SENSITIVE	x		x	x	x					x		x		x
KAL5.1 HERWESAN ACQUA		x		x	x							x		
KN04.1 HERWESAN ALL-IN-ONE			x	x						x		x		
KN05.1 HERWESAN DRY EMULSION											x	x		
KN06.1 HERWESAN UV				x				x				x		
KAL7.1 HERWESAN UV 50 SPRAY								x				x		
YY19.1f LINDESA®				x					x			x		
KAL1.1 LINDESA® F Professional		x		x	x				x			x		
EEE5.1 LINDESA® K				x					x	x		x		
KAX9.1 LINDESA® PURE				x					x			x	x	x
P346.1 PHYSIO® UV 30				x	x			x						
AH81.1f Physioderm® PROGLOVE											x	x		
EEE6.1 PROTEXSAN	x	x		x	x	x						x	x	x
C785.1 SANIWIP®		x		x	x				x			x		
KAL2.1 SANSIBAL®	x		x									x		
KAL3.1 SANSIBON®			x									x		x
4140.1 Silicoderm® F Bayer		x	x	x			x							x
2987.1 SINEPRINT®							x			x		x		x

Rotiprotect®-skin protection cream

Protects and nourishes the skin. Creates a water-repellant protective film. Promotes the regeneration of skin cells and preserves the natural acidic mantle of the skin. Contains silicone, essential fatty acids, allantoin and RMS, a lactic acid, pH 4.

Packaging	Art. No.	Pack Qty.	€
Dispenser 55 g	**0543.2**	1	8,10

SINEPRINT®

Hand protection cream made for using natural ingredients.
Protects hands, does not leave residue and increases finger grip.
Non-greasing, silicone-free, paraben-free.

Packaging	Art. No.	Pack Qty.	€
Tube 100 ml	**2987.1**	1	6,40

DUALIN® cream

Protects against **non-water soluble** and **water soluble** substances and is therefore ideal for workplaces with different working materials.
Absorbs into the skin quickly, is slightly perfumed, very hypoallergenic.
Free of paraffin, silicone and paraben.

Packaging	Art. No.	Pack Qty.	€
Tube 100 ml	**P332.1**	1	7,75

HERWESAN ALL-IN-ONE (non-greasing cream)

Areas of application: non-greasing protective cream for handling of working materials with water-soluble and hydrophobic properies, for example, in metal processing and in plastics technology, microelectronics and electrical engineering.

- Easy to spread, quickly absorbed O/W skin protection emulsion
- With a new film formation system for protection against water-soluble and hydrophobic working materials
- Non-greasing and therefore a particularly good, comfortable grip remains following absorption
- Cost-effective dosing system
- Silicone-free

Packaging	Art. No.	Pack Qty.	€
Tube 100 ml	**KN04.1**	1	7,40

HERWEDERM PROTECT SENSITIVE skin protection gel

For imprint-free working and frequently changing work materials; also suitable for sensitive skin types. Universally usable, for face and hands, recommended for extremely sensitive skin types.
For use in the food industry, hospitals, nursing and retirement homes, as well as in electrical engineering. Protection against colours, grease, damp/wet, resins, adhesives, paints, oil, tar-like substances, changing areas of use.
Easy to apply, absorbed quickly. pH neutral, non-greasy, free from preservatives, parabens, silicone and dyes, non-perfumed.

Packaging	Art. No.	Pack Qty.	€
100 ml tube	**YT47.1**	1	7,90

NEW

HERWESAN ACQUA skin protection cream

Water insoluble cream, W/O emulsion type. For handling aqueous substances such as water-based coolants, drilling emulsions, diluted bases, detergent solutions, alkali and acidic cleaners, cement, lime and mortar.

- Excellent protective effect
- High adhesive strength
- High oil content
- Slightly perfumed, silicone-free

Packaging	Art. No.	Pack Qty.	€
100 ml tube	**KAL5.1**	1	4,65

NEW

LINDESA®-skin protection and skin care cream

Oil-in-water emulsion containing natural beeswax and allantoin for care of the skin. For use in applications involving low stress on the skin or daily work in high humidity environments. Protects against skin damage and soothes irritated skin areas while smoothing and conditioning the skin. Suitable as an afterwork skin care cream or for conditioning stressed skin. Fast-absorbing, low-greasing, silicone-free, beeswax-scented or unscented.

Type	Packaging	Art. No.	Pack Qty.	€
Perfumed	50 ml tube	**YY19.1**	1	4,25
Perfumed	100 ml tube	**YY19.2**	1	5,35

LINDESA® PURE PROFESSIONAL skin protection and skin care cream

Oil-in-water emulsion containing natural beeswax and allantoin for skincare. Suitable for everyday skin care. Protects against skin damage and soothes irritated skin while smoothing and conditioning. Suitable as an after work skin care cream or for conditioning stressed skin. Contains paraben-free preservatives. Quickly absorbed by the skin, slightly oily, silicone and fragrance-free.

Packaging	Art. No.	Pack Qty.	€
100 ml tube	**KAX9.1**	1	5,35

LINDESA® K Non-greasy skin protection cream with chamomile

Oil-in-water emulsion that contains natural beeswax and chamomile. Particularly suitable for working environments where leaving grease marks on surfaces must be avoided, e.g. when painting, in electrical manufacturing or the final inspection. Also suitable for caring for stressed skin. Strengthens the skin's defensive function and prevents skin damage caused by external stresses. Has a normalising effect on irritated skin. Non-greasy, fast-absorbing, scented, silicone-free.

Packaging	Art. No.	Pack Qty.	€
100 ml tube	**EEE5.1**	1	5,35

NEW

LINDESA® F PROFESSIONAL

Oily skin protection cream, W/O emulsion with natural beeswax. Prevents skin damage when working with water and when handling diluted surfactant solutions and diluted alkalis, e.g. washing and cleaning solutions.
Also suitable for skin care after working when skin is highly degreased and for protecting against cold and frost. Perfumed, silicone-free.

Packaging	Art. No.	Pack Qty.	€
100 ml tube	**KAL1.1**	1	6,35

Physioderm® PROGLOVE

Protects the skin against the effects of skin softening when wearing gloves. Transparent fragrance and greece free gel containing alcohol.
Hamamelis and chitin protect the upper layer of the skin while bisabolol and glycerine moisturise and soothe the skin. Suitable for foodstuffs.
Contains no fragrances, preservatives, silicone or grease.
Matching dispenser for AH81.2: YY16.1.

Image	Type	Art. No.	Pack Qty.	€
①	100 ml tube	**AH81.1**	1	11,00
②	Dispenser bottle 1000 ml	**AH81.2**	1	36,35

SANIWIP®

Hand cream for protection against damage to the skin when working with **water soluble agents** such as acids, alkali, solvents and alcohol. Prevents cracking of the skin. Suitable for use in foodstuffs processing. Also suitable for the care of highly stressed skin. Without perfume or silicone.

Packaging	Art. No.	Pack Qty.	€
Tube 100 ml	**C785.1**	1	6,80

PHYSIO UV 30 sun

Skin protection creme for protection against exposure to UV-A, UV-B and UV-C radiation with well balanced protection factor UV-B 30/UVA 10.
Use: for protection against intensive UV radiation or when using artificial UV radiation sources.

- white, medium-moisturising W/O emulsion
- Waterproof, contains no fragrances, preservatives or petroleum
- With reflective titanium oxide UV filters (silicone coated)
- Vitamin E acetate combats ageing of the skin

Packaging	Art. No.	Pack Qty.	€
100 ml tube	**P346.1**	1	9,15

PROTEXSAN skin cream

Protection against water-soluble and water-miscible substances (e.g. water-mixed oils and cooling lubricants, diluted acids and alkalis, alcohol, washing-up liquids and detergents, disinfectants, salts and cement) and against free radicals.

- Contains luteolin, co-enzyme Q10 and vitamin E, as well as skin-related lipids
- Does not contain any aluminium salts, preservatives or emulsifiers
- Free from mineral oils, silicone-free, unscented
- Fast-absorbing
- ECARF-certified

Packaging	Art. No.	Pack Qty.	€
50 ml tube	**EEE6.1**	1	11,10

Skin protection

HERWE DRY EMULSION

Area of application: prevents softening of the skin as a result of wearing airtight clothing and in case of mechanical stress on the skin. For example, when wearing gloves for microelectronic work, and when handling cardboard boxes.

- Non-greasing O/W emulsion
- Hardens corneal layers
- Non-greasing cream
- Reduces perspiration and protects against softening of the skin
- Increases wearing comfort of protective clothing
- Lightly perfumed, silicone-free

Packaging	Art. No.	Pack Qty.	€
250 ml bottle	**KN05.1**	1	9,70

HERWESAN UV

With sun protection factor 30 (International SPF Test Method, Colipa).

Area of application: for protection against strong solar radiation or during exposure to artificial sources of radiation.

- White, slightly greasing, weak-fragrance O/W emulsion
- Waterproof and easy to spread on the skin, easily absorbed
- Silicone-free
- Contains inorganic UV protective pigments and special sunscreens, thus protecting the skin against harmful UV-A, -B, -C radiation
- Skin care properties through cosmetic oils and shea butter

Packaging	Art. No.	Pack Qty.	€
Tube 100 ml	**KN20.1**	1	8,35

Baktolan® protect+ pure

Water-in-oil-in-water emulsion, protects against aqueous solutions and revitalises cracked, hard-working skin. Protects the skin when performing tasks involving aqueous solutions. Can be used under gloves to counteract skin irritation due to occlusion. Suitable for use several times a day. Fragrance, silicone and colourant free.

Packaging	Art. No.	Pack Qty.	€
100 ml tube	**TE58.1**	1	9,65

Marly-Skin®-skin protection foam

Microfine foam penetrates the skin rapidly and forms a protective barrier against harmful and irritant substances. Protection for 4-6 hours. Suitable for use on the entire body, non-greasy, unnoticeable, economical in use. Ideal for use under gloves. Clinically tested.

Note: does not replace protective measures, e.g. wearing gloves.

Packaging	Art. No.	Pack Qty.	€
Spray can 50 ml	**2938.3**	1	12,70
Spray can 100 ml	**2938.1**	1	21,45

NEW

SANSIBAL® skin protection cream

White, slightly oily, fast absorbing cream, O/W emulsion type.
Water-soluble skin protection cream, the solid substances in which form a separating and protective film after application. Offers protection when working with non-water-soluble substances (e.g. oils, certain organic solvents, non-aqueous coolants).
Perfumed, silicone-free, neutral pH.

Packaging	Art. No.	Pack Qty.	€
100 ml tube	**KAL2.1**	1	7,00

SANSIBON® skin protection cream

White, slightly oily, fast absorbing cream, suspension with skin protection pigments. Water-soluble skin protection cream which protects against highly-adhesive dirt and which facilitates gentle skin cleaning through special emulsifiers. Protects the skin against intensive dirt or strongly adherent working materials (e.g. used oil, adhesives, resins, varnishes, paints).

- Perfumed, silicone-free
- pH-neutral
- No mineral oil or parabens

Packaging	Art. No.	Pack Qty.	€
100 ml tube	**KAL3.1**	1	6,40

NEW

HERWESAN UV 50 SPRAY skin protection spray

Highly effective UV protection spray for OUTDOOR use.

- Waterproof, transparent, non-greasy
- High UVB sun protection factor 50, balanced UVA protection
- Protection against UVA and UVB radiation (SPF 50)
- Extremely light, fast absorbing formulation, therefore ideally suited to use on large areas and parts of the body covered in hair
- Supplies the skin with panthenol and vitamin E
- Convenient pump spray to enable use all over the body (e.g. including the back and legs)
- Slightly perfumed, silicone-free

Packaging	Art. No.	Pack Qty.	€
200 ml spray bottle	**KAL7.1**	1	24,65

Skincare		For stressed skin									
		Low	Medium	High	Water-in-oil emulsion	Water-in-oil emulsion	Helps the skin to regenerate itself	Silicone-free	Fragrance-free	Suitable as skin protection
Baktolan® balm pure	**ANY7.1**			x		x	x		x	
Baktolan® lotion	**L297.1**	x			x		x	x		
Baktolan® lotion pure	**EKH7.1**	x			x		x	x	x	
CARE PURE	**KAL4.1**			x	x		x	x	x	
Cura Soft	**Y866.1**	x			x		x	x		
cUrea soft	**LP24.1**		x		x		x	x		
Rotiprotect® skin protection cream	**0543.2**			x	x		x			x
HERWE CURA	**KN06.1**	x			x		x	x		x
HERWE MIELOSAN	**YT49.1**			x			x	x		
HERWE QUREA CARE	**KAL6.1**		x				x	x		
Physioderm® cream	**4671.1f**			x	x	x	x	x		
ROTIDERM®	**5535.2**			x			x		x	

Silicoderm®F BAYER

Hand protection cream with silicone oil, sorbit and vitamin F. Protects reliably against skin damaging conditions. Slightly cooling, pleasant smell.

Packaging	Art. No.	Pack Qty.	€
Tube 35 g	**4140.1**	1	5,75

Tubenboy®

Made of ABS/SAN, very robust. For total emptying of all plastic and metal tubes. The tube can be stored in an upright position. The actual tube content can always be seen. For max. tube width 66 mm.

Art. No.	Pack Qty.	€
AK63.1	1	3,50

Cura Soft

Skin care cream. Is absorbed quickly and is only slightly greasing. Fat content 7 %. Ideal for nourishing and regenerating skin subjected to stress. Oil-in-water-emulsion. Slightly perfumed, silicone-free. Dermatologically tested.

Packaging	Art. No.	Pack Qty.	€
Tube 100 ml	**Y866.1**	1	6,40

cUrea soft

Application: fast absorbing skin care cream containing naturally hygroscopic urea. Nourishes sensitive, worn skin. Helps skin to regenerate effectively from abrasional dermatosis or eczema. Also suitable as nail care.

Product description:

- Contains urea, horsetail plant extracts and high quality bisabolol
- Smooths extremely dry, worn hands
- Slightly greasing cream, emulsion type O/W
- pH-value neutral and perfumed
- Silicone-free and without mineral oil

Packaging	Art. No.	Pack Qty.	€
Tube 100 ml	**LP24.1**	1	6,80

ROTIDERM®

Hand care cream for highly stressed and sensitive skin. Contains essential fatty acids, Sorbitol, waxy high fatty acids and dextrorotatory lactic acid. Helps to repair cracked skin and restore the natural acid balance of the skin. pH 4, unperfumed.

Application: apply to cleansed and dried skin after work which is tough on the hands. Absorbs completely without leaving a greasy film.

Packaging	Art. No.	Pack Qty.	€
Dispenser 55 g	**5535.2**	1	8,10

NEW

HERWE QUREA CARE cream-gel

With highly active moisturising complex and intensive care effect.
- Fast absorbing cream-gel for work-related stressed skin
- With urea, lactic acid and hyaluronic acid
- Valuable cosmetic lipids as care components
- Coenzyme Q10 and Vitamin E for antioxidant protection
- Silicone-free

Packaging	Art. No.	Pack Qty.	€
100 ml tube	**KAL6.1**	1	5,35

HERWE CURA

Area of application: easily absorbed skin care cream. Every time after washing hands and face; also during work in the company or office.
- Slightly greasing cream, emulsion type O/W
- Contains natural oils and beeswax
- Easily absorbed, ensures pleasant feeling on the skin
- For hands and face
- Regenerates the skin
- Weak fragrance, silicone-free
- Suitable for all skin types

Packaging	Art. No.	Pack Qty.	€
Tube 100 ml	**KN06.1**	1	4,55

HERWE MIELOSAN

High-quality hand and foot care cream for dry and stressed skin. To care for skin after intensive hand washing and other activities that particularly dehydrate the skin. Supports the skin's natural moisture retention capacity. Easy to apply, very little required. With honey, urea, glycerine and allantoin, silicon-free.

Packaging	Art. No.	Pack Qty.	€
100 ml tube	**YT49.1**	1	5,65

Baktolan® lotion

Moisturising care for normal skin, with vegetable oils and panthenol. Oil-in-water-emulsion. Suitable for both daily body skin care and for hand care. Is light and distributes well. Soaks into the skin quickly and leaves no irritating oily film. Slightly perfumed, silicone-free. Excellent when doing paperwork, for working in the laboratory, etc.

Packaging	Art. No.	Pack Qty.	€
Bottle 350 ml	**L297.1**	1	8,10

Baktolan® lotion pure

Fragrance-free O/W emulsion for normal skin.
- High skin tolerability
- Absorbs quickly without leaving a greasy film
- Significantly increases the skin's moisture

Applications:
Can be used on the hands and body. This mild O/W emulsion has been adapted to the skin's physiological characteristics and is especially suited to daily use, as well as applications in which fragrance-free skincare is particularly sought-after.

Packaging	Art. No.	Pack Qty.	€
350 ml bottle	**EKH7.1**	1	7,35

Baktolan® balm pure

Fragrance free W/O emulsion for dry, highly stressed and sensitive skin. Contains the following active ingredients: allantoin, vitamin E and panthenol. Moisturising and soothing effect, stabilises the skin's protective barrier, pH 5.5. Spreads easily, economical in use, is absorbed quickly, does not form a greasy film.

Packaging	Art. No.	Pack Qty.	€
350 ml bottle	**ANY7.1**	1	11,40

NEW

CARE PURE skin protection cream

Intensive care cream with natural oils and seabuckthorn extract for extremely strained and dry skin. O/W emulsion, contains a balanced combination of natural oils which compensate for lipid loss in highly stressed skin. Reduces skin redness, smooths and cares for irritated skin. Equalises the water balance of the upper layer of skin, keeps the skin elastic and improves its mechanical resistance.

- Contains no synthetic perfumes, colourings or preservatives
- Silicone- and mineral oil-free
- Suitable for working in the food sector
- ECARF-certified

Packaging	Art. No.	Pack Qty.	€
50 ml tube	**KAL4.1**	1	5,35

Physioderm® cream

Refatting skin care cream, improves the skin's water-binding capacity, helps restore the skin's hydrolipidic film, improves skin smoothness and can help to regenerate the skin in case of attrition dermatitis or eczema. Oil-in-water emulsion with high level of lipids, perfumed, silicone free.

Applications: care and protection of work-stressed skin, especially brittle or dry skin.

Image	Packaging	Art. No.	Pack Qty.	€
①	Tube 100 ml	**4671.1**	1	6,40
②	Dispenser 1000 ml	**4671.2**	1	33,90

Skin cream dispensers

Compatible with article no. AH81.2 and 4671.2, all Physioderm Vario 1000 or 2000 ml bottles.
Delivery incl. mounting material.

VARIOMAT ECO

Made of impact-resistant plastic, with optimal dispensing and efficient emptying.
Dimensions (W x H (incl. lever) x D): 126 x 351 x 130 mm.

Image	Art. No.	Pack Qty.	€
①	**YY16.1**	1	56,95

VARIOMAT-M STAINLESS STEEL

Brushed stainless steel housing. Absolutely hygienic system since the product does not come into contact with the dispenser.

- Robust design
- Easy to operate and fill
- Optimal dispensing

Dimensions (W x H (incl. lever) x D): 134 x 316 x 128 mm.

Image	Art. No.	Pack Qty.	€
②	**EEE7.1**	1	99,80

Skin cleaning	To be used for ...												
	Soiling:												
	light	medium to strong	very strong	oils, fats, lubricants	Chemicals	Hands	Body	Surfaces	free from alcali and soap	unscented	With abrasive agent	anti-bacterial	oil-moisturizing
PA94.1f AZUDERM EXTRA MILD®	x					x	x		x				x
X589.1f Baktolin® sensitive	x					x	x		x				x
EKH6.1f Baktolin® pure	x					x			x	x			
CK45.1 plum wipes moist hand wipes	x					x		x					x
CK46.1 Heavy Duty moist hand wipes		x		x		x		x					x
NK81.1 Gentle Med® wash lotion	x					x	x		x				
KAL8.1f HERCULAN INTENSO GEL			x	x		x					x	x	
YT48.1f HERWE FRESH shower gel	x					x	x						
EYY3.1f Lotion Soap	x					x							
1548.1 Majola® wash lotion	x					x	x		x			x	
EYX5.1 Foam soap	x					x							
X668.1f Stellisept® med	x					x	x					x	x
AH82.1 Topscrub® NATURE			x		x	x			x		x		

① ②

Moist hand wipes plum wipes

By Plum. Effectively and carefully removes all kinds of dirt and soiling caused while working. The moist PP tissues absorb and bind the dirts; and they can be used repeatedly, also suitable for cleaning labware or tools. Lightly perfumed and, because of the glycerine additive, are moisturizing.

- ① **Multi-purpose wipes** with a wide spectrum of application for removing slight to medium soiling.
- ② **Heavy duty-wipes** with additional rubbing effect for removing stubborn and bad soiling, e.g. oil, fat and grease.

Design	Art. No.	Pack Qty.	€
① Multi-purpose wipes, box with 200 tissues	**CK45.1**	1	37,25
② Heavy duty-wipes, box with 50 tissues	**CK46.1**	1	16,40

① ②

Lotion soap

Mild lotion soap with pleasant scent. Skin-friendly substances guarantee no skin irritation even when used frequently. Economical in use. Colour: Pink.

Image	Packaging	Art. No.	Pack Qty.	€
①	950 ml bottle	**EYY3.1**	1	n. a.
②	10 l canister	**EYY4.1**	1	n. a.

① ② ③

AZUDERM EXTRA MILD

Area of use: Soap-free cleaning gel for sensitive and highly stressed skin.

- Mild, colourless cleaning liquid
- No preservatives
- **Non-perfumed**
- With skin-friendly sugar tensides
- For gentle cleansing of the hands and the whole body
- Corresponds to the pH-value of the skin

Image	Packaging	Art. No.	Pack Qty.	€
①	Bottle 250 ml	**PA94.1**	1	4,20
②	Pouch bottle 2000 ml	**PA95.1**	1	18,85

Dispenser

Matches Art. No. PA95.1 and YT48.2.
Housing and wall bracket made of shock-resistant plastic. Operating lever made of stainless steel. With adjusting screw to regulate pump volume.
Dimensions: W 120 x H 320 x D 125 mm.

Image	Art. No.	Pack Qty.	€
③	**PA96.1**	1	61,25

Baktolin® pure

Cleaning lotion for mild cleaning.
- Fragrance-free and colourant-free
- Free of alkali and soap
- Skin-neutral pH value of 5.5

Areas of application:
due to the omission of fragrance and colourants, Baktolin® pure is particularly suitable for sensitive skin. The pH value of 5.5 conserves the skin's natural acid-protection layer. At the same time, this makes the product ideal for use in food-processing fields, in which detrimental effects on the goods to be processed are to be avoided.

Packaging	Art. No.	Pack Qty.	€
500 ml bottle	**EKH6.1**	1	3,20
1000 ml bottle	**EKH6.2**	1	5,15

Baktolin® sensitive

For stressed skin. Conditioning and moisturising cleansing lotion for gentle cleansing of hands and skin. Contains the skin care substances allantoin and wheat protein. Regenerates and soothes the skin. Soap, alkali and colorant free, skin-neutral pH of 5.5, subtly scented.

Packaging	Art. No.	Pack Qty.	€
500 ml bottle	**X589.1**	1	5,20
1000 ml bottle	**X589.2**	1	8,10

Stellisept® med

Acc. to EN 1499, EN 13727. Antiseptic cleansing lotion with antibacterial effect for hands and body. Bactericidal and effective against MRSA. Skin and mucous membrane compatible, suitable for all skin types. Contains no alcohol and no colouring agents.

Packaging	Art. No.	Pack Qty.	€
Bottle 500 ml	**X668.1**	1	n. a.
Bottle 1000 ml	**X668.2**	1	n. a.

Gentle Med®-cleansing lotion with camomile extract

For hands and body. Moisturises and protects against dry skin, anti-irritant and soothing effect. Economical in use. pH skin neutral, free of alkalis and soap, fresh fragrance.
Suitable for dispensers TE54.1.

Art. No.	Pack Qty. (ml)	€
NK81.1	1000	7,50

Majola® cleanser lotion

For hands and skin, alkali-free. Strengthens and regenerates the skin's natural acid-protection layer. With an anti-bacterial and deodorizing effect. Suitable for infected, damaged, highly stressed and soap-sensitive skin. Helps in the treatment of acne.

Art. No.	Pack Qty. (ml)	€
1548.1	500	10,15

HERWE FRESH shower gel

Skin-friendly and pleasantly mild cleaning gel for face, body and hair.
Even suitable for extremely stressed and very sensitive skin,
as well as frequent hand-washing.
Free from abrasives, soap, and parabens, pH neutral, contains preservatives, discreetly perfumed.

Image	Packaging	Art. No.	Pack Qty.	€
①	Bottle 250 ml	**YT48.1**	1	4,25
②	Dispenser bottle 2000 ml	**YT48.2**	1	19,25

Dispenser

Matches Art. No. PA95.1 and YT48.2.
Housing and wall bracket made of shock-resistant plastic. Operating lever made of stainless steel. With adjusting screw to regulate pump volume.
Dimensions: W 120 x H 320 x D 125 mm.

Image	Art. No.	Pack Qty.	€
③	**PA96.1**	1	61,25

NEW

HERCULAN INTENSO GEL skin cleaning gel

Flowing hand cleaner gel with **corcbits®** natural abrasive bodies for heavy industrial dirt.

- With biodegradable, extremely soft ground cork **corcbits®**
- Intensive cleaning strength thanks to high content of detergent substances, with sugar surfactants
- Very good skin tolerance due to soft abrasive bodies; with Panthenol and green tea extract
- Non-greasy, solvent-free, with a natural fragrance

Packaging	Art. No.	Pack Qty.	€
250 ml bottle	**KAL8.1**	1	5,20
2000 ml dispenser bottle	**KAL9.1**	1	21,45

Topscrub® NATURE

Hand cleaner with natural exfoliant made of olive stone flour for tough dirt such as oils, soot, grease, graphite and metal dust.
Dermatologically tested. Smooth paste containing no solvents or soaps.
Skin-neutral pH value, scented. Tough on dirt, gentle on skin.
A little goes a long way – highly economical.

Packaging	Art. No.	Pack Qty.	€
200 ml tube	**AH82.1**	1	5,25

COSMOS foam soap dispenser

Made of ABS plastic, colour white. Lockable.
Removable wall bracket for flexible handling.
Dimensions: H 240 x W 105 x D 120 mm.
Can be used with foam soap cartridge EYX5.1.
Delivery incl. mounting material.

Image	Art. No.	Pack Qty.	€
①	**EYX4.1**	1	40,80

Foam soap cartridges for COSMOS foam soap dispenser

Foam soap with grapefruit scent.
Economical in use, approx. 0.4 ml per stroke.

Image	Packaging	Art. No.	Pack Qty.	€
②	1000 ml	**EYX5.1**	1	9,00

Skin disinfection		On following basis ...			for hands	for the body
		Propanol	Benzalconium-chloride	Ethanol		
Disinfectant spray Cutasept® F	**AK64.1f**	x	x		x	x
Softa-Man®	**XP54.1ff**	x		x	x	
Softa-Man® ViscoRub	**XP55.1ff**	x		x	x	
Sterillium®	**L276.1ff**	x			x	x
Sterillium® Antiseptic wipes	**T037.1**	x			x	x
Sterillium® classic pure	**EH72.1ff**	x			x	x
Sterillium® Virugard	**L313.1ff**			x	x	

Sterillium®

Propanol-based rub-in hand disinfectant. No need for a wash basin or water. For all hygiene-sensitive clinical and industrial applications. Protects against infection in public buildings and during travel.
Efficacy range: bactericidal, tuberculocidal, limited virucidal efficacy (HBV, HIV, HCV), effective against herpes simplex, influenza A, SARS coronavirus, adeno-associated viruses, polyoma viruses and rotavirus.
Listing: BfArM Approval No. 603.00.01. RKI list area A, VAH, IHO list for virucidal products.

Sterillium: *Active substances*: **propan-2-ol, propan-1-ol, mecetronium ethyl sulphate. Ingredients:** 100 g of solution contains: *Active substances:* propan-2-ol 45.0 g, propan-1-ol 30.0 g, mecetronium ethyl sulphate 0.2 g. Other Ingredients: glycerol 85 %, tetradecan-1-ol, fragrances, blue patent V 85 %, purified water. **Areas of application:** for hygienic and surgical hand disinfection. For skin disinfection prior to injections and punctures. **Contraindications:** unsuitable for the disinfection of mucus membranes. Do not use in close proximity to the eyes or open wounds. Hypersensitivity (allergy) to one of the ingredients. **Side effects:** slight dryness or irritation of the skin can occur occasionally. In such cases, more intensive general skin care is recommended. Allergic reactions are rare. **Warnings:** Sterillium should not be used on newly or prematurely born infants. Wait until dry before using electrical devices. Do not expose to naked flame. Do not use in the vicinity of ignition sources. Flash point: 23 °C, flammable. There are no fire or explosion hazards associated with the proper use of this product. After spillage of the disinfectant, the following steps should be taken: soak up the spilt liquid straight away, dilute with copious amounts of water, ventilate the room and remove ignition sources. Refrain from smoking. In the event of fire, extinguish with water, extinguishing powder, foam or CO2. Refilling may only be performed under aseptic (clean bench) conditions.

Warning H226-H319-H336

Packaging	Art. No.	Pack Qty.	€
Bottle 100 ml	**L276.3**	1	n. a.
Bottle 500 ml	**L276.1**	1	n. a.
Bottle 1000 ml	**L276.2**	1	n. a.
Canister 5 l	**L276.4**	1	n. a.

Sterillium® classic pure

Hygienic and surgical rub-in hand disinfectant. Ideal for users with sensitive skin (colorant and fragrance free). For all hygiene-sensitive clinical and industrial applications.
Efficacy range: bactericidal, tuberculocidal, limited virucidal efficacy (incl. HBV, HIV, HCV). Effective against herpes simplex, influenza A, SARS coronavirus, adeno-associated viruses, polyoma virus and rotavirus.
Listing: BfArM Approval No. 25918.00.00, RKI list area A, VAH certification, IHO list for virucidal products. Actual product not shown (similar).

Sterillium classic pure: *Active substances:* propan-2-ol, propan-1-ol, mecetronium ethyl sulphate. Composition: 100 g solution contains: *Active substances:* 45.0 g propane-2-ol, 30.0 g propane-1-ol, 0.2 g mecetronium ethyl sulphate. **Other ingredients:** 85 % glycerol, tetradecane-1-ol, purified water. **Areas of application:** for hygienic and surgical hand disinfection. For skin disinfection prior to injections and punctures. **Contraindications:** unsuitable for the disinfection of mucus membranes. Do not use in close proximity to the eyes or open wounds. Do not use in case of hypersensitivity (allergic reaction) to one of the active substances or other ingredients. **Side effects:** slight dryness or irritation of the skin may occasionally occur. In such cases, more intensive general skin care is recommended. Allergic reactions are rare. **Warnings:** hand disinfection helps prevent the transmission of infection, e.g. in nursing and health care. Sterillium classic pure should not be used on newly or prematurely born infants. Always consult a doctor prior to use on infants and small children. It is important to ensure that the solution does not come into contact with the eyes. After contact with the eyes, rinse the eyes under running water for several minutes holding the eyelids open. Avoid transferring the solution from one container into another in order to prevent contamination. If this is unavoidable, the solution should be transferred under aseptic conditions (e.g. using sterile containers under a laminar air flow hood). Wait until dry before using electrical devices. Do not expose to naked flame. Do not use in the vicinity of ignition sources. Flash point: 23 °C, flammable. There are no fire or explosion hazards associated with the proper use of this product. After spillage of the disinfectant, the following steps should be taken: soak up the spilt liquid straight away, dilute with copious amounts of water, ventilate the room and remove ignition sources. Refrain from smoking. In the event of fire, extinguish with water, extinguishing powder, foam or CO2.

Warning H226-H319-H336

Packaging	Art. No.	Pack Qty.	€
Bottle 100 ml	**EH72.1**	1	n. a.
Bottle 500 ml	**EH72.2**	1	n. a.
Bottle 1000 ml	**EH72.3**	1	n. a.
Canister 5 l	**EH72.4**	1	n. a.

Sterillium® Virugard

Ethanol-based rub-in hand disinfectant. Especially useful for all working areas with an increased infection hazard, such as clinics, laboratories, hospitals etc.
Efficacy range: bactericidal, fungicidal, tuberculocidal, limited virucidal efficacy (including HBV, HIV, HCV), virucidal. Effective against herpes simplex, adeno-associated viruses, polyoma viruses, polio and rotavirus.
Listing: BfArM Approval No. 13814.00.00. RKI list area A/B, VAH, IHO list for virucidal products.

Sterillium Virugard: *Active substance:* ethanol. **Ingredients:** 100 g solution contain: *Active substance:* ethanol 99 % 95.0 g. Other ingredients: butan-2-on, glycerol, tetradecan-1-ol, petroleum. **Areas of application:** hygienic and surgical hand disinfection. **Contraindications:** Do not apply to mucus membranes. Do not use in close proximity to the eyes or open wounds. Hypersensitivity to ingredients. **Side effects:** slight, diffuse reddening of the skin may occur rarely. In such cases, more intensive general skin care is recommended. **Warning:** do not expose to naked flame. Do not use in the vicinity of ignition sources. Close bottle after use. Flash point according to DIN 51755: 0 °C. Highly flammable. Avoid electrostatic charge. Do not touch if your skin has come into contact with alcohol. After spillage of the disinfectant, the following steps should be taken: soak up the spilt liquid straight away, dilute with copious amounts of water, ventilate the room and remove ignition sources. Refrain from smoking. Refilling may only be performed under aseptic (clean bench) conditions.

Danger H225-H319-H412

Packaging	Art. No.	Pack Qty.	€
Bottle 100 ml	**L313.3**	1	n. a.
Bottle 500 ml	**L313.1**	1	n. a.
Bottle 1000 ml	**L313.2**	1	n. a.

Dosing pumps

For screwing on. Made of PP/PE. Suitable for bottles from Bode.

For	Art. No.	Pack Qty.	€
300/500 ml bottles	**X439.1**	2	11,50
1000 ml bottles	**X440.1**	2	11,50

Cutasept® F

For skin disinfection, e.g. in the event of accident or minor injuries. Fast acting and comprehensive. Excellent skin tolerance. Ready-to use, colourless solution.
Efficacy range: bactericidal (including MRSA), fungicidal, tuberculocidal, limited virucidal efficacy (including HBV, HIV, HCV), rotavirus.
Listing: BfArM Approval No. 6281157.00.00, VAH.
Delivery incl. invertible spray nozzle for 50, 250 and 500 ml bottles (please order spray nozzle for 1000 ml bottle separately).

Cutasept F: *Active substance:* propan-2-ol. **Ingredients:** 100 g solution contain: *Active substance:* propan-2-ol 63.0 g, equivalent 72 % by vol. Other ingredients: benzalkonium chloride, purified water. **Areas of application:** skin disinfection prior to punctures, injections and surgical procedures. Surgical and hygienic hand disinfection. **Contraindications:** do not use in close proximity to the eyes. Intolerance to ingredients. When used properly, Cutasept F is safe for use during pregnancy and breast-feeding. **Side effects:** slight, diffuse skin irritation occurs frequently. Contact allergic reactions may occur. **Warning:** there is not enough clinical data to recommend this product for the treatment of infants and toddlers. In these cases, this product may only be applied after stringent diagnosis and under medical supervision. Benzalkonium chloride may cause skin irritation. Do not wet skin below blood pressure cuffs. Do not apply surgical film until dry. Wait until dry before using electrical devices. Avoid accumulation on patient beds/seats. Do not expose to naked flame. Keep clear of ignition sources. There are no fire or explosion hazards associated with the proper use of this product. If the solution comes into contact with eyes, hold the eyes open and rinse with running water for several minutes. After spillage of the disinfectant, the following steps should be taken: soak up the spilt liquid straight away, dilute with copious amounts of water, ventilate the room and remove ignition sources. Flash point according to DIN 51755: 21 °C. Flammable. Refilling may only be performed under aseptic (clean bench) conditions.

Danger H225-H319-H336

Type	Art. No.	Pack Qty.	€
50 ml spray bottle	**AK64.1**	1	n. a.
250 ml spray bottle	**AK64.2**	1	n. a.
500 ml spray bottle	**AK64.3**	1	n. a.
1000 ml bottle	**AK64.4**	1	n. a.
Spray nozzle for 1000 ml bottle	**X827.1**	1	7,50

Abbreviations for hygiene inspectorates

DGHM = German Society for Hygiene and Microbiology
VAH = Association for Applied Hygiene
RKI = Robert Koch Institute
IHO = German Industrial Association for Hygiene and the Protection of Surfaces

IHO List of Virucidal Products: www.iho-viruzidie-liste.de

Softa-Man®

Ready-to-use, alcohol-based hand sanitiser.
- For rapid and long lasting skin disinfection
- Contains Panthenol (Provitamin B5), Bisabolol and Allantoin for hand care
- Dye-free, low-allergen fragrance
- Dermatologically tested
- Hygienic hand disinfection 30 sec, surgical hand disinfection 60 sec

Efficacy: effective against bacteria (including MRSA, TbB) and fungi. Limited virucidal efficacy (including HBV, HCV, HIV), effective against rota, influenza, adeno and noro viruses (surrogate virus MNV).
Listing: DGHM/VAH, RKI listed (efficacy range A) and in the IHO List of Virucidal Products.

Composition: 100 ml of solution contain: *Active substances:* ethanol (100 %) 45 g, 1-propanol (Ph. Eur.) 18 g. Other constituents: purified water, diisopropyl adipate, macrogol-6-glycerolcaprylocaprate (Ph.Eur.), dexpanthenol, (+/-)alpha-bisabolol, fragrances (contain lemons and linalool), allantoin. **Applications:** hygienic and surgical hand disinfection. **Contraindications:** hypersensitivity (allergy) to ethanol or 1-propanol or one of the other constituents. **Side effects:** contact allergy. Skin irritations such as inflammation and redness and burning, particularly if used frequently. **Warnings:** flammable. Keep container tightly closed. Keep clear of ignition sources. - Refrain from smoking! Avoid contact with the eyes. Do not apply to injured skin or mucus membranes. For external use only. 21-22 °C flash point according to DIN 51 755.

Danger H225-H318-H336

Type	Art. No.	Pack Qty.	€
100 ml bottle	**XP54.1**	1	n. a.
500 ml bottle	**XP54.2**	1	n. a.
1000 ml bottle	**XP54.3**	1	n. a.
5 litre canister	**XP54.4**	1	n. a.

Softa-Man® ViscoRub

Ready-to-use, gel-like, alcohol-based hand disinfectant.
- Gel-like structure allows drip free dispensing
- Colorant and fragrance free, i.e. reduced allergenic potential
- Excellent skin compatibility - dermatologically tested
- Especially gentle to the skin
- Hygienic hand disinfection 30 sec, surgical hand disinfection 90 sec

Efficacy: effective against bacteria (including MRSA, TbB) and fungi. Limited virucidal efficacy (including HBV, HCV, HIV), effective against rota, influenza and noro viruses (surrogate virus MNV).
Listing: DGHM/VAH listed and included in the IHO List of Virucidal Products.

Composition: 100 ml of solution contain: *Active substances:* ethanol (100 %) 45 g, 1-propanol (Ph. Eur.) 18 g. Other ingredients: purified water, butane-2-on, glycerol, isopropyl myristate (Ph. Eur.), (hexadecyl, octadecyl) [(RS)-2-ethyl hexanoate], (+/-)alpha-bisabolol. **Applications:** hygienic and surgical hand disinfection. **Contraindications:** hypersensitivity (allergy) to ethanol or 1-propanol or one of the other ingredients of Softa-Man® ViscoRub. **Side effects:** contact allergy. Skin irritations such as inflammation and redness and burning, particularly if used frequently. **Warnings:** flammable. Keep container tightly closed. Keep clear of ignition sources. - Refrain from smoking! Avoid contact with the eyes. Do not apply to injured skin or mucus membranes. For external use only. 52.3 % ethanol by weight, 20.9 % 1-propanol by weight. 21 °C flash point according to DIN 51 755.

Danger H225-H318-H336

Type	Art. No.	Pack Qty.	€
100 ml bottle	**XP55.1**	1	n. a.
500 ml bottle	**XP55.2**	1	n. a.
1000 ml bottle	**XP55.3**	1	n. a.
5 litre canister	**XP55.4**	1	n. a.

Sterillium® Tissue

For hand and skin disinfection. Based on propan-2-ol, propan-1-ol and mecetronium ethyl sulphate.
Efficacy range: bactericidal, yeasticidal, tuberculocidal, mycobactericidal, limited virucidal efficacy (including HBV, HIV, HCV). Effective against herpes simplex and rotavirus. **Listing:** BfArM Approval No. 603.00.00.VAH.

Sterillium® Tissue: *Active substances:* 2-propanol (Ph. Eur.), 1-propanol (Ph. Eur.), mecetronium ethyl sulphate. **Composition:** 1 fleece wet wipe contains: *Active substances:* 1.341 mg propan-2-ol , 894 mg propan-1-ol and 5.96 mg mecetronium ethyl sulphate. Other constituents: tetradecane-1-ol, glycerol 85 %, fragrances, purified water. **Applications:** for hygienic hand disinfection, for skin disinfection after injections and punctures in low-sebaceous areas of skin. **Contraindications:** Sterillium® Tissue must not be used in persons with an allergic hypersensitivity to 2-propanol (Ph. Eur.), 1-propanol (Ph. Eur.), mecetronium ethyl sulphate or any of the other constituents, in immediate proximity to the eyes or open wounds, in premature and new-born infants, and for disinfection of mucus membranes. **Side effects:** slight dryness or irritation of the skin may occasionally occur. In such cases, more intensive general skin care is recommended. Allergic reactions are rare. **Warnings:** always consult a doctor prior to use on infants and small children. Avoid contact with the eyes. In case of contact with the eyes, rinse immediately with flowing water for several minutes with the eyelid open. Do not use electrical equipment until the substance has dried. Keep away from naked flame. Do not use in the vicinity of ignition sources. Flash point: 23.5 °C, flammable. In the event of fire, extinguish with water, fire extinguisher or CO_2.

Warning H226-H319

Art. No.	Pack Qty.	€
T037.1	10	n. a.

ELS/TLS Plus wall dispensers

By B. Braun. For hygienic and precise dispensing of cleansing lotions, disinfectants and skin care lotions. Lever-operated, aluminium housing, plastic pump. Adjustable dispensing volume of 0.7 to 1.5 ml per stroke.

Type	W x D x H (mm)	Art. No.	Pack Qty.	€
ELS plus for 500 ml bottles	82 x 215 x 295	**NK86.1**	1	108,60
TLS plus for 1000 ml bottles	92 x 225 x 340	**NK87.1**	1	108,60

Dispensing pumps

By B. Braun. Made of PP/PE. For hygienic dispensing. Integrated non-return valve prevents leakage of contents, e.g. when tilting the bottle. 2 ml per stroke. Suitable for B. Braun bottles.

For bottles	Art. No.	Pack Qty.	€
500 ml	**NK88.1**	1	6,70
1000 ml	**NK89.1**	1	6,70

Sekuroka® soap and disinfectant dispenser plus

For application of hand disinfectants, wash and care lotions
- Removable front for easy pump replacement
- Reliable and robust metal dispenser
- All removable parts are fully autoclavable
- Easy installation even in difficult space conditions
- Fits all commercially available bottles
- Easy and quick bottle replacement
- Easy to operate and clean
- Dispensing quantities are adjustable to approx. 0.75 ml to 1.5 ml per stroke

Delivery incl. mounting hardware, excludes bottle (please order separately).

With long arm lever

For bottles	W x D x H (mm)	Art. No.	Pack Qty.	€
350/500 ml	82 x 215 x 295	**TE53.1**	1	96,25
1000 ml	92 x 225 x 340	**TE54.1**	1	105,35

With short arm lever

For bottles	W x D x H (mm)	Art. No.	Pack Qty.	€
350/500 ml	82 x 160 x 315	**CTA8.1**	1	84,85
1000 ml	92 x 160 x 360	**CTA9.1**	1	93,00

Accessories:

Empty dispenser bottles, 500 ml	**KA39.1**	6	8,00
Empty dispenser bottles, 1000 ml	**KA40.1**	6	9,65

Accessories: drip pans with handle

Suitable for Sekuroka® soap and disinfectant dispenser plus. The drip pans protect floors and other surfaces against products which can drip during dispensing.

For bottles	W x D x H (mm)	Art. No.	Pack Qty.	€
350/500 ml	82 x 215 x 295	**TE55.1**	1	70,95
1000 ml	92 x 225 x 340	**TE56.1**	1	73,10

Accessories: dispensing pumps

Suitable for Sekuroka® soap and disinfectant dispenser plus.

Replacement stainless steel pumps

For bottles	Matching dispenser	Art. No.	Pack Qty.	€
500 ml	TE53.1	**CTA4.1**	1	23,95
1000 ml	TE54.1	**CTA5.1**	1	26,70

Disposable pumps

Single-use plastic pumps. Easy pump replacement after changing bottle. Saves conditioning the stainless steel pump.
- Individually packed for hygienic use of the pump
- Suitable for hand sanitisers and cleansing lotions
- Dispensing quantity: 1.3 ml per stroke, non-adjustable.
- Non-dishwasher safe, non-autoclavable

For bottles	Matching dispenser	Art. No.	Pack Qty.	€
500 ml	TE53.1	**CTA6.1**	1	8,10
1000 ml	TE54.1	**CTA7.1**	1	8,10

Touchless disinfectant dispenser plus

Touchless dispenser for hand sanitiser

- Removable front for easy pump replacement
- Reliable and robust metal dispenser
- Easy installation even in difficult space conditions
- Easy and quick bottle replacement
- Easy to operate and clean
- Dispensing quantities are adjustable to approx. 0.75 to 1.5 ml per stroke

Delivery incl. batteries and mounting hardware, without bottle (please order separately).

For bottles	W x D x H (mm)	Art. No.	Pack Qty.	€
350/500 ml	92 x 210 x 290	**CTC0.1**	1	232,20
1000 ml	92 x 210 x 290	**CTC1.1**	1	246,20

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Soap and disinfectant dispenser Vario

Made of ABS. For application of hand sanitisers, wash and care lotions.
- Removable front for convenient pump replacement
- Easy to assemble
- Easy and quick bottle replacement
- Easy to operate and clean
- Dispensing quantities are adjustable to approx. 1 to 3 ml per stroke

Delivery incl. mounting hardware, excludes bottle (please order separately).

For bottles	W x D x H (mm)	Art. No.	Pack Qty.	€
350/500 ml	74 x 170 x 275	**CPY9.1**	1	50,45
1000 ml	98 x 170 x 345	**CTA0.1**	1	53,70

Accessories: replacement pumps for soap and disinfectant dispenser Vario

Replacements pumps for CPY9.1 and CTA0.1.

For bottles	Art. No.	Pack Qty.	€
350/500 ml	**CTA1.1**	1	16,10
1000 ml	**CTA2.1**	1	16,60

Universal arm lever dispenser

Made of ABS. Operating lever made of stainless steel. Colour: White.
With wall bracket, lockable closing plate and replaceable pump.
Optimally designed for the hygiene needs of a wide range of industries.

- 500 ml or 1000 ml capacity in one dispenser
- Suitable for all conventional bottle models
- Flexible stroke adjustments
- Convenient installation
- Removable drip tray and wall bracket
- Easy folding of the pump head for replacement of the pump
- Locking plate and key guarantee no unauthorised removal

Dimensions: W 105 x H 350 x D 222 mm.

Delivery incl. mounting material, empty 1000 ml bottle and adapter for 500 ml bottle. Drip tray optional, please order separately.

Art. No.	Pack Qty.	€
EYX7.1	1	42,95

Accessories for universal arm lever dispenser

Drip tray: Made of ABS, colour white.
Dimensions: W 185 x H 20 x D 105 mm.
Replacement pump: Made of plastic.

Type	Art. No.	Pack Qty.	€
Drip tray	**EYX8.1**	1	10,70
Replacement pump	**EYX9.1**	1	5,60

Sekuroka®-soap dispenser

For liquid hand wash, lotions, shampoos, shower gel and detergents.
500 ml capacity. Housing made of transparent plastic.
Suitable as standalone or wall-mounted dispenser.
Dimensions: H 180 x W 80 x T 65 mm.
Delivery incl. mounting materials.

Art. No.	Pack Qty.	€
T054.1	1	21,45

Liquid soap dispenser

Universal soap and disinfectant dispenser.
Made of ABS, operating lever made of stainless steel.
Easily filled from canisters.
Suitable for 1000 ml disposable Euro bottles.
Dimensions: W 100 x H 280 x D 180 mm. Lever length 70 mm.
Delivery incl. dispenser bottle and lockable cover plate.

Art. No.	Pack Qty.	€
EYX6.1	1	42,95

Sekuroka®-dispenser

For hand disinfecting agents, wash and skin care lotions in 350 and 500 ml Bode-bottles. Original bottle can be replaced easily.
Dosing approx. 1.5-2 ml per pump action. H 210 x W 58/65 x D 110 mm.
Delivery incl. dosing pump, wall holder, mounting parts, assembly and operating instructions. Bottle not included (please order separately).

For bottles	W x D x H (mm)	Art. No.	Pack Qty.	€
350/500 ml	58/65 x 110 x 210	**N110.1**	1	14,20

Sekuroka®-folded towel dispensers

Made of sheet steel, white, with level indicator window. Suitable for all standard towels. Dimensions: W 275 x H 350 x D 125 mm.

Art. No.	Pack Qty.	€
CY02.1	1	34,30

Sekuroka®-folded hand towels

Made of 100 % recycled paper, soft tissue quality, highly absorbent and tough. Suitable for folded towel dispenser CY02.1, ETY2.1 and EYY1.1.

Type	Size (mm)	Art. No.	Pack Qty. (Sheet)	€
2-ply, tissue, natural, zigzag folds	23,5 x 23	**CY03.1**	20 x 160	32,20
2-ply, tissue, green, zigzag folds	23,5 x 23	**CY04.1**	20 x 160	32,20
1-ply, crepe, natural, quire folding	25 x 33	**CY05.2**	24 x 154	36,50

Wall holders

Made of stable, load bearing ABS plastic. For hand sanitisers, wash and skin care lotion bottles. Easy attachment and cleaning. Consisting of wall plate and bottle holder. Wall plate is attached to the wall, bottle holder is easy to remove and attach for cleaning or replacement.
Resistant to hand sanitisers.
Y973.1 is also suitable for holding Bacillol® Tissue cans.

Delivery incl. mounting hardware, without bottle/can and dispensing pump (please order separately).

For bottles	Inner surface area (mm)	Art. No.	Pack Qty.	€
500 ml	70 x 70	**Y972.1**	2	19,15
1000 ml	88 x 88	**Y973.1**	2	22,60

Folded hand towel dispenser

Made of ABS, colour white with blue window.
Dimensions: W 277 x H 270 x D 130 mm.
Delivery incl. mounting material.

Art. No.	Pack Qty.	€
EYT2.1	1	25,70

Folded hand towels

Made of cellulose, TAD quality, 2-ply, interfold. Highly absorbent, soft and tearproof when wet. Towel dimensions: 20.3 x 32 cm.
Suitable for dispensers: EYY1.1, CY02.1, EYT2.1.

Packaging	Art. No.	Pack Qty.	€
20 x 100 towels	**EYY0.1**	2000	46,05

AQUARIUS hand towel dispenser

By Kimberley-Clark. Made of impact resistant plastic, white, with sight glass.
For hygienic individual removal of paper hand towels.
Dimensions: L 265 x D 136 x H 399 mm.
Suitable for disposable hand towels: KLEENEX® Art. No. X251.2, ECX6.1, ECX7.1 and SCOTT® Performance Art. No. X254.2.

KC number	Art. No.	Pack Qty.	€
6945	**X252.1**	1	102,80

Disposable hand towels for AQUARIUS hand towel dispenser

By Kimberley-Clark.

SCOTT® Performance hand towels
Disposable hand towels made of Airflex paper, white, single layer, interfold.
Suitable for hand towel dispenser AQUARIUS Art. No. X252.1.

KC number	Towel size L x W (mm)	Packaging	Art. No.	Pack Qty.	€
6663	315 x 215	15 pack, 212 sheets each	**X254.2**	3180	82,40

KLEENEX® ULTRA hand towels
Disposable hand towels made of Airflex paper, white. Double-layer, interfold. Outstanding quality, highly absorbent and tear resistant.
Suitable for hand towel dispenser AQUARIUS Art. No. X252.1.

KC number	Towel size L x W (mm)	Packaging	Art. No.	Pack Qty.	€
6777	315 x 215	30 pack, 124 sheets each	**ECX6.1**	3720	140,85

KLEENEX® ULTRA SUPER SOFT hand towels
Disposable hand towels made of Airflex paper, white.
Triple-layer, interfold, very soft, kind to the skin and highly absorbent.
Suitable for hand towel dispenser AQUARIUS Art. No. X252.1.

KC number	Towel size L x W (mm)	Packaging	Art. No.	Pack Qty.	€
6771	315 x 215	30 pack, 96 sheets each	**ECX7.1**	2880	153,75
6773	415 x 215	30 pack, 72 sheets each	**X251.2**	2160	176,30

Midi folded hand towel dispenser

Made of ABS, colour white with window. Suitable for all folded hand towels, lockable. Dimensions: W 255 x H 250 x D 120 mm.
Delivery incl. mounting material and dispenser plate for interfold paper.

Art. No.	Pack Qty.	€
EYY1.1	1	27,45

COSMOS hand towel roll dispenser

Made of ABS plastic, colour white. Lockable and secure. Cover opens upwards and remains open for convenient refilling. Removable wall bracket for flexible handling. Automatic remnant roll function.
Dimensions: H 430 x W 320 x D 210 mm.
Suitable for hand towel rolls up to W 290 mm.

① **COSMOS**
Push lever with slip clutch.
Delivery incl. mounting material.

Art. No.	Pack Qty.	€
EYX0.1	1	103,20

② **COSMOS Sensor**
With length regulator. Setting options: Sensor or Auto mode as well as battery or mains operation.
Delivery incl. mounting material and 4 (Duracell D) 1.5 V batteries.

Art. No.	Pack Qty.	€
EYX1.1	1	148,35

Accessories:

Mains adapter for COSMOS Sensor hand towel roll dispenser	**EYX2.1**	1 piece	18,25
Mono/D 1.5 V battery	**1024.2**	2 pieces	6,35
Paper rolls, 2-ply, W 290 x L 140 m, for COSMOS hand towel roll dispenser	**EYX3.1**	6 pieces	42,95

Maxi hand towel roll dispenser with pull-out unit

Made of ABS, colour white with blue window. Lockable.
Dimensions: W 207 x H 321 x D 220 mm. For roll diameters max. 190 mm.

Art. No.	Pack Qty.	€
EYY2.1	1	37,10

Lab towels

Made of 100 % cotton, towelling quality, can be washed at 90 °C.
Dimensions: 50 x 100 cm, surface weight 420 g/m².

Colour	Art. No.	Pack Qty.	€
peacock blue	**1617.1**	3	23,15
creamy-yellow	**1616.1**	3	23,15
pure white	**0121.1**	3	23,15

Wall-mounted dispenser for hand towel rolls

Made of impact-resistant plastic.
For tidy storage and easy removal of wipes from the roll.

Dimensions: W x D x H (mm)	suitable for	Art. No.	Pack Qty.	€
140 x 140 x 280	E184.1	**E183.1**	1	35,40

Disposable hand towel rolls

Premium quality, tear resistant, single-layer, unperforated, white.
Pull out centre, unwind wipes from inside.

Blade width (mm)	Roll length (m)	suitable for	Art. No.	Pack Qty. (roll)	€
200	120	E183.1	**E184.1**	3	16,05
203	300	EYY2.1	**E185.1**	2	21,45

Sekuroka®-wire mesh basket

Made of robust metal with plastic coating. Suitable as waste basket, e.g. for paper tissues. Dimensions: L 360 x W 260 x H x 610 mm.

Art. No.	Pack Qty.	€
AC06.1	1	40,80

Accessories for Sekuroka® wire mesh basket

Matching waste disposal bags
50 litres. Made of PE, white. Dimensions: 370/260 x 850 mm, strength 30 µm. 40 bags, pre-perforated on a roll.

Art. No.	Pack Qty.	€
Y405.1	200	23,60

Disposable gloves

As of 21st April 2018, the European regulation on personal protective equipment (PPE) (EU) 2016/425 replaced the previous directive 89/686/EEC

EC type examination certificates in accordance with directive 89/686/EEC remain valid until 21st April 2023, provided they do not expire before then.

PPE that corresponds to directive 89/686/EEC and that was placed on the market before 21st April 2019 may be provided on the market and used by operators until 21st April 2023.

European Standards for protective gloves:

EN 374	Protective gloves against chemicals and micro-organisms
EN 388	Protective gloves against mechanical risk
EN 407	Protective gloves against thermal risk
EN 420	General requirements for gloves
EN 421	Gloves for protection against ionising radiation and radioactive contamination
EN 455	Medical gloves for single use
EN 511	Protective gloves against the cold
EN 1082	Protective clothing, gloves and protective sleeves for protection against cuts and stab injuries caused by pocket knives
EN 1149	Protective clothing against electrostatics
EN 12477	Protective gloves for welders

AQL-value: Statistical procedure for quality analysis.

Identification of protective gloves via standardized pictographs:

Protection against mechanical hazards

Protection against chemical hazards

Waterproof protective gloves and low protection against chemical hazards

Protection against bacteriological contamination

Protection against radioactive contamination

Protection against cold

Protection against heat and flames

Commodity goods which are safe to come in contact with food

Rotilabo®-wall dispensers

Made of **stainless steel**. Suitable for all Rotiprotect® glove dispensers and Rotizell®-tissues (0087.2). By lightly pressing the two metal hoops together, other dispensers of max. 7.5 cm width can be inserted.
Comes with two loops for wall attachment. Dowels and screws included.

Type	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
For one box	180 x 85 x 135	**Y383.1**	1	22,55
For three boxes	245 x 100 x 477	**AC07.1**	1	53,65

Dracula universal wall mount

Made of PS, colour: white. Adaptable wall mount for dispenser boxes in various sizes, ideal for disposable gloves, face masks, tissues or wipes. For doctor's surgeries, laboratories and hospitals.

- Spring-loaded clamp with teeth
- For boxes with a width of 100 to max. 130 mm, weight up to approx. 1 kg
- Can be attached with double-sided adhesive tape or screws
- Dimensions: W 100 x H 170-210 x D 20 mm

Delivery incl. double-sided adhesive strips for fastening.

Art. No.	Pack Qty.	€
CAL7.1	1	7,50

Sekuroka®-Solo glove dispenser

Made of premium-quality stainless steel, matt-brushed surface.
Can be disinfected with surface disinfectant.
Flexible wall mounting options: Can be mounted vertically or horizontally thanks to the shelf support fitted on one side.
Highly adaptable: On the back of the dispenser is a tab that users can fold over in order to insert boxes of different sizes (between 60 and 90 mm) and secure them firmly in place. Flat boxes will not slip backwards.
Delivery incl. wall fastenings.

Outer dimensions: L x W x H (mm)	Suitable dispenser boxes max. L x W x H (mm)	Art. No.	Pack Qty.	€
250 x 135 x 95	250 x 132 x 90	**EHC9.1**	1	42,95

Sekuroka®-stainless steel glove dispensers

Made of high-quality stainless steel with brushed matt finish.
Can be disinfected with surface disinfectant.
① **Flex glove dispenser**
Height adjustable with variable mounting positions - can be mounted on a level surface or bolted to the wall. Suitable for dispensers with central dispensing opening. Also suitable for dispensing cosmetic wipes and cleaning wipes.
Delivery incl. 4 non-slip, self-adhesive mounting pads to protect surfaces.
② **Fix glove dispenser**
Keyhole system for quick mounting and removal from the wall without tools.
③ **Trio glove dispenser**
Three-way glove dispenser with a straightforward vertical layout.
Sizes S, M and L are marked on the side. Filling from above.
Can be removed from the wall without tools.
All dispensers are **supplied with** mounting materials.

Type	Outer dimensions: L x W x H (mm)	Suitable dispenser boxes max. L x W x H (mm)	Art. No.	Pack Qty.	€
① Flex	262 x 152 x 90	259 x 136 x 60-90	**NK95.1**	1	81,50
② Fix	250 x 135 x 80	250 x 132 x 75	**NK96.1**	1	42,50
③ Trio	258 x 96 x 392	250 x 130 x 90	**NK97.1**	1	68,30
Adapter for Iso standard rail	202 x 23 x 37	-	**NK98.1**	1	21,45

Multismart glove dispenser

Made of high-quality stainless steel, polished appearance.
Triple dispenser, inner height and width can be variably adjusted.
Clear vertical arrangement. To be filled from above.
Can be disinfected with surface disinfectant. Suitable for wall mounting.
Variable inner dimensions: Width 200-260 mm, depth 40-95 mm.
Delivery incl. mounting parts.

Art. No.	Pack Qty.	€
KCT3.1	1	75,05

Acrylic wall-mounted holder

Made of transparent acrylic. For boxes containing gloves or cleaning wipes.
Can be wall-mounted. Supplied without wall fastenings.

Type	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
①	250 x 140 x 70	**EHX1.1**	1	13,95
②	250 x 145 x 100	**EHX2.1**	1	15,60

Disposable gloves

Latex finger stalls

With roll-up cuff, **powder-free**, natural colour. Length 68 mm, 0.1 mm thick.

Size	Flat width (mm)	Art. No.	Pack Qty.	€
3 (M)	24	**X152.1**	500	11,75
4 (L)	27	**X153.1**	500	11,75
5 (XL)	30	**X154.1**	500	11,75

Sekuroka®-membrane gloves, extra-long

Made of soft foil (co-Polymer), very stretchable. Colour orange.
Disposable, ambidextrous. Strength 30 µm, length approx. 90 cm.

Art. No.	Pack Qty.	€
AN64.1	50	8,85

PE-gloves

Disposable gloves made of polyethylene. Simple consumer quality.
10 packs of 100.

Size	Art. No.	Pack Qty.	€
Men's gloves	**1969.1**	1000	17,10
Ladies' gloves	**H706.1**	1000	17,10

Cat. I

Sekuroka®-membrane gloves

Made of blue soft foil (co-polymere), very stretchable.
Disposable, ambidextrous.
Ideal for foodstuffs acc. to Guidelines 90/128/EWG.
Strength 30 µm, length 375 mm.

Art. No.	Pack Qty.	€
AN63.1	100	5,60

Disposable gloves made of PE

Made of sturdy polyethylene, stretchable and powdered.
Skin friendly and abrasion-proof. Suitable for delicate work.
Come in dispenser carton with holes for wall mounting.

Size	Art. No.	Pack Qty.	€
Ladies'	**1517.1**	100	12,15
Men's	**1230.1**	100	12,15

Undergloves

Made of 100 % nylon. Thin white fine knit. Fingertip-free fine knit undergloves for protection against sweaty hands.
High wearing comfort, good tactile sensitivity and ambidextrous.
Machine washable up to 30 °C, suitable for multiple use. Universal size.

Art. No.	Pack Qty. (pair)	€
NK52.1	10	17,15

Rotiprotect®-vinyl gloves

Acc. to EN 420, corresponds to EN 455. AQL 1.5.

Comply with the requirements of the Foodstuffs and Commodotoes Law, EU-Regulation 1935/2004.

Not suitable for foodstuffs containing grease.

Cat. I

Rotiprotect®-vinyl

Disposable vinyl gloves, powder-free

CE Category I, protected from minimal risks.

Very good sense of touch
- Colour transparent
- Made of PVC
- Smooth
- Flexible
- With roll-type edge
- Wall thickness, double: approx. 0.18 mm
- Free of latex proteins
- Can be used on both hands
- 100 or 90 units in a dispenser carton

Size	Length (mm)	Art. No.	Pack Qty.	€
S (6-7)	≥240	**6177.1**	100	8,25
M (7-8)	≥240	**6178.1**	100	8,25
L (8-9)	≥240	**6179.1**	100	8,25
XL (9-10)	≥240	**X356.1**	90	8,25
With 10 boxes of each size				7,43/box

Resistance list Rotiprotect®-vinyl gloves

Material	Level acc. to EN 374-3	Permeation time (min)
Acetic acid (10 %)	6	>480
Acetone	n. r.	instant
Acetonitrile	A	<10
Ammonia (25 %)	A	<10
Benzalconium chloride	4	>120
Benzene	n. r.	instant
Cyclohexanol (solid)	4	>120
Chlorohexidine (solid)	6	>480
Dichloremethane	n. r.	instant
Diesel oil	A	<10
Diethylamine	n. r.	instant
Diethylether	n. r.	instant
Dimethylsulfoxide (DMSO)	n. r.	instant
Ethanol (80 %)	A	<10
Ethyl acetate	n. r.	instant
Formaldehyde (37 %) in 10 % methanol	A	<10
Formaldehyde (37 %), formalin	A	<10
Glutaraldehyde (5 %)	5	>240
n-Heptane	n. r.	instant
n-Hexane	n. r.	instant
Hydrochloric acid (36 %)	1	>10 min
Isopropyl alcohol	A	<10
Linseed oil	A	<10
Nitric acid (10 %)	6	>480
Nitric acid (50 %)	6	>480
Phenol (10 %)	A	<10
Soda lye (40 %)	6	>480
Sulphuric acid (96 %)	A	<10
Toluene	n. r.	instant
Trichloroethane	n. r.	instant
Xylene	n. r.	instant

Level / permeation time:

A - only recommended as splash guard

Level 1 >10 min
Level 2 >30 min
Level 3 >60 min
Level 4 >120 min
Level 5 >240 min
Level 6 >480 min
n. r. = not recommended

This information is based upon laboratory test methods which cannot simulate the working conditions completely. It is the responsibility of the end consumer to select the gloves most suitable for his needs. When working with substances that may irritate the skin, please always check the glove beforehand for possible holes or tears.

Rotiprotect®-latex gloves

Comply with the requirements of the Foodstuffs and Commodotoes Law, EU-Regulation 1935/2004.

- Very smooth and pleasantly soft
- Extremely stretchable
- Thiuram-free
- Thin roll-type edge
- AQL 1.5

Cat. III

Rotiprotect®-latex gloves Type 1 powder-free

Disposable natural latex gloves

Acc. to 89/686/EEC, CE category III, for protection against complex risks
Acc. to EN 420, EN 374 and ASTM-F 1671-97. AQL 1.5
Acc. to 1935/2004 - suitable for contact with foodstuffs.

Textured surface for secure grip.
- Very smooth and pleasantly soft
- Extremely stretchy
- High tactile sensitivity
- Can be worn on both hands
- Beaded cuff
- Colour: natural
- Double thickness: min. 0.20 mm
- Thiuram-free
- 100 or 90 per dispenser box

Size	Length (mm)	Art. No.	Pack Qty.	€
S (6-7)	≥240	**C268.1**	100	12,85
M (7-8)	≥240	**C269.1**	100	12,85
L (8-9)	≥240	**C270.1**	100	12,85
XL (9-10)	≥240	**HE60.1**	90	12,85
With 10 boxes of each size				11,57/box

Cat. III

Rotiprotect®-latex gloves Type 2 powder-free

Disposable natural latex gloves

Acc. to 89/686/EEC, CE category III, for protection against complex risks
Acc. to EN 420, EN 455, EN 374 and ASTM-F 1671-97. AQL 1.5
Acc. to 1935/2004 - suitable for contact with foodstuffs.

Textured surface for secure grip.
Synthetic inner coating makes gloves easy to put on.
- Maximum wearing comfort and optimum perspiration absorption
- Intensive washing processes ensure gloves contain low levels of protein and irritants
- Can be worn on both hands
- Beaded cuff
- Colour: natural (light)
- Double thickness: min. 0.22 mm
- Thiuram-free
- 100 or 90 per dispenser box

Size	Length (mm)	Art. No.	Pack Qty.	€
S (6-7)	≥240	**L949.1**	100	11,75
M (7-8)	≥240	**L950.1**	100	11,75
L (8-9)	≥240	**L951.1**	100	11,75
XL (9-10)	≥240	**HE61.1**	90	11,75
With 10 boxes of each size				10,58/box

Thiurams
are used as a preservative during glove manufacturing and are also mainly added to accelerate vulcanisation. Thiurams may often cause latex allergies.

Resistance list Rotiprotect®-latex gloves

Rotiprotect® Latex	Type 1 powder-free C268.1 ff.	Type 2 powder-free L949.1 ff.	Type 4 powdered 5884.1 ff.
Substance	**Level acc. to EN 374**		
Acetic acid (10 %)	2	2	A
Acetone (2-propanone, ketone propane)	n.r.	n.r.	n.r.
Acetonitrile (methyl cyanide, ethane nitrile)	n.r.	n.r.	n.r.
Acrylamide (40 %)	6	n.t.	6
Ammonia (25 %)	A	A	n.t.
Benzalkonium chloride fl. (quaternary ammonium compound)	n.t.	6	n.t.
Chlorhexidine gluconate+ethanol+water	n.t.	n.t.	n.t.
Chloroform (trichloromethane)	n.r.	n.r.	n.r.
Cyclohexanol (hexalin / at 23 °C)	n.t.	1	n.t.
Dichloromethane (methylene dichloride, Freon 30)	n.r.	n.r.	n.r.
Diethyl amine (DEA)	n.r.	n.r.	n.r.
Diethyl ether (diethyl oxide, ethoxyethane)	n.r.	n.r.	n.r.
Dimethyl sulphoxide DMSO	n.r.	n.r.	n.r.
Ethanol (20 %)	A	A	A
Ethanol (40 %)	n.r.	n.r.	n.r.
Ethanol (70 %)	n.r.	n.r.	n.r.
Ethanol (80 %)	n.r.	n.r.	n.r.
Ethanol p.a.	n.r.	n.r.	n.r.
Ethidium bromide (1 %)	n.r.	n.r.	n.r.
Ethyl acetate	n.r.	n.r.	n.r.
Formaldehyde (37 %)	1	n.t.	A
Glutaraldehyde (5 %)	6	n.t.	n.t.
n-heptane (CAS 142-82-5)	n.r.	n.r.	n.r.
n-hexane (CAS 110-54-3)	n.r.	n.r.	n.r.
Hydrochloric acid (36 %)	A	1	1
Hydrofluoric acid (40 %) (hydrogen fluoride)	n.t.	n.t.	n.t.
Isopropyl alcohol (40 %)	A	A	A
Isopropyl alcohol (70 %)	A	A	A
Isopropyl alcohol p.a.	n.r.	A	n.r.
Methanol p.a.	n.r.	n.r.	n.r.
Nitric acid (10 %)	6	6	6
Nitric acid (36 %)	6	n.t.	n.t.
Nitric acid (50 %)	2	A	A
Petroleum (heavy, bp 150-190 °C)	n.r.	n.r.	n.r.
Phenol (10 %)	n.t.	A	A
Phenol (80 %)	n.t.	n.t.	n.t.
Phosphoric acid (30 %)	6	n.t.	n.t.
Potassium hydroxide (30 %) (caustic potash)	1	n.t.	n.t.
Sodium hydroxide (30 %) (caustic soda)	4	6	2
Sodium hydroxide (40 %) (caustic soda)	4	5	3
Sulphuric acid (96%)	n.t.	1	n.t.
Toluene	n.r.	n.r.	n.r.
Trichlorethane	n.r.	n.r.	n.r.
Xylene	n.r.	n.r.	n.r.

Level / Permeation time:

Level 1 >10 min	Level 4 >120 min	A - < 10 min, only recommended as splash guard
Level 2 >30 min	Level 5 >240 min	n.r. = not recommended (ruptures immediately)
Level 3 >60 min	Level 6 >480 min	n.t. = not tested

This information is based on laboratory test methods which are not able to simulate al aspects of the working conditions. The end user is responsible for selecting appropriate gloves for a given application. When working with fabrics which can damage the hands, please check the gloves first for any holes and cracks they may contain.

S

Cat. III

Sempercare® premium sterile - examination gloves

Disposable natural latex gloves, powder-free, sterile.
Acc. to 93/42 EEC medical product class I, acc. to 89/686/EEC PSA category III, acc. to EN 420, EN 374, EN 455, ASTM-F 1671-97, AQL 1,5

- Usable on both sides
- Synthetic inner coating
- Colour: yellowish-white
- Smooth surface, textured fingers, thin beaded cuff
- Double wall thickness: 0.16 mm fingertips; 0.26 mm palm
- High tensile strength (9 N) gives superior protection for use in critical environments
- Protection against infection for user and patient
- Gamma-sterilised acc. to EN 552, EN 556
- Packaged in pairs inside sterile pouches and sealed

Applications: health care, medical and dental use, light laboratory applications, food processing.

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
S (6-7)	≥240	**HH47.1**	40	32,20
M (7-8)	≥240	**HH48.1**	40	32,20
L (8-9)	≥240	**HH49.1**	40	32,20
With 10 boxes of each size				28,98/box

Cat. III

Semperclean MC

Single-use gloves made of natural Latex, powder-free
Acc. to 89/686/EEC CE Category III, for complex risks.
Acc. to 93/42/EEC: CE Class I Medical products.
Acc. to EN 420, EN 374, EN 455, AQL 1.5.

- **With hand-specific form**, ideal fit for fatigue-free work
- Highest wearing comfort and especially easy to put on due to special inner coating
- Excellent secure grip through micro-roughended surfaces
- Especially skin-friendly, since cleaned/washed in the production process
- Thin rolled edge
- Colour: natural white
- Length: min. 270 mm
- Double thickness: approx.0.42 mm (measured double)
- 50 pairs in a dispenser carton

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
S	270	**HHN4.1**	50	42,95
M	280	**HHN5.1**	50	42,95
L	285	**HHN6.1**	50	42,95

Rotiprotect®-nitrile gloves

Acc. to 89/686/EEC, CE category III,
for protection against complex risks
Acc. to EN 420, corresponds to EN 455, EN 374 and ASTM-F 1671-97. AQL 1.5.
Acc. to 1935/2004 - suitable for contact with foodstuffs.

Rotiprotect® -nitrile evo

Disposable nitrile gloves, powder-free

Textured surface for secure grip
- Higher durability thanks to special formulation
- High elasticity and good tactile sensitivity
- Can be worn on both hands
- Beaded cuff
- Colour: blue
- Thickness: approx. 0.14 mm
- Length: min. 240 mm
- Free from phthalates/plasticisers and allergenic latex proteins
- 100 or 90 per dispenser box

Ideal for general laboratory use, good resistance to many chemicals, greases and oils.

Size	Art. No.	Pack Qty.	€
S (6-7)	**CPX6.1**	100	15,00
M (7-8)	**CPX7.1**	100	15,00
L (8-9)	**CPX8.1**	100	15,00
XL (9-10)	**CPX9.1**	90	15,00
With 10 boxes of each size			13,50/box

Disposable gloves
These gloves have been manufactured for single use and should be disposed of regularly. They are liquidproof and can therefore be used as protection against splashing of certain chemicals. Gloves which have been contaminated with chemicals should be changed as soon as possible.

Rotiprotect®-nitrile eco

Disposable nitrile gloves, powder-free

Textured fingers for secure grip
- Extra thin and soft for maximum wearing comfort
- High tactile sensitivity
- Can be worn on both hands
- Beaded cuff
- Colour: blue
- Thickness: approx. 0.10 mm
- Length: min. 240 mm
- Free from phthalates/plasticisers and allergenic latex proteins
- 100 or 90 per dispenser box

The perfect disposable solution for splash protection against many chemicals and for handling greasy foodstuffs. The blue signal is suitable for areas which are subject to HACCP standards.

Size	Length (mm)	Art. No.	Pack Qty.	€
S (6-7)	≥240	**TC12.1**	100	12,70
M (7-8)	≥240	**TC13.1**	100	12,70
L (8-9)	≥240	**TC14.1**	100	12,70
XL (9-10)	≥240	**TC15.1**	90	12,70
With 10 boxes of each size				11,43/box

Rotiprotect®-nitrile light

Disposable nitrile gloves, powder-free

Textured fingers for secure grip
- Extra thin and elastic for maximum wearing comfort
- High tactile sensitivity
- Can be worn on both hands
- Beaded cuff
- Colour: lavender-blue
- Thickness: approx. 0.07 mm
- Length: min. 240 mm
- Free from phthalates/plasticisers and allergenic latex proteins
- 200 or 180 per dispenser box

The perfect alternative to latex gloves. An extremely thin nitrile glove with outstanding elasticity and maximum wearing comfort thanks to a specially developed formulation and innovative production technology.

Size	Art. No.	Pack Qty.	€
XS (5-6)	**EYK7.1**	200	23,55
S (6-7)	**AYA6.1**	200	23,55
M (7-8)	**AYA7.1**	200	23,55
L (8-9)	**AYA8.1**	200	23,55
XL (9-10)	**AYA9.1**	180	23,55
With 10 boxes of each size			21,20/box

Rotiprotect® nitrile green

Disposable nitrile gloves, non-powdered

Acc. to EN 420, EN 455, EN ISO 374-1/Type B (KPT) and EN ISO 374-5 (virus), ASTM-F 1671-97. AQL 1.5
Acc. to 1935/2004 – suitable for contact with foodstuffs

Textured finger tips for better grip during wet or dry use

- Easy to put on thanks to special inner coating
- Reduced risk of allergic skin reactions
- Can be worn on either hand
- Rolled edge
- Colour: mint green
- Wall thickness: approx. 0.06 mm
- Length: approx. 240 mm
- 200 or 180 per dispenser box

The perfect alternative to latex gloves. An extremely thin nitrile glove with outstanding elasticity and maximum wearing comfort thanks to specially developed formulation and innovative production technology.
Skin-friendly formula: free from latex proteins, manufactured without vulcanisation accelerators or chlorine.
Environmentally friendly manufacture: water- and energy-saving, reduced CO_2 emissions.

Size	Art. No.	Pack Qty.	€
S (6-7)	**HXK1.1**	200	24,10
M (7-8)	**HXK2.1**	200	24,10
L (8-9)	**HXK3.1**	200	24,10
XL (9-10)	**HXK4.1**	180	24,10
With 10 boxes of each size			21,69/box

Resistance list Rotiprotect®-nitrile gloves

	Nitrile evo CPX6.1ff	Nitrile eco TC12.1ff	Nitrile light EYK7.1ff
Substance	Level gem. EN 374		
Acetic acid (10 %)	n.t.	6	6
Acetone (2-Propanon, Ketonpropan)	n.r.	n.r.	n.r.
Acetonitrile (Methylcyanide, Ethanenitrile)	n.r.	n.r.	n.r.
Acrylamide (40 %)	6	6	6
Ammonia (25 %)	n.t.	A	n.t.
Benzene (heavy, bp 160-190 °C, CAS 8032-32-4)	n.r.	n.r.	n.r.
Chloroform (Trichloromethane)	n.r.	n.r.	n.r.
Cyclohexanol (Hexalin / at 23 °C)	4	3	n.t.
Dichlormethane (Methylene dichloride, Freon 30)	n.r.	n.r.	n.r.
Diethylamine (DEA)	n.r.	n.r.	n.r.
Diethylether (Diethyloxide, Ethoxyethane)	n.r.	n.r.	n.r.
Dimethylsulfoxide DMSO	n.r.	n.r.	n.r.
Ethanol (20 %)	6	6	1
Ethanol (40 %)	1	1	A
Ethanol (70 %)	1	1	A
Ethanol (80 %)	1	A	A
Ethanol p.a.	n.t.	A	A
Ethidiumbromide (1 %)	6	6	6
Ethylacetate	A	n.r.	n.r.
Formaldehyde (37 %)	6	3	1
Glutaraldehyde (5 %)	6	6	6
n-Heptane (CAS 142-82-5)	A	n.r.	n.r.
n-Hexane (Cas 110-54-3)	A	n.r.	n.r.
Hydrochloric acid (10 %)	n.t.	6	6
Hydrochloric acid (36 %)	3	2	A
Hydrofluoric acid (40%) (Hydrogen fluoride)	1	n.t.	n.t.
Hydrogen peroxide	n.t.	6	n.t.
Isopropylalcohol (40 %)	1	1	1
Isopropylalcohol (70 %)	1	1	1
Isopropylalcohol p.a.	1	1	A
Methanol 5 %	n.t.	6	n.t.
Methanol p.a.	A	A	n.r.
Nitric acid (10 %)	6	6	6
Nitric acid (36 %)	4	A	A
Nitric acid (50 %)	4	A	A
Phenol (10 %)	2	n.r.	n.r.
Phenol (80 %)	2	n.r.	n.r.
Phosphoric acid (30 %)	n.t.	6	6
Potassiumhydroxide (30 %)	6	6	6
Sodiumhydroxide (30 %) (Caustic potash, caustic soda)	6	6	6
Sodiumhydroxide (40 %) (Caustic potash, caustic soda)	6	6	6
Sulphuric acid (96 %)	1	A	n.t.
Toluene	n.r.	n.r.	n.r.
Trichlorethane	n.r.	n.r.	n.r.
Xylene	n.r.	n.r.	n.r.

Level / permeation time:

Level 1 >10 min
Level 2 >30 min
Level 3 >60 min
Level 4 >120 min
Level 5 >240 min
Level 6 >480 min
A - only recommended as splash guard
n. r. = not recommended
n. t. = not tested

This information is based upon laboratory test methods which cannot simulate the working conditions completely. It is the responsibility of the end consumer to select the gloves most suitable for his needs. When working with substances that may irritate the skin, please always check the glove beforehand for possible holes or tears.

Disposable gloves

Cat. III

Semperguard® Nitrile Xenon examination gloves

Disposable nitrile gloves, non-powdered

Acc. to 89/686/EEC: CE category III, protection against complex risks.
Acc. to 93/42/EEC: CE class I medical product.
Acc. to EN 420, EN 374, AQL 1.5.
Acc. to EC regulation 1935/2004 - suitable for contact with foodstuffs.

- **Smooth exterior, textured fingers**
- Very soft, very thin with latex-like wearing comfort and excellent tactile sensitivity
- Can be worn on both hands
- Thin rolled edge
- Kind to the skin: free of phthalates and allergy-causing latex proteins
- Colour: white
- Wall thickness: approx. 0.05 mm
- 200 or 180 per dispenser (less packaging material)

Applications: foodstuffs production, catering, health care, examination gloves, medical areas, light industrial applications.

Size	Length (mm)	Art. No.	Pack Qty.	€
S (6-7)	240	**XP94.1**	200	26,35
M (7-8)	240	**XP95.1**	200	26,35
L (8-9)	240	**XP96.1**	200	26,35
XL (9-10)	240	**XP97.1**	180	26,35
With 10 boxes of each size				23,72/box

Cat. III

Semperguard® Nitrile Xtension

Disposable nitrile gloves, non-powdered

Acc. to 89/686/EEC: CE category III, protection against complex risks.
Acc. to 93/42/EEC: CE class I medical product.
Acc. to EN 420, EN 374, EN 455, AQL 1.5.
Acc. to 1935/2004 – suitable for contact with foodstuffs.

- High wearing comfort
- Safe grip due to textured finger tips
- Good protection against many chemicals
- Skin-friendly, since free of phthalaten/plasticizers and allergenic latex proteins
- Thin rolled edge
- The blue signal colour is suitable for areas which are subject to HACCP standards
- **Length: 300 mm**. Extra protection at wrist
- Double thickness: approx. 0.20 mm (measured double)

Size	Art. No.	Pack Qty.	€
S	**HLH8.1**	100	19,25
M	**HLH9.1**	100	19,25
L	**HLK0.1**	100	19,25
XL	**HLK1.1**	90	19,25

S

Cat. III

Nitrile® sterile examination gloves

By Meditrade. **Disposable nitrile gloves, powder-free, sterile.**
In accordance with EN 420, EN 455, AQL 1.5.
In accordance with 93/42/EEC medical product category Is.

Thin and soft material, fit the hand like a second skin after just a short time and thus guarantee fatigue-free work.

- Micro-rough surface
- With polymer inner coating making them easy to put on
- Can be worn on both hands
- With rolled edge
- Colour: white
- Thickness: approx. 0.06 mm
- Length: ≥240 mm
- Free from allergenic latex proteins
- In pairs in a peel pack

Applications: for all areas with sterile requirements and in sterile environments, in laboratories, in the pharmaceutical industry, cleaning industry, food industry, etc.

Size	Art. No.	Pack Qty. (pair)	€
S (6-6.5)	**EYL4.1**	50	28,30
M (7-7.5)	**EYL5.1**	50	28,30
L (8-8.5)	**EYL6.1**	50	28,30
XL (9-9.5)	**EYT3.1**	50	28,30

Cat. III

Nitrile® magenta examination gloves

By Meditrade. **Disposable gloves made of nitrile, powder-free**.
In accordance with EN 420, EN 455, EN 374, AQL 1,5.
In accordance with 93/42/EEC Medical product category I.
In accordance with 1935/2004 – food safe.

- Patented inner coating, silk-sericin coating, gentle on the hands and ensures the gloves can be put on easily
- Excellent tactile sensitivity and flexibility
- Ideal for particularly dry and stressed skin
- Micro-rough surface
- Can be worn on both hands
- With rolled edge
- Colour: Pink
- Thickness: approx. 0.07 mm
- Length ≥240 mm
- Free from allergenic latex proteins

Applications: use in laboratories, in the pharmaceuticals industry, for patient care and for handling of cleaning agents.

Size	Art. No.	Pack Qty.	€
S	**EYL1.1**	100	11,10
M	**EYL2.1**	100	11,10
L	**EYL3.1**	100	11,10
With 10 boxes of each size			9,99/box

Cat. III

Microflex® 93-833

By Ansell. Disposable gloves, examination gloves made of nitrile.
Acc. to 89/686/EWG: CE Category III, protected from complex risks.
Acc. to. EN 420, EN 374, EN 455, AQL 0,65.
Antistatic acc. to EN 1149

- Examination gloves with ergonomics certificate. The low muscle force required and the resulting low hand fatigue minimizes the risk factors for illnesses at the workplace caused by ergonomics (carpal tunnel syndrome)
- Protection against type-I allergy, irritation and dehydration of the skin, since powder-free and latex-free
- Can be worn on both hands
- Thin rolled edge
- Length 240 mm
- Thickness: approx. 0.07 mm

Applications: laboratory analyses, food processing, manufacture and preparation of pharmaceuticals, assembly and inspection, storage work, maintenance and cleaning of devices ad instruments, examination of patients.

Size	Art. No.	Pack Qty.	€
5.5-6	**HLT3.1**	250	32,15
6.5-7	**HLT4.1**	250	32,15
7.5-8	**HLT5.1**	250	32,15
8.5-9	**HLT6.1**	250	32,15
9.5-10	**HLT7.1**	230	32,15
With 10 boxes of each size			28,94/box

Cat. III

Microflex® 93-856

By Ansell. Disposable gloves, examination gloves made of nitrile.
Acc. to 89/686/EEC: CE Category III, protected from complex risks.
Acc. to EN 420, EN 374, EN 455, AQL 1,5.
Antistatic acc. to EN 1149

- High visibility of the hands at greater distances and therefore higher safety in the work areas due to bright orange colour, also when lighting is poor
- Resistant to a wide range of industrial chemicals over a longer period than other gloves made of nitrile
- Additional protection through extended cuff
- Safe grip due to textured fingers
- Powder-free and latex-free for protection against type-I allergy
- Can be worn on both hands
- Thin rolled edge
- Length 270 mm
- Thickness: approx. 0.13 mm

Applications: laboratory analyses, assembly and inspection, storage work, maintenance and cleaning of devices and instruments, examination of patients.

Size	Art. No.	Pack Qty.	€
6.5-7	**HLP8.1**	100	32,15
7.5-8	**HLP9.1**	100	32,15
8.5-9	**HLT0.1**	100	32,15
9.5-10	**HLT1.1**	100	32,15
10.5-11	**HLT2.1**	100	32,15
With 10 boxes of each size			28,94/box

Cat. III

Microflex® 93-260

By Ansell. Disposable gloves, examination gloves made of neoprene and nitrile.
Acc. to 89/686/EEC: CE category III, for protection against complex risks.
Acc. to EN 420, EN 388 and EN 374. AQL 0.65. Antistatic acc. to EN1149.

- Coating material neoprene and nitrile
- Excellent protection against chemicals, including acids, solvents and bases
- Thin-walled, therefore high tactile sensitivity and finger mobility
- Extra-soft material and anatomic fit, very good wearing comfort, high flexibility
- Textured fingertips
- Silicon-free material formulation and processing
- Non-powdered
- Colour: green outside, blue inside
- Rolled edge
- Length 300 mm
- Double thickness 0.198 mm
- 50 piece per dispenser box

Applications: sampling and laboratory processing, handling of unexpected leaks, transport of liquids and solids, spillage or other releases, petrochemicals, paint and varnishing, handling of spray guns and robots.

Size	Art. No.	Pack Qty.	€
XS (5.5-6)	**HNT5.1**	50	25,95
S (6.5-7)	**HNT6.1**	50	25,95
M (7.5-8)	**HNT7.1**	50	25,95
L (8.5-9)	**HNT8.1**	50	25,95
XL (9.5-10)	**HNT9.1**	50	25,95
XXL (10.5-11)	**HNX0.1**	50	25,95
With 10 boxes of each size			23,36/box

SHOWA disposable gloves

- Made of 100 % nitrile rubber (latex-free)
- Wearing comfort like a second skin
- Easy to put on and take off
- Low-modulus formula for better fit and less fatigue
- Can be worn on both hands

SHOWA 7505PF

By SHOWA.
Disposable gloves made of nitrile, powder-free.

In accordance with 89/686/EEC, CE category III, protected against complex risks.
In accordance with EN 374. AQL 1.5.
In accordance with 1935/2004, food safe.

- Feels like a second skin
- New formula for better fit and less fatigue
- Easy to put on and take off
- Structured surface on fingers for improved grip
- Short-term chemical-protection against a variety of hazardous substances
- Latex-free, 100% nitrile
- Can be worn on both hands
- With rolled edge
- Colour: blue
- Thickness: approx. 0.1 mm
- Length ≥240 mm

Areas of use: Chemistry labs and plants, industry and utility companies.

Size	Art. No.	Pack Qty.	€
XS (5-6)	**EYL7.1**	100	20,00
S (6-7)	**EYL8.1**	100	20,00
M (7-8)	**EYL9.1**	100	20,00
L (8-9)	**EYN0.1**	100	20,00
XL (9-10)	**EYN1.1**	100	20,00
XXL (10-11)	**EYN2.1**	100	20,00
With 10 boxes of each size			18,00/box

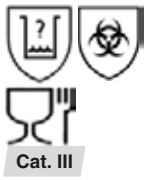
SHOWA 7540

By SHOWA. **Disposable gloves made of nitrile, non-powdered.**
Acc. to 89/686/EWG: CE Category III, protected from complex risks.
Acc. to EN 420, EN 374, EN 455, AQL 0.65.
Acc. to EC 1935/2004 suitable for contact with foodstuffs.

- Silicone-free
- High protection against chemical penetration and chemical splashes
- Chlorinated glove for improved comfort and grip, and reduced sticking
- Wearing comfort like a second skin, more pleasant texture and easy to pull on
- Low-modulus formula for better fit and less fatigue
- Structured surface on finger tips for improved grip
- Can be worn on both hands
- Thin rolled edge
- Colour: cobalt blue
- Length 240 mm
- Thickness: approx. 0.1 mm
- 100 piece per dispenser box

Applications: laboratories, health/pharmaceutical industry, glass and glazing, food processing, electronics, aviation.

Size	Art. No.	Pack Qty.	€
XS	**HKA7.1**	100	16,25
S	**HKA8.1**	100	16,25
M	**HKA9.1**	100	16,25
L	**HKC0.1**	100	16,25
XL	**HKC1.1**	100	16,25
With 20 boxes of each size			14,63/box



SHOWA 7555

By SHOWA. **Disposable gloves made of 100 % nitrile, non-powdered.**
Acc. to 89/686/EWG: CE Category III, protected from complex risks.
Acc. to EN 420, EN 374, EN 455, AQL 0.65.
Acc. to EC 1935/2004 suitable for contact with foodstuffs.

- Silicone-free
- High protection against chemical penetration and chemical splashes
- Chlorinated glove for improved comfort and grip, and reduced sticking
- Wearing comfort like a second skin, more pleasant texture and easy to pull on
- Low-modulus formula for better fit and less fatigue
- Structured surface on finger tips for improved grip
- Can be worn on both hands
- Thin rolled edge
- Colour: cobalt blue
- Length 300 mm
- Thickness: approx. 0.12 mm

Applications: laboratories, health/pharmaceutical industry, glass and glazing, food processing, electronics, aviation.

Size	Art. No.	Pack Qty.	€
XS	**HKC2.1**	50	12,85
S	**HKC3.1**	50	12,85
M	**HKC4.1**	50	12,85
L	**HKC5.1**	50	12,85
XL	**HKC6.1**	50	12,85
With 20 boxes of each size			11,57/box

Cat. III

SHOWA 7550

By SHOWA. **Disposable gloves made of 100 % nitrile, non-powdered.**
Acc. to 89/686/EWG: CE Category III, protected from complex risks.
Acc. to EN 420, EN 374, EN 455, AQL 1.5. Antistatic acc. to EN 1149.

- **Antistatic** - surface resistance 10^9 to 10^{10} Ohm
- Silicone-free
- Wearing comfort like a second skin, more pleasant texture and easy to pull on
- Low-modulus formula for better fit and less fatigue
- Enhanced grip due to structured surface on finger tips
- Protection against chemical splashes
- Can be worn on both hands
- Thin rolled edge
- Colour: black
- Length 240 mm
- Thickness: approx. 0.1 mm
- 100 piece in each dispenser box

Applications: laboratories, electronics and auto-mobile industry, printing industry, painting and spraying workshops, aviation, non-complex assembly work, food sectors.

Size	Art. No.	Pack Qty.	€
S	**HHP3.1**	100	18,40
M	**HHP4.1**	100	18,40
L	**HHP5.1**	100	18,40
XL	**HHP6.1**	100	18,40
With 20 boxes of each size			16,56/box

Cat. III

SHOWA 7595

By SHOWA. **Disposable gloves made of 100 % nitrile, non-powdered.**
Acc. to 89/686/EWG: CE Category III, protected from complex risks.
Acc. to EN 420, EN 374, EN 455, AQL 1.5.

- **Suitable for use in clean room class 100 (ISO 5)**
- Silicone-free
- Washed intensively with deionised water in the production process and packaged in the clean room
- Wearing comfort like a second skin, more pleasant texture and easy to pull on
- Low-modulus formula for better fit and less fatigue
- Enhanced grip due to structured surface on finger tips
- Protection against many chemicals and chemical splashes
- Can be worn on both hands
- Thin rolled edge
- Colour: white
- Length 300 mm
- Thickness: approx. 0.12 mm
- 100 pieces in bag

Applications: pharmaceutical manufacturing, biotechnology and biosciences, optics, microelectronics and semiconductor production, quality testing.

Size	Art. No.	Pack Qty.	€
XS	**HHT2.1**	100	32,05
S	**HHT3.1**	100	32,05
M	**HHT4.1**	100	32,05
L	**HHT5.1**	100	32,05
XL	**HHT6.1**	100	32,05
With 10 boxes of each size			28,85/box

Cat. III

SHOWA 7570

By SHOWA. **Disposable gloves made of 100 % nitrile, non-powdered.**
Acc. to 89/686/EWG: CE Category III, protected from complex risks.
Acc. to EN 420, EN 374, EN 455, AQL 1.5.

- **Accelerator-free formula**, suitable for particularly sensitive skin - reduces the risk of allergic skin reactions
- Silicone-free
- Wearing comfort like a second skin, more pleasant texture and easy to pull on
- Low-modulus formula for better fit and less fatigue
- Enhanced grip due to structured surface on finger tips
- Protection against chemical splashes
- Can be worn on both hands
- Thin rolled edge
- Colour: Hi Viz green (fluorescent)
- Length 240 mm
- Thickness: approx. 0.1 mm
- 100 piece in each dispenser box

Applications: laboratories, pharmaceutical industry, hospitals and medical treatment, agriculture, auto-mobile industry, easy assembly work.

Size	Art. No.	Pack Qty.	€
XS	**HHP7.1**	100	18,40
S	**HHP8.1**	100	18,40
M	**HHP9.1**	100	18,40
L	**HHT0.1**	100	18,40
XL	**HHT1.1**	100	18,40
With 20 boxes of each size			16,56/box

Accelerators are chemical additives used for shortening the “curing process” when manufacturing disposable nitrile gloves.

Dermatril® P-disposable nitrile gloves

Acc. to EN 420. EN 374, EN 455. AQL 0.65.
Virus resistant to ASTM F 1671:2007.
RAL approved for use with foodstuffs.

- Colour: blue
- Long cuff, rolled edge, coarsened fingertips
- Snug fitting, very high tactile sensitivity
- Increased tear strength
- Good chemical resistance
- Powder-free
- Latex free, free of allergenic thiurames and rosin
- Wall thickness: 0.2 mm
- Length: 280 mm

Applications: laboratory and research, chemicals industry, foodstuffs industry, electronics and computer industry, cleaning and maintenance work, product protection.

Size	Art. No.	Pack Qty.	€
6	**TX41.1**	50	29,30
7	**TX42.1**	50	29,30
8	**TX43.1**	50	29,30
9	**TX44.1**	50	29,30
10	**TX45.1**	50	29,30
11	**TX46.1**	50	29,30
With 10 boxes of each size			26,37/box

Nitrile disposable gloves TouchNTuff®

Acc. to EN 420 and EN 374. AQL 1.5. **Powder-free.** Colour light blue.
Thickness 0.10 mm. With roll-type edge. Textured fingertips.
Offers optimal protection against splashes from chemicals.
Suitable for foodstuffs. 100 slides per dispenser.

TouchNTuff® 92-670, length 240 mm.

Size	Art. No.	Pack Qty.	€
S (6½-7)	**P438.1**	100	23,60
M (7½-8)	**P439.1**	100	23,60
L (8½-9)	**P440.1**	100	23,60
XL (9½-10)	**P441.1**	100	23,60
With 10 boxes of each size			21,24/box

TouchNTuff® 92-665, length 300 mm.

Size	Art. No.	Pack Qty.	€
S (6½-7)	**KE73.1**	100	27,90
M (7½-8)	**KE74.1**	100	27,90
L (8½-9)	**KE75.1**	100	27,90
XL (9½-10)	**KE76.1**	100	27,90
With 10 boxes of each size			25,11/box

Nitrile disposable gloves TouchNTuff®, green

Acc. to EN 420 and EN 374. AQL 1.5. Colour green. Thickness 0.12 mm.
With roll-type edge. Offers optimal protection against splashes from chemicals. 100 gloves per dispenser.

TouchNTuff® 92-500, slightly powdered, textured fingertips.

Size	Length (mm)	Art. No.	Pack Qty.	€
S (6½-7)	240	**K416.1**	100	21,00
M (7½-8)	240	**K417.1**	100	21,00
L (8½-9)	240	**K418.1**	100	21,00
XL (9½-10)	240	**K419.1**	100	21,00
With 10 boxes of each size				18,90/box

TouchNTuff® 92-600, powder-free, smooth. Suitable for foodstuffs. Antistatic acc. to EN 1149-5.

Size	Length (mm)	Art. No.	Pack Qty.	€
S (6½-7)	240	**K966.1**	100	25,30
M (7½-8)	240	**K967.1**	100	25,30
L (8½-9)	240	**K968.1**	100	25,30
XL (9½-10)	240	**K969.1**	100	25,30
With 10 boxes of each size				22,77/box

TouchNTuff® 92-605, powder-free, smooth. Suitable for foodstuffs.

Size	Length (mm)	Art. No.	Pack Qty.	€
S (6½-7)	300	**PA90.1**	100	28,85
M (7½-8)	300	**PA91.1**	100	28,85
L (8½-9)	300	**PA92.1**	100	28,85
XL (9½-10)	300	**PA93.1**	100	28,85
With 10 boxes of each size				25,97/box

Cat. III

Neoprene disposable gloves NeoTouch®

Acc. to EN 420, EN 374, AQL 1.5. Ideal for applications in the pharmaceutical and chemical industry; for laboratory work and analyses which require short-term protection against chemicals.

- Powder-free
- Protect against Type I allergies
- The inner polyurethane coating enables gloves to be slipped on easily
- With structured fingertips for safer grip when dry or wet
- Turn-up cuff offers safe and firm hold
- Excellent stretching ability enables greater freedom of movement
- Good protection against chemical splashes but not suitable as complete protection against chemicals
- Thickness: 0.13 mm
- 100 gloves per dispenser box

NeoTouch® 25-101, length 240 mm

Size	Art. No.	Pack Qty.	€
S (6.5-7)	**EN44.1**	100	21,40
M (7.5-8)	**EN45.1**	100	21,40
L (8.5-9)	**EN46.1**	100	21,40
XL (9.5-10)	**EN47.1**	100	21,40
With 10 boxes of each size			19,26/box

NeoTouch® 25-201, length 290 mm

Size	Art. No.	Pack Qty.	€
S (6.5-7)	**LT51.1**	100	25,30
M (7.5-8)	**LT52.1**	100	25,30
L (8.5-9)	**LT53.1**	100	25,30
XL (9.5-10)	**LT54.1**	100	25,30
With 10 boxes of each size			22,77/box

Cat. III

DermaShield® Neoprene disposable gloves

Acc. to EN 420, EN 374 and EN 421, AQL 0.65.

- Powder-free, green
- High tech disposable gloves, available in **sterile** or non-sterile, suitable for use in controlled environments or **cleanrooms**
- Free of latex proteins and vulcanisation accelerants
- High wearing comfort and high flexibility
- Anti-slip rolled edge for increased protection
- Optimal product and user protection
- Fingertips with bisque finish for enhanced tactile sensitivity
- Length 310 mm, wall thickness 0.18 mm

Applications: drug production under aseptic conditions, biotechnology, production of medical equipment, handling cytostatic agents.

Packaging:

- PE bag printed with cleanroom-compatible IPA printing ink
- Optimal contamination protection is provided by triple packaging
- Easy-to-open PE packaging

DermaShield® 73-711.
Sterile, for critical applications acc. to ISO 5 (class 100 & GMP AB).
Subpackaging:

- In pairs, 10 pairs in sealed PE master bag
- 5 PE master bags in separate PE protective sleeve
- 4 PE master bags per large bag, carton

Size	Art. No.	Pack Qty. (pair)	€
6	**XE44.1**	200	622,45
7	**XE45.1**	200	622,45
7½	**XE46.1**	200	622,45
8	**XE47.1**	200	622,45
9	**XE48.1**	200	622,45

DermaShield® 73-721.
Non-sterile, for controlled working environments.
Subpackaging:

- 20 left/right gloves in separate chambers of a vacuum sealed PE bag
- 2 PE bags in vacuum sealed PE master bag
- 5 PE master bags per large bag, carton

Size	Art. No.	Pack Qty. (pair)	€
6	**XE49.1**	200	550,40
7	**XE50.1**	200	550,40
7½	**XE51.1**	200	550,40
8	**XE52.1**	200	550,40
9	**XE53.1**	200	550,40

Resistance against chemicals - protective gloves

Material	Butyl			Chloroprene (Neoprene)					Latex		PE-spec. foil	PVA
Art. No. (and following)	K626ff	AXN0ff	CE42ff	K347ff/ AA08ff	ET40ff	XY14	XY15	HLP4	C940ff	YA59ff	P157ff	1681f
Page	p. 658	p. 658	p. 657	p. 653	p. 655	p. 654	p. 654	p. 654	p. 652	p. 652	p. 657	p. 656
Substance	Level (Permeation time)											
Accumulator acid (Sulphuric acid 25%)	6	6	n.t.	6	6	n.t.	n.t.	n. t.	6	n.t.	n.t.	n.t.
Acetic acid 10 %	6	6	n.t.	6	6	n.t.	n.t.	0	6	n.t.	n.t.	n.t.
Acetic acid conc. (pure acetic acid)	6	6	n.t.	2	2	n.t.	n.t.	n. t.	2	3	4	n.t.
Acetone (2-Propanon)	6	6	4	1	1	0	n.t.	n. t.	1	0	6	3
Acetonitril	6	6	6	1	3	1	2	n. t.	1	1	6	3
Ammonia 25 %	6	6	6 (29 %)	3	5	n.t.	n.t.	n. t.	1	1	1	n.t.
Amyl alcohol (1-Pentanol)	6	6	n.t.	5	5	n.t.	n.t.	n. t.	1	n.t.	n.t.	n.t.
Benzene	1	1	n.t.	1	1	n.t.	n.t.	n. t.	0	n.t.	6	n.t.
Butyl alcohol (1-Butanol)	6	6	6	5	5	n.t.	6	n. t.	1	n.t.	n.t.	n.t.
Carbon disulphide	2	1	n.t.	0	1	0	0	n. t.	n/r	0	6	6
Carbon tetrachloride	2	1	1	1	4	n.t.	n.t.	n. t.	1	n.t..	n.t.	n.t.
Caustic potash solution, saturated	6	6	n.t.	6	n.t.	n.t.	n.t.	n. t.	6	n.t.	n.t.	n.t.
Chloroform (Trichloromethane)	1	1	1	0	0	n.t.	n.t.	n. t.	0	n.t.	1	n.t.
Cyclohexane	2	2	1	1	5	n.t.	n.t.	n. t.	0	n.t.	n.t.	n.t.
Dichlormethane (Methylene chloride)	1	1	0	0	0	n.t.	n.t.	n. t.	0	n.t.	1	6
Diesel fuel	5	4	3	4	5	n.t.	n.t.	n. t.	2	n.t.	n.t.	n.t.
Diethylamine	2	1	n.t.	0	0	n.t.	n.t.	n. t.	0	0	6	0
Diethyl ether (Ether)	1	1	n.t.	0	1	n.t.	n.t.	n. t.	0	n.t.	6	n.t.
Ethanol (Ethylalcohol)	6	6	6	3	4	n.t.	n.t.	n. t.	1	2 (95 %)	6	n.t.
Ethyl acetate (Acetic acid ethyl)	4	3	3	1	1	0	n.t.	n. t.	0	0	6	6
Formaldehyde 37 % (Formalin)	6	6	n.t.	5	6	n.t.	n.t.	n. t.	0	6 (35 %)	n.t.	n.t.
Formic acid 98 %	6	6	n.t.	6	6	n.t.	n.t.	n. t.	3	3	6	n.t.
Glycerine	6	6	n.t.	6	6	n.t.	n.t.	n. t.	6	n.t.	n.t.	n.t.
n-Heptane	1	1	0	3	6	5	4	n. t.	0	n.t.	6	6
n-Hexane	2	2	0	1	6	n.t.	n.t.	n. t.	1	0	6	6
Hydrochloric acid 32 %	6	6	6 (37 %)	6	6	6 (37 %)	6 (37 %)	n. t.	3	6 (conc.)	6 (conc.)	n.t.
Hydrofluoric acid 10 %	6	6	n.t.	6	6	n.t.	n.t.	n. t.	6	n.t.	n.t.	n.t.
Hydrofluoric acid 40 %	6	6	6 (48 %)	6	5	n.t.	n.t.	6	4	6 (48 %)	6 (48 %)	n.t.
Hydrogen peroxide 30 %	6	6	n.t.	6	6	n.t.	n.t.	n. t.	6	6	n.t.	n.t.
Isopropyl alcohol (Isopropanol)	6	6	6	5	6	n.t.	6	n. t.	0	4	n.t.	3
Lactic acid 90 %	6	6	n.t.	6	6	n.t.	n.t.	n. t.	6	n.t.	n.t.	n.t.
Methanol (Methyl alcohol)	6	6	6	2	4	6	3	6	0	2	6	0
Methylethylketone (2-Butanone)	5	5	2	1	1	n.t.	n.t.	n. t.	0	0	6	2
Nitric acid 50 %	6	6	6 (70 %)	5	5	n.t.	n.t.	n. t.	6	4 (70 %)	6 (65 %)	n.t.
Nitrobenzene	6	6	6	2	2	n.t.	n.t.	n. t.	2	n.t.	6	6
Perchlorethylene (Tetrachlorethylene)	1	1	0	1	4	n.t.	n.t.	n. t.	0	n.t.	6	n.t.
Petroleum	3	2	n. t.	1	5	n.t.	n.t.	n. t.	0	n.t.	n.t.	n.t.
Phenol, 85 % in water	6	6	6	6	5	n.t.	n.t.	n. t.	4	4 (90%)	6 (90 %)	n.t.
Phosphoric acid, saturated	6	6	6 (85 %)	6	6	6	6	n. t.	6	6	n.t.	n.t.
Potassium hydroxide solution, saturated	6	6	n.t.	6	6	n.t.	n.t.	n. t.	6	n.t.	n.t.	n.t.
Pyridine	5	4	n.t.	1	1	n.t.	n.t.	n. t.	1	1	6	0
Sodium hydroxide 40 %	6 (50 %)	6	6 (50 %)	6 (45 %)	6 (45 %)	6 (50%)	6 (50%)	n. t.	6	6 (50 %)	6 (50 %)	0 (50 %)
Sodium hypochlorite (12 % Active chlorine)	6	6	n.t.	6	6	n.t.	n.t.	6	6	n.t.	n.t.	n.t.
Sulphuric acid 50 %	6	6	n.t.	6	6	n.t.	n.t.	n. t.	6	n.t.	n.t.	n.t.
Sulphuric acid 96 %	4	3	6 (97 %)	3	3	5	5	n. t.	1	4	6 (95 %)	0
Tetrahydrofurane	1	1	1	0	1	n.t.	n.t.	n. t.	0	n.t.	6	2
Toluene	1	1	0	0	1	n.t.	n.t.	n. t.	0	0	6	6
m-Xylene	2	2	1	0	1	n.t.	n.t.	0	0	n.t.	6	6

Level / Permeation time

Level 1 >10 min
Level 2 >30 min
Level 3 >60 min
Level 4 >120 min
Level 5 >240 min
Level 6 >480 min
n/r: no recommendation
n.t.: not tested

This table is meant as a **guideline when selecting the correct chemical protection gloves**.
All information is based on EN 374. Permeation is the molecular penetration through the glove material.
The time required by the chemical to permeate is listed in levels.

Resistance against chemicals - protective gloves

Material	PVC		Nitrile						Viton	
Art. No. (and following)	8203ff	X410ff	Y452ff/ CH44ff	HH73ff	PT65ff	PA83ff	AXY9ff	XX07ff	LH87ff	CY66ff
Page	p. 653	p. 653	p. 656	p. 655	p. 665	p. 655	p. 656	p. 656	p. 658	p. 658
Substance	Level (Permeation time)									
Accumulator acid (Sulphuric acid 25%)	n.t.	n.t.	6	n.t.	6	n.t.	n.t.	n.t.	6	n.t.
Acetic acid 10 %ig	n.t.	n.t.	6	n.t.	6	n.t.	n.t.	n.t.	6	n.t.
Acetic acid conc. (pure acetic acid)	6	1	2	0	2	3	2	4	3	n.t.
Acetone (2-Propanon)	0	0	0	0	0	0	0	n.t.	0	0
Acetonitril	0	n.t.	0	0	0	1	0	1	1	0
Ammonia 25 %	n.t.	1	5	1	5	5	4	n.t.	6	6 (29 %)
Amyl alcohol (1-Pentanol)	n.t.	n.t.	6	n.t.	6	n.t.	n.t.	n.t.	6	n.t.
Benzene	0	0	1	0	1	1	0	1	6	3
Butyl alcohol (1-Butanol)	6	n.t.	6	n.t.	6	n.t.	n.t.	n.t.	6	6
Carbon disulphide	n.t.	0	0	n.t.	n.t.	1	1	0	6	n.t.
Carbon tetrachloride	1	n.t.	5	n.t.	4	n.t.	n.t.	n.t.	6	6
Caustic potash solution, saturated	n.t.	n.t.	6	n.t.	n.t.	n.t.	n.t.	n.t.	6	n.t.
Chloroform (Trichloromethane)	0	n.t.	0	n.t.	0	n.t.	n.t.	n.t.	6	6
Cyclohexane	6	n.t.	6	n.t.	6	6	6	n.t.	6	6
Dichlormethane (Methylene chloride)	0	n.t.	0	n.t.	0	0	n.t.	n.t.	4	0
Diesel fuel	n.t.	n.t.	6	n.t.	6	n.t.	6	n.t.	6	6
Diethylamine	n.t.	n.t.	1	0	1	1	1	2	4	n.t.
Diethyl ether (Ether)	n.t.	n.t.	1	n.t.	1	2	n.t.	n.t.	2	n.t.
Ethanol (Ethylalcohol)	6	n.t.	4	1	4	5 (95 %)	n.t.	n.t.	6	6
Ethyl acetate (Acetic acid ethyl)	0	0	1	0	0	1	1	n.t.	1	1
Formaldehyde 37 %(Formalin)	n.t.	n.t.	6	6 (35 %)	6	6	n.t.	n.t.	6	n.t.
Formic acid 98 %	n.t.	4	1	n.t.	2	2	1	n.t.	6	n.t.
Glycerine	n.t.	n.t.	6	n.t.	6	n.t.	n.t.	n.t.	6	n.t.
n-Heptane	6	n.t.	6	6	6	6	6	6	6	6
n-Hexane	6	0	6	6	6	n.t.	6	6	6	6
Hydrochloriacid 32 %	5 (36 %)	6 (conc.)	6	4 (37 %)	6	6 (conc.)	6 (30 %)	6 (37 %)	6	6 (37 %)
Hydrofluoric acid 10 %	n.t.	n.t.	6	n.t.	6	n.t.	n.t.	n.t.	6	n.t.
Hydrofluoric acid 40 %	n.t.	6	4	0 (48 %)	3	n.t.	4 (48 %)	n.t.	6	6 (48 %)
Hydrogen peroxide 30 %	6	6	6	4	6	6	6	n.t.	6	6
Isopropyl alcohol (Isopropanol)	6	4	6	3	6	6	6	n.t.	6	6
Lactic acid 90 %	n.t.	n.t.	6	n.t.	6 (85 %)	n.t.	n.t.	n.t.	6	n.t.
Methanol (Methyl alcohol)	6	2	2	0	1	3	1	4	4	6
Methylethylketone (2-Butanone)	0	n.t.	0	0	0	1	0	n.t.	1	0
Nitric acid 50 %	3 (16 %)	2 (70 %)	4	0 (70 %)	4	2 (70 %)	1 (70 %)	n.t.	6	6 (70 %)
Nitrobenzene	n.t.	n.t.	2	n.t.	1	4	3	5	6	n.t.
Perchlorethylene (Tetrachlorethylene)	1	0	5	1	5	5	4	5	6	6
Petroleum	n.t.	n.t.	6	n.t.	6	n.t.	3	n.t.	6	n.t.
Phenol, 85 % in water	n.t.	4 (90 %)	3	n.t.	2	3 (90 %)	3 (90 %)	n.t.	6	6
Phosphoric acid, saturated	n.t.	n.t.	6	n.t.	6 (85 %)	6 (conc.)	6	n.t.	6	6 (85 %)
Potassium hydroxide solution, saturated	n.t.	n.t.	6	n.t.	6	n.t.	n.t.	n.t.	6	n.t.
Pyridine	n.t.	0	1	n.t.	0	1	1	n.t.	1	n.t.
Sodium hydroxide 40 %	6 (50 %)	6 (50 %)	6 (45 %)	6	6 (50 %)	6 (50 %)	6	6 (50 %)	6 (45 %)	6 (50 %)
Sodium hypochlorite (12 % Active chlorine)	n.t.	n.t.	6	n.t.	6 (13 %)	n.t.	n.t.	n.t.	6	n.t.
Sulphuric acid 50 %	n.t.	n.t.	6	n.t.	6	n.t.	n.t.	n.t.	6	n.t.
Sulphuric acid 96 %	n.t.	2	2	1	2	3	2	4	6	6 (97 %)
Tetrahydrofurane	n.t.	0	0	n.t.	0	0	0	n.t.	1	0
Toluene	0	0	1	0	0	1	1	2	6	4
m-Xylene	1	0	2	0	2	2	2	4	6	6

Level / Permeation time

Level 1 >10 min
Level 2 >30 min
Level 3 >60 min
Level 4 >120 min
Level 5 >240 min
Level 6 >480 min
n/r: no recommendation
n.t.: not testet

Attention:

The information in the table was established under laboratory conditions (new gloves, no additional mechanical strain, room temperature). As the conditions in everyday practical use often vary from the above conditions, the information in only meant as a guideline when choosing suitable chemical protection gloves. The table does not replace the need for suitability tests to be carried out by the end consumer. For this reason Carl Roth GmbH + Co. KG will not be held responsible and/or accept liability in connection with the information in the above list.

Cat. III

AccuTech® 91-325 latex gloves

By Ansell. Acc. to EN 420, EN 374. AQL 1.0.
Made from a special natural rubber latex formulation which provides a very comfortable fit ideal for work requiring high tactile sensitivity and precision. Suitable for a large number of applications, particularly in controlled working environments in biotechnology, medical equipment production, laboratory analysis, pharmaceuticals, and in the flat screen industry.

- Powder-free
- Hand specific (packed in pairs in a PE bag)
- Smooth inside and out, fingertips with bisque finish
- Colour: natural
- Straight forend
- Length 300 mm
- Wall thickness (palm): 0.225 mm

Size	Art. No.	Pack Qty. (pair)	€
6,5	**ANC8.1**	10	31,15
7	**ANC9.1**	10	31,15
7,5	**ANE0.1**	10	31,15
8	**ANE1.1**	10	31,15
8,5	**ANE2.1**	10	31,15
9	**ANE3.1**	10	31,15
With 20 boxes of each size			28,04/box

Cat. III

Lapren® 706 moulded latex gloves

By KCL by Honeywell. Acc. to EN 420, EN 388, EN 374, AQL 0,65.
Made of natural latex with a low chloroprene content.
Profiled palms for secure grip even in wet zones. Cotton flock lining.
Forend with elastic edging. Anatomically shaped, elastic and flexible.
Length approx. 300-320 mm, thickness 0.6 mm.

Size	Art. No.	Pack Qty. (pair)	€
7	**C940.1**	10	38,45
8	**C941.1**	10	38,45
9	**C942.1**	10	38,45
10	**C943.1**	10	38,45

Cat. III

Marigold®-Featherweight Plus

By Ansell. Acc. to EN 420, EN 388, EN 374, EN 421, AQL 0.65.
Made of natural rubber with beaded cuff. Palms and fingers with a rough profile outside, smooth on inside. High flexibility, excellent finger mobility, high tactile sensitivity, highly tear resistant.
Length approx. 320 mm, wall thickness approx. 0.35 mm.

Size	Art. No.	Pack Qty. (pair)	€
6.5	**YX54.1**	12	30,05
7.5	**YX55.1**	12	30,05
8.5	**YX56.1**	12	30,05
9.5	**YX57.1**	12	30,05

Cat. III

Bi-Colour™-latex/neoprene combination gloves

By Ansell. Acc. to EN 420, EN 374, EN 388, EN 421, AQL 0.65.
Double latex/neoprene outer coating, high-quality pure cotton inner flocklining. With protective cuff. Diamond-pattern grip profile for outstanding wet and dry grip. High resistance to salts and cleaning agents.
Reliable protection against a wide range of chemicals.
Colour: green/yellow. Wall thickness 0.68 mm. Length 320 mm.

Size	Art. No.	Pack Qty. (pair)	€
6½-7	**YA59.1**	12	42,50
7½-8	**YA60.1**	12	42,50
8½-9	**YA61.1**	12	42,50
9½-10	**YA62.1**	12	42,50
10½-11	**YA63.1**	12	42,50

PVC protective gloves Snorkel®

By Ansell. Acc. to EN 420, EN 388 and EN 374. AQL 1.5.
Inner lining made of cotton jersey. With good grip profile for safe handling. Excellent abrasion resistance. Suitable for working with acids, caustic substances and solvents. Length 355 mm, 1.2 mm thick.

Size	Art. No.	Pack Qty. (pair)	€
9	**X410.1**	1	12,65
10	**X411.1**	1	12,65

PVC-long gloves

Acc. to EN 420, EN 388 and EN 374. With cuff, made of soft PVC foil. High wearing comfort and excellent touch sensitivity. Also features patterned grip area and skin friendly inner cotton flocked lining. Free from latex and phthalate. Largely resistant against diluted acids and alkali, alcohol, etc. Approx. 0.6 mm thick, length 700 mm.

Size	Art. No.	Pack Qty. (pair)	€
M	**8203.1**	1	23,60
L	**8204.1**	1	23,60
XL	**8206.1**	1	23,60

Chloroprene gloves Camapren® 720

By KCL by Honeywell. Acc. to EN 420, EN 388, EN 374, AQL 0,65. made of polychloroprene with natural latex layer. Profiled palms for secure grip even when handling wet, greasy and oily parts. Cotton flock lining. Forend with elastic edging. Highly elastic and flexible even at low depths temperatures.
Resistant to diluted and semi-concentrated acids, diluted to concentrate bases, saturated saline solutions, glycol and glycerol, long-chained alcohols, vegetable and animal fats and oils.
Length 290-310 mm, total layer thickness approx. 0,65 mm.

Size	Art. No.	Pack Qty. (pair)	€
7	**K347.1**	2	11,75
8	**K348.1**	2	11,75
9	**K349.1**	2	11,75
10	**K350.1**	2	11,75
11	**K351.1**	2	11,75

Chloroprene gloves Tricopren® 723

By KCL by Honeywell. Acc. to EN 420, 388, EN 374, AQL 0,65.
Made of polychloroprene, with interior cotton lining. **Latex-free.**
Highly resistant to mechanical and a variety of chemical hazards.
Anatomic fit. The palm is ribbed for safe grip.
Suitable for working with diluted and semi-concentrated acids and diluted and concentrated alkaline solutions, for glycols and glycerins, long-chain alcohols, Perhydrol, aliphatic and alicyclic hydrocarbons.
Length approx. 300 mm. Total layer thickness 1.3 mm.

Size	Art. No.	Pack Qty. (pair)	€
8	**AA08.1**	1	32,15
9	**AA09.1**	1	32,15
10	**AA10.1**	1	32,15
11	**AA11.1**	1	32,15

Cat. III

Neoprene gloves Scorpio® 09-924

By Ansell. Acc. to EN 420, EN 388 and EN 374. AQL 1.5.
Black, neoprene-coated protective gloves, cotton jersey backed.
For protection against a wide range of bases, acids, alcohols and diluted aqueous solvents.
Good abrasion and cutting resistance. Smooth grip profile. Length 350 mm.
Standard size 10.
Applications: handling chemicals and petrochemicals, for degreasing and coating etc.

Art. No.	Pack Qty. (pair)	€
XY14.1	1	24,65

Cat. III

Neoprene gloves Scorpio® 09-022

By Ansell. Acc. to EN 420, EN 388, EN 374, EN 407 and EN 511. AQL 1.5.
Black, neoprene-coated protective gloves **with foam insulation**. For protection against a wide range of bases, acids, alcohols and diluted aqueous solvents.
Also suitable for working in hot and cold conditions. Suitable for short-time contact with liquids at temperatures from max. 180 °C to min. -25 °C. Not suitable for temperatures above 200 °C. Good abrasion and cutting resistance.
Smooth grip profile. Length 350 mm. Standard size 10.

Applications: handling chemicals and petrochemicals, for degreasing and coating etc.

Art. No.	Pack Qty. (pair)	€
XY15.1	1	47,20

Cat. III

Neoprene gloves Scorpio®

By Ansell. Acc. to EN 420, EN 374, EN 388 (3222), EN 407 (32XX4X) and EN 511 (121). AQL 1,0. black, Neoprene-coated protective gloves with **foam insulation**.

- For protection against a wide range of bases, acids, alcohols, and diluted aqueous solvents
- Also suitable for working in hot and cold conditions. Suitable for short-time contact with liquids at temperatures from max. 180 °C to min. -25 °C. Good abrasion-resistance and cut-resistance. Antistatic acc. to EN 1149
- Roughened handle profile for enhanced grip

Please note:
Gloves are not suitable for working above 200 °C.
Do not use when working with or near to open flames.

Applications: Steam-jet and maintenance work, anodizing.
Working with water baths. Handling objects with hot or cold chemicals.

Scorpio 19-024

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
8	450	**HLP4.1**	1	73,10
10	450	**HLP5.1**	1	73,10

Scorpio 19-026

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
8	660	**HLP6.1**	1	84,95
10	660	**HLP7.1**	1	84,95

▶ For a Chemical Resistance List of Gloves, see page 650-651

Cat. III

Nitopren®-gloves 717

By KCL by Honeywell. Acc. to EN 420, 388 and EN 374. Made with 2 layers of material, top layer **chloroprene**, inner layer **nitril**, with thin velour coating. Anatomic fit. Has an extremely high resistance to a number of chemicals and to many aggressive gases. Highly flexible, also enable sensitive work. Secure grip when working with wet and oily objects. Very good mechanical resistance. Free of natural latex.
Suitable for the chemical and pharmaceutical industry, galvanic work. Length approx. 310 mm, thickness of layer approx. 0.65 mm.

Size	Art. No.	Pack Qty. (pair)	€
7	**ET40.1**	2	11,65
8	**ET41.1**	2	11,65
9	**ET42.1**	2	11,65
10	**ET43.1**	2	11,65
11	**ET44.1**	2	11,65

Cat. III

Nitrile gloves Virtex™

By Ansell. Acc. to EN 420, EN 421, EN 388 and EN 374.
Antistatic acc. to EN 1149.
Interior with new, extremely thin polymer-composite coating - Aquadri™. Give off fewer particles, absorb more moisture. Glove exterior is not chlorinated and is abraded for a better grip. Comfortable fit and extremely flexible.
Suitable for light assembly work and for working with parts which require a secure grip when dry, wet or oily: Light assembly work in contact with chemicals, the automotive industry, paint and spray jobs, working with solutions on an oil and hydrocarbon base. Thickness 0.225 mm, length approx. 310 mm.

Size	Art. No.	Pack Qty. (pair)	€
7	**HH73.1**	5	12,75
8	**HH74.1**	5	12,75
9	**HH75.1**	5	12,75
10	**HH76.1**	5	12,75
11	**HH77.1**	5	12,75

Cat. III

Nitrile gloves Tricotril® 736

By KCL by Honeywell. Acc. to EN 420, EN 388, EN 374, AQL 0.65. Anatomic fit, with profiled palm. Latex-free, authorized for food processing and preparation. With cotton tricot interior. **Suitable for** diluted and semi-concentrated acids, alkaline solutions, glycols and glycerin, long-chain alcohols, aliphatic and alicyclic hydrocarbons. Length approx. 300 mm. Total layer thickness 1.0 mm.

Size	Art. No.	Pack Qty. (pair)	€
8	**CH44.1**	1	24,65
9	**CH45.1**	1	24,65
10	**CH46.1**	1	24,65
11	**CH47.1**	1	24,65

Cat. III

Nitrile gloves Sol-Vex® 37-900

By Ansell. Acc. to EN 420, EN 374, EN 388. AQL 0.065.
- Inside: with velour
- Outside: textured surface in palm
- Length 380 mm, wall thickness 0.425 mm
- Each glove is tested using compressed air
- Excellent protection against abrasion and puncture

Suitable for laboratory analyses, chemical applications, e.g. chemical processing, handling corrosive chemicals and chemical mixtures.

Size	Art. No.	Pack Qty. (pair)	€
7	**PA83.1**	2	14,95
8	**PA84.1**	2	14,95
9	**PA85.1**	2	14,95
10	**PA86.1**	2	14,95
11	**PA87.1**	2	14,95

Chemical protection gloves

Cat. III

Nitrile gloves Sol-Vex®

By Ansell. Acc. to EN 420, EN 374, EN 388, AQL 0.65.
- Structured palm gives increased grip
- Colour green
- Suitable for foodstuffs

Applications: chemical processes, refining oil and petroleum, metalworking, agrochemicals and printing industry. Ideal for dry and wet work environments where chemical protection and high abrasion resistance are crucial.

① **Sol-Vex® 37-675: length 330 mm, wall thickness 0.38 mm**
Inner: with flocklining for improved wear comfort.

Size	Art. No.	Pack Qty. (pair)	€
7	**AXY9.1**	12	38,20
8	**AXX0.1**	12	38,20
9	**AXX1.1**	12	38,20
10	**AXX2.1**	12	38,20
11	**AXX3.1**	12	38,20

② **Sol-Vex® 37-185: length 455 mm, wall thickness 0.5 mm**
Inner: without flocklining, therefore no contamination by flock fibres.

Size	Art. No.	Pack Qty. (pair)	€
7	**XX07.1**	1	10,70
8	**XX08.1**	1	10,70
9	**XX09.1**	1	10,70
10	**XX10.1**	1	10,70
11	**XX11.1**	1	10,70

Cat. III

Camatril®-nitrile gloves

By KCL by Honeywell. Acc. to EN 420, EN 388 and EN 374. AQL 0.65. Largely cut and puncture proof. Free of silicone and antibacterial. With high chemical resistance especially to oils, fats, solvents and fuels.

Camatril® 730: Length 310 mm, approx. 0.4 mm thick, flock lined. Approved for foodstuffs.

Size	Art. No.	Pack Qty. (pair)	€
7	**Y452.1**	2	10,70
8	**Y453.1**	2	10,70
9	**Y454.1**	2	10,70
10	**Y455.1**	2	10,70
11	**Y456.1**	2	10,70

Camatril® 732: Length 400 mm, approx. 0.4 mm thick, flock lined. Approved for foodstuffs.

Size	Art. No.	Pack Qty. (pair)	€
7	**T923.1**	2	18,25
8	**A909.1**	2	18,15
9	**A910.1**	2	18,15
10	**A911.1**	2	18,15
11	**T924.1**	2	18,25

Camatril® 733: Length 600 mm, approx. 0.5 mm thick

Size	Art. No.	Pack Qty. (pair)	€
8	**8197.1**	1	34,35
9	**8198.1**	1	34,35
10	**8199.1**	1	34,35
11	**8200.1**	1	34,35

Resistance against chemicals-protective gloves

This table is meant as a **guideline when selecting the correct chemical protection gloves**.
All information is based on EN 374. Permeation is the molecular penetration through the glove material.
The time required by the chemical to permeate is listed in levels.

Attention:
The information in the table was established under laboratory conditions (new gloves, no additional mechanical strain, room temperature). As the conditions in everyday practical use often vary from the above conditions, the information in only meant as a guideline when choosing suitable chemical protection gloves. The table does not replace the need for suitability tests to be carried out by the end consumer. For this reason Carl Roth GmbH + Co. KG will not be held responsible and/or accept liability in connection with the information in the above list.

Permeation time (Level):

Level 1 >10 min	Level 4 >120 min	n.r. = no recommendation
Level 2 >30 min	Level 5 >240 min	
Level 3 >60 min	Level 6 >480 min	n.t. = not tested

Cat. III

PVA®-solvent gloves

By Ansell. Acc. to EN 420, EN 388 and EN 374, AQL 1.0. Antistatic acc. to EN 1149. Red covered with a layer of polyvinylalcohol and cotton flock lined. Resistant against aromatic (xylene), chlorinated (tri, per) and other organic solvents. Sensitive to high temperatures. **Dissolve in water and fluids containing water!** Length 355 mm. Thickness 1.1 mm.

Size	Art. No.	Pack Qty. (pair)	€
9	**1681.1**	1	39,35
10	**NH46.1**	1	39,25

Cat. III

NSK26 long nitrile gloves

By SHOWA. Comply with EN 420, EN 388 (4111), EN 374.
Acc. to EEC 1935/2004 – suitable for contact with foodstuffs.
Cotton/polyester jersey lining with nitrile outer coating.

- Anatomically shaped hand allows for greater freedom of movement and fatigue-free work
- Extended bonded sleeve, stitched with elasticated border means that it stays correctly adjusted
- Rough finish over entire surface for an effective and durable grip
- Flexible glove with excellent wear resistance
- Absorbs perspiration and can be worn for an extended period with no reduction in comfort
- Protects against oils, hydrocarbons and fats
- Impermeable; for working in a damp or oily environment

Applications: Food production, petrochemistry and refinery, working with oils and fats.

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
8 (S)	620	**ECY4.1**	1	18,20
9 (M)	630	**ECY5.1**	1	18,20
10 (L)	640	**ECY6.1**	1	18,20
11 (XL)	650	**ECY7.1**	1	18,20

Cat. III

Long-sleeve nitrile gloves 772

By SHOWA. Acc. to EN 420, EN 388 (4111) and EN 374. Cotton/polyester jersey lining, fully coated nitrile rubber outer. The additional coating over the entire hand offers improved protection from chemicals.

- Anatomically shaped hand
- Extended bonded sleeve, stitched with elasticated edging, means that it stays correctly adjusted
- Rough finish over entire surface for improved sense of touch and better grip
- Flexible, robust and abrasion-resistant
- Absorbs perspiration; comfortable even when worn for extended periods
- Protects against oils, hydrocarbons, fats and abrasion; offers effective, lasting grip
- Eyelet for airing and hanging up
- Colour: yellow; thickness: approx. 0.8 mm

Applications: for working in damp or oily environments; for securely taking hold of objects. Petrochemistry and refinery, etc.

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
8 (M)	650	**ECY8.1**	1	18,60
9 (L)	650	**ECY9.1**	1	18,60
10 (XL)	650	**EEA0.1**	1	18,60

Cat. III

Special gloves Barrier®

By Ansell. Acc. to EN 420, EN 374 and EN 388. AQL 0.065. Made of 5-ply HPPE-laminate. Anatomic-fitting chemical resistant PE gloves.
For protection against a wide range of hazardous chemicals.
Each glove is individually tested with compressed air.
Thickness of PE film approx. 0.062 mm.

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
7	380	**P157.1**	1	16,10
8	385	**LY64.1**	1	16,70
9	390	**N964.1**	1	16,70
10	395	**N965.1**	1	16,70
11	410	**P158.1**	1	16,10

Cat. III

Butyl-gloves SHOWA 874R

By SHOWA. Acc. to EN 420, 388, 374. Thin chemical protection glove with rough surface in hand area to increase grip of smooth and wet objects. Good finger mobility and sens of touch. Long roll-up cuff. Unlined.
Length 350 mm, **0.35 mm thick.**

Size	Art. No.	Pack Qty. (pair)	€
7	**CE42.1**	1	33,65
8	**CE43.1**	1	33,65
9	**CE44.1**	1	33,65
10	**CE45.1**	1	33,65
11	**CE46.1**	1	33,65

Cat. III

Butoject® 897+ butyl gloves

By KCL by Honeywell. Acc. to EN 420, EN 388 and EN 374. AQL 0.65. Highly flexible and effective chemical protection gloves made of butyl rubber, suitable for work with esters and ketones, among other chemicals. Ideal for laboratory use.

- With special surface roughening for increased grip when handling wet objects
- Designed for tight fit, and therefore also suitable for precision work or as undergloves
- Excellent mechanical resistance and gas tightness
- Exceptional flexibility at low temperatures and good ozone resistance

With beaded cuff, powdered on the inside, length 350 mm, wall thickness 0.3 mm.

Size	Art. No.	Pack Qty. (pair)	€
7	**AXN0.1**	1	53,55
8	**AXN1.1**	1	53,55
9	**AXN2.1**	1	53,55
10	**AXN3.1**	1	53,55
11	**AXN4.1**	1	53,55

Cat. III

Viton-gloves Vitoject®

Made of 100 % fluororubber (Viton®). Acc. to EN 420, 388 and EN 374. AQL 0.65. Gastight. Anatomically formed, with roll-up cuff, smooth, powdered. Wide fit allows glove liners to be worn underneath. Suitable for working with particularly aggressive chemicals such as aliphatic, aromatic and chlorinated hydrocarbons, diluted and concentrated acids, saturated salt solutions, long-chain alcohols, glycol and glycerin, aniline, benzene etc. Not resistant against esters and ketones. **Please see chemical resistance table!** Length approx. 350 mm, 0.7 mm thick.

Size	Art. No.	Pack Qty. (pair)	€
8	**LH87.1**	1	170,95
9	**A398.1**	1	181,70
10	**A399.1**	1	181,70
11	**A400.1**	1	181,70

Cat. III

Butyl-gloves Butoject® 898

By KCL by Honeywell. Acc. to EN 420, EN 421, EN 388 and EN 374. AQL 0.65. For use in the chemical industry, at production sites of paint, lacquer, glue and plastics and for the production and use of herbicides. Resist short chained esters, ketones and aldehydes, diluted and concentrated acids and alkali, saturated saline solutions, alcohols, softeners etc. With roll-up cuff. Length approx. 350 mm, approx. **0.7 mm thick.**

Size	Art. No.	Pack Qty. (pair)	€
8	**K626.1**	1	32,20
9	**A621.1**	1	32,20
10	**A622.1**	1	32,20
11	**A623.1**	1	32,20

Cat. III

Viton®-gloves SHOWA 892

Acc. to EN 420, 388 and 374. Thin gloves for chemical protection that are made out of a Viton®-top layer and Butyl-bottom layer, unlined. Very good flexibility and good touch sensitivity. Hand-specific form, rolled band on cuff. **Suitable for** working with aromatic, aliphatic and chlorinated hydrocarbons, organic and anorganic acids, alkaline solutions, animal fats and oils. Smooth surface, length 300 mm, thickness 0.3 mm.

Size	Art. No.	Pack Qty. (pair)	€
7	**CY66.1**	1	98,40
8	**CY67.1**	1	98,40
9	**CY68.1**	1	98,40
10	**CY69.1**	1	98,40
11	**CY70.1**	1	107,00

Cut resistant gloves

Cat. III

Glove box gloves AlphaTec® 55-100

By Ansell. Acc. to EN 420, EN 374, EN 388 (3010), AQL 0.65.

- Made of natural rubber (latex), without carrier material
- Enhanced finger mobility for improved handling of objects
- With rolled edge
- Smooth surface, natural colour
- Thickness 0.51 mm
- Length 711 mm
- Port (shaft size) 150 mm (6 inch)

Applications: biotechnology, chemical and pharmaceutical research, chemical processing, laboratory work and analyses, particularly when acid-resistance is required, processing of chemical and biological products, product protection work.

Size	Art. No.	Pack Qty. (pair)	€
9	**HLT8.1**	1	131,15

Cat. III

Glove box gloves AlphaTec® 55-302

By Ansell. Acc. to EN 420, EN 374, EN 388 (2100) AQL 0.65.

- Made of neoprene, without carrier material
- Effective protection in moderately contaminated chemical environments, extraordinary chemical-resitance to most acids, alcohols, oils, lubricants and hydrocarbons
- Enhanced finger mobility for improved handling of objects
- With rolled edge
- Smooth surface, black colour
- Thickness 0.51 mm
- Length 813 mm
- Port (shaft size) 200 mm (8 inch)

Applications: biotechnology, chemical and pharmaceutical research, chemical processing, laboratory work and analyses, particularly when acid-resistance is required, processing of chemical and biological products, product protection work.

Size	Art. No.	Pack Qty. (pair)	€
9	**HLT9.1**	1	209,65

Cut-resistant gloves

The cut-resistant gloves are controlled according to EN Standard 388 (mechanical risks). This standard defines four tests and determines the level. The levels illustrate the efficiency of a glove.

Test	Level 1	Level 2	Level 3	Level 4	Level 5
Abrasion resistance (cycles)	100	500	2000	8000	-
Cut resistance (factor)	1.2	2.5	5.0	10.0	20.0
Tear resistance (Newton)	10	25	50	75	-
Puncture resistance (Newton)	20	60	100	150	-

Abrasion resistance:
Number of test cycles required to fray test glove.

Cut resistance:
Number of test cycles required at constant speed to cut test glove.

Tear resistance:
Force required to tear test glove.

Puncture resistance:
Force required to puncture test glove with a standardized test product.

Cut resistant gloves

Art. No.	Abrasion resistance	Cut resistance	Tear resistance	Puncture resistance	Page
0024.1 ff.	Level 2	Level 1	Level 3	Level 2	665
CA01.1 ff.	Level 4	Level 3	Level 4	Level 0	664
CAN2.1 ff	Level 2	Level 1	Level 4	Level 2	662
CC05.1 ff.	Level 3	Level 1	Level 4	Level 0	660
CYC0.1ff	Level 3	Level 5	Level 4	Level 0	664
E441.1 ff.	Level 1	Level 3	Level 4	Level 0	661
EA32.1 ff.	Level 0	Level 3	Level 4	Level 2	663
ECP7.1 ff.	Level 3	Level 5	Level 3	Level 1	672
ECT2.1 ff.	Level 3	Level 5	Level 4	Level 3	664
ECY4.1 ff.	Level 4	Level 1	Level 1	Level 1	657
ECY8.1 ff.	Level 4	Level 1	Level 1	Level 1	657
EP06.1 ff.	Level 3	Level 1	Level 3	Level 1	662
HE68.1 ff.	Level 2	Level 1	Level 2	Level 1	665
HEN1.1 ff.	Level 4	Level 1	Level 4	Level 1	661
HH29.1 ff.	Level 2	Level 1	Level 3	Level 1	662
HNA3.1 ff.	Level 4	Level 1	Level 3	Level 1	661
HNA7.1 ff.	Level 4	Level 1	Level 4	Level 1	662
HNC2.1 ff.	Level 3	Level 2	Level 4	-	660
K290.1 ff.	Level 3	Level 1	Level 1	Level 1	666
K961.1 ff.	Level 3	Level 4	Level 4	Level 4	659
KL18.1 ff.	Level 4	Level 3	Level 4	Level 1	663
LY23.1 ff.	Level 0	Level 0	Level 3	-	660
PA77.1 ff.	-	Level 5	Level 4	Level 3	665
PT65.1 ff	Level 4	Level 5	Level 4	Level 4	665
T084.1 ff.	Level 1	Level 3	Level 4	Level 0	667
TT87.1 ff.	Level 2	Level 1	Level 1	Level 1	666
XC93.1 ff.	Level 4	Level 1	Level 3	Level 1	663
XY00.1 ff.	Level 2	Level 1	Level 4	-	660
XY04.1 ff.	Level 4	Level 3	Level 4	Level 2	663
XY83.1 ff.	Level 4	Level 1	Level 3	Level 1	661

Cut resistant gloves

Cat. II

Multipurpose gloves SensiLite® type 48-105

By Ansell. Acc. to EN 420 and EN 388 (003X). Lightweight multipurpose glove for work requiring selective abrasion resistance and a secure grip.
- Made of seamless nylon, with knitted welt and PU-coated fingertips
- Only the fingertips are coated, ensuring maximum breathability and good wear comfort
- Outstanding fit and good mobility allow precise handling of small objects
- For protection against skin abrasion
- Length 210-265 mm

Size	Art. No.	Pack Qty. (pair)	€
7	**LY23.1**	12	31,10
8	**LY24.1**	12	31,10
9	**LY25.1**	12	31,10
10	**LY26.1**	12	31,10

Cat. II

Stringknits™ multipurpose gloves

By Ansell. Acc. to EN 420, EN 388 (2140). Seamless knit gloves made of lightweight nylon (soft, comfortable, flexible and low-fluff). With knitted welt. Breathable. Ambidextrous. Colour: white. Length 190-235 mm. Washable up to max. 40 °C.

Applications: general work, precision work, precision assembly of dry components and packing work. Also suitable as undergloves.

Size	Art. No.	Pack Qty. (pair)	€
7	**XY00.1**	12	24,30
8	**XY01.1**	12	24,30
9	**XY02.1**	12	24,30
10	**XY03.1**	12	24,30

Cat. II

Knitted gloves PolyTRIX®

By KCL by Honeywell. Acc. to EN 420, EN 388 (3140).
Light protective gloves made of 70 % polyamide and 30 % cotton, white. Can be worn on both sides. Cellular, seamless knit, adapt to the skin. With elastic knitted cuff. Washable. Application range: Laboratory work, fine work, light assembly work.

Size	Art. No.	Pack Qty. (pair)	€
7	**CC05.1**	5	17,15
8	**CC06.1**	5	17,15
9	**CC07.1**	5	17,15
10	**CC08.1**	5	17,15

Cat. II

Cut resistant gloves with dimples

Acc. to EN 420 and EN 388 (324x).
Double-layer finely knitted gloves, cotton inside, polyamide outside. Seamless circular knit with knit wrist. Hand inner surfaces with vinyl dimples.
- Skin-friendly and pleasant to wear
- Excellent fit and flexible
- Safe grip
- Excellent wear resistance for long service life
- Colour white/dimples green

Size	Art. No.	Pack Qty. (pair)	€
7	**HNC2.1**	6	11,70
8	**HNC3.1**	6	11,70
9	**HNC4.1**	6	11,70
10	**HNC5.1**	6	11,70

Cut resistant gloves

Cat. II

Cut resistant gloves K-MEX®

By KCL by Honeywell. Acc. to EN 420 and EN 388 (1340). Made of Para-Aramid. Medium knit-strength. Fit both hands, breathing. Facilitates long, non-fatiguiing work. High touch sensitivity. Washable. Used for all kinds of assembly works, metal processing, chemical and plastic industry.

PVC dot-coated for good wet grip

Size	Art. No.	Pack Qty. (pair)	€
7	**E441.1**	1	17,00
8	**E442.1**	1	17,00
9	**E443.1**	1	17,00
10	**E444.1**	1	17,00

Cat. II

Finely-knitted gloves

Acc. to EN 420 and EN 388 (4131). Made of nylon, white. Protect against cuts and pricks. With polyurethane coating on the palm of the hand. Elasticated knitted welt, seamless, silicone-free. Washable max. 30 °C.

Size	Art. No.	Pack Qty. (pair)	€
6	**X797.2**	12	20,40
8	**X799.2**	12	20,40
9	**EH70.2**	12	20,40
10	**EH71.2**	12	20,40
7	**X798.2**	12	20,40

Finely knitted gloves with PU coating

Acc. to EN 420 and EN 388 (4131). Finely knitted made of polyamide, seamless. Hand inner surfaces and finger tips with polyurethane coating.

- Breathable, comfortable to wear
- Safe grip with excellent tactile sensitivity, high resistance to wear
- Excellent fit
- For protection against light cuts and stabbing injuries
- Colour white, rubber grey knit wrist

Size	Art. No.	Pack Qty. (pair)	€
6	**HEN1.1**	12	15,00
7	**HEN2.1**	12	15,00
8	**HEN3.1**	12	15,00
9	**HEN4.1**	12	15,00
10	**HEN5.1**	12	15,00

Cat. II

Finely knitted gloves with PU coating

Acc. to EN 420 and EN 388 (4131).
Finely knitted gloves made of polyamide, seamless circular knit with knit wrist. Hand inner surfaces and finger tips with polyurethane coating.

- Especially breathable, comfortable to wear
- Very good fit, excellent tactile sensitivity
- Safe grip
- High resistance to wear for long service lives
- Colour grey/grey

Size	Art. No.	Pack Qty. (pair)	€
7	**HNA3.1**	12	12,75
8	**HNA4.1**	12	12,75
9	**HNA5.1**	12	12,75
10	**HNA6.1**	12	13,90

Cat. II

Multipurpose gloves SensiLite® type 48-101

By Ansell. Acc. to EN 420, EN 388 (4131). Rugged finely knitted nylon gloves, with knitted welt and polyurethane-coated palm. Colour: black. Length 210-265 mm. For protection against chafing.
Good mobility for handling small parts.
Applications: general work, assembly, inspection and packing of small components.

Size	Art. No.	Pack Qty. (pair)	€
6	**XY83.1**	12	34,95
7	**XY84.1**	12	34,95
8	**XY85.1**	12	34,95
9	**XY86.1**	12	34,95
10	**XY87.1**	12	34,95
11	**XY88.1**	12	34,95

Cut resistant gloves

Cat. II

Ninja Maxim NFT® multipurpose gloves

Acc. to EN 420 and EN 388 (4141).
Finely knitted gloves made of polyamide/Elasthan, seamless circular knit with knit wrist. Hand inner surfaces and finger tips with foamed NFT® Nitrile coating.

- Excellent fit and flexible, therefore comfortable to wear
- Excellent tactile sensitivity, especially breathable
- Secure grip in dry, oily and moist environments
- Excellent wear resistance for long service life
- Colour grey/black

Size	Art. No.	Pack Qty. (pair)	€
7	**HNA7.1**	2	8,90
8	**HNA8.1**	2	8,90
9	**HNA9.1**	2	8,90
10	**HNC0.1**	2	8,90
11	**HNC1.1**	2	8,90

Cat. II

Anti-static gloves Camapur® Comfort

By KCL by Honeywell. Acc. to EN 420, EN 388 (2131), EN 1149 Part 1 and 2. Made of polyamide with copper thread. Polyurethane coating on palm of the hand, back of the hand is not coated. With knitted cuff. Good fit and sensitivity. Fulfills all the requirements for classification as an anti-static glove. Values in compliance with EN 1149: Part 1 $<10^6$ surface resistance, Part 2 $<10^6$ volume resistance. Suitable for assembly work in the electro-industry or handling and processing chips. Washable, anti-static properties do not dwindle away.

Size	Art. No.	Pack Qty. (pair)	€
7	**HH29.1**	5	37,60
8	**HH30.1**	5	37,60
9	**HH31.1**	5	37,60
10	**HH32.1**	5	37,60

Cat. II

Showa Grip Green 310 protective gloves

By SHOWA. Acc. to EN 420, EN 388 (2142).
Seamless polyester/cotton fabric with latex coated palm and elasticated cuff. A flexible and robust glove offering great dexterity and good resistance to tearing.

- Breathable back for reduced moisture
- Suitable for use in wet and moist environments
- Surface is specially treated for a more tactile feel and better grip
- Anatomically shaped for greater freedom of movement and extra comfort during extended periods of wear

Applications: farming, gardening, construction, outdoor work.

Size	Art. No.	Pack Qty. (pair)	€
7 (S)	**CAN2.1**	10	39,70
8 (M)	**CAN3.1**	10	39,70
9 (L)	**CAN4.1**	10	39,70
10 (XL)	**CAN5.1**	10	39,70
11 (XXL)	**CAN6.1**	10	39,70

Cat. II

HyFlex® Foam knitted gloves

By Ansell. Acc. to EN 420, EN 388 (3131). Seamless, knitted, multi-purpose gloves made of elastic nylon. Dip coated with specially foamed, breathable nitril except on back of hand.

- With excellent freedom of movement
- Excellent grip
- Ideal for handling dry or slightly oiled components
- Offers some protection when working with mechanical parts
- High abrasion resistance

Areas of application: light assembly work in the automobile, plastic, textile and consumer goods industry, warehouse and logistics work.
All substances in compliance with FDA 21 CFR 177.2600.
Washable max. 40 °C.

Size	Art. No.	Pack Qty. (pair)	€
7	**EP06.1**	2	11,70
8	**EP07.1**	2	11,70
9	**EP08.1**	2	11,70
10	**EP09.1**	2	11,70

Cut resistant gloves

Cat. II

phynomic M1 WET-cut resistant gloves

By UVEX. Acc. to EN 420. EN 388 (4131). Made of polyamide/Elasthan, Aqua-Polymer foam coating on palm and fingers. With knitted welt.

- Absolute cleanliness - **uvex pure standard**, excellent skin tolerability
- Perfect fit, outstanding natural feel
- Maximum flexibility
- Outstanding dry and wet grip
- Oil/emulsions roll off, oil is absorbed
- High breathability ensures optimum wear comfort
- Length 210-250 mm

Suitable for precision work, fine assembly work, general maintenance work, dry areas and moist/oily working conditions.

Size	Art. No.	Pack Qty. (pair)	€
7	**XC93.1**	2	13,15
8	**XC94.1**	2	13,15
9	**XC95.1**	2	13,15
10	**XC96.1**	2	13,15

Cat. II

Protective gloves Camapur® Cut

By KCL by Honeywell. Acc. to EN 420, EN 388 (4341).

- Seamless tricot made of Polyethylene (HPPE-fibre), with knitted welt and thin Polyurethane-layer
- The back of the hand remains uncovered, minimizes sweating of hand
- Very high cut protection value
- High touch sensitivity and mechanical load, extremely comfortable
- Good grip even when handling wet and slippery objects
- Approx. 1.2 mm thick, length approx. 240 mm

Size	Art. No.	Pack Qty. (pair)	€
7	**KL18.1**	2	32,20
8	**KL19.1**	2	32,20
9	**KL20.1**	2	32,20
10	**KL21.1**	2	32,20

Cat. II

HyFlex®-cut resistant gloves type 11-624

By Ansell. Acc. to EN 420, EN 388 (4342). Grey backing material Polyethylene (ultra-high-molecular-weight PE), Elasthan (Lycra®), nylon. Polyurethane coated palm. With knitted welt.

- Comfortable gloves with good mobility
- Pleasant to wear, also suitable for prolonged work use
- Special polyurethane coating offers flexibility and fit, as well as secure grip on dry and slightly oily objects
- High cutting resistance for safe handling and assembly of sharp-edged parts
- Length 220-270 mm

Applications: glass production, handling sharp-edged objects, preassembly, cutting dry or slightly oily small parts, maintenance work etc.

Size	Art. No.	Pack Qty. (pair)	€
7	**XY04.1**	1	13,45
8	**XY05.1**	1	13,45
9	**XY06.1**	1	13,45
10	**XY07.1**	1	13,45

Cat. II

Cut protection gloves T-Flex

By SHOWA. Acc. to EN 420 and EN 388 (0342). Very thin glove made of Polyethylene. Offers high protection agains cuts, very good tactile touch and high finger sensitivity. Circular knit, can be worn on both hands. Universal use, e.g. for sharp-edged glass or metal parts. Suitable for either working with or for processing food.

Size	Art. No.	Pack Qty. (pair)	€
7	**EA32.1**	1	23,60
8	**EA33.1**	1	23,60
9	**EA34.1**	1	23,60
10	**EA35.1**	1	23,60

Cut resistant gloves

Cat. II

Cut resistant gloves NevoCut® 923

By KCL by Honeywell. Acc. to EN 420, EN 388 (3540). Made of seamless tricot (polyamide and high-strength polyethylene HPPE fibre) with knitted welt.
Very high level of protection against cutting (Level 5), without limiting mobility. Excellent tactile sensitivity and high wearing comfort.
Can be worn on both hands, washable. Length 250 mm.
Applications: work which involves a high risk of cutting, e.g. work with scalpels or doctor blade. Suitable for contact with foodstuffs.

Size	Art. No.	Pack Qty. (pair)	€
7	**CYC0.1**	1	18,25
8	**CYC1.1**	1	18,25
9	**CYC2.1**	1	18,25
10	**CYC3.1**	1	18,25

Cat. II

Cut resistant gloves 8110 D-Flex

By SHOWA. Acc. to EN 420, EN 388 (3543). Acc. to Reg. (EC) 1935/2004 - suitable for contact with foodstuffs. Seamless fabric made of high-performance polyethylene (HPPE, Spectra fibres). Uncoated, untreated. With elasticated cuff. Ambidextrous.

- Active protection against cutting and long life
- Excellent dexterity and tactile feel
- Minimum allergy risk
- No skin irritation by stitching
- High freedom of movement of wrist joint
- Length 240 mm

Areas of use:
Work requiring a high level of protection against cutting and dexterity.
Food processing.

Size	Art. No.	Pack Qty. (pair)	€
6	**ECT2.1**	1	29,00
7	**ECT3.1**	1	29,00
8	**ECT4.1**	1	29,00
9	**ECT5.1**	1	29,00
10	**ECT6.1**	1	29,00

Cat. II

Cut resistant gloves 542X HPPE Fit

By SHOWA. Acc. to EN 420 and EN 388 (4340). Seamless knit gloves made from polyethylene (HPPE). Without coating, thin and flexible, good protection against cutting. Excellent for precision working. Washable at 40 °C with a neutral washing powder. (The performance level according to standard EN 388 is no longer guaranteed after washing).

Size	Art. No.	Pack Qty. (pair)	€
7	**CA01.1**	1	13,45
8	**CA02.1**	1	13,45
9	**CA03.1**	1	13,45

Cat. II

Cut resistant gloves K-TEX®

By KCL by Honeywell. Acc. to EN 420 and EN 388 (3444). Coated. Made of Para-Amid. Finger tips and inner surface dipped in natural latex. Excellent flexibility and grip. Comfortable to wear. Washable. Total length 250 mm. Ideal for following applications: metal processing, glass industry, plastic industry, etc. Heavy-weight glove.

Size	Art. No.	Pack Qty. (pair)	€
7	**K961.1**	1	20,35
8	**K962.1**	1	20,35
9	**K963.1**	1	20,35
10	**K964.1**	1	20,35

Cut resistant gloves PowerFlex®

By Ansell. Acc. to EN 388 (X543), EN 407.
- Excellent protection against cuts, abrasion and puncture
- Made of steel, nylon, fiber-glass, cotton and Kevlar®
- Safe grip with rough coat of natural rubber
- ¾ coated, liquid-repellent
- Blue coating on green flecked base
- Length 260-295 mm
- Extended knitted wrist for ideal forearm protection
- Machine washable

Suitable for handling broken glass, sharp metal edges, waste separation (glass, tin cans, metallic parts, etc.).

Size	Art. No.	Pack Qty. (pair)	€
6	**PA77.1**	1	22,90
7	**PA78.1**	1	22,90
8	**PA79.1**	1	22,90
9	**PA80.1**	1	22,90
10	**PA81.1**	1	22,90
11	**PA82.1**	1	22,90

Protective gloves PROTECTOR CHEMICAL

By UVEX. Acc. to EN 374 and EN 388 (4544).
- Multi Layer Technology provides optimal chemical/cut protection Cotton/polyethylene (HPPE)/glass and double nitrile rubber coating
- Comfortable, anatomically shaped glove
- Coarse surface for secure grip

Suitable for chemicals industry, machine and tool making, work involving cutting hazards and protection from chemicals.

Length 270 mm

Size	Art. No.	Pack Qty. (pair)	€
9	**PT65.1**	1	69,35
10	**PT66.1**	1	69,35

Length 400 mm

Size	Art. No.	Pack Qty. (pair)	€
9	**PT67.1**	1	84,95
10	**PT68.1**	1	84,95

Power-type safety gloves

Acc. to EN 420, EN 388 (2132). Grey split cowhide leather, does not include rubber cord. Cuffs and backs made of green drill. Length approx. 260 mm.

Size	Art. No.	Pack Qty. (pair)	€
10.5	**0024.1**	5	17,00

Working gloves RewoMech®

By KCL by Honeywell. Acc. to EN 420, EN 388 (2121). Grey/black. Good alternative to conventional leather gloves.
- Breathable backing fabric made of 97 % polyester with 3 % elastane
- Palm reinforced with resistant synthetic leather (60 % polyamide / 40 % polyurethane)
- Thumb back with cotton wool Terry cloth for sweat absorption
- Cuff with Velcro fastening system for secure fit
- Strong grip even when parts are wet
- Good fit enables long and fatigue-free working
- Sensitive, therefore ideal for working with filigree objects
- Vent holes between the fingers
- Flexible to cold up to approx. max -20 °C
- Temperature resistant up to approx. max 130 °C
- Length approx. 230-280 mm, 0.70 mm thick

Size	Art. No.	Pack Qty. (pair)	€
7	**HE68.1**	2	32,20
8	**HE69.1**	2	32,20
9	**HE70.1**	2	32,20
10	**HE71.1**	2	32,20
11	**HE72.1**	2	32,20

Cat. II

Protective gloves Man at Work

By KCL by Honeywell. In acc. to EN 420, EN 388 (2111). Made of cotton with nitrile coating and canvas cuff. Knuckle protection and elastic back. Rugged design. **Ideal replacement for leather gloves.**
High flexibility compared to leather, good thermal flexibility.
High breathability. Oil, grease and moisture repellent.
Provides good grip on smooth surfaces. Washable up to 30 °C.
Length: 260-280 mm, 1.25 mm thick.
Applications: craft trades, forestry and agriculture, construction and machinery sector, metalworking.

Size	Art. No.	Pack Qty. (pair)	€
8	**TT87.1**	2	14,25
9	**TT88.1**	2	14,25
10	**TT89.1**	2	14,25
11	**TT90.1**	2	14,25

Cat. I

Cotton gloves

Tricot gloves made of 100 % cotton. With finger walls, anatomic thumb, lined. White, bleached. Öko Tex Standard 100. Suitable for foodstuffs.
Breathable, wearing comfort, precise fit, excellent tactile sensitivity.
Application: product protection or as underglove.

Length approx. 24 cm, medium-duty quality

Size	Art. No.	Pack Qty. (pair)	€
7	**ENC3.1**	12	24,55
8	**ENC4.1**	12	24,55
9	**ENC5.1**	12	24,55
10	**ENC6.1**	12	24,55
11	**ENC7.1**	12	24,55

Length approx. 24 cm, heavy duty

Size	Art. No.	Pack Qty. (pair)	€
7	**0514.2**	12	32,20
11	**0557.2**	12	32,20

Extra long approx. 35 cm, medium-duty quality

Size	Art. No.	Pack Qty. (pair)	€
8	**ENC8.1**	6	18,85
10	**ENC9.1**	6	18,85

Cat. II

Protective gloves Sahara® 100

By KCL by Honeywell. Acc. to EN 420 and EN 388 (3111). Made of cotton. The **high-quality nitrile coating** guarantees excellent physical properties. Gloves are light, flexible and robust and provide safe and comfortable protection during mechanical stress. For example, protect against puncture injuries and cuts. Made of cotton tricot and without coating on back of hands gloves have excellent touch sensitivity and are comfortable to wear.

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
7	ca. 235	**K290.1**	2	12,70
8	ca. 250	**K291.1**	2	12,70
9	ca. 255	**K292.1**	2	12,70
10	ca. 265	**K293.1**	2	12,70

Cat. I

Cotton-undergloves

Tricot gloves made of 100 % cotton. Ambidexterous, lined.
Natural white, unbleached. Öko Tex standard 100.
Breathable, wearing comfort, excellent tactile sensitivity.
Application: product protection or as underglove.

Size	Art. No.	Pack Qty. (pair)	€
7	**ENE0.1**	12	13,55
8	**ENE1.1**	12	13,55
10	**0068.2**	12	13,55

NEW

Cat. I

JACKSON SAFETY G35 undergloves

Made of 100% nylon. Designed for working in segments with a high level of product and process protection.
- Seamless design – minimises skin irritation and offers improved breathability as well as wearing comfort
- Can be worn on either hand
- Colour: white
- Colour-coded cuffs for the various sizes
- Silicone-free
- Packaged in a polybag

Applications: for general use, ideal for the automotive and aviation industries and for lint-free and silicone-free tasks in particular.

Size	Art. No.	Pack Qty. (pair)	€
XS	**KAA9.1**	12	17,15
S	**KAC0.1**	12	17,15
M	**KAC1.1**	12	17,15
L	**KAC2.1**	12	17,15
XL	**KAC3.1**	12	17,15

Cat. II

Nappa leather gloves

Acc. to EN 420. For cold and hot conditions, comfortable fit, not fully tear- and waterproof.

Size	Art. No.	Pack Qty. (pair)	€
8	**1744.1**	2	12,80
9	**1747.1**	2	12,80
10	**1748.1**	2	12,80

Programme extension!

niroflex 2000 pierce-resistant gloves

Metal mesh gloves, tested according to DIN EN 1082-1/ISO 13999-1. Protect the hands against cutting and piercing injuries.
- Extremely comfortable to wear and allow for effortless work
- Patented locking hook for simple, continuously adjustable locking
- Metal mesh made of 100% stainless steel
- Easy to use without spare parts such as press studs, clasps and spare straps
- Metal mesh end strap
- Exceptional fit thanks to ergonomic design without excess metal mesh at the fingertips
- Colour-coded cuff to quickly identify the size
- Flexible cuff makes the glove extremely comfortable to wear and prevents slipping
- Can be worn on the right or left hand
- Easy to clean without leaving residue
- Ring outer ∅ 4.2 mm, wire thickness 0.55 mm

Without cuff

Size	Art. No.	Pack Qty.	€
S	**K173.1**	1	107,10
M	**K174.1**	1	107,10
L	**K175.1**	1	109,20

With cuff
Length 190 mm.

Size	Art. No.	Pack Qty.	€
S	**KAY7.1**	1	181,70
M	**KAY8.1**	1	181,70
L	**KAY9.1**	1	181,70

Accessories:

Glove tensioner, blue	**KCA0.1**	100	26,90

Cat. II

Arm protectors ArMEX

By KCL by Honeywell. Acc. to EN 388. Made of Para-Aramid. With thumb-hole for good fit. Protect the forearm **against cuts** and **temperatures to 100 °C**. Washable.

Size (mm)	Length (mm)	Art. No.	Pack Qty.	€
2	360	**T084.1**	2	25,70
3	420	**TT10.1**	2	25,75

▶ Film gloves for wearing under chain gloves see page 638

Cold resistant gloves

Cold protection gloves

Tested according to **EN 511 standard (gloves for protection against the cold).** This applies to all gloves designed for protection of the hand against convective and contact cooling to -50 °C. The standard defines three performance indicators in conjunction with specific protective properties.

A: Resistance to convective cooling (performance levels 0-4)
Thermal insulation against through-cooling, measured by convection transfer.

B: Contact cooling (performance levels 0-4)
Thermal insulation of the glove material in direct contact with a cold object.

C: Waterproofing (0 or 1)
The test for water-tightness is voluntary.
0 = water penetration
1 = no water penetration
X = the glove was not submitted for testing, or the test or test method is not appropriate or irrelevant.

Cold protection gloves

Art. No.	Performance indicators according to EN 511		
	A	B	C
0922.1ff	3	2	x
5233.1f	1	1	x
CC00.1ff	1	2	x
EA80.1f	1	0	0
HLP4.1ff	1	2	1
K970.1ff	1	2	1
KH93.1ff	3	2	1
KL11.1ff	3	3	1
T664.1ff	3	2	1
XE54.1f	1	1	1
XY15.1	1	1	1

In addition all gloves must achieve at least performance level 1 for abrasive resistance and tear strength according to EN 388 (protection against mechanical risks).

Performance indicators according to EN 388

Art. No.	Abrasive resistance	Cutting resistance	Tear resistance	Penetration force
0922.1ff.	1	3	2	3
5233.1f	1	x	4	x
CC00.1ff	2	1	2	1
EA80.1f	3	1	4	x
HLP4.1 ff.	3	2	2	2
K970.1ff	3	2	2	1
KH93.1ff	1	3	2	3
KL11.1ff	3	2	2	2
T664.1ff	1	2	2	3
XE54.1f.	3	3	4	1
XY15.1	3	2	3	2

Resistant gloves proFood® Insulated

By Ansell. Acc. to EN 420, EN 388, EN 511 and EN 407.
- With special hollow fibers for working in cold and hot conditions
- Draw off moistness from skin and forms a heat insulation barrier between skin and surroundings
- Light and pliable, can be worn on both hands
- Seamless design prevents rubbing and skin irritation
- Made of material which is also suitable for handling food
- Machine washable up to 40 °C
- Protection against exposure up to 100 °C: max. 15 sec

Recommended areas of application:
- Gloves can also be worn to protect against cold or frost, e.g. non-sterile working with dry food
- As a glove liner when working with meat or fish

Size	Art. No.	Pack Qty. (pair)	€
7	**EA80.1**	2	13,45
9	**EA81.1**	2	13,45

SIPRA®-deep freeze gloves

Acc. to EN 420, EN 388 and EN 511. Heavyweight, made of dense, knitted white an impregnating cotton and terry towel like outer structure. Made of 100 % cotton, Öko-Tex Standard 100. Length 30 cm. Protection against contact coldness down to -20 °C.

Size	Art. No.	Pack Qty. (pair)	€
8 / S (red braid)	**5233.1**	1	44,65
9 / M (blue braid)	**2086.1**	1	44,65

Cold resistant gloves

Cat. II

Ice Grip® cold resistant gloves

By KCL by Honeywell. Acc. to EN 511 and EN 388. RAL-certified, suitable for use in the food industry. Made of PVC, inner lining made of breathable Thinsulate®. Very good grip, especially of wet parts, due to special slipstop coating on palm. Moisture repellent. The knitted wrist stops cold from getting into the glove. Cold-stable to max. -50 °C.

Size	Art. No.	Pack Qty. (pair)	€
7	**CC00.1**	1	14,20
8	**CC01.1**	1	14,20
9	**CC02.1**	1	14,20
10	**CC03.1**	1	14,20

Cat. II

Winter Monkey Grip®-work gloves

By Ansell. Acc. to EN 388, EN 420, EN 511.

- PVC dip coated with foam insulation
- Keeps hands warm and dry and protects against chafing
- Oil and grease repellent
- Excellent grip and abrasion resistance
- Maintains flexibility even at subzero temperatures
- With protective cuff

Applications: working with oily or greasy objects and materials, working with chemical containers at low temperatures, transporting oil in winter, cold storage room and warehouse maintenance.

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
10	265	**XE54.1**	1	18,20
11	295	**XE55.1**	1	18,20

Cat. III

Neoprene gloves Scorpio® 09-022

By Ansell. Acc. to EN 420, EN 388, EN 374, EN 407 and EN 511. AQL 1.5. Black, neoprene-coated protective gloves **with foam insulation**.
For protection against a wide range of bases, acids, alcohols and diluted aqueous solvents.
Also suitable for working in hot and cold conditions. Suitable for short-time contact with liquids at temperatures from max. 180 °C to min. -25 °C. Not suitable for temperatures above 200 °C. Good abrasion and cutting resistance.
Smooth grip profile. Length 350 mm. Standard size 10.

Applications: handling chemicals and petrochemicals, for degreasing and coating etc.

Art. No.	Pack Qty. (pair)	€
XY15.1	1	47,20

Cat. II

Cold resistant gloves Cama Iso® 690+

By KCL by Honeywell. Acc. to EN 420, EN 388, EN 511. Made of PVC. Specially developed for working in cold. Extremely comfortable, abrasion-proof and highly flexible. With seamless, warm cotton lining inside. Impervious to fluids. Textured surface for secure grip when handling wet parts. Length approx. 300 mm, total layer thickness approx. 3.5 mm. Stable to approx. -20 °C.

Size	Art. No.	Pack Qty. (pair)	€
9	**K970.1**	1	26,85
10	**K971.1**	1	26,85

Cold resistant gloves

A 121 °C

Cat. III

Cryo-Gloves®-cold resistant gloves

By Tempshield. Acc. to EN 420, EN 388 and EN 511. Provides protection in extremely cold temperature ranges up to -160 °C. Autoclavable. Suitable for handling dry ice (-79 °C), for working in the gas phase of cryogenic media, such as **liquid nitrogen in the gas phase**.
Attention: Do not submerse in cryogenic liquids!
Material: Semi-permeable skin made of sewn nylon. Seamless, laminated inside. Light polyolefin/polyester lining in cotton-knit inner glove.

Type ① and ② for applications in the laboratory:
- Filling and decanting from large tanks to Dewars
- Shock freezing and deep freezing
- Filling cryo traps and metrological devices
- Cryo banks, blood banks
- Deep-freeze conservation

Model ①: Standard design, water resistant

With knitted trim

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
S (8 - 8½)	290, wrist length	**0922.1**	1	180,60
M (9 - 9½)	320, wrist length	**0923.1**	1	180,60
L (10 - 10½)	320, wrist length	**0924.1**	1	180,60

With cuffs

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
S (8 - 8½)	345, forearm length	**0926.1**	1	185,45
M (9 - 9½)	345, forearm length	**0927.1**	1	185,45
L (10 - 10½)	390, forearm length	**0928.1**	1	185,45
XL (11- 11½)	390, forearm length	**0929.1**	1	194,05
M (9 - 9½)	440, elbow length	**5462.1**	1	241,90
L (10 - 10½)	485, elbow length	**5468.1**	1	241,90
XL (11- 11½)	485, elbow length	**5483.1**	1	244,60
M (9 - 9½)	625, shoulder length	**5506.1**	1	281,65
L (10 - 10½)	685, shoulder length	**5508.1**	1	281,65
XL (11- 11½)	685, shoulder length	**5511.1**	1	289,20

Type ① and ② for applications in the laboratory:
- Filling and decanting from large tanks to Dewars
- Shock freezing and deep freezing
- Filling cryo traps and metrological devices
- Cryo banks, blood banks
- Deep-freeze conservation

Model ②: 100 % waterproof design, with additional seamless inner glove.
For long-term work in the gas phase and when there is a danger of exposure to liquids, e.g. also to infectious or toxic substances.
Possible penetration through seams at fingers is prevented.

With knitted trim

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
S (8)	approx. 290, wrist length	**KH93.1**	1	237,05
M (9)	approx. 320, wrist length	**KH94.1**	1	237,05
L (10)	approx. 320, wrist length	**KH95.1**	1	237,05
XL (11)	approx. 320, wrist length	**KH96.1**	1	240,80

With cuffs

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
S (8)	approx. 345, forearm length	**T664.1**	1	238,65
M (9)	approx. 345, forearm length	**T665.1**	1	238,65
L (10)	approx. 390, forearm length	**T666.1**	1	238,65
XL (11)	approx. 390, forearm length	**T667.1**	1	245,10
M (9)	approx. 440, elbow length	**KH97.1**	1	289,20
L (10)	approx. 485, elbow length	**KH98.1**	1	289,20
XL (11)	approx. 485, elbow length	**KH99.1**	1	295,65
M (9)	approx. 625, shoulder length	**KL00.1**	1	355,85
L (10)	approx. 685, shoulder length	**KL01.1**	1	355,85
XL (11)	approx. 685, shoulder length	**KL02.1**	1	363,35

A 121 °C

Cat. III

Cryo-Industrial® cold resistant gloves

By Tempshield.
Same design as Cryo-Gloves® thermal protection gloves.
Attention: Do not submerse in cryogenic liquids.

Model ③: Industrial design 100 % waterproof:
Specially for industrial applications, hard-wearing and robust. Ideal for applications where wear resistance, durability and good grip are necessary. Inner glove consists of three layers (two insulating layers and lining). There is an additional 100 % waterproof seamless inner glove between the outer layer and the insulating layers.
Areas of application: Chemical/pharmaceutical (cryogenic product cooling), food technology (cryogenic freezing processes, pelletising), metal processing industry (cold dilation and shrinkage), maintenance and repair work to cryo-systems, during cryo-cleaning processes, technical gas industry (decanting cryogenic gases, argon, oxygen, nitrogen, helium).

With cuffs, forearm length

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
M (9)	ca. 400	**KL11.1**	1	252,10
L (10)	ca. 400	**KL12.1**	1	252,10
XL (11)	ca. 400	**KL13.1**	1	257,50

With wide cuffs, elbow length

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
M (9)	ca. 500	**YL11.1**	1	382,70
L (10)	ca. 500	**YL12.1**	1	382,70
XL (11)	ca. 500	**YL13.1**	1	390,80

Heat resistant gloves

Heat protection gloves

Tested according to **EN 407 standard (gloves for protection against the thermal risks).** The standard defines six performance indicators in conjunction with specific protective properties and performance levels from 0-4.

- **A:** Flammability
- **B:** Contact heat
- **C:** Convective heat
- **D:** Radiation heat
- **E:** Small amounts of molten metal spatter
- **F:** Small amounts of liquid metal

Heat protection gloves

Art. No.	Performance indicators					
	A	B	C	D	E	F
0745.1	4	2	2	2	x	x
6584.1ff.	x	2	x	x	x	x
ALA1.1ff.	x	1	x	x	x	x
ALA3.1ff.	x	1	x	x	x	x
APX6.1ff.	4	1	3	4	4	4
CNH6.1	4	2	3	4	4	4
ECP7.1ff.	4	2	2	1	2	x
H297.1ff.	4	3	4	2	x	x
HE74.1	4	3	x	2	x	x
HE75.1	4	4	x	2	2	4
HE76.1	4	4	x	2	1	x
HLP4.1ff.	3	2	x	x	4	x
LY89.1ff.	x	2	x	x	x	x
TT82.1	4	1	3	4	4	4
TT84.1ff.	4	2	4	3	x	x
TX89.1	4	3	4	3	x	x
XE56.1	4	1	3	x	4	x
XY15.1	3	2	x	x	x	x
Y351.1ff.	x	2	4	2	x	x
Y431.1ff.	4	2	4	1	x	x

In addition, all gloves must achieve at least performance level 1 for abrasive resistance and tear strength according to EN 388 (protection against mechanical risks).

Performance indicators according to EN 388

Art. No.	Abrasive resistance	Cutting resistance	Tear resistance	Penetration force
0745.1	1	x	2	x
6584.1ff.	1	x	1	x
ALA1.1ff.	1	x	1	x
ALA3.1ff.	1	x	1	x
APX6.1ff	1	x	2	x
CNH6.1	3	4	4	3
ECP7.1ff	3	5	3	1
H297.1ff.	4	x	2	x
HE74.1	1	5	4	x
HE75.1	2	3	x	x
HE76.1	1	x	2	2
HLP4.1ff	3	2	2	2
LY89.1ff.	3	2	3	2
TT82.1	4	x	4	x
TT84.1ff.	1	4	4	1
TX89.1	2	4	4	2
XE56.1	3	2	4	3
XY15.1	3	2	3	2
Y351.1ff.	2	2	4	1
Y431.1ff.	1	4	4	1

Cat. II

Heat protection gloves

Acc. to EN 420, EN 388 and EN 407. Made of polyamide fibres Nomex® by DuPont. Long product life, good form stability, very comfortable fit, highly flame and chemical resistant. The finely-knitted jersey quality gloves are suitable for precision work. Washable at max. +95 °C.
Protect against exposure to max contact heat of:
- 100 °C: max. 26 sec
- 250 °C: max. 7.6 sec

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
6½	260	**ALA1.1**	1	33,35
7½	260	**0138.1**	1	33,35
8	260	**0141.1**	1	33,35
8½	260	**0143.1**	1	33,35
9	260	**ALA2.1**	1	33,35
6½	350	**ALA3.1**	1	44,10
7½	350	**0145.1**	1	44,10
8	350	**0147.1**	1	44,10
8½	350	**0148.1**	1	44,10
9	350	**ALA4.1**	1	44,10

Cat. II

5-finger gloves

Acc. to EN 420, EN 388 and EN 407. Made of polyamide Nomex® from DuPont. Ideal for protection against flames and heat. Size 10½.
Protective capacity on contact with heat:
- 60.5 sec at 100 °C
- 14.7 sec at 250 °C

Length (mm)	Art. No.	Pack Qty. (pair)	€
270	**6584.1**	1	45,15
350	**6599.1**	1	49,45
400	**6604.1**	1	57,00

Heat resistant gloves

Cat. II

Heat and cut resistant gloves 240

By SHOWA. Acc. to EN 420, EN 388 (3531), EN 407 (42212X) Seamless fine knit made of Kevlar®, modacrylic, glass fibre with foam neoprene palm.

- Flame resistant materials
- Kevlar backing fabric offers high cutting resistance: Level 5
- Flat dipped neoprene coating ensures extra-secure grip
- The ergonomic design matches the natural shape of the hand and thus reduces operator fatigue and improves fit and wearing comfort
- Protection against arcing: arcing protection class 2
- 240 mm long.

Range of uses:
Work requiring a high level of protection against cutting and heat.
Building trade, metallurgy, oily working conditions.

Size	Art. No.	Pack Qty. (pair)	€
7 (S)	**ECP7.1**	1	22,50
8 (M)	**ECP8.1**	1	22,50
9 (L)	**ECP9.1**	1	22,50
10 (XL)	**ECT0.1**	1	22,50
11 (XXL)	**ECT1.1**	1	22,50

Cat. III

Neoprene gloves Scorpio® 09-022

By Ansell. Acc. to EN 420, EN 388, EN 374, EN 407 and EN 511. AQL 1.5. Black, neoprene-coated protective gloves **with foam insulation**.
For protection against a wide range of bases, acids, alcohols and diluted aqueous solvents.
Also suitable for working in hot and cold conditions. Suitable for short-time contact with liquids at temperatures from max. 180 °C to min. -25 °C. Not suitable for temperatures above 200 °C. Good abrasion and cutting resistance.
Smooth grip profile. Length 350 mm. Standard size 10.

Applications: handling chemicals and petrochemicals, for degreasing and coating etc.

Art. No.	Pack Qty. (pair)	€
XY15.1	1	47,20

Cat. II

Clavies™ autoclavable gloves

Acc. to EN 420, EN 388, and EN 407. Made of 100 % cotton terry cloth.
Anatomic glove cut. Temperature stable up to 232 °C.
Ideal when handling autoclavable material. Machine washable.
Can be tumble-dried at max. 70 °C.

Total length (mm)	Cuff length (mm)	Art. No.	Pack Qty. (pair)	€
330	130	**Y351.1**	1	40,65
470	280	**Y352.1**	1	55,90

Cat. III

Neoprene gloves Scorpio®

By Ansell. Acc. to EN 420, EN 374, EN 388 (3222), EN 407 (32XX4X) and EN 511 (121). AQL 1,0. black, Neoprene-coated protective gloves with **foam insulation**.

- For protection against a wide range of bases, acids, alcohols, and diluted aqueous solvents
- Also suitable for working in hot and cold conditions. Suitable for short-time contact with liquids at temperatures from max. 180 °C to min. -25 °C. Good abrasion-resistance and cut-resistance. Antistatic acc. to EN 1149
- Roughened handle profile for enhanced grip

Please note:
Gloves are not suitable for working above 200 °C.
Do not use when working with or near to open flames.

Applications: Steam-jet and maintenance work, anodizing.
Working with water baths. Handling objects with hot or cold chemicals.

Scorpio 19-024

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
8	450	**HLP4.1**	1	73,10
10	450	**HLP5.1**	1	73,10

Scorpio 19-026

Size	Length (mm)	Art. No.	Pack Qty. (pair)	€
8	660	**HLP6.1**	1	84,95
10	660	**HLP7.1**	1	84,95

Heat resistant gloves

Cat. III

KarboTECT® heat resistant gloves

Acc. to EN 420. EN 388, EN 407. Made of Para-Aramid, carbon and wool. Heavy knit.

- Good thermal insulation
- High cutting resistance
- Good and tight fit for exact and precise handling
- Good wearing comfort thanks to cotton inner glove
- Reduced static charging

Applications: laboratories, heating and drying ovens, metal production and metalworking, commercial bakeries, retooling hot machines, refineries, all dry contact heat environments.

With knitted welt, length 250 mm.
Good thermal protection up to 250 °C. Washable up to 30 °C.

Size	Art. No.	Pack Qty. (pair)	€
7	**Y431.1**	1	40,35
9	**Y432.1**	1	40,35
10	**Y433.1**	1	40,35

With leather cuff, length 390 mm.
This combination allows work to be carried out at temperatures of up to 350 °C and protects large areas of the lower arm.
Suitable for use with foodstuffs.

Size	Art. No.	Pack Qty. (pair)	€
7	**TT84.1**	1	58,05
9	**TT85.1**	1	58,05
10	**TT86.1**	1	58,05

Cat. II

Charguard®-heat resistant gloves

Acc. to EN 420, EN 388 and EN 407. In conformity with 21CFR, 170-199.

- Special, non-woven heat-insulating lining with heat-resistant coating
- Textured surface
- Slip-on design for easy use
- Heat resistant up to 260 °C
- Washable to 65 °C
- Length 355 mm

Size	Art. No.	Pack Qty. (pair)	€
S	**LY89.1**	1	19,70
M	**LY90.1**	1	19,70
L	**LY91.1**	1	19,70
XL	**LY92.1**	1	19,70

Cat. III

Leather-aluminium heat resistant gloves

By JUTEC®. Acc. to EN 388, EN 407.
Mitten. Outer hand and cuff of flexible aluminium coated Preox-Aramid fabric, inner hand of heat resistant Sebatan leather. Very soft and flexible.
Protection against:

- Radiated heat to 1000 °C
- Contact heat up to 100 °C for at least 15 sec
- Contact heat (spatter) to 250 °C for a limited time

Standard size 10. Length 38 cm.

Applications: light welding work, foundries, metalworking, ceramic furnaces.

Art. No.	Pack Qty. (pair)	€
TT82.1	1	71,20

Cat. III

Heat resistant gloves providing protection to 500 °C

By JUTEC®. Acc. to EN 388, EN 407, EN 420.
Made of Aramid fabric. Cut resistant, abrasion resistant, double insulated.
Good mechanical strength even at high temperatures.
Usable on both sides.
Protection against contact heat to:

- 350 °C: max. 20 sec
- 500 °C: max. 12 sec

Standard size 10. Length 30 cm.

Type	Art. No.	Pack Qty. (pair)	€
Mitten	**TX89.1**	1	42,75
5-finger glove	**HE73.1**	1	51,40

Heat resistant gloves

Cat. III

Aramid-aluminium heat resistant gloves

By JUTEC®. Acc. to EN 388, EN 407.
5-finger glove. Aluminised Preox-Aramid fabric outer hand and cuff, Aramid palm. Cut and abrasion resistant with insulation. Protection against:
- Radiated heat to 1000 °C
- Contact heat up to 100 °C for at least 15 sec
- Contact heat (spatter) to 250 °C for a limited time

Length 380 cm.
Applications:
foundries, welding shop, furnace construction, metalworking, container construction.

Size	Art. No.	Pack Qty. (pair)	€
9	**APX6.1**	1	85,70
10	**TT81.1**	1	85,70

Cat. III

Preox aramid-aluminium heat resistant gloves

By JUTEC®. Acc. to EN 388, EN 407.
5-finger gloves. Outer shell and cuff of Preox aramid fabric with aluminium, palm of Preox aramid, carbon fibre reinforced. Cut and abrasion resistant with insulation. Soft aluminium coating, good handling.
Protection against:
- Radiated heat up to 1000 °C
- Min. 15 sec resistance to contact heat at 250 °C, short-time spatter resistance up to 600 °C

Standard size 10, length 380 mm.
Applications: foundries, furnace construction, glass processing, metal construction, etc.

Art. No.	Pack Qty. (pair)	€
CNH6.1	1	96,25

Isotemp®-R-mittens

Asbestos-free, acc. to EN 407, EN 420, with raw leather on palm. The back of the hand and the 15 cm long cuffs are made of ISOTEMP®. Thick wooly fur lining. Reliable secure protection of hands and lower arms, excellent grip on smooth surfaces. Largely waterproof and stable against contact temperature up to +300 °C and radiation heat up to +600 °C.
Total length 35 cm.

Art. No.	Pack Qty. (pair)	€
0745.1	1	58,05

Programme extension!

Cat. III

Preox-aramid heat-resistant gloves

By JUTEC®. Acc. to EN 388 (3542), EN 407 (43434), EN 420.
Five-finger gloves made from preox-aramid fabric, able to withstand mechanical stress, cut-resistant. Can be worn on both sides as a cost-saving factor.
Protection against contact heat to:
- 350 °C for max. 19 s
- 500 °C for max. 11 s

Universal size 10. Ideal for working with hot parts that must not exceed a short-term temperature of 350 °C.

Applications: transportation of hot cast parts, glass industry operations, pressing facilities, hardening plants, etc.

Length (mm)	Art. No.	Pack Qty. (pair)	€
300	**HE74.1**	1	68,80
400	**HTH1.1**	1	76,35
600	**HTH2.1**	1	96,65

Heat resistant gloves

Cat. III

Heat protection gloves for max. 900 °C

By JUTEC®. Acc. to EN 388, EN 407, EN 420, EN 531. Mittens made of a fabric with a special high-temperature coating, can withstand mechanical load capacity, cut-resistant.
Protect against exposure contact heat:
- 500 °C: max. 16 sec
- 900 °C: max. thermal resistance

Also protects against small metal splashes as well as liquid iron and aluminium. Thumb on side, can be worn on both hands.
One-size 10, length 30 cm.

Art. No.	Pack Qty. (pair)	€
HE75.1	1	82,75

Cat. III

Welder gloves WorkGuard™

By Ansell. Acc. to EN 388, EN 407, EN 420, EN 12477 type A.
Rugged 5-finger leather glove with jersey liner and Kevlar stitching®.
With protective cuff.
Special-purpose glove for heavy-duty work with excellent protection against molten metal spatter. Also suitable for general thermal protection.
Outstanding durability and excellent protection against cutting.
Reinforced palm for even higher abrasion resistance.
For thermal protection in many types work, e.g. welding work, machine operation and work in environments where there is a danger of molten metal spatter.

Standard size 10, length 41 cm.

Art. No.	Pack Qty. (pair)	€
XE56.1	1	16,95

Cat. III

Heat protection gloves for max. 1100 °C

By JUTEC®. Acc. to EN 388, EN 407, EN 420. Mittens made of silicate fabric, 3-fold special isolation. Marginal mechanical load capacity, very flexible even at high temperatures, soft surface, doesn't stick to hot glass.
Protects against exposure contact heat:
- 500 °C: max. 24 sec
- 1100 °C: max. thermal resistance

One-size 10, length 40 cm.

Art. No.	Pack Qty. (pair)	€
HE76.1	1	136,55

Sekuroka®-heat protections

Ideal for manipulating hot or frozen goods. Made of silicone rubber, temperature stable from -60 to +250 °C. No slipping due to rubber burl surface. With loop to hang up glove.

Type	Size (mm)	Art. No.	Pack Qty.	€
Type F finger	137 x 30	**4694.1**	1	12,45
Type M hand	170 x 86	**4693.1**	1	20,00

Sekuroka®-lab coats

Made of blended fabrics (65 % polyester, 35 % cotton).

- **Concealed press-stud buttons** - can be ripped open quickly in an emergency
- **Pen pocket** - pens or spatulas don't fall out when bending
- **Sleeve ends can be adjusted 3 times** - narrower cuffs allow gloves to be pulled on more easily and stop the sleeves from being caught on corners or other objects.
- 2 side pockets - the right pocket as a **double pocket, one of which has a zip**
- The back seam has a practical vent, no belt on back

Properties:

- Crease-resistant
- Comfortable to wear
- Easy-to-clean
- Washable at max. 60 °C, can be dry-cleaned
- German sizes
- Fabric weight approx. 215 g/m²

For ladies - length 114 cm

Size	Art. No.	Pack Qty.	€
36	**T410.1**	1	42,95
38	**T411.1**	1	42,95
40	**T412.1**	1	42,95
42	**T413.1**	1	42,95
44	**T414.1**	1	42,95
46	**T415.1**	1	42,95
48	**T416.1**	1	42,95

For men - length 120 cm

Size	Art. No.	Pack Qty.	€
46	**T417.1**	1	45,10
48	**T418.1**	1	45,10
50	**T419.1**	1	45,10
52	**T420.1**	1	45,10
54	**T421.1**	1	45,10
56	**T422.1**	1	45,10
58	**T423.1**	1	45,10

Women's and men's coats UNISEX, reversible collar

By BP®. **With reversible collar**. Concealed buttons, long sleeve, 1 breast pocket, 2 side pockets, with a slit at the back. Length 103 cm. Öko-Tex Standard 100.

100 % cotton

Fabric weight approx. 205 g/m². Easy-care, washable up to 95 degrees, dry cleaning possible.

Size	equivalent to women's size	equivalent to men's size	Art. No.	Pack Qty.	€
XXS	-	38	**ELY1.1**	1	34,35
XS	32/34	40/42	**KT03.1**	1	39,05
S	36/38	44/46	**KT04.1**	1	39,05
M	40/42	48/50	**KT05.1**	1	39,05
L	44/46	52/54	**KT06.1**	1	39,05
XL	48/50	56/58	**KT07.1**	1	39,05
XXL	52/54	60/62	**KT08.1**	1	39,05
3XL	56/58	64/66	**ELY2.1**	1	34,35

Mixtures of 65 % polyester / 35% cotton

Fabric weight approx. 215 g/m². Robust, suitable for industrial washing.

Size	equivalent to women's size	equivalent to men's size	Art. No.	Pack Qty.	€
XS	32/34	40/42	**ELY3.1**	1	34,35
S	36/38	44/46	**ELY4.1**	1	34,35
M	40/42	48/50	**ELY5.1**	1	34,35
L	44/46	52/54	**ELY6.1**	1	34,35
XL	48/50	56/58	**ELY7.1**	1	34,35
XXL	52/54	60/62	**ELY8.1**	1	34,35

Women's and men's coats UNISEX

By BP®. **With stand-up collar**. Concealed buttons, long sleeve, 1 breast pocket, 2 side pockets, with a slit at the back. Length 103 cm. Öko-Tex Standard 100.

100 % cotton
Fabric weight approx. 205 g/m². Easy-care, washable up to 95 degrees, dry cleaning possible.

Size	equivalent to women's size	equivalent to men's size	Art. No.	Pack Qty.	€
XXS	-	38	**ELY9.1**	1	33,90
XS	32/34	40/42	**ENA0.1**	1	33,90
S	36/38	44/46	**ENA1.1**	1	33,90
M	40/42	48/50	**ENA2.1**	1	33,90
L	44/46	52/54	**ENA3.1**	1	33,90
XL	48/50	56/58	**ENA4.1**	1	33,90
XXL	52/54	60/62	**ENA5.1**	1	33,90
3XL	56/58	64/66	**ENA6.1**	1	33,90

Mixtures of 65 % polyester / 35 % cotton
Fabric weight approx. 215 g/m². Robust, suitable for industrial washing.

Size	equivalent to women's size	equivalent to men's size	Art. No.	Pack Qty.	€
XS	32/34	40/42	**ENA7.1**	1	32,20
S	36/38	44/46	**ENA8.1**	1	32,20
M	40/42	48/50	**ENA9.1**	1	32,20
L	44/46	52/54	**ENC0.1**	1	32,20
XL	48/50	56/58	**ENC1.1**	1	32,20
XXL	52/54	60/62	**ENC2.1**	1	32,20

HACCP-Unisex laboratory coats

By BP®. Acc to. DIN 10524:2004 and HACCP.
With inner pockets. Concealed stud fastenings, 1 inside breast pocket, 2 inside side pockets, long sleeves with adjustable sleeve vents, turn-down collar .
60 % cotton, 40 % polyester, fabric weight approx. 200 g/m². Suitable for industrial washing at up to 95 °C. Length 103 cm. Colour: white.

Size	equivalent to women's size	equivalent to men's size	Art. No.	Pack Qty.	€
XS	32/34	40/42	**XE73.1**	1	36,70
S	36/38	44/46	**XE74.1**	1	36,70
M	40/42	48/50	**XE75.1**	1	36,70
L	44/46	52/54	**XE76.1**	1	36,70
XL	48/50	56/58	**XE77.1**	1	36,70
XXL	52/54	60/62	**XE78.1**	1	36,70

Work coats

By UVEX. Long-sleeved with reversible collar. Öko-Tex Standard 100.
Colour: Cornflower blue.

① **Ladies work coats**
Slightly tailored. Concealed metal stud fastenings. 2 sewn-on side pockets, left-hand breast pocket. Adjustable cuffs. **100 % cotton**.
Fabric weight 210 g/m². Length approx. 105 cm. Washable up to 60 °C.

Size	Art. No.	Pack Qty.	€
36	**NN99.1**	1	45,05
38	**NP00.1**	1	45,05
40	**NP01.1**	1	45,05
42	**NP02.1**	1	45,05
44	**NP03.1**	1	45,05
46	**NP04.1**	1	45,05
48	**NP05.1**	1	50,00
50	**NP06.1**	1	50,00
52	**NP07.1**	1	50,00
54	**NP08.1**	1	50,00

② **Men's work coats**
With short side slits. Concealed metal stud fastenings.
1 left-hand external breast pocket, 1 right breast pocket, 2 side pockets. Adjustable cuffs. **65 % Polyester, 35 % cotton**.
Fabric weight 245 g/m². Length approx. 96 cm. Washable up to 95 °C.

Size	Art. No.	Pack Qty.	€
40/42	**NP09.1**	1	38,40
44/46	**NP10.1**	1	38,40
48/50	**NP11.1**	1	38,40
52/54	**NP12.1**	1	38,40
56/58	**NP13.1**	1	40,75
60/62	**NP14.1**	1	40,75
64/66	**NP15.1**	1	40,75

③ **Men's work coats**
With short side slits. Concealed buttons. 1 left-hand external breast pocket, 1 right breast pocket, 2 side pockets. Straight cuffs. **100 % cotton**.
fabric weight 240 g/m². Length approx. 96 cm. Washable up to 95 °C.

Size	Art. No.	Pack Qty.	€
44/46	**HHX6.1**	1	23,60
48/50	**HHX7.1**	1	23,60
52/54	**HHX8.1**	1	23,60
56/58	**HHX9.1**	1	23,60
60/62	**HHY0.1**	1	23,60

① Ladies' coats 4866

By BP®.
- Stand-up collar with V-neck
- Body-fitting cut
- Hidden snap fasteners with one visible fastener
- 2 side pockets and 1 buzzer pocket
- Length 90 cm
- 100 % cotton, Öko-Tex Standard 100
- Fabric weight approx. 205 g/m²
- **Suitable for industrial washing**, boil-proof and easy care

Size	Art. No.	Pack Qty.	€
36	**PE25.1**	1	42,80
38	**PE26.1**	1	42,80
40	**PE27.1**	1	42,80
42	**PE28.1**	1	42,80
44	**PE29.1**	1	42,80
46	**PE30.1**	1	42,80
48	**PE31.1**	1	42,80
50	**PE32.1**	1	42,80
52	**PE33.1**	1	42,80

② Ladies' coats 1699

By BP®. Made of 50 % cotton, 50 % polyester. With reversible collar. Concealed buttons, 1 breast pocket, 2 side pockets, with a slit at the back and back strap. Length 105 cm. Body-fitting.
Fabric weight: approx. 215 g/m².
Industrial washable, boil-proof and easy care.

Size	Art. No.	Pack Qty.	€
32	**PT46.1**	1	42,80
34	**PT47.1**	1	42,80
36	**PT48.1**	1	42,80
38	**PT49.1**	1	42,80
40	**PT50.1**	1	42,80
42	**PT51.1**	1	42,80
44	**PT52.1**	1	42,80
46	**PT53.1**	1	42,80
48	**PT54.1**	1	42,80
50	**PT55.1**	1	42,80
52	**PT56.1**	1	42,80
54	**PT57.1**	1	42,80

Ladies' coats 1111

By BP®. With stand-up collar and hidden buttons, sewed on buttons. Centre seam in the back with vent. Length 105 cm. 100 % cotton, Öko-Tex Standard 100. Boil proof, easy to iron and **suitable for industrial wear**, extremely easy-care. German sizes. Fabric weight approx. 230 g/m².

Size	Art. No.	Pack Qty.	€
36	**EE17.1**	1	61,20
38	**EE18.1**	1	61,20
40	**EE19.1**	1	61,20
42	**EE20.1**	1	61,20
44	**EE21.1**	1	61,20
46	**EE22.1**	1	61,20
48	**EE23.1**	1	61,20
50	**KE01.1**	1	64,00
52	**KE02.1**	1	64,00

Ladies' coats 1108

By BP®. With lapel and concealed buttons, buttons are permanently sewn on, centre seam on back with slit, length 105 cm.
100 % cotton, Öko-Tex Standard 100. May be boiled, easy to iron and **ideal for industrial use,** easy-care. Fabric weight approx. 230 g/m².

Size	Art. No.	Pack Qty.	€
36	**KE10.1**	1	63,35
38	**KE11.1**	1	63,35
40	**KE12.1**	1	63,35
42	**KE13.1**	1	63,35
44	**KE14.1**	1	63,35
46	**KE15.1**	1	63,35
48	**KE16.1**	1	63,35
50	**KE17.1**	1	63,35
52	**KE18.1**	1	63,35

Men's lab coats

① By BP®. With concealed stud fasteners, 1 breast pocket, 1 inner pocket and 2 side pockets, length 96 cm. 65 % cotton, 35 % polyester, Öko-Tex Standard 100. Easy-care, washable at 95 °C.
Fabric weight approx. 230 g/m².

Size	Art. No.	Pack Qty.	€
48/50	**KC56.1**	1	49,35
52/54	**KC57.1**	1	49,35
56/58	**KC58.1**	1	49,35
60/62	**KC59.1**	1	49,35

② Made of 100 % cotton Öko-Tex Standard 100. With concealed buttons, 1 breast pocket, 1 inner pocket and 2 side pockets (including 1 with multipurpose pocket). Length 96 cm. Fabric weight approx. 230 g/m².

Size	Art. No.	Pack Qty.	€
48/50	**PT58.1**	1	44,65
52/54	**PT59.1**	1	44,65
56/58	**PT60.1**	1	44,65
60/62	**PT61.1**	1	44,65

Men's lab coats

By BP®. With lapel and hidden „sewn on buttons and belt on back. Length 110 cm. 100 % cotton, Öko-Tex Standard 100. Boil-proof, easy to iron and **suitable for industrial wear**, easy-care. German sizes.
Fabric weight approx. 230 g/m².

Size	Art. No.	Pack Qty.	€
46	**EC50.1**	1	66,55
48	**EC51.1**	1	66,55
50	**EC52.1**	1	66,55
52	**EC53.1**	1	66,55
54	**EC54.1**	1	66,55
56	**EC55.1**	1	66,55
58	**KE05.1**	1	68,30
60	**KE06.1**	1	68,30

Ladies' tunics

By BP®. **½ arm.** With V-neck, no collar rear web. Length 75 cm. **Suitable for industrial washing**, boil-proof and easy care. Made of 65 % polyester, 35 % cotton, Öko-Tex Standard 100. With snap fasteners. 1 breast pocket and 2 side pockets.
Fabric weight approx. 215 g/m².

Size	Art. No.	Pack Qty.	€
34	**PE14.1**	1	26,80
36	**PE15.1**	1	26,80
38	**PE16.1**	1	26,80
40	**PE17.1**	1	26,80
42	**PE18.1**	1	26,80
44	**PE19.1**	1	26,80
46	**PE20.1**	1	26,80
48	**PE21.1**	1	26,80
50	**PE22.1**	1	26,80
52	**PE23.1**	1	26,80
54	**PE24.1**	1	26,80

Ladies' and men's trousers

By BP®. Comfortable fit: elasticised waistband with integrated drawstring and 2 side pockets. Hardwearing blended fabric: 50 % cotton, 50 % polyester. Soft on the inside, smooth on the outside and resistant. **Suitable for industrial laundering** up to 95 °C. Inside leg 82 cm.
Weight of fabrics approx. 215 g/m².

Size	Art. No.	Pack Qty.	€
XS	**EE24.1**	1	28,30
S	**EE25.1**	1	28,30
M	**EE26.1**	1	28,30
L	**EE27.1**	1	28,30
XL	**EE28.1**	1	28,30
XXL	**EE29.1**	1	28,30

Protective clothing - type overview

- Type 1: Gas tight protective clothing
- Type 2: Non gas tight protective clothing
- Type 3: Liquid tight protective clothing EN 14605
- Type 4: Splashproof protective clothing EN 14605
- Type 5: Particle tight protective clothing Protection against solid airborne particles EN ISO 13982
- Type 6: Limited splashproof protective clothing Protection against chemical splashes EN 13034
- Protective clothing against pathogens EN 14126
- Protection against contamination by radioactive particles (no protection against radioactive radiation) EN 1073-2
- Protective clothing with antistatic properties EN 1149-1
- Flame and heat protection EN ISO 14116

TYCHEM® 2000 C and TYCHEM® 6000 F Overalls

Types 3, 4, 5 and 6 are in compliance with European standards for protective clothing against chemicals.
The special PE-spun fleece is extremely comfortable to wear.

- 100 % particle-tight
- Non-fluffing, tear- and abrasionproof
- Antistatic in acc. with EN 1149-1
- With hood, and elasticated face, arms, legs and waist
- Double zip covering can be removed by unsticking
- With special chin covering for optimal sealing of respiratory protection masks
- 100 % tight seams

Model	① TYCHEM® 2000 C, yellow	② TYCHEM® 6000 F, orange
Protection against	many conc. anorganic acids, alkaline and saline solutions	many **organic** chemicals; many conc. anorganic acids, alkaline and saline solutions
Impermeable to splashes	**up to max. 2 bar**	**up to max. 5 bar**
Material	coated PE-spun fleece	laminated PE-spun fleece
Weight	83.2 g/m²	120 g/m²
Thickness	183 µm	206 µm

① Model TYCHEM® 2000 C, yellow

Size	Body size (cm)	Art. No.	Pack Qty.	€
M	168-176	**AK28.1**	1	37,10
L	174-182	**AK29.1**	1	37,10
XL	180-188	**AK30.1**	1	37,10
XXL	186-194	**AK31.1**	1	37,10

② Model TYCHEM® 6000 F, orange

Size	Body size (cm)	Art. No.	Pack Qty.	€
M	168-176	**AK33.1**	1	62,25
L	174-182	**AK34.1**	1	62,25
XL	180-188	**AK35.1**	1	62,25
XXL	186-194	**AK36.1**	1	62,25

Overalls decontex® CONCEPT

Type 4. Acc. to EN 14605 (chemically resistant). Antistatic acc. to EN 1149-1. Flame-retarding acc. to EN ISO 14116 (Index 1). Made of elastomerised special PVC. Light, flexible and comfortable. Washable at 40 °C. Seams are welded for liquid proof. With integrated hood, front zip covered with velcro fastening and protective bib. Sleeve bottoms feature inner safety catch and trouser legs have a velcro fastening. German sizes.

Size	Art. No.	Pack Qty.	€
M (50/52)	**P787.1**	1	156,95
L (54/56)	**P788.1**	1	156,95
XL (58/60)	**P789.1**	1	164,50
XXL (62/64)	**P790.1**	1	170,95

Fields of application:

TYCHEM® 2000 C

- Handling powdery hazardous materials
- Working with anorganic acids and alkaline solutions
- Protection against radioactive particles
- Handling blood and viruses transmitted through blood e.g. hepatitis and HIV
- Treating crops and plants by pressure-spraying agrochemichals

TYCHEM® 6000 F

- Handling solid, liquid or gaseous hazardous substances
- Decontamination
- Disposal of hazardous chemicals
- When working with hazardous substances under pressure
- Checking and securing areas exposed to unknown substances

Cat. III

TYVEK® 500-overalls

Special PE-spun fleece, extremely comfortable to wear.
- Lint-free, suitable for cleanroom classes ISO 7/8 (C/D acc. to GMP)
- Tear- and abrasionproof
- Light and flexible
- High protection against splashing, aerosols and particles (>1 µm)
- Weight approx. 41 g/m², 130 µm thick
- Antistatic in accordance with EN 1149-1

① Model TYVEK® 500 Xpert, white
This model is qualified under types 5 and 6 in accordance with the European Standards for protective clothing against chemicals. The hood, arm, leg, and waist holes have both elastic and covered zipper seals. Antistatic, cellular.

Size	Body size (cm)	Art. No.	Pack Qty.	€
S	162-170	**AK17.1**	1	12,10
M	168-176	**AK18.1**	1	12,10
L	174-182	**AK19.1**	1	12,10
XL	180-188	**AK20.1**	1	12,10
XXL	186-194	**AK21.1**	1	12,10

② Model TYVEK® 500 Plus, white
Types 4, 5 and 6 in accordance with the European Standards for protective clothing against chemicals. Similar to Model Classic, but with velcro fastening on the covered zip. With special chin covering for optimal sealing of respiratory protection masks. 100 % tight seams.

Size	Body size (cm)	Art. No.	Pack Qty.	€
M	168-170	**AK23.1**	1	14,30
L	174-182	**AK24.1**	1	14,30
XL	180-188	**AK25.1**	1	14,30
XXL	186-194	**AK26.1**	1	14,30

Fields of application:

TYVEK® 500 Xpert
- Handling solid hazardous materials
- Laboratory work, food industry, pharmaceuticals industry, agriculture
- Police investigations
- Decontamination
- Pest and weed control
- Agricultural chemistry
- Clean rooms
- Nuclear power stations

TYVEK® 500 Plus
- Same as Model Classic Xpert
- All areas of application which require additional protection through tight seams (particles rejected by the material cannot penetrate through the seam holes)

Cat. III

3M®-protective suits

By 3M. Type 5/6, protection against non-hazardous dusts and limited spray-tightness. Made of soft spunbonded polypropylene and a polyethylene film laminate.
Antistatic on both sides, in accordance with EN 1149.
- Elasticated at hips and ankles for comfort fit and improved mobility
- Two-way zip with taped flap
- Low-lint
- Colour: white

Series 4510
Elasticated inserts at hips, arms and wrists, 2-ply hood.
Applications: light activities in industrial firms and craft enterprises, light industrial cleaning, machine maintenance and inspection work.

Size	3M No.	Art. No.	Pack Qty.	€
S	4510S	**HAL0.1**	1	7,50
M	4510M	**HAL1.1**	1	7,50
L	4510L	**HAL2.1**	1	7,50
XL	4510XL	**HAL3.1**	1	7,50
XXL	45102XL	**HAL4.1**	1	7,50
XXXL	45103XL	**HAL5.1**	1	8,55

Series 4545
knitted cuffs on the arms for improved comfort. 3-part hood for improved fit. Reinforced crotch.
Applications: insulating work, cement production, grinding/sanding and polishing, light industrial cleaning, machine maintenance, work in the pharmaceutical industry.

Size	3M No.	Art. No.	Pack Qty.	€
S	4545S	**HAL6.1**	1	11,30
M	4545M	**HAL7.1**	1	11,30
L	4545L	**HAL8.1**	1	11,30
XL	4545XL	**HAL9.1**	1	11,30
XXL	45452XL	**HAN0.1**	1	11,30
XXXL	45453XL	**HAN1.1**	1	11,65

Cat. III

uvex sil-Wear disposable overalls

By UVEX.
- Hood is highly compatible with protective face masks
- Middle finger loops prevent the sleeves from riding up, e.g. during overhead work
- Silicone-free
- Antistatic to EN 1149-1
- **Suitable for clean rooms**

① Type 5/6, white/lime

Breathable PE laminate with air-permeable SMS back for excellent moisture management and breathability. With bound seams for effective protection against chemical splashes and particles.

Uses:
- Working with powdery chemicals
- Painting and lacquering
- Glass fibre production and processing
- General maintenance work

Size	Art. No.	Pack Qty.	€
M	**PP20.1**	1	13,55
L	**PP21.1**	1	13,55
XL	**PP22.1**	1	13,55
XXL	**PP23.1**	1	13,55

② Type 4B, 5, 6, acc. to EN 14126, protection against pathogens, white/orange

Made of breathable, lightweight and flexible material for wear comfort. Self-adhesive zip cover and bound seams provide protection against penetration of liquid aerosols and particles.
Tested for **protection against pesticides according** to DIN 32781.

Uses:
- Handling of low-toxic inorganic chemicals
- Industrial cleaning work using low pressures (spray)
- Shipbuilding and automobile manufacturing
- Handling of paints and lacquers
- Agriculture and horticulture
- Electronics

Size	Art. No.	Pack Qty.	€
S	**PP25.1**	1	15,40
M	**PP26.1**	1	15,40
L	**PP27.1**	1	15,40
XL	**PP28.1**	1	15,40
XXL	**PP29.1**	1	15,40
XXXL	**PP30.1**	1	15,40

Cat. III

Overall KLEENGUARD® A50

Type 5 and 6. Protects against chemical splashes and particles.
Antistatic acc. to EN 1149-1.
- Low-fluffing and with inner seams to prevent contamination through fibres
- Silicone-free, ideal for spray-painting task.
- Two-way zip for easier access to clothing worn underneath
- Cellular material for reduced heat build up
- With special hood for masks and good freedom of movement
- Robust triple whip stitches with high resistance to tear

Ideal for following applications: chemical, pharmaceutical and processing industry, supply and disposal, electronics, agriculture and spray-painting processes.

Size	Art. No.	Pack Qty.	€
M (46-50)	**0455.1**	1	25,40
L (50-54)	**0497.1**	1	25,40
XL (54-58)	**0498.1**	1	25,40

KIMTECH SCIENCE® A7 Lab Coat

Acc. to EN 13034 type PB [6], part-body protective clothing with limited splash protection. Antistatic acc. to EN 1149-1.
Made from breathable, textile-like SMS-material. Triple stitched seams. With attached pockets and buttons.
Durable and tear resistant, comfortable to wear. Silicone free.

Size	Art. No.	Pack Qty.	€
S	**2144.1**	5	85,60
M	**2145.1**	5	85,60
L	**2146.1**	5	85,60
XL	**2147.1**	5	85,60

TYVEK® 500-lab coats

By DuPont. Made of TYVEK® (spunbond polyethylene fibre).
With stand-up collar and inner seams. Colour: white. Lint-free and antistatic.
Permeation barrier protection against particles and fibres >1 µm.
Applications: laboratories, non-critical environments, pharmaceuticals production, electronics, food processing.

With 5 press studs and 3 pockets

Size	Art. No.	Pack Qty.	€
M	**2142.2**	10	70,40
L	**NK08.1**	10	70,40
XL	**2143.2**	10	61,50
XXL	**NK09.1**	10	70,40

With zipper, 2 pockets and elasticated cuffs

Size	Art. No.	Pack Qty.	€
S	**NK10.1**	10	70,40
M	**NK11.1**	10	70,40
L	**NK12.1**	10	70,40
XL	**NK13.1**	10	70,40
XXL	**NK14.1**	10	70,40

Disposable coats, PP

Made of **PP**. white, 40 g/m². With snap-fasteners. Individually wrapped.

With 2 pockets, straight cuffs

Size	Art. No.	Pack Qty.	€
L	**KE77.1**	10	12,05
XL	**KE78.1**	10	12,05
XXL	**KE79.1**	10	12,05

Without pockets, elasticated cuffs

Size	Art. No.	Pack Qty.	€
L	**KE80.1**	10	12,05
XL	**KE81.1**	10	12,05
XXL	**KE82.1**	10	12,05

① Secutex® pro aprons

Made of PP with PE-coating. Water repellent.
Anti-static, lint free and tearproof. Skin-friendly.

Length (mm)	Width (cm)	Art. No.	Pack Qty.	€
96,5	98	**A246.1**	10	21,00

② TYVEK® 500-aprons

By DuPont. Made from specially spun, non-woven PE material,
weight 41 g/m², white. Lint-free. Antistatic.
Temperature stable up to max. 134 °C.

Length (mm)	Width (cm)	Art. No.	Pack Qty.	€
90	70	**HY31.1**	25	75,15

Disposable aprons, PE

Made of PE. Colour white or blue. Waterproof.

Colour	Thickness (µm)	Width (cm)	Length (mm)	Art. No.	Pack Qty.	€
white	25	75	125	**KE83.1**	50	7,50
white	35	75	145	**KE84.1**	50	11,80
blue	25	75	145	**KE85.1**	50	8,10
blue	35	75	145	**KE86.1**	50	11,80

PU laboratory and work aprons

Pinafore and straps made of polyurethane.
- Durable and multifunctional
- Water repellent
- Smooth, washable surface
- Metal lugs at connection points
- Strap length individually adjustable
- Adjustable click lock at straps
- Material thickness of 0.30 mm.

Colour	Length (mm)	Width (cm)	Art. No.	Pack Qty.	€
white	110	90	**HNE1.1**	1	16,05
blue	110	90	**HNE2.1**	1	16,05
white	130	90	**HNE3.1**	1	16,05
blue	130	90	**HNE4.1**	1	16,05

PVC-aprons

By Ansell. Acc. to EN 340 and EN 14605:2005. Neck and waist ties. Made of flexible, robust PVC. Highly resistant against many chemicals, fats and oils. Extremely abrasion proof. With welded PVC eyelets for longer durability. Manufactured exclusively from FDA-approved materials and therefore suitable for the food industry. Watertight.
Dimensions: L 112 x W 84 cm.

Thickness (mm)	Colour	Art. No.	Pack Qty.	€
0,508	green	**L073.1**	3	30,65

Hygiene work aprons

Pinafores made of polyester/cotton blended fabric with polyurethane coating.
- Durable and multifunctional
- Water-resistant and liquid-resistant
- Smooth, washable surface
- Neck straps and ties in the waist made of PU
- Hygienic because washable up to 90 °C
- Fabric weight approx. 260 g/m^2

Colour	Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
red/white striped	110	75	**HNC9.1**	1	23,60
dark blue/white striped	110	75	**HNE0.1**	1	23,60

TYCHEM®-aprons, chemical resistant

By DuPont. Partial body chemical protective clothing, category III, type PB [3] to EN 14605:2005+A1:2009. Fastening straps at the neck and waist.
Standard size, width 70 cm, length 108 cm.

TYCHEM® 2000 C: Protection against inorganic chemicals.
TYCHEM® 6000 F: Protection against organic chemicals.

Material	Colour	Art. No.	Pack Qty.	€
TYCHEM® 2000 C	yellow	**NK15.1**	5	29,60
TYCHEM® 6000 F	grey	**NK16.1**	5	41,85

TYCHEM® 2000 C-aprons with sleeves

By DuPont. Acc. to EN 14605:2005+A1:2009 Type PB[3].
Part-body chemical protective clothing. Surface weight 83 g/m².
Lab coat with back-closing ties. Protection of the front of the body and arms.
Rubber cuff sleeves. Tight, overtaped seams. Calf-length.

Material protects against:

- Dust and powder-like harmful substances
- Inorganic acids and alkali
- Splashes of various organic chemicals
- Aerosols and spray mist of many mixtures
- Blood or viruses passed on through blood

Size	Chest girth (cm)	Body size (cm)	Art. No.	Pack Qty.	€
S/M	84-100	162-176	**K179.2**	4	82,45
L/XXL	100-124	176-194	**HY32.1**	4	82,45

Heat protection aprons

By JUTEC®. For simple protection against radiated heat.

- Flexible, lightweight, soft
- With adjustable neck suspender
- Dimensions: approx. L 1000 x W 800 mm

Made of aluminised Aramid fabric.
Protects against radiated heat up to 1000 °C.
DIN EN ISO 11612 certified (clothing for protection against heat and naked flame).

Applications:
extreme radiated heat, welding work, glass industry, etc.

Art. No.	Pack Qty.	€
APX5.1	1	136,55

X-ray protection aprons

Acc. to DIN 6813 and RöV. Lead value 0.5 mm Pb. Very light apron with velcro fastening and elastic band. Fastens crosswise on the hip. The vinyl exterior can be cleaned with a mild detergent at max. 30 °C.
Colour: royal blue.

Size	Length (mm)	Shoulder size (mm)	Hip size (mm)	Weight (kg)	Art. No.	Pack Qty.	€
S	900	400	600	3,0	**X423.1**	1	469,80
M	1000	480	600	3,4	**X424.1**	1	519,25

Cryo aprons

Acc. to EN 340. Ideal for operations in deep-freezing processes and **with liquid nitrogen in gas phase**. Also suitable for clean-rooms. Reversible. Made of water repellent nylon with polyolefin/polyester lining. Temperature stable from -160 to +150 °C. High chemical resistance. With adjustable ties for waist and neck. Antistatic and washable.

Length (mm)	Art. No.	Pack Qty.	€
89	**0525.1**	1	221,45
107	**0526.1**	1	232,20

▶ CRYO-safety gloves, see page 670

▶ Labels Radtape® / Autoradiography Pen see chapter biochemistry.

NEW

niroflex aprons for protection against piercing

Metal mesh aprons, according to DIN EN ISO 13998:2003 (performance level 2). Metal mesh made of 100% stainless steel.

- The perfect combination of safety and functionality
- Wide TPU-X straps ensure ideal weight distribution
- Best fit and extremely comfortable to wear thanks to the wide straps
- Easy to clean without leaving residue
- Metal mesh types with ring outer ∅ of 4.2 or 7.0 mm
- Type 4.2 is recommended when extremely sharp knives are used!
- Aprons in metal mesh type 7.0 can be detected

Metal mesh type (mm)	Size L x W (cm)	Weight (g)	Art. No.	Pack Qty.	€
7.0 x 0.7	75 x 45	830	**KCH3.1**	1	141,90
7.0 x 0.7	80 x 55	1000	**KCH4.1**	1	170,95
4.2 x 0.6	75 x 45	1200	**KCH5.1**	1	223,60

BEESANA®-surgical gowns

By Meditrade®. Acc. to 93/42/EEC, medical product class I. Disposable protective gown made of 3-layer PP SMS (spunbond meltblown spunbond), 40 g/m². With tricot cuffs on the sleeves, ties at the back of the neck and waist. Colour blue, length 150 cm, size XL/XXL. Non-sterile.

For protection against liquids and particles. Breathable and comfortable, low-linting, tear and puncture resistant. Ideal for use in industry, laboratories, electronics and pharmaceuticals.

Art. No.	Pack Qty.	€
CAL9.1	10	15,60

BEESANA® disposable protective gowns for visitors

By Meditrade®. Made of PP nonwoven material, 23 g/m².
With ties at the back of the neck and waist. Elasticised cuffs.
Lightweight, breathable and moisture repellent. Protects both personnel and visitors against germs. Standard size, length 140 cm.

Colour	Art. No.	Pack Qty.	€
white	**CAN0.1**	10	10,25
green	**CAN1.1**	10	10,25

Surgical caps

Made of PP-fleece. With two latex free elastic bands for securing behind the neck. One size fits all.
Applications: hospitals, laboratories and foodstuffs industry.

Colour	Art. No.	Pack Qty.	€
white	**XL13.1**	100	18,95

Cat. I

Secutex® pro-hoods

Made of PP with PE-coating. Features elastic band and shoulder protection. Highly resistant and abrasion proof, water repellent and anti-static. Protects against harmful dusts and some chemicals.

Art. No.	Pack Qty.	€
L272.1	20	29,90

Disposable caps

① **Detectable caps**
Acc. to 2002/72/EC. Made of PP-fleece with integral metal strips. With latex free elastic band. Size ∅ 50 cm.
Applications: hospitals, laboratories and foodstuffs industry.

Colour	Art. No.	Pack Qty.	€
white	**XL10.1**	100	10,70
blue	**XL11.1**	100	10,70

② **Caps with screen**
Made of PP fleece, lightweight, breathable. With latex free elastic band. Size ∅ 48 mm.

Colour	Art. No.	Pack Qty.	€
white	**XL12.1**	100	14,50

Bouffant caps Suavel® Astrid

By Meditrade. Disposable caps made of extra-soft breathable polypropylene fleece. With latex free all around stretch band. Comfortable to wear and skin-friendly.

Size (mm)	Colour	Art. No.	Pack Qty.	€
53	white	**EHY2.1**	100	5,30
53	blue	**EHY3.1**	100	5,30
53	green	**EHY4.1**	100	5,30
60	white	**EHY5.1**	100	5,30
60	green	**EHY6.1**	100	5,30

Beard cover

Made of polypropylene non-woven material, highly breathable and lightweight. With elastic band, latex-free.
Applications: Food production, hospitals, biochemistry and in sensitive production environments.

Size (mm)	Colour	Art. No.	Pack Qty.	€
46 x 20	White	**EHP3.1**	100	7,75

Disposable caps, PP fleece

Made of PP fleece, lightweight. Protect hair from dust and other particles, but also products from contamination.
Applications: foodstuffs industry, pharmacy, electrical industry etc.

② **Bouffant caps**
Allround elastic band. Size ∅ 53 mm.

Colour	Art. No.	Pack Qty.	€
white	**L092.1**	100	11,85

① **Standard caps - high quality**
Acc. to HACCP. Latex free elastic bands. Size ∅ 50 mm.

Colour	Art. No.	Pack Qty.	€
white	**2089.1**	100	17,75

Protective sleeves standard

Made of PE, 20 µm thick, 40 cm long. Elastic closures at the ends. Moisture-proof, hard wearing. Food-safe according.

Art. No.	Pack Qty.	€
KP24.1	5 x 100	24,85

Sleeves made of Secutex®

Made of PP with PE-coating. With elastic bands. Anti-static, lint-free, tearproof and water repellent. For protection against heavy soiling.

Design	Length (mm)	Art. No.	Pack Qty. (pair)	€
Normal	38	**8193.1**	10	13,95
Shoulder length	58	**8202.2**	10	19,30

TYCHEM®-sleeves, chemical resistant

By DuPont. Partial body chemical protective clothing, category III. Type PB [3] to EN 14605:2005+A1:2009.
Wide elasticated wrist band and upper arm for comfortable and secure fitting. Tight, overtaped seams. Length 50 cm.
TYCHEM® 2000 C: Resistant to inorganic chemicals.
TYCHEM® 6000 F: Resistant to organic solutions.

Material	Colour	Art. No.	Pack Qty.	€
TYCHEM® 2000 C	yellow	**NK18.1**	10	23,55
TYCHEM® 6000 F	grey	**NK19.1**	10	35,00

Protective sleeves, air-permeable

For the food industry. Colour white. Length 45 cm.
Model ① Made of PP-fleece, 25 g/m². Elastic bands on both ends. Air-permeable and moisture repellent.
Model ② Made of SMS-fleece, 55 g/m², PE-coated inside. With elastic band on one end and soft knitted cuff on other. Allows skin to breathe and are moisture repellent.

Type	Art. No.	Pack Qty.	€
①	**LH96.1**	500 (5 x 100)	60,00
②	**LH97.1**	100	32,10

TYCHEM® 2000 C-overboot, chemical resistant

By DuPont. Category III partial body chemical protective clothing. Type PB [3] to EN 14605:2005+A1:2009.
Good resistance to concentrated inorganic chemicals. Knee-length overboots with slip-retardant sole, fixation ties and elasticated cuff. Overtaped seams, same tightness as TYCHEM® C suit material. Double layer sole, partially stitched, splash proof but not completely impervious to fluids.
Standard size, height 48 cm, length 42 cm, fits shoes sizes up to 45 (UK size 11). Colour: yellow.

Art. No.	Pack Qty.	€
NK17.1	10	42,90

Foot guard

Disposable PE-overboots

Made of embossed transparent polyethylene, very sturdy and moisture repellent. An integrated elastic ensures a good fit. Suitable for use in the meat and foodstuffs industry and for working in wet conditions.
Length: 38 cm, height: 47 cm.

Art. No.	Pack Qty.	€
NP38.1	100	23,60

Disposable overshoes

Made of textured **PE**-film. Interchangeable. Colour: blue.

L x W (mm)	Design	Art. No.	Pack Qty.	€
360 x 150	Standard	**1258.1**	100	6,40
410 x 150	Large	**PK96.1**	100	7,30

TYVEK® 500 overboots

Made of PE-spunbond, white. Water repellent, lint free, antistatic.
With rubber cord and fastening straps.
Standard size, height 48 cm, length 42 cm.

Art. No.	Pack Qty. (pair)	€
2084.2	10	41,90

Non-woven overshoes with a CPE-sole

Upper made from white breathable polypropylene non-woven material with an outsole made of blue CPE (chlorinated polyethylene). The CPE sole is very sturdy, tear-proof and **slip-resistant.** It is impermeable to moisture and therefore provides protection against liquids. Suitable for use in catering and medical environments.

Size (mm)	Colour	Art. No.	Pack Qty.	€
41	white/blue	**EHE4.1**	50	9,65

Overshoes made of Secutex®

Made of PP with PE-layer. Water repellent. Specially treated to be antistatic. Tearproof, lint-free. Skin-friendly. Length approx. 39 cm.

Art. No.	Pack Qty. (pair)	€
A248.1	25	26,80
A248.3	100	89,15

Anti-slip CPE-overshoes with TPE-coating

Made of CPE (chlorinated polyethylene) with a firmly welded and extremely hard-wearing 50 µm thick TPE-coating. This makes the overshoes **highly slip-resistant**, therefore providing the wearer with secure footing even on smooth or slippery flooring. Suitable for wearing for extended periods, e.g. in catering or pharmaceutical environments, clinics and large kitchens.

Size (mm)	Colour	Art. No.	Pack Qty.	€
41	white	**EHE5.1**	50	11,65

Foot guard

Overshoes

Suitable for use with Hygomat overshoe dispensers.

⑥ **PE-eco overshoes**
Made of polyethylene film, 20 µm thick.
Suitable for wearing for short periods and under low stress.

Size (mm)	Colour	Art. No.	Pack Qty.	€
41	blue	**EHE6.1**	110	15,00

① **CPE-overshoes**
Made of CPE, 60 µm thick, hard wearing and impermeable to liquids.

Size (mm)	Colour	Art. No.	Pack Qty.	€
47	blue	**XA12.1**	110	21,00

② **Fleece overshoes with CPE-sole**
Fleece upper, reinforced CPE sole, 60 µm thick. Robust and tear resistant. Provides protection against liquids, air permeable. Anti-slip, suitable for smooth floors.

Size (mm)	Colour	Art. No.	Pack Qty.	€
44	white/blue	**XA13.1**	70	26,90

③ **Fleece overshoes with CPE coating**
Fleece lining, CPE coated outerAnti-slip, suitable for smooth surfaces.

Size (mm)	Colour	Art. No.	Pack Qty.	€
44	white	**XA14.1**	80	33,35

④ **PP-overshoes with non-slip sole**
Made of PP. Hard wearing and extra slip resistant.

Size (mm)	Colour	Art. No.	Pack Qty.	€
46	light-blue	**XA15.1**	100	24,35

⑤ **PP-fleece overshoes with antistatic band**
Made of PP-fleece, antistatic, discharges static electricity through a black contact band requiring skin contact to ground the body.

Size (mm)	Colour	Art. No.	Pack Qty.	€
46	blue	**XA16.1**	100	85,90

Hygomat overshoe dispensers

- Improves hygiene & cleanliness, reduces germs and infections
- Low-noise mechanical action – no electrical power required
- With different filling capacities and level indicator windows
- Reliable and robust
- Easy to operate and refill
- Overshoes adapt automatically to shoes

Applications: for employees of and visitors to laboratories, restaurants and canteens, hospitals, dairies, showrooms, production facilities, cleanrooms and protected zones.

Note:
the overshoe dispensers can only be filled with matching-sized overshoes (Art. No. XA12.1 to XA16.1 and EHE6.1)!

① **Hygomat Classic mobile overshoe dispenser**
- For product, factory and personal hygiene
- For mobile use
- Capacity: 110 overshoes

Size: L x W x H (cm)	Art. No.	Pack Qty.	€
70 x 32 x 28	**XA09.1**	1	295,65

② **Hygomat Comfort overshoe dispenser**
- With larger capacity for large numbers of employees and visitors
- With handle for even more convenient fitting
- Capacity: 220 overshoes

Size: L x W x H (cm)	Art. No.	Pack Qty.	€
74 x 32 x 90	**XA10.1**	1	456,90

② **Hygomat Cleanroom overshoe dispenser**
- Specially designed for use in cleanrooms and pharmaceuticals industry
- With handle for even more convenient fitting
- Stainless steel rear and side panels for optimal hygiene
- Easy to clean and disinfect
- Two rollers on the back allow fast and easy moving
- Capacity: max. 220 overshoes

Size: L x W x H (cm)	Art. No.	Pack Qty.	€
74 x 32 x 90	**XA11.1**	1	585,90

Nomad™-adhesive mats for fine dust

By 3M. Multi-layered adhesive mat. White vinyl backing, adhesive surface layers of clear PE. With self-adhesive surface for retention of fine dirt and dust particles. Thickness 1.99 mm. 40 layers per mat.

- Excellent absorption of dirt and fine dust from soles of shoes and wheels
- All layers are numbered and the number of remaining layers is visible
- The mat is suitable for driving over as it frameless and flat. Can also be placed under doors.

Suitable for use at cleanroom entrances, in the computer, semiconductor and electronics industry, in laboratories, hospitals and in the pharmaceuticals industry.

Width (mm)	Length (mm)	Art. No.	Pack Qty.	€
450	900	**PY75.2**	6	586,95
450	1150	**PY76.2**	6	719,20
600	1150	**PY77.2**	6	1030,95
900	1150	**PY78.2**	6	1542,65

Sekuroka®-adhesive mats for fine dust

Multi-ply, blue tacky mats for cleaning the soles of shoes before entering cleanroom areas in medicine, industry, food processing, electronics etc. Self-adhesive backing holds the mat securely in place. Used films can be removed hygienically and quickly. Mat comprises 30 self-adhesive, removable, numbered films.

Dimensions L x W (cm)	Art. No.	Pack Qty.	€
45 x 90	**NK53.1**	10	124,70
60 x 90	**NK54.1**	10	138,70
66 x 114	**NK55.1**	10	167,70

Multi-dispensers for single-use protective clothing

Suitable for loose gloves, caps, protective sleeves and overshoes. Can be wall-mounted. The top cover can be opened for refilling.

① **Stainless steel multi-dispenser**
Made from stainless steel, front panel made from transparent acrylic glass and features a dispensing opening.

② **Acrylic glass multi-dispenser**
Container and top cover made from acrylic glass. Features a dispensing opening.

Image	Material	Dimensions: W x D x H (mm)	Art. No.	Pack Qty.	€
①	Stainless steel/acrylic glass	300 x 200 x 430	**EHE0.1**	1	170,95
②	Acrylic glass	155 x 210 x 395	**EHE1.1**	1	85,90

Stainless steel multi-dispenser for visitor smocks, lab coats and overalls

Made from stainless steel, can be cleaned with disinfectants. Its depth makes it particularly well suited to storing large items. Dimensions: W 280 x H 400 x D 300 mm.

Art. No.	Pack Qty.	€
EHE2.1	1	192,45

Dispenser for covers

Made of stainless steel, can be cleaned with disinfectant. With wide rubber-clad removal slot. For storing all types of standard covers, caps, hairnets or disposable protectors. Dimensions: W 300 x H 312 x D 160 mm.

Art. No.	Pack Qty.	€
EHE3.1	1	192,45

First-aid cabinets

Made of sheet steel, stove-enamelled in white. Security lock with 2 keys. With filling acc. to **DIN 13157 or 13169**. With adjustable shelving units and folding tray.

Design	W x D x H (mm)	Art. No.	Pack Qty.	€
Acc. to DIN 13157	302 x 140 x 362	**K931.1**	1	80,60
Refill set acc. to DIN 13157		**K166.1**	1	24,20
Acc. to DIN 13169	402 x 112 x 462	**K932.1**	1	111,80
Refill set acc. to DIN 13169		**K165.1**	1	54,75

First aid cabinets

White, single door.

① Made of plastic
- For first-aid kits & supplies acc. to DIN 13 157
- Impact resistant, antistatic
- Subdivided into 10 compartments, with 4 removable compartments
- Security lock with key

② Made of sheet steel
- **With poison compartment;** extra lock with 2 keys
- For first-aid kits & supplies acc. to DIN 13 169
- With solid base, stove-enamelled
- Security lock with 2 keys

Delivery without dressing materials.
Please order first-aid kits & supplies separately.

Type	W x D x H (mm)	Weight (kg)	Art. No.	Pack Qty.	€
①	330 x 160 x 450	approx. 2.2	**XE80.1**	1	61,10
②	455 x 175 x 550	approx. 9.8	**XE81.1**	1	103,00

A first-aid kit/cabinet acc. to DIN 13169 contains the same dressing materials, however double the amount, as a small first-aid kit/cabinet acc. to DIN 13157.
Two first-aid kits/cabinets acc. to DIN 13157 replace one acc. to DIN 13169.

S

First aid refill packs and replacement sets

① **First aid refill packs**

Quality first aid refill packs are in accordance with the latest accident prevention guidelines. All first aid refill packs come illustrated and labelled in multiple languages for easy use.

Type	Art. No.	Pack Qty. (set)	€
First aid refill packs acc. to DIN 13 157	**XH21.1**	1	16,95
First aid refill packs acc. to DIN 13 169	**XH22.1**	1	30,05

② **Replacement sets for DIN first aid refill packs**

Sterile. The complete set allows convenient replacement of all sterile products in a DIN first aid refill pack.

Type	Art. No.	Pack Qty. (set)	€
Replacement set acc. to DIN 13 157	**XH23.1**	1	7,50
Replacement set acc. to DIN 13 169	**XH24.1**	1	11,20
Replacement set acc. to DIN 13 164	**XH25.1**	1	6,40

First-aid box small

With contents in compliance with **DIN 13157,** made of high impact plastic, orange. With hinge and straps. L 260 x W 160 x H 80 mm.

Type	Art. No.	Pack Qty.	€
First-aid box	**T295.1**	1	26,35
Wall mounting plastic, orange	**T296.1**	1	4,00
Refill set acc. to DIN 13157	**K166.1**	1	24,20

▶ Hazard signs from page 714

First-aid box big

Acc. to **DIN 13169**, made of sheet steel, painted white. Rounded edges, profile packing. With toggle catch. L 350 x W 250 x H 100 mm.

Type	Art. No.	Pack Qty.	€
First-aid box	**K934.1**	1	99,45
Wall mounting made of sheet steel	**T297.1**	1	15,00
Refill set acc. to DIN 13169	**K165.1**	1	54,75

MEZZO FOX®-first aid set

With contents according to DIN 13157. The arrangement of the interior compartments is variable, with wall holder and handle.

- Translucent for a good view inside
- Robust and durable
- Easy to operate: Can be used from the wall or can be removed from holder for on-site aid
- Is securely mounted and therefore theft-proof
- High-quality dressing material, printed in four languages
- The compartments inside can be moved around and altered

Art. No.	Pack Qty.	€
HA37.1	1	42,90

First-aid case

Compact design made of plastic, rugged and long lasting. Suitable for mobile and stationary use, with wall mount. Easy to use, sealable. Colour: translucent red, dimensions: L 270 x W 300 x H 110 mm. **Delivery incl.** first aid materials acc. to DIN 13 157.

Type	Art. No.	Pack Qty.	€
First-aid case	**NP39.1**	1	33,65
First aid refill packs acc. to DIN 13 157	**XH21.1**	1	16,95

Mobile-first-aid cases

Made of ABS-plastic. All-round rubber sealing protects against dust and splashing. Cases can be lead-sealed. Wall attachment with 90° stop-lock, which enables case to be opened in the attachment and items to be removed.

Model with contents as per **DIN 13157**:
Dimensions: L 260 x W 110 x H 170 mm.
Model with contents as per **DIN 13169**:
Dimensions: L 400 x W 150 x H 300 mm.

Design	Art. No.	Pack Qty.	€
Case small with content acc. to DIN 13157	**0598.1**	1	79,05
Refill set acc. to DIN 13157	**NH88.1**	1	40,75
Case big with content acc. to DIN 13169	**1721.1**	1	179,55
Refill set acc. to DIN 13169	**NH89.1**	1	82,70

Sekuroka®-first-aid book

Ideal for entering all information on work accidents or assistance given. Preprinted columns, DIN A5, bound in paper boards. In german.

Art. No.	Pack Qty.	€
T298.1	1	4,25

According to
BGV-A1/GUVA1 § 24 IV Section 6, a record must be kept of every occasion on which first aid was administered and retained for 5 years.

Emergency first aid bag

Your own personal first aid kit for immediate aid.
Small, compact, can be taken everywhere: on excursions, trips, sports or work. Bag with zip, 210 x 140 mm. Contents: gauze pads, quick-dressings, bandages, assortment of band aids, SIRIUS®-rescue blanket.

Art. No.	Pack Qty.	€
N531.1	1	17,75

First-aid cases special

Burns and cauterizations

with acids, alkaline solutions, steam and liquids.
Specially put together for chemical and galvanic work areas.

Laboratory and chemistry

Base contents in accordance with DIN 13157 and expanded after risk assessment for chemical industry, medical, technical and chemical laboratories.

Science and research

Base contents in accordance with DIN 13157 and expanded after risk assessment for scientific colleges and universities, research institutes and laboratories.

All cases incl. wall attachment with 90° stop-lock, which enables case to be opened in the attachment and items to be removed.
Dimensions of case: L 400 x W 150 x H 300 mm.

Type	Art. No.	Pack Qty.	€
Burns and cauterizations	**0515.1**	1	194,60
Refill set for Art. No. 0515.1	**P098.1**	1	117,20
Laboratory and chemistry	**X292.1**	1	181,70
Refill set for Art. No. X292.1	**X298.1**	1	106,25
Science and research	**X293.1**	1	187,05
Refill set for Art. No. X293.1	**X299.1**	1	113,95

First-aid case for special occupations - foodstuffs

Basic contents to DIN 13157, extended and tailored to specific occupational hazards. Equipped for foodstuffs and food processing industry, frozen and tinned foods, butchers, dairies and bakeries.

Case made of orange-coloured ABS plastic. Shape-holding, impact resistant, temperature stable, splashproof, dust-proof. Adjustable inner partitions, transparent cover panels. Easy-action turn-lock fasteners, reinforced carry handle. Case is sealable, with security seal.
Wall fixing with 90° stop.
Case dimensions: L 400 x W 150 x H 300 mm.

Art. No.	Pack Qty.	€
TX11.1	1	174,15

Motor vehicle first aid box

The content meets the requirements of DIN 13164. Box made of high impact strength plastic, colour: black. With hinge and sealing flaps.
Interior with extra tray for a better view of the contents.
Dimensions: L 260 x W 160 x H 80 mm.

Art. No.	Pack Qty.	€
KL96.1	1	16,80

Retro-reflective safety vests

Comply with EN ISO 20471:2013, class 2 (size S in accordance with EN 1150). 100 % polyester. With double Velcro fasteners for variable size fitting.
Use: For improved recognition of persons in traffic and handling zones, or as equipment for company vehicles.

① Features two reflective horizontal bands

Size	Colour	Art. No.	Pack Qty.	€
S	yellow	**TP38.1**	5	16,10
M-XL (One size fits all)	orange	**TP39.1**	5	16,70
M-XL (One size fits all)	yellow	**TP40.1**	5	16,70
XXL	orange	**TP41.1**	5	16,70
XXL	yellow	**TP42.1**	5	16,70

② Features two reflective horizontal bands and vertical bands over the shoulders

Size	Colour	Art. No.	Pack Qty.	€
One size fits all	orange	**EHP4.1**	1	5,05
One size fits all	yellow	**EHP5.1**	1	5,05

Bags for reflective safety vests

100 % polyester, with velcro fastener. Size: 180 x 220 mm.

Colour	Art. No.	Pack Qty.	€
yellow	**TP43.1**	5	4,25
orange	**TP44.1**	5	4,25

Traveller first aid set

Softbag with first aid supplies for use on the go. Made of synthetic fibre. Two carrying straps, parallel zipper, flap with button, insertable straps. Dimensions: L 230 x W 115 x H 55 mm.
Contents: emergency blanket, compresses, quick bandages, finger and wound dressing, Silk adhesive plaster strips, surgical disinfectant, sutures, scissors, tweezers, protective gloves.

Art. No.	Pack Qty.	€
TL60.1	1	29,35

First-aid miniset

Bag made of laminated nylon fabric, blue, with zip, 135 x 90 mm. Contains most commonly required items: sticky plaster strips, packets of dressings, gauze pad, elastic bandage.

Art. No.	Pack Qty.	€
T299.1	1	4,45

Rescue blanket

Silver and gold-coloured. Aluminium-vaporised PE-foil, reflects up to 85 % body heat, can eliminate radiation loss, prevents cooling down and hypothermia, can also be used as heat protection. Size: 210 x 160 cm.

Art. No.	Pack Qty.	€
1846.1	1	4,10

① Cold-ready to use-compresses

Quick "ice bag" without precooling. Bag is activated when squeezed together and it immediately turns extremely cold. For rapid cooling of acute injuries such as bruises, pulled muscles or sprains. Can only be used once.

Size (mm)	Art. No.	Pack Qty.	€
21 x 15	**AP16.1**	5	9,65
25 x 15	**AP17.1**	5	9,65

② Cold-/warm-compresses

Reusable compresses for local pain relief of bruises, pulled muscles, sprains, acute inflammation, insect bites, etc. Remain‘s flexible and easy to form even down -30 °C. Can also be used as a heating pad.
Place in the freezer to cool or in a hot water bath to heat (up to +60 °C).
Contents: environmentally friendly, non-toxic gel.

Size (mm)	Art. No.	Pack Qty.	€
ca. 7,5 x 13	**AP13.1**	5	7,50
ca. 13 x 14	**AP14.1**	5	9,65
ca. 15 x 28	**AP15.1**	5	17,10

Actiomedic® AQUATIC-first aid bandages

Water repellent, elastic first aid dressing. Supple and easy to tear off, suitable for all minor finger injuries, even in awkward places.
- Sticks to itself and not to the wound, skin or hair
- Easy to remove
- Water repellent and elastic
- Allows maximum freedom of movement
- Keeps grease, water and oil away from the wound

Roll size: 3 cm x 7 m

Colour	Art. No.	Pack Qty.	€
white	**XH07.1**	4	15,60
blue	**XH08.1**	4	15,60
skin colour	**XH09.1**	4	15,60

Roll size: 5 cm x 7 m

Colour	Art. No.	Pack Qty.	€
white	**XH10.1**	2	10,15
blue	**XH11.1**	2	10,15
skin coloured	**XH12.1**	2	10,15

Hansaplast®-strips

Plaster-sets contain strips in 4 different sizes.
Breathable and skin-friendly material, non-adhesive wound dressing protects and pads the wound. The plasters adhere reliably and do not slip. Suitable for all types of small wounds and injuries.

- **Hansaplast® Universal water-repellent**
- **Hansaplast® Sensitive** - hypo-allergenic for sensitive skin

Type	Packaging	Art. No.	Pack Qty.	€
Universal 20 strips	8 strips 19 x 72 mm 6 strips 30 x 72 mm 2 strips ∅ 50 x 72 mm 4 strips 23 mm	**0630.2**	1	6,40
Sensitive 40 strips	20 strips 19 x 72 mm 10 strips 30 x 72 mm 2 strips ∅ 50 x 72 mm 8 strips 23 mm	**ENH9.1**	1	9,15

Leukosilk®-adhesive plasters

Made of white cellulose acetate. Extremely skin-friendly, easy to tear with high tensile strength. The plaster is hypo-allergic, painless to remove and can be labelled. Roll 5 m, 2.5 cm wide.

Art. No.	Pack Qty. (roll)	€
0631.1	3	24,70

Leukoplast®-adhesive plasters

With extremely high adhesive power. Is air permeable, water-repellent with high tensile strength skin-coloured. Roll 5 m.

Width (cm)	Art. No.	Pack Qty. (roll)	€
1,25	**N532.1**	3	12,50
2,50	**N533.1**	3	20,80

Cellulose swabs

Acc. to DAB. Made of highly bleached cellulose, highly absorptive, non-fibrous. For skin cleansing, or as absorbent pads for treatment of minor injuries. Non-sterile. Size 4 x 5 cm.

Art. No.	Pack Qty.	€
NK84.1	2 rolls à 500 pieces	5,30

Cellulose swab dispenser

For hygienic storage and removal of cellulose swabs.
Suitable for 1 roll of 500.

Art. No.	Pack Qty.	€
NK85.1	1	24,65

Salvequick®-sticking plaster dispensers

Half of the plaster is ready for sticking on when pulked out.
Can be used without any assistance.

Set contains:

- Dispenser box with special key for opening and refilling dispenser L 220 x W 52 x H 115 mm
- 1 refill set X288.1 elastic with 24 strips 72 x 19 mm and 16 strips 72 x 25 mm
- 1 refill set X289.1 waterproof with 27 strips 72 x 19 mm and 18 strips 72 x 25 mm

Type	Art. No.	Pack Qty. (set)	€
① Sticking plaster dispenser set	**X287.1**	1	37,45
② Refill elastic	**X288.1**	1	10,70
③ Refill waterproof	**X289.1**	1	9,15

aluderm®-aluplast-bandage dispensers

Made of ABS-plastic. Base with three compartments for strips, finger knuckle and fingertip dressings, transparent lid with compartment for finger dressings. Wall mounting possible. Dimensions: approx. 160 x 122 x 57 mm.

Contains:

- 25 fingertip dressings
- 30 strips 7.2 x 2.5 cm
- 30 strips 7.2 x 1.9 cm
- 20 finger dressings 12 x 2 cm
- 10 finger knuckle dressings

All sticky plasters are individually and hygienically sealed. The aluminized gauze layer does not stick to the wound. Cellular, water repellent, hypoallergenic, skin-friendly, also suitable for sensitive skin or allergies to sticky plasters.

Type	Art. No.	Pack Qty.	€
Sticky plaster dispensers, filled	**AH56.1**	1	24,70

Refill packs:

Type	Art. No.	Pack Qty.	€
25 fingertip dressings	**AH57.1**	1	7,10
30 strips 7.2 x 2.5 cm	**AH58.1**	1	4,25
30 strips 7.2 x 1.9 cm	**AH59.1**	1	4,25
20 finger dressings 12 x 2 cm	**AH60.1**	1	4,25
10 finger knuckle dressings	**TP45.1**	1	4,05

QuickFix-bandage systems

By Plum.
- Individually wrapped sticky plaster strips
- Can be removed from the bottom of the dispenser; sticking side is opened completely on one side; **advantage:** plaster strip can be placed on wound immediately with one hand.
- With additional compartments for storing first-aid material in the dispenser
- The system can be locked, protects against theft
- Contains following plasters:
  Type ①: waterproof, extremely skin-friendly, made of perforated, air-permeable substrate. Plaster size: 72 x 25 mm
  Type ②: detectable blue sticky plaster strips with integrated metal strips to enable detection by metal detectors in hygienically sensitive areas (**e.g. the food industry**); made of elastic textile fabric.
  Plaster size: 72 x 25 mm
- **Type** ③: elastic, extremely skin-friendly and breathable.
  Made of perforated, air-permeable textile fabric. Plaster size: 72 x 25 mm.
- Dispenser dimensions: W 23.25 x H 13.34 x D 3.3 mm

Delivery incl. QuickFix Plaster dispenser system, incl. two refill packs, mounting material and key to protect against theft.

Type	Art. No.	Pack Qty.	€
Dispenser system incl. 2 x HC45.1, type ①	**HC43.1**	1	28,40
Dispenser system incl. 2 x HC46.1, type ②	**HC44.1**	1	39,25
Dispenser system incl. 2 x LH94.1, type ③	**LK67.1**	1	32,15
Refill pack type ①, 45 plasters	**HC45.1**	2	14,20
Refill pack type ②, 45 plasters	**HC46.1**	2	22,05
Refill pack type ③, 45 plasters	**LH94.1**	2	15,25

First Aid Station

By Plum. Guarantees speedy and optimal care of eye accidents and cuts. All elements can be operated single-handedly; no additional person is needed.

Wall assembly station (L 515 mm x W 300 mm) **incl.**:
- **Disposable eye wash flask 500 ml** (Y828.1)
  Sterile salt solution 0.9 %, maintenance-free. The ergonomically designed eye dish holds eyelid open during rinsing process.
- **QuickFix sticky plaster dispenser**
  Filled with 45 plaster strips apiece.
  Type 1 (waterproof) and type 3 (elastic).
- **QuickClean-dispenser box**
  With 40 individually wrapped tissues for cleaning wound.
  Size: 130 x 200 folded 40 x 40 mm.

Art. No.	Pack Qty.	€
LH92.1	1	69,35

Accessories:

Refill pack Type ①, waterproof	**HC45.1**	2	14,20
Refill pack Type ②, detectable	**HC46.1**	2	22,05
Refill plasters Type ③, elastic	**LH94.1**	2	15,25
Refill pack, wound cleansing tissues	**LH93.1**	1	10,70
Disposable eye wash flask 500 ml	**Y828.1**	1	18,25

Pocket mask for mouth-to-mouth resuscitation

Ideal for untrained personnel in first aid. Air supply via mouth and nose simultaneously without contact with the patient's exhaled air. Transparent mask enables observation of patient (saliva excretion, etc.). Suitable for adults and children. Extendable semi-soft plastic dome with mouth piece. Air filled press-on rim made of soft plastic. L 120 mm.
Easy to clean, reusable. Complete with case and instruction.

Art. No.	Pack Qty.	€
4799.1	1	21,45

Detectable plasters

Elastic, hypoallergenic and detectable plasters, individually sealed.

Detectable

Type	Dimensions (mm)	Art. No.	Pack Qty.	€
Plaster strips	19 x 72	**XH14.1**	100	8,50
Knuckle dressings	38 x 75	**XH15.1**	50	9,00
Finger dressings	120 x 20	**XH16.1**	100	10,70

Detectable and water repellent

Type	Dimensions (mm)	Art. No.	Pack Qty.	€
Plaster strips	19 x 72	**XH17.1**	100	7,00
Finger dressings	120 x 20	**XH18.1**	100	8,45
Fingertip dressings	43 x 68	**XH19.1**	50	6,40

Plaster dispenser

Plastic wall-mountable dispenser box, blue/transparent.
The plaster container detaches from the wall.
Dimensions: W 155 x H 125 x D 55 mm.
Delivery incl. wall mount, mounting kit and 100 detectable plaster strips (19 x 72 mm).

Art. No.	Pack Qty.	€
XH20.1	1	12,80

Ampoule case

Made of coated nylon fabric in red, with all-round zipper.
For 55 ampoules in various standard sizes, can be individually configured.
Dimensions: L 310 x W 320 x H 30 mm.
Delivery without ampoules.

Art. No.	Pack Qty.	€
NH87.1	1	37,55

A 121 °C

Gauze swabs

Acc. to EN 14079, type 20. Made of medical gauze, 100 % cotton. Non-sterile. For absorbing blood and secretion, external wound care and hand disinfection. Highly absorptive. Swab size 20 x 20 cm, round, plum-sized, in PE-bag.

Art. No.	Pack Qty.	€
NK83.1	250	13,95

Rest room loungers

Frame made of square profiled steel tubing, white powder-coated, sturdy and load bearing. Upholstery made of fabric-reinforced synthetic leather, hardwearing, easy care, dirt repellent, colour black.
- Multi-position adjustable
- Sanitary paper reel holder integrated into frame

Reclining surface: 2000 x 700 mm, reclining height approx. 500 mm.

Type	Art. No.	Pack Qty.	€
① Adjustable head rest, rigid foot rest	**NH47.1**	1	319,30
② Adjustable head and foot rests	**NH48.1**	1	360,15

Examination table paper covers

Hygienic paper on a roll, made of double-layer recycled cellulose, absorptive, tear resistant, white. Roll length 50 m, width 59 cm.

Art. No.	Pack Qty. (roll)	€
NK82.1	1	8,55

FLAME STOP-fire blanket

Acc. to EN 1869: 1997, TÜV-certified. Made of impregnated glass fiber cloth (300 g/m²). Temperature stable up to 1250 °C. Blankets are specially folded and have two pull tags for speedy opening. Self-inflating. For single use. For extinguishing small fires, for protection against fire. Does not release toxic fumes.

Dimensions L x W (cm)	Art. No.	Pack Qty.	€
100 x 100	**AH78.1**	1	32,20
180 x 125	**AH79.1**	1	47,25

Fire extinguishing blanket

Made of fibre glass Isotemp®. BAM-tested. Free of asbestos, stable against high temperatures, fully capable of extinguishing, reusable.
Standard format 200 x 160 cm, weight approx. 2100 g. With loops.
In stand-by pack with wall attachment.
Dimensions of stand-by pack: D 130 x W 255 x H 275 mm.

Art. No.	Pack Qty.	€
0084.1	1	99,45

Dry powder extinguisher Bavaria Colt P6

In acc. with DIN EN 3. To be used for **ABC-fires** and for **electric devices of max. 1000 volt**. Highgrade dry powder extinguisher.
All-purpose use in industry, commerce, public buildings and the home.
Contents: 10 extinguishing components according to BGR 133.
Weight 10.9 kg. Operating conditions -30 to +60 °C. Incl. wall mount.
Dimensions (L x W x H): 300 x 155 x 535 mm.

Art. No.	Pack Qty.	€
T321.1	1	123,65

CO_2-fire extinguisher

For **fire class B**. Ideal for rooms with sensitive electronic and electric devices. Content 2 kg. Weight 7 kg.
Dimensions: ∅ 110 x H 555 mm. With wall mounting.

Art. No.	Pack Qty.	€
1028.1	1	167,70

Sekuroka® fire protection tub

Tub and mesh made of chrome-nickel-steel.
- Liquids are collected immediately and fire-safe in the mesh
- If the liquid ignites, the flame extinguishes autonomously due to lack of oxygen
- Resists heat and corrosion
- Liquids collected can be transferred for disposal or reuse
- The mesh can be removed and is easy to clean and reuse
- No glass or steel wool mats needed, so there is no material to dispose of

Note! The meshes may only be filled to 2/3 with flammable liquid. Maximum collection volume approx. 13 litres.

Dimensions: W 450 x L 450 x H 120 mm. Weight 12 kg.

Art. No.	Pack Qty.	€
1658.1 *	1	989,00

* Longer delivery times possible. Please check with our Sales Department.

▶ Fire warning signs see page 714
▶ Fire-rescue hoods see page 608

Safety cabinets Q-Classic-90

By Asecos. For the storage of flammable liquids. Acc. to DIN EN 14470-1, 90 min fire resistance (FWF 90). Ceric-compliant, GS-approved, acc. to DIN EN 14727 (laboratory furniture).

- **Highly rugged design**, scratchproof textured paint finish
- The panel doors lock in any position for easy storage and removal from storage
- **Automatic locking of doors in event of fire** by integrated thermal cut-out
- Forklift-accessible base - easy transport, high flexibility, lockable with optional plinth panel
- **Easy alignment** - adjusting aids to compensate for uneven floor
- **Quick commissioning** - air ducts ready for connection (NW 75) to a technical exhaust system

Design: anthracite grey body (similar to RAL 7016), light grey doors (RAL 7035), with panel doors. Ventilation system, recirculating air filter system and plinth panel are optional (please order separately).

Types (inner fittings):

① With 3 shelves, perforated sheet insert and bottom tray (33 l, powder-coated sheet steel)
② With 4 full extension drawers (powder-coated sheet steel)
③ With 6 full extension drawers (powder-coated sheet steel)
④ With 3 shelves, perforated sheet insert and bottom tray (22 l, powder-coated sheet steel)
⑤ With 6 full extension drawers (powder-coated sheet steel)

Type	Door stop	Outer dimensions (mm) W x D x H	Art. No.	Pack Qty.	€
①	2/right, left	1193 x 615 x 1953	**CCA0.1** *	1	3129,35
②	2/right, left	1193 x 615 x 1953	**CCA1.1** *	1	3689,40
③	2/right, left	1193 x 615 x 1953	**CCA2.1** *	1	4076,40
④	1/left	599 x 615 x 1953	**CCA3.1** *	1	2427,90
④	1/right	599 x 615 x 1953	**CCA4.1** *	1	2427,90
⑤	1/left	599 x 615 x 1953	**CCA5.1** *	1	2981,00
⑤	1/right	599 x 615 x 1953	**CCA6.1** *	1	2981,00

* Please note: longer delivery times may occur! Delivery free of charge behind the first lockable door within Germany. Costs for further transport to the point of use within the building in Germany as well as for the transport outside Germany are available on request. For further information please contact our Sales Department.

Plinth panels for safety cabinets Q-CLASSIC-90

By Asecos. Please order separately.

Type	Art. No.	Pack Qty.	€
Plinth panel for 2-door cabinets	**CCA7.1** *	1	29,60
Plinth panel for 1-door cabinets	**CCA8.1** *	1	21,50

* Longer delivery times possible. Delivery plus packing and transport costs. Please check with our Sales Department

Accessories for safety cabinets Q-Classic-90

By Asecos.

① **Ventilation system without exhaust monitor**

Safe detection of vapour and gas emissions at the outlet or source. Housing made of powder-coated high-grade sheet steel.

- Plug ready - fast and easy assembly
- Extra low noise, ideal for use directly in the workspace
- NW 75 hose connection
- ATEX-compliant: Ceric II 3/-G Ex c IIC T4

Delivery incl. connecting cable and power plug.

② **Recirculating air filter system for safety cabinets**

Vents safety cabinets safely and economically without exhaust lines. Recirculating air filter housing made of powder-coated high-grade sheet steel.

- Installation without wall breakthroughs and exhaust lines
- Flexible selection of installation location
- Safe detection of hazardous vapours with retention in the filtration system
- Silent - only approx. 39 dB (A)
- ATEX-compliant: Ceric II 3/-G Ex ic nA IIB T4Gc

Delivery incl.:

- Multiple-stage filtration system, connecting cable and power plug
- VDE-approved monitoring electronics for exhaust air and filter monitoring
- Visual and audible alarms incl. floating alarm contact

Type	Outer dimensions (mm) W x D x H	Art. No.	Pack Qty.	€
① Ventilation system	200 x 400 x 200	**CCA9.1** *	1	642,85
② Recirculating air filter system	305 x 555 x 210	**CCC0.1** *	1	1493,75

* Longer delivery times possible. Delivery plus packing and transport costs. Please check with our Sales Department

Sekuroka®-wall cupboard

Made from sheet steel, light grey (RAL 7035). With two fixed shelves (distance from above: 160 and 470 mm). Smooth surface without ventilation slots. Reinforced door, right stop. DOM cylinder lever lock with 2 keys. W 400 x H 800 x D 200 mm.
Delivery without hazard warning signs.

Art. No.	Pack Qty.	€
5226.1	1	267,70

Combined safety cabinets K-PHOENIX-90

By Asecos.
Two in one - storage of flammable and aggressive hazardous substances in one cabinet. Acc. to DIN EN 14470-1, 90 min fire resistance (FWF 90). Ceric-compliant, GS-approved, acc. to DIN EN 14727 (laboratory furniture).

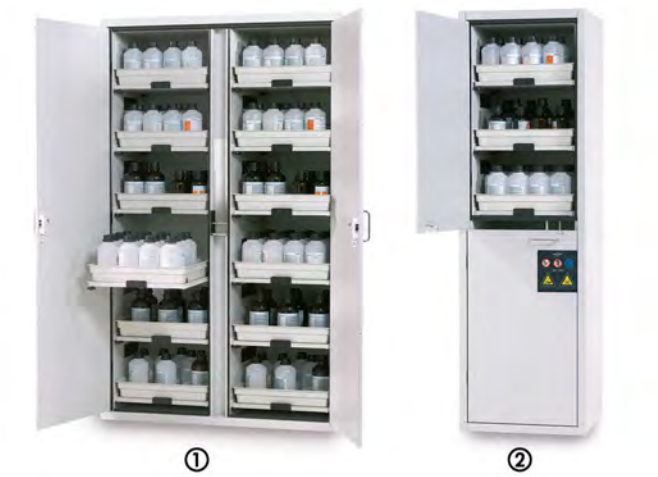
- **Rugged and durable** - safety elements assembled outside the storage compartment for increased protection against corrosion
- **Safety isolated** - storage chambers hermetically separated by central partition
- **Comfortable and safe** - doors lock in the standard stop position, safe storage and removal from storage of drums, all doors can be operated and locked separately
- **Easy alignment** - adjusting aids to compensate for uneven floor
- **Quick commissioning** - integrated air ducts ready for connection (NW 75) to a technical exhaust system

Outer body made of epoxy resin coated high-grade sheet steel. Inner body made of highly resistant melamine resin coated special panels. Colour light grey (RAL 7035), outer dimensions W x D x H: 1200 x 615 x 1968 mm. Ventilation system (Art. No. CCA9.1) is optional, please order separately.

Types:
① **Left side of cabinet**, compartment for flammable liquids: with folding door, 3 shelves (75 kg load capacity), perforated sheet insert and 22 l bottom tray (powder-coated sheet steel).
Right side of cabinet, compartment for acids and bases: with panel doors, 4 pull-out shelves (25 kg load capacity) incl. removable plastic tray.
② **Left side of cabinet**, compartment for flammable liquids: with folding door, 6 full extension drawer (powder-coated sheet steel).
Right side of cabinet, compartment for acids and bases: with panel doors, 6 pull-out shelves (25 kg load capacity) incl. removable plastic tray.

Image	Art. No.	Pack Qty.	€
①	**CCC1.1** *	1	3607,20
②	**CCC2.1** *	1	4363,45

* Please note: longer delivery times may occur! Delivery free of charge behind the first lockable door within Germany. Costs for further transport to the point of use within the building in Germany as well as for the transport outside Germany are available on request. For further information please contact our Sales Department.



SL-Classic acid and base cabinets

By Asecos. Safe and correct storage of aggressive, non-flammable hazardous substances in work zones. GS-approved, acc. to DIN EN 14727 (laboratory furniture).

- **Rugged and durable** - epoxy resin coated high-grade sheet steel, locking mechanism is located outside the store room for increased protection against corrosion
- **Safely isolated** - two hermetically separated storage chambers
- **No unauthorised use** - doors are fitted with profile cylinder locks (master-key system compatible)
- **Easy alignment** - integrated adjusting aids to compensate for uneven floor
- **Quick commissioning** - air ducts ready for connection (NW 75) to a technical exhaust system
- **Clean ventilation** - corrosion-resistant, metal-free air ducts, separate ventilation of storage chambers, only one air vent in roof area

Equipment: pull-out shelves - high-quality, sturdy construction with leak-proof, removable plastic tray (18 l), 25 kg load capacity. With panel doors, colour light grey (RAL 7035). Ventilation system (Art. No. CCA9.1) is optional, please order separately.

Inner fittings:
① with 12 pull-out shelves incl. plastic collecting tray
② with 6 pull-out shelves incl. plastic collecting tray

Type	Door stop	Outer dimensions (mm) W x D x H	Art. No.	Pack Qty.	€
①	left/right	1197 x 603 x 1965	**CCC8.1** *	1	3374,45
②	left	597 x 603 x 1965	**CCC9.1** *	1	2169,35
②	right	597 x 603 x 1965	**CCE0.1** *	1	2169,35

* Please note: longer delivery times may occur! Delivery free of charge behind the first lockable door within Germany. Costs for further transport to the point of use within the building in Germany as well as for the transport outside Germany are available on request. For further information please contact our Sales Department.

Gas cylinder cabinets G90

By Asecos. For safe indoor storage of pressurised gas cylinders (decentralised). Type-tested acc. to DIN EN 14470-2, 90 min fire resistance (FWF 90). Ceric-compliant, GS-approved, acc. to DIN EN 14727 (laboratory furniture).

- **Easy assembly of fittings and pipework** - large inner height (1858 mm), 24 leadthroughs in the cabinet ceiling
- **No unauthorised use** - door is fitted with profile cylinder locks (master-key system compatible)
- **Easy alignment** - adjusting aids to compensate for uneven floor
- **Quick commissioning** - integrated air ducts ready for connection (NW 75) to a technical exhaust system, complete and even floor-to-ceiling ventilation inside cabinet

① For safe storage of up to two 50-litre steel pressurised gas cylinders or two 40-litre aluminium pressurised gas cylinders, each ∅ 230 mm. With standard inner fittings complete - consisting of mounting rail, roll-in flap, cylinder holder and matching tensioning straps.

② For safe storage of one 50 litres pressurised gas cylinder or two 10 litre pressurised gas cylinders. With standard inner fittings - complete with mounting rail, roll-in flap, cylinder holder and matching tensioning straps - optional accessories: lateral cylinder holder for 2 x 10-litres cylinders.

③ Small gas cylinder cabinet for two 10-litres cylinders. With standard inner fittings - complete with mounting rail, roll-in flap, cylinder holder and matching tensioning straps.

Design: with panel door, left stop. Body and door light grey (RAL 7035).

Image	For gas cylinders:	Outer dimensions (mm) W x D x H	Art. No.	Pack Qty.	€
①	2 x 50 l	598 x 616 x 2050	**CCC3.1** *	1	3314,25
②	1 x 50 l	598 x 616 x 2050	**CCC4.1** *	1	2845,55
③	2 x 10 l	598 x 616 x 1450	**CCC5.1** *	1	2845,55

* Please note: longer delivery times may occur! Delivery free of charge behind the first lockable door within Germany. Costs for further transport to the point of use within the building in Germany as well as for the transport outside Germany are available on request. For further information please contact our Sales Department.

Accessories for gas cylinder cabinets:

By Asecos.

Type	Art. No.	Pack Qty.	€
2 cylinder holders with 2 tensioning straps for additional securing of small 10 l pressurised gas cylinders	**CCC6.1** *	1	56,45
Gas cylinder trolley for 1 x 50 l gas cylinder	**CCC7.1** *	1	305,85

* Longer delivery times possible. Delivery plus packing and transport costs. Please check with our Sales Department

Filter trolley Jumbo

Ideal for extracting and filtering gases and vapours directly from place of origin.

- With wheels which enable flexible use at different workplaces
- Very quiet
- With 3 articulated arms for more flexibility
- Low energy consumption
- With ultra filter effect for pure air
- The filtered air is routed back to the workplace
- Filter can be easily removed for changing

Applications:

glueing, lacquering, laminating, extraction of solvent vapours, cleaning work.

Technical specifications:

Range of suction arm	750 mm
Performance	80 m^3/h at 1400 Pa
Electrical connection	230 V, 50 Hz
Power consumption	150 W
Sound level	49 dB (A)
Hood	
Dimensions (L x W)	296 x 248 mm
Material	PC
Filter trolley	
Dimensions	450 x 340 x 530 mm
Weight	18 kg
Material	ABS

Type	Art. No.	Pack Qty.	€
Filter trolley, complete	**Y928.1** *	1	2789,65
Spare filter	**Y929.1** *	1	256,95

* Longer delivery times possible. Please check with our Sales Department.

Pharmacy workstations (pharmacy fume hoods)

Hazardous material workstations according to DIN 12924-4: 2012 (Fume cupboards for pharmacies) – Does not replace a fume cupboard according to DIN EN 14175 (Fume cupboards).
Not suitable for working with high acid loads or for openly breaking down chemicals at high temperatures.

- Safe handling of chemicals, protection against harmful vapours and explosive atmospheres
- Easy to mount on bench top
- Ruggedly constructed from plastic coated high-grade sheet steel
- Each unit is functionally tested by a recognised testing agency

Standard equipment
- Monitoring electronics
- 2 power sockets
- Work light
- Continuously height-adjustable acrylic glass sliding window
- Exhaust fan

Delivery without media supply (natural gas, wastewater, cold water) and ventilation sets (please order separately).

Technical specifications:

Type	APA.145.075	APA.145.090
Outer dimensions W x D x H (mm)	750 x 600 x 1460	900 x 600 x 1460
Inner dimensions W x D x H (mm)	740 x 440 x 924	890 x 440 x 924
Effective working area W x D (mm)	745 x 440	895 x 440
Overall weight (kg)	55	65
Exhaust connection (NW/mm)	100	
Recommended exhaust air volume (m^3/h)	330	
Pressure loss (approx. Pa)	315	
PE power sockets, IP 54 rated	2	
Media supply (optional)	Drainage outlet, natural gas, water	
Wastewater connection (inches)	1.5	
Gas/water connection (mm)	12	
Electrical system: power supply 230 V, 50 Hz, energy-saving lamp, on-off switch, light switch, monitoring electronics, fresh air fan(s), with 2 230 V PE power sockets, 50 Hz. Unit is fuse-protected to 4 A.		

With standard equipment

Type	Art. No.	Pack Qty.	€
APA.145.075	**CEH3.1** *	1	2105,95
APA.145.090	**CEH4.1** *	1	2145,70

* Please note: longer delivery times may occur! Delivery free of charge behind the first lockable door within Germany. Costs for further transport to the point of use within the building in Germany as well as for the transport outside Germany are available on request. For further information please contact our Sales Department.

Accessories for pharmacy workstations (pharmacy fume hoods)

Media supply

Type	For	Art. No.	Pack Qty.	€
Cold water, drainage outlet	APA.145.075	**CEH5.1** *	1	208,55
Natural gas, cold water, drainage outlet	APA.145.075	**CEH6.1** *	1	388,10
Cold water, drainage outlet	APA.145.090	**CEH7.1** *	1	208,55
Natural gas, cold water, drainage outlet	APA.145.090	**CEH8.1** *	1	388,10
Natural gas	APA.145.075/ APA.145.090	**CEH9.1** *	1	219,30

Ventilation sets

Ventilation set 1
- 1 m flexible hose DN100
- 2 hose clamps
- 1 wall duct

Ventilation set 2
- 7.5 m flexible hose DN125
- 2 hose clamps
- 1 wall duct
- 1 reducer DN100/125

Ventilation set 3
- 1 duct fan DN150
- 2 reducers DN150/125
- 7.5 m flexible hose DN125
- 2 hose clamps
- 6 drilling screws 4.2 x 16 mm

Type	For	Art. No.	Pack Qty.	€
Ventilation set 1	APA.145.075/APA.145.090	**CEK0.1** *	1	162,35
Ventilation set 2	APA.145.075/APA.145.090	**CEK1.1** *	1	275,20
Ventilation set 3	APA.145.075/APA.145.090	**CEK2.1** *	1	617,05

* Please note: longer delivery times may occur! Delivery free of charge behind the first lockable door within Germany. Costs for further transport to the point of use within the building in Germany as well as for the transport outside Germany are available on request. For further information please contact our Sales Department.

Sekuroka®-glove bags

Made of PE, with integrated gloves. Ideal for handling substances in an air or moisture free milieu.
Handling: fill all working material through opening into glove bag, close with clip and then fill with inert gas through gas adapter. Plastic coupling for gas adapter, closing clips and glove liners come with bag.

Bags with 1 opening and 1 hose connection

L x W x H (mm)	Opening (mm)	Art. No.	Pack Qty.	€
420 x 420 x 280	275	**1936.1**	1	55,90
690 x 690 x 380	565	**K352.1**	1	91,40
940 x 940 x 640	860	**K353.1**	1	105,35

Glove bag-set

3 x 1936.1; 2 x K352.1 and 1 x K353.1.

Opening (mm)	Art. No.	Pack Qty.	€
see above	**1910.1**	1	333,25

Bag with 2 openings and 2 hose connections

L x W x H (mm)	Opening (mm)	Art. No.	Pack Qty.	€
490 x 490 x 290	each 300 mm	**1937.1**	1	68,60

Safety shields

Sekuroka®-safety shields

Collapsable. Made of transparent acrylic glass, 8 mm thick. Protects against splinters and splashes. Three parts, can be folded out to 120°.

Type 450

Main shield W 450 x H 450 mm, 2 side shields each W 200 x H 450 mm. Weight approx. 3.7 kg.

Art. No.	Pack Qty.	€
2967.1	1	263,40

Type 750

Main shield W 450 x H 750 mm, 2 side shields each W 200 x H 750 mm. Weight approx. 6.0 kg.

Art. No.	Pack Qty.	€
2968.1	1	349,40

Table holder

Consists of acrylic glass support and screw clamp with ring screws. Securely attaches shield to work benches and tables up to 38 mm thickness.

Art. No.	Pack Qty.	€
5099.1	1	59,05

Sekuroka® radiation protection screens

For protection during work with radioactive samples or solutions which emit beta radiation (^{32}P) or gamma radiation (^{125}J). Made of transparent acrylic glass for protection against beta radiation or of leaded acrylic glass for protection against gamma radiation. Inclination angle of 15° to reduce light reflections.
Screens with bent base are suitable for use with protection trays.

With flat base. Dimensions: W 300 x D 300 x H 450 mm.

For protection against	Wall thickness (mm)	Art. No.	Pack Qty.	€
β radiation	10	**E041.1**	1	158,05
γ radiation	12	**EXN7.1**	1	1340,55

With bent base. Dimensions: W 300 x D 150 x H 450 mm.

For protection against	Wall thickness (mm)	Art. No.	Pack Qty.	€
β radiation	10	**EXN8.1**	1	162,35
γ radiation	12	**E042.1**	1	1407,20

Sekuroka® radiation protection screen duo
Made of two layers, acrylic and leaded acrylic. 15° inclination angle. With bent base. Dimensions: W 300 x D 150 x H 450 mm.

For protection against	Art. No.	Pack Qty.	€
β and γ radiation	**EXN9.1**	1	2740,20

Sekuroka®-protection shields

Made of transparent or leaded acrylic glass. Protects against beta or gamma-radiation. By adjusting the feet, the screens can be used at inclination of 15°. Dimensions: W 350 x H 540 mm.

For protection against	Wall thickness (mm)	Art. No.	Pack Qty.	€
Beta-radiation	10	**E008.1**	1	170,95
Gamma-radiation	12	**E009.1**	1	1795,25

Sekuroka®-radiation protection screens

Protect against radio-isotope solutions. Two models available: for either beta protection (^{32}P) or gamma radiation (^{125}J) ; made of transparent or leaded acrylic glass. With 45° canted frontage. With offsetbase for hanging into the safety tub.

For protection against	W x D x H (mm)	Wall thickness (mm)	Art. No.	Pack Qty.	€
β-radiation	300 x 150 x 450	10	**K562.1**	1	163,40
γ-radiation	300 x 150 x 450	12	**K564.1**	1	1621,10

Sekuroka®-beta radiation protection screen

Made of transparent acrylic glass. Ideal for working with radio-isotope solutions which emit Beta-radiation, e.g. ^{32}P, ^{14}C or ^{35}S. With tilted front screen and rounded edges. With 4 rubber feet on base plate for extra stability. Made of one piece. Total height 50 cm, width 35 cm, depth 30 cm. Wall thickness 1 cm.

Art. No.	Pack Qty.	€
9764.1	1	160,20

▶ Microcentrifuge tubes see page 489

Safety shields

Sekuroka®-hourglass-shaped radiation protection screens

Made of transparent acrylic glass for protection against beta radiation or of leaded acrylic glass for protection against gamma radiation.
Inclination angle of 15° to reduce light reflections.
For protection during work with radioactive samples and solutions which emit beta radiation (32P) or gamma radiation (125J).
Screens with a bent base are suitable for use with protection trays.
The bent shape with cut-outs at the sides allows for greater freedom of movement in order to eliminate fatigue when working.

With flat base. Dimensions: W 300 x D 300 x H 450 mm.

For protection against	Wall thickness (mm)	Art. No.	Pack Qty.	€
β radiation	10	**EYN3.1**	1	169,85
γ radiation	12	**EYN4.1**	1	1433,00

With bent base. Dimensions: W 300 x D 150 x H 450 mm.

For protection against	Wall thickness (mm)	Art. No.	Pack Qty.	€
β radiation	10	**EYN5.1**	1	171,90
γ radiation	12	**EYN6.1**	1	1433,00

Sekuroka®-radiation protection waste box

Made of leaded acrylic glass for protection against beta rays.
For collecting contaminated pipettor tips, cannulas, centrifuge tubes, etc.
Opening ∅ 25 mm in lid. Extra hinged lid for closing the opening.
Comes with 4 rubber feet to prevent slipping.
Dimensions: W 150 x D 150 x H 150 mm.

Art. No.	Pack Qty.	€
E267.1	1	356,90

Sekuroka®-radiation protection waste bags

Suitable for waste box E267.1. Made of reinforced polyethylene.
With double welded seams for extra leak proofing and a double cord sealing mechanism for secure storage of radioactive waste during disposal.
A line marking the maximum fill level and warning symbol for radioactive waste is printed on the bags.
Dimensions: L 120 x W 130 x H 140 mm.

Art. No.	Pack Qty.	€
K178.1	25	112,90

Sekuroka®-radiation protection boxes

Made of transparent acrylic glass for protection against beta radiation or of leaded acrylic glass for protection against gamma radiation.
For storage and transportation of radioactive samples and solutions.
Each box has a hinged lid and slip-resistant feet.

Beta radiation protection boxes

Type	Outer dimensions (mm) W x D x H	Inner dimensions (mm) W x D x H	Art. No.	Pack Qty.	€
MIni	109 x 109 x 79	85 x 85 x 55	**EXT0.1**	1	242,95
Midi	185 x 105 x 80	165 x 85 x 60	**K565.1**	1	261,25
Maxi	300 x 185 x 160	280 x 165 x 140	**L424.1**	1	338,65

Gamma radiation protection boxes

Type	Outer dimensions (mm) W x D x H	Inner dimensions (mm) W x D x H	Art. No.	Pack Qty.	€
Mini	109 x 109 x 79	85 x 85 x 55	**EXT1.1**	1	948,15
Midi	189 x 109 x 84	165 x 85 x 60	**K566.1**	1	1510,40
Maxi	304 x 189 x 164	280 x 165 x 140	**L425.1**	1	2856,30

Racks for Sekuroka®-radiation protection boxes

Made of acrylic. Maxi boxes can accommodate up to three midi racks.

Suitable for	Version for	No. of slots	Art. No.	Pack Qty.	€
Mini box	0.5 ml reaction vials	20	**EXT2.1**	1	35,35
Mini box	1.5 ml reaction vials	16	**EXT3.1**	1	35,35
Midi box	0.5 ml reaction vials	40	**EXT4.1**	1	35,35
Midi box	1.5 ml reaction vials	32	**K568.1**	1	35,50
Midi box	2 ml cryogenic vials	32	**EXT5.1**	1	35,35
Maxi box	5 ml scintillation vials	15	**EXT6.1**	1	35,35
Maxi box	20 ml scintillation vials	8	**EXT7.1**	1	35,35

Sekuroka®-beta-protection round container

Made of transparent acrylic glass. Holds flasks, beakers and other vessels.
Wall thickness 1 cm.

Outside ∅ (mm)	Innner ∅ (mm)	Outer height (mm)	Inner height (mm)	Art. No.	Pack Qty.	€
120	100	170	150	**9766.1**	1	181,70
150	130	280	260	**9767.1**	1	267,70

Sekuroka®-radiation protection waste containers

For storage and transportation of radioactive samples and solutions.
Made of transparent acrylic glass for protection against beta radiation or of leaded acrylic glass for protection against gamma radiation.
The 47 l container is equipped with rollers for easy transportation.

Beta radiation protection waste container

Volume (l)	Inner L x W x H (mm)	Art. No.	Pack Qty.	€
1	100 x 80 x 130	**EYN7.1**	1	298,85
3,3	150 x 150 x 150	**C975.1**	1	414,95
10	200 x 200 x 250	**C976.1**	1	496,65
20	215 x 235 x 380	**EYN8.1**	1	512,80
47	285 x 270 x 580	**EYN9.1**	1	669,75
53	490 x 270 x 400	**C977.1**	1	596,65

Gamma radiation protection waste container

Volume (l)	Inner L x W x H (mm)	Art. No.	Pack Qty.	€
1	100 x 80 x 130	**EYP0.1**	1	1266,35
3,3	150 x 150 x 150	**EYP1.1**	1	1906,00

Sekuroka®-protection trays

Made of **PVC** in signal colour. To protect the desk or laboratory bench against contamination from radioactive substances or spilt reagents.
Easy to clean.
With strong edging, 20 mm high. The trays should be used together with the anti-static inserts made of transparent PET.
Delivery incl. protection tray and protection tray insert.

For work with radioactive substances, signal colour yellow

Outer L x W (mm)	Art. No.	Pack Qty.	€
460 x 260	**EXL3.1**	1	67,35
540 x 340	**EXL4.1**	1	73,65
570 x 540	**LN79.1**	1	100,65
680 x 540	**EXL5.1**	1	120,40
700 x 460	**EXL6.1**	1	122,55
1130 x 540	**LN78.1**	1	136,55

For general tasks, colour white

Outer L x W (mm)	Art. No.	Pack Qty.	€
460 x 260	**EXL7.1**	1	55,05
540 x 340	**EXL8.1**	1	58,75
570 x 540	**EXL9.1**	1	80,85
680 x 540	**EXN0.1**	1	98,35
700 x 460	**EXN1.1**	1	98,35
1130 x 540	**EXN2.1**	1	113,95

Sekuroka®-protection tray inserts
Made of **PET**, transparent. The flexible anti-static inserts fit exactly into the trays provided and can be disposed of or reused as required.

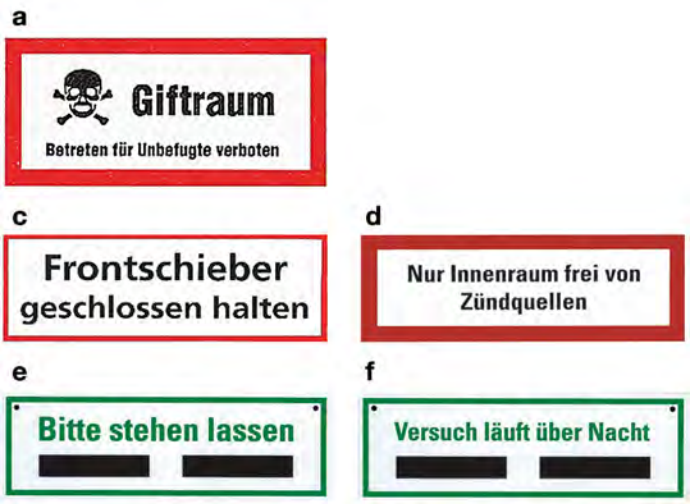
Outer L x W (mm)	Art. No.	Pack Qty.	€
460 x 260	**EXN3.1**	25	67,75
540 x 340	**EXN4.1**	25	93,15
570 x 540	**LN81.1**	25	107,30
680 x 540	**EXN5.1**	25	146,20
700 x 460	**EXN6.1**	25	149,45
1130 x 540	**LN80.1**	25	201,05

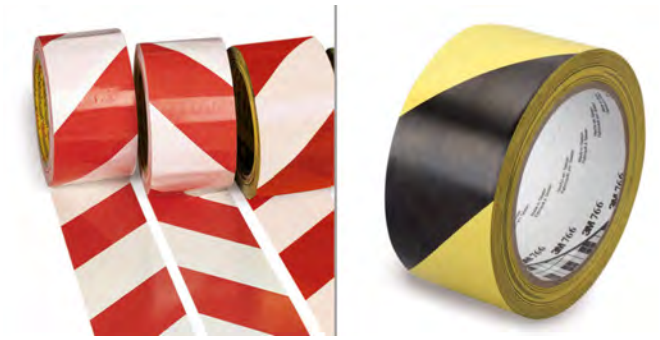
Programme extension!

Sekuroka® "Radioactive" warning labels

Made of plastic film, self-adhesive. Yellow background with black writing.
Supplied on a roll: Width 24 mm, Length 66 m, core ∅ 7.6 cm.

Type	Art. No.	Pack Qty. (roll)	€
RADIOACTIVE	**1730.2**	1	11,30





Adhesive hazard warning tape

By 3M. Self-adhesive, abrasion resistant adhesive hazard warning tape for indoor use. Made of PVC film, highly elastic and conformable even on irregular or uneven surfaces. Ideal for marking hazards, bundling, holding and sealing.
Roll width 50 mm, length 33 m.

Colour	Art. No.	Pack Qty. (roll)	€
red / white	**0744.2**	1	23,60
yellow / black	**NK94.1**	1	21,45

Sekuroka®-signal barrier tape

Tear-resistant tape made of PE film, red/white striped, plain printed, non-adhesive. For indicating, marking and warning against obstacles and hazardos.
Dimensions: L 500 m x W 75 mm.

Art. No.	Pack Qty. (roll)	€
NH42.1	1	23,15

Only available in Germany!

Sekuroka®-hazard warning labels "Radioactive"

Self-adhesive. Ideal for labelling micro-centrifuge tubes, twist top vials, test tubes, etc. Supplied in dispenser box.

∅ (mm)	Packaging	Art. No.	Pack Qty. (roll)	€
6,0	roll à 1000	**E289.1**	1	53,65

Sekuroka®-magnetic signs

Come on tape roll. Made of plastic with magnetic finish and white PVC layer. Can be marked with pencil, pen, typewriter, etc.

Width (mm)	Roll length (m)	Art. No.	Pack Qty.	€
30	5	**0182.1**	1	26,45
50	5	**0181.1**	1	44,05

PerfTape™-perforated marker tapes

Self-adhesive coloured marker tape, with perforations for easy and clean separation of identical-sized strips. The coated paper surface is durable, abrasion resistant and does not discolour. Oil and water resistant. Excellent adhesion to most surfaces, such as glass, plastic and metal. Can be removed without leaving a residue.

Ideal for general identification and colour coding. Suitable for labelling with ball-point pen, pencil, felt tipped pen or permanent marker.

Temperature stable from **-23 to +121 °C**.
Distance between perforations: 31.75 mm.

Length 12.7 m, width 19 mm, core ∅ 25.4 mm

Colour	Art. No.	Pack Qty. (roll)	€
white	**ATY8.1**	1	17,10
yellow	**ATY9.1**	1	17,10
green	**AXA0.1**	1	17,10
light blue	**AXA1.1**	1	17,10
red	**AXA2.1**	1	17,10

Length 55 m, width 19 mm, core ∅ 76.2 mm

Colour	Art. No.	Pack Qty. (roll)	€
white	**AXA3.1**	1	42,50
yellow	**AXA4.1**	1	42,50
green	**AXA5.1**	1	42,50
light blue	**AXA6.1**	1	42,50
red	**AXA7.1**	1	42,50

NEW

A 121 °C

Labeltape original marker tape

Self-adhesive coloured marker tape. Coated paper surface, durable, abrasion-resistant, does not stain. Resistant to oils, dilute acids and water. Excellent adhesion to most surfaces, such as glass, plastic and metal. Can be removed without leaving residue.
Ideal for general identification and colour coding. Can be written on using a ballpoint pen, pencil, felt pen or permanent marker.
Temperature-stable from **-23 to +121 °C**. Autoclavable.
Dimensions: L 12.7 m, W 19 mm, core ∅ 25.4 mm.

Colour	Art. No.	Pack Qty. (roll)	€
white	**KCL0.1**	1	13,45
yellow	**KCL1.1**	1	13,45
green	**KCL2.1**	1	13,45
blue	**KCL3.1**	1	13,45
red	**KCL4.1**	1	13,45

- Microcentrifuge tubes from p. 489
- Stands for centrifuge tubes from p. 237
- Cryo gloves see page 670

Sekuroka®-standard textile adhesive tapes

PE-coated cloth tape with natural rubber adhesive backing. 80 mesh (threads per inch²). High tear strength, good adhesive power, also adheres to rough surfaces. Hand tearable. Waterproof, highly UV and oil resistant. Wide variety of uses indoors and outdoors. Writable, temperature stable from **-35 to +80 °C**.
Length 50 m, width 19 mm, thickness 0.30 mm, core ∅ 76.1 mm.

Colour	Art. No.	Pack Qty.	€
white	**YX05.1**	1	16,70
yellow	**YX06.1**	1	16,70
red	**YX07.1**	1	16,70
blue	**YX08.1**	1	16,70
green	**YX09.1**	1	16,70
silver	**YX10.1**	1	16,70

A 121 °C

tesa®-premium textile adhesive tapes

Acrylic-coated cloth tape with natural rubber adhesive. 148 mesh (threads per inch²). Abrasion resistant, very high tear strength. Hand tearable. Waterproof, UV and oil resistant. Wide variety of uses indoors and outdoors. Writable, temperature stable from **-40 to 130 °C**.
Length 50 m, width 19 mm, thickness 0.31 mm, core ∅ 76.1 mm.
Autoclavable.

Colour	Art. No.	Pack Qty.	€
white	**YX11.1**	1	26,85
yellow	**YX12.1**	1	26,85
red	**YX13.1**	1	26,85
blue	**YX14.1**	1	26,85
green	**YX15.1**	1	26,85
grey	**YX16.1**	1	26,80
brown	**YX17.1**	1	26,80
black	**YX18.1**	1	26,85

A 121 °C

Temperature stable adhesive tapes

Self-adhesive tape. Ideal for extreme temperatures. Temperature stable from **-196 to +287 °C**. Suitable for use in the cryo sector, incubators, autoclaves, sterilizers, etc. Surface with textile finish, can be marked.

Width (mm)	Length (m)	Art. No.	Pack Qty.	€
12,7	7,6	**L034.1**	1	33,35
19,0	7,6	**L035.1**	1	37,60
25,4	7,6	**L036.1**	1	57,85

Roti®-Tape-marking tapes

Self-adhesive, coloured marking tape. Ideal for various applications, e.g. marking samples, lab glasses, vessels, etc.

- Can be written on with pencil, biro, pen, marker, ink, etc.
- Can be peeled off without leaving a trace
- Resistant to oil, water and acids
- Temperatur stable from -23 to +121 °C
- Autoclavable

Length 12.7 m, inner-∅ 2.54 cm

	Width 13.0 mm	Width 19.1 mm	Width 25.4 mm
Colour	Art. No.	Art. No.	Art. No.
white	**7981.1**	**7999.1**	**8036.1**
yellow	**7987.1**	**8008.1**	**8055.1**
green	**7985.1**	**8003.1**	**8042.1**
pink	**AL31.1**	**AL32.1**	**AL33.1**
red	**7982.1**	**8000.1**	**8037.1**
orange	**7988.1**	**8014.1**	**8057.1**
blue	**7983.1**	**8002.1**	**8041.1**
beige	**AL34.1**	**AL35.1**	**AL36.1**
salmon	**AL37.1**	**AL38.1**	**AL39.1**
copper	**AL40.1**	**AL41.1**	**AL42.1**
pink	**AL43.1**	**AL44.1**	**AL45.1**
violet	**AL46.1**	**AL47.1**	**AL48.1**
lavender	**AL49.1**	**AL50.1**	**AL51.1**
grey	**AL52.1**	**AL53.1**	**AL54.1**
black	**AL55.1**	**AL56.1**	**AL57.1**
€/roll	8,50	9,60	13,90

Length 55 m, inner-∅ 7.62 cm

	Width 13.0 mm	Width 19.1 mm	Width 25.4 mm
Colour	Art. No.	Art. No.	Art. No.
white	**7990.1**	**8024.1**	**8058.1**
yellow	**7996.1**	**8034.1**	**8065.1**
green	**7994.1**	**8033.1**	**8064.1**
rosé	**AL58.1**	**AL59.1**	**AL60.1**
red	**7991.1**	**8026.1**	**8061.1**
orange	**7997.1**	**8035.1**	**8069.1**
blue	**7993.1**	**8027.1**	**8062.1**
salmon	**AL64.1**	**AL65.1**	**AL66.1**
copper	**AL67.1**	**AL68.1**	
pink	**AL70.1**	**AL71.1**	**AL72.1**
violet	**AL73.1**	**AL74.1**	**AL75.1**
lavender	**AL76.1**	**AL77.1**	**AL78.1**
grey	**AL79.1**	**AL80.1**	**AL81.1**
beige		**AL62.1**	
black		**AL83.1**	
€/roll	18,10	23,45	26,85

Roti®-Tape-marking tape assortments

Contains 5 rolls in white, red, blue, green and yellow.

Length (m)	Width (mm)	Art. No.	Pack Qty. (assortment)	€
12,7	13,0	**AK65.1**	1	37,65
12,7	19,1	**AK66.1**	1	40,65
12,7	25,4	**AK67.1**	1	55,80
55	13,0	**E287.1**	1	64,00
55	19,1	**E288.1**	1	81,95
55	25,4	**K325.1**	1	117,20

Roti®-Tape-marking tape dispensers

For Roti®-Tape-marking tape.
Dispenser and rolls can be combined individually.
Plastic dispenser: for 1-2 rolls of length 12.7 m.
Acrylic glass dispenser: with lid and 4 rubber knobs.

for roll length (m)	Useable width (mm)	Material	L x W x H (mm)	Art. No.	Pack Qty.	€
12,7	34	Plastic	117 x 47 x 90	**CT05.1**	1	10,70
12,7	220	Acrylic glass	251 x 125 x 92	**AL87.1**	1	96,65
55	240	Acrylic glass	248 x 191 x 162	**AL88.1**	1	123,65

❄❄❄ A 121 °C

Labels on rolls

Ideal for 0.2/0.5/0.65 and 1.5/2 ml tubes and other containers. Made of chemically inert polyester. Sticks to plastics without drying out and falling off during steam sterilization, in boiling waterbaths, refrigerators, stirrers, shakers, centrifuges, etc. Are extremely close-fitting and do not hinder removal or loading of tubes in stands or centrifuges. Tearproof.
Can be marked with almost all markers.

Labels, angular (Tough Tags™), for manually marking.
Temperature stable from **-40 to +121 °C**. 1000 per roll.
(1500 per roll at Art. No. K436.1).

For vials (ml)	Colour	Length (mm)	Width (mm)	Art. No.	Pack Qty. (roll)	€
0,2	white	20,5	6,5	**K436.1**	1	42,50
0,5	white	23	13	**K556.1**	1	38,20
0,5	blue	23	13	**K440.1**	1	42,50
0,5	yellow	23	13	**K441.1**	1	42,50
0,5	green	23	13	**L666.1**	1	41,40
0,5	red	23	13	**K442.1**	1	42,50
0,5	transparent	23	13	**K443.1**	1	42,50
1,5/2	white	32	13	**K557.1**	1	38,20
1,5/2	blue	32	13	**K444.1**	1	49,45
1,5/2	yellow	32	13	**K445.1**	1	49,45
1,5/2	green	32	13	**L667.1**	1	47,85
1,5/2	red	32	13	**K446.1**	1	49,45
1,5/2	transparent	32	13	**K447.1**	1	49,45
Test tubes etc.	white	38	19	**L676.1**	1	64,00
Microtest plates	white	38	6	**K435.1**	1	42,50

Programme extension!
❄❄❄ A 121 °C

Labels, round (Tough Spots™), for manually marking.
Temperature stable from **-196 to +80 °C**.
1000 labels per roll, 500 labels for KCK8.1 and KCK9.1.

For vials (ml)	Colour	∅ (mm)	Art. No.	Pack Qty. (roll)	€
0,5	white	9,5	**K164.1**	1	40,80
0,5	blue	9,5	**X612.1**	1	36,55
0,5	green	9,5	**X613.1**	1	36,55
0,5	red	9,5	**X614.1**	1	36,55
0,5	yellow	9,5	**X615.1**	1	36,55
1,5	white	11	**KCK7.1**	1	38,20
1,5/2	white	12,7	**N120.1**	1	38,20
1,5/2	red	12,7	**N121.1**	1	38,20
1,5/2	green	12,7	**N122.1**	1	38,20
1,5/2	yellow	12,7	**N123.1**	1	38,20
1,5/2	blue	12,7	**N124.1**	1	38,20
15	white	19	**KCK8.1**	1	42,90
50	white	25	**KCK9.1**	1	42,90

Labels for laser printers

Ideal for 0.2/0.5/0.65 and 1.5/2 ml tubes and other containers. Made of chemically inert polyester. Sticks to all plastics without drying out and falling off during steam sterilization, in boiling waterbaths, refrigerators, stirrers, shakers, centrifuges, etc. Are extremely close-fitting and do not hinder removal or loading of tubes in stands or centrifuges. Tearproof.

Labels, angular, for laser printers (Laser Tough Tags™)
Come on sheets, sheet size (US-Letter) 21.6 x 27.9 cm.
Temperature stable from **-40 to +121 °C**

*sorted acc. to colour: contains 4 sheets each of following colours (blue, green, orange, red, yellow)

For vials (ml)	Colour	Length (mm)	Width (mm)	Labels/ Sheet	Art. No.	Pack Qty. (Sheet)	€
0,5	white	24	13	119	**TH53.1**	25	88,70
0,5	sorted acc. to colour*	24	13	119	**TH54.1**	25	88,70
1,5/2	white	33	13	85	**TH55.1**	25	88,70
1,5/2	sorted acc. to colour*	33	13	85	**TH56.1**	25	88,70
Test tubes etc.	white	38	19	60	**TH57.1**	25	88,70
Test tubes etc.	sorted acc. to colour*	38	19	60	**TH58.1**	25	88,70
Microscope slides etc.	white	22	22	96	**TH59.1**	25	88,70

Labels, round, for laser printers (Laser Tough Spots™)
Come on sheets, sheet size (US-Letter) 21.6 x 27.9 cm.
Temperature stable from **-196 to +100 °C.**

*sorted according to colour: contains 4 sheets each of following colours (blue, green, orange, red, yellow)

For vials (ml)	Colour	∅ (mm)	Labels/ Sheet	Art. No.	Pack Qty. (Sheet)	€
0,5-0,65	white	9,5	192	**KP57.1**	20	70,75
0,5-0,65	sorted acc. to colour*	9,5	192	**KP63.1**	20	70,75
1,5-2,0	white	11	234	**KP64.1**	20	70,75
1,5-2,0	white	13	192	**KP65.1**	20	70,75
1,5-2,0	sorted acc. to colour*	13	192	**KP71.1**	20	70,75

▶ Further labels see page 712

Cryo-labels on sheets

Made with acrylate. Sticks to plastic, glass or metal without drying out or peeling off. Glass and metal surfaces must be completely free of grease. Can also be used in boiling water baths, in refrigerators, under cryo-conditions (liquid nitrogen). Temperature stable from **-196 to +100 °C**. Can be removed without leaving any traces. Sheets are printable with a laser printer.

Sheet size (US-Letter) 21.6 x 27.9 cm.

White

Length (mm)	Width (mm)	For	Labels/ Sheet	Art. No.	Pack Qty. (Sheet)	€
38	6	Microtiter-plates	156	**X545.1**	20	78,50
24	13	0.5 ml tubes	119	**X547.1**	20	78,50
33	13	1.5-2 ml tubes	85	**X548.1**	20	78,50
25	25	Microscope slides	80	**EL06.1**	20	74,75
38	19	Cryo-vials	60	**X549.1**	20	78,50
64	13	0.5-2 ml tubes	60	**EL07.1**	20	74,75
43	19	Cryo vials	52	**EL08.1**	20	74,75
29	44	Centrifuge tubes	42	**EL09.1**	20	74,75
67	25	Racks, boxes	30	**X550.1**	20	78,50
76	51	Bottles, glasses	12	**X551.1**	20	78,50

Blue

Length (mm)	Width (mm)	For	Labels/ Sheet	Art. No.	Pack Qty. (Sheet)	€
24	13	0.5 ml tubes	119	**HX32.1**	20	75,20
33	13	1.5-2 ml tubes	85	**HX33.1**	20	75,20
38	19	Cryo-vials	60	**HX34.1**	20	75,20
67	25	Racks, boxes	30	**HX35.1**	20	75,20

Green

Length (mm)	Width (mm)	For	Labels/ Sheet	Art. No.	Pack Qty. (Sheet)	€
24	13	0.5 ml tubes	119	**HX36.1**	20	75,20
33	13	1.5-2 ml tubes	85	**HX37.1**	20	75,20
38	19	Cryo-vials	60	**HX38.1**	20	75,20
67	25	Racks, boxes	30	**HX39.1**	20	75,20

Orange

Length (mm)	Width (mm)	For	Labels/ Sheet	Art. No.	Pack Qty. (Sheet)	€
24	13	0.5 ml tubes	119	**HX40.1**	20	75,20
33	13	1.5-2 ml tubes	85	**HX41.1**	20	75,20
38	19	Cryo-vials	60	**HX42.1**	20	75,20
67	25	Racks, boxes	30	**HX43.1**	20	75,20

Red

Length (mm)	Width (mm)	For	Labels/ Sheet	Art. No.	Pack Qty. (Sheet)	€
24	13	0.5 ml tubes	119	**HX44.1**	20	75,20
33	13	1.5-2 ml tubes	85	**HX45.1**	20	75,20
38	19	Cryo-vials	60	**HX46.1**	20	75,20
67	25	Racks, boxes	30	**HX47.1**	20	75,20

Yellow

Length (mm)	Width (mm)	For	Labels/ Sheet	Art. No.	Pack Qty. (Sheet)	€
24	13	0.5 ml tubes	119	**HX48.1**	20	75,20
33	13	1.5-2 ml tubes	85	**HX49.1**	20	75,20
38	19	Cryo-vials	60	**HX50.1**	20	75,20
67	25	Racks, boxes	30	**HX51.1**	20	75,20

Coloured assorted
(4 sheets of each: blue, green, orange, red, yellow)

Length (mm)	Width (mm)	For	Labels/ Sheet	Art. No.	Pack Qty. (Sheet)	€
24	13	0.5 ml tubes	119	**HX52.1**	20	75,20
33	13	1.5-2 ml tubes	85	**HX53.1**	20	75,20
38	19	Cryo-vials	60	**HX54.1**	20	75,20
67	25	Racks, boxes	30	**HX55.1**	20	75,20

Cryo-labels on the roll, colour white

White, for manually marking

Length (mm)	Width (mm)	For	Labels/ Roll	Art. No.	Pack Qty. (roll)	€
24	13	0.5 ml tubes	1000	**HX56.1**	1	41,40
38	19	Cryo vials	1000	**L673.1**	1	40,85
33	13	1.5-2 ml tubes	1000	**L672.1**	1	40,85

Cryo-Clear™ - labels for laser printers

Transparent labels made of flexible vinyl with acrylic adhesive. The label surface is specially coated for printing with laser printers. Temperature stable from **-196 to +70 °C**. Also suitable for liquid nitrogen. Good chemical resistance against most organic solutions.

Come on sheet, format (US-Letter) 21.6 x 27.9 cm

Length (mm)	Width (mm)	For	Labels/ Sheet	Art. No.	Pack Qty. (Sheet)	€
24	13	0.5 ml tubes	119	**HT44.1**	20	74,75
33	13	1.5-2.0 ml tubes	85	**HT45.1**	20	74,75

WETGRIP™-labels

On sheets, sheet size (US-Letter) 21.6 x 27.9 cm, suitable for laser printers. Labels stick to moist and frozen surfaces made of glass, plastic, metal and cardboard. Make sure that surfaces are free of grease and silicone! Made of chemically inert polyester. Temperature stable from **-80 to +100 °C.**

Length (mm)	Width (mm)	For	Labels/ Sheet	Art. No.	Pack Qty. (Sheet)	€
24	13	0.5 ml-tubes	119	**KP74.1**	20	79,80
33	13	1.5-2 ml-tubes	85	**KP75.1**	20	79,80
38	19	Other applications	60	**KP76.1**	20	79,80
22	22	Microscope slides	96	**KP77.1**	20	79,80

- ▶ Labels for thermal transfer printers see page 712
- ▶ Labels DIN A4 see page 718

Thermal transfer labels

White, angular cornered labels with acrylate-based adhesive backing. Excellent adhesion to plastic, glass or metal at low temperatures without drying out or peeling off. Care must be taken to ensure that glass and metallic surfaces are absolutely free of oil and grease. Abrasion resistant, resistant to chemicals and moisture.
Suitable for use in refrigerators, freezers and under cryogenic conditions (liquid nitrogen).
Can be removed without leaving any traces. Coated for use with a resin ribbon. Designed for high resolution and very precise labelling, e.g. for barcode. Suitable for most thermal transfer printers.
2000 labels per roll, wound externally, roll core dia. 25.4 mm (1 inch).

Cryo-Tags® cryogenic labels

Temperature stable from **-196 to +80 °C**.

Length (mm)	Width (mm)	For	Art. No.	Pack Qty. (roll)	€
20,6	7	0.2 ml tubes	**NL05.1**	1	84,40
24	13	0.5 ml tubes	**NL06.1**	1	84,40
27	13	0.5 ml tubes	**NL07.1**	1	84,40
32	13	1.5-2 ml tubes	**NL08.1**	1	105,35
35	16	0.5-2 ml cryo vials	**NL09.1**	1	93,00
38	13	0.5-2 ml cryo vials	**NL10.1**	1	117,20
38	19	Racks/containers	**NL11.1**	1	146,20
51	6	Microtitration plates	**NL12.1**	1	80,55

Tough-Tags®

Temperature stable from **-40 to +150 °C**.

Length (mm)	Width (mm)	For	Art. No.	Pack Qty. (roll)	€
24	13	0.5 ml tubes	**NL13.1**	1	81,65
32	13	1.5-2 ml tubes	**NL14.1**	1	84,90
35	16	0.5-2 ml cryo vials	**NL15.1**	1	84,90
38	19	Racks/containers	**NL16.1**	1	149,45
51	6	Microtitration plates	**NL17.1**	1	83,85

Thermal transfer labels, xylene-resistant

Made of polyester. Excellent solvent resistance, specifically against xylene. Versatile - also suitable for use in boiling water baths. Surface coated for use with resin ribbon. Designed for high resolution and very precise labelling, e.g. for barcode. Suitable for most thermal transfer printers.
Good adhesion to PP tubes; not for use on siliconised surfaces.
Temperature stable from -40 to 121 °C, autoclavable.
2000 labels per roll, wound externally, 25.4 mm roll core (1 inch).

L x W (mm)	Suitable for:	Art. No.	Pack Qty.	€
22 x 22	Microscope slide	**ECH8.1**	2000	87,65

High-temperature labels (Bake Tags™)

Made of acrylate, for manual labelling. For permanent labelling of plastic, glass and metal containers. Can be used for hot air sterilizing (180 °C) and for deactivating RNase/DNase and other enzymes. Also ideal for use during sterilizing, autoclaving, in boiling waterbaths, refrigerators and for storing in freezers (liquid nitrogen). Resistant to most organic solvents, acids and alkalis. Strength 0.008 mm. Temperature stable from **-196 to +180 °C**.
Size of labels 38 x 19 mm. Colour: white. 250 labels on roll.

Art. No.	Pack Qty. (roll)	€
L675.1	1	103,00

- Centrifuge tubes, see page 489
- For racks for centrifuge tubes, see page 237
- Cryo gloves see page 670

Wash-Off Labels™

Washable, white labels **on sheets**. Labels and adhesive are completely removable within 30 seconds at any water temperature and without leaving any traces of adhesive. 100 % biodegradable.
Temperature stable from 0 to 21 °C. Suitable for racks, boxes and containers. Suitable for most laser printers.
Sheet format (US letter) 21.6 x 27.9 cm.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
67	25,4	**NL21.1**	750	120,40
102	25,4	**NL22.1**	500	120,40

Removable Tough-Tags® for manual labelling

Removable, white labels with rounded corners; ideal for labelling reusable containers, laboratory equipment, racks and pipettes.
No residues - easily removable without leaving any traces of adhesive.
Resistant to most solvents, including (for short periods) acetone and xylol.
1000 labels per roll.

Length (mm)	Width (mm)	Art. No.	Pack Qty. (roll)	€
32,5	12,7	**NL19.1**	1	34,35
38	19	**NL20.1**	1	34,35

Sekuroka®-hazard warning labels "Biohazard"

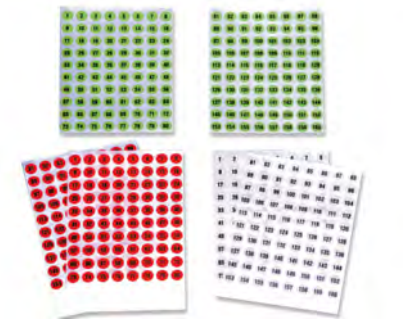
Self-adhesive, ∅ 9.5 mm. Ideal for 0.5 to 2.0 ml tubes and other containers. Sticks to all plastics without drying out and falling off, e.g in freezers or in boiling water baths. Chemically resistant against most organic solvents and caustic materials. Resistant in temperature range from -196 to +80 °C. 1000 labels per roll.

Art. No.	Pack Qty. (roll)	€
KL45.1	1	38,20

Write-Protect™-label protection film

Self-adhesive, perforated, fits Cryo labels for 0.5, 1.5 and 2.0 ml tubes or other vessels. Protects the label against organic solvents and corrosive chemicals. Holds labels in place, and prevents labels from becoming detached or falling off. Adheres to most surfaces, plastics, glass and metals. Resistant in temperature range from -196 to +150 °C.
Delivery incl. dispenser. 1000 labels per roll.

L x W (mm)	Art. No.	Pack Qty.	€
31,75 x 12,7	**ECH6.1**	1000	41,40
40,65 x 16,0	**ECH7.1**	1000	41,40



Sekuroka®-labels

Numbered from 1-160 in red, green and blue. Self-adhesive, made of paper ∅ 8 mm. Ideal for labelling test tubes, vials, microcentrifuge tubes, etc. Should be used together with numerical racks to prevent any mix-up. Labels ensure correct positioning of test tubes even during bulk sampling.

Art. No.	Pack Qty.	€
N376.1	1	4,25

Tough-Tag Station

For easy and convenient storage of up to 6 rolls of Tough-Tags®, Tough-Spots® or Cryo-Tags® (unsuitable for round labels ∅ 25 mm). With ledge for writing labels, cutting edge and no-skid rubber feet.
Delivery without labels, please order separately.

Art. No.	Pack Qty.	€
NL18.1	1	89,25

tesa Easy Cut® table dispenser

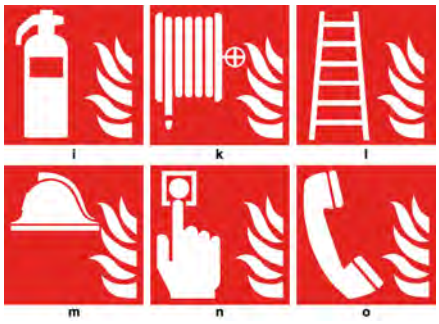
Non-slip base and heavy weight for extra stability.
Model ①: dimensions L 240 x W 70 x H 130 mm, weight 1500 g
Model ②: dimensions L 155 x W 55 x H 80 mm, weight 900 g

Model	for roll length (m)	Max. tape width (mm)	Art. No.	Pack Qty.	€
①	66	25	**1731.1**	1	40,80
②	33	19	**4918.1**	1	32,15

Sekuroka®-blank labels

Multipurpose labels made of calendered paper (80 g/m²), white.
With permanent adhesive. On A5 sheets. Ideal for writing or printing on.

Size (mm)	Packaging	Art. No.	Pack Qty.	€
50 x 19	200 sheets x 24 labels = 4800 labels	**5823.1**	1	42,95
50 x 100	200 sheets x 4 labels = 800 labels	**5831.1**	1	42,95



Sekuroka®-fire protection sign acc. to ISO 7010

Acc. to ASR A1.3, DIN EN ISO 7010.
Self-adhesive film. Adheres permanently to clean, grease-free and smooth surfaces. Resistant to many chemicals. Temperature stability: -40 to +80 °C. Suitable for indoor use. Minimum bonding temperature: +10 °C. Material thickness: approx. 0.08 to 0.55 mm.

Type	Symbol	W x H (mm)	Art. No.	Pack Qty.	€
i	Fire extinguisher	148 x 148	**YX19.1**	1	3,50
i	Fire extinguisher	200 x 200	**YX20.1**	1	4,50
k	Fire hose	200 x 200	**YX21.1**	1	4,95
l	Fire ladder	200 x 200	**YX22.1**	1	5,30
m	Firefighting media and apparatus	200 x 200	**YX23.1**	1	4,95
n	Fire alarm	200 x 200	**YX24.1**	1	5,30
o	Fire emergency telephone	200 x 200	**YX25.1**	1	5,30

Long-lasting luminescence
175 % over DIN 67510. Ideal for power failure or darkness.

Type	Symbol	W x H (mm)	Art. No.	Pack Qty.	€
i	Fire extinguisher	200 x 200	**YX26.1**	1	9,60
k	Fire hose	200 x 200	**YX27.1**	1	9,60
l	Fire ladder	200 x 200	**YX28.1**	1	9,85
m	Firefighting media and apparatus	200 x 200	**YX29.1**	1	9,60
n	Fire alarm	200 x 200	**YX30.1**	1	9,85
o	Fire emergency telephone	200 x 200	**YX31.1**	1	9,85

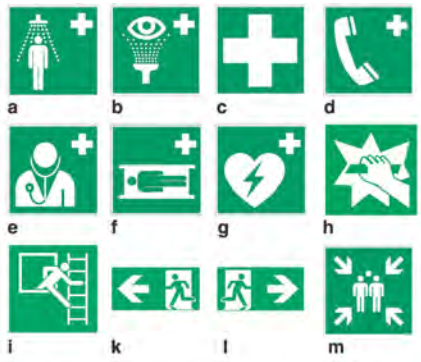
Sekuroka®-fire protection signs

Field-proven safety marking. Made of self-adhesive PVC foil, 0.1 mm, with permanent-glue and colour-fast print.

Type	Symbol	B x H (mm)	Art. No.	Pack Qty.	€
d	Direction arrow	200 X 200	**K217.1**	1	5,35

Recognisability of the sign depends on the size of the sign and the distance between the viewer and the sign:

Side length (mm)	50	100	200	300	400
Visibility range (m)	1	3	6	9	12
∅ (mm)	50	100	200	-	400
Visibility range (m)	2	4	8		16
Size W x H (mm)	148 x 148	200 x 200	297 x 105	297 x 148	400 x 140
Visibility range (m)	10	12	8	9	10.5



First-aid and emergency signs acc. to ISO 7010

Acc. to ASR A1.3 and DIN EN ISO 7010.

Film
Self-adhesive individual labels, made of PE film, colourfast print. Resistant to water, oil and alkalis. Temperature stable from -40 to +80 °C.

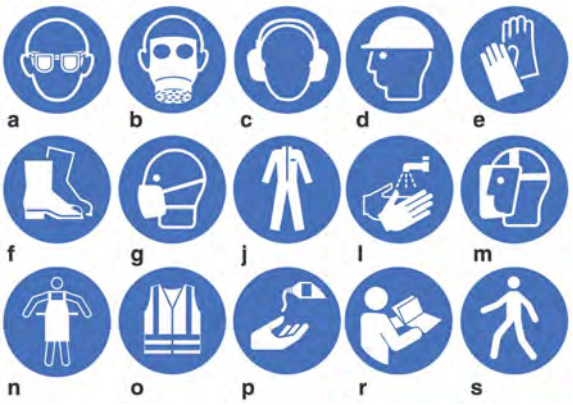
Image	Symbol	Side length (mm)	Art. No.	Pack Qty.	€
a	Body safety shower	200 x 200	**NP67.1**	1	5,40
b	Eyewash	200 x 200	**H497.1**	1	5,35
c	First aid	100 x 100	**NP68.1**	1	3,80
c	First aid	200 x 200	**0232.1**	1	5,95
d	Emergency telephone	200 x 200	**NP69.1**	1	5,35
e	Doctor	200 x 200	**NP70.1**	1	5,35
f	Stretcher	200 x 200	**NP71.1**	1	5,35
g	Defibrillator	200 x 200	**NP72.1**	1	5,15
h	Emergency exit system	100 x 100	**NP73.1**	1	3,85
k	Emergency exit, left	400 x 200	**NP74.1**	1	8,25
l	Emergency exit, right	400 x 200	**NP75.1**	1	8,25

Film, long-lasting luminescence
Self-adhesive, long-lasting luminescence exceeding DIN 67510 by 175 %. Ideal for power failure or darkness.

Image	Symbol	Side length (mm)	Art. No.	Pack Qty.	€
a	Body safety shower	200 x 200	**NP76.1**	1	9,85
b	Eyewash unit	200 x 200	**H493.1**	1	11,70
c	First aid	200 x 200	**H492.1**	1	11,70
h	Emergency exit system	100 x 100	**NP77.1**	1	6,05
i	Emergency exit with escape ladder	200 x 200	**NP78.1**	1	9,85
k	Emergency exit, left	400 x 200	**NP79.1**	1	18,30
l	Emergency exit, right	400 x 200	**NP80.1**	1	18,30

Plastic
Plastic sign for indoor and outdoor use. Temperature stable from -30 to +50 °C, resistant to moisture and weak acids, flame retardant.

Image	Symbol	Side length (mm)	Art. No.	Pack Qty.	€
m	Collection point	400 x 400	**NP81.1**	1	23,10



Safety symbols to ISO 7010

Acc. to ASR A1.3 and DIN EN ISO 7010.
Made of PE film with colour-fast print. Self-adhesive individual labels.
Resistant to water, oil and alkalis. Temperature stable from -40 to +80 °C.

Type	Symbol	∅ (mm)	Art. No.	Pack Qty.	€
a	Wear eye protection	100	**NK21.1**	1	2,80
a	Wear eye protection	200	**NK22.1**	1	4,85
b	Wear respiratory protection	100	**NK23.1**	1	3,20
b	Wear respiratory protection	200	**NK24.1**	1	4,90
c	Wear ear protection	100	**NK26.1**	1	3,15
c	Wear ear protection	200	**NK27.1**	1	4,85
d	Wear protective headgear	100	**NK28.1**	1	3,20
d	Wear protective headgear	200	**NK29.1**	1	4,90
e	Wear protective gloves	50	**NK30.1**	1	2,10
e	Wear protective gloves	100	**NK31.1**	1	2,80
e	Wear protective gloves	200	**NK32.1**	1	4,85
f	Wear protective footwear	100	**NK33.1**	1	3,20
f	Wear protective footwear	200	**NK34.1**	1	4,90
g	Wear mask	100	**NK35.1**	1	3,20
g	Wear mask	200	**NK36.1**	1	4,90
j	Wear protective clothing	100	**NK37.1**	1	3,20
j	Wear protective clothing	200	**NK38.1**	1	4,90
l	Wash hands	100	**NK39.1**	1	3,20
l	Wash hands	200	**NK40.1**	1	4,90
m	Wear face shield	100	**NK41.1**	1	3,20
m	Wear face shield	200	**NK42.1**	1	4,90
n	Wear protective apron	100	**NK43.1**	1	3,20
o	Wear safety vest	100	**NK45.1**	1	3,20
p	Apply skin protection creme	100	**NK46.1**	1	3,20
r	Follow instructions	100	**NK47.1**	1	3,20
s	Use footpath	200	**NK48.1**	1	4,90

Sekuroka®-mandatory signs

Field-proven, self-adhesive PVC foil, 0.1 mm, with permanent-glue and colour-fast print.

Type	Symbol	∅ (mm)	Art. No.	Pack Qty.	€
h	Protective cap must be used	100	**N419.1**	1	3,50
h	Protective cap must be used	200	**L252.1**	1	5,95

Sekuroka®-prohibition symbols to ISO 7010

To ASR A1.3, DIN EN ISO 7010.
Self-adhesive film. Adhere permanently to clean, grease-free and smooth surfaces. Resistant to many chemicals. Temperature stable from -40 to +80 °C. Suitable for indoor use. Minimum bonding temperature +10 °C.
Material thickness approx. 0.08 to 0.55 mm.

Type	Symbol	∅ (mm)	Art. No.	Pack Qty.	€
a	No smoking	100	**YX32.1**	1	3,05
a	No smoking	200	**YX33.1**	1	4,85
b	Fire, naked flame and smoking prohibited	200	**0204.1**	1	5,35
b	Fire, naked flame and smoking prohibited	400	**0205.1**	1	12,85
c	Not drinking water	100	**YX34.1**	1	3,05
d	No eating or drinking	200	**YX35.1**	1	4,85
e	No pedestrian access	200	**YX36.1**	1	4,85
f	No storage permitted	200	**YX37.1**	1	4,85
g	Do not touch	200	**YX38.1**	1	4,85
h	Do not enter	200	**YX39.1**	1	4,85
i	No mobile phones	200	**X450.1**	1	5,50
k	No access for persons with pacemakers or implanted defibrillators	200	**YX40.1**	1	4,85
l	No photography	200	**YX41.1**	1	4,85

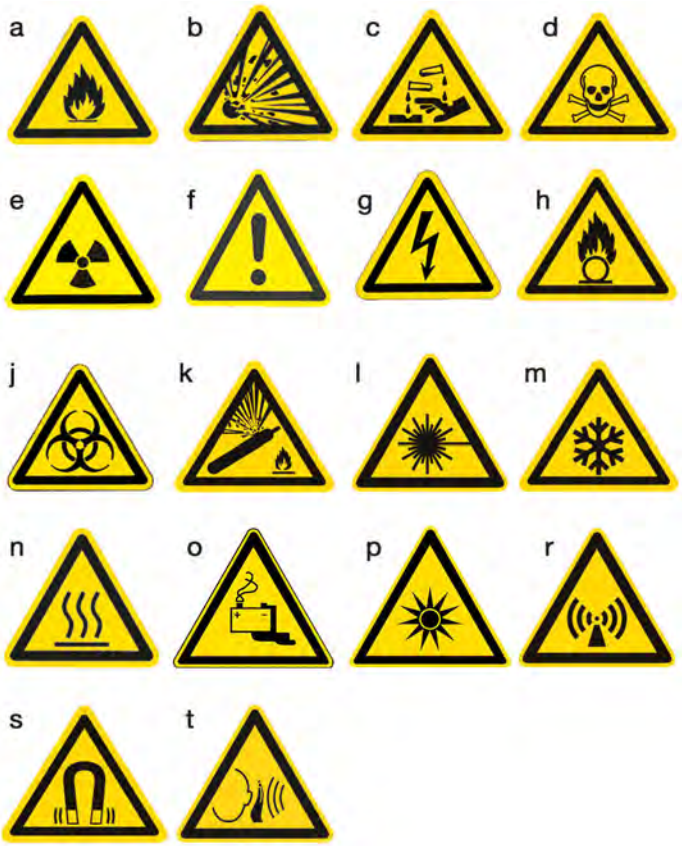
Sekuroka®-prohibition signs, double-sided
Self-adhesive films for glass doors.

Type	Symbol	∅ (mm)	Art. No.	Pack Qty.	€
i	No mobile phones	100	**YX42.1**	1	12,85
a	No smoking	100	**YX43.1**	1	12,85

Sekuroka®-prohibition signs

Field-proven safety marking. Made of self-adhesive PVC foil, 0.1 mm, with permanent-glue and colour-fast print.

Type	Symbol	∅ (mm)	Art. No.	Pack Qty.	€
f	Access forbidden to all unauthorized persons	200	**H483.1**	1	5,35
h	Eating and drinking forbidden	200	**H486.1**	1	6,35



Warning symbols

Selection in accordance with ISO 7010, in accordance with ASR A1.3, or established through use in the industry.

Made of **PE film** with colourfast print. Self-adhesive warning symbol labels. Permanent. Resistant to water, oil and alkalis. Temperature resistant from -40 to +80 °C. Suitable for indoor use.

On sheets, 10 pc/sheet

Product	Warning against	Side length (mm)	Art. No.	Pack Qty.	€
c	Corrosive substances	50	**XL40.1**	1	9,95
e	Radioactive substances or ionising radiation	25	**XL42.1**	1	7,55
e	Radioactive substances or ionising radiation	50	**XL43.1**	1	8,75
f	Hazardous area	50	**XL44.1**	1	8,75
g	Hazardous electrical voltage	25	**XL45.1**	1	7,20
g	Hazardous electrical voltage	50	**XL46.1**	1	8,50
l	Laser beam	50	**XL47.1**	1	7,45
n	Hot surface	50	**XL48.1**	1	8,50
r	Non-ionising radiation	50	**XL49.1**	1	9,25

Individual labels

Product	Warning against	Side length (mm)	Art. No.	Pack Qty.	€
a	Flammable substances	100	**XL15.1**	1	3,80
a	Flammable substances	200	**TA07.1**	1	5,35
b	Explosive substances	200	**XL16.1**	1	5,35
b	Explosive substances	300	**0458.1**	1	9,65
c	Corrosive substances	100	**EYH2.1**	1	3,80
c	Corrosive substances	200	**EYH3.1**	1	5,35
d	Toxic substances	100	**XL19.1**	1	3,80
d	Toxic substances	200	**EYH4.1**	1	5,35
e	Radioactive substances or ionising radiation	100	**XL21.1**	1	3,80
e	Radioactive substances or ionising radiation	200	**XL22.1**	1	5,35
f	Hazardous area	100	**XL23.1**	1	3,80
f	Hazardous area	200	**XL24.1**	1	5,35
f	Hazardous area	400	**0220.1**	1	10,70
g	Hazardous electrical voltage	100	**XL25.1**	1	3,80
g	Hazardous electrical voltage	200	**XL26.1**	1	5,35
h	Oxidising substances	100	**XL28.1**	1	3,80
h	Oxidising substances	200	**EYH5.1**	1	5,35
j	Biohazard	100	**XL29.1**	1	3,80
j	Biohazard	200	**H489.1**	1	5,35
k	Gas cylinders	100	**EYH6.1**	1	3,80
k	Gas cylinders	200	**EYH7.1**	1	5,35
l	Laser beam	100	**EYH8.1**	1	3,80
l	Laser beam	200	**XL31.1**	1	5,35
l	Laser beam	300	**H498.1**	1	6,40
m	Low temperature/frost	100	**EYH9.1**	1	3,80
m	Low temperature/frost	200	**EYK0.1**	1	5,95
n	Hot surface	100	**XL33.1**	1	3,80
n	Hot surface	200	**K214.1**	1	5,35
o	Hazards due to batteries	100	**XL34.1**	1	3,80
p	Optical radiation	100	**XL35.1**	1	3,80
r	Non-ionising radiation	100	**EYK1.1**	1	4,55
r	Non-ionising radiation	200	**XL36.1**	1	5,35
s	Magnetic field	100	**EYK2.1**	1	4,55
s	Magnetic field	200	**XL37.1**	1	5,35
t	Sudden loud noise	100	**EYK3.1**	1	4,55

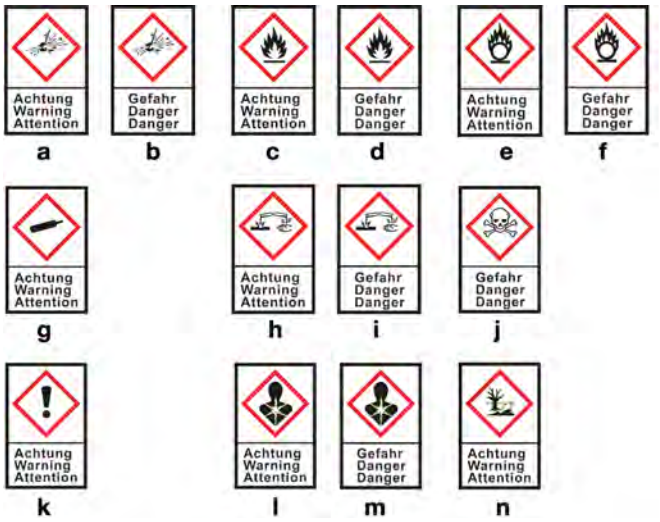
On a roll, 500 pc/roll

Product	Warning against	Side length (mm)	Art. No.	Pack Qty.	€
l	Laser beam	25	**XL50.1**	1	57,00
n	Hot surface	25	**XL52.1**	1	57,00
n	Hot surface	50	**XL53.1**	1	75,15

Warning symbols – Established individual labels

Self-adhesive. Made of PVC film with colourfast print. Permanent. Resistant to water, oil and alkalis. Temperature resistant from -40 to +80 °C. Suitable for indoor use.

Type	Warning against	Side length (mm)	Art. No.	Pack Qty.	€
a	Harmful or irritant substances	200	**H490.1**	1	5,35
b	Explosive atmosphere	100	**EYK5.1**	1	4,55
b	Explosive atmosphere	200	**XL27.1**	1	5,35
b	Explosive atmosphere	400	**H487.1**	1	10,70
c	UV radiation	100	**EYK6.1**	1	4,55



GHS hazardous substances labels

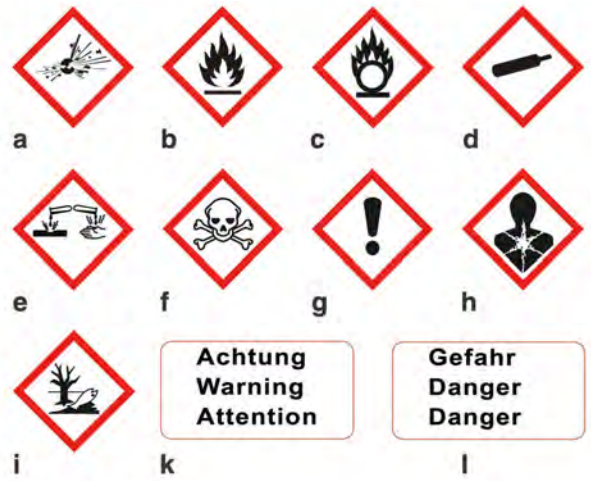
High-glossy **PE-foil**, 100 µm thick. permanent adhesive, waterproof, temperature stable from -20 to +80 °C. Signal words trilingual: German, English, French. 250 per roll in practical dispenser box.

Dimensions: W 22 x H 30 mm

Image	Pictogram/signal word	Code	Art. No.	Pack Qty.	€
a	Exploding bomb/Warning	GHS01	**LN47.1**	250	10,60
b	Exploding bomb/Danger	GHS01	**LN48.1**	250	10,60
c	Flame/Warning	GHS02	**LN49.1**	250	10,60
d	Flame/Danger	GHS02	**LN50.1**	250	10,60
e	Flame over circle/Warning	GHS03	**LN51.1**	250	10,60
f	Flame over circle/Danger	GHS03	**LN52.1**	250	10,60
g	Gas cylinder/Warning	GHS04	**LN53.1**	250	10,60
h	Chemical burns/Warning	GHS05	**LN54.1**	250	10,60
i	Chemical burns/Danger	GHS05	**LN55.1**	250	10,60
j	Skull and crossbones/Danger	GHS06	**LN56.1**	250	10,60
k	Exclamation mark/Warning	GHS07	**LN57.1**	250	10,60
l	Health hazard/Warning	GHS08	**LN58.1**	250	10,60
m	Health hazard/Danger	GHS08	**LN59.1**	250	10,60
n	Environment/Warning	GHS09	**LN60.1**	250	10,60

Dimensions: W 27 x H 40 mm

Image	Pictogram/signal word	Code	Art. No.	Pack Qty.	€
a	Exploding bomb/Warning	GHS01	**LN61.1**	250	14,45
b	Exploding bomb/Danger	GHS01	**LN62.1**	250	14,45
c	Flame/Warning	GHS02	**LN63.1**	250	14,45
d	Flame/Danger	GHS02	**LN64.1**	250	14,45
e	Flame over circle/Warning	GHS03	**LN65.1**	250	14,45
f	Flame over circle/Danger	GHS03	**LN66.1**	250	14,45
g	Gas cylinder/Warning	GHS04	**LN67.1**	250	14,45
h	Chemical burns/Warning	GHS05	**LN68.1**	250	14,45
i	Chemical burns/Danger	GHS05	**LN69.1**	250	14,45
j	Skull and crossbones/Danger	GHS06	**LN70.1**	250	14,45
k	Exclamation mark/Warning	GHS07	**LN71.1**	250	14,45
l	Health hazard/Warning	GHS08	**LN72.1**	250	14,45
m	Health hazard/Danger	GHS08	**LN73.1**	250	14,45
n	Environment/Warning	GHS09	**LN74.1**	250	14,45



Combinable GHS hazard pictograms

High-gloss **PE-film**, thickness 100 µm. Permanent adhesive, waterproof, temperature stable from -20 to +80 °C.
250 pce. per roll in a handy dispenser box.

Pictograms without signal word, label size 22 x 22 mm.

Image	Pictogram/signal word	Code	Art. No.	Pack Qty.	€
a	Exploding bomb	GHS01	**NP43.1**	250	11,60
b	Flame	GHS02	**NP44.1**	250	11,60
c	Flame over circle	GHS03	**NP45.1**	250	11,60
d	Gas bottle	GHS04	**NP46.1**	250	11,60
e	Burns	GHS05	**NP47.1**	250	11,60
f	Skull	GHS06	**NP48.1**	250	11,60
g	Exclamation mark	GHS07	**NP49.1**	250	11,60
h	Health hazard	GHS08	**NP50.1**	250	11,60
i	Environment	GHS09	**NP51.1**	250	11,60

Signal words in three languages: German, English and French.
Label size: W 27 x H 15 mm.

Image	Pictogram/signal word	Art. No.	Pack Qty.	€
k	Caution	**NP52.1**	250	12,85
l	Hazard	**NP53.1**	250	12,85

GHS hazard symbols assortment

High-gloss, self-adhesive **PE film**, thickness 100 µm.
Permanent adhesive, waterproof, temperature stable from -20 to +80 °C.
20 labels per sheet, sorted by frequency of use.

Type	Label size (mm)	Art. No.	Pack Qty.	€
Hazard symbols GHS01-GHS09	22 x 22	**ATY6.1**	500	60,35
Signal words for caution/hazard	27 x 15	**ATY7.1**	500	93,00

Sekuroka®-labels

For wash bottles and reagent bottles. Suitable for ordinary laboratory use. Made of PVC, dimensions L 105 x W 75 mm. With the name of substance and hazard pictograms. Trilingual: German, English, French.

Label	Art. No.	Pack Qty.	€
acetone	**8416.1**	10	11,10
destilled water	**8420.1**	10	11,10
ethanol	**8419.1**	10	11,10
isopropanol	**8430.1**	10	11,10

Labels on DIN A4 sheets

Rectangular labels, white, matt.

Standard paper labels

With permanent adhesive. Suitable for laser, colour and inkjet printers, as well as copiers.

W x H (mm)	Labels/sheet	Art. No.	Pack Qty. (sheets)	€
70 x 50,8	15	**HY36.1**	100	21,45
105 x 74	8	**HY37.1**	100	21,45
105 x 148	4	**HY38.1**	100	21,45

Impregnated paper labels

Made of wood-free paper, with high-strength rubber-based adhesive. Latex-impregnated surface is water repellent. Suitable for laser printers and copiers. Temperature stable from -5 to +80 °C

W x H (mm)	Labels/sheet	Art. No.	Pack Qty. (sheets)	€
70 x 50,8	15	**NK99.1**	30	32,05
105 x 74	8	**NL00.1**	30	32,05
105 x 148	4	**NL01.1**	30	32,05

Chemical resistant PET labels

Made of polyester film, with permanent acrylic adhesive. Suitable for laser printers, copiers and inkjet printers (with solvent based inks only). Weather resistant and suitable for outdoor use. Saltwater resistant and resistant to many solvents, diluted acids and alkalis. Temperature stable from -20 to +100 °C

W x H (mm)	Labels/sheet	Art. No.	Pack Qty. (sheets)	€
70 x 50,8	15	**NL02.1**	30	31,10
105 x 74	8	**NL03.1**	30	31,10
105 x 148	4	**NL04.1**	30	31,10

Document boxes

By Justrite. Made of HDPE, stable and weatherproof. Safe storage of safety datasheets, directives, manuals, among other things documents at hand at the work place.

- Protection against moisture and dust
- With front flap
- Field for writing labels on the lid
- High visibility due to bright red colour
- Large box suitable for a narrow A4 folder
- Securing with padlock possible (feed-through opening ∅ 10 mm)
- Wall fastening through screws or adhesive tape

Delivery incl. doubled-sided adhesive tape for simple installation.

Type	Outer dimensions (mm) W x D x H	Inner dimensions (mm) W x D x H	Art. No.	Pack Qty.	€
Medium	279 x 54 x 368	219 x 25 x 311	**HNN3.1**	1	120,40
Large	333 x 90 x 400	273 x 57 x 337	**HNN4.1**	1	143,00

Pyracidosorb-ROTH®

For neutralizing acids. With colour indicator.
1 kg absorbs approx. 0.3 l concentrated sulphuric acid, 0.6 l concentrated nitric acid and 1 l concentrated hydrochloric acid.

Warning H319

Art. No.	Pack Qty.	€
0411.1	5 kg	44,65

Basosorb

For **neutralizing alkaline** solutions. With colour indicator. 1 kg absorbs approx. 1 l concentrated ammonia solution (25 %), 1 l concentrated potassium hydroxide (50 %) and ¾ l concentrated sodium hydroxide (50 %).

Warning H319

Art. No.	Pack Qty.	€
3287.1	5 kg	69,35

Universal absorber Rotisorb®

Ideal for absorption of inflammable, oily, and aggressive liquids such as anorganic and organic acids, alkaline solutions, alcohols, aldehydes, amines, esters, aromatic, chlorinated and aliphatic hydrocarbons, substance compounds, e. g. paint, heating oil, fuels, lacquers, motor lubricants.

Art. No.	Pack Qty.	€
1710.1	800 g (in square HDPE container)	24,55
1710.2	25 kg (in PE flat bag)	89,15

Sekuroka®-safety station

Wall shelf made from galvanised sheet steel.
Yellow orange (RAL 2000). W 530 x H 300 x D 220.
Delivery incl. 3 special absorbents for acids, alkali and solvents (0411.1, 3287.1 and 1710.1), plastic bags, dustpan and brush.

Warning H319

Art. No.	Pack Qty.	€
1288.1	1	247,25

Entsorger-Set-ROTH® (Disposal-Kits)

Ideal for absorbing and disposing spilled chemicals.
Contents: absorbent and neutralizer, safety glasses, scoop and brush, sponge, disposal bags with clips and labels.

Acids and alkali

5 kg Pyracidosorb-ROTH®, 5 kg Basosorb

Warning H319

Art. No.	Pack Qty.	€
1808.1	1 kit	121,50

Organic solvents

2 x 800 g universal absorber Rotisorb®

Art. No.	Pack Qty.	€
1803.1	1 kit	87,10

Fluoric acid

2-component system for neutralizing spilt hydrofluoric acid. Set contains: substances to mix. 1.5 l FLUOROSORB-ROTH® component A, 1 l FLUOROSORB-ROTH® component B with pH indicator, 800 g universal absorber Rotisorb®.

Component A (art. no. H066.1): WGK 1

Art. No.	Pack Qty.	€
1804.1	1 kit	112,90
H066.1	FLUOROSORB-ROTH®, Component A	24,20
H067.1	FLUOROSORB-ROTH®, Component B	30,65

Disposal-Mix

Warning H319

Art. No.	Pack Qty.	€
0055.1	1 kg Pyracidosorb-ROTH®, 1 kg Basosorb, 400 g Rotisorb®	89,25

ROTH® Mercurisorb

Contains silver nitrate. For speedy and easy absorption of mercury. Emits no more vapours after absorption. Absorption capacity 1:1.

Emergency kit (in plastic case or in a box).
Delivery incl. 100 g Mercurisorb-ROTH®, scoop, brush, pasteur pipettes, empty vessel.

Danger H314-H410

Art. No.	Pack Qty.	€
9461.1	1 Emergency kit in plastic case	89,80
9461.4	1 Emergency kit in carton	70,45
9461.2	1 Refill pack Mercurisorb-ROTH® 250 g, plastic	116,65
9461.3	1 Refill pack Mercurisorb-ROTH® 1 kg, plastic	450,45

Mercury is, at room temperature, a liquid metal, (freezing point -38.84 °C, boiling point 356.95 °C). Saturation pressure at room temperature is only 0.0013 mm. Mercury vapours are highly toxic and can often lead to chronic mercury poisoning. Inhaled mercury accumulates in the human organ's and can be secreted only very slowly with the urine. Mercury should therefore always be stored in closed containers and should only be used in well-ventilated rooms with a respiratory filter (e.g. screw-top filter Hg-P3 up to 0.5 Vol %).

Mercury collector

Mercury is absorbed by a specially-designed foamed insert inside the collector. When the collector is screwed down the pellets loosen, fall through a perforated separating disc and can be reused.

Type	Art. No.	Pack Qty.	€
Mercury collector	**P941.1**	1	25,75
Spare foamed insert	**P942.1**	1	4,85

UNI-SAFE chemical and oil binder

All-in-one binder!
Polymer-based all-purpose chemical and oil binder. Suitable for absorbing and containing liquids such as acids, alkalis, oils, fuels, brake fluid etc., but also battery acid, coolant, oil-water mixtures, paints and lacquers. Also suitable for strong oxidants, such as fuming nitric acid and peroxides.

- High absorption capacity
- No hazardous reactions
- Dam-forming

Absorption capacity of aqueous media up to 1:75
Oil binder type III/R (suitable for paved traffic areas), 1 kg binds 0.56 l heating oil
Applications: laboratories, chemical and commercial operations, transportation of hazardous materials, emergency vehicles, etc.

UNI-SAFE

Art. No.	Pack Qty.	€
EAA8.1	800 g laboratory pack	42,95
EAA8.2	5 kg bucket	160,20

UNI-SAFE Plus fine granulate with reduced formation of dust

Art. No.	Pack Qty.	€
EYY5.1	700 g laboratory pack	45,05
EYY5.2	5 kg bucket	165,55

Oil sorbent

By 3M. Ideal for absorbing and containing oil and organic liquids. Is also oleophilic (hydrophobic) and water repellent. Ideal for absorbing oil both on water and on land. Made of synthetic fibres (polypropylene and polyester) for use indoors and out.

Type	3M No.	Dimensions (cm)	Absorption capacity (l)	Art. No.	Pack Qty.	€
Wipes	HP255	48 x 43	2,0	**A377.1**	10	32,90
Mini hose	T4	∅ 7,5 x 120	3,75	**E186.1**	1	17,15

Oil binder Penta 99

Fast-acting and highly effective fine granulate for absorbing oil, waste oil, grease, lubricants, fuels, paints and lacquers and other nonpolar organic liquids on firm surfaces. Stays hard and slip-resistant after use and can easily be removed. Do not use in combination with acids and oxidants.

- Oil binder type III/R (suitable for traffic surfaces)
- Calcium silicate hydrate based
- Oil absorption capacity: approx. 60 % fuel oil by weight
- Bulk weight: approx. 545 g/l.

Type	Art. No.	Pack Qty.	€
40 l bag (approx. 21 kg)	**CTC2.1**	1	39,25

Öcu-Sorb fleece-wipes T-33

For fast and dust-free absorption of **oil and organic, non-aggressive liquids**. Water-repellent, floatable, so ideal in water.
Absorption capacity per cloth approx. 260 ml. Cloth size 30 x 30 cm.

Art. No.	Pack Qty.	€
5128.2	50	38,60

Laboratory emergency kit

By 3M. Absorption capacity for approx. 5 l of spilled liquids.
Contents: 10 sorbent pads, 1 sorbent pillow, 1 waste disposal bag.

Art. No.	Pack Qty.	€
AKX3.1	1	62,25

Chemicals absorbant fleece

By 3M. Ideal for absorbing and containing **agressive** liquids, such as acids, bases, ketones, alcohols, aromatic compounds, glycols, hydrocarbons.
High absorption capacity.

Type	Length (mm)	Width (cm)	∅ (mm)	Capacity	Art. No.	Pack Qty.	€
Pillows	23	38	-	2 l	**2888.1**	4	64,45
Wipes	28	33	-	0,25 l	**2920.1**	50	63,20
Tube	120	-	75	3,75 l	**2930.1**	1	34,95

Industrial sorbent

By 3M. Ideal for absorbing and containing **non-agressive liquids** such as oil, coolants, lubricants and emulsions. High absorption power. Easy disposal, recovery of absorbed liquid possible. When folded, the fleece looks like a tube, when unfolded once like a pillow and a second time similar to a wipe. Perforated every 40 cm. Length 15 m, width 12 cm.
Total absorption approx. 34 l, comes in dispenser.

Art. No.	Pack Qty.	€
E391.1	1	66,60

Warning sign Danger of slipping

Made of PE. Acc. to ASR A 1.3/BGV A8/DIN 4844.
Warning sign "Warning of danger of slipping", two languages German and English. Colour yellow, printed on both sides. Easy to fold and transport.

Art. No.	Pack Qty.	€
HLL6.1	1	21,40

Benchtop waste container

Practical and space-saving. Ergonomic design with large opening for easy disposal of articles.
- Slip-resistant rubber feet for secure positioning on the lab bench
- Lid can be secured in open position
- Extra-large lid rim for easy opening
- The divider can be removed from the green waste container as required
- Wall mountable

Delivery incl. mounting kit.

Type	Volume (l)	Dimensions: W x D x H (mm)	Art. No.	Pack Qty.	€
1 compartment, blue	4	155 x 155 x 170	**AXL3.1**	1	75,15
2 compartments, green	5	180 x 155 x 165	**AXL4.1**	1	74,10

Mini safety bins

Acc. to BGR 250/TRBA 250: biological substances in the health sector and welfare work.
Made of PP, bright yellow. With sealing lid and removal device for needles/syringes. Ideal when on the go, fits in all doctor's bags, emergency kits, or labcoat pockets. The reinforced base prevents the needles from piercing through. Height 115 mm, ∅ 50 mm, volume 170 ml.

Art. No.	Pack Qty.	€
HA52.1	10	15,60

Sekuroka®-waste disposal bins

Made of PP, shock and perforation proof. Ideal for safe collection of sharp, dangerous or infected waste such as needles, Petri dishes, syringes, scalpels, etc. Autoclavable up to 134 °C (18 min.).
- Acc. to DIN EN ISO 23907, TRBA 250, AFNOR NX30-500, BS 7320
- Waterproof when vertical
- With handle for safe transport
- Large opening with transparent inner chamber and automatic closure which prevents vapours from escaping to the ambient air
- Lid of outer chamber has two positions: temporary or permanent closure
- Distinct maximum level mark
- Label is the indelibly stamped into the container
- Container can be autoclaved when open

1 l bin with pull-off device for insulin pens, Luer-Lock syringes and Luer-Slip syringes. Label in German/French/Italian/Spanish/English.

2, 4 and 7 l bins with pull-off device for all needle types as well as insulin pens and scalpel blades. Label in German/French/Italian/Spanish/English.

9 and 13 l bins with pull-off devices for all needle types and scalpel blades. With wide horizontal opening for large quantities of waste such as 60 or 90 mm ∅ Petri dishes. Label in French/Dutch.

9h l bin, high type, specially designed for pipettes and long instruments.

24 and 30 l bins with pull-off device for scalpels and universal pull-off device as well as wide non-return trap for the disposal of bulky waste. Label in English.

Volume (l)	L x W x H (mm)	Opening (mm)	Art. No.	Pack Qty.	€
1	108 x 90 x 180	55 x 35	**YK90.1**	10	25,75
2	195 x 120 x 180	55 x 50	**PA88.1**	5	14,95
4	175 x 175 x 245	55 x 50	**E812.1**	5	18,25
7	175 x 175 x 380	55 x 50	**E813.1**	5	24,65
9	292 x 195 x 291	210 x 60	**HT25.1**	5	35,35
9h	175 x 175 x 498	55 x 50	**YK91.1**	5	35,15
13	292 x 195 x 353	210 x 60	**HT26.1**	5	46,05
24	450 x 230 x 335	365 x 95	**YK92.1**	1	18,10
30	450 x 230 x 415	365 x 95	**YK93.1**	1	21,90

Accessories for Sekuroka®-waste disposal bins

Stand made of PP, self-adhesive.
For safe mounting of the waste disposal bin on a level surface.

Suitable for bins	Art. No.	Pack Qty.	€
1 litre	**YK94.1**	1	7,50
2 litres	**PA89.1**	1	9,60
4 litres, 7 litres and 9h	**KA66.1**	1	10,00
9 and 13 litres	**KA67.1**	1	10,70

Wall hook. Made of stainless steel.

Suitable for bins	Art. No.	Pack Qty.	€
2, 4 and 7 litres	**YK97.1**	1	22,40

Laminar flow stand. Made of stainless steel.
Stand for use of the waste disposal bin under laminar flow.

Suitable for bins	Art. No.	Pack Qty.	€
4 litres, 7 litres and 9h	**YK98.1**	1	20,90

Trays made of PP, with storage compartments.
Suitable for 1 and 2 litre bins.

Type	L x W x H (mm)	Art. No.	Pack Qty.	€
with 1 storage compartment	280 x 260 x 45	**YK95.1**	1	9,15
with 2 storage compartments	355 x 290 x 45	**YK96.1**	1	7,50

A 121 °C

Biohazard waste collection containers

From Nalgene®. Made of **PP**. For collecting and storing biohazardous waste materials. For easy sterilisation in a single operation. It is not necessary to remove the autoclavable bag. Opening in lid makes for safe disposal. Wall and base of container are **leak-proof**. Autoclavable.

Volume (l)	Outer ∅ x H (mm)	Matching bag	Art. No.	Pack Qty.	€
5,5	210 x 270	KN77.1	**APL8.1**	1	165,55
19	280 x 380	KN78.1	**APL9.1**	1	266,60
67	330 x 690	A192.1, 0385.1	**APN0.1**	1	317,15

Multi-Safe euroMatic®-waste disposal bins

Made of PP. With self-opening, automic lid. For the disposal of pointed and sharp objects (needles, scalpels, broken glass etc.).
With detaching device, e.g. for scalpels.
Single-hand operation: lid lifts automatically when button is pressed and can be opened and closed repeatedly. The slit is not secured or tightly closed until after the final closure. A retaining ring then automatically moves to an upright position and serves as a handle.
Compliant with: TRBA 250, AFNOR, DIN EN ISO 23907.
With UN inspection number. Oval opening ∅: 110 x 60 mm, standing area: 132 x 132 mm, filling: max. 85 %.

Volume (l)	Dimensions with lid L x W x H (mm)	Art. No.	Pack Qty.	€
3,0	173 x 173 x 185	**EL18.1**	5	22,05
4,0	173 x 173 x 245	**EL19.1**	5	23,60
6,0	173 x 173 x 330	**EL20.1**	5	29,90
7,0	173 x 173 x 390	**EL21.1**	5	29,60

Multi-Safe twin waste disposal bin

Made of PP. Conforms to: TRBA 250, DIN EN ISO 23907.
- Universal extractor for the disposal of needles, scalpels, disposable syringes, tubing, etc.
- The size of the slot can be gradually enlarged by breaking out the flaps (except for E329.1)
- All-round sealing rim and double lid
- Lid can always be reopened by closing the lid to the first locking position
- A secure final seal is obtained by pushing the lid through to the second locking position
- With UN inspection number
- Oval slot: 55 x 106 mm (except for E329.1, round ∅ 50 mm)
- Filling capacity: max. 85 %

Volume (l)	∅ base/lid (mm)	Height (mm)	Opening ∅ (mm)	Art. No.	Pack Qty.	€
0,7	77/98	135	50	**E329.1**	20	27,45
1,8	112/143	162	55 x 106	**E330.1**	20	37,10
2,1	112/143	186	55 x 106	**E331.1**	10	24,70
3,0	112/143	259	55 x 106	**T709.1**	5	17,15

Medibox® disposable bins

By B. Braun. Made of PP. Complies with TRBA 250. Waste container for the disposal of needles and sharp objects in medical environments and laboratories.
- No-touch insertion of needles and scalpel blades
- Break-proof, stable and puncture-proof
- Lid can be temporarily or permanently closed
- Visible content level on side to monitor for overfill
- Application explained using pictograms on label

Type	Max. filling cap. (l)	W x D x H (mm)	Art. No.	Pack Qty.	€
Medibox® 0,7 l	0,6	114 x 74 x 130	**PA97.1**	10	30,65

Broken glass disposal boxes

For safe collection and disposal of broken glass materials.

- Made of extra-strength cardboard, with a 50 µm thick PE-insert bag to prevent residual fluid from escaping
- Large flap in lid for simple filling
- Seal safety lid for disposal when box is full
- Printed in four languages (German, English, French and Spanish)
- Folded flat for space-saving storage
- 2 sizes; small container suitable for the lab bench

Type	Max. loading weight (kg)	Dimensions W x D x H (cm)	Art. No.	Pack Qty.	€
small	5.5	20 x 20 x 25	**KN69.1**	6	60,85
large	18	30 x 30 x 69	**KN70.1**	6	98,05

A 121 °C

Waste bins

By Nalgene®. **Autoclavable**, made of polypropylene for safe handling of biologically harmful substances. Ideal for storing and sterilizing waste, clothing, lab articles, appliances and contaminated materials. Complies with OSHA-standard 29 CFR part 1910.1030 for use as protection against disease-causing agents in blood. With recessed handles.
Note: lid must be removed before autoclaving. Thermal conductivity of plastic (as compared to that of metal and glass) and the large volume of the container may lead to requiring longer autoclaving times. Duration of autoclaving to achieve sterility also depends upon the material being autoclaved and users own experience.

Volume (l)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
45	356	584	**H985.1**	1	305,30

Disposal boxes

For all types of waste that is neither pointed nor sharp (e.g. full safety bins for needles) and not fluid (e.g. swabs and for compresses).

- Made of cardboard with 2 hand grips
- Cardboard is 6 mm thick
- LDPE bag insert is 60 µm thick to extensively prevent residual fluids running out
- Bag closure made of PP
- Cable ties as final seal in lid
- Capacity 50 l
- Printed in four languages (German, English, French and Dutch)
- UN authorization 4G/Y18
- Maximum net weight 13 kg
- Dimensions: 400 x 300 x 500 mm

Art. No.	Pack Qty.	€
LP22.1	10	57,45

Wide neck barrels

By CurTec. Made of **HDPE**, with rubber seal. UN-approval (X-approval) for storage and transport of solid materials and pastes. Approved for food, chemical and pharmaceutical products. Impermeable to air, water and water vapours. Art. No. CY90.1 to 5459.1 with handles.
Maximum filling temperature is 80 °C. Sealable.

Volume (l)	∅ (mm)	Neck inner ∅ (mm)	Height (mm)	UN approval	Art. No.	Pack Qty.	€
3,6	198	136	173	1H2/X12/S	**K280.1**	1	14,55
6,4	198	136	265	1H2/X20/S	**0788.1**	1	17,75
10,4	274	204	239	1H2/X22/S	**L958.1**	1	27,45
15,4	274	204	328	1H2/X22/S	**0789.1**	1	32,05
20	274	204	418	1H2/X27/S	**L959.1**	1	35,50
26	316	204	426	1H2/X33/S	**0790.1**	1	39,60
42	410	282	416	1H2/X51/S	**CY90.1**	1	56,55
55	410	282	518	1H2/X66/S	**CY91.1**	1	62,25
68,5	410	282	632	1H2/X81/S	**5459.1**	1	64,45

▶ Scoops see page 199

Safety waste disposal systems

By Nalgene®. Made of break-resistant (fluorinated) HDPE. For temporary storage of chemical, biological and solvent waste. System consists of waste container and removable safety funnel with lid.

- Reduces emission‘s of volatile substances in the laboratory
- The funnel has a large diameter for easy filling
- Easy-Snap-safety lock on lid minimises spillage should the system fall over accidentally
- Integrated ventilation valve with PTFE-syringe filter on cover adapter accelerates the flow of the chemicals and prevents any overflowing
- Removable sieve insert (PP) on bottom of funnel stops particles from falling through

Materials: 4 l-container HDPE, 10 l-container FLPE, funnel and lid HDPE.

Bottle volume (l)	∅ of funnel at top (mm)	Length of funnel tube (mm)	Art. No.	Pack Qty.	€
4	140	254	**EL99.1**	1	87,65
10	254	254	**EN00.1**	1	131,15

Sekuroka®-waste disposal cans

For storing and transporting aggressive waste in the laboratory.

Advantages:

- High stability
- Glass insert made of borosilicate glass 3.3, resistant against almost all chemicals. The glass meets the requirements of hydrological class 1, acidic class 1, caustic class 2 in compliance with DIN 12111, 12116, 52322
- With screw cap, overpressure protection and handle
- Red-coated enclosure
- Hazardous goods - label

Filling volume (l)	Height (mm)	Outside ∅ (mm)	Neck inner ∅ (mm)	Art. No.	Pack Qty.	€
4	360	230	87	**1397.1**	1	446,15
8	420	265	87	**1398.1**	1	478,40

Safety funnels

By Nalgene®. Made of HDPE, with lid.

- The funnel has a large diameter for easy filling
- Easy-Snap-safety lock on lid minimises spillage should the canister fall over accidentally
- Integrated ventilation valve with PTFE-syringe filter on cover adapter accelerates the flow of the chemicals and prevents any overflowing
- Removable sieve inserst (PP) on bottom of funnel stops particles from falling through
- Cover adapter can be removed for cleaning

Please order matching bottles separately:
4 l-bottle (Art. No. C475.1) fits small funnel
10 l-bottle (Art. No. C476.1) fits large funnel

∅ of funnel at top (mm)	Length of funnel tube (mm)	Art. No.	Pack Qty.	€
140	254	**EN01.1**	1	63,35
254	254	**EN02.1**	1	66,65

Safety canisters Poly Can

By Justrite. Made of chemical-resistant HPE.
Lid and flame protection made of stainless steel.

- Safe storage and distribution of flammable fluids
- Very robust container with extra-strong walls
- Self-closing lid
- Operation via lever at handle
- Automatic pressure compensation
- **Carbon Insert** - a patented system connects the flame protection on the inside with the earth connection on the outside
- Can be earthed using an earthing cable
- Space-saving, oval shape
- Red colour

Volume (l)	Type	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
2	oval	194 x 117 x 241	**HNP1.1**	1	109,15
4	oval	194 x 117 x 324	**HNP2.1**	1	119,35

Safety collecting canister Safety Can

By Justrite. Made of chemical-resistant HPE. Lid, handle and flame protection made of stainless steel.

- Safe collection and storage of flammable liquids
- Very robust container with extra-strong walls
- Lid with spring, vents at overpressure (between 0.2 and 0.35 bar)
- Snap-in system holds the cover flap in the open position when filling
- The large opening makes filling easy
- **Carbon Insert** - a patented system connects the flame protection on the inside with the earth connection on the outside
- Can be earthed using an earthing cable
- Secure stand through round compact form
- Red colour

Volume (l)	Type	∅ x H (mm)	Art. No.	Pack Qty.	€
7,5	Round	305 x 375	**HNP3.1**	1	330,05
19	Round	305 x 508	**HNP4.1**	1	297,80

Sekuroka®-safety funnels for plastic canisters

Made of stainless steel, unpolished. Seal made of Alveocel (polyolefin foam). With lid, overfill protection and flame arrester, as well as earth connection. Can be screwed onto plastic canisters. Height 125 mm, funnel head ∅ 140 mm.
Delivery without screen filter insert (please order separately).

Type	Art. No.	Pack Qty.	€
Closure size DIN 50	**ATA6.1**	1	176,30
Closure size DIN 61	**ATA7.1**	1	178,45

Accessories: screen filter insert for Sekuroka® safety funnels for plastic canisters

Suitable for safety funnels: K345.1, ATA6.1 and ATA7.1, as well as for insertable funnels PC04.1 and PC13.1.

Art. No.	Pack Qty.	€
ATA8.1	1	13,45

Safety collection containers for flammable liquids

For safe collection of flammable liquids.
Made of high-grade stainless steel (1.4571=V4a, unpolished), wall thickness: 0.8 mm. High stability. Capacity 10 l. Cap size: IG2″ fine pitch thread, with PTFE seal, without flame arrester.
Dimensions: H 330 x ∅ 260 (mm) (incl. ring).
Usable with Sekuroka® stainless steel funnel K345.1.
With level indicator for ATA3.1.

Delivery without accessories (please order separately).

Type	Art. No.	Pack Qty.	€
① without level indicator	**ATA2.1**	1	253,70
② with level indicator	**ATA3.1**	1	453,65

Accessories for 10 l safety collection containers

Made of stainless steel (1.4301=V2a).
For safe filling and draining of containers. Fits 10 l safety collection container, Rotitainer® and other drums with cap with 2″ fine pitch thread.
Safety funnel: H 125 x ∅ 140 mm
Spout: H 180, tube ∅: 40 mm

Type	Art. No.	Pack Qty.	€
Sekuroka® stainless steel funnel	**K345.1**	1	178,45
Flame arrester	**ATA4.1**	1	66,65
Spout 2"	**ATA5.1**	1	55,90

Sekuroka®-high-grade steel funnel

With lid, overflow and flame safety device. The flame arrester which deeply penetrates the container prevents ignition sparks from entering. The hinged lid almost totally prevents harmful fumes from escaping and must be closed after each filling process. The overflow device causes an insulating air cushion to arise once the filling level has been reached.
The funnel contents do not drain. Contents only drain off when the funnel has been released. After draining, the funnel is removed and container closed. Opening app. 120 mm. Flame arrester approx. 150 mm long.
With 2″-Trisure®-thread. With PE sealing ring. Suitable for Rotitainers® and all other standard vessels with 2″-Trisure®-screw fittings.

Art. No.	Pack Qty.	€
K345.1	1	178,45

Sekuroka®-waste disposal stations

For collecting chemical waste. Canisters come in different colours for easy distinguishing of waste. The funnels come with a sieve on the inside to catch solids and level indicator.

4-place waste disposal station

Four canisters (10 l) made of HDPE with 4 funnels ∅ 120 mm and spillage tub made of PP.

Dimensions with open lids: L 870 x W 370 x H 610 mm.

Colour	Art. No.	Pack Qty.	€
assorted	**5074.1**	1	563,30

1-place waste disposal station

One canister (10 l) made of HDPE with one funnel ∅ 120 mm and spillage tub made of PP.

Dimensions with open lid: L 240 x W 370 x H 610 mm.

Colour	Art. No.	Pack Qty.	€
natural	**5084.1**	1	260,15
yellow	**5087.1**	1	260,15
green	**5090.1**	1	260,15
blue	**5096.1**	1	260,15

Sekuroka®-spare canisters

Made of HDPE, capacity 10 l. With handle and replacement ventilation screw. L 280 x W 180 x H 325 mm. Neck-∅ 42 mm.

Colour	Art. No.	Pack Qty.	€
natural	**A251.1**	1	27,75
yellow	**A252.1**	1	27,75
green	**A253.1**	1	27,75
blue	**A254.1**	1	27,75

Sekuroka®-spare spillage tubs

For 10 l canisters, grey.

Design	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
1-place	240 x 370 x 165	**P318.1**	1	197,30
4-place	870 x 370 x 165	**P319.1**	1	237,60

Sekuroka®-spare funnels

Made of PP, with integrated screw connection, collecting sieve, level indicator and self-closing lid. Diameter 120 mm.

Art. No.	Pack Qty.	€
5083.1	1	120,40

Sekuroka®-adapter

For funnel 5083.1. 2″-fine-pitch thread, to fit Roth-Rotitainer®-flasks.

Art. No.	Pack Qty.	€
9070.1	1	75,15

Waste disposal units, electro-conductive

Specially for the disposal of highly flammable liquids. All components made of black, electro-conductive, conducting PE-HD, build-up of electric charge is not possible.

- 10 l-canister, leakproof screw cap and handle. UN-authorization (Y) for the transport of hazardous goods.
- Screw-on funnel with automatically closing, patented floating ball valve.Therefore, no vapours or odours can escape from the waste disposal bin. Also comes with overflow and splash protection.
- Robust spillage tub can hold 100 % of canister contents in an emergency.

Delivery incl. disposable funnel, 10 l-canister with metal ring (for connecting earthing cable), spillage tub and 3 earth cables.

Type	Art. No.	Pack Qty.	€
Waste disposal units, electro-conductive	**HE62.1**	1	461,20

Spare parts for waste disposal units

Type	Art. No.	Pack Qty.	€
Funnel, electro-conductive	**HE63.1**	1	134,40
Canister 10 l, electro-conductive	**HE64.1**	1	88,65
Spillage tubs, electro-conductive	**HE65.1**	1	203,20
Grounding tension clip, Cr-Ni-Steel	**HE66.1**	1	86,55
Grounding cable	**HE67.1**	1	53,55

Sekuroka®-30 l-chemical collection pans

PE-collection pan, galvanised steel grid. Suitable for small drums.
Also usable for storage shelves and chemicals cabinets. Can be lined with chemical binding fleece. Outer dimensions: L 980 x W 600 x H 85 (mm).
Retention capacity 30 l. Load-bearing capacity of pan with grid: 50 kg.

Type	Weight (kg)	Art. No.	Pack Qty.	€
Collection pan	4	**NH66.1**	1	155,90
Collection pan with grid	10	**NH67.1**	1	235,45

NEW

Laboratory collecting trays

Made of PE, recyclable.
Z-40.22-548 and Z-40.22-549 technical approval.

- Grate made of PE with anti-slip plate surface
- Can be stacked, minimising storage and transport space
- Designed for Euro pallets
- Trays can be connected to protect surfaces
- Suitable for small containers such as bottles and canisters

Retention capacity (l)	Outer dimensions L x W x H (cm)	Weight (kg)	Carrying capacity (kg)	Art. No.	Pack Qty.	€
25	60 x 40 x 18	3.7	125	**KAN4.1**	1	139,75
35	80 x 40 x 18	4.8	160	**KAN5.1**	1	169,85
60	80 x 60 x 18	6.8	250	**KAN6.1**	1	198,90
120	120 x 80 x 18	12.8	500	**KAN7.1**	1	249,40

NEW

GRP sump pallets, 65 l

Made of glass reinforced plastic (GRP).
Z-40.12-227 technical approval.
GRP combines the properties of steel and plastic and is therefore a material that can be used universally for storing hazardous materials correctly. The sump pallets demonstrate good fire behaviour and high chemical resistance. Due to their absolute corrosion resistance, GRP sump pallets can be placed directly on the ground. The low installation height facilitates easy handling in factories. Long-lasting, UV-resistant, recyclable. Suitable for small containers such as bottles and canisters. Retention capacity 65 l. Carrying capacity of sump with grate: 40 kg.

Type	Outer dimensions L x W x H (cm)	Weight (kg)	Art. No.	Pack Qty.	€
without grate	82 x 41 x 23	4	**KAN2.1**	1	155,90
with grate made of galvanised steel	82 x 42 x 24	9.5	**KAN3.1**	1	241,90

Sekuroka®-spillage tubs

Made of glass-fiber reinforced plastic with DIBt-Berlin approval Z40.12-227. Ideal for correct storage of highly water imcompatible substances. High chemical resistance, corrosion-proof, durable, UV-resistant, recyclable. Suitable for barrels, plastic carboys, small drums, canisters, etc.

Spillage tub without grating, with stop catch

150 l capacity. Dimensions: L 1200 x W 800 x H 165 mm, approx. 9 kg. With stop catch on the underside of tub for attaching to Europallets 800 x 1200 mm (only stable with paletts).

Art. No.	Pack Qty.	€
2915.1 *	1	317,15

Spillage tub without grating and stop catch

150 l capacity. Dimensions: L 1200 x W 800 x H 165 mm, approx. 9 kg. Can be placed directly on the ground.

Art. No.	Pack Qty.	€
N530.1 *	1	256,95

Spillage tub with steel grating

220 l capacity. Dimensions: L 1280 x W 850 x H 270 mm, approx. 33 kg. Galvanized steel grating for max. 800 kg surface load.

Art. No.	Pack Qty.	€
X426.1 *	1	375,20

* Longer delivery times possible. **Price plus** transport costs. Please check with our Sales Department.

Sekuroka®-drip pans

Made of acid-proof PE; acid, chemical, oil and petroleum resistant.
① With pouring spout transferring liquids and sturdy carry handles.
② 4-chamber system for safe transportation and drainage via the 4 pouring edges with raised lip to prevent spillage of contents.

Retention capacity (l)	Outer dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
20	690 x 440 x 105	**NH64.1**	1	130,10

NEW

Folding tray 30 l

Made of PVC and with built-in reinforcement plates, the folding collecting tray can be transported in any vehicle thanks to its flat design. Absolutely impervious to liquid; leaking chemicals or oils are collected safely.

- Requires little space, only 2.5 cm high when folded
- Quick assembly with velcro fasteners
- Resistant to many chemicals and oils
- It is ideally suited for transporting hazardous materials and for use on construction, agricultural and forestry machines

Retention capacity (l)	Outer dimensions L x W x H (cm)	Weight (kg)	Art. No.	Pack Qty.	€
30	60 x 40 x 25	1.2	**KAN0.1**	1	109,65

Sekuroka®-solvent collecting vessels

Stackable, painted sheet metal drum. Suitable for interim storage of liquid waste – mainly used solvents. 60 mm filler neck, with plastic screw plug. **Delivery incl.** pouring aid, 2″ coarse thread.

6 litre collecting vessel

with Lupolen® lining, upper carry handle, H 20 cm, ∅ 23.5 cm, unladen weight approx. 1.3 kg. UN authorization: 6HA1/X2.0/300/

Art. No.	Pack Qty.	€
CHK8.1	1	35,45

12 litre collecting vessel

with Lupolen® lining, upper carry handle, H 35 cm, ∅ 23.5 cm, unladen weight approx. 1.8 kg. UN authorization: 6HA1/X2.0/300/

Art. No.	Pack Qty.	€
0750.1	1	40,80

30 litre collecting vessel

with Lupolen® lining, 2 side carry handle, H 57 cm, ∅ 27 cm, unladen weight approx. 3.5 kg. UN authorization: 6HA1/X1.6/300/

Art. No.	Pack Qty.	€
0751.1	1	45,05

Accessorie for Sekuroka®-solvent collectors

Sekuroka®-funnel

To screw on top, made of polypropylene. ∅ 120 mm.
Features sieve to catch solids, lid and floating indicator to show filling level.
With adapter for 2″-coarse thread.

Art. No.	Pack Qty.	€
9081.1	1	213,95

Sekuroka®-multi-purpose disposal container

For collecting used solvents. Outer container made of lacquered sheet steel (0.5 mm gauge), with lid and galvanised clamping ring and rubber seal. Adjustable narrow mouth container made of Lupolen®, with 2″ coarse thread closure. Nominal content 12 l. H 384 mm, outside ∅-310 mm, inside-∅ 230 mm.
Use: as collector initially. Once full, the container is taken to a disposal centre.
Here, the filled Lupolen® liner is tipped out.
The sheet metal container is then reused with a new Lupolen®-liner.
UN authorization: 6HA1/X1.6/250

Type	Art. No.	Pack Qty.	€
Sekuroka®-disposal container, complete	**1393.1**	1	42,60
Lupolen®-insert	**1394.1**	1	23,15

Problem waste containers

For collection of non-liquid waste. Conical container made of dark blue PP with bulging handles on both sides and yellow lid made of the same material, with rubber seal. Lid can not be removed after final closing. Container and lid are totally free from metal and can be incinerated. UN authorization: 1H2/Y15/S bzw. 1H2/Y25/S.

Volume (l)	Weight (kg)	W x D x H (mm)	Art. No.	Pack Qty.	€
30	ca. 1,050	334 x 404 x 315	**A854.1**	1	16,10
60	ca. 1,650	335 x 404 x 646	**1066.1**	1	21,40

Disposal containers for corrosive waste

Made of PE, red. Safe collection and disposal of corrosive, non-solvent-based waste. Use directly at the workplace. Reduces leakage of vapours. Self-closing lid. Safe foot pedal operated opening mechanism.

Volume (l)	Outer ∅ x H (mm)	Art. No.	Pack Qty.	€
23	420 x 400	**CEH0.1**	1	107,50
38	420 x 470	**CEH1.1**	1	116,10
53	560 x 530	**CEH2.1**	1	120,95

Waste bins for cleaning rags

By JUSTRITE®. Rags soaked with solvent, thinner, linseed oil, flammable adhesives and other flammable liquids and represent a serious fire hazard if they are not disposed of correctly.

- Made of galvanised sheet steel with rugged, highly chemical resistant powder-coat finish
- The opening angle of the lid does not exceed 60°
- The lid is self-closing when not in use
- Protects contents against sparks, heat sources and spontaneous combustion
- With foot pedal, colour red

Volume (l)	Outside ∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
20	302	403	**CAX1.1**	1	88,70
34	354	464	**CAX2.1**	1	103,85
52	408	514	**CAX3.1**	1	116,10

NEW

Go-Box 75 l, portable storage container for binders

Made of chemical-resistant PE, 100% recyclable.
For grit, sand, binders, etc.

- For inside and outside use and storage
- Good impact strength down to -40 °C
- Sturdy rubber wheels
- Angled lid for water drainage
- Easy-to-use, ergonomic handle
- Side handles for pushing and central handle for pulling
- Can be filled/emptied when the lid is locked in the vertical position
- Easy to use and easy to clean
- Rubber seal and locking mechanism for optimal weather resistance
- Lockable with a padlock (not supplied)
- Loading capacity 75 l

Outer dimensions L x W x H (cm)	Weight (kg)	Art. No.	Pack Qty.	€
59 x 43,5 x 107	11	**KAN1.1**	1	241,90

Electrically conductive disposal canisters

Made of HDPE, electrically conductive, surface resistance <10^9 Ohm.
- With carrying handle and screw cap
- Stackable
- With UN approval
- Closure size DIN 61

Volume (l)	L x W x H (mm)	UN approval	Art. No.	Pack Qty.	€
10	300 x 200 x 258	3H1/Y1.5/200	**HNC6.1**	1	34,00
20	300 x 200 x 495	3H1/Y1.5/150	**HNC7.1**	1	44,10
30	364 x 240 x 455	3H1/Y1.5/150	**HNC8.1**	1	52,70

A 121 °C

Sekuroka®-disposal bags – Biohazard

Made of strong PE. For holding and disposing of small items of contaminated waste such as pipette tips, test tubes and sample vials directly at the workstation.
Colour red for easy recognition and identification.
With BIOHAZARD labelling and indicator field, colour change indicates completed autoclaving process. Autoclavable at 121 °C.
Leave the bag open during the autoclaving process.
Safety information in German, English, French and Spanish.
For use with Sekuroka®-desk stands H508.1.
Dimensions: W 210 x H 290 mm, foil thickness 20 µm.

Art. No.	Pack Qty.	€
EPY0.1	1000	146,75

A 121 °C

Sekuroka®-disposal bags

Ideal for laboratory waste such as used pipettor tips, test tubes and vials.
Sterilizable to +121 °C. Bags should be left open during autoclaving.
Dimensions: W 200 x L 300 mm.
Made of 40 µm thick PP in a dispenser box.

Art. No.	Pack Qty.	€
E706.1	100	9,60

Sekuroka®-disposal bags

Ideal for laboratory waste such as used pipettor tips, test tubes and vials.
Dimensions: W 200 x L 300 mm.
Made of 30 µm thick PP. Not autoclavable.
100 bags pre-perforated from roll

Art. No.	Pack Qty.	€
H736.1	500	21,45

Sekuroka®-disposal bag holders

Wire frame with white powder coating and anti-slip rubber feet.
Dimensions: Upper ∅ 125 mm, height 250 mm. Ideal for all lab benchtops.
Autoclavable. For disposal bags W 200 x L 300 mm.

Type	Art. No.	Pack Qty.	€
Sekuroka®-disposal bag holder	**H508.1**	1	11,80
Sekuroka®-disposal bag holder, incl. 100 PP bags (E706.1)	**E705.1**	1	19,15

A 121 °C

Bench-Top disposal bags

- Made of HDPE, red, thickness 18 µm. Material acc. to ASTMD 1922 (propagation tear resistance) and ASTMD 1709 (puncture resistance)
- With printed-on "Biohazard"-warning symbol
- **Autoclavable, with sterility indicator field**
- Dimensions: B 220 x H 280 mm

Art. No.	Pack Qty.	€
YA55.1	100	27,95

Bench-Top stands and covers for disposal bags

Cover made of PP. Epoxy coated wire frame.
Suitable for disposal bags in sizes W 200 x L 300 and W 220 x L 280 mm.
For lab benches, extractors and examination rooms. Autoclavable.

Type	Dimensions (mm)	Art. No.	Pack Qty.	€
Stands	127 x 85 x 216	**YA56.1**	1	39,35
Covers	127 x 89 x 16	**YA57.1**	1	18,10

A 121 °C

Sekuroka®-disposal bags

Designed for hygienic disposal of contaminated laboratory articles.
Autoclavable. Seal bag loosely during sterilisation!

① **PP bag, film thickness 50 µm**.
For steam sterilisation at temperatures of up to +134 °C.

Dimensions W x L (mm)	Total volume (l)	Usable volume (l)	Art. No.	Pack Qty.	€
300 x 500	8	6	**0384.1**	500	85,40
400 x 780	38	22	**L371.1**	500	149,45
600 x 800	60	32	**0385.1**	500	174,15
600 x 800	60	32	**0385.2**	100	52,60
700 x 1100	110	72	**L372.1**	350	194,60
700 x 1100	110	72	**L372.2**	75	57,20

PP bag, extra strong, film thickness 100 µm.
For steam sterilisation at temperatures of up to +134 °C.

Dimensions W x L (mm)	Total volume (l)	Usable volume (l)	Art. No.	Pack Qty.	€
600 x 800	60	32	**XP67.1**	125	162,35
700 x 1100	110	72	**XP68.1**	75	140,85

PA bag, film thickness 50 µm.
Suitable for hot air sterilisation at temperatures up to +160 °C.

Dimensions W x L (mm)	Total volume (l)	Usable volume (l)	Art. No.	Pack Qty.	€
300 x 500	10	6	**L373.1**	500	289,20
400 x 780	30	22	**L374.1**	500	557,95
600 x 780	65	32	**L375.1**	300	435,40

② **PP bag, film thickness 50 µm. With extra-strong bottom seam**.
Suitable for steam sterilisation to +134 °C.
With imprinted **biohazard symbol** and affixed sterilisation indicator box.
Safety imprint in German, English and French.

Dimensions W x L (mm)	Total volume (l)	Usable volume (l)	Art. No.	Pack Qty.	€
300 x 500	8	6	**ATY2.1**	100	42,95
400 x 780	38	22	**ATY3.1**	100	69,75
600 x 800	60	32	**ATY4.1**	100	85,50
700 x 1100	110	72	**ATY5.1**	100	148,35

Sekuroka®-bag ties

Made of plastic coated wire. Ideal for closing all types of bags.
Length 300 mm.

Art. No.	Pack Qty.	€
C790.1	1000	27,85

▶ Autoclavable baskets see p. 270
▶ Sterile indicator tapes see p. 266

A 121 °C

Sekuroka®-disposal bags

Made of 40 µm thick PP. Heat stable to +145 °C.
Transparent, with **„Biohazard" warning**. Ideal for safe disposal of lab waste, e.g. used petri dishes, test tubes, sample vials, etc.
Bags should be left open during autoclaving. Autoclavable

Dimensions W x L (mm)	Art. No.	Pack Qty.	€
305 x 660	**A195.1**	100	33,25
420 x 600	**A194.1**	100	34,30
600 x 780	**A192.1**	100	59,05

NEW
A 121 °C

BIOHAZARD disposal bags

Made of HDPE. Autoclavable disposable waste bags made from extremely strong polyethylene film with a wide bottom seal for disposing of contaminated material.

- White indication area shows that autoclaving has been carried out by dark colouration
- With BIOHAZARD symbol and safety information in German, English and French
- Autoclavable at 121 °C, the bag must not be fully closed for autoclaving
- Marking shows maximum fill level
- Colour: yellow
- Thickness 50 µm

Dimensions W x L (mm)	Total volume (l)	Usable volume (l)	Art. No.	Pack Qty.	€
300 x 500	8	6	**KAA4.1**	500	181,70
600 x 800	60	32	**KAA5.1**	500	321,45

Waste disposal

A 121 °C

Disposal bags with sterilisation indicator

- For steam sterilisation at 135 °C
- Made of PP, thickness 38 µm, material acc. to ASTMD 1922 (propagation tear resistance) and ASTMD 1709 (puncture resistance)
- **With sterilisation indicator field that turns dark after autoclaving**
- With imprinted "Biohazard" warning symbol
- Labelled in German, English, French and Spanish
- Matches disposal bag stand KN74.1.1ff

Dimensions W x L (mm)	Volume max. (l)	suitable for	Art. No.	Pack Qty.	€
300 x 610	11,5	KN74.1	**KN71.1**	100	84,75
610 x 760	45,4	KN75.1	**KN72.1**	100	205,35
610 x 910	75,7	KN76.1	**KN73.1**	100	223,60

A 121 °C

Disposal bags stands

Suitable for disposal bags with sterilisation indicator KN71.1ff. Stainless steel frame, keeps the bag open at all times. Bottom made of PP, serves as a receptacle for leaking bags. Small stand, ideal for lab benches. Autoclavable.
Cover for stand sizes M and L is optional; please order separately.

Type	Dimensions W x L x H (cm)	Matching bag	Art. No.	Pack Qty.	€
S	18.5 x 35.6 x 47	KN71.1	**KN74.1**	1	64,25
M	35.6 x 35.6 x 54.6	KN72.1	**KN75.1**	1	92,15
L	35.6 x 35.6 x 69.6	KN73.1	**KN76.1**	1	99,05

Accessories: cover for disposal bag stands

Made of PP, with labelling space.
Suitable for disposal bag stands KN75.1 and KN76.1.
Dishwasher safe. Autoclavable.

Art. No.	Pack Qty.	€
YA64.1	1	42,85

A 121 °C

Disposal bags extra strong, with sterilisation indicator

- For steam sterilisation at 135 °C
- Red, made of HDPE, thickness 50 µm
- **With sterilisation indicator field that turns dark after autoclaving**
- With imprinted "Biohazard" warning symbol
- Labelled in German, English, French and Spanish

Dimensions W x L (mm)	Volume max. (l)	Art. No.	Pack Qty.	€
360 x 480	15,1	**KN77.1**	200	263,40
480 x 580	34,1	**KN78.1**	200	362,30
640 x 890	45,4	**KN79.1**	200	736,40
790 x 960	113,6	**KN80.1**	200	826,70
940 x 1220	189,3	**KN81.1**	100	633,20

A 121 °C

Disposal bags, self-adhesive

Made of HMHD (High Molecular Weight High Density) PE, thickness 25.4 µm. Material acc. to ASTM D1922 (propagation tear resistance) and ASTM D1709 (puncture resistance). For disposal of laboratory waste at the workplace, e.g. lab bench. Space-saving. Load capacity max. 1.36 kg. Dimensions: W 305 x L 406 mm. Autoclavable.

Art. No.	Pack Qty.	€
YA65.1	50	47,55

A 121 °C

One-way clips

Made of PP. For keeping disposal bags sealed during transportation and sterilisation. Can be opened and closed with one hand. Suitable for bags in sizes W 300 x L 610 and W 480 x L 580 mm. Autoclavable.

Art. No.	Pack Qty.	€
YA58.1	100	24,10

Refuse sacks eco

Made from LDPE. Colour grey, thickness 50 µm. 25 pieces per roll.

Volume approx. (l)	Width (mm)	Length (mm)	Art. No.	Pack Qty.	€
60	600	800	**HYX9.1**	250	32,15

BIO refuse bags, compostable

Acc. to EN 13432 (biodegradable materials).
Based on renewable raw materials. Made of 100% cornstarch, white.

- Practical and hygienic, odour blocking
- Their softness means they fit any container
- Biodegradable
- Last for years if stored properly (kept out of UV light and stored at room temperature)
- Waterproof
- Easy to handle as the bags are on a roll

Volume approx. (l)	Width (mm)	Length (mm)	Art. No.	Pack Qty.	€
10	420	450	**HYY0.1**	26	7,35
35	500	600	**HYY1.1**	20	9,65
80	810	1100	**HYY2.1**	10	13,95
120	860	1200	**HYY3.1**	10	16,10

Refuse sacks

Made of HDPE. Strong quality. Thickness 30 µm. 50 pieces per roll.

Colour	Volume approx. (l)	Width (mm)	Length (mm)	Art. No.	Pack Qty.	€
blue	70	575	1000	**HYY6.1**	50	8,55
red	70	575	1000	**HYY7.1**	50	8,55
yellow	70	575	1000	**HYY8.1**	50	8,55
grey	70	575	1000	**HYY9.1**	50	8,55
blue	120	700	1100	**KAA0.1**	50	10,70
red	120	700	1100	**KAA1.1**	50	10,70
yellow	120	700	1100	**KAA2.1**	50	10,70
grey	120	700	1100	**KAA3.1**	50	10,70

Refuse sacks paper

Made from paper, brown, 2 x 70 g. Neutral, no printing.

Volume approx. (l)	Width (mm)	Length (mm)	Art. No.	Pack Qty.	€
70	550 + 230	850	**HYY4.1**	25	21,45
120	700 + 250	950	**HYY5.1**	25	25,80

Refuse sacks extra strong

Made from LDPE. Especially tearproof and tensile. Thickness 60 µm. 25 pieces per roll.

Colour	Volume approx. (l)	Width (mm)	Length (mm)	Art. No.	Pack Qty.	€
red	120	700	1100	**HYX4.1**	25	10,25
yellow	120	700	1100	**HYX6.1**	25	10,25
green	120	700	1100	**HYX7.1**	25	10,25
black/grey	120	700	1100	**HYX8.1**	25	9,15

Waste collectors

Sekuroka®-multi-purpose bags

Made of PE with adhesive strip. For attaching to all smooth and clean surfaces, such as walls, tables, scales, etc. Can be peeled off without leaving a trace. Bags can be sealed with adhesive strip if required.

Dimensions W x L (mm)	Art. No.	Pack Qty.	€
200 x 300	**Y104.1**	100	12,85
300 x 300	**Y105.1**	100	14,80
300 x 450	**Y106.1**	100	11,50

NEW

Water-soluble laundry bags

Based on polyvinyl alcohol (PVA). With sealing strip, red in colour.

- Safe collection and handling of soiled, contaminated, infectious laundry
- Prevents personnel from coming into direct contact with the bag's contents and therefore avoids cross-contamination of germs
- Can be added directly to a washing machine without having to be emptied
- The bag and sealing strip automatically dissolve in a water bath at temperatures of 45 °C and above without leaving residue
- The material is non-toxic and fully biodegradable

Volume (l)	Width (mm)	Length (mm)	Art. No.	Pack Qty.	€
60	660	840	**KCT1.1**	25	26,35
100	710	990	**KCT2.1**	25	31,00

Waste collectors Clappy

Made of stainless steel. Bin base made of plastic (ABS). With solid rubber wheels. The ring for attaching the waste bag also serves as closure. Opens by pressing the pedal. Integrated brake device prevents collector from rolling away.

Volume (l)	L x W x H (mm)	Weight (kg)	Art. No.	Pack Qty.	€
40	585 x 490 x 825	6,5	**X441.1** *	1	363,35
70	585 x 490 x 975	7,5	**X442.1** *	1	388,10

* Delivery ex work

WS 120 profiLine waste collectors

- Stand for 120 l waste bags
- With holder for waste bags
- Aluminium tubular holder
- Hinged lid
- Lid frame and bottom made of plastic (ABS)
- Integrated frame with rubber ring for easy attachment of bags
- Models with and without rollers
- Includes set of labels for separating waste

Model	W x D x H (cm)	Art. No.	Pack Qty.	€
without castors	43 x 45 x 97	**KL39.1**	1	74,75
with castors	43 x 45 x 103	**KL40.1**	1	78,40

Matching waste disposal bags

Made of PE.

40 litres: blue. Superstrong quality. 550 x 650 mm, strength 30 µm. Roll with 50 bags.

Art. No.	Pack Qty.	€
Y386.1	200	19,25

70 litres: light blue. Especially tearproof and tensile. 575 x 1000 mm, strength 60 µm. Roll with 25 bags.

Art. No.	Pack Qty.	€
Y387.1	100	21,40

Matching waste disposal bags for ProfiLine ASS 120 and WS 120

Made of PE, blue. Especially tearproof and tensile.
120 litres: 700 x 1100 mm, strength 40 µm.

Art. No.	Pack Qty.	€
5382.2	25	7,50

ProfiLine waste collection system ASS 120

Made of aluminium and plastic.
Upright system for a 120-l waste disposal bag.

- Open by foot pedal
- Automatic and damped closing
- Always closed, even without lid
- Easy to mount
- Coloured self-adhesive film for waste sorting
- Connection elements for expansion to dual or triple collection station

Dimensions: W 33 x D 49 x H 108 cm.

Art. No.	Pack Qty.	€
KL36.1	1	70,45

Sekuroka®-waste bins

Made of PP. With swinging lids that lock into place when pushed backwards.

Volume (l)	L x W x H (mm)	Colour	Art. No.	Pack Qty.	€
25	330 x 270 x 510	silver / anthracite	**K522.1**	1	20,40
50	406 x 340 x 668	silver / anthracite	**K524.1**	1	31,15

Matching waste disposal bags for Sekuroka® waste bins

For 25-l bins: 40 litres: Made of PE, blue. Superstrong quality.
Dimensions 550 x 650 mm, strength 30 µm. Roll with 50 bags.

Art. No.	Pack Qty.	€
Y386.1	200	19,25

For 50-l bins: 50-60 litres: Made of PE, blue.
Dimensions: 370/260 x 850 mm, strength 30 µm.
40 bags, pre-perforated on a roll. Specially suitable for waste bins.

Art. No.	Pack Qty.	€
Y405.1	200	23,60

Pedal bin

By Brabantia. Made of steel plate. Comes either with polyethylene or incombustible zinc insert. Silent lid lock, odour-proof.

Colour	Insert-material	Volume (l)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
chrome	PE	12	400	250	**N434.1**	1	51,10
chrome	zinc	12	400	250	**N435.1**	1	62,35
white	zinc	12	400	250	**N436.1**	1	54,85
white	zinc	20	460	290	**1873.1**	1	70,45
chrome	zinc	20	460	290	**N437.1**	1	81,55
chrome	zinc	30	675	300	**N438.1**	1	103,20
white	zinc	30	675	300	**N439.1**	1	84,95

Matching waste disposal bags

For 12-l bin: 16 litres:
Dimensions: 450 x 520 mm, roll with 50 pre-perforated bag, white.

Art. No.	Pack Qty.	€
P388.1	250	6,15

For 18-l bin: 24 litres: Dimensions: 540 x 550 mm,
Box with 1000 bags. Recycling waste disposal bags made of HDPE.

Art. No.	Pack Qty.	€
P389.1	1000	25,40

For 20-l bins: 40 litres: Made of PE, blue. Superstrong quality. Dimensions 550 x 650 mm, strength 30 µm. Roll with 50 bags.

Art. No.	Pack Qty.	€
Y386.1	200	19,25

For 30-l bins: 50 litres: Made of PE, blue. Dimensions: 370/260 x 850 mm, strength 30 µm. 40 bags on a roll. Specially suitable for waste bins.

Art. No.	Pack Qty.	€
Y405.1	200	23,60

Sekuroka®-dual system paper basket

Ideal for dual waste disposal. Paper and other waste can be collected separately. Paper in the 20 l basket, wet waste in the attached 9 l basket with lid. Both baskets can be emptied separately.
The circular grip rim enables both to be carried at the same time.
H 350 mm, W 280 mm. ∅ top 154 + 291 mm.

Art. No.	Pack Qty.	€
A338.1	1	48,20

Waste collectors

Push Bin

By Brabantia. Functional design. Removable lid with extra wide (210 x 210 mm) opening. Bin made of chrome steel, base made of plastic to avoid damage to the floor. Capacity 60 l, ∅ 400 mm x H 820 mm.

Art. No.	Pack Qty.	€
Y404.1	1	174,15

Matching waste disposal bags for waste bin Push Bin

50-60 litres. Made of PE, whiteDimensions: 370/260 x 850 mm, strength 30 µm. 40 bags on a roll. Specially suitable for waste bins.

Art. No.	Pack Qty.	€
Y405.1	200	23,60

Waste collector "Sort & Go"

By Brabantia. Made of plastic.

- Compact and space-saving
- Ideal for separate collection of refuse
- Can be mounted on the wall or positioned free-standing
- Easy to mount
- The 6-l container is ideal for the disposal of waste directly from the worktop
- The lid is not self-closing, ideal for longer work
- Stable handle and recessed grip on base for emptying

Delivery incl. wall-mount, fastening material and instructions.

Volume (l)	Colour	Dimensions: W x D x H (mm)	Art. No.	Pack Qty.	€
6	yellow	200 x 249 x 181	**HLX7.1**	1	24,65
6	white	200 x 249 x 181	**HLX8.1**	1	24,65
6	grey	200 x 249 x 181	**HLX9.1**	1	24,65
12	yellow	200 x 249 x 351	**HLY0.1**	1	29,90
12	white	200 x 249 x 351	**HLY1.1**	1	29,90
12	grey	200 x 249 x 351	**HLY2.1**	1	29,90
16	yellow	220 x 279 x 401	**HLY3.1**	1	36,50
16	white	220 x 279 x 401	**HLY4.1**	1	36,50
16	grey	220 x 279 x 401	**HLY5.1**	1	36,50

NEW

Flame Guard self-extinguishing paper basket

By Brabantia. Made of stainless steel, chrome-plated. With removable incombustible zinc insert. TÜV-tested. The ring around basket has been formed in such a way that the oxygen supply is cut off by rising smoke and the fire is subsequently smothered. Capacity 20 litres, height 655 mm, ∅ 250 mm, opening of basket ∅ 120 mm.

Colour	Art. No.	Pack Qty.	€
chrome	**KAY5.1**	1	107,40

Paper basket

By Brabantia. Made out of galvanized steel plates, stainless. Colour black. Rim at top of basket has beads to provide a more secure grip.

Volulme (l)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
15	320	251	**L909.1**	1	25,75

Used battery collector

Made of recycling plastic, colour grey.
One opening each for normal batteries and button cells.
Dimensions: L 300 x W 200 x H 230 mm, volume 9 litres.

Art. No.	Pack Qty.	€
P345.1	1	34,95

Laboratory Equipment, Transport & Tools

Ampoule opener	765
Assortment boxes	759
Caliper gauges / Measuring rulers	768
Cases	753
Container & boxes	752
Chairs / stools	740
Clips	771
Cutting tools	762
Drawer trays	760
Glass cutters / engravers	765
Knives	763
Lab markers	773
Laboratory mats	761
Ladders	745
Non-slip mats	761
Office organization	773
Openers	770
Pens	773
Platform trolleys	747
Scissors	764
Storage containers	757
Storage boxes	757
Supports	740
Tools	767
Transport containers	752
Transport trolleys	746
Trolleys	751

Office chairs, standard models

Acc. to DIN 68877.

- Seat and backrest made of PU-foam or beechwood, ergonomically designed
- Backrest adjustment and seat height adjustment infinitely variable
- Depth of seat can be adjusted
- Safety gas spring with spring suspension for depth
- All double rollers have a load-controlled brake, suitable for hard and soft floors
- PU-moulded parts with steel core
- Stable and robust plastic cross-shaped base

Model	Seat and backrest	Seat height (mm)	Art. No.	Pack Qty.	€
Glides	PU black	400-600	**Y708.1** *	1	153,75
Castors	PU black	420-620	**Y709.1** *	1	168,80
Glides	Beech natural	400-600	**Y710.1** *	1	134,40
Castors	Beech natural	420-620	**Y711.1** *	1	147,30

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Replacement rollers for working stools	**CTY8.1**	5	29,75

Office chairs

- Large PU-seat and PU-backrest, black
- Continuous seat and backrest adjustment
- 12° seat inclination adjustment
- Plastic feet with concealed safety gas spring
- Large, non-slip floor glides or load-responsive braked double castors
- Optionally available with footrest, footrest height is adjustable independently of seat height
- Acc. to DIN 68877

Model	Seat height (mm)	Art. No.	Pack Qty.	€
① Glides, without footrest	440-630	**ALC5.1** *	1	199,95
② Castors, without footrest	500-690	**ALC6.1** *	1	208,55
③ Glides, with footrest	440-630	**ALC7.1** *	1	235,45

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Replacement rollers for working stools	**CTY8.1**	5	29,75

Office chairs, high

- Seat and backrest made of PU-foam
- Tilting backrest can be adjusted in height and inclination
- Infinitely variable seat height adjustment
- Type ② with adjustable seat inclination (12°)
- Extremely stable tubular steel feet
- Three integrated footrests at different heights
- Glides
- Safety gas spring
- Compliant with DIN 68877

Type	Seat and backrest	Seat height (mm)	Art. No.	Pack Qty.	€
①	PU, black	480-880	**Y712.1** *	1	248,35
①	Beech, natural	480-880	**Y713.1** *	1	218,25
②	PU, black	480-880	**ALC8.1** *	1	270,90

* Longer delivery times possible. Please check with our Sales Department.

Office chairs, stainless steel

- Large PU-seat and PU-backrest with stainless steel inlay
- Infinitely variable seat and backrest adjustment
- Stainless steel feet with stainless steel safety gas spring
- Easy to clean
- Rust free
- Optionally available with footrest, folds up variably (please order separately)
- Compliant with DIN 68877

Colour	Model	Seat height (mm)	Art. No.	Pack Qty.	€
black	Glides	440-630	**ALE9.1** *	1	596,65
black	Castors	500-690	**ALH0.1** *	1	618,15

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Footrest made of stainless steel	**ALH1.1**	1	166,65

Laboratory chairs Labster

By bimos.
GMP-compatible and suitable for use in clean rooms, ideal for laboratories with safety classes S1 to S3.

- High level of seating comfort through Skai artificial leather and soft upholstery
- Fully washable and can be disinfected
- Seamless design concept
- Mechanics and soft-cover lining with control panel
- Excellent ergonomics, height-adjustable backrest
- Auto-motion technology adapts the inclination of the seat and backrest automatically to the working posture
- Compact design, small space requirement
- Space-saving star base
- Load-dependent limited dual casters for hard floor surfaces

Type	Design	Colour	Seat height (mm)	Art. No.	Pack Qty.	€
Labster 2	Rollers	black	400-510	**HHA2.1**	1	441,85
Labster 2	Rollers	grey	400-510	**HHA3.1**	1	441,85
Labster 2	Rollers	red	400-510	**HHA4.1**	1	441,85
Labster 2	Rollers	mint	400-510	**HHA5.1**	1	441,85
Labster 2	Rollers	black	450-650	**HHA6.1**	1	467,65
Labster 2	Rollers	grey	450-650	**HHA7.1**	1	467,65
Labster 2	Rollers	red	450-650	**HHA8.1**	1	467,65
Labster 2	Rollers	mint	450-650	**HHA9.1**	1	467,65
Labster 3	Glides + foot ring	black	550-800	**HHC0.1**	1	559,00
Labster 3	Glides + foot ring	grey	550-800	**HHC1.1**	1	559,00
Labster 3	Glides + foot ring	red	550-800	**HHC2.1**	1	559,00
Labster 3	Glides + foot ring	mint	550-800	**HHC3.1**	1	559,00

Accessories:

Foot ring for 2, suitable for later mounting on the seat column	**HHC4.1**	1	69,80

Laboratory stools Labster

By bimos.
GMP-compatible and suitable for use in clean rooms, ideal for laboratories with safety classes S1 to S3.

- High level of seating comfort through Skai artificial leather and soft upholstery
- Fully washable and can be disinfected
- Seamless design concept
- Mechanics and soft-cover lining with control panel
- Adjustable seat height with ring-release gas elevation
- Extra-large seat with ∅ 380 mm
- Compact design, small space requirement
- Load-dependent limited dual casters for hard floor surfaces

Type	Design	Colour	Seat height (mm)	Art. No.	Pack Qty.	€
Labster stools	Rollers	black	450-650	**HHC5.1**	1	256,95
Labster stools	Rollers	grey	450-650	**HHC6.1**	1	256,95
Labster stools	Rollers	red	450-650	**HHC7.1**	1	256,95
Labster stools	Rollers	mint	450-650	**HHC8.1**	1	256,95

Office chairs, XXL

- With leather upholstery
- Especially large, comfortable seat and backrest width
- Continuously variable seat inclination
- Maximum load up to 160 kg
- Reinforced synchronized mechanics with hand wheel to adjust the weight
- Height adjustment via gas spring
- Large, non-slip floor glides or load-responsive braked double castors

Model	Seat height (mm)	Art. No.	Pack Qty.	€
Glides	480-660	**HKT1.1**	1	524,60
Rollers	425-555	**HKT2.1**	1	540,75

Stools

- Infinitely variable seat height adjustment
- Seat made of durable PU-foam or beech
- Super-sturdy plastic star base
- Safety gas spring for quick seat height adjustment
- LGA approved

Standard stool

Model	Seat	Seat height (mm)	Art. No.	Pack Qty.	€
Glides	PU, black	400-600	**Y702.1**	1	103,65
Rollers	PU, black	420-620	**Y703.1**	1	110,75

Stools with release ring

Model	Seat	Seat height (mm)	Art. No.	Pack Qty.	€
Glides	PU, black	400-590	**CXA5.1**	1	107,30
Glides	Beech, natural	400-600	**Y704.1**	1	104,20
Rollers	PU, black	430-620	**CXA6.1**	1	118,25
Rollers	Beech, natural	420-620	**Y705.1**	1	111,80
Glides + foot ring	PU, black	540-800	**CXA7.1**	1	141,90

Swivel stools, padded

- Soft seat made of durable synthetic leather
- Seat ∅ 360 mm, seat thickness 90 mm, padded
- Release ring
- Plastic feet ∅ 630 mm, with double castors
- Safety gas spring for quick seat height adjustment

Colour	Seat height (mm)	Art. No.	Pack Qty.	€
red	480-680	**ALH2.1**	1	130,10
blue	480-680	**ALH3.1**	1	130,10
black	480-680	**ALH4.1**	1	130,10

Stool, comfort models

- Infinitely variable seat height adjustment
- Seat made of extremely robust PU-foam or beechwood
- Beechwood seat with circular trigger
- Pedestal made of stable plastic, with rollers
- Safety gas spring for speedy seat height adjustment
- LGA-tested

Seat	Seat height (mm)	Art. No.	Pack Qty.	€
PU-black	440-630	**Y706.1**	1	106,45
Beech natural	440-630	**Y707.1**	1	106,45

Swivel stools, stainless steel

- Seat made of PU-foam with stainless steel inlay
- Stainless steel feet with stainless steel safety gas spring
- Easy to clean
- Rust-free
- Optionally available with footrest, folds up variably (please order separately)

Colour	Model	Seat height (mm)	Art. No.	Pack Qty.	€
black	Glides	440-630	**ALE1.1**	1	302,10
black	Castors	500-690	**ALE2.1**	1	333,25

Accessories:

Footrest made of stainless steel	**ALH1.1**	1	166,65

Swivel stool, XL

- Infinitely variable seat height adjustment
- Seat made of soft, robust synthetic leather or beech
- Maximum load up to 150 kg
- Safety gas spring, chrome-plated
- Aluminium star base, polished, ∅ 610 mm
- Load-responsive braked double castors

Model	Design	Seat height (mm)	Art. No.	Pack Qty.	€
Rollers	Black synthetic leather, ∅ 400 mm	560-740	**HKP7.1**	1	239,75
Rollers	Beech, ∅ 400 mm	470-650	**HKP8.1**	1	204,25
Rollers	Black synthetic leather, ∅ 360 mm	560-740	**HKP9.1**	1	207,50
Rollers	Beech, ∅ 360 mm	470-650	**HKT0.1**	1	168,80

Stools and standing supports, high

- Seat made of soft PU foam or PP
- Continuously variable seat height adjustment by means of gas spring
- Large seat area, width 370 mm
- Front/back seat angle adjustment: 7.5°
- Sturdy plastic cross base
- High backrest for upright seating

Articles CXA3.1 and CXA4.1 can be used flexibly as a standing support or stool: incline seat forwards to stand, align straight for sitting.

Model	Seat	Seat height (mm)	Art. No.	Pack Qty.	€
Glides	PU, blue	490-680	**CTY9.1**	1	192,45
Rollers	PU, blue	520-710	**CXA0.1**	1	198,90
Glides	PP, black	490-680	**CXA1.1**	1	160,20
Rollers	PP, black	520-710	**CXA2.1**	1	167,70
Glides + base ring	PU, blue	600-860	**CXA3.1**	1	231,15
Glides + base ring	PP, black	600-860	**CXA4.1**	1	198,90

Stackable stools, stainless steel

- Seat made of PU foam with stainless steel inlay
- Tubular stainless steel frame
- Easy to clean
- Rust free

Colour	Seat height (mm)	Art. No.	Pack Qty.	€
blue	500	**ALE3.1**	1	188,15
blue	580	**ALE4.1**	1	197,80
black	500	**ALE5.1**	1	167,70
black	580	**ALE6.1**	1	170,95

Stool with all-round footrest

Thanks to the integrated footrest, seat heights of up to 740 mm are possible.

- Seat made of PU-foam, black
- Safety gas spring
- Sturdy steel feet, glides
- All-round footrest for excellent support

Seat height (mm)	Art. No.	Pack Qty.	€
540-740	**ALH5.1**	1	139,75

NEW

Standing supports with comfortable seat

- Seat made of soft PU foam, extra wide
- Seat surface with distinct air-conditioning ducts
- Handle on rear of the seat for easy change of location
- Foot rest with transport castors
- Non-rotative gas-pressure spring
- Optionally available with foldable foot rest (please order separately)
- Seat height: 650-850 mm
- Seat width: 420 mm

Type	Art. No.	Pack Qty.	€
Standing supports with comfortable seat	**HTA2.1**	1	306,40

Accessories:

Foot rest, foldable	**HTA3.1**	1	64,30

Standing support

For taking the strain off work carried out standing. Stable steel tube frame. Black PU seat, foamed, steel cored. Seat and foot rest are collapsible. Seat height is adjustable and can be locked in place: 650-850 mm.

Colour	Art. No.	Pack Qty.	€
black	**AH91.1**	1	167,70
red	**AH92.1**	1	167,70

Standing supports

Folding, made of plastic covered steel tubing. To relieve feet and spinal cord at work in standing positions. Padded seat and back rest made of air permeable imitation leather.
Infinitely variable adjustment from 550 to 900 mm.

Colour	Art. No.	Pack Qty.	€
red	**9042.1**	1	198,90
black	**9045.1**	1	198,90
aluminium	**9050.1**	1	198,90

Stackable stools

- Seat made of PU foam or beech, ∅ 350 mm
- Sturdy tubular steel frame
- Ready to hand and can be stacked to save space

Seat	Frame	Seat height (mm)	Art. No.	Pack Qty.	€
PU, black	black	500	**CXA8.1**	1	73,95
PU, black	light grey	500	**CXA9.1**	1	73,95
Beech, natural	light grey	500	**CXC0.1**	1	58,05
PU, black	black	580	**CXC1.1**	1	75,25
PU, black	light grey	580	**CXC2.1**	1	75,25
Beech, natural	light grey	580	**CXC3.1**	1	59,60

Roller stools

Acc. to DIN 4569. TÜV and BG tested. Runs on 3 spring-bearing wheels (attachable). With thick plastic stand ring. Steps covered with nonslip rubber covering. Max. load 150 kg. Immovable, stationary stand from 5 kg load.

Metal stools

Made of powder-coated metal, lead and cadmium free.
Dimensions: H 430 mm, upper ∅ 290 mm, lower ∅ 435 mm. Weight 4.9 kg.

Colour	Art. No.	Pack Qty.	€
blue	**X429.1**	1	64,45
light grey	**X430.1**	1	64,45

Plastic stools

Made of breakproof **PP**.
Dimensions: H 425 mm, upper ∅: 290 mm, lower ∅ 445 mm. Weight 2.8 kg.

Colour	Art. No.	Pack Qty.	€
white	**X431.1**	1	50,55
light grey	**X432.1**	1	50,55

Mobile step-ladder

Acc. to DIN 4569. TÜV and BG tested. Made of aluminium with edge protection. With spring-bearing wheels for full mobility. 2 corrugated steps. Immoveable, stationary stand when under load. Folding.

Technical specifications:

Dimensions (L x W x H) When folded together	440 x 425 x 445 mm 440 x 230 x 485 mm
Maximum load / weight	150 / 2.2 kg

Art. No.	Pack Qty.	€
Y645.1	1	66,65

Stepladder

Made of robust plastic. With two steps. Folding. Antislip feet and steps. Easy to clean. Max. load 150 kg.
Outer dimensions 486 x 172 x 630 mm, colour anthracite/red.

Art. No.	Pack Qty.	€
T224.1	1	53,65

Folding step ladders

By Hailo. With Soft-Grip base for optimal stability on various surfaces. High-curved aluminium safety rail for secure grip or simply to lean against, with tray. Extra-large, non slip ribbed aluminium steps for optimal comfort when standing. Maximum load capacity 150 kg.

Steps	W x H (mm)	Weight (kg)	Art. No.	Pack Qty.	€
2	520 x 1270	4,9	**ACP5.1**	1	93,00
3	550 x 1540	6,6	**ACP6.1**	1	116,10

Safety ladders

By Hailo. Made of aluminium. With anti-slip grooves.
Safe, high-tech rivetted rail step connection and anti-slip foot.
Load capacity 150 kg.

① **Safety ladder with steel platform.**

Steps	W x H (mm)	Height of platform (mm)	Weight (kg)	Art. No.	Pack Qty.	€
4	450 x 1580	840	3,9	**LT09.1**	1	85,50

② **Safety ladder with aluminium platform.**

Steps	W x H (mm)	Height of platform (mm)	Weight (kg)	Art. No.	Pack Qty.	€
5	480 x 1820	1060	4,6	**LT12.1**	1	96,35

Gas bottle holders

Made of galvanised steel. For wall-mounting of a single gas bottle.
Delivery incl. safety chain.

For bottle ∅ (mm)	Art. No.	Pack Qty.	€
140	**CTC5.1**	1	42,50
230	**CTC6.1**	1	42,50
320	**CTC7.1**	1	45,70

Gas cylinder trolley

Made of sturdy **PE**, with handle. For safe transportation of a single gas bottle, ∅ max. 320 mm. Large surface area provides excellent stability.
Solid rubber tyres, wheel ∅ 200 mm. Load capacity: 80 kg.
Delivery incl. lashing strap for securing the bottle.

Type	W x D x H (mm)	Art. No.	Pack Qty.	€
① Without stabiliser wheel	495 x 630 x 1110	**CTC3.1**	1	221,45
② With stabiliser wheel	495 x 800 x 1110	**CTC4.1**	1	245,10

NEW

Cage transport trolleys

Made of steel tube and profile steel, welded, powder-coated.
With wooden platform, surface in beech finish.
Face and side walls made of wire mesh 50 x 50 x 4 mm,
wall height 500 mm, one longitudinal wall can be removed.
Two swivel castors and two fixed castors, lockable swivel castors.

Technical specifications:

Outer dimensions: L x W x H (mm)	Wheel ∅ (mm)	Art. No.
1030 x 509 x 958	160	**HTY6.1**
1180 x 609 x 990	200	**HTY7.1**
1180 x 709 x 990	200	**HTY8.1**
1380 x 809 x 990	200	**HTY9.1**

Bearing capacity (kg)	Platform size (mm)	Weight (kg)	Art. No.	Pack Qty.	€
500	850 x 500	38	**HTY6.1**	1	353,70
600	1000 x 600	47	**HTY7.1**	1	374,10
600	1000 x 700	51	**HTY8.1**	1	378,40
600	1200 x 800	59	**HTY9.1**	1	407,45

Platform trolleys

Universal transport trolley

Foldable. Made of fiber-reinforced plastics in conjunction with aluminium and steel tube. With adjustable strap to secure goods. Solid rubber tyres on wheels (∅ 200 x W 40 mm) made of cushion-type polymer (easy-to-handle, puncture-proof). **Load capacity 125 kg**. Weight 5.4 kg. Dimensions when folded/open: W 490/490 x H 685/1030 mm. Shovel unfolded: W 490 x D 250 mm.

Art. No.	Pack Qty.	€
9305.1	1	148,35

Push trolley

Made of steel tube, welded, powder-coated, blue. TPE tyres, two swivel castors and two fixed castors, lockable swivel castors.

Technical specifications:

Order No.	**HTX6.1**	**HTX7.1**
Outer dimensions: L x W x H (mm)	890 x 500 x 860	
Bearing capacity (kg)	250	
Platform size (mm)	600 x 500	
Loading surface height (mm)	195	
Wheel ∅ x thickness (mm)	125 x 32	

Material platform	Weight (kg)	Art. No.	Pack Qty.	€
Wood, surface in beech finish	12	**HTX6.1**	1	170,95
Steel sheet, powder-coated	14	**HTX7.1**	1	192,45

Trolley for transporting crates

Steel tubing. Colour black-silver effect. Pneumatic/cleated tires. Roller bearing wheels. **Load capacity 250 kg.** Dimensions: H 1100 mm, shovel W 260 x D 280 mm.

Art. No.	Pack Qty.	€
X828.1 *	1	249,40

* Longer delivery times possible. Please check with our Sales Department.

Rotilabo®-platform trolleys

Tabular steel construction with reinforced beech plywoods. Black-silver enamel steel plate. With 2 steerable and 2 fixed wheels, solid rubber, ∅ 200 mm. Platform height 270 mm. **Loading capacity 500 kg.**

Platform size (mm)	Overall height (mm)	Art. No.	Pack Qty.	€
850 x 500	975	**N176.1** *	1	378,40
1200 x 700	980	**N177.1** *	1	454,75

* Longer delivery times possible. Please check with our Sales Department.

Platform trolleys

NEW

Push handle cart

Made of steel tube, powder-coated. With wooden platform, surface in beech finish. Push handle removable.
Two swivel castors and two fixed castors, lockable swivel castors.

Technical specifications:

Outer dimensions: L x W x H (mm)	Wheel ∅ (mm)	**Art. No.**
970 x 509 x 948	160	**HTY2.1**
1120 x 609 x 990	200	**HTY3.1**
1120 x 709 x 990	200	**HTY4.1**
1325 x 809 x 990	200	**HTY5.1**

Bearing capacity (kg)	Platform size (mm)	Weight (kg)	Art. No.	Pack Qty.	€
500	850 x 500	23	**HTY2.1**	1	198,90
600	1000 x 600	27	**HTY3.1**	1	212,85
600	1000 x 700	30	**HTY4.1**	1	213,95
600	1200 x 800	35	**HTY5.1**	1	236,50

Lab services trolley

Metal frame and steel angles with black-silver enamel powder coating. Plates made of multilayer beech plywood. **Capacity load 200 kg.**
Weight 33 kg. With two castor wheels and two fixed wheels 125 mm, solid rubber soft running wheels with ball-bearing.
Two loading platforms 100 x 60 cm at a height of 28 and 80 cm.
Dimensions without handle: W 62 x H 81 x L 104 cm. Overall height 90 cm.

Art. No.	Pack Qty.	€
5390.1 *	1	469,80

* Longer delivery times possible. Please check with our Sales Department.

NEW

Collapsible cart

With handlebar, folds onto platform.
Two swivel castors and two fixed castors, lockable swivel castors.

① **Steel tube frame, powder-coated.**
Wooden platform, surface in beech finish. Load capacity: 250 kg.

Platform size (mm)	L x W x H outer (mm)	Weight (kg)	Wheel ∅ (mm)	Art. No.	Pack Qty.	€
720 x 450	815 x 470 x 930	16	125	**HTX8.1**	1	192,45
900 x 600	995 x 620 x 965	25	160	**HTX9.1**	1	235,45

② **Aluminium frame and platform. Load capacity: 200 kg.**

Platform size (mm)	L x W x H outer (mm)	Weight (kg)	Wheel ∅ (mm)	Art. No.	Pack Qty.	€
720 x 450	815 x 470 x 930	11	125	**HTY0.1**	1	299,95
900 x 600	995 x 620 x 965	18	160	**HTY1.1**	1	385,95

Rotilabo®-platform trolleys

Made of stainless steel. The smooth, sound absorbing, undercoated platform has 80 mm folded edges with safety crimping to the inside. Curved handle is made of rectangular tubing ∅ 25 mm and is firmly welded onto trolley. The 4 rubber wheels (2 are lockable), ∅ 125 mm, are screwed on at the reinforced corners. 2 sturdy corner guards protect the trolley from damage. Platform height 243 mm. **Total load 120 kg.**

Platform size (mm)	L x W x H outer (mm)	Weight (kg)	Art. No.	Pack Qty.	€
545 x 545	740 x 600 x 1020	16	**N136.1** *	1	600,95
820 x 545	1000 x 600 x 1020	20	**N137.1** *	1	633,20

* Longer delivery times possible. Please check with our Sales Department.

Platform trolleys

Lab-wire trolley

Made of steel tubing and sheet steel. Two baskets, 65 and 24 l volume, corrosion protected and covered with soft plastic.
Dimensions: W 410 x L 730 x H 850 mm (total height 970 mm), weight 13.5 kg. Wheels, ∅ 10 cm, can rotate in all directions.
Loading capacity per basket 30 kg.

Art. No.	Pack Qty.	€
1927.1	1	521,40

Security separating grating

For use inside trolley. Made of plastic covered metal.
Ideal for subdividing lab trolley basket. Suitable for safe transport of small containers and glass flasks. Dimensions: W 370 x H 240 mm.

Art. No.	Pack Qty.	€
B001.2	1	62,25

Rotilabo®-transport trolleys

Made of stainless steel. Welded circular tubing frame, ∅ 25 mm.
With 1.5 mm thick, firmly attached shelf. One narrow side features 450 mm high barred construction, curved handle. With four firmly screwed on plates to attach the rubber tyred wheels, ∅ 200 mm. With 2 fixed rollers and 2 lockable, steerable wheels. Platform height 270 mm. **Total load 500 kg.**

Platform size (mm)	L x W x H outer (mm)	Weight (kg)	Art. No.	Pack Qty.	€
850 x 500	970 x 500 x 940	27	**N138.1** *	1	1027,70
1000 x 700	1120 x 700 x 940	34	**N139.1** *	1	1194,35

* Longer delivery times possible. Please check with our Sales Department.

Laboratory shelf trolleys

Made of high-grade 18/10 steel. With welded bases, max. load per base 40 kg. Comes on extra large wheels with wall fender guards and two wheel locks. Diameter of wheels is 125 mm.
Without protruding edges and screws, therefore safe and easy to clean. Wheels are anti-static. Shelf size L 800 x W 500 mm.

Model	**With 2 and 3 shelves**	**With 4 shelves**
Outer dimensions L x W x H (mm)	900 x 600 x 940	900 x 600 x 1260

No. of shelves	Distance between shelves (mm)	Weight (kg)	Total load capacity (kg)	Art. No.	Pack Qty.	€
2	590	approx. 15	80	**0033.1** *	1	367,65
3	280	approx. 22	120	**A206.1** *	1	407,45
4	280	approx. 27	130	**Y497.1** *	1	532,15

* Longer delivery times possible. Please check with our Sales Department.

Rotilabo®-shelf trolleys, for self-assembly

Made of stainless steel 18/0. Sturdy shelves, 0.8 mm thick.
Load-bearing capacity of each shelf: 40 kg.
Bases are coated with sound-insulating material.

Technical specifications:

Model	**With 2 plates**	**With 3 plates**
Total load-bearing capacity (kg)	80	120
Rack ∅ (mm)	25	
Swivel castor ∅ (mm)	125	
Plate spacing (mm)	570	260
Plate inner dimensions L x W (mm)	760 x 440	
Plate outer dimensions L x W (mm)	830 x 510	
Overall plate dimensions: L x W x H (mm)	860 x 560 x 950	
Weight (kg)	13	17

Delivery incl. 4 swivel castors, 2 lockable. Fully disassembled.

Type	Art. No.	Pack Qty.	€
With 2 plates	**YE87.1**	1	198,90
With 3 plates	**YE88.1**	1	245,10

NEW

CLAX® transport carriage

Colour grey. Foldable. Made of aluminium and high-grade plastic.
Stable hard rubber, also with footbrake for safe loading and unloading.
Folding box on top transport floor can be fixed using securing straps.
Top floor folds up easily to accommodate bulky objects.
Easy to setup and dismantle in seconds with a single press of a button.
Dimensions folded/open: W 470/550 x D 670/890 x H 170/1030 mm.
Total load capacity 60 kg (top floor 20 kg, bottom floor 40 kg).
Weight 8,5 kg. **Delivery incl.** CLAX® transport box.

Art. No.	Pack Qty.	€
HNX7.1	1	203,20

CLAX® transport box

Colour grey. Foldable. Made of high-grade plastic. Capacity 46 l.
Dimensions: L 530 x W 370 x H 270 mm.

Art. No.	Pack Qty.	€
HNX8.1	1	21,00

① ②

Rotilabo®-compact multi-function trolleys

With 2 or 3 shelves made of **PE**. Middle shelf can be adjusted in height by 25 mm. Shelves either have a retaining rim or a tub shape. Load capacity of shelves: model with tub-shaped shelves 65 kg, other models 30 kg.
Delivery incl. 4 rubber castors, unmounted.

① **Without tub shelves,** height 940 mm

Depth (mm)	Width (mm)	Number of bases	Shelf surface (mm)	Distance between shelves (mm)	Art. No.	Pack Qty.	€
535	857	2	475 x 735	550	**K492.1** *	1	385,95
535	857	3	475 x 735	250	**K493.1** *	1	478,40
686	1003	2	620 x 880	550	**K494.1** *	1	446,15
686	1003	3	620 x 880	250	**K495.1** *	1	548,25

② **With tub shelves**, height 1060 mm

Depth (mm)	Width (mm)	Number of bases	Shelf surface (mm)	Distance between shelves (mm)	Art. No.	Pack Qty.	€
540	840	2	480 x 730	610	**X446.1** *	1	456,90
540	840	3	480 x 730	280	**X447.1** *	1	514,95
690	995	2	625 x 885	610	**X448.1** *	1	493,45
690	995	3	625 x 885	280	**X449.1** *	1	578,35

* Longer delivery times possible. Please check with our Sales Department.

NEW

Table trolley, ESD

Electrically conductive types. Steel tube with profile steel, welded, powder-coated. Bases made of electrically conductive wooden composite board. Two swivel castors and two fixed castors, lockable swivel castors. Wheels with TPE-ESD tyres (thermoplastic elastomer), electrically conductive.

Technical specifications:

Overall load-bearing capacity	250 kg
Load-bearing capacity of top loading surface	80 kg
Overall height	1020 mm
Wheel ∅	125 mm

Platform trolley with trays

L x W (mm)	Number of bases	Shelf surface (mm)	Platform height (mm)	Weight (kg)	Art. No.	Pack Qty.	€
980 x 509	2	850 x 500	206, 827	30	**HXA0.1**	1	418,20
1130 x 609	2	1000 x 600	206, 827	39	**HXA1.1**	1	456,90
980 x 509	3	850 x 500	206, 517, 827	39	**HXA2.1**	1	535,35
1130 x 609	3	1000 x 600	206, 517, 827	54	**HXA3.1**	1	622,45

Platform trolley with boxes, depth 45 mm.

L x W (mm)	Number of bases	Shelf surface (mm)	Platform height (mm)	Weight (kg)	Art. No.	Pack Qty.	€
980 x 509	2	810 x 445	206, 826	30	**HXA4.1**	1	454,75
1130 x 609	2	960 x 545	206, 826	38	**HXA5.1**	1	521,40
980 x 509	3	810 x 445	206, 514, 826	39	**HXA6.1**	1	568,70
1130 x 609	3	960 x 545	206, 514, 826	48	**HXA7.1**	1	642,85

Laboratory trolley

Made of stainless steel 1.4301.
- Sturdy and hygienic design
- 4 swivel castors, including 2 with full locking brake
- Castor ∅ 125 mm, in corrosion-resistant housing, low-friction bearings
- Castors are not electrically conductive
- With smooth side shelves, thickness 1.0 mm, with sound-absorbing lining
- Shelves rigidly welded with 4 round tubes, ∅ 25 mm

Dimensions: W 450 x D 450 x H 510 mm. Load capacity: 120 kg.

Art. No.	Pack Qty.	€
AXL5.1*	1	450,45

* Longer delivery times possible. Please check with our Sales Department.

Transport trolleys

Stainless steel shelf trolley

Made of stainless steel 1.4301. With four solid rubber swivel castors (non-marking), wheel ∅ 125 mm. Load capacity of trolley 200 kg.
Dimensions: L 620 x W 460 x H 1200 mm. Shelf spacings 300 mm.
Shelves (XE29.1) and matching stackable container (TC11.1) (optional), please order separately.

Art. No.	Pack Qty.	€
TC09.1	1	611,70

Shelves

Made of RESOPAL®. Suitable for stainless steel shelf trolley TC09.1.
Dimensions: L 610 x W 410 x H 8 mm.

Art. No.	Pack Qty.	€
XE29.1	3	203,20

Stackable containers

Made of plastic, impact resistant.
Container TC11.1 suitable for stainless steel shelf trolley TC09.1 (can be used with or without XE29.1 shelves).

Capacity (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
20	400 x 300 x 235	**TC10.1**	1	33,35
40	600 x 400 x 220	**TC11.1**	1	55,85

Plastic tubs

Made of **HDPE**. Chipproof and breakproof. Resistant against most acids and alkali. Temperature stable from -40 to +110 °C.
Tub C973.1 suitable for lab cart C972.1.

Colour	Volume (l)	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
red	85	800 x 550 x 300	**C973.1**	1	60,15
white	100	900 x 550 x 360	**E285.1**	1	89,80

Tub trolleys

For all-purpose use in labs, clinics, production sites.
The carriage is made of plastic-coated steel pipe with four solid rubber castor wheels ∅ 75 mm.
The tub is made of white **LDPE**, stable from -40 to +120 °C.
Dimensions:

- Tub: inside/top 480 x 480 mm, H 400 mm, capacity approx. 85 l, weight 2.8 kg
- Trolley with tub: H 800 mm, weight 8.2 kg

Type	Art. No.	Pack Qty.	€
Tub	**4524.1**	1	40,75
Lid for tub	**5826.1**	1	38,50
Trolley	**K625.1**	1	181,70

Lab cart

For removable tub or basket. Multi-purpose use. **Max. load 200 kg.**
Frame made of 28 mm steel tubing, plastic coated. 4 wheels (∅ 75 mm) with solid rubber tyres and thread protection to ensure mobility.
Is secure due to 2 lockable steering wheels with double stop.
Height of tub seat 430 mm.
Delivery without tub. Please order suitable plastic tub separately.

for tub	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
C973.1	730 x 490 x 580	**C972.1**	1	177,40

Transport containers

Universal containers

Made of 18/10 stainless steel, extra heavy-duty. Material thickness of 1.0 mm. Items EEX5.1 and EEX6.1 come with handle reinforcement plates.
Delivery incl. lid and three toggle fasteners to secure it in place.

Volume (l)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
20	265	395	**EEX2.1**	1	377,35
25	300	395	**EEX3.1**	1	414,95
30	300	465	**EEX4.1**	1	450,45
50	350	555	**EEX5.1**	1	525,70
75	400	620	**EEX6.1**	1	628,90

Transport castors

Made of 18/10 stainless steel. With five rubber castors dia. 100 mm, one of which can be locked. For transporting round containers safely.

For ∅ (mm)	Art. No.	Pack Qty.	€
300	**EET7.1**	1	177,40
350	**EET8.1**	1	181,70
400	**EET9.1**	1	235,45
445	**EEX0.1**	1	288,10
550	**EEX1.1**	1	364,45

Aluminium boxes

Made of 1.0 mm thick aluminium. Colour: Silver.
- Corrosion, weather and temperature-resistant
- Dimensionally stable
- Strong lever clamp seals with holes for padlock or seal lock and for fitting cylinder locks
- Plastic-coated safety folding handles
- Circumferential rubber seal to protect against external influences, such as dust and splash water
- Retaining bands on folding lid prevent hinges from pulling out

Capacity (l)	Outer dimensions L x W x H (mm)	Inner dimensions L x W x H (mm)	Weight (kg)
29	335 x 432 x 277	300 x 400 x 245	2.7
76	385 x 592 x 409	353 x 560 x 380	4.37
91	385 x 782 x 379	350 x 750 x 350	5.3

Volume (l)	Art. No.	Pack Qty.	€
29	**EPL0.1**	1	104,30
76	**EPL1.1**	1	192,45
91	**EPL2.1**	1	203,20

Sekuroka®-transport boxes

Made of **PP**. With recessed grip on the side. Very robust, stackable. UN-authorized for storing and transporting solids, granulates and powders (Packing group I, II and III) if used together with UN-seal tape to secure lid.
Delivery without seal tapes, please order separately.

Volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
20	400 x 300 x 275	**T325.1**	1	58,60
45	600 x 400 x 275	**LL32.1**	1	63,25

Accessories:

UN-seal tapes	**LL31.1**	50	20,40

Euro container

Made of PP. With 2 handles or open grips, ideal for transport and storage.
- Stackable
- Closed base and side walls
- Dimensions compliant with Euro pallet (120 x 80 cm)
- Please order non-hinged lid separately (can also be stacked with lids)

Delivery without non-hinged lid, please order separately.

Capacity (l)	Outer dimensions L x W x H (mm)	Inner dimensions L x W x H (mm)	Weight (kg)	Matching lid
11.2	300 x 400 x 120	268 x 367 x 117	0.69	EPK7.1
20.8	300 x 400 x 220	268 x 367 x 217	1.02	EPK7.1
30.0	300 x 400 x 320	268 x 367 x 317	1.46	EPK7.1
23.9	400 x 600 x 120	367 x 567 x 117	1.13	EPK8.1
54.5	400 x 600 x 270	367 x 567 x 267	1.96	EPK8.1
80.0	400 x 600 x 420	367 x 567 x 416	3.20	EPK9.1

Volume (l)	Art. No.	Pack Qty.	€
11,2	**EPK1.1**	1	11,00
20,8	**EPK2.1**	1	15,00
30,0	**EPK3.1**	1	19,30
23,9	**EPK4.1**	1	17,15
54,5	**EPK5.1**	1	27,85
80,0	**EPK6.1**	1	44,10

Non-hinged lid for Euro container

Image	Art. No.	Pack Qty.	€
①	**EPK7.1**	1	7,85
②	**EPK8.1**	1	9,90
③	**EPK9.1**	1	15,25

Rotilabo®-plastic cases

With lid. Very robust version, slip-proof and stackable.
With handle and spring-loaded latches, can be lead-sealed.

Volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
10	400 x 300 x 133	**C236.1**	1	37,10
15	400 x 300 x 183	**C237.1**	1	40,75
20	600 x 400 x 135	**C238.1**	1	53,70
40	600 x 400 x 235	**C239.1**	1	64,45

With two extra side handles

Volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
32	400 x 300 x 282	**H310.1**	1	53,70
40	400 x 300 x 338	**H311.1**	1	53,70

Rotilabo®-instrument cases

Very robust aluminium cases with extra stabilizing aluminium frame. Instruments are protected from shock and breakage due to the removeable knopped foam liner in lid and the pre-perforated foam squares in base. Can be locked. **Delivery incl.** key.

Small case

Outer dimensions: W 340 x H 270 x D 145 mm
Inner dimensions: W 320 x H 245 x D 125 mm
Weight 2 kg.

Art. No.	Pack Qty.	€
Y377.1	1	81,60

Large case

Outer dimensions: W 460 x H 360 x D 155 mm
Inner dimensions: W 440 x H 330 x D 140 mm
Weight 3 kg.

Art. No.	Pack Qty.	€
Y378.1	1	112,90

Transport containers

A 121 °C

DuraPorter™ safety containers

Made of **PC**, with watertight silicon seal. Ideal for in-house transportation of biological and chemical samples, instruments or for storage. Transparent box with hinged lid, three snap locks and carry handle, stackable. Partitionings for smaller samples can be removed to make use of the entire interior. Lid can be fully opened for easy filling and cleaning.
Dimensions: outer L 380 x W 196 x H 160 mm, inner L 335 x W 155 x H 135 mm. Autoclavable.

Colour	Art. No.	Pack Qty.	€
transparent/blue	**AAA0.1**	1	89,00
red	**AAA1.1**	1	89,00
yellow	**AAA2.1**	1	89,00

Transport containers

Made of **PP**. Grey/red, with spacious compartment for storing small parts and carrying tray.
- Cover and removable carrying tray each with flush handle
- Hinges with galvanised metal axles
- Eyelet for attachment of a padlock

Volume (l)	L x W x H (mm)	Carrying tray compartments	Art. No.	Pack Qty.	€
9	410 x 225 x 185	5	**EPL4.1**	1	24,20
15	485 x 260 x 230	6	**EPL5.1**	1	28,60

A 121 °C

Rotilabo®-safety container

Made of **PC**. For dustfree storage of samples and reagents or for safe transport of test tubes and other vessels with dangerous substances. Features tightly sealing lid and 4 catches. Plus two side-handles and a main one made out of high-grade steel. Break- and leakproof.
Dimensions: outer L 330 x W 175 x H 180 mm, inner L 300 x W 125 x H 160 mm. Autoclavable.

Type	Art. No.	Pack Qty.	€
Safety container	**8331.1**	1	100,70
Spare clips	**LK68.1**	4	19,75

Rotilabo®-laboratory basket

Spot-welded, PE-coated wire trellis basket, 10 x 10 x 1.5 mm. Handle can be folded down and locks into place. The grip of the handle is plastic-coated. Base is reinforced by two rods for additional safety.
Dimensions: L 400 x W 300 x H 200 mm.

Art. No.	Pack Qty.	€
L048.1	1	160,20

Rotilabo® transport boxes

Made of plastic. With sturdy fold-away carry handle; removable compartment and 2 removable small parts magazines in lid. For transporting measuring instruments, tools and small parts.
Dimensions: L 580 x W 290 x H 300 mm.

Art. No.	Pack Qty.	€
CYX1.1	1	35,40

Hand baskets

Can be stacked inside one another when empty.

① **Made of plastic**, double-handled. Colour red.

Volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
22	430 x 300 x 230	**TC06.1**	1	24,70

② **Zinc chromate finish** with plastic-coated metal handle.

Volume (l)	L x W x H (mm)	Art. No.	Pack Qty.	€
7	365 x 250 x 120	**TC07.1**	1	53,65
20	470 x 310 x 210	**TC08.1**	1	46,25

Transport containers

Rotilabo®-baskets

Made of aluminium. Slide strip made of plastic. Ergonomically formed handles on the front side. The straight baskets can be stacked on top of each other, the conical ones inside each other.

Model	Outer dimensions L x W x H (mm)	Inner dimensions L x W x H (mm)	Volume (l)	Weight (kg)
① straight	580 x 380 x 300	540 x 340 x 280	55	2.5
② conical	top: 740 x 485 x 290 bottom: 640 x 380 x 290	top: 700 x 445 x 290 bottom: 630 x 375 x 290	89	3.0

Type	Art. No.	Pack Qty.	€
① straight	**EX45.1**	1	149,45
② conical	**EX47.1**	1	166,65

Rotilabo®-collapsible boxes

Made of **PP**. Folding baskets. Capacity 30 l. Max. load 10 kg.
Dimensions: L 470 x W 340 x H 240 mm.

Art. No.	Pack Qty.	€
X857.1	1	13,95

NEW

CLAX® transport box

Colour grey. Foldable. Made of high-grade plastic. Capacity 46 l.
Dimensions: L 530 x W 370 x H 270 mm.

Art. No.	Pack Qty.	€
HNX8.1	1	21,00

A 121 °C

Bottle carriers

Made of **PP**, with handle and 8 slots. Ideal for transporting oxygen bottles acc. to Winkler (Art. No. HH78.1, 150 ml).
Dimensions: L 330 x W 170 x H 70 mm. Opening ∅ 72 mm.
Handle height 72 mm. Autoclavable.

Art. No.	Pack Qty.	€
YC18.1	2	118,25

Rotilabo®-plastic containers

Made of **PP**. For safe transport of bottles. Segment divisions in box can be removed easily. Containers are robust, scratch-proof and easy to clean.
Outer dimensions: L 400 x W 300 mm.

With 12 subdivisions

Each 85 x 85 mm. Height of container 220 mm.

Art. No.	Pack Qty.	€
C013.1	1	45,15

With 8 subdivisions

Each 97 x 97 mm. Height of container 270 mm.

Art. No.	Pack Qty.	€
C014.1	1	47,25

Accessories:
Lid with hinges

Art. No.	Pack Qty.	€
P094.1	1	8,55

Spring-loaded catches

Art. No.	Pack Qty.	€
P095.1	2	3,05

Transport containers

Multi-purpose transport baskets

By Nalgene®. Ideal for transporting samples, bottles, tools, etc.
With moulded divider.
Dimensions of compartments: L 340 x W 89 x H 111 mm.
Overall dimensions (incl. handle): L 378 x W 241 x H 114 mm.

Made of HDPE

Art. No.	Pack Qty.	€
K571.1	1	31,10

Made of PP

Ideal in biological and clinical laboratories for collecting and transporting samples. Conforms to OSHA Standard 29 CFR, part 1910.1030 for use as protection against haematogen pathogens. Autoclavable.

Art. No.	Pack Qty.	€
K572.1	1	33,15

Bottle transport buckets

Made from thermoplastic elastomer. Suitable for shockproof transport of breakable glass bottles or goods for cooling. Max. tensile loading capacity: 50 kg. Resistant to most aqueous solvents, acids and bases.
Temperature stable from -45 to +110 °C. Autoclavable.

For bottles	Height incl. handle (mm)	Height without handle (mm)	Outer ∅ (mm)	Inner ∅ (mm)
0.5 to 1	254	165	114	100
2.5 to 4 l	406	267	190	175

For bottles	Colour	Art. No.	Pack Qty.	€
0.5 to 1 l	red	**ATC1.1**	1	42,20
2.5 to 4 l	red	**C804.1**	1	85,50
2.5 to 4 l	black	**C806.1**	1	85,50

Transport of hazardous substances
The guidelines for working safely in laboratories (BGI 850-0) stipulate that non-shatterproof containers must be supported at their base when carrying; many other containers taken from refrigerators or cold rooms may be very smooth or slippery due to condensation.
Non-shatterproof containers may only be transported to other rooms using special aids which allow them to be held and carried safely; these include buckets, carry boxes or laboratory trolleys, preferably fitted with trays (4.10.3).

Safety container for bottles

By Nalgene®. Made of **LDPE** with PC lid. Ideal for transporting and storing 2.5 l narrow neck bottles (for ex. Art. No. T503.1). The screw cap enables pouring without removing bottle from the container.

Art. No.	Pack Qty.	€
P333.1	1	87,80

Bottle baskets

Ideal for transporting dangerous liquids. Made of plastic covered steel wire. Handle with slight suspension effect.

Basket 4 x 1 l
Dimensions: L 235 x W 235 x H 130 mm, H with handle 300 mm, compartment width 105 x 105 mm.

Art. No.	Pack Qty.	€
0869.1	1	39,70

Basket 2 x 2.5 l
Dimensions: L 340 x W 180 x H 130 mm, H with handle 320 mm, compartment width 160 x 160 mm.

Art. No.	Pack Qty.	€
0130.1	1	34,95

Bottle baskets

Ideal for transporting different-sized laboratory samples.
With feet and stable handle. Made of wire, covered with white PE.

Innner ∅ (mm)	Number of compartments	Height (mm)	Art. No.	Pack Qty.	€
100	4	330	**L431.1**	1	62,90
100	6	330	**L432.1**	1	78,40
100	8	330	**L433.1**	1	96,55
100	10	330	**L434.1**	1	116,10
130	4	370	**L435.1**	1	70,95
130	6	370	**L436.1**	1	80,65
130	8	370	**L437.1**	1	111,80
80	12	320	**N146.1**	1	107,50

Storage containers

Bottle carriers

Made of **PP**. With ergonomically-shaped carrying handle.
Height 150 mm. Stackable.

Compartment size (mm)	Number of compartments	L x W x H (mm)	Art. No.	Pack Qty.	€
90 x 90	6	295 x 200 x 320	**EPA5.1**	5	41,55
∅ 110	4	300 x 260 x 310	**EPA6.1**	5	47,85

Storage boxes

Made of **PP**. Resistant against oil and acids. Breakproof, stackable.

Colour	L x W x H (mm)	Art. No.	Pack Qty.	€
blue	115 x 102 x 74	**Y388.1**	6	7,35
blue	164 x 102 x 74	**Y389.1**	4	6,90
blue	242 x 146 x 127	**Y390.1**	2	7,15
blue	332 x 207 x 155	**Y391.1**	2	15,00
red	332 x 207 x 155	**EPH3.1**	2	15,00
yellow	332 x 207 x 155	**EPH4.1**	2	15,00
green	332 x 207 x 155	**EPH5.1**	2	15,00
blue	489 x 312 x 184	**Y392.1**	2	25,95

MultiStore storage systems

Made of **PS**, white, tip-out drawers made of transparent polystyrene.

- For small items and accessories, versatile
- Dust-free and clean storage of contents
- Can be combined in a variety of ways to provide customised storage solutions

Number of drawers	Overall plate dimensions: L x W x H (mm)	Drawer size L x W x H (mm)
9	601 x 65 x 77	49 x 45 x 46
6	601 x 94 x 113	80 x 67 x 69
5	601 x 136 x 163	99.5 x 97 x 107.5
3	601 x 198 x 238	176 x 149 x 161
2	601 x 310.5 x 353	265 x 221 x 241

Number of drawers	Art. No.	Pack Qty.	€
9	**ANP5.1**	1	18,25
6	**ANP6.1**	1	23,15
5	**EPL6.1**	1	30,80
3	**ANP7.1**	1	50,45
2	**EPL7.1**	1	111,80

Sorting container for small items

Made of acrylic glass. Easy to fill from above. Pipette tips, reaction vials and other small items can easily be removed through second opening. With non-slip rubber feet.

Number of compartments	L x W x H (mm)	Art. No.	Pack Qty.	€
1	180 x 175 x 235	**AXE0.1**	1	74,95
2	139 x 160 x 368	**AXE1.1**	1	83,85
3	210 x 155 x 212	**AXE2.1**	1	92,05
4	278 x 158 x 217	**AXE3.1**	1	96,65

Storage containers

Drawer container

Made of **ABS**. With 5 drawers for the storage of up to 5000 microscope slides. Each drawer holds 10 containers for microscope slides (Art. No. 2299.2 + 2300.2). Optionally available with rollers for mobile use. Can be upgraded by adding drawers.
Delivery incl. 5 drawers and cover. Please order rollers separately.

Type	Art. No.	Pack Qty.	€
Drawer container	**CPY1.1**	1	241,90

Accessories:

Rollers	**CPY2.1**	4	16,70
Drawer (L 420 x W 420 x H 140 mm)	**CPY3.1**	1	70,85
Cover for drawer (L 420 x B 420 x H 25 mm)	**CPY4.1**	1	25,70

Storage boxes

Made of **PP**. With hinged lid, stackable.
Art. No. YC76.1 and YC77.1 with label holder on lid.

L x W x H (mm)	Art. No.	Pack Qty.	€
136 x 87 x 35	**YC76.1**	1	6,40
136 x 87 x 55	**YC77.1**	1	6,75
185 x 140 x 80	**YC78.1**	1	8,55
228 x 130 x 60	**YC79.1**	1	9,05

Storage boxes

Bottom section made of **PP**. Cover housing made of SAN.
Red, with transparent hinge cover.

- Nominal volume 2.5 l (Filling volume 3.7 l)
- Stackable
- Can be connected together at the sides by means of enclosed connectors
- Dimensions: W 146 x D 232 x H 158 mm

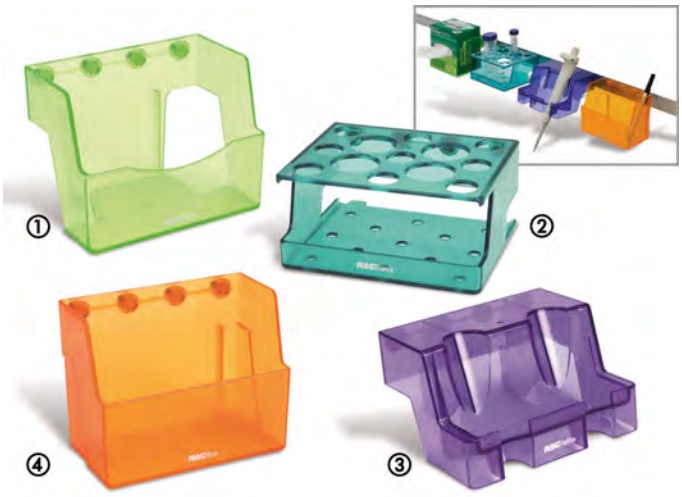
Art. No.	Pack Qty.	€
EPH1.1	4	55,05

Hood for small instruments

Made of **PMMA**. Transparent cover with square base for protecting microscopes and other sensitive instruments against dust and contamination. Also suitable as draft shield for balances.
Dimensions: L 300 x W 307 x H 400 mm.

Art. No.	Pack Qty.	€
CPX2.1	1	99,25

Storage containers



Magnetic storage containers

Made of **ABS**, with four magnets. For attaching to clean benches, extractors or other metallic surfaces.

Delivery incl. metal plate for attaching, self-adhesive.

Type	For	L x W x H (mm)	Art. No.	Pack Qty.	€
①	Tissue boxes AA64.1 (213 x 114 mm)	130 x 91 x 98	**ACL3.1**	1	21,45
②	4 x 50 ml + 9 x 15 ml centrifuge tubes	131 x 112 x 64	**ACL4.1**	1	21,45
③	2 microlitre pipettes	131 x 112 x 76	**ACL5.1**	1	21,45
④	Small items	130 x 78 x 102	**ACL6.1**	1	21,45

Assortment boxes

Made of **PP**. With fixed compartments and sturdy hinges and covers.

Dimensions: L 250 x W 170 x H 46 mm

Colour	Number of compartments	Dimensions of compartments (mm)	Art. No.	Pack Qty.	€
red	8	65 x 242 (1x), 98 x 38 (2x) 48 x 38 (4x), 98 x 90 (1x)	**H354.1**	1	10,70
transparent	12	82 x 38 (12x)	**EPH6.1**	1	12,30
transparent	18	48 x 38 (12x), 65 x 38 (6)	**EPH7.1**	1	12,30

Dimensions: L 335 x W 225 x H 55 mm

Colour	Number of compartments	Dimensions of compartments (mm)	Art. No.	Pack Qty.	€
red	8	105 x 105 (1x), 105 x 325 (1x) 105 x 52 (2x), 52 x 52 (4x)	**H355.1**	1	13,90
yellow	12	105 x 52 (12x)	**EPH8.1**	1	14,25
Blue	24	52 x 52 (24x)	**EPH9.1**	1	14,25

Storage rack for microscope slide boxes

Made of acrylic. With 15 spaces for 50 or 100-slot microscope slide boxes.
Compartment dimensions: L 214 x W 171 x H 38 mm,
Overall dimensions: L 711 x W 171 x H 228 mm.

Art. No.	Pack Qty.	€
TP32.1	1	310,70

Rotilabo®-small parts boxes

Made of clear **PS**. Art. No. 8544.1 red. With different-sized compartments.

Outer dimensions (mm)	Number of compartments	Dimensions of compartments (mm)	Art. No.	Pack Qty.	€
250 x 170	12	82 x 38 x 40	**K154.1**	1	12,85
250 x 170	18	48 x 38 x 40 (12 x) 65 x 38 x 40 (6 x)	**K155.1**	1	12,85
210 x 120	7	32 x 57 x 30 (6 x) 203 x 57 x 30 (1 x)	**8544.1**	1	7,75
210 x 120	9	36 x 67 x 30	**K156.1**	1	9,90
210 x 120	12	56 x 32 x 30	**K157.1**	1	9,60
170 x 105	10	50 x 32 x 27	**K159.1**	1	8,30

Drawer trays

Rotilabo®-drawer tray

Made of **PVC**, with 12 storage compartments 87 x 87 mm (inside) for small parts. Outer dimensions: L 410 x W 300 x H 65 mm.

Art. No.	Pack Qty.	€
8110.1	1	56,45

Rotilabo®-drawer tray, 9 compartments

Made of **PVC**, with subdivided lengthwise. Ideal for pipettes, thermometers, columns, etc. Outer dimensions: L 355 x W 300 x H 45 mm. Inner dimensions of the compartments: L 345 x W 27 mm.

Art. No.	Pack Qty.	€
8111.1	1	50,35

Rotilabo®-drawer tray

Made of **PVC**, with 5 compartments for pipettes, thermometers, small parts, etc. Outer dimensions: L 410 x W 300 x H 70 mm. Compartment inner dimensions:

- 1 compartment L 380 x W 96 mm
- 2 compartments L 187 x W 100 mm
- 2 compartments L 187 x W 66 mm

Art. No.	Pack Qty.	€
9521.1	1	55,10

Rotilabo®-pipette tray

Made of **PVC**, fits most drawers. Divided lengthways into 4 parts. Dimensions: L 420 x W 300 x H 40 mm.

Art. No.	Pack Qty.	€
7230.1	1	33,90

Rotilabo®-drawer tray

Made of **PS**. With 4 compartments 205 x 155 mm for neat storage of larger, small devices.
Overall dimensions approx. W 440 x D 340 x H 70 mm.

Art. No.	Pack Qty.	€
L064.1	1	79,95

Rotilabo®-drawer tray for microlitre pipettors

Made of **PS**. Ideal for pipettors, syringes

- 5 compartments L 275 x W 60 mm
- 2 compartments L 155 x W 140 mm

Overall dimensions approx. W 440 x D 340 x H 70 mm.

Art. No.	Pack Qty.	€
L060.1	1	79,95

▶ Pipettor stands see pages 440

▶ Drawer container for microscope slides, see page 758

Non-slip mats/Laboratory mats

Rocker Tape Adhesive films for shakers

Made of Polyester. Adhesive on both sides, provides a secure hold for different laboratory vessels on agitators or in incubators. Suitable for gentle shaking movements, dependent on load and contact area. Washable, reusable.

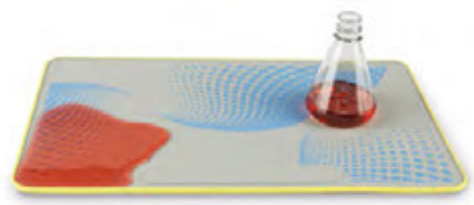
Type	Length (cm)	Width (cm)	Art. No.	Pack Qty.	€
Roll	610	3,8	**TH52.1**	1	46,20
Sheets	30,5	30,5	**TX33.1**	3	56,95

A 121 °C

Rotilabo®-laboratory mats

Made of silicone. Non-slip. Temperature stable from -60 to +260 °C. Autoclavable.

Colour	Dimensions (mm)	Art. No.	Pack Qty.	€
red	250 x 250	**EE86.1**	1	17,60
black	250 x 250	**EE87.1**	1	17,60
red	350 x 350	**EE88.1**	1	27,25
black	350 x 350	**EE89.1**	1	27,25



Programme extension!

A 121 °C

Laboratory mats

Made of FDA-approved silicone. Reduce vibration noise from devices. Metal inserts in the mat hold the magnetic rods in position. Raised edge as protection for spilled liquids.

- Slip-resistant
- Usable on both sides
- Washable
- Dishwasher-safe

Dimensions: L 600 x W 350 x H 2 mm.
Temperature-stable up to +200 °C, autoclavable.

Colour	Art. No.	Pack Qty.	€
yellow	**HNH0.1**	1	59,05
violet	**HNH1.1**	1	59,05
blue	**HYN8.1**	1	59,80

Lab sink mat

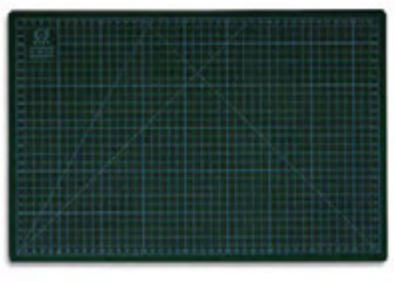
Made of soft **PVC** to prevent glass breakage when washing.
Round profile prevents splashing of running water.
The smooth surface prevents dirt from settling.
Weight of mat is sufficient to insure secure position in flowing water.
An additional advantage: Magnetic rods do not slip through mesh easily into drain pipe.
Dimensions: L 750 x W 450 x H 15 mm.
Width of profile 8 mm. Width of web 40 mm.

Art. No.	Pack Qty.	€
C374.1	1	64,40

Rotilabo®-adhesion mat

Made of soft **PVC**. Prevents slipping and is suitable for use as padding. Both sides can be used. Washable and durable.
Roll W 400 x L 1000 mm, approx. 1 mm thick.

Art. No.	Pack Qty. (roll)	€
0668.1	1	32,20



Cutting mats

Made of **PVC**, in 3 layers with special interior core.
With grid imprint and self-closing surface.
Colour: green, with white grid pattern. Thickness 3 mm.

Dimensions L x W (mm)	Art. No.	Pack Qty.	€
450 x 300	**KN07.1**	1	13,65
600 x 450	**PK51.1**	1	23,60

Anti-vibration laboratory mats

Made of neoprene. For absorbing vibration produced by laboratory equipment. Suitable for a large number of vortexers, shakers, rotators, microscopes and other equipment. Slip-resistant, creates a stable surface. Stackable for bearing heavy equipment, place side by side to produce a larger surface area.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
178	216	**AXC1.1**	2	48,40
216	279	**AXC2.1**	2	55,90

Rotilabo®-elastic buffer pads

Ideal for preventing slipping, vibrating, rattling of instruments, machines, lids, etc. Made of soft-elastic plastic. Self-adhesive.

∅ (mm)	Height (mm)	Colour	Art. No.	Pack Qty.	€
13	3	clear	**5352.1**	112	25,75

▶ Bench-Top protection paper see page 1163

Cutting boards

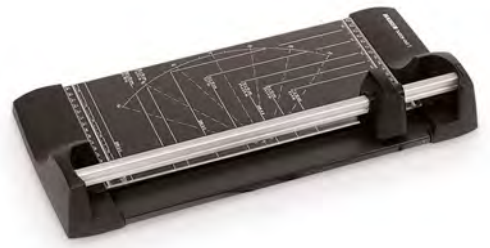
Made of **PE**. Temperature stable up to +90 °C.

Dimensions L x W x H (mm)	Design	Art. No.	Pack Qty.	€
300 x 200 x 10	with recessed grip, without rubber feet	**N115.1**	1	9,35
350 x 250 x 20	without recessed grip, with rubber feet	**N116.1**	1	23,15

Cutting boards

Made of coloured plastic, for colour assignment.
Dimensions: L 400 x W 300 x H 20 mm.

Colour	Art. No.	Pack Qty.	€
red	**HEC8.1**	1	33,90
blue	**HEC9.1**	1	33,90
green	**HEE0.1**	1	33,90
white	**HEE1.1**	1	33,90



Safety cutter

With bevelled, rotating round knife, self-sharpening, in closed plastic top.
Automatic pressing on of the cutting material at the cutting point.
With transparent press-down ruler. Also features two angle layouts with cm and inch scales, degree graduation and format marking.
Cutting height max. 1 mm.

Small model:
Cutting length max. ca 320 mm. Dimensions: W 430 x H 70 x D 210 mm.

Art. No.	Pack Qty.	€
X860.1	1	50,00

Large model:
Cutting length max. ca 460 mm. Dimensions: W 570 x H 70 x D 210 mm.

Art. No.	Pack Qty.	€
X861.1	1	62,25

Safety knife

Made of cast aluminium, black heat-baked paint and blue plastic parts. For left and right handed users. Blade is drawn back into handle by a spring when lever is released. With ergonomically formed handle. Knife is handy, safe and secure in grip. Length 150 mm, width 35 mm. Blade thickness 0.65 mm (trapeze shape).

Type	Art. No.	Pack Qty.	€
Safety knife	**C649.1**	1	18,25
Spare blades	**C650.1**	10	6,40

Glass and ceramic scratcher

With fitted blade. For hobs and other smooth surfaces. Adjustable. Width 50 mm, length 140 mm. Weight 63 g.

Type	Art. No.	Pack Qty.	€
Scratcher	**0508.1**	1	9,10
Replacement blades (L 43 x W 22 x strength 0,22 mm)	**CLT7.1**	10	5,35

MARTego safety knife

With automatic blade retractor. Operating lever can be locked to prevent accidental opening. Anatomically shaped aluminium tong grip with soft-component handle for slip-resistant and fatigue-free working. For left and right handed users. Easy blade replacement without tools. Application advantage: blade is usable on 4 sides. Suitable for all routine cutting work, ideal for opening boxes.

Type	Art. No.	Pack Qty.	€
Safety knife	**XK02.1**	1	32,20
Replacement blades	**XK03.1**	10	7,75

Safety laboratory knife

Strong, rounded blade made of stainless steel 1.4034. Plastic safety handle reduces risk of injury. Blade length 90 mm, overall length 225 mm.

Art. No.	Pack Qty.	€
PX19.1	1	17,10

Cutter 2-in-1

With automatic blade retractor and auto-lock feature. Metal handle with rubberised grip zone and integrated break-off device. Usable as a standard cutter or safety knife. Spring-loaded blade retracts automatically when the blade slips off the cutting object. The standard break-off blade can, however, also be pushed forwards in the conventional fashion using the auto-lock feature. Dimensions: L 186 mm x W 38 mm, blade width 18 mm. **Delivery incl.** blade.

Type	Art. No.	Pack Qty.	€
Cutter	**PK49.1**	1	12,85
Replacement blades	**PK50.1**	10	4,10

Ceramic knives

With extremely hard, stainless and anti-magnetic blade. Very light. Ergonomically designed handle. No resharpening.

Blade length (mm)	Art. No.	Pack Qty.	€
90	**T752.1**	1	34,95
120	**T753.1**	1	53,70
150	**T754.1**	1	59,15

Knives

For cutting foils, tubing, insulation, mats, etc.
Blade is made of ice-hardened and hand-sharpened stainless steel.
Knives are dishwasher proof.

Blade length (mm)	Total length (mm)	Art. No.	Pack Qty.	€
75	180	**A572.1**	1	37,20
90	190	**A573.1**	1	38,20
120	225	**A574.1**	1	39,90
160	270	**A575.1**	1	44,95
200	330	**A577.1**	1	62,90
260	380	**A579.1**	1	70,85

Knives with coloured handle

Blades made of chrome molybdenum steel.
Coloured handle for colour assignment, anti-slip for safe grip.

With smooth cutter
Blade length 130 mm, overall length 270 mm.

Colour	Art. No.	Pack Qty.	€
red	**HEE2.1**	1	15,60
blue	**HEE3.1**	1	15,60
green	**HEE4.1**	1	15,60

With serrated edge
For cutting hard shells or crusts.
Blade length 110 mm, overall length 220 mm.

Colour	Art. No.	Pack Qty.	€
orange	**HEE5.1**	1	6,25
light blue	**HEE6.1**	1	6,25
lime green	**HEE7.1**	1	6,25

Lab clasp knife

Special knife with lockable, stainless blade
and rubber-like textured handle for secure grip.
Dimensions: length blade ca. 70 mm, knife unfolded 175 mm,
folded ca. 105 mm. Weight 78 g.

Art. No.	Pack Qty.	€
1036.1	1	15,00

Scissors

Made of stainless high-grade steel, rated 56 on the Rockwell hardness scale and shock-resistant plastic. Can be readjusted and sharpened. TÜV-tested. Comes in plastic case.

For papers, textiles, foils and more

Fig.	Blade length (mm)	Total length (mm)	Type	Art. No.	Pack Qty.	€
④	130	260	for right-handed users	**0821.1**	1	19,30
①	66	164	for right-handed users	**9674.1**	1	16,00
-	66	164	for left-handed users	**9676.1**	1	18,20

For cardboard, leather, plastic, carpets and more

Fig.	Blade length (mm)	Total length (mm)	Type	Art. No.	Pack Qty.	€
②	41	170	for right-handed users	**5489.1**	1	13,75
③	93	212	for right-handed users	**9677.1**	1	18,60
-	93	212	for left-handed users	**9678.1**	1	21,40

Utility shears

- Cutting principle Amboss
- Precision-ground upper blade, non-stick
- Ergonomic handle, non-slip
- Integrated spring
- One-handed safety lock
- Maximum cutting thickness 23 mm
- Length 200 mm.

Art. No.	Pack Qty.	€
1259.1	1	28,85

Combinations scissors

Made of stainless steel. Cut wire, tin, cardboard, textile, leather, rubber and plastic. Can be locked. Total length 190 mm, blade length 40 mm, weight 110 g.

Art. No.	Pack Qty.	€
1901.1	1	17,80

Glass cutters/Engravers

Rotilabo®-hose- and tube-cutter

Made of stainless steel 18/10, with high gloss finish.
Ideal for cutting hoses and centrifuge tubes of max. outer ∅ 10 mm.
Blade length 2.5 cm. Total length 10 cm.
Delivery incl. artificial leather case.

Art. No.	Pack Qty.	€
CK56.1	1	21,15

Tube cutter

For all tubes with ∅ max. 13 mm.

Type	Art. No.	Pack Qty.	€
Tube cutter	**6737.1**	1	20,00
Spare blades for tube cutter	**6738.1**	5	36,35

Rotilabo®-glass tube cutter

Made of die cast zinc, nickel plated. Carbide cutter wheel.
Suitable for tube ∅ from 3 to 30 mm.

Type	Weight (g)	Art. No.	Pack Qty.	€
Glass tube cutter	68	**YT66.1**	1	13,80
Replacement cutter wheel for glass tube cutter	2	**YT67.1**	1	4,25

Capillary tubing cutter

For ∅ up to 1⁄16″ (1.59 mm) outside and 0.1 mm inside.
Prevents sharp or warped edges when cutting.
The depth of cut can be adjusted. Also suitable for clean cuts on PTFE tubes or electric wires. Can be used approx. 2000 times.

Art. No.	Pack Qty.	€
5116.1	1	53,70

Glass cutter

With replaceable blade made of hard metal. Length 185 mm.

Type	Art. No.	Pack Qty.	€
Glass cutter	**8209.1**	1	48,20
Spare blade 40 x 20 mm	**8210.1**	1	32,05

Ampoule opener

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

Art. No.	Pack Qty.	€
CXT2.1	1	53,25

Rotilabo®-glass cutter

With plastic handle. Standard format with Toplife cutting roller.
Extremely light cover strip made of special metal alloy.
Cuts very finely and smoothly. Universal glass cutter for
glass thickness 2 to 12 mm. Cutting angle 135°. 2.5 mm from ruler.
Cutter roller not interchangeable.

Art. No.	Pack Qty.	€
L124.1	1	21,20

Diamond grinding pen

With octaeder tip and wooden handle. For engraving glass.

Art. No.	Pack Qty.	€
1530.1	1	24,65

Rotilabo®-glass scriber

With carbide tip scriber, for permanent marking of glass or metal.
Ergonomic handle made of plastic, sturdy pen made of aluminium
with rugged tip holder for safe handling.
Tip can be retracted into the pen body for safe storage.
Dimensions: L 150 x ∅ 11 mm.

Art. No.	Pack Qty.	€
CHN4.1	1	26,80

Marker pen

With sharp tungsten carbide tip for indelible marking of glass,
ceramic and plastic. Tip can be retracted into the pen body for safe storage.
Dimensions: L 137 x ∅ 9.8 mm.

Art. No.	Pack Qty.	€
AXL2.1	1	34,20

Signograph

Engraver, for marking or decorating metal, stone, plastic, glass, porcelain.
Works acc. to the vibration principle, using AC frequency.
Intensity can be infinitely adjusted.
Delivery incl. adapter and steel tip. 1.75 m extension cord.
Power supply 220 V/50 Hz/25 W. Weight incl. cable 320 g.

Type	Art. No.	Pack Qty.	€
Engraver Signograph	**1951.1**	1	39,35
Modelling tip, spherical	**5251.1**	1	4,25
Modelling tip, pointed	**0203.1**	1	5,35
Diamond tip	**0901.1**	1	38,50

Engraving set, complete

Ideal for engraving, frosting, signing glass, ceramics, acrylic or metal.
Dimensions approx. L 300 x W 200 x H 60 mm. Comes in plastic case.
- 1 engraver 12-18 volt, 20.000 $Umin^{-1}$, with mounted ball bearing
- 1 TÜV-tested power pack (220-240/12 volt, 0.5 A)
- 1 piece of test glass
- 1 sample and instruction manual

Delivery incl. all the necessary tools: spherical Diamond pens for making 1.0 and 1.8 mm lines and notches. Each grinding pen is made of silicium-carbide, with a cone and ball shaped for frosting.

Art. No.	Pack Qty.	€
N411.1	1	66,45

Spare pens

Type	Art. No.	Pack Qty.	€
Diamond grinding pen, spherical ∅ 1.0 mm	**N976.1**	2	6,25
Diamond grinding pen, spherical ∅ 1.8 mm	**N977.1**	2	6,25
Silicium-carbide grinding pens, cone and ball shaped	**N978.1**	2	4,00

Hand cork borers

Made of brass. For drilling in cork, rubber, leather, styrofoam, etc.
18 drills from ∅ 5 to 26 mm.

Art. No.	Pack Qty. (set)	€
0581.1	1	154,80

Cork borer sharpener

For sharpening blunt drills.

Art. No.	Pack Qty.	€
0582.1	1	21,15

Hole punching pliers

With 6 hole punchers from ∅ 2 to 5 mm. Ideal for cardboard, plastic foil, leather. Can be locked. L 220 mm, weight 250 g.

Art. No.	Pack Qty.	€
0837.1	1	19,00

Diamond steel saw

With tungsten-carbide blade. Ideal for cutting wood, plastic, rubber, ceramics, soft metal, clay and glass tubes, etc. without knife jamming. Blade length 210 mm. Total length 400 mm (255 mm when clasped). Weight 150 g.

Art. No.	Pack Qty.	€
1857.1	1	25,70

Precision gripper

Made of chrome-vanadium steel with plastic handle.
Smooth, polished gripping surfaces for precise work.
Smooth-running double spring for soft, steady opening.
Length 130 mm. Weight 61 g.

Art. No.	Pack Qty.	€
ETY7.1	1	54,20

Pliers

Made from special steel, chromium-plated, polished.
With protective covering for handles.

① Combination pliers

Length (mm)	Weight (g)	Art. No.	Pack Qty.	€
160	270	**X191.1**	1	13,45

② Telephone pliers, straight

Length (mm)	Weight (g)	Art. No.	Pack Qty.	€
200	180	**X192.1**	1	14,55

③ Telephone pliers, 45° offset

Length (mm)	Weight (g)	Art. No.	Pack Qty.	€
200	180	**X193.1**	1	17,75

④ Diagonal cutting pliers

Length (mm)	Weight (g)	Art. No.	Pack Qty.	€
160	190	**X194.1**	1	13,95

Precision caliper gauge

Made of hardened high grade steel, with round scale under acrylic glass cover. Knurled thumb screws are used for adjustment and locking. Measirung range up to 160 mm. Resolution: 0.02 mm. Accuracy acc. to DIN 862. With case.

Art. No.	Pack Qty.	€
0813.1	1	61,85

Fastening tool

Made of metal. For fastening and cutting cable ties.
The corrugated cable ties or fasteners are secured in a single operation and then cut. The required tension can be individually set.
Colour: blue or red.
Assorted ties Art. No. 1729.1 and 1735.1.

Art. No.	Pack Qty.	€
H977.1	1	90,20

Rotilabo®-ties

Made of **PA**. Temperature stable from -40 to +85 °C.
Suitable for fastening tool H977.1.

Length (mm)	Width (mm)	For binding to max	Art. No.	Pack Qty.	€
180	4,5	∅ 50 mm	**1729.1**	100	10,55
102	2,5	∅ 22 mm	**1735.1**	100	5,35

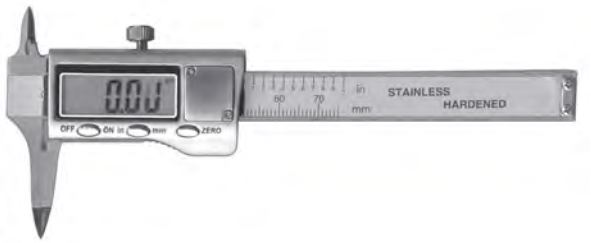
Rotating vice

With ball-and-socket joint. For benches up to 80 mm thick.
Has two aluminium holding blocks with different profiles.
Max. opening 55 mm. Weight 2.2 kg.
Colour grey hammer enamel (not picture colour).

Art. No.	Pack Qty.	€
1940.1	1	199,95

Holding blocks made of plastic. For highly sensitive objects.

Art. No.	Pack Qty.	€
1942.1	2	36,50



Pocket slide rule, digital

By Hammacher. Made of stainless steel, with narrow callipers.
With cross tips and depth measuring stick.
Extra large display, accuracy to DIN 862.

Technical specifications:

Measuring range	0 to 70 mm
Scaling	0.01 mm / .0005″, switchable
Jaw length	20 mm

Delivery incl. case.

Art. No.	Pack Qty.	€
HCN3.1	1	131,15

Digital caliper gauge

Made of stainless steel, hardened. Suitable for indoor and outdoor measurement. Working temperature 5 to 40 °C.
With locking screw device. Power supply via 1.5 V cell battery.
Features automatic switch-off and mm/inch change-over.

Technical specifications:

Range	0 to 150 mm
Scale graduation	0.01 mm
Tolerance	±0.03 mm
Max. operating speed	1.5 m/s

Art. No.	Pack Qty.	€
L826.1	1	105,35

Rulers

By Hammacher. Made of metal, non-corrosive. Autoclavable.

Measuring range (mm/inch)	Length (mm)	Art. No.	Pack Qty.	€
150 / 6	167	**HCN1.1**	1	8,10
300 / 12	317	**HCN2.1**	1	10,25

Tool kit bag

Made of sturdy imitation leather with chrome vanadium tools:
- 1 enamelled hammer 250 g
- 1 adjustable pliers 235 mm
- 1 combination pliers 180 mm with side cutting
- 3 screwdrivers 125 x 6, 150 x 5 and 75 x 4 mm
- 1 cross-point screwdriver 100 x 2 mm
- 1 voltage tester 150-250 V as screwdriver
- 8 chrome plated double open-ended spanners, width 6 to 22

Bag when open: W 400 x L 400 mm.
Bag when closed: W 150 x H 70 x L 400 mm.
Weight 2.1 kg.

Art. No.	Pack Qty.	€
1829.1	1	155,90

Screwdriver set

Acc. to EN 60900. For live parts up to 1000 V.
6-piece set:

Slotted:	Phillips:
2.5 x 80 mm 3.5 x 100 mm 4.0 x 100 mm 5.5 x 125 mm	PH 1/80 mm PH 2/100 mm

Art. No.	Pack Qty. (set)	€
Y258.1	1	26,50

Expert toolbox

By Heyco. By Heyco. Made of ABS, with load-carrying capacity of up to 30 kg, double aluminium frame and barrel lock.
High-quality foam insert for secure tool holding during transit.
Dimensions: L 480 x W 320 x H 150 mm.

Contents:
- 1 removable socket wrench set ¼″, 17-piece
- 1 lever wrench ½″ + 5 accessories
- 12 socket wrench inserts ½″ from 10 to 24 mm (hexagonal)
- 1 pipe and water pump wrench 240 mm
- 13 combination wrench from 6 to 24 mm
- 1 combination pliers 180 mm
- 1 side cutter 160 mm
- 8 offset screwdriver from 2 to 10 mm (hexagonal)
- 8 offset screwdriver T9 to T40 (TORX®)
- 1 voltage tester, insulated
- 1 engineer's hammer
- 1 boxcutter
- 1 torch (LED, 1 W, L 100 mm)
- 1 tape measure, 5 m, with belt clip
- 2 Phillips screwdriver (75 mm, No. 1 / 100 mm, No. 2)
- 2 screwdrivers (100 x 5.5 mm / 150 x 8.0 mm)

Art. No.	Pack Qty. (set)	€
NH23.1	1	891,20

Box spanner set

47 parts. Made of chrome vanadium steel, chrome-plated. ¼″ + TORX.

Contents:
- Box spanner adapters 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14 mm
- Box spanner adapters long 8; 10; 11; 13 mm
- Adapters for slotted head screws 4; 5.5; 6.5 mm
- Adapters for crosspin screws PH 1, 2, 3, PZ 1, 2, 3
- Adapters for Allen screws 3, 4, 5, 6, 7, 8 mm
- Adapters for inner-TORX-screws T10; T15; T20; T25; T30; T40
- Handle with sliding block
- Reversible lever ratchet with ejection mechanism
- Hand adapter with plastic hilt
- Cardan joint
- Extension 50 + 105 mm
- Hexagon wrench key with pilot 1.5; 2; 2.5

Supplied in plastic box, dimensions: L 230 x W 160 x H 40 mm.
Weight 1050 g.

Art. No.	Pack Qty. (set)	€
L148.1	1	58,05

Pin spanner set

Hexagonal hinged holder for standard inch screws.
Has an ergonomic design and a fiber-glass reinforced casing.
Spanners are made of chrome vanadium steel.
Lifting button enables easy selection of the required spanner.
For screws 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4 inch.
Dimensions: L 120 x W 32 x H 39 mm.

Art. No.	Pack Qty.	€
HE16.1	1	22,10

Multi-function tools

Hinged holder for hexagon, slotted, Philips and TORX® screws.
Ergonomic design, fiber-glass reinforced casing.
Spanner made of chrome vanadium steel.
Lifting button enables easy selection of the required spanner.
Dimensions: L 120 x W 32 x H 39 mm.

Technical specifications:

Slotted	4.5 mm
Phillips	PH2
TORX®	T10, T15, T20
Hexagon	3, 4, 5, 6 mm

Art. No.	Pack Qty.	€
HE15.1	1	27,85

Pliers/wrench

Made of chrome vanadium steel. Pliers and spanner in one.
The loose jaw opening can be adjusted 13 times by press of a button - jaws are therefore always parallel. Extremely high clamping power.

Opening (mm)	Total length (mm)	Art. No.	Pack Qty.	€
42	250	**K336.1**	1	62,35
35	180	**K965.1**	1	56,05

Opening keys

For plastic canisters and bottles with DIN thread.

*Opener with notches, not for universal application.

Type	Dimensions L x W (mm)	Art. No.	Pack Qty.	€
DIN 45/32*	220 x 70/55	**X457.1**	1	7,45
DIN 51	195 x 80	**CNC9.1**	1	4,25
DIN 61	200 x 85	**TX61.1**	1	6,40

Strap wrench

For easy loosening of connected parts. Max. range 160 mm.
Weight 220 g.

Art. No.	Pack Qty.	€
X190.1	1	12,85

Tin opener

For tins of all sizes. Length 200 mm. Weight 210 g.
5 years warranty.

Art. No.	Pack Qty.	€
0505.1	1	10,70

All-purpose opener

For screw lids from tube caps to wide neck lids.
Length 260 mm. Weight 200 g.
5 years warranty.

Art. No.	Pack Qty.	€
0506.1	1	10,70

Tri-Sure®-barrel and keg key

Ideal for taking off tin seals and caps and for unscrewing Tri-Sure® container plugs. The narrow side of the tool is 15 mm, the wide side is 45 mm wide. Total length 260 mm. Weight app. 380 g. **Suitable for ROTITAINER®.**

Art. No.	Pack Qty.	€
0398.1	1	31,00

Rotilabo®-clips

Made of spring steel. For DC plates, x-ray films, sheets of paper, etc. Can be hung up.

Width (mm)	Span (mm)	Art. No.	Pack Qty.	€
19	7	**ACY9.1**	12	5,05
25	10	**0826.1**	12	5,85
41	18	**0827.1**	6	7,50
51	28	**0850.1**	6	11,75

Rotilabo®-universal clamps

Made of powder coated metal, nickel-plated, with strong coil spring. For storing, binding, pressing or glueing, large clamping width. Also suitable for hanging up.

Width (mm)	Span (mm)	Art. No.	Pack Qty.	€
75	20	**AEA0.1**	10	34,30
125	30	**AEA1.1**	10	44,10

tesa®-hand tape dispenser comfort

Ideal for sealing packages. **Blade is covered** for extra protection against injury. Manually adjustable roll brake. Dimensions: Length, height: 22 cm, width 6 cm, weight 500 g. Core ∅ 76.2 mm, roll ∅ max 140 mm, roll width max 50 mm.

Art. No.	Pack Qty.	€
X163.1	1	29,70

tesapack®-PVC adhesive tape

Parcel brown. Length 66 m x width 50 mm.

Art. No.	Pack Qty. (roll)	€
6111.1	3	22,05

tesapack®-paper adhesive tape

Foil-free, manufactured from smooth paper with silicone-free, impregnated surface and a synthetic rubber paste. 0.1076 mm thick. Tensile strength 50 N/cm. Elongation at tear 8 %. On 50 m long and 50 mm wide rolls.

Art. No.	Pack Qty. (roll)	€
8574.1	3	17,15

Universal spring clamps

Made of **PA**. For powerful clamping with constant tension force. With ergonomic, antislip handle and flexible, movable soft pads. Excellent for sensitive materials such as glass plates, wood and plastics. Extremely light and handy, but with highest stability.

Total length (mm)	Span (mm)	Art. No.	Pack Qty.	€
60	20	**LK35.1**	1	4,70
90	34	**LK36.1**	1	5,35
120	44	**LK37.1**	1	8,10
160	60	**LK38.1**	1	11,45

tesa Easy Cut® table dispenser

Non-slip base and heavy weight for extra stability.
Model ①: dimensions L 240 x W 70 x H 130 mm, weight 1500 g
Model ②: dimensions L 155 x W 55 x H 80 mm, weight 900 g

Model	for roll length (m)	Max. tape width (mm)	Art. No.	Pack Qty.	€
①	66	25	**1731.1**	1	40,80
②	33	19	**4918.1**	1	32,15

tesafilm® PP adhesive tape

Transparent universal adhesive tape for packaging, e.g. for sealing small boxes, tins and bags.

for dispenser	Roll length (m)	Strip width (mm)	Art. No.	Pack Qty. (roll)	€
1731.1	66	19	**CPY6.1**	1	3,55
4918.1	33	19	**CPY7.1**	1	3,05

Universal protective case for tablet PCs

Made from high-quality synthetic leather, easy care, with soft lining. Universal all-round protection in A5 format with stand function for all tablets with screen sizes from 9.7" to 10.1". The tablet is held securely in place by four rubber band holders. To watch videos and presentations etc., the tablet holder can be set up in any desired viewing angle. Connections and functions are easily accessible, with cut-outs for camera lenses. With elastic rubber loop for touch pen and magnetic catch with concealable loop.
Suitable for Apple iPad 1 to 4 + AIR, Samsung Galaxy + Note, Asus MeMo, Sony Xperia, Acer Iconia and all other tablets from 9.7" to 10.1".
Dimensions: L 270 x W 210 x H 30 mm
(max. tablet size: approx. 267 x 192 mm).

Art. No.	Pack Qty.	€
ANY4.1	1	27,85

Accessories for tablet case Touch Pen 2 in 1

Conductive stylus with ball-point pen. Soft rubber tip for precise navigation on all touch screens of smartphones and tablet PCs. Allows accurate composition of messages and easy navigation and scrolling without leaving fingerprints on the display. Even works through protective film and antireflective film. Ball-point pen with rotary mechanism and jumbo cartridge (blue). Length 130 mm.

Art. No.	Pack Qty.	€
ANY5.1	1	12,40

Business card box

Made of plastic. With sliding lid and eight plastic dividers.
Dimensions: L 235 x W 135 x H 65 mm. Colour black/blue.

Art. No.	Pack Qty.	€
8194.1	1	41,20

Standard file boxes A4-C4

Stackable. Boxes with grip and labelling area.
Compatible with other makes. Dimensions: W 256 x D 350 x H 67 mm.

Colour	Art. No.	Pack Qty.	€
blue	**X020.1**	1	5,35
green	**X017.1**	1	5,35

Files, A4

For magazines, catalogues, books and documents. With grid in opening to protect corners. Dimensions: H 293 x W 75 x D 251 mm.

Colour	Art. No.	Pack Qty.	€
green	**X007.1**	1	5,30
blue	**X008.1**	1	5,30

Writing pad support

Made of break-proof plastic. Suitable for all formats up to DIN A4. Rubber lip holds the paper tightly in place. Clamping width ca. 9 mm. Can be hung up. Dimensions: L 330 x W 220 x H 15 mm.

Art. No.	Pack Qty.	€
0382.1	1	16,10

Lab Markers

All-purpose fibre-tip. For nearly all types of surfaces made of glass, metal and most plastics, e.g. PS-petri dishes. Writes on wet or cold surfaces. Waterproof, also while autoclaving. With quick-drying ink. Can be wiped off high-gloss surfaces. Length 135 mm. Stroke width 1.0 mm.

Colour	Art. No.	Pack Qty.	€
black	**3083.2**	10	28,95
blue	**3084.2**	10	28,95
red	**3085.2**	10	28,95
4 black, 4 blue, 4 red	**1701.1**	12	33,90

Laboratory notebooks

For the documentation of research findings, experiment logs, important notes and data. Numbered, acid-free pages, gridded, with preprinted fields for project names, project number, date and signature. With waterproof cover. Dimensions: W 218 x L 281 mm.

Colour	Number of pages	Art. No.	Pack Qty.	€
black	100	**YY89.1**	1	26,35
black	100	**YY89.2**	12	246,20
blue	200	**YY90.1**	1	30,65

Waterproof ink pen set

Fine-line, stroke width 0.4 mm. Quick drying. Two pens each in black, blue, green, red.

Art. No.	Pack Qty. (set)	€
0883.1	1	15,60

Sharpie® lab markers

Waterproof permanent marker for glass, metal, porcelain or similar surfaces. Fast-drying. Single-tip marker with 1 mm stroke width, double-tip marker with additional stroke width of 0.5 mm .

Design	Colour	Art. No.	Pack Qty.	€
Double tip	Sorted (black, blue, violet, bordeaux, light blue, light green, turquoise, orange)	**XT85.1**	8	33,35
Single tip	black	**KN09.1**	12	40,35

Laboratory markers

By Marienfeld. Permanent marker suitable for nearly all surfaces made of glass, plastic and paper. Suitable for indelible labelling of microscope slides, embedding cassettes and Petri dishes.

- Ultrafine tip
- High-contrast black ink
- Writes without pretreatment of surfaces
- Waterproof, resistant to most laboratory chemicals
- Odourless
- Non-toxic
- Non-dry, long-lasting

Art. No.	Pack Qty.	€
CET9.1	12	37,45

NEW

stericlin® laboratory markers, sterilisation-resistant

For labelling disposable items such as sterile barrier systems, adhesive tapes and labels. Only label transparent packaging on the film side and outside the area of the filling material. Line width: approx. 0.6 mm.

Colour	Art. No.	Pack Qty.	€
black	**HXE3.1**	10	37,10
blue	**HXE4.1**	10	37,10
red	**HXE5.1**	10	37,10

NEW

Permanent marker

By edding. For permanent marking and labelling on almost all conventional materials, e.g. metal, plastic and glass.

- Waterproof, odourless ink
- Fast-drying, abrasion and light-resistant

Type	Colour	Design	Line width (mm)	Art. No.	Pack Qty.	€
3000	black	Round tip	1,5 - 3	**HPE9.1**	10	26,35
3000	blue	Round tip	1,5 - 3	**HPH0.1**	10	26,35
3000	red	Round tip	1,5 - 3	**HPH1.1**	10	26,35
3000	green	Round tip	1,5 - 3	**HPH2.1**	10	26,35
400	black	Round tip, fine	1	**HPH3.1**	10	26,35
400	blue	Round tip, fine	1	**HPH4.1**	10	26,35
400	red	Round tip, fine	1	**HPH5.1**	10	26,35
400	green	Round tip, fine	1	**HPH6.1**	10	26,35
404	black	Round tip, extra fine	0,75	**HPH7.1**	10	26,35
404	blue	Round tip, extra fine	0,75	**HPH8.1**	10	26,35
404	red	Round tip, extra fine	0,75	**HPH9.1**	10	26,35
404	green	Round tip, extra fine	0,75	**HTE0.1**	10	26,35

NEW

Laboratory markers

By edding. Suitable for fine, precise labelling of smooth and transparent surfaces, such as slides, reaction vials, Petri and laboratory dishes.

- Colour black
- Extremely fast-drying, abrasion and light-resistant
- Waterproof, odourless ink
- Permanent on plastic
- Removable from glass with acetone, ethanol, isopropanol and methyl ethyl ketone
- Temperature stable up to -183 °C
- Heat resistant up to +500 °C

Type	Design	Line width (mm)	Art. No.	Pack Qty.	€
8014	Round tip, fine	1	**HPE1.1**	10	25,60
8015F	Round tip, extra fine	0,75	**HPE2.1**	10	25,60

NEW

Clean room marker

By edding. For permanent markings in clean-room and dust-free environments. Writes reliably on smooth surfaces, such as special clean-room paper, laminated paper and foil. Tip and shaft have been developed specially to prevent contamination with dust; this is why it contains no metallic parts and has no label or lettering.

- Wipe and water-proof
- Markings can be removed from all smooth surfaces with isopropyl alcohol
- Applications: semi-conductor production, nano technology and optics/laser technology

Type	Colour	Design	Line width (mm)	Art. No.	Pack Qty.	€
8011	black	Round tip, extra fine	0,6	**HTE1.1**	10	26,35
8011	blue	Round tip, extra fine	0,6	**HTE2.1**	10	26,35
8011	red	Round tip, extra fine	0,6	**HTE3.1**	10	26,35

NEW

Paint marker

By edding. For strong markings and permanent labelling on almost all surfaces, e.g. plastic and glass. Ideal for dark and transparent materials.

- Opaque finish
- Waterproof and odourless
- Resistant to ethanol, most disinfectants and isopropyl
- Colours white and copper, additionally resistant to acetone
- Temperature stable up to 400 °C (white colour up to 1000 °C)
- Weather- and extremely light-resistant, abrasion-resistant
- Application: shake the pen with cap closed firmly, then open, position the tip of the pen on a piece of test paper and carefully pump up and down

Type	Colour	Design	Line width (mm)	Art. No.	Pack Qty.	€
751	black	round tip, fine	1 - 2	**HPE3.1**	10	33,00
751	white	round tip, fine	1 - 2	**HPE4.1**	10	33,00
751	copper	round tip, fine	1 - 2	**HPE5.1**	10	33,00
780	black	metal-mounted plastic tip, extra fine	0,8	**HPE6.1**	10	37,60
780	white	metal-mounted plastic tip, extra fine	0,8	**HPE7.1**	10	37,60
780	copper	metal-mounted plastic tip, extra fine	0,8	**HPE8.1**	10	37,60

❄❄❄ A 121 °C

Labels on rolls

Ideal for 0.2/0.5/0.65 and 1.5/2 ml tubes and other containers. Made of chemically inert polyester. Sticks to plastics without drying out and falling off during steam sterilization, in boiling waterbaths, refrigerators, stirrers, shakers, centrifuges, etc. Are extremely close-fitting and do not hinder removal or loading of tubes in stands or centrifuges. Tearproof. Can be marked with almost all markers.

Labels, angular (Tough Tags™), for manually marking. Temperature stable from **-40 to +121 °C**. 1000 per roll. (1500 per roll at Art. No. K436.1).

For vials (ml)	Colour	Length (mm)	Width (mm)	Art. No.	Pack Qty. (roll)	€
0,2	white	20,5	6,5	**K436.1**	1	42,50
0,5	white	23	13	**K556.1**	1	38,20
0,5	blue	23	13	**K440.1**	1	42,50
0,5	yellow	23	13	**K441.1**	1	42,50
0,5	green	23	13	**L666.1**	1	41,40
0,5	red	23	13	**K442.1**	1	42,50
0,5	transparent	23	13	**K443.1**	1	42,50
1,5/2	white	32	13	**K557.1**	1	38,20
1,5/2	blue	32	13	**K444.1**	1	49,45
1,5/2	yellow	32	13	**K445.1**	1	49,45
1,5/2	green	32	13	**L667.1**	1	47,85
1,5/2	red	32	13	**K446.1**	1	49,45
1,5/2	transparent	32	13	**K447.1**	1	49,45
Test tubes etc.	white	38	19	**L676.1**	1	64,00
Microtest plates	white	38	6	**K435.1**	1	42,50

Optical Instruments & Lamps

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Model 33208 stereo microscope

By Eschenbach. With LED lighting, reflected light and transmitted light.
Can be dimmed as an option – dimmer sold separately.

Technical specifications:

Total magnification	20x/40x – can be expanded up to 80x as an option
Eyepieces	Wide field (WF) 10x Field of view 20 mm Diopter compensation on left eyepiece tube (±5 dpt)
Head	Binocular 45° angular observation Rotatable by 360° Adjustable interocular distance (54-74 mm)
Lenses	Rotation of turret 2x and 4x Parallel lens arrangement
Working distance with 10x WF 2x lens/4x lens	75 mm/45 mm
Lighting	LED, separate reflected and transmitted light and can be controlled in real time
Image focusing	Coarse focus
Stand	Robust metal stand, 180 mm column length
Power supply	100-240 V

Delivery incl. 95 mm ∅table inserts (black/white plastic plate for reflected light, and frosted glass plate for transmitted light), eyepiece cups and dust cover.

Art. No.	Pack Qty.	€
EEC2.1	1	521,40

Accessories:

Wide-field eyepieces WF 5x (field of view approx. 22 mm)	**P239.1**	2	134,40
Wide-field eyepieces WF 15x (field of view approx. 14 mm)	**9667.1**	2	142,80
Wide-field eyepieces WF 20x (field of view approx. 10 mm)	**P240.1**	2	143,00
Dimmer	**EEC3.1**	1	28,30

Models 33213 and 33263 stereo microscopes

By Eschenbach.
With LED lighting, reflected light.

- Model 33213 with robust metal stand, column length 245 mm. 200 x 150 mm bottle stand with black and white plastic plate for reflected lighting. Support rod ∅ 20 mm.
- Model 33263 with robust, 850-mm-long swivelling metal arm with three set screws in the spring joints, fully adjustable. With a sturdy table clamp and desk-top foot that can be fixed to the table. Suitable for tabletop thicknesses up to 70 mm.

Technical specifications:

Total magnification	10x/20x – can be expanded up to 40x as an option
Eyepieces	Wide field (WF) 10x Field of view 19 mm Diopter compensation on left eyepiece tube (±5 dpt)
Head	Binocular 45° angular observation Rotatable by 360° Adjustable interocular distance (54-74 mm)
Lenses	Rotation of turret 1x and 2x Coaxial lens arrangement
Working distance	83 mm
Lighting	LED reflected light ring lighting
Image focusing	Coarse focus
Power supply	100-240 V

Delivery incl. eyepiece cups and dust cover.

Type	Art. No.	Pack Qty.	€
Model 33213	**X822.1**	1	596,65
Model 33263	**X823.1**	1	780,45

Accessories:

Wide-field eyepieces WF 5x (field of view approx. 22 mm)	**P239.1**	2	134,40
Wide-field eyepieces WF 15x (field of view approx. 14 mm)	**9667.1**	2	142,80
Wide-field eyepieces WF 20x (field of view approx. 10 mm)	**P240.1**	2	143,00

SMZ-161-series LED stereo microscopes

By Motic. With **LED lighting.** Compact design, high-quality optics, rugged mechanism.

- Continuously variable zoom with detent positions for reproducible magnification
- Increased working distance allows sufficient space for sample handling
- Optionally available with a trinocular head for attachment of a microscope camera to the phototube using a C-Mount adapter (please order C-Mount camera adapter separately)

Technical specifications:

Total magnification	7.5 to 45x
Eyepieces	Wide field 10x Field of view 20 mm Diopter compensation on both ocular tubes (±5 dpt)
Head	Binocular or trinocular 45° viewing angle 360° rotatable Adjustable eye distance (50-75 mm)
Lens	Magnification 0.75x-4.5x Zoom factor 1:6
Working distance	110 mm
Lighting	3 W LED, reflected and transmitted light can be controlled separately
Image focusing	Coarse drive
Power supply	100-240 V

Delivery incl. black/white and matte glass stage inserts as well as dust cover.

Type	Design	Art. No.	Pack Qty.	€
① SMZ-161-BLED (R2LED)	Binocular	**ATP9.1**	1	784,75
② SMZ-161-TLED (R2LED)	Trinocular	**ATT0.1**	1	843,90

Accessories:

0.5x C-Mount camera adapter for ⅓″ or ½″ chip sensors	**ATT1.1**	1	153,75

▶ Dissecting sets see p. 346
▶ Precision tweezers see p. 317

SMZ-168-series reflected and transmitted light stereo microscopes

By Motic. High-end stereo microscope for science, research and quality control.

- 50x total magnification, up to max. 200x with optional widefield ocular and attachment lenses
- Larger field of view and working distance
- Sturdy transmitted light stand with wide base plate
- Continuously variable zoom with lock positions for reproducible magnification
- Optionally available with trinocular head for attachment of a microscope camera to the phototube using a C-Mount adapter (please order C-Mount camera adapter separately)

Technical specifications:

Total magnification	7.5 to 50x - up to max. 200x with optional lenses
Eyepieces	Widefield 10x Field of view 23 mm Diopter compensation on both ocular tubes (±5 dpt)
Head	Binocular or trinocular 35° viewing angle 360° rotatable Adjustable eye distance (52.5-75 mm)
Lens	Magnification 0.75x-5x Zoom factor 1:6.7
Working distance	113 mm
Lighting	12 V / 10 W Halogen, reflected and transmitted light can be adjusted separately
Image focusing	Coarse drive
Power supply	100-240 V

Delivery incl. black/white and matte glass stage inserts, blue filter and dust cover.

Type	Design	Art. No.	Pack Qty.	€
① SMZ-168 BL	Binocular	**KA17.1**	1	1029,85
② SMZ-168 TL	Trinocular	**KA18.1**	1	1118,00

Accessories for SMZ-168 series

Wide field eyepieces

Type	Art. No.	Pack Qty.	€
WF 15 x (vision field 13 mm)	**KA19.1**	1 pair	149,45
WF 20 x (vision field 10 mm)	**KA20.1**	1 pair	149,45

Ancillary lenses

Type	Art. No.	Pack Qty.	€
0,5x (operating distance 192 mm)	**KA21.1**	1 piece	117,20
2x (operating distance 34,5 mm)	**KA22.1**	1 piece	117,20

C-Mount adapter

Type	Art. No.	Pack Qty.	€
0.65x C-Mount-adapter for ½″ and ½,₅″ chip-sensors	**KA23.1**	1 piece	100,55

Replacement bulb

Type	Art. No.	Pack Qty.	€
Halogen (reflected light), 12 V / 10 W	**PE00.1**	1 piece	18,10
Replacement bulb, halogen (transmitted light), 12 V / 10 W	**PE49.1**	1 piece	20,35

Stereo microscopes, Kern

Stereo microscope OSE-417

By Kern. Robust, rigid and easy to operate stereo microscope for schools, workshops and training organisations. For preparations with focus on spatial impression, e.g. insects and seeds.

- Good optical characteristics for sharp images over a wide field of vision
- Interchangeable lens with two pre-defined magnifications
- Eyepiece fixed securely in the barrel
- Stable and precisely adjustable mechanics of the microscope stand

Technical specifications:

Total magnification	20x, 40x
Eyepieces	Wide field 10x Field of vision ∅ 20 mm Dioptre compensation, left
Head	Binocular 45° Viewing angle Adjustable eye distance (55-75 mm)
Lens	Revolver: 2x and 4x
Working distance	57 mm
Lighting	0.21 W LED (transmitted and reflected illumination)
Image focusing	Coarse focus
Power supply	50/60 Hz, 100 to 240 V

Optional accessories (please order separately):
Wide field eyepieces can be used to modulate the total magnification of the stereo zoom microscope.

Technical specifications:

Eyepiece	Lens		
	Magnification	2x[1]	4x[1]
WF 5x	Total magnification (x-fold) Visual field ∅ (mm)	10 10	20 5
WF 10x[1]	Total magnification (x-fold) Visual field ∅ (mm)	20 10	40 5
WF 20x	Total magnification (x-fold) Visual field ∅ (mm)	40 6.5	80 3.2

[1] included in delivery

Delivery incl. table inserts black/white and frosted glass, eye cups and dust protection hood.

Art. No.	Pack Qty.	€
HNA2.1	1	255,00

Accessories:

Eyepieces HWF 5x, visual field ∅ 16.2 mm	**HHE3.1**	2	70,00
Eyepieces HWF 20x, visual field ∅ 10 mm	**HHE4.1**	2	70,00

Stereo microscope OSF-439

By Kern. Practical and sterile stereo microscope for training and laboratory. With integrated handle and stable stand. Ergonomically designed working surface for enhanced convenience. Interchangeable lens with three pre-defined magnifications for fast, effective working. Eyepieces securely held in the tube and thereby protected against loss or damage.

Technical specifications:

Total magnification	10x, 20x, 40x
Eyepieces	Wide field 10x Visual field ∅ 20 mm Dioptre compensation, left (±5 dpt)
Head	Binocular 45° angular observation fixed Adjustable interocular distance (55-75 mm)
Lens	Revolver: 1x, 2x and 4x
Working distance	57 mm
Lighting	1 W LED (incident light), 0.35 W LED (transmitted light) Incident and transmitted light can be regulated separately
Image focusing	Coarse focus
Power supply	50/60 Hz, 100 to 240 V

Delivery incl. table sets black/white and mat glass, eye cups and dust cover.

Art. No.	Pack Qty.	€
HHC9.1	1	325,00

Stereo microscopes, Kern

Stereo zoom microscope OZL-445

By Kern. Easy-to-operate, stable stereo-zoom microscope for laboratories, test institutes and quality checks. Zoom lens enables infinitely-variable magnification of the preparation. Large work area for enhanced comfort, column stands for greater flexibility. Eyepieces securely held in the tube and thereby protected against loss or damage.

Technical specifications:

Total magnification	7.5x to 36x (can be expanded to 144x)
Eyepieces	Wide field 10x Visual field ∅ 20 mm Dioptre compensation, left (±5 dpt each)
Head	Binocular 45° angular observation Rotatable by 360° Adjustable interocular distance (55-75 mm)
Lens	Zoom: 0.75 to 3.6x
Working distance	86 mm (standard lens)
Lighting	1 W LED (incident light), 0.35 W LED (transmitted light) Incident and transmitted light can be regulated separately
Image focusing	Coarse focus
Power supply	50/60 Hz, 100 to 240 V

Optional accessories (please order separately):
- Protective lens element
- Wide field eyepieces and clip-on lenses allow modulation of the overall magnification of the stereo zoom microscope:

Technical specifications:

Eyepiece	Lens			
	Magnification	Standard 1x[1]	Clip-on 0.5x	Clip-on 2.0x
WF 5x	Total magnification (x-fold) Visual field ∅ (mm)	3.75 to 18 26 to 6	1.875 to 9 60 to 13	7.5 to 36 12.5 to 3
WF 10x[1]	Total magnification (x-fold) Visual field ∅ (mm)	7.5 to 36 26.7 to 5.6	3.75 to 18 53.3 to 11.1	15 to 72 13.3 to 2.8
WF 20x	Total magnification (x-fold) Visual field ∅ (mm)	15 to 72 12.5 to 3	7.5 to 36 28 to 6	30 to 144 6 to 1.5

1 In delivery incl.

Delivery incl. table sets black/white and mat glass, eye cups and dust cover.

Art. No.	Pack Qty.	€
HHE1.1	1	420,00

Accessories:

Protective lens	**HHE2.1**	1	19,00
Eyepieces HWF 5x, visual field ∅ 16.2 mm	**HHE3.1**	2	70,00
Eyepieces HWF 20x, visual field ∅ 10 mm	**HHE4.1**	2	70,00
Clip-on lens 0.5x	**HHE5.1**	1	75,00
Clip-on lens 2.0x	**HHE6.1**	1	80,00

Stereo zoom microscope OZL-46 series

By Kern. All-round stereo microscope with zoom function for schools, training workshops and laboratories. With extra-wide field eyepieces for greater vision angle, thereby ideal for persons who wear glasses. Optimal illumination of the preparation through powerful incident and transmitted light.

Technical specifications:

Total magnification	7x to 45x (can be expanded to 180x)
Eyepieces	Extra-wide field 10x Visual field ∅ 20 mm Dioptre compensation, left (±5 dpt each)
Head	Binocular or trinocular 45° angular observation Rotatable by 360° Adjustable eye distance (55-75 mm)
Lens	Zoom: 0.7 to 4.5x
Working distance	105 mm (standard lens)
Lighting	1 W LED (incident light), 1 W LED (transmitted light) Incident and transmitted light can be regulated separately
Image focusing	Coarse focus
Power supply	50/60 Hz, 100 to 240 V

Optional accessories (please order separately):
- C-mount adapter for mounting a microscope camera on the photo tube of the trinocular microscope
- Wide field eyepieces and clip-on lenses allow modulation of the overall magnification of the stereo zoom microscope

Technical specifications:

Eyepiece	Lens			
	Magnification	Standard 1x[1]	Clip-on 0.5x	Clip-on 2.0x
HWF 10x[1]	Total magnification (x-fold) Visual field ∅ (mm)	7 to 45 28.6 to 4.4	3.5 to 22.5 57.1 to 8.9	14 to 90 14.3 to 2.2
HWF 20x	Total magnification (x-fold) Visual field ∅ (mm)	14 to 90 14.3 to 2.2	7 to 45 28.6 to 4.4	28 to 180 7.1 to 1.1

1 In delivery incl.

Delivery incl. table sets black/white and mat glass, eye cups and dust cover.

Type	Art. No.	Pack Qty.	€
OZL 463 binocular	**HHE7.1**	1	500,00
OZL 464 brinocular	**HHE8.1**	1	570,00

Accessories:

0.5x C-mount adapter (adjustable focus)	**HHE9.1**	1	95,00
Eyepieces HWF 20x, visual field ∅ 10 mm	**HHH0.1**	2	100,00
Clip-on lens 0.5x	**HHH1.1**	1	80,00
Clip-on lens 2.0x	**HHH2.1**	1	80,00

Stereo zoom microscope OZL-456

By Kern. Stereo microscope with large zoom range. Integrated LED ring lighting in the lens housing for even illumination of the preparation without shadows. Field of vision and working distance magnified through high-super wide field lenses. The greater vision angle of the HSWF eyepieces is ideal for persons who wear glasses.

Technical specifications:

Total magnification	7.5x to 50x (can be expanded to 200x)
Eyepieces	Extra-wide field 10x (HSWF) Visual field ∅ 23 mm Dioptre compensation, left (±5 dpt each)
Head	Binocular 45° angular observation Rotatable by 360° Adjustable interocular distance (55-75 mm)
Lens	Zoom: 0.75 to 5x
Working distance	113 mm (standard lens)
Lighting	1 W LED (incident light), 0.21 W LED (transmitted light) Incident and transmitted light can be regulated separately
Image focusing	Coarse focus
Power supply	50/60 Hz, 100 to 240 V

Optional accessories (please order separately):

- Wide field eyepieces and clip-on lenses allow modulation of the overall magnification of the stereo zoom microscope:

Technical specifications:

Eyepiece	Lens		
	Magnification	**Standard 1x[1]**	**Clip-on 2.0x**
HWF 5x	Total magnification (x-fold) Visual field ∅ (mm)	3.75 to 25 31 to 4.6	7.5 to 50 16 to 2.5
HSWF 10x[1]	Total magnification (x-fold) Visual field ∅ (mm)	7.5 to 50 33 to 5	15 to 100 16 to 2.5
HSWF 20x	Total magnification (x-fold) Visual field ∅ (mm)	15 to 100 20 to 3.5	30 to 200 10 to 1.8

1 In delivery incl.

Delivery incl. table sets black/white and mat glass, eye cups and dust cover.

Art. No.	Pack Qty.	€
HHH3.1	1	690,00

Accessories:

Eyepieces HWF 5x, visual field ∅ 23.2 mm	**HHH4.1**	2	80,00
Eyepieces HSWF 20x, visual field ∅ 14.5 mm	**HHH5.1**	2	120,00
Clip-on lens 2.0x	**HHH6.1**	1	115,00

Transmitted light microscope OBS-106

By Kern. Simple microscope with clear operating elements for school and training. For translucent, thin, high-contrast and non-demanding preparations.

- Height adjustable, focusable 1.25 Abbe condenser for optimised light concentration
- Mechanical cross table for fast working and moving of the preparation
- Mobile use possible through rechargeable batteries
- With continuously dimmable 0.5 W LED for optimum illumination of the preparations

Technical specifications:

Total magnification	40x, 100x, 400x
Eyepieces	Wide field 10x field of vision ∅ 18 mm dioptre compensation on both side
Head	Binocular 30° angular observation Rotatable by 360° Adjustable interocular distance (55-75 mm)
Lens turret	4-way, tilted forwards
Lenses, achromatic	- 4x / N.A. 0.10, W.D. 18.0 mm - 10x / N.A. 0.25, W.D. 7.0 mm - 40x / N.A. 0,65 (sping-loaded), W.D. 0.53 mm
Microscope stage	Area 115 x 125 mm Coaxial x/y travel range 75 x 18 mm
Condenser	Focusable Abbe condenser N.A. 1.25 with aperture cover
Lighting	0.5 W LED transmitted light, chargeable, adjustable
Image focusing	Coaxial coarse and fine drive with scale: 2.5 µm
Power supply	50/60 Hz, 100 to 240 V

Delivery incl. batteries and dust hood.

Art. No.	Pack Qty.	€
HNA1.1	1	360,00

OBE series transmitted light microscope

By Kern. Fully-equipped transmitted light microscope (bright field) for training and lab use. Very easy to use, robust and sturdy. For translucent and thin, contrast-rich preparations (e.g. plant tissue, stained cells, parasites). With **strong, infinitely dimmable 3W LED** for optimum illumination of the preparations.

Technical specifications:

Total magnification	40x, 100x, 400x, 1000x
Eyepieces	Wide field 10x Field of view 18 mm Dioptre compensation on left ocular tube (±5 Dpt)
Head	Binocular or trinocular 30° viewing angle 360° rotatable Adjustable eye distance (50-75 mm)
Lens turret	4-way, tilted forwards
Lenses, achromatic	- 4x / N.A. 0.10, W.D. 18.6 mm - 10x / N.A. 0.25, W.D. 6.5 mm - 40x (spring) / N.A. 0.65, W.D. 0.47 mm - 100x (spring, oil) / N.A. 1.25, W.D. 0.07 mm
Microscope stage	Area 125 x 115 mm Coaxial x/y travel range 50 x 70 mm
Condenser	Focusable Abbe condenser N.A. 1.25 with aperture cover
Lighting	3W LED transmitted light, adjustable
Image focusing	Coaxial coarse and fine drive with scale: 2 µm
Power supply	50/60 Hz, 100 to 240 V

Optional accessories (please order separately):
- C-mount adapter for mounting a microscope camera on the phototube of the trinocular microscope
- Dark field use for 4x to 40x lenses; to increase contrast of small, unstained structures
- 100x lens (planachromatic, spring) with water immersion

Delivery incl. eyecups and dust cover.

Type	Art. No.	Pack Qty.	€
① OBE 112 binocular	**EYP2.1**	1	540,00
② OBE 114 trinocular	**EYP3.1**	1	650,00
Accessories:			
0.5x C-mount adapter (adjustable focus)	**EYP4.1**	1	160,00
Dark field use for 4x to 40x lenses	**EYP5.1**	1	85,00
100x lens, planachromatic (spring, water) / N.A. 1.0, W.D. 0.18 mm	**EYP6.1**	1	170,00

OBL series transmitted light microscope

By Kern. Versatile transmitted light microscope (bright field) for translucent, low-contrast, demanding preparations (e.g. living mammal cells, bacteria, tissue). With **simplified Köhler illumination** (fixed pre-centred) and **infinite optics** for optimum image quality. With **strong, infinitely dimmable 3W LED** for optimum illumination of the preparations.

Technical specifications:

Total magnification	40x, 100x, 400x, 1000x
Eyepieces	Wide field 10x Field of view 20 mm Dioptre compensation on left ocular tube (±5 dpt)
Head	Binocular or trinocular 30° viewing angle 360° rotatable Adjustable eye distance (50-75 mm)
Lens turret	4-way, tilted backwards
Lenses, achromatic	- 4x / N.A. 0.10, W.D. 12.1 mm - 10x / N.A. 0.25, W.D. 2.1 mm - 40x (spring) / N.A. 0.65, W.D. 0.58 mm - 100x (spring, oil) / N.A. 1.25, W.D. 0.19 mm
Microscope stage	Area 145 x 130 mm Coaxial x/y travel range 76 x 52 mm Holder for 2 object carriers
Condenser	Fixed pre-centred, focusable Abbe condenser N.A. 1.25 with aperture and field diaphragm
Lighting	3W LED transmitted light, adjustable
Image focusing	Coaxial coarse and fine drive with scale: 2 µm
Power supply	50/60 Hz, 100 to 240 V

Optional accessories (please order separately):
- C-mount adapter for mounting a microscope camera on the phototube of the trinocular microscope
- Dark field use to increase contrast of small, unstained structures
- 100x lens (planachromatic, spring) with water immersion

Delivery incl. eyecups and dust cover.

Type	Art. No.	Pack Qty.	€
① OBL 127 binocular	**EYP7.1**	1	910,00
② OBL 137 trinocular	**EYP8.1**	1	1020,00
Accessories:			
0.5x C-mount adapter (adjustable focus)	**EYP9.1**	1	160,00
Dark field condenser N.A. 0.85-0.91 (Dry)	**EYT0.1**	1	230,00
100x infinity lens, planachromatic (spring, water) / N.A. 1.15, W.D. 0.18 mm	**EYT1.1**	1	445,00

OBD series digital microscope

By Kern. Digital transmitted light microscope with integrated camera. For translucent, low-contrast and demanding preparations (e.g. living mammal cells, bacteria, tissue).
With **simplified Köhler illumination** (fixed pre-centred) and **infinite optics** for optimum image quality. With **powerful, infinitely variable 20 W halogen lighting** for optimum illumination of the preparations.

General technical specifications:

Total magnification	40x, 100x, 400x, 1000x
Eyepieces	Wide field 10x Field of view 20 mm Dioptre compensation on left ocular tube (±5 dpt)
Digital head	Trinocular 30° viewing angle 360° rotatable Adjustable eye distance (50-75 mm) Beam path distribution 80:20 Built-in digital camera USB port for PC
Lens turret	4-way, tilted backwards
Lenses, semi-planachromatic	- 4x / N.A. 0.10, W.D. 12.1 mm - 10x / N.A. 0.25, W.D. 2.1 mm - 40x (spring) / N.A. 0.65, W.D. 0.58 mm - 100x (spring, oil) / N.A. 1.25, W.D. 0.19 mm
Microscope stage	Area 125 x 115 mm Coaxial x/y travel range 76 x 52 mm
Condenser	Fixed pre-centred, focusable Abbe condenser N.A. 1.25 with aperture cover
Lighting	6 V / 20 W halogen transmitted light, adjustable built-in colour filter (blue)
Image focusing	Coaxial coarse and fine drive with scale: 2 µm
Power supply	50/60 Hz, 100 to 240 V

Camera technical specifications:

Type	**OBD 127**	**OBD 128**
Resolution	3 MP	5 MP
CMOS colour sensor	1/2″	1/2.5″
Software operating system	WIN XP, 7, VISTA, 8, 10	

Optional accessories (please order separately):
- Dark field condenser to increase contrast of small, unstained structures
- 100x lens (planachromatic, spring) with water immersion

Delivery incl. software, USB cable, calibration rod, eyecups and dust cover.

Type	Art. No.	Pack Qty.	€
OBD 127 digital / 3 MP	**EYT8.1**	1	1510,00
OBD 128 digital / 5 MP	**EYT9.1**	1	1600,00

Accessories:

Dark field condenser N.A. 0.85-0.91 (Dry)	**EYT0.1**	1	230,00
100x infinity lens, planachromatic (spring, water) / N.A. 1.15, W.D. 0.18 mm	**EYT1.1**	1	445,00

OBL series phase contrast microscope

By Kern. Sturdy phase contrast microscope for very translucent, low-contrast and demanding preparations (e.g. living mammal cells, bacteria, tissue).
With **simplified Köhler illumination** (fixed pre-centred) and **infinite optics** for optimum image quality. With **powerful, infinitely variable 20 W halogen lighting** for optimum illumination of the preparations.

Technical specifications:

Total magnification	40x, 100x, 400x, 1000x
Eyepieces	Wide field 10x Field of view 20 mm Dioptre compensation on left ocular tube (±5 dpt)
Head	Binocular or trinocular 30° viewing angle 360° rotatable Adjustable eye distance (50-75 mm)
Lens turret	4-way, tilted backwards
Lenses for bright field, semi-planachromatic	- 4x / N.A. 0,10, W.D. 12.1 mm - 100x (spring, oil) / N.A. 1.25, W.D. 0.19 mm
Lenses for phase contrast, planachromatic	- Ph 10x / N.A. 0.25, W.D. 4.64 mm - Ph 40x (spring) / N.A. 0.66, W.D. 0.65 mm
Object plate (mechanical)	Area 145 x 130 mm Coaxial x/y travel range 76 x 52 mm Holder for 2 object carriers
Condenser	Fixed pre-centred, focusable Abbe condenser N.A. 1.25 with aperture and field diaphragm
Phase modifier, single	Each for Ph 10x and Ph 40x
Lighting	6 V / 20 W halogen, adjustable built-in colour filter (blue)
Image focusing	Coaxial coarse and fine drive with scale: 2 µm
Power supply	50/60 Hz, 100 to 240 V

Optional accessories (please order separately):
- C-mount adapter for mounting a microscope camera on the phototube of the trinocular microscope
- Dark field condenser to increase contrast of small, unstained structures
- 100x lens (planachromatic, spring) with water immersion

Delivery incl. colour filter (green), eyecups and dust cover.

Type	Art. No.	Pack Qty.	€
OBL 145 binocular	**EYT6.1**	1	1420,00
OBL 155 trinocular	**EYT7.1**	1	1530,00

Accessories:

0.5x C-mount adapter (adjustable focus)	**EYP9.1**	1	160,00
Dark field condenser N.A. 0.85-0.91 (Dry)	**EYT0.1**	1	230,00
100x infinity lens, planachromatic (spring, water) / N.A. 1.15, W.D. 0.18 mm	**EYT1.1**	1	445,00

Microscopes, Motic

Protective sleeves for microscopes

Made of Vikem®-vinyl. Protects high-end devices and instruments against dust and liquids.

Size	Bottom range x top range x H (mm)	Art. No.	Pack Qty.	€
Standard	660 x 460 x 420	**XY16.1**	1	20,35
L	820 x 560 x 460	**XY17.1**	1	27,75
XL	920 x 760 x 560	**XY18.1**	1	32,15

Paper wipes for lenses

Lint-free tissue paper. Ideal for cleaning optical glasses, cuvettes and as protective paper for metallographic cuts. Pack of 50 sheets, 80 x 100 mm.

Art. No.	Pack Qty.	€
1068.1	10	49,25

SFC-100FLED monocular microscope

By Motic. Rugged microscope for pupils and students.
With **LED lighting**. Battery or mains operation.

Technical specifications:

Total magnification	40x, 100x, 400x
Eyepiece	Wide field 10x Field of view 18 mm With pointer and ocular retainer
Head	Monocular 45° viewing angle 360° rotatable
Lens turret	3-way, tilted forwards
Lenses, achromatic	- 4x / N.A. 0.10 - 10x / N.A. 0.25 - 40x (spring) / N.A. 0.65
Microscope stage	120 x 110 mm, with 2 spring clamps
Condenser	N.A. 0.65 with iris diaphragm and filter holder
Lighting	LED (20 mA / 3.5 V / 70 mW), chargeable, continuously variable
Image focusing	Coarse and fine drive
Power supply	100-240 V

Delivery incl. charger, batteries and dust cover.

Art. No.	Pack Qty.	€
ATT2.1	1	191,35

Accessories:

Replacement LED (20 mA / 3.5 V / 70 mW)	**ATT3.1**	1	20,30

Lens cleaning tissues

Cleans without smearing, also removes dust and oil. 500 wipes per pack.

Art. No.	Pack Qty.	€
LH30.1	1	16,40

Laboratory and course microscope SHB 45

By Motic. Rugged microscope for pupils and students.
With halogen lighting and light intensity adaptation.

Technical specifications:

Total magnification	40x, 100x, 400x, can be expanded up to 1000x
Eyepieces	Wide field 10x Field of view 18 mm Dioptre compensation on both eyepieces (±5 dpt)
Head	Binocular 45° inclination 360° rotatable
Lens turret	4-way, tilted forwards
Lenses, achromatic	4x / N.A. 0.10 10x / N.A. 0.25 40x (spring) / N.A. 0.65
Microscope stage	120 x 120 mm with clamps for microscope slide
Condenser	N.A. 1.25, focusable, iris membrane with filter holder
Lighting	Halogen 12 V / 10 W, adjustable
Image focusing	Coaxial coarse and fine focus
Power supply	100-240 V

Delivery incl. blue filter, eyepiece cups and dust cover.

Type	Art. No.	Pack Qty.	€
SHB 45	**Y421.1**	1	425,70

Accessories:

Lenses, achromatic, 20x / N.A. 0.40	**Y424.1**	1	62,35
Lenses, achromatic, 60x (spring) / N.A. 0.85	**Y425.1**	1	79,40
Lenses, achromatic, 100x (spring) / oil / N.A. 1.25	**Y426.1**	1	79,30
Wide field eyepieces 15x, visual field 12 mm	**CH58.2**	2	64,30
Replacement bulb, halogen (transmitted light), 12 V / 10 W	**PE49.1**	1	20,35

▶ Microscope slides and cover slips see p. 299

Biology microscope B3 Professional series

By Motic. With infinity optics.
- Brightfield microscope for the analysis of high-contrast, coloured samples
- Optionally available with a trinocular head for attachment of a microscope camera to the phototube using a C-Mount adapter (please order C-Mount camera adapter separately)

Technical specifications:

Total magnification	40x, 100x, 400x, 1000x
Eyepieces	Widefield 10x Field of view 20 mm Diopter compensation on left ocular tube (±5 dpt)
Head	Binocular or trinocular 30° viewing angle 360° rotatable Adjustable eye distance (55-75 mm)
Lens turret	5x, inclined backward, with four achromatic super contrast lenses
Lens	- 4x / N.A. 0.10, W.D. 17.0 mm - 10x / N.A. 0.25, W.D. 6.4 mm - 40x (spring) / N.A. 0.65, W.D. 0.45 mm - 100 x (spring oil) / N.A. 1.25, W.D. 0.14 mm
Microscope stage	140 x 135 mm, height adjustable coaxial x/y travel range 78 x 50 mm
Condenser	Focusable Abbe condenser N.A. 1.25 with iris diaphragm and filter holder
Lighting	Köhler halogen (12 V / 20 W), variable
Image focusing	Coaxial coarse and fine focus
Power supply	100-240 V

Delivery incl. colour filter set (blue, yellow, green), immersion oil and dust cover.

Type	Design	Art. No.	Pack Qty.	€
B3-220ASC	Binocular	**CH56.1**	1	805,20
B3-223ASC	Trinocular	**CH57.1**	1	955,70

Accessories for B3 Professional series

Wide-field eyepiece

Type	Art. No.	Pack Qty.	€
Wide field eyepieces 15x, visual field 12 mm	**CH58.2**	1 pair	64,30

Graduated eyepiece

Type	Art. No.	Pack Qty.	€
WF 10x (for ASC), scale grad. 10 mm into 100 increments	**PC97.1**	1 piece	95,15

C-Mount adapter

Type	Art. No.	Pack Qty.	€
0.5x C-Mount camera adapter for ½″ and ½,₅″ chip-sensors	**PC98.1**	1 piece	95,15

Replacement bulb

Type	Art. No.	Pack Qty.	€
Halogen, 12 V / 20 W	**PC99.1**	1 piece	18,10

BA210-series laboratory microscopes

By Motic. With **LED lighting** and **infinite optics** for optimum image quality.

- Brightfield microscope for analysis of high-contrast, coloured samples; supplied lenses: 4x, 10x, 40x and 100x
  Phase contrast version for examination of colourless preparations with low natural contrast; supplied lens: Ph10x + Ph40x
  for phase contrast and 4x + 100x for brightfield
- Optionally available with a trinocular head for attachment of a microscope camera to the phototube using a C-Mount adapter (please order C-Mount camera adapter separately)

Technical specifications:

Total magnification	40x, 100x, 400x, 1000x
Eyepieces (incl. eyecups)	Wide field 10x Field of view 20 mm Diopter compensation on both eyepieces (±5 dpt)
Head	Binocular or trinocular 30° viewing angle 360° rotatable Adjustable eye distance (55-75 mm)
Lens turret	4-way, tilted backwards
Lens for brightfield, planachromatic (EC PL)	- 4x / N.A. 0.10. W.D. 15.9 mm - 10x / N.A. 0.25, W.D. 17.4 mm - 40x S / N.A. 0.65, W.D. 0.5 mm - 100x S-Oil / N.A. 1.25, W.D. 0.15 mm
Lens for phase contrast, planachromatic (EC-H-PL)	- Ph10x / N.A. 0.25, W.D. 17.4 mm - Ph40x S / N.A. 0.65, W.D. 0.50 mm
Microscope stage	140 x 135 mm coaxial x/y travel range 76 x 50 mm
Condenser	Focusable Abbe condenser N.A. 1.25 with iris diaphragm and slider slot
Specially designed for phase contrast	3x phase shifter for Ph1/2 and brightfield Centring telescope
Lighting	LED (3 W), controllable Colour temperature: 5 500 K
Image focusing	Coarse and fine drive
Power supply	100-240 V

Delivery incl. immersion oil and dust cover.

Type	Art. No.	Pack Qty.	€
① BA210 LED binocular, brightfield	**ATT7.1**	1	1033,10
② BA210 LED trinocular, brightfield	**ATT8.1**	1	1188,95
① BA210 LED binocular, phase contrast	**ATT9.1**	1	1569,50
② BA210 LED trinocular, phase contrast	**ATX0.1**	1	1745,80

Accessories:

0.5x C-Mount camera adapter for ⅓″ or ½″ chip sensors	**ATT1.1**	1	153,75

AE2000-series inverse microscopes

By Motic. During inverse microscopy the lenses are positioned under the benchtop. This results in a larger gap between the benchtop and condenser, allowing analysis of thicker preparations such as living cells in culture vessels/microtiter plates.

- With **infinite optics** for optimum image quality
- Optionally available with **LED lighting** (please order separately)
- Optionally available with a trinocular head for attachment of a microscope camera to the phototube using a C-Mount adapter (please order C-Mount camera adapter separately)

Technical specifications:

Total magnification	40x and 400x in brightfield 100x and 200x in phase contrast
Eyepieces (incl. eyecups)	Wide field 10x Field of view 20 mm Diopter compensation on both eyepieces
Head	Binocular or trinocular 45° viewing angle 360° rotatable Adjustable eye distance (48-75 mm)
Lens turret	4-way, tilted sideways
Lenses for brightfield, planachromatic	- PL 4x / N.A. 0,10, W.D. 12.6 mm - LWD PL 40x / N.A. 0.50, W.D. 3.0 mm
Lenses for phase contrast	- PL Ph 10x / N.A. 0.25, W.D. 4.1 mm - LWD PL Ph 20x / N.A. 0.30, W.D. 4.7 mm
Worktop	200 x 239 mm With glass/metal stage insert
Condenser	ELWD N.A. 0.30 with phase shifter (Ph1, BF) W.D. with condenser for 72 mm W.D.
Lighting	Halogen (6 V / 30 W) with sleep mode, variable
Image focusing	Coarse and fine drive, coaxial
Power supply	100-240 V

Delivery incl. blue filter, interference filter green, neutral filter with slider, centring telescope and dust cover.

Type	Art. No.	Pack Qty.	€
① AE2000 binocular	**ATT4.1**	1	2630,55
② AE2000 trinocular	**ATT5.1**	1	3025,05

Accessories:

LED module (6 V / 30 W, 6 000 K)	**AXA8.1**	1	84,40
0.5x C-Mount camera adapter for ⅓″ or ½″ chip sensors	**ATT1.1**	1	153,75
Replacement halogen lamp (6 V / 30 W)	**ATT6.1**	1	38,15

▶ Immersion oil see chapter Histology/ Microscopy accessories!

Microscope cameras

By Motic. Digital microscope cameras with measurement software. The cameras can be connected to the third tube of the microscope by the C-Mount thread. This requires a matching C-Mount adapter of the microscope manufacturer. The supplied eyepiece adapter allows the cameras to be used on almost any commercially available microscope. Connection via PC, system requirements: Windows XP operating systems and higher or Apple Mac OSX, USB 3.0 port. The camera is powered via the USB port. Larger objects can also be viewed independently of the microscope using the macro tube.

Technical specifications:

Model	① Moticam 3+	② Moticam 5+
CMOS sensor format	½″	½,5″
Attachment lens, focusable	16 mm / CCD	12 mm / CCD
Number of pixels	3.0 MP	5.0 MP
Maximum resolution	2048 x 1536	2592 x 1944
Live image measurements	yes	

Delivery incl. 2 variable eyepiece adapters (suitable for sizes 28, 30, 34 and 35 mm), detachable USB 3.0 cable, macro tube with macro lens, Motic (4-point) calibration scale with crosshair and Motic Images 2.0 Software.

Type	Art. No.	Pack Qty.	€
① Moticam 3+	**TX09.1**	1	796,60
② Moticam 5+	**TX10.1**	1	995,45

Bellows with cleaning brushes

Made of rubber. Clip-on brushes. For contact-free removal of dust and/or loose dust particles on optical or other sensitive surfaces. Easy handling. With large elastic bellows for strong blowing action. Sturdy air nozzle at front, air inlet valve at rear. Dimensions about: L 180 x ∅ 60 mm.

Art. No.	Pack Qty.	€
KP30.1	1	13,90

C-mount cameras ODC series

By Kern. For conventional microscope use, and for demanding application (e.g. darkfield, phase contrast and fluorescence).

- Fast and clear image transmission with proven CMOS technology
- USB 2.0 data transmission adequate for static samples. USB 3.0 version recommended for living samples (faster transmission without stalling)
- Camera power supply via USB cable (length 2 m)
- Multilingual software available. With the functions streaming, photo snapshot and video. Various measuring functions such as paths, surfaces and angular measurement, as well as manual counting possible. Image processing and documentation functions included
- Mounting possible either via C-mount connection on the third barrel of the microscope or via eyepiece. Matching C-mount adapter is provided by the microscope manufacturer, eyepiece adapter (∅ 23.2 mm) and adapter rings (∅ 30.0 mm and 30.5 mm) included in the scope of delivery

Technical specifications:

Model	ODC 822	ODC 824	ODC 825	ODC 831	ODC 832
CMOS sensor format	1/3″	1/2″	1/2,5″	1/3″	1/2,5″
Port	USB 2.0	USB 2.0	USB 2.0	USB 3.0	USB 3.0
Number of pixels (MP)	1.3	3.1	5.1	3.1	5.1
Images per second	15-48	11.5-45	6.8-55	27.3-53.3	14.2-101.2
Supported operating system	Win XP, Vista, 7, 8, 10				

Delivery incl. software microscope VIS, USB cable, eyepiece adapter, rings and lens micrometer for calibrating the software. Please download the software free of charge.

Type	Art. No.	Pack Qty.	€
ODC 822	**HNH4.1**	1	280,00
ODC 824	**HNH5.1**	1	370,00
ODC 825	**HNH6.1**	1	385,00
ODC 831	**HNH7.1**	1	500,00
ODC 832	**HNH8.1**	1	530,00

Digital USB manual microscope ODC 895

By Kern. For fast and easy pre-examination, for example of plants, insects or skin samples. Strong and effective illumination of the samples with eight LEDs arranged in a ring. Multilingual software supplied. With the functions streaming, photo snapshot and video.

Technical specifications:

Magnification stages	10x, 200x
CMOS sensor format	$^{1}/_{3.2}''$
Port	USB 2.0
Number of pixels	2 MP
Work area	150 x 80 mm
Focal range	60 mm
Images per second	15-30
Lighting	LED reflected light ring lighting, controllable
Image focusing	Coarse focus
Supported operating systems	Win XP, Vista, 7, 8, 10
Power supply	Via USB connection (fixed cable, length 1.4 m)

Delivery incl. software.

Art. No.	Pack Qty.	€
HNH2.1	1	230,00

Pocket microscope

30x magnification. With focusing device and swivel illumination of the viewing area. Dimensions: 140 x 45 x 20 mm.
Delivery without batteries, please order separately.
2 batteries Mignon 1.5 V are required.

Art. No.	Pack Qty.	€
P387.1	1	32,20

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Dual goose neck LED

By Kern. External lighting unit (reflected) for microscope.
For maximum flexibility and maximum comfort.
With excellent light quality at constant intensity on the object.

Technical specifications:

Lighting	6 W LED, dimmable
Useful life	Approx. 50,000 operating hours
Colour temperature	5600-6300 K
Length of lights	300 mm
Dimensions (W x H x D)	300 x 250 x 250 mm
Weight	1.5 kg
Power supply	50/60 Hz, 100-240 V

Delivery incl. twin-arm goose neck light conductor.

Art. No.	Pack Qty.	€
HNH3.1	1	160,00

Cold light source

With adapter for gooseneck light guide.
- Integral **halogen mirror lamp 8 V, 20 W**
- With continuous adjustable electronic adjustment of light
- Ideal for illuminating objects during microscopy
- Dimensions: W 175 x D 150 x H 90 mm
- Electrical supply 220 V

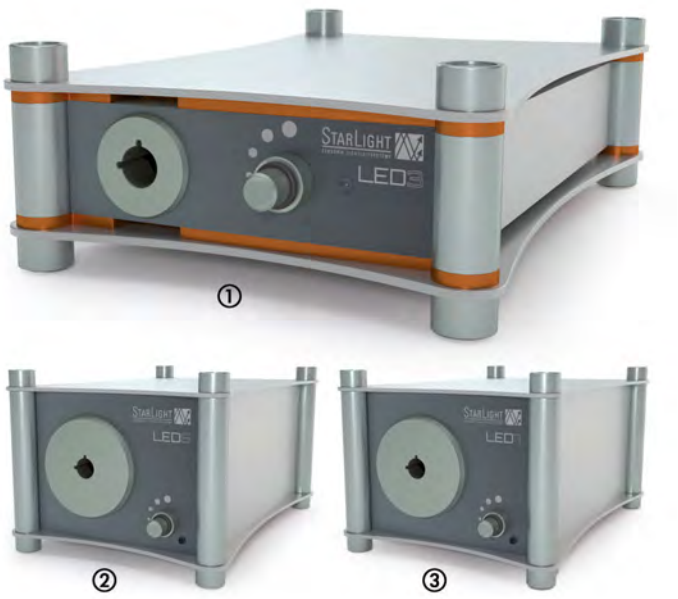
Delivery without gooseneck light guide, please order separately.

Art. No.	Pack Qty.	€
C018.1	1	476,25

Gooseneck light guides

With glass-fibre cable. Fully flexible. With metal casing.
Front ∅ 4.5 mm, external ∅ 10 mm. Length 500 mm.

Type	Art. No.	Pack Qty.	€
1-armed	**C019.1**	1	196,75
2-armed	**C020.1**	1	306,40
Spare halogen mirror lamp	**K641.1**	2	67,70



LED series cold light sources

By Starlight. Modern cold light sources with robust aluminium housing and premium-quality finish. LED technology makes for highly efficient, long-lasting (approx. 50,000 h) and maintenance-free units.
Flicker-free illumination. Stackable.
Can be positioned both horizontally and vertically.

Model overview:

① **LED3**	- Passive cooling (without fan) for silent and vibration-free working - More powerful than 150 W halogen light sources - Fanless cooling makes them perfect for cleanroom applications
② **LED5**	- Cold light source is actively cooled and provides excellent lighting whatever the diameter of the fibre-optic cable
③ **LED7**	- Actively cooled cold light source with high light output

Technical specifications:

Model	① **LED3**	② **LED5**	③ **LED7**
Luminous flux with 1 m x ∅ 9 mm (lm) fibre-optic cable	730	810	1350
Colour temperature (K)	5700	7700	6900
Colour rendering index (CRI)	70	70	75
Fibre-optic cable connection (mm)	∅ 15	∅ 15	∅ 15
Power consumption (W)	36	62	78
Dimensions L x W x H (mm)	259 x 174 x 81	259 x 174 x 137	259 x 174 x 138
Weight (kg)	3.7	2.7	2.7
Power supply	100-240 V, 50/60 Hz		

Delivery without fibre-optic cable; please order separately.

Type	Art. No.	Pack Qty.	€
① LED3	**HAX2.1**	1	622,45
② LED5	**HAX3.1**	1	858,95
③ LED7	**HAX4.1**	1	1041,70

Fibre-optic cables and accessories for LED series cold light sources

Fibre-optic cables

Type	Art. No.	Pack Qty.	€
① Dual-branch swan-neck fibre-optic cable. L: 450 mm, active ∅ 4.5 mm	**HAX5.1**	1	210,70
Single-branch flexible fibre-optic cable. L: 1200 mm, active ∅ 4.5 mm	**HAX6.1**	1	127,95
② Dual-branch flexible fibre-optic cable. L: 1200 mm, active ∅ 4.5 mm	**HAX7.1**	1	212,85
③ Fibre-optic split ring light 66. L: 1000 mm, active ∅ 9 mm	**HAX8.1**	1	523,55

LED ring lights

Type	Art. No.	Pack Qty.	€
④ LED ring light RL4-66-NW, ∅ 66 mm, approx. 5000 K	**HAX9.1**	1	375,20
⑤ LED segment ring light RL4-66-S4, ∅ 66 mm, approx. 5000 K, 4 segments	**HAY0.1**	1	633,20
⑥ Diffuser plate for RL4-66 series	**HAY1.1**	1	60,20
⑦ Polarising filter set for RL4-66 series	**HAY2.1**	1	223,60

⑧ **Reducing rings for ring lights**

Type	Art. No.	Pack Qty.	€
∅ 66 mm to ∅ 64 mm	**HAY3.1**	1	23,15
∅ 66 mm to ∅ 62 mm	**HAY4.1**	1	23,15
∅ 66 mm to ∅ 60 mm	**HAY5.1**	1	23,15
∅ 66 mm to ∅ 58 mm	**HAY6.1**	1	23,15
∅ 66 mm to ∅ 56 mm	**HAY7.1**	1	23,15
∅ 66 mm to ∅ 54 mm	**HAY8.1**	1	23,15
∅ 66 mm to ∅ 52 mm	**HAY9.1**	1	23,15
∅ 66 mm to ∅ 50 mm	**HCA0.1**	1	23,15

Illuminated magnifiers

Stand magnifier and mini light panel

Stand magnifier

With swivel-mounted plastic lens, **magnification 1.75x**.
Lens size 140 x 100 mm, frame height 185 mm.
Use with mini light panel NL24.1 is optional.

Art. No.	Pack Qty.	€
NL23.1	1	98,90

Mini light panel

Battery-operated.
Dimensions: housing L 158 x W 150 x H 14 mm,
illuminated surface L 125 x W 100 mm.
Use with stand magnifier NL23.1 is optional.
Delivery incl. 6 batteries Micro (1.5 V).

Art. No.	Pack Qty.	€
NL24.1	1	138,70

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

LED magnifier lamps

- **3 diopter** glass lens, field of vision ∅ **127 mm**
- 90 LEDs, over 15 000 hours lamp life, maintenance free
- Colour temperature: daylight white 6500 K
- Light intensity 1 x 600 lx at 35 cm distance, 495 lumen
- Low energy consumption of approx. 8 watts (energy efficiency class „A“)
- Ball-and-socket joint allows three-dimensional head rest adjustment
- Rugged metal linkage, arm length at bottom and top 450 mm
- Clamp base for clamping widths of up to 65 mm
- Power supply 230 V, 50 Hz, cable length 1.70 m

Colour	Art. No.	Pack Qty.	€
white	**NH99.1**	1	134,40
black	**NK00.1**	1	134,40

Approximation formula for calculating diopters in magnification:

$$\frac{\text{Dpt.}}{4} + 1 = \text{x-times magnified}$$

Desk magnifying glass with LED lamp

With frameless plastic lens, ∅ 102 mm. **2x magnification**,
with integrated small lens **4x**. Separate LED lamp with 4 LEDs.
With removable clamp for attaching to table edges.

Delivery incl. 2 x 1.5 V batteries.

Art. No.	Pack Qty.	€
PK48.1	1	29,00

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

LED magnifier lamps, compact

- **3 diopter** glass lens, field of vision ∅ **100 mm**
- Embedded **12-diopter** lens, field of vision ∅ **25 mm**
- 60 LEDs, over 20,000 hours lamp life, maintenance free
- Colour temperature: daylight white 6500 K
- Light intensity 1 x 200 lx at 35 cm distance, 330 lumen
- Low energy consumption of approx. 5 watts (energy efficiency class A)
- Ball-and-socket joint allows three-dimensional head rest adjustment
- Plastic linkage, arm length: bottom 155 mm, top 180 mm
- Sturdy base with ballasting, 150 x 180 mm
- Power supply 230 V, 50 Hz, cable length 1.40 m

Colour	Art. No.	Pack Qty.	€
white	**NK01.1**	1	77,95
black	**NK02.1**	1	77,95

Illuminated magnifiers

varioLEDflex magnifier lamp

By Eschenbach. With shadow-free ring illumination and structure-accentuating segment illumination. A flexible gooseneck stand with a smooth action and the lens which also tilts in two directions ensures precise adjustment of the magnifier head to suit individual requirements.

- Aspheric PXM® lightweight lens, cera-tec® coated
- **Lens ∅ 76 mm**
- **2.5x magnification (6 dpt),** high edge definition
- 63 LEDs, up to 50 000 hours lamp life, maintenance free
- Illumination level: approx. 6 000 lx at only 5 W (ring illumination)
- Colour temperature >6 000 K
- Stand length 410 mm
- Power supply 110-230 V, 50-60 Hz, cable length approx. 2.5 m

Delivery incl. mains adapter (EU/GB/US) and sturdy table clamp made from steel, max. clamping range 60 mm.

Art. No.	Pack Qty.	€
AEA3.1	1	413,90

LED-illuminated round magnifier

By Waldmann. Very sturdy and rugged, resistant to vibration. Excellent colour rendering and homogeneous light distribution.

- Scratch-resistant plastic lens with **6 diopters**
- Field of vision ∅ **72 mm**, undistorted
- 63 x Low Power LEDs
- Low energy consumption of approx. 6 watts (energy efficiency class A)
- Colour temperature: neutral white 3 700-4 300 K
- Colour rendering Ra = 85
- Illumination level approx. 2 660 lx at a distance of 15 cm
- Stand length approx. 730 mm
- Comfortable switching on/off using sensor button on lamp head
- Housing made of anodised aluminium and black plastic
- Power supply 100-240 V, 50/60 Hz, cable length 2.3 m

Delivery incl. base and protective lens casing to avoid fire when not in use. Table clamp and table base is optional (please order separately).

Type	Art. No.	Pack Qty.	€
LED illuminated round magnifier	**CCE1.1**	1	433,25
Table clamp	**LK23.1**	1	41,40
Table base	**LK24.1**	1	98,70

Dissecting set

In zip-up case, with elastic loops to hold instruments.

Contents:

1 pair of scissors, sharp-blunt, L 140 mm
1 pair of small scissors, L 110 mm
1 pair of tweezers, blunt, L 140 mm
1 pair of tweezers, sharp, L 110 mm
1 scalpel handle No. 4
5 scalpel blades, type 23
2 dissecting needles, sharp

Art. No.	Pack Qty.	€
CAL6.1	1	24,70

▶ Further dissecting sets see p. 346

Illuminated magnifiers

Tevisio magnifier lamps

By Waldmann. For demanding applications in research, manufacturing, quality assurance and assembly.

- Scratch-resistant **3.5 diopter** glass lens
- **Large field of vision,** ∅ **153 mm**, distortion free
- 48 LEDs, up to 50,000 hours lamp life, maintenance free
- Various light segments can be switched on and off to create structure-accentuating effects
- Continuously variable dimming to 10 %
- Colour temperature: neutral white 4000 K
- Light intensity: 6000 lx at only 14 W
- 40 % energy saving compared to standard magnifier lamps
- 3D head joint for individual adjustments
- Housing made of colourless anodised aluminium and black plastic
- Power supply 100-240 V, 50/60 Hz, cable length 3.8 m

Overall reach (mm)	Art. No.	Pack Qty.	€
784 (400/384)	**NH40.1**	1	719,20
984 (500/484)	**NH41.1**	1	736,40

Headlight LED

By Eschenbach. High-performance LED light for shadow-free, ergonomic and fatigue-free working at near-constant illumination levels. Light swivels vertically into the desired position.
For attachment to headband magnifiers (P106.1 ff.) and the MaxDetail magnifier (HE06.1).

Technical specifications:

Lighting	2 high-performance LEDs
Illumination level	approx. 3200 lx in 250 mm approx. 1200 lx in 400 mm
Length of cable	1 m
Dimensions: lamp housing battery housing (incl. clip)	 32 x 20 x 34 mm 90 x 55 x 40 mm
Weight: lamp housing battery housing (excl. batteries)	 11 g 60 g
Lighting duration	approx. 8 h in normal mode approx. 14 h in Eco mode
Power supply	3 mignon/AA 1.5 V batteries

Delivery incl. adapter for headband magnifiers and MaxDetail magnifier, hard foam case and batteries.

Art. No.	Pack Qty.	€
CPT7.1	1	98,40

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Magnifying glasses MaxDetail

By Eschenbach. **Magnification 2-times.** Multi-purpose magnifying glasses for all tasks where you need to use both hands.
Advantages:

- Adjustable side-pieces for a close fit
- Optimal working distance 400 mm
- Large field of vision (~150 mm at 400 mm working distance)
- Diopter compensation of ±3 dpt. possible
- Low weight 49 g

Art. No.	Pack Qty.	€
HE06.1	1	104,10

Head band magnifiers

By Eschenbach. Binocular lenses enable stereoscopic sight with both eyes. Suitable for spectacle users. Screen is closed on all sides to protect against diffused light. Screen can be folded back when not in use.

Operating distance (mm)	Magnification	Art. No.	Pack Qty.	€
400	1.7x	**P106.1**	1	106,25
250	2x	**P107.1**	1	106,25
180	2.5x	**P108.1**	1	106,35
130	3x	**P109.1**	1	106,35

Illuminated magnifiers

Illuminated pocket magnifiers

By Eschenbach.
- Ergonomically shaped handle
- Large, easy-to-operate light switch
- Aspheric PXM® lightweight lens, dia. 35 mm
- Lenses are hard coated on both sides
- Setting distance (distance between eye and virtual image): 400 mm
- Easy battery replacement

Delivery incl. batteries (2 Mignon 1.5 V, type AA), folding dust cap (type ② only).

Type ①: with 2.5 V light bulb, 250 mA, E10

Magnification	Art. No.	Pack Qty.	€
7x / 28.0 dpt.	**H506.1**	1	32,20
10x / 38.0 dpt.	**H507.1**	1	35,70

Type ②: with LED white light, 52 mA
With attachable filters for various light colours.

Magnification	Art. No.	Pack Qty.	€
10x / 38.0 dpt.	**PT98.1**	1	64,40
12.5x / 50.0 dpt.	**PT99.1**	1	67,55

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4	6,05

Binocular magnifiers for spectacles

By Eschenbach. Simple and effective magnifying aid for spectacle users.

Advantages:
- Can be clipped on to almost any spectacle frames
- Field of vision is not restricted
- Both hands are free for working

Operating distance (mm)	Magnification	Art. No.	Pack Qty.	€
400	1.7x	**P103.1**	1	61,20
250	2x	**P104.1**	1	61,20
180	2.5x	**P105.1**	1	61,20
160	3x	**H577.1**	1	64,10

① Precision magnifiers with graticule

By Eschenbach. Has a distortion-free, high quality, achromatic lens.
Lens ∅ 23 mm. Features handy focussing ring.
With 20 mm measuring range and 0.1 mm subdivision.
Casing made of glass-fibre reinforced polyamide.

Magnification	Art. No.	Pack Qty.	€
7x	**H570.1**	1	104,15
10x	**H571.1**	1	121,50

② Illuminating attachment LED

By Eschenbach. For precision magnifiers. Handy case for two batteries, type Baby 1.5 V. **Delivery without** batteries, please order separately.

Art. No.	Pack Qty.	€
H572.1	1	79,50

Accessories:

Baby/C 1.5 V battery	**1023.2**	2 pieces	4,85

Approximation formula for calculating diopters in magnification:

$$\frac{\text{Dpt.}}{4} + 1 = \text{x-times magnified}$$

Illuminated precision magnifier

By Eschenbach. With removable **graticule**.
Magnification 10x, 38 (dpt).
With aspheric **PXM®-light lens, lens-∅ 35 mm.**
Graticule with 0.5 mm and 1/64 inch graduation.
Power supply via 2 x 1.5 V batteries (type Baby).
Delivery without batteries, please order separately.

Art. No.	Pack Qty.	€
H568.1	1	81,60

Accessories:

Baby/C 1.5 V battery	**1023.2**	2 pieces	4,85

Magnifying lenses

Illuminated pocket magnifiers easyPOCKET

By Eschenbach.
- Aspherical lens
- **Magnification: 3-times**
- Lens diameters: L 50 x W 46 x H 3 mm
- Ultra-flat
- With LED illumination
- Can be switched on and off by pulling magnifier out of protective case
- Fibre glass reinforced plastic case protects lens
- Dimensions of plastic case: L 85 x W 55 x H 6 mm

Delivery incl. battery (Button cell, 3 V, type CR 2025)

Colour	Art. No.	Pack Qty.	€
silver	**KC50.1**	1	61,20
black	**KC51.1**	1	61,20

Accessories:

CR 2025 button cell battery (3 V)	**CH14.1**	1	5,35

All-purpose pocket lens

By Eschenbach. Can be used as a **handheld or desktop magnifier.** With a simply twist, you can easily transform the hand-held magnifier into a desktop magnifier that always ensures correct height and a sharp image. The aspheric PXM® lightweight lens **(∅ 60 mm)** produces a sharp image right to the edge of the lens with **3.5x magnification (10.0 dpt.)**.

Art. No.	Pack Qty.	€
H569.1	1	37,45

Folding magnifier

Made of plastic, with PXM® lightweight lens **(∅ 23 mm)**.
10x magnification. Aplanatic lens for edge-to-edge distortion-free images.

Art. No.	Pack Qty.	€
PX00.1	1	31,75

Hand-held magnifiers with additional lens

By Eschenbach. Suitable for use when a large field of vision is required with low level magnification.
- Biconvex PXM® lightweight lens
- Plano-convex additional lens with 5x magnification integrated in the handle
- Eyelet in the handle for round-the-neck carry cord

Lens ∅ (mm)	Magnification (dpt / x times)	Art. No.	Pack Qty.	€
60	6,4/2,5	**AXL6.1**	1	16,10
80	5,0/2,25	**AXL7.1**	1	23,60

Folding magnifiers

High-resolution. With aspheric lenses.
Dust-tight casing protects lens from scratching. ∅ **of lens 35 mm**.
Total ∅ 52 mm.

Delivery incl. neck strap

Magnification	Colour	Art. No.	Pack Qty.	€
4x	red	**H502.1**	1	25,60
7x	anthracite	**H503.1**	1	29,00
10x	white	**H504.1**	1	34,20

Standing magnifiers

Multipurpose magnifiers made of shockproof plastic.
Lenses made of PMMA. Transparent glass base. With aspheric lenses.
Model ② also has colour-corrected lens and diopter compensation.

Technical specifications:

Model	Magnification	Lens-∅ (mm)	Height (mm)	∅-Field of vision (mm)
①	8-times	24	approx. 45	45
②	10-times	26	approx. 38	66

Model	Art. No.	Pack Qty.	€
①	**X294.1**	1	18,60
②	**KP29.1**	1	21,45

Measuring lens

With **magnification 8x**, variably adjustable.
With graticule length 10 mm, subdivisions 0.1 mm. Outer ∅ 32 mm.

Art. No.	Pack Qty.	€
1285.1	1	107,00

Hand-held lamp, compact

9 W. With ballast in plug, unbreakable plastic protection tube and tiltable wire hook. Length of lamp 205 mm. 5 m cable. Protection class II. Current 220 V/50Hz.

Art. No.	Pack Qty.	€
2986.1	1	167,70

Linen tester

Made of plastic. With graticule on side, 1 mm subdivision.
Magnification 8x. Aperture 20 x 20 mm. Height 35 mm. Collapsible.

Art. No.	Pack Qty.	€
H576.1	1	21,00

Infrared lamp IL21

Compressed glass bulb for intensive infrared light.
Inclination of angle adjustable in 5 stages from 0 to 45°.
Capacity ca. 150 W. Voltage: 230 V, 50/60 Hz.

Type	Art. No.	Pack Qty.	€
Infrared lamp IL21	**X435.1**	1	60,75

Accessories:

Spare lamp for IL21	**X436.1**	1	21,45

Precision linen tester

By Eschenbach. In chromium plated brass housing.
Biconvex lens made of optically ground silicate glass. Collapsible.

Magnification	Height (mm)	Aperture (mm)	Art. No.	Pack Qty.	€
10x	27	15 x 15	**H573.1**	1	45,80
5x	53	30 x 30	**H574.1**	1	63,10

LED bench lamps

- 48 LEDs, over 15 000 hours lamp life, maintenance free
- Colour temperature: daylight white 6 500 K
- Light intensity: 1 500 lx at 350 mm distance, 200 lumen
- Low energy consumption of approx. 6.5 watts (energy efficiency class „A“)
- Arm and lamp head made of aluminium and plastic
- Lamp head 130 x 110 mm, rotatable and tiltable
- Switch on lamp head for convenient switching on and off
- Arm length: 400 mm
- Height in normal working position: 430 mm
- Sturdy base, 200 x 165 mm, made of plastic with ballasting
- Power supply 230 V, 50 Hz, cable length 1.75 m

Colour	Art. No.	Pack Qty.	€
black	**NK64.1**	1	83,75
silver	**NK65.1**	1	83,75

Table lamps Study

Arm, shade and clamp base made of metal.

- Length of arm, top and bottom approx. 35 cm (height adjustable)
- Reflector can be moved
- Lamp head ∅ 17 cm
- Span width of clamp max. 55 mm
- Can be rotated 360°
- Cord length approx. 1.75 m
- Supply 230 V, 50/60 Hz

Delivery without light bulb, please order separately.

Colour	Art. No.	Pack Qty.	€
silver	**EP57.1**	1	32,20
black	**EP58.1**	1	32,20

Accessories:

Energy-saving bulb E27	**TA18.1**	1	18,85

Energy saving bench lamps

- Reflector for optimal light utilisation
- Colour temperature: daylight white 6 500 K
- Light intensity: 1 700 lx at 350 cm distance, 840 lumen
- Arm, lamp head and base made of shatterproof plastic
- Lamp head 360 x 70 mm
- Switch on lamp head for convenient switching on and off
- Arm length 310 mm, variable height
- Height in normal working position: 420 mm
- Sturdy base, 230 x 120 mm, with ballasting
- Energy efficiency class „A“
- Power supply 230 V, 50 Hz, cable length 1.80 m

Delivery incl. bulbs.

Colour	Art. No.	Pack Qty.	€
white	**NK60.1**	1	40,35
black	**NK61.1**	1	40,35
silver	**NK62.1**	1	40,35

Accessories:

Replacement energy saving bulb, 11 W, G23 base	**NK63.1**	1	10,30

Desktop lamp "Office"

Output 20 W. With adjustable aluminium arm (max. 82 cm). Can be rotated horizontally 360°. Arm and reflector (Length 21 cm) can be adjusted. Lamp head with antiglare protection. Rotatable metal foot, alternatively available with metal clamping foot (max opening 55 mm). Cable length 2 m. Power supply: 230 V, 50/60 Hz.

Delivery incl. light bulb, foot and table clamp.

Art. No.	Pack Qty.	€
AH77.1	1	84,85

Accessories:

Spare lamp	**XC72.1**	1	10,50

LED workplace luminaires

By Waldmann. For homogeneous wide area illumination of the workplace without glare or shadows.
Good contrast vision and excellent colour detection.

- Maintenance-free LED technology, up to 50 000 hours lamp life
- 30 % energy saving compared to standard work lights
- Variable dimming down to 10 %, with memory function
- Colour temperature: neutral white 5 000 K
- Glare suppression is provided by cone prism aperture
- Flicker-free light without IR and UV content
- Housing made of colourless anodised aluminium and black fibre-reinforced plastic

Technical specifications:

Model	①	②	③	④
Number of LEDs	24	36	12	24
Power consumption (W)	31	47	15	31
E_m/E_{max} (lx)*	958/2603	1425/3596	479/1394	958/2603
Total reach (mm)	1036		431	-
Lamp dimensions L x W x H (mm)	398 x 136 x 33	577 x 136 x 33	179.5 x 136 x 33	359.5 x 136 x 33

*E_m = medium illuminance, E_{max} = max. illuminance, measuring field 100 x 100 cm, measuring distance 50 cm.

Models ① and ② for benchtop mounting. With frame and 3D head joint.
Delivery incl. screw-on foot.

Type	Art. No.	Pack Qty.	€
①	**NK90.1**	1	628,90
②	**NK91.1**	1	725,65

Models ③ and ④ for space-saving under-cabinet assembly.
Rotatable head joint.
Delivery incl. bracket.

Type	Art. No.	Pack Qty.	€
③ with swivel arm	**NK92.1**	1	321,45
④ with fixed mounting	**NK93.1**	1	385,95

Workplace luminaire

Colour: white. Ideal for laboratories, workshops and engineering offices.
With electronic ballast for flicker-free start, flicker-free light, low current consumption and longer bulb life.

- Colour temperature: daylight white 6 500 K
- Light intensity: 2 800 lx at 350 cm distance, 1 250 lumen
- Lamp head with aluminised parabolic louvre for glare-free use
- Switch on lamp head for convenient switching on and off
- Rugged metal arm, rotatable through 360°
- Arm length at bottom and top 400 mm
- Height in normal working position 400 mm
- Metal clamp base, plastic coated (for clamping widths up to 65 mm)
- Energy efficiency class „A“
- Power supply 230 V, 50 Hz, cable length 1.50 m

Delivery incl. bulbs (3 x 14 W).

Art. No.	Pack Qty.	€
NK58.1	1	134,40

Accessories:

Replacement energy saving bulb, 14 W, G5 base	**NK59.1**	1	16,15

Laser pointer

All-metal casing with clip. Range approx. 150 m. Laser class 2.
Dimensions: L 140 mm, ∅ 10 mm.
Output power ≤ 1 mW, wavelength 635-670 nm (red).

Delivery incl. case and 2 batteries Micro/AAA 1.5 V.

Art. No.	Pack Qty.	€
AH29.1	1	31,00

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Warning:
Avoid looking directly into the laser beam and do not point the beam into another person's eyes!

Solitaire®-Rod-shaped torch

By MAG. Black. With aluminium casing. 8 cm long.
A simple turning movement enables switch over from spot- to floodlight.
With battery and spare bulb in cap.
Extra long-life and economical energy usage.
With key-chain hook in case.

Art. No.	Pack Qty.		€
N257.1	1		19,50

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40
Spare bulbs	**N261.1**	2 pieces	7,50

Torches, Micro-Mag and Mini-Mag

By MAG. Black with aluminium casing.
Can be switched over from spot- to floodlight.
Anodized inside and outside for optimal protection against corrosion.

Delivery incl. 2 x 1.5 V Micro batteries for Micro-Mag, 2 x 1.5 V Mignon batteries for Mini-Mag. Includes case and spare lamp.

Type	Art. No.	Pack Qty.	€
Micro-Mag, 125 mm long with pocket clip	**N258.1**	1	37,15
Mini-Mag, 145 mm long (without pict.)	**N259.1**	1	42,20

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4	6,40
Mignon battery/AA 1.5 V	**1022.2**	4	6,05
Spare bulbs	**N263.1**	2	8,10

LED torch

By TFA-Dostmann. **With zoom** for stray light/focusing.
Rugged aluminium housing with carry strap.

Technical specifications:

Power output	3 W
Illumination range	120 m
Lifetime of LED bulb	100 000 h
Energy consumption	800 mA/h
Dimensions (L x ∅)	115 x 34 mm
Weight incl. battery	160 g
Power supply	3 x 1.5 V AAA batteries

Delivery incl. batteries.

Art. No.	Pack Qty.		€
YK82.1	1		19,15

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Torch LED 3 D-Cell

By Mag-Lite®. Continuous adjustment from spot-to flood beam.
Housing made of aluminium. Anodized surfaces for enhanced corrosion protection. Splash-proof and shockproof.

Technical specifications:

Lamp	1 LED
Distance	364 m
Light output	168 Lumen
Lighting duration	approx. 80 h
Length	315 mm
∅	56 mm
Weight (without batteries)	446 g
Power supply	3 batteries Mono/D 1.5 V

Delivery without batteries, please order separately.

Art. No.	Pack Qty.		€
HLC2.1	1		83,85

Accessories:

Mono/D 1.5 V battery	**1024.2**	2 pieces	6,35

Ex-safe LED mini flash light eLED®PEN

By Ecom. Pen-sized for zone 1/21 hazardous areas (areas in which an explosive atmosphere is likely to be present intermittently).
Wide beam with powerful, evenly distributed light.

Technical specifications:

Lamp	0.5 W power LED
Lighting power at a distance of 1 m	approx. 1000 lx
Ex-code: Suitable for use in gas atmosphere Suitable for use in dust atmosphere	 II 2G Ex ib IIB T4 Gb II 2D Ex ib IIIC T60 °C IP6X Db
Operating time	approx. 3 hours (continuous operation)
Ambient temperature	-20 to +40 °C
IP protection class	IP67
Dimensions (L x W x H)	135 x 22 x 25 mm
Weight	approx. 100 g

Note: Please use only type-tested replacement batteries (see operating instructions)!

Delivery incl. 2 batteries.

Art. No.	Pack Qty.	€
NT20.1	1	53,55

Ex-safe LED torch eLED®CPO TS

By Ecom. For zone 1/21 hazardous areas (areas in which an explosive atmosphere is likely to be present intermittently).

Technical specifications:

Lamp	2 W power LED
Lighting power at a distance of 1 m	approx. 2000 lx
Ex-code: Suitable for use in gas atmosphere Suitable for use in dusty atmospheres	 II 2G Ex e ib IIC T6 II 2D Ex ibD 21 T61 °C
Operating time	approx. 6-8 hours (continuous operation)
Ambient temperature	-20 to +40 °C
IP protection class	IP67
Dimensions (L x W x H)	134 x 35 x 41 mm
Weight	approx. 150 g

Note: Please use only type-tested replacement batteries (see operating instructions)!

Delivery incl. 3 batteries.

Art. No.	Pack Qty.	€
NT21.1	1	93,45

Ex-safe LED torch Lite-Ex PL 10

By Ecom. For zone 0/20 hazardous areas (areas in which an explosive atmosphere is likely to be present continuously for long periods or frequently).
With ring switch and coated, scratch-resistant protective filter.

Technical specifications:

Lamp	High-performance LED
Lighting power at a distance of 1 m	approx. 3000 lx
Ex-code: Suitable for use in gas atmosphere Suitable for use in dust atmosphere	 II 1G Ex ia op is IIC T4 Ga II 1D Ex ia IIIC T130 °C Da
Operating time	approx. 55 hours
Ambient temperature	-20 to +50 °C
IP protection class	IP65/IP67
Dimensions (L x W x H)	147 x 36 x 36 mm
Weight	approx. 120 g

Note: Please use only type-tested replacement batteries (see operating instructions)!

Delivery incl. belt clip, hand strap and 3 batteries.

Art. No.	Pack Qty.	€
NT19.1	1	138,70

LED light panels slimlite plano

By Kaiser-Fototechnik. With 8 mm height, very flat lighting plates.
For an even and true-colour illumination when viewing transparent images.
LED lighting in daylight quality, dimmable.

- Touch-sensitive switch for On/Off and brightness control
- Selectable mains or battery operation
- Different units beside the illuminated area (cm and inch)

Technical specifications:

Model	**S**	**M**	**L**
Illuminated area L x W (mm)	220 x 160	320 x 228	429 x 309
Number of LEDs	23	33	90
Colour temperature (K)	5000	5000	5000
Light density cd/m²	750	600	650
Colour rendering index CRI	95	95	95
Power consumption (W)	3,6	4.1	6,6
Operation duration, battery (h)	5	3.5	1.5
Charge time, battery (h)	5	5	5
Power supply	100-240 V, 50/60 Hz		
Dimensions L x W x H (mm)	290 x 200 x 8	390 x 270 x 8	499 x 350 x 8
Weight (g)	570	1010	1690

Delivery incl. power supply, USB cable (length 2 m), lithium-ion battery.

Type	Art. No.	Pack Qty.	€
S	**HNK0.1**	1	123,65
M	**HNK1.1**	1	192,45
L	**HNK2.1**	1	258,00

Lighting panels, autoradiography

Lighting panels

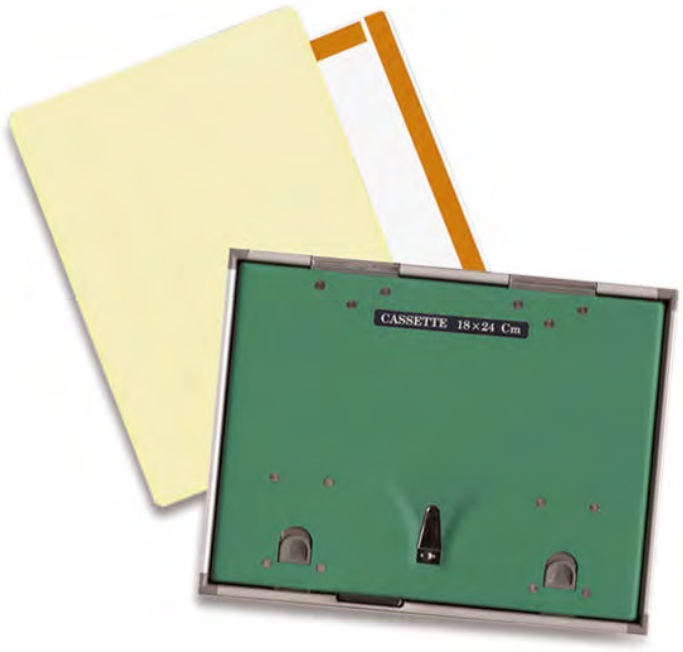
By Rex.
Ideal for viewing and for precise colour evaluation of slides, for examining large-sized films and transparencies, for illuminating X-rays.
Also suitable for selecting and evaluating photographic material or for comparing superimposed graphs or chromatogrammes, etc.

Design:
- Sturdy sheet steel case, powder-coated (white)
- Extremely flat construction
- Plane, scratch resistant plastic opal pane
- **Non-flashing, non-flickering light,** for non-fatiguing viewing
- Without border and good illumination
- Light temperature 5000 K
- Only slight warming of surface during permanent run
- Comes with integrated wall mounting
- Length of leads 2 m
- Mains supply 230 V, 50-60 Hz

Technical specifications:

Type	Dimensions L x W x D (mm)	Illuminated area L x W (mm)	Luminance (cd/m²)	Light fittings (Watt)
Size 6 E	320 x 250 x 60	300 x 230	1700	2 x 8
Size 1 E2	415 x 270 x 60	395 x 250	1400	2 x 8
Size 1 E4	415 x 270 x 60	300 x 250	3000	4 x 8
Size 2 E	550 x 380 x 60	530 x 360	1300	2 x 13
Size 2 RE	550 x 380 x 60	530 x 360	1800	3 x 13
Size 3 RE	600 x 550 x 60	580 x 530	2000	5 x 13

Type	Art. No.	Pack Qty.	€
Size 6 E	**P262.1**	1	212,85
Size 1 E2 (2 x 8 W)	**P263.1**	1	221,45
Size 1 E4 (4 x 8 W)	**H988.1**	1	310,70
Size 2 E	**P265.1**	1	281,65
Size 2 RE	**P266.1**	1	339,70
Size 3 RE	**P268.1**	1	471,95



Rotilabo®-X-ray-cassettes

Light, stable aluminium cassette. **Optimal film-screen contact.**
With safety catch for easy opening. Press to close. High cold stability to -70 °C.

Size (cm)	Art. No.	Pack Qty.	€
18 x 24	**X265.1**	1	123,65

Intensifying screens

Suitable for isotopes ^{32}P.
Delivery incl. 1 set of screens for front and back.

- **Type, Universal (sensitivity 100)**

Combines relatively high sensitivity with excellent detail recognition.
Luminous substance: calcium tungstate. For blue-sensitized films.

Size (cm)	Art. No.	Pack Qty.	€
18 x 24	**X274.1**	1	60,10

- **Type, Special/Rapid (sensitivity 200)**

Sensitivity of special screens is almost twice as high as of standard universal screens. Luminous substance: calcium tungstate. Blue-emitting.

Size (cm)	Art. No.	Pack Qty.	€
18 x 24	**X279.1**	1	72,05

▶ X-ray protection aprons see p. 685
▶ Illuminated template and autoradiography pen: refer to chapter Biochemistry!
▶ UVA meter see p. 879
▶ UV spectacles see p. 578

Surface illuminators

UV-handheld lamps

By Herolab. Suitable for fluorescence excitation in microbiology, textile material technology, mineralogy, botany etc.
The lamps are equipped with and can be switched over between **two wavelengths (254 nm/365 nm)**. Supplied complete with outlet cable, on/off switch and handle. Electrical supply 220 V/50 Hz.
Also available as an accessory: Desktop stand made of metal.

Technical specifications:

Model	Output (W)	Dim. filter L x W (mm)	Dim. lamp L x W x H (mm)	Weight (kg)
I	2 x 4	100 x 50	195 x 70 x 65	0.7
II	2 x 6	150 x 50	260 x 70 x 65	0.8
III	2 x 8	200 x 50	335 x 70 x 65	0.9
IV	2 x 15	300 x 70	485 x 85 x 80	1.65

Model	Art. No.	Pack Qty.	€
I	**H466.1**	1	355,85
II	**H467.1**	1	395,60
III	**H468.1**	1	407,45
IV	**H469.1**	1	539,65

Accessories:

Replacement UV tube, 4 W, 254 nm, L135 x ∅ 16 mm	**H391.1**	1	47,25
Replacement UV tube, 4 W, 365 nm, L135 x ∅ 16 mm	**H392.1**	1	37,65
Replacement UV tube, 6 W, 254 nm, L 210 x ∅ 16 mm	**P368.1**	1	48,60
Replacement UV tube, 6 W, 365 nm, L 210 x ∅ 16 mm	**P369.1**	1	36,80
Replacement UV tube, 8 W, 254 nm, L288 x ∅ 16 mm	**P370.1**	1	48,40
Replacement UV tube, 8 W, 365 nm, L288 x ∅ 16 mm	**P371.1**	1	37,10
Replacement UV tube, 15 W, 254 nm, L 437 x ∅ 26 mm	**P372.1**	1	62,70
Replacement UV tube, 15 W, 365 nm, L 437 x ∅ 26 mm	**P373.1**	1	45,15
Spare fluorescent tubes - White light	**H390.1**	1	13,90

Desktop stand made of metal

By Herolab. For UV-handheld lamps. Height adjustable from 50 to 270 mm.

Art. No.	Pack Qty.	€
H470.1	1	138,70

UV transilluminators

For use in all areas (standard gel analysis, preparation of nucleic acids, etc.).
- **Filter size: 110 x 140 mm**
- Stainless steel filter cover
- Special reflectors made of ultra-pure aluminium for homogeneous illumination with high utilisation of tube UV intensity
- Flicker-free quick starting
- Low thermal output
- Dimensions: W 266 x D 186 x H 80 mm

Delivery without UV protective screen. Please order separately.

Type	Wavelength (nm)	Tubes	Art. No.	Pack Qty.	€
UVT-14 SE	254	4 x 6 W	**NK03.1**	1	878,30
UVT-14 ME	312/302	4 x 6 W	**NK04.1**	1	878,30
UVT-14 LE	365	4 x 6 W	**NK05.1**	1	767,55

Accessories:

Hinged UV protective screen	**NK06.1**	1	118,25
Replacement UV tube, 6 W, 254 nm, L 210 x ∅ 16 mm	**P368.1**	1	48,60
Replacement UV tube, 6 W, 312/302 nm, L 210 x ∅ 16 mm	**P850.1**	1	56,55
Replacement UV tube, 6 W, 365 nm, L 210 x ∅ 16 mm	**P369.1**	1	36,80

Warning: UV-C radiation is detrimental to health!

Fields of application:

- UV-A = 320 to 380 nm (max 366 nm): effect lighting, testing of materials, commencement of photochemical reaction, fluorescence excitation e.g. with DCchromatogrammes and gels.

- UV-B = 280 to 320 nm (max 312 nm): e.g. analytic evaluation of chromatography plates without destroying separated substances.

- UV-C = 100 to 280 nm (max 254 nm): e.g. chromatographic investigation for identifying (absorption or fluorescence) substances.

Surface illuminators

Blue light LED transilluminators

For the gentle excitation of fluorescent DNA strands in gel.
No damage to DNA by UV radiation. Specially designed for SYBR dyes (excitation at 420-500 nm, emission above 520 nm).
Dimensions: L 266 x W 186 x H 80 mm.
Please order UV protective goggles with orange lens for the detection of DNA strands separately.

Type	Filter size (mm)	Art. No.	Pack Qty.	€
UVT-14 BE-LED	110 x 140	**NN23.1**	1	655,75
UVT-22 BE-LED	140 x 220	**NN24.1**	1	693,40

Accessories:

UV protective goggles with orange lens	**NN25.1**	1	15,60

UV/white light transilluminator

By Herolab. Multifunction device with **100/75 % intensity switch**.

- **Filter size: 200 x 200 mm**
- Stainless steel filter cover, plastic coated housing, recessed switch
- Special reflectors made of ultra-pure aluminium for homogeneous illumination with high utilisation of tube UV intensity
- Dimensions: W 470 x D 340 x H 135 mm

Delivery incl. UV protective screen.

Type	Wavelength (nm)	Tubes	Art. No.	Pack Qty.	€
UVT-20 M/W	312/white light	6 x 8 W/3 x 6 W	**LY09.1**	1	1661,95

Accessories:

Replacement white light tube, 6 W, L 210 x ∅ 16 mm	**X306.1**	1	37,10
Replacement UV tube, 8 W, 312 nm, L 285 x ∅ 12 mm	**LL71.1**	1	37,10

UV-transilluminators with high light intensity

By Biostep.

- Filter cover made of rust-proof stainless steel
- Homogenous illumination
- High intensity light
- Model UST-30M-8E has an intensity switch 50/100 % and quiet, temperature-controlled ventillation system

Delivery without UV-protective covers, please order separately.

Filter size: 230 x 300 mm
Dimensions: W 325 x D 322 x H 105 mm

Type	Wavelength (nm)	Tubes	Art. No.	Pack Qty.	€
UST-30M-8E	312	12 x 8 W	**LY10.1**	1	1342,70

Filter size: 200 x 400 mm
Dimensions: W 478 x D 322 x H 135 mm

Type	Wavelength (nm)	Tubes	Art. No.	Pack Qty.	€
UXDT-40SL-15K	254/365	2 x (3 x 15 W)	**LY11.1**	1	1987,70
UXDT-40SM-15K	254/312	2 x (3 x 15 W)	**LY12.1**	1	1987,70

Accessories:

UV-protective cover for LY10.1, canted on 4 sides, W 325 x D 322 x H 25 mm	**LY13.1**	1	78,30
UV-protective cover for LY11.1, LY12.1, canted on 2 sides, W 478 x D 322 x H 25 mm	**LY14.1**	1	72,60
Replacement UV tube, 8 W, 312 nm, L 285 x ∅ 12 mm	**LL71.1**	1	37,10
Replacement UV tube, 15 W, 254 nm, L 437 x ∅ 26 mm	**P372.1**	1	62,70
Replacement UV tube, 6 W, 254 nm, L 210 x ∅ 16 mm	**P851.1**	1	74,20
Replacement UV tube, 15 W, 365 nm, L 437 x ∅ 26 mm	**P373.1**	1	45,15

Handheld refractometers, analog

By Kern. For measuring the refractive index of transparent substances in a liquid state.

- Eyepiece with diopter compensation
- Scale is precisely calculated and checked, with very thin and clear lines
- With or without automatic temperature compensation (ATC):
  Measured temperature with ATC: 10 to 30 °C
  Measured temperature without ATC: 20 °C

Delivery incl. calibration solution and storage box.

Application area: laboratory

Model	Scale	Measuring range	Graduation	ATC
ORA 4RR	Refractive index	1.440-1.520 nD	0.001 nD	-
ORA 1RE	Refractive index	1.333-1.405 nD 1.405-1.468 nD 1.468-1.517 nD	0.005 nD 0.005 nD 0.005 nD	-

Model	Art. No.	Pack Qty.	€
ORA 4RR	**CEX9.1**	1	85,00
ORA 1RE	**CEY0.1**	1	295,00

Application area: food industry/quality control

Model	Scale	Measuring range	Graduation	ATC
ORA 10BA	Brix	0-10 %	0.1 %	+
ORA 20BA	Brix	0-20 %	0.1 %	+
ORA 32BA	Brix	0-32 %	0.2 %	+
ORA 80BB	Brix	0-80 %	0.5 %	-

Model	Art. No.	Pack Qty.	€
ORA 10BA	**CEY1.1**	1	85,00
ORA 20BA	**CEY2.1**	1	85,00
ORA 32BA	**CEY3.1**	1	85,00
ORA 80BB	**CEY4.1**	1	80,00

Application area: food industry/winemaking

Model	Scale	Measuring range	Graduation	ATC
ORA 3WA	Brix Oechsle	0-32 % 30-140 °Oe	0.2 % 1 °Oe	+
ORA 1WA	Brix Oechsle (°Oe) KMW (Babo)	0-32 % 0-140 °Oe 0-25 °KMW	0.2 % 1 °Oe 0.25 °KMW	+
ORA 2AB	Vol (weight)	0-50 % by vol 50-80 % by vol	1 % by vol 2.5 % by vol	-

Model	Art. No.	Pack Qty.	€
ORA 3WA	**CEY5.1**	1	85,00
ORA 1WA	**CEY6.1**	1	85,00
ORA 2AB	**CEY7.1**	1	80,00

Application area: food industry/fishkeeping

Model	Scale	Measuring range	Graduation	ATC
ORA 1SA	Salinity Spec. weight	0-100 ‰ 1.000-1.070 sg	1 ‰ 0.001 sg	+
ORA 3SA	Salt (NaCl) Brix	0-28 % 0-32 %	0.2 % 0.2 %	+

Model	Art. No.	Pack Qty.	€
ORA 1SA	**CEY8.1**	1	85,00
ORA 3SA	**CEY9.1**	1	85,00

Applications: industry/automotive

For analysing the glycol concentration (ethylene: EG and propylene: PG) of battery fluid (BF), antifreeze and windscreen wash fluid (CW).

Model	Scale	Measuring range	Graduation	ATC
ORA 4FA	EG (G13) PG (G11 / 12) CW BF	-50 - 0 °C -50 - 0 °C -40 - 0 °C 1.10 - 1.40 kg / l	1 °C 1 °C 5 °C 0.01 kg / l	+

Model	Art. No.	Pack Qty.	€
ORA 4FA	**CYN3.1**	1	85,00

Digital refractometers

By Krüss. Digital refractometers for analyzing the concentration and calculation index of liquids. Measuring, temperature compensating and adjusting take place automatically.
The DR301-95 model also includes a tolerance alarm, serial port, data transfer cable and evaluation software.

Technical specifications:

Model	① DR 201-95	② DR 301-95
Measuring range	1.3330 - 1.5320 nD	1.3330 - 1.5318 nD
	0-95 % Brix	0-95 % Brix
	-	0-30 % salt content
Accuracy	±0.0003 nD	±0.00015 nD
	±0.2 % Brix	±0.1 % Brix
	-	±0.1 % salt content
Resolution	0.0001 nD	0.0001 nD
	0.1 % Brix	0.1 % Brix
	-	0.1 % salt content
Temperature compensation range	5-40 °C	5-40 °C
Dimensions	130 x 80 x 40 mm	180 x 100 x 60 mm
Weight	150 g	900 g
Power supply	Battery Mignon 1.5 V	Battery E-block 9 V

Delivery incl. batteries.

Type	Art. No.	Pack Qty.	€
① DR 201-95	**HH60.1**	1	493,45
② DR 301-95	**EP62.1**	1	965,35

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4	6,05
E-Block 9 V battery	**1025.1**	1	4,85

Refractometer, digital

By Kern. Digital refractive index measuring instrument for laboratories and industry.

- Compact, rugged design
- Dust and splash-proof acc. to protection class IP 65
- With automatic temperature compensation (ATC)
- Depending on model, measurement data is output on different measurement scales

Technical specifications:

Measurement temperature Accuracy	+5 to +30 °C ±0.5 °C
Minimum sample volume	approx. 2-3 droplets
Auto Off function	after 90 sec
Battery life	approx. 3750 measurements
Dimensions (H x W x D)	38 x 145 x 67 mm
Weight	approx. 200 g
Power supply	2 x Micro/AAA 1.5 V battery

Delivery incl. calibration solution, leather case, storage case and batteries.

Application area: laboratory
For refractive index measurement, with extra-large measuring range.

Model	Scale	Measuring range	Accuracy	Graduations
ORF 1RS	Refractive index	1.3330-1.5400 nD	±0.0005 nD	0.0001 nD

Type	Art. No.	Pack Qty.	€
ORF 1RS	**ECL0.1**	1	430,00

Application area: food industry/quality control
For calculating the Brix value (refractive index) for the quantification of sugar content in foodstuffs (e.g. fruit, vegetables, juices and beverages containing sugar). Also suitable for monitoring industrial processes (monitoring of cooling lubricants, oils and greases).
Refractive index display is optional.

Model	Scale	Measuring range	Accuracy	Graduations
ORF 45BM	Brix Refractive index	0-45 % 1.3330-1.4098 nD	±0.2 % ±0.0003 nD	0.1 % 0.0001 nD
ORF 85BM	Brix Refractive index	0-85 % 1.3330-1.5100 nD	±0.2 % ±0.0003 nD	0.1 % 0.0001 nD

Type	Art. No.	Pack Qty.	€
ORF 45BM	**ECL1.1**	1	340,00
ORF 85BM	**ECL2.1**	1	395,00

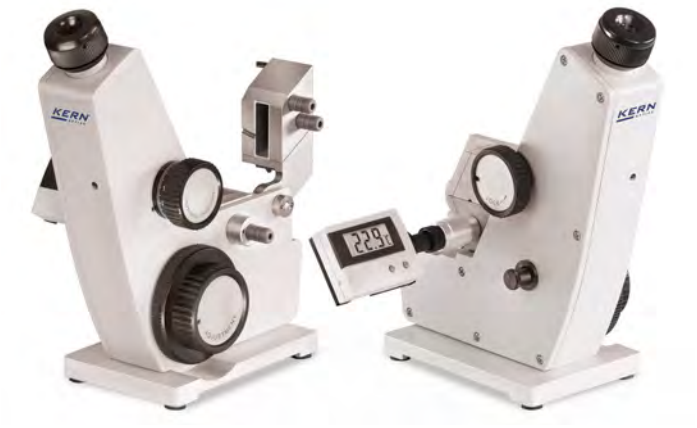
Application area: food industry/fishkeeping
For calculating the Brix value (refractive index) and determining the concentration of sodium chloride in water.
Refractive index display is optional.

Model	Scale	Measuring range	Accuracy	Graduations
ORF 3SM	Brix Salt (NaCl) Refractive index	0-45 % 0-28 % 1.3330-1.4100 nD	±0.2 % ±0.2 % ±0.0003 nD	0.1 % 0.1 % 0.0001 nD

Type	Art. No.	Pack Qty.	€
ORF 3SM	**ECL3.1**	1	340,00

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4	6,40



Abbe refractometer ORT 1RS

By Kern.

For determining the refraction index of transparent liquid, solid and pasty samples.
Application area: laboratory/industry/pharmaceuticals.

- Easy-to-use, rugged design
- Eyepiece with diopter adjustment
- Scale refers to +20 °C
- Includes thermometer for reading the measuring temperature
- Calibrated with distilled water or calibration block and special contact fluid
- Can be connected to a water circulation system for temperature control of measurement prism and illumination prism (outer diameter of connecting piece: 9.5 mm)

Technical specifications:

Scale	Brix	Refraction index
Measuring range	0-95 %	1.3000-1.7000 nD
Accuracy	±0.1 %	±0.0002 nD
Graduations	0.25 %	0.0005 nD
Dimensions W x D x H (mm)	90 x 180 x 240	
Weight (g)	approx. 1950	

Delivery incl. thermometer, calibration block and contact fluid.
Transportation and storage box made of aluminium is optional (please order separately).

Warning H302-H319

Art. No.	Pack Qty.	€
ECK5.1	1	690,00

Replacement contact fluid 1-brom-naphthalene
for ORT 1 RS, contents: 2.5 ml

Warning H302-H319

Art. No.	Pack Qty.	€
ECK9.1	1	25,00

Accessories:

Aluminium case (L 310 x W 120 x H 240 mm)	**ECK6.1**	1	80,00
Replacement thermometer (wihthout battery V 13 GA)	**ECK7.1**	1	72,50
Replacement calibration block for ORT 1RS	**ECK8.1**	1	40,00
Cell battery V 13 GA (1.5 V)	**1938.1**	1	4,85

Dry batteries High Energy

By Varta. System: Alkali-manganese.

Type	Voltage (V)	Capacity (mAh)	Art. No.	Pack Qty.	€
① Lady/LR 1	1,5	800	**CH38.1**	1	3,80
② Micro/AAA	1,5	1200	**1021.2**	4	6,40
③ Mignon/AA	1,5	2600	**1022.2**	4	6,05
④ Baby/C	1,5	7800	**1023.2**	2	4,85
⑤ Mono/D	1,5	16500	**1024.2**	2	6,35
⑥ E-Block	9,0	550	**1025.1**	1	4,85

Round cell batteries

By Varta.

Model	System	Voltage (V)	Capacity (mAh)	Art. No.	Pack Qty.	€
CR 1220	lithium	3,0	35	**CH41.1**	1	5,35
CR 1225	lithium	3,0	48	**AEC3.1**	1	5,35
CR 1616	lithium	3,0	55	**KE59.1**	1	5,35
CR 1620	lithium	3,0	60	**CH42.1**	1	5,35
CR 2016	lithium	3,0	90	**CH43.1**	1	5,35
CR 2025	lithium	3,0	170	**CH14.1**	1	5,35
CR 2032	lithium	3,0	230	**P858.1**	1	5,35
CR 2430	lithium	3,0	280	**EY56.1**	1	5,35
V 10 GA	alkali-manganese	1,5	50	**CH39.1**	1	5,35
V 13 GA	alkali-manganese	1,5	125	**1938.1**	1	4,85
V 301	silver	1,55	115	**CH40.1**	1	5,35
V 392	silver	1,55	38	**X563.1**	1	5,35
V 675 AT	zinc-air	1,4	630	**9800.2**	6	8,55

Rechargeable Power Accu

By Varta. Environment-friendly Ni-MH storage batteries.
No memory effect. Constant, always recurrent capacity standard.

Type	Voltage (V)	Capacity (mAh)	Art. No.	Pack Qty.	€
① Micro/AAA	1,2	800	**T409.2**	4	16,10
② Mignon/AA	1,2	2100	**1301.2**	4	16,05
③ Mignon/AA	1,2	2400	**HT32.1**	4	22,05
④ Baby/C	1,2	3000	**1302.2**	2	18,25
⑤ Mono/D	1,2	3000	**X228.2**	2	18,25
⑥ E-Block	8,4	200	**1304.1**	1	15,00

LCD universal charger

By Varta. Suitable for 2 or 4 Ni-MH rechargeable batteries of sizes AA, AAA, C, D (charging in pairs), 1 x 9 V.

- LCD indicator (blue) for charge status
- Safety features: Minus Delta U-shut-off, timer, alkaline detection
- Charging times: Rechargeable batteries 4 hours, external devices 1.5-5 hours
- 4 charging bays for charging batteries
- Dimensions: W 111 x D 70 x H 187 mm

Delivery incl. external mains adapter (100-240 V).
Supplied without rechargeable batteries, please order separately.

Art. No.	Pack Qty.	€
EXP0.1	1	24,70

LCD Ultra Fast Charger

By Varta. Suitable for one to four AA or AAA Ni-MH batteries.

- Four different functions: Charging, discharging, refresh and capacity test
- Large LCD display for reading the voltage, mAh and minute values; LED backlighting that indicates charging status
- Safety features: Minus Delta U cut-off, safety timer, short-circuit protection, alkaline detection, temperature monitoring and fan function
- AA battery charging time (70 %): 15-30 min.
- Dimensions: W 180 x D 240 x H 111 mm

Delivery incl. four AA batteries, external power supply (220-240 V) and 12 V-adapter.

Art. No.	Pack Qty.	€
CA77.1	1	73,65

Measuring Instruments

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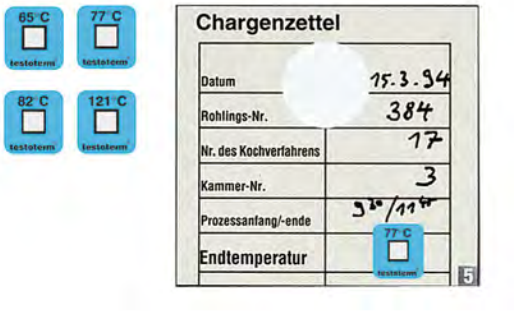


Colour-change crayons - irreversible

Ideal for monitoring temperature of equipment and machines via colour change. The colour clings to paper, rubber, textiles, plastic, glass, iron, and steel. Can also be used in aluminium processing or in enamel and welding operations. Exact measuring result with a tolerance of ±5 °C per temperature value. Colour change after reaching the temperature within 1-2 seconds.

Measuring point (°C)	Art. No.	Pack Qty.	€
120	**9307.1**	1	19,25
245	**9312.1**	1	19,25
600	**9547.1**	1	19,25

Temperature measuring dots - irreversible

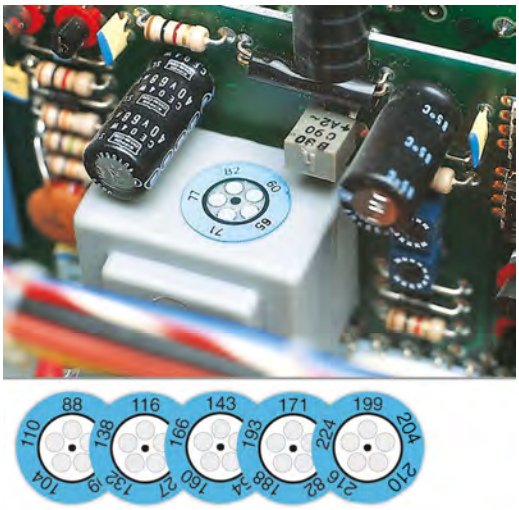
Self-adhesive, temperature stable foils with heat sensitive elements for temperature monitoring and control. Once temperature has been reached, there is an irreversible change of colour within one second from the pale grey or yellow dot to black. Dimensions of each check point:
L 15 x W 14 mm. Accuracy: ±1 %. 1 booklet with 50 check points.

Measuring point (°C)	Art. No.	Pack Qty.	€
65	**N276.1**	1	22,60
77	**N278.1**	1	22,60
82	**N279.1**	1	22,60
121	**N286.1**	1	22,60

Temperature measuring strips - irreversible

Self-adhesive. They indicate current temperatures on surfaces.
The light indicator dots on the self-adhesive strips darken after reaching temperature value next to dot.
Dimensions per check strip: L 48 x 18 mm. Measuring accuracy: ±1 %.
Delivered in bags with 10 strips.

Measuring range (°C)	Art. No.	Pack Qty. (Bag)	€
40-43-46-49-54-60-66-71	**1890.1**	1	18,85
77-82-88-93-99-104-110-116	**2077.1**	1	18,85
121-127-132-138-143-149-154-160	**2079.1**	1	18,85
166-171-177-182-188-193-199-204	**5231.1**	1	20,40
210-216-224-232-241-249-254-260	**5232.1**	1	20,40



Mini-temperature indicators – irreversible

Self-adhesive, temperature stable foils with heat sensitive elements for monitoring and controlling temperature. Particularly suitable for temperature control of small objects. The colour changes irreversibly within 2 seconds as soon as the respective temperature has been reached.
Accuracy from 88 to 154 °C: ±1.5 °C;
over 160 °C: ±1 °C and ±1 % of respective temperature value.
1 booklet with 10 indicators (∅ 15 mm each measuring point).

Measuring range (°C)	Art. No.	Pack Qty.	€
88-93-99-104-110	**AY04.1**	1	33,90
116-121-127-132-138	**AY05.1**	1	33,90
143-149-154-160-166	**AY06.1**	1	33,90

Thermometer, analogue

Bimetallic strip maximum-minimum thermometer

Measuring range -50 to +50 °C. Graduated by 1 °C. Plastic housing. Adjustable red markers indicate the Max/Min temperatures. Reset by turning the dial. Dimensions: W 95 x D 35 x H 135 mm. With hanger eyelet.

Art. No.	Pack Qty.	€
LX81.1	1	13,85

Environmentally friendly maximum/minimum thermometer

With mercury-free thermometer liquid (**special red filling**). Measuring range: -30 to +50 °C. Graduated by 1 °C marks. Metal markers indicate max/min temperatures. Reset via push-button. With suspension eye.

Image	Material housing	Dimensions W x H (mm)	Art. No.	Pack Qty.	€
①	Plastic	79 x 230	**KA34.1**	1	9,65
②	Aluminium	50 x 220	**CK40.1**	1	15,60

Deep-freeze thermometer

With bimetallic indicator. Measuring range -50 to +50 °C. Graduated by 1 °C. Measuring accuracy ±2 °C. ∅ 70 mm. With loop for hanging.

Art. No.	Pack Qty.	€
H717.1	1	6,05

Thermometer for autoclaves

For monitoring the temperature during autoclaving. Max. temperature is indicated by the moving red marker. Manual resetting by turn screw. Bimetallic thermometer with housing and removable base made of stainless steel, dust cap made of silicone rubber. Watertight glass window, pressure resistant. Autoclavable.

Technical specifications:

Measuring range	-20 to +150 °C
Graduations	2 °C
Accuracy	±1.5 °C
Dimensions	∅ 81 x D 85 x H 95 mm

Art. No.	Pack Qty.	€
CXP0.1	1	57,30

Soil thermometer

With pointed probe. Ideal for determining the temperature of deeper layers. Measuring range -20 to +60 °C. Graduation 1 °C. Accuracy ±2 °C. Probe: Length 200 mm, ∅ 3 mm. Head: ∅ 40 mm.

Art. No.	Pack Qty.	€
E755.1	1	15,00

▶ Data logger for autoclaves see page 831

▶ Please note our digital thermometers overview on page 814

Thermometer, analogue

Plastic thermometer

With a **special blue filling**. Measuring range -50 to +50 °C.
Graduation 1 °C. Measuring accuracy ±2 °C. Length 200 mm, ∅ 20 mm.

Art. No.	Pack Qty.	€
H718.1	1	5,60

Universal thermometers

Tube contains a **special red filling**, coated white. Comes in a yellow plastic case with clip. 1 °C graduation. Accuracy ±2 °C. Size: Length 165 mm, ∅ 10 mm.

Measuring range (°C)	Art. No.	Pack Qty.	€
-30 to +50	**Y931.1**	1	6,90
-10 to +100	**Y932.1**	1	6,90

General-purpose stirring thermometers

With reinforced base for stirring in beakers etc.
In capillary form, colourless with red special liquid filling (thermometer liquid and biodegradable colour, accuracy ±3-4 °C).
1 °C graduations, rod-∅ 7-8 mm.

Measuring range (°C)	Length (mm)	Art. No.	Pack Qty.	€
-35 to +50	260	**PE82.1**	1	12,65
-10 to +60	200	**PE83.1**	1	10,50
-10 to +110	260	**PE84.1**	1	10,70
-20 to +110	260	**PE85.1**	1	11,80
-10 to +150	260	**PE86.1**	1	12,60
-10 to +200	300	**PE87.1**	1	16,50

Environmental-friendly glass thermometers

Rod-shaped. With a **special green filling**. Thermometer fluid and colour are biodegradable. Coated white. ∅ 5.5 to 7.0 mm. Accuracy ±3 °C.
With band around top.

Measuring range (°C)	Graduation (°C)	Length (mm)	Immersion depth (mm)	Art. No.	Pack Qty.	€
-10 to +110	1	300	76	**ET02.1**	1	12,85
-10 to +110	0.5	300	76	**ET03.1**	1	13,95
-10 to +150	1	300	76	**ET04.1**	1	13,95
-10 to +250	2	300	76	**ET05.1**	1	19,90
-10 to +360	2	300	76	**ET06.1**	1	22,60

Glass thermometers with temperature limiter

With **red or blue special filling** and safety casing (PTFE/FEP).
For monitoring cooling units and temperature control units.
Supplied in plastic bottle containing filling medium for precise temperature determination. Can be mounted using magnets (exception: YE26.1).

Bottle filling medium: sand

Measuring range (°C)	Graduation (°C)	Accuracy (°C)	Length (mm)	Art. No.	Pack Qty.	€
-90 to +20	1,0	±2.0	180	**YE17.1**	1	70,45

Bottle filling medium: ethylene glycol mixture

Measuring range (°C)	Graduation (°C)	Accuracy (°C)	Length (mm)	Art. No.	Pack Qty.	€
-25 to -5	0,1	±0.2	235	**YE18.1**	1	89,15
-30 to 0	0,5	±1.0	130	**YE19.1**	1	60,05
-2 to +10	0,1	±0.2	230	**YE20.1**	1	75,05
-5 to +15	0,5	±1.0	130	**YE21.1**	1	53,65
+15 to +30	0,1	±0.2	180	**YE22.1**	1	80,65
+18 to +50	0,5	±1.0	130	**YE23.1**	1	57,75
+25 to +45	0,1	±0.2	190	**YE24.1**	1	85,95

Bottle filling medium: Vermiculite

Measuring range (°C)	Graduation (°C)	Accuracy (°C)	Length (mm)	Art. No.	Pack Qty.	€
+20 to +130	1,0	±2.0	135	**YE25.1**	1	62,25
+35 to +200	1,0	±2.0 (>100 °C ±3.0)	180	**YE26.1**	1	167,70

Thermometer, analogue

Standard glass thermometers

Special filling red (E745.1 blue). Rod-shaped for daily laboratory operations. ∅ 5.5 to 7.0 mm. Accuracy ±3 to 200 °C. Graduated by 1 °C.

Measuring range (°C)	Length (mm)	Art. No.	Pack Qty.	€
-35 to +50	300	**E740.1**	1	11,80
-10 to +60	200	**E741.1**	1	11,80
-20 to +110	300	**E742.1**	1	11,80
-20 to +150	300	**E743.1**	1	11,80
-10 to +200	300	**E744.1**	1	11,80
-10 to +250	300	**E745.1**	1	27,90

NEW

Laboratory thermometers, calibrated with certificate

Special red filling. Enclosed type. ∅ 8.0 to 9.0 mm. Capillary tube, prismatic. Calibrated fully immersed.

Measuring range (°C)	Graduation (°C)	Length (mm)	Art. No.	Pack Qty.	€
0 to +50	0,5	220	**HXC1.1**	1	164,50
0 to +100	0,5	240	**HXC2.1**	1	176,30
0 to +200	1	300	**HXC3.1**	1	220,40

Precision, high-accuracy thermometers

Special filling, blue. Enclosed type. Capillary form colourless, prismatic, ∅ 8-10 mm. Calibrated fully immersed.

Standard design

Measuring range (°C)	Graduation (°C)	Accuracy (°C)	Length (mm)	Art. No.	Pack Qty.	€
-10 to +50	0,5	±0.5	220	**HKX4.1**	1	52,35
-10 to +100	0,5	±0.5	270	**HKX5.1**	1	59,15
-10 to +150	0,5	±0.5	350	**HKX6.1**	1	70,75
-10 to +200	0,5	±0.5	450	**HKX7.1**	1	77,40
-5 to +50	0,2	±0.3	350	**HKX8.1**	1	60,45
-5 to +100	0,2	±0.3	420	**HKX9.1**	1	83,35
-5 to +201	0,2	±0.4	550	**HKY0.1**	1	149,45
-10 to +50	0,1	±0.2	420	**HKY1.1**	1	88,40
0 to +100	0,1	±0.2	550	**HKY2.1**	1	143,00

With FEP safety coating

Measuring range (°C)	Graduation (°C)	Accuracy (°C)	Length (mm)	Art. No.	Pack Qty.	€
-10 to +50	0,5	±0.5	220	**HKY3.1**	1	78,35
-10 to +100	0,5	±0.5	270	**HKY4.1**	1	96,40
-10 to +150	0,5	±0.5	350	**HKY5.1**	1	115,05
-10 to +200	0,5	±0.5	450	**HKY6.1**	1	125,80
-5 to +50	0,2	±0.3	350	**HKY7.1**	1	103,00
-5 to +100	0,2	±0.3	420	**HKY8.1**	1	132,25
-5 to +201	0,2	±0.4	550	**HKY9.1**	1	209,65
-10 to +50	0,1	±0.2	420	**HLA0.1**	1	135,45
0 to +100	0,1	±0.2	550	**HLA1.1**	1	203,20

Precision low-temperature thermometers

Enclosed-scale thermometer. Graduated by 1 °C.

Capillary: luminous blue, prismatic, pentane filling.

Measuring range (°C)	Length (mm)	Art. No.	Pack Qty.	€
-200 to +30	350	**X575.1**	1	102,15
-150 to +30	300	**X576.1**	1	56,25

Capillary: uncoated, prismatic. Alcohol filling.

Measuring range (°C)	Length (mm)	Art. No.	Pack Qty.	€
-100 to +100	300	**X577.1**	1	55,30
-100 to +30	300	**X578.1**	1	40,55

Precision low-temperature thermometers, calibrated

Calibrated, with certification. Enclosed form. Graduated by 1 °C. Calibrated fully immersed.

Capillary: luminous blue, prismatic, pentane filling.

Measuring range (°C)	Length (mm)	Art. No.	Pack Qty.	€
-200 to +30	350	**KH57.1**	1	478,40
-150 to +30	300	**KH58.1**	1	435,40

Capillary: uncoated, prismatic. Alcohol filling.

Measuring range (°C)	Length (mm)	Art. No.	Pack Qty.	€
-100 to +100	300	**KH59.1**	1	471,95
-100 to +30	300	**KH60.1**	1	428,95

- Thermometer adapters see page 150
- Material for stands see page 216

Thermometer, analogue

Precision thermometers with special filling

Red filling. Calibrated fully immersed.

Rod type
Yellow backed capillary, round. ∅ 6 ±1 mm.

Measuring range (°C)	Graduation (°C)	Length (mm)	Art. No.	Pack Qty.	€
-10 to +100	1	305	**ALH6.1**	1	20,95
-10 to +150	1	305	**ALH7.1**	1	23,05
-10 to +200	1	350	**ALH8.1**	1	31,30
-10 to +50	0,5	220	**ALH9.1**	1	23,20
-10 to +100	0,5	270	**ALK0.1**	1	25,40
-10 to +150	0,5	350	**ALK1.1**	1	43,90
-5 to +50	0,2	350	**ALK2.1**	1	27,65
-5 to +100	0,2	420	**ALK3.1**	1	33,90
-1 to +200	0,2	610	**ALK4.1**	1	102,80
-10 to +30	0,1	300	**ALK5.1**	1	53,40
-10 to +50	0,1	420	**ALK6.1**	1	40,55
-1 to +101	0,1	610	**ALK7.1**	1	96,65

Enclosed type, with factory test certificate
Colourless capillary, prismatic. ∅ 9 ±1 mm.

Measuring range (°C)	Graduation (°C)	Length (mm)	Art. No.	Pack Qty.	€
-10 to +100	1	305	**ALK8.1**	1	140,85
-10 to +150	1	305	**ALK9.1**	1	146,20
-10 to +200	1	350	**ALL0.1**	1	153,75
-10 to +50	0,5	220	**ALL1.1**	1	144,05
-10 to +100	0,5	270	**ALL2.1**	1	154,80
-10 to +150	0,5	350	**ALL3.1**	1	158,05
-10 to +200	0,5	450	**ALL4.1**	1	169,85
-5 to +50	0,2	350	**ALL5.1**	1	149,45
-5 to +100	0,2	420	**ALL6.1**	1	170,95
-10 to +30	0,1	300	**ALL7.1**	1	174,15
-10 to +50	0,1	420	**ALL8.1**	1	170,95
0 to +100	0,1	550	**ALL9.1**	1	219,30

Precision thermometer, with DAkkS-certification

Special red filling. Enclosed type. Capillary form: colourless, prismatic.
∅ 9 ±1 mm. Calibrated for total immersion.

Measuring range (°C)	Graduation (°C)	Length (mm)	Art. No.	Pack Qty.	€
-10 to +50	0,5	220	**CKX7.1**	1	194,60
-10 to +100	0,5	270	**CKX8.1**	1	246,20
-10 to +100	1	305	**CKX9.1**	1	202,10
-10 to +150	1	305	**CKY0.1**	1	188,15
-10 to +200	1	350	**CKY1.1**	1	202,10

Precision thermometers with blue filling

Very high accuracy, contains no mercury. Rod type.
Capillary form: white back, round.

Without calibration certificate

*according to ASTM

Measuring range (°C)	Graduations/ accuracy (°C)	Immersion depth	Length (mm)	Art. No.	Pack Qty.	€
-38 to +2*	0,1 / ±0,1	total	401	**ANK4.1**	1	145,15
-20 to +102*	0,2 / ±0,2	total	435	**ANK5.1**	1	149,45
-20 to +150	1,0 / ±0,5	76 mm	335	**ANK6.1**	1	82,80
-7 to +105*	0,5 / ±0,5	total	300	**ANK7.1**	1	81,30
+20 to +100	0,2 / ±0,2	total	325	**ANK8.1**	1	113,95
+30 to +200	0,5 / ±0,3	total	415	**ANK9.1**	1	116,10

With DAkkS calibration certificate

*according to ASTM

Measuring range (°C)	Graduations/ accuracy (°C)	Immersion depth	Length (mm)	Art. No.	Pack Qty.	€
-20 to +102*	0,2 / ±0,2	total	435	**ANL0.1**	1	315,00
-20 to +150	1,0 / ±0,5	76 mm	335	**ANL1.1**	1	262,30
+30 to +200	0,5 / ±0,3	total	415	**ANL2.1**	1	297,80

General information on calibration and calibrating meters

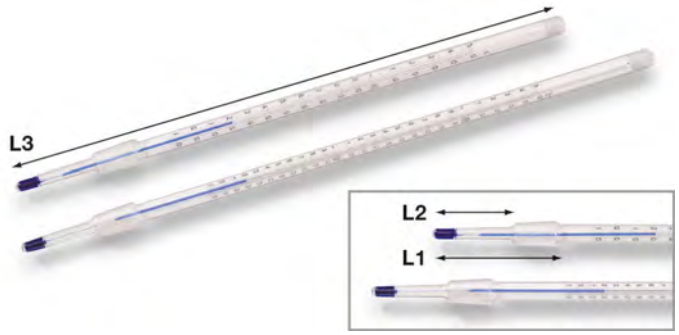
Calibrated meters:
Calibration of a meter is performed by the competent calibrating body. Each unit must fulfill certain criteria prior to receiving a certificate (e.g. automatic check when switched on, suitable connection for standard probes, etc.).
A calibrated meter is not automatically a highly accurate unit, it must simply keep within the given tolerances.
Each calibrated unit receives a seal and certificate of testing.
Tests should be repeated at regular intervals.

Meters with DAkkS Certificates of Calibration:
A DAkkS Certificate of Calibration is issued by a accredited testing agency (must be approved and is monitored by Deutsche Akkreditierungsstelle [German Accreditation Agency]). Meter meets national standard requirements and can be used in accordance with ISO 9000 Quality Assurance Standards.
Very low preset tolerance (lower than required for works certificate).

The user of DAkkS certified meters can therefore issue internal works certificates. This is particulary of advantage in the Quality Assurance Department of larger firms where measuring instruments used in the Production Department must be tested and calibrated at specific intervals.
Individual test points should be customized depending upon temperature ranges under measurement.

Meters with a Works Certificate of Calibration:
A works certificate of calibration is issued after carrying out a comparison measurement with a DAkkS calibrated meter.
Unit meets national standard requirements and can be used in accordance with **ISO 9000** Quality Assurance Standards.
Tolerance of measurement with works certificates is slightly higher than of a DAkkS certified unit. Individual test points should be customized depending upon temperature ranges under measurement.

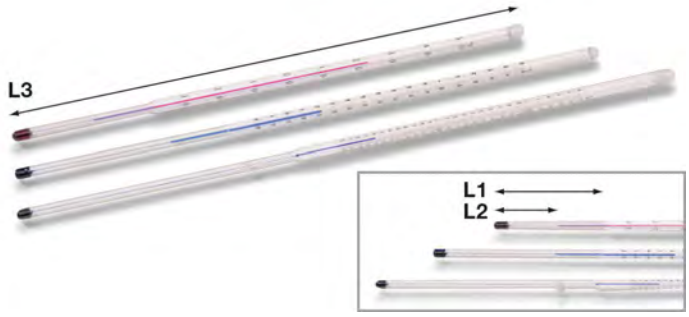
Thermometer, analogue



Precision ground joint thermometers with special filling

Compliant with DIN 12784. With NS 14.5/23 ground joint. Enclosed type. **Blue filling.** Capillary form: colourless, prismatic. Graduations 1 °C. Upper ∅ 11 ±0.5 mm.

Measuring range (°C)	Length L1 (mm)	Immersion depth L2 (mm)	Overall length L3 (mm)	Art. No.	Pack Qty.	€
-10 to +150	68	45	318	**ALN0.1**	1	42,45
-10 to +150	75	52	325	**ALN1.1**	1	42,65
-10 to +150	95	72	345	**ALN2.1**	1	42,85
-10 to +150	125	102	375	**ALN3.1**	1	46,75
-10 to +250	68	45	368	**ALN4.1**	1	51,05
-10 to +250	75	52	375	**ALN5.1**	1	51,60
-10 to +250	95	72	395	**ALN6.1**	1	61,30
-10 to +250	125	102	425	**ALN7.1**	1	63,40



Precision straight stem thermometers with special filling

Compliant with DIN 12781. Enclosed type. Blue filling (except for ALP0.1, which has a red filling). Capillary form: colourless, prismatic. Graduations 1 °C. Upper ∅ 11 ±0.5 mm, lower ∅ 8 ±0.5 mm.

Measuring range (°C)	Length L1 (mm)	Immersion depth L2 (mm)	Overall length L3 (mm)	Art. No.	Pack Qty.	€
-30 to +50	100	80	375	**ALP0.1**	1	49,80
-20 to +150	150	130	425	**ALP1.1**	1	57,60
-20 to +150	250	230	525	**ALP2.1**	1	52,30
-20 to +150	300	280	575	**ALP3.1**	1	69,05
-20 to +150	400	380	675	**ALP4.1**	1	73,85
-20 to +250	100	80	375	**ALP5.1**	1	61,50
-20 to +250	150	130	425	**ALP6.1**	1	62,60
-20 to +250	200	180	475	**ALP7.1**	1	63,95
-20 to +250	300	280	575	**ALP8.1**	1	71,65
-20 to +250	400	380	675	**ALP9.1**	1	75,05

Distillation thermometers

Precision thermometer with core NS 14/23. special filling red.

Measurement range/graduations (°C)	Length L1 (mm)	Immersion depth L2 (mm)	Total length (mm)	Art. No.	Pack Qty.	€
0 to +150 / 0.5	55	32	355	**EPY1.1**	1	67,40
0 to +150 / 0.5	70	47	370	**EPY2.1**	1	67,40
0 to +150 / 0.5	85	62	385	**EPY3.1**	1	67,40
0 to +250 / 1	55	32	355	**EPY4.1**	1	71,40
0 to +250 / 1	70	47	370	**EPY5.1**	1	71,40
0 to +250 / 1	85	62	385	**EPY6.1**	1	71,40

Straight stem thermometers with special filling

Similar to DIN 16178. With flat scale. **Red filling.** Capillary form: colourless, prismatic. Upper ∅ 20.5 ±1 mm, lower ∅ 8 ±0.5 mm.

Measurement range/graduations (°C)	Length L1 (mm)	Immersion depth L2 (mm)	Overall length L3 (mm)	Art. No.	Pack Qty.	€
-30 to +50 / 1	105	89	340	**ALT0.1**	1	44,85
0 to +160 / 2	165	149	400	**ALT1.1**	1	39,20
0 to +160 / 2	255	239	490	**ALT2.1**	1	42,05
0 to +200 / 2	105	89	340	**ALT3.1**	1	45,40

▶ Clear lubricant see page 1171

Thermometer, digital

Overview - Digital Thermometers

Measuring range (°C)	Accuracy (°C)	Features	Art. No.	Page
-10 to +50	±1	Solar thermometer, Min/Max-storage	**KT83.1**	815
-10 to +200	±1	Thermometer with timer, alarm and min./max. functions	**X256.1**	817
-20 to +50	±1	Refrigerator thermometer	**TA56.1**	817
-20 to +55	±0.4	°C and rF data logger; memory with capacity for 1 mill. measured values; data readout via PC or SD card	**PH32.1**	830
-20 to +50	±1	Min/Max-temperature values; Suitable for inside and outside; Splashproof	**CK39.1**	817
-20 to +70	±0.5	°C- and rF data logger with display for 16000 measured values	**NA07.1**	829
-20 to +140	±0.2 to ±0.5	Data logger for high temperatures; water-tight and pressure-tight up to 10 bar	**ENE3.1**	831
-30 to +50	±0.5	Wireless data logger with integrated NTC temperature sensor	**ECK0.1**	832
-30 to +70	±1	Digital fridge/freezer thermometer with min/max function	**PE75.1**	817
-30 to +60	±1	°C and rF data logger with wireless sensor; connectivity for 8 transmitters	**PL21.1**	831
-30 to +60	±1	LAN data logger with Internet connection, data can be retrieved via smartphone, up to 50 transmitters can be connected	**ENN0.1**	832
-30 to +70	±0.5	°C data logger with display for 16000 measured values	**NA06.1**	829
-30 to +220	±0.5 / 1%	Folding thermometer for core temperature and random measurement	**PE63.1**	820
-30 to +220	±1.5 to ±2 or 2 %	Non-contact thermometer with hold and lock function	**Y400.1**	834
-35 to +55	±0.5	°C data logger; memory with capacity for 1 mill. measured values; data readout via PC or SD card	**PH31.1**	830
-35 to +70	±0.5	°C data logger with display for 40 000 measured values	**CXC4.1**	829
-35 to +365	±2 to ±2 %	Infrared thermometer with measuring spot marking and pistol grip	**LY46.1**	834
-40 to +65	±1	Readings transferred wirelessly, up to three transmitter units can be connected, min./max. memory	**LP27.1**	815
-30 to +70	±1	Wireless transmission of measured values, min/max memory	**HY40.1**	815
-40 to +70	±0.5 to ±1	°C data logger with integrated USB port for 60000 measured values	**CCE2.1**	828
-40 to +70	±0.5 to ±1	For monitoring refrigerators; alarm, min./max. and hold functions	**KA32.1**	818
-40 to +70	±1 to ±2	Inner-/outer thermometer Rotilabo®, min/max function	**YE41.1**	816
-40 to +70	±0,5, ±1,0	USB data logger able to display 150.000 readings, data issued as a PDF automatically	**EHX3.1**	828
-40 to +200	±1 to ±2	Insertion thermometer with revolving display, Min/Max and hold function	**AK16.1**	819
-40 to +200	±0.5 to ±1.5	For monitoring refrigerators; alarm, min./max. and hold functions	**KA33.1**	818
-40 to +200	±1 to ±1.5	Penetration thermometer with HOLD-, Min- and Max-function	**T332.1**	819
-40 to +200	±0.5 to ±1	Min/Max-storage, hold function, display lighting	**N359.1**	825
-40 to +200	±1 to ±1.5	Permanently-connected NTC penetration probe, min/max and hold function	**HNN8.1**	825
-40 to +250	±0.5 to ±1 or 1 %	Folding thermometer for core temperature and random measurement	**TA94.1**	820
-40 to +250	±0.5 to ±1 or 1 %	Penetration thermometer with min/max and hold function, water and dustproof (IP 67)	**LN45.1**	819
-50 to +60	±1	Inner-/outer thermometer Min/Max-storage	**AN34.1**	816
-50 to +70	±1.5	Thermometer with timer-function and temperature trend	**Y845.1**	815
-50 to +70	±1	Indoor-/outdoor thermometer, officially calibrated with certificate, min/max function	**EH47.1**	818
-50 to +70	±1	Inner-/outer thermometer, Min/Max-storage	**CH86.1**	816
-50 to +70	±1 to ±2	Inner-/outer thermometer with limit value alarm and Min/Max function	**HA34.1**	816
-50 to +70	±0.3	With factory certificate, alarm, min./max. functions and temperature control	**HAN2.1**	819
-50 to +125	±0.5 to ±1	°C data logger with display for 60 000 measured values. Connection of external sensor	**NA22.1**	830
-50 to +150	±0.2 or ±0.4	Precision-NTC-thermometer with acoustic limit value alarm, min/max function	**EL54.1**	822
-50 to +200	±1	Penetration probe thermometer, hold function	**A321.1**	820
-50 to +250	±0,5 to ±2,5	Penetration probe and infrared thermometer for core and surface temperature measurement	**XK00.1**	833
-50 to +250	±0.5 to ±1 or 1 %	Folding thermometer for core temperature and random measurement with Min/Max-function	**PE64.1**	820
-50 to +300	±0.2 to ±0.3	Conformity assessment; with alarm and min./max. functions	**EH93.1**	823
-50 to +300	±1.5 to ±2	Non-contact temperature quicktester with laser spot marker	**P855.1**	833
-50 to +300	±0.2 to ±0.5 or 0.4 %	For simple, fast measurements, with penetration probe, IP 67	**HHY1.1**	822
-50 to +1000	±0.5 to ±0.7 / ±0.3 % to ±0.5 %	Wide range of accessories available; with alarm, min./max. and hold functions	**EH73.1**	824
-60 to +500	±2 or ±2 %	Infrared thermometer with circuit laser, thermocouple input for external sensors	**EHP6.1**	834
-60 to +1000	±2 or ±2 %	Infrared thermometer with thermocouple input and double laser	**KA38.1**	834
-64 to +1370	±1 or ±1 %	For simple temperature measurements, various K-type sensors can be connected, hold function	**KL30.1**	821
-80 to +70	±0.5 to ±0.8	°C data logger for 40 000 measured values, specially designed for low temperatures	**CXC5.1**	829
-100 to +800	±0.2 to 0.2 %	Pt 100-thermometer with Min/Max-function and limit value alarm	**EH87.1**	823
-200 to +220	±1.5 to ±2.5	Wireless data logger with 2 connections for external temperature sensors	**ECK1.1**	832
-200 to +250	±0.5	°C-data logger with display for 60000 measured values. Connection of external sensor	**NK56.1**	830
-200 to +850	±0.3	Pt 100 thermometer with min/max and hold function, internal memory, USB interface, adjustment feature	**HNN5.1**	826
-200 to +1760	±0.1 to ±1.5	With calibrating function, can be connected either to Pt 100 probe or thermocouple	**X717.1**	827
-200 to +1760	±0.1 to ±1.5	With calibrating function, can be connected either to Pt 100 probe or thermocouple	**X718.1**	827
-200 to +1760	±0.03 to ±1.5	With calibrating function and extremly high accuracy	**X719.1**	827
-200 to +1760	±0.03 to ±1.5	With calibrating function and extremly high accuracy	**X720.1**	827
-200 to +1375	±0.5	Type K thermometer with min/max, hold and average values, adjustment feature	**HNN9.1**	826

Thermometer, digital

Indoor/outdoor thermometer

By Amarell. Memory function for min/max temperature (indoor and outdoor). Outdoor sensor fitted with 3 m cable. With temperature trend display. Also includes clock and date display. Ideal for table top or wall mounting.

Technical specifications:

Measuring range/Resolution	Indoor: 0.0 to +50.0 °C Outdoor: -50.0 to +70.0 °C
Accuracy	±1.5 °C
Dimensions (L x W x D)	100 x 70 x 25 mm

Delivery incl. 1.5 V Micro battery.

Art. No.	Pack Qty.	€
Y845.1	1	24,55

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Radio-controlled thermometer Ratio

By TFA-Dostmann. Wireless transmission of outside temperature from up to 3 different transmitters. Range max. 100 m. Indication of inside temperature. Max/Min-memory. Also with radio-controlled clock. For hanging or upright use.

Technical specifications:

Measuring range/Resolution	Inside Outside	0 to +60.0 °C -40.0 to +65.0 °C
Dimensions (L x W x H)	Receiver Transmitter	113 x 67 x 28 mm 86 x 32 x 15 mm
Power supply	Receiver Transmitter	2 Batteries Mignon 1.5 V 2 Batteries Micro 1.5 V

Delivery incl. 1 receiver and 1 transmitter. Without batteries, please order separately.

Type	Art. No.	Pack Qty.	€
Radio-controlled thermometer	**LP27.1**	1	21,30
Additional transmitter	**LP28.1**	1	14,00

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05
Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Radio-controlled thermometer, type Wave

By TFA-Dostmann. Wireless transmission of outside temperature. Range max. 100 m. Indication of inside temperature. Min/Max-memory. Also with clock and date display. Suitable for desktop or hanging.

Technical specifications:

Measuring range/ Resolution	Inside Outside	-10.0 to +60.0 °C -40.0 to +60.0 °C
Dimensions (L x W x H)	Receiver Transmitter	115 x 70 x 29 mm 132 x 39 x 28 mm
Power supply	Receiver Transmitter	2 Batteries Mignon 1.5 V 2 Batteries Mignon 1.5 V

Delivery incl. receiver, transmitter and batteries.

Art. No.	Pack Qty.	€
HY40.1	1	23,55

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Digital solar thermometer, Eco Basic

By TFA-Dostmann. Shows actual inside temperature and comes with memory function for min/max values. With integrated and replaceable backup-battery - should energy supply from solar panel not be sufficient. With stand and hanging device.

Technical specifications:

Measuring range/resolution	-10.0 to +50.0 °C
Accuracy	±1 °C
Dimensions (W x D x H)	90 x 20 x 90 mm
Weight	100 g

Delivery incl. 1.5 V button cell battery.

Art. No.	Pack Qty.	€
KT83.1	1	13,95

Accessories:

Cell battery V 13 GA (1.5 V)	**1938.1**	1 piece	4,85

Thermometer, digital

Rotilabo®-indoor/outdoor thermometers

With Min/Max function. Outdoor sensor with approx. 1.5 m of cable.

Technical specifications:

Measuring range/resolution	Indoor: -10.0 to +50.0 °C Outdoor: -40.0 to +70.0 °C
Accuracy	±1.0 °C (0.0 to +50.0) ±2.0 °C (residual measuring range)
Dimensions (H x W x D)	68 x 58 x 12 mm
Weight including battery	approx. 37 g

Delivery incl. button cell battery CR 2032 (3 V).

Type	Art. No.	Pack Qty.	€
white	**YE41.1**	1	12,40

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

Indoor/outdoor thermometer

By TFA-Dostmann.

- Simultaneous-display of inside and outside temperatures
- Save-function for min-/max-temperature readings (inside and outside)
- Reset-key for save-function
- Outdoor sensor with 3 m cord
- Desktop stand, wall fixture

Technical specifications:

Measuring range/resolution	Inside: -10.0 to +50.0 °C Outside: -50.0 to +60.0 °C
Accuracy	±1 °C
Dimensions (L x W x D)	105 x 65 x 20 mm
Weight	105 g

Delivery incl. 1.5 V Mignon battery.

Art. No.	Pack Qty.	€
AN34.1	1	14,55

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Electronic maxima-minima-thermometer with limit value alarm

By TFA-Dostmann. Simultaneous display of indoor and outdoor temperatures. Memory function for min/max values. **Outdoor temperature alarm with adjustable upper and lower limit values** (interval alarm only rings whenever the set temperatures have been exceeded or not reached). Outer probe with 1.5 m lead. Ideal for hanging or standing.

Technical specifications:

Measuring range/resolution	Indoor: -10.0 to +50.0 °C Outdoor: -50.0 to +70.0 °C
Accuracy	±1 °C (0 to +50 °C) ±2 °C (outside)
Dimensions (L x W x H)	110 x 70 x 20 mm
Weight	130 g

Delivery incl. Micro 1.5 V battery.

Art. No.	Pack Qty.	€
HA34.1	1	15,30

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Indoor/outdoor thermometer

By TFA-Dostmann. With large display and max/min function.
Ideal for desktops or hanging. Outdoor sensor with approx. 3 m cord.

Technical specifications:

Measuring range/resolution	Inside: -10.0 to +50.0 °C Outside: -50.0 to +70.0 °C
Dimensions (L x W x D)	110 x 95 x 20 mm
Weight	180 g

Delivery incl. battery Micro 1.5 V.

Art. No.	Pack Qty.	€
CH86.1	1	18,85

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Thermometer, digital

Electronic maximum-minimum-thermometer

Shows current temperature as well as highest and lowest values.
Suitable for inside and outside; splash-proof.
With reset-button for resetting max/min-values. For wall assembly.

Technical specifications:

Measuring range/resolution	-20.0 to +50.0 °C
Accuracy	±1 °C
Dimensions (H x L x W)	75 x 44 x 115 mm
Weight	161 g

Delivery incl. Mignon 1.5 V battery.

Art. No.	Pack Qty.	€
CK39.1	1	19,30

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Refrigerator thermometer

By Dostmann. For indication of current temperature in rooms, refrigerators etc. With fold-out holder for attaching to grids etc. Includes magnet for affixing. Refrigerator symbol is displayed at temperatures between +4 and +8 °C.

Technical specifications:

Measuring range/resolution	-20.0 to +50.0 °C
Accuracy	±1 °C
Dimensions (W x D x H)	68 x 14 x 43 mm

Delivery incl. CR 2025 button cell battery (3 V).

Art. No.	Pack Qty.	€
TA56.1	1	9,65

Accessories:

CR 2025 button cell battery (3 V)	**CH14.1**	1 piece	5,35

Thermo-timer

By TFA-Dostmann. For measuring temperature. **Alarm sounds once a specific temperature has been reached** (can be set as upper and lower limit). Stainless steel probe (L 160 x ∅ 4 mm) with 1 m heat-resistant cord. Min/max function. Measuring range -10 to +200 °C, resolution/accuracy: 1 °C. Clock with 12- or 24-h-display. **Timer-function (up to 24 h). With signal at "zero"**. Mountable display.
Dimensions W 68 x H 121 x D 22 mm.
Delivery incl. 1.5 V Micro battery.

Art. No.	Pack Qty.	€
X256.1	1	26,35

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Digital fridge/freezer thermometer

By TFA-Dostmann. For displaying current, maximum and minimum temperatures. With stand and frame for attachment to surfaces or behind glass (display cabinet etc.) by means of self-adhesive film.

Technical specifications:

Measuring range/resolution	-30.0 to +50.0 °C
Accuracy	±1 °C
Dimensions (L x W x D)	91 x 72 x 13 mm
Weight	66 g

Delivery incl. CR 2032 button cell battery.

Art. No.	Pack Qty.	€
PE75.1	1	15,00

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

Thermometer, digital

Indoor-/outdoor thermometer, officially calibrated

By Amarell. With display light and Min/Max-value control.
Simultaneous display of inside and outside temperatures. Outdoor sensor with approx. 3 m cord. Suitable for desktop or wall assembly.

Technical specifications:

Measuring range/resolution	Inside: 0,0 to +40 °C Outside: -50 to +70 °C
Accuracy	±1 °C
Dimensions (H x L x W)	55 x 20 x 80 mm

Delivery incl. official calibration certificate with test point at +4 °C and battery Micro 1.5 V.

Art. No.	Pack Qty.	€
EH47.1	1	141,90

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Temperature limiter for thermometer

By Dostmann. **Reference object for constant temperature measurement in refrigerators.** Avoids large temperature fluctuations, e.g. due to frequent opening of the refrigerator door. The sensor is inserted into one of the accurate-fitting holes and fixed in place with a screw. The reference object acts as a buffer and provides a homogeneous temperature distribution, because mass (and not air) is measured.
Suitable for sensors with ∅ of 3.5 mm, 4.2 mm and 5.0 mm.
Dimensions: W 60 x D 25 x H 25 mm.

Art. No.	Pack Qty.	€
PT43.1	1	23,15

Laboratory thermometers with limit alarm and Min/Max function

By Dostmann. Applications: measurements in refrigerators and deep freezers, storage of foodstuffs etc. Watertight housing (IP 65). Min/Max and Hold function. Audio and visual warning alarm when freely adjustable temperature limits are exceeded. Magnetic back for attachment to metal surfaces.

Technical specifications:

Model	**① Lab Basic**	**② Lab Pro**
Measuring range/resolution (°C)	-40.0 to +70.0	-40.0 to +200.0
Accuracy (°C)	±0.5 (-20.0 to +25.0) ±1.0 (outside)	±0.5 (0 to +50.0) ±1.0 (-40.0 to 0) ±1.0 (+50.0 to +100.0) ±1.5 (outside)
Sensor dimensions L x ∅ (mm)	20 x 5	100 x 3.5
Cable length (m)	3	1
Dimensions L x W x D (mm)	86 x 57 x 30	
Weight (g)	40	

Delivery incl. button cell battery CR 2032, 3 V.

Standard version

Type	Art. No.	Pack Qty.	€
① Lab Basic	**KA32.1**	1	21,45
② Lab Pro	**KA33.1**	1	27,00

Measuring equipment Kit with works certificate, test point at +5 °C

Type	Art. No.	Pack Qty.	€
① Lab Basic	**PY66.1**	1	32,80

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

Thermometer, digital

Thermometer with factory certificate

By Ludwig Schneider.

- Calibrated at -10 °C and +40 °C
- High measuring precision
- Min/max measured value storage with real time and date
- Limit alarm, audible and visual
- Storage of last threshold violation
- For exact temperature measurement with temperature brake (plastic bottle filled with ethylene glycol)

Technical specifications:

Measuring range/resolution	-50.0 to +70.0 °C
Accuracy	±0.3 °C
Sensor cable length	320 mm
Dimensions: Device (W x H x D) Plastic bottle (∅ x H)	 75 x 124 x 19 mm 19.5 x 40 mm
Weight	170 g

Delivery incl. temperature brake, factory certificate and AAA 1.5 V batteries.

Art. No.	Pack Qty.	€
HAN2.1	1	175,25

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Laboratory pocket thermometer LABTHERM

By Dostmann. With robust insertion tip, ideal for measuring temperature in liquids, food, etc. **Water and dustproof acc. to IP 67.** Hold-, Max- and Min-Function. AUTO-OFF function after 15 min to save battery, can be switched off. 0 °C calibrating function.

Technical specifications:

Measuring range/resolution	-40.0 to +250.0 °C
Accuracy	±0.5 °C (-10 to +100 °C), ±1.0 °C or ±1.0 % (outside)
Dimensions total (L x W x H)	220 x 25 x 20 mm
Dimensions of probe	106 mm, ∅ 3.5 mm

Delivery incl. protective cover (for probe), attachment clip and 1.5 V button cell battery.

Art. No.	Pack Qty.	€
LN45.1	1	24,75

Accessories:

Cell battery V 13 GA (1.5 V)	**1938.1**	1 piece	4,85

Inserting thermometer

By Dostmann. Ideal for simple temperature measurements in liquids, powdery and plastic substances. HOLD-, MAX-, and MIN-function. Automatic switch-off after 10 minutes.

Technical specifications:

Measuring range/resolution	-40.0 to +200.0 °C
Accuracy	±1.0 °C (-20.0 to 100.0 °C) ±1.5 °C (outside)
Dimensions with probe	205 x 20 x 16 mm
Dimension of probe	125 mm, ∅ 3.5 mm

Delivery incl. protective case (for probe) and 1.5 V button cell battery.

Art. No.	Pack Qty.	€
T332.1	1	22,15

Accessories:

Cell battery V 13 GA (1.5 V)	**1938.1**	1 piece	4,85

Insertion thermometer Pro-DigiTemp

By Dostmann. With 180°-swivel display for easy readability. MAX-, MIN- and HOLD-function. Automatic switch-off after 5 min.

Technical specifications:

Measuring range/resolution	-40.0 to +200.0 °C
Accuracy	±1.0 °C (0 to +100 °C) ±2.0 °C (outside)
Dimensions total	L 240 mm, ∅ 50 mm
Dimension of probe	L 180 mm, ∅ 3.5 mm

Delivery incl. protective case (for the probe) and 1.5 V button cell battery.

Art. No.	Pack Qty.	€
AK16.1	1	23,45

Accessories:

Cell battery V 13 GA (1.5 V)	**1938.1**	1 piece	4,85

Thermometer, digital

Pocket-thermometer

By Amarell. With sensor probe tip of high-grade steel.
Ideal for measurements in liquids, semi-solid substances and for solids.
Plastic housing useful as handle or as pocket clip.
With hold function to store spot measurements.

Technical specifications:

Measuring range/resolution	-50.0 to +200.0 °C
Accuracy	1.0 °C (-20 to +100 °C)
Dimensions (L x W)	150 x 58 mm
Dimensions of probe	L 120 mm x ∅ 3.5 mm

Delivery incl. 1.5 V button cell battery battery.

Art. No.	Pack Qty.	€
A321.1	1	24,55

Accessories:

Cell battery V 13 GA (1.5 V)	**1938.1**	1 piece	4,85

ThermoJack folding pocket thermometer

By Dostmann. For core temperature and random measurements.
Suitable for foodstuffs acc. to EN 13485. Protection class IP 65.

Technical specifications:

Measuring range/resolution	-40.0 to +250.0 °C
Accuracy	±0.5 °C (-20.0 to +150.0 °C) ±1 or ±1 °C (outside)
Housing dimensions, folded out fully (L x W x H)	190 x 38 x 20 mm
Sensor dimensions (length /∅)	70 x 3.5 mm (tip tapered to approx. 1.7 mm)
Weight	43 g

Delivery incl. CR 2032 button cell battery (3 V).

Art. No.	Pack Qty.	€
TA94.1	1	27,35

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

Folding thermometers testo 103/104

By Testo. For core temperature and random measurements.
On/Off via folding mechanism (approx. 30°). Auto Off after 60 min.

Technical specifications:

Model	**testo 103**	**testo 104**
Measuring range/resolution (°C)	-30.0 to +220.0	-50.0 to +250.0
Accuracy (°C)	±0.5 (-30.0 to +99.9) ±1 % (+100.0 to +220.0)	±1.0 (-50.0 to -30.1) ±0.5 (-30.0 to +99.9) ±1 % (+100.0 to +250.00)
Housing dimensions, folded out fully L x W x H (mm)	189 x 35 x 19	265 x 48 x 19
Sensor dimensions length/∅ (mm)	75 / 3	106 / 3
Other functions	-	Auto Hold, Hold, Min/Max
Protection rating	IP 55	IP 65
Housing material	ABS	ABS / TPE / PC, die cast zinc, stainless steel
Battery type	2 x button cell battery CR 2032 (3 V)	2 x Micro/AAA 1.5 V
Weight (g)	49	165

Delivery incl. batteries.

Type	Art. No.	Pack Qty.	€
testo 103	**PE63.1**	1	48,40
testo 104	**PE64.1**	1	83,85

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40
Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

▶ Please take note of our digital thermometers-overview on page 814

Thermometer, digital

Compact thermometer Mini-K

By Dostmann. For simple temperature measurement.
For connection with thermocouple probe, Type K.

- Waterproof enclosure (IP 65)
- Automatic switch-off after 15 min to prolong battery life
- Hold display
- With magnet for attachment to metal surfaces

Technical specifications:

Measuring range/resolution	-64.0 to +1370.0 °C
Accuracy	±1 % or 1 °C (larger value is valid)
Dimensions (L x W x D)	43 x 20 x 78 mm
Weight	41 g

Delivery incl. Cell battery CR 2032, 3 V.
Supplied without probe (please order separately).

Art. No.	Pack Qty.	€
KL30.1	1	50,00

Temperature probes, Type K for Mini-K

By Dostmann. Cord length 1.0 m.

Immersion-/penetration probe
With centred tip. Measuring range -40 to +400 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
120	3,5	**KL31.1**	1	31,75

Immersion-/penetration probe
With centred tip. Measuring range -60 to +550 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
130	1,5	**KL32.1**	1	45,05

Immersion probe
Ideal for measuring in liquid, gaseous and powdery media.
Measuring range -100 to +1100 °C

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
300	1.5	**KL33.1**	1	64,40

Immersion probe without handle
Bendable. Measuring range -200 to +900 °C. Without handle and connecting lead. Please order separately if required.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
220	3	**KL34.1**	1	29,05

PTFE-insulated thermo wire without handle
Bendable. Measuring range -65 to +260 °C.
Without handle and connecting lead. Please order separately if required.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
1000	1	**KL35.1**	1	21,45

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1	5,35
Handle with connecting cable, cable length 1.2 m, suitable for all K-type probes	**EH83.1**	1	70,95

Information on temperature measurement

There are various methods to make a temperature visible or readable:
Colour reaction (e.g. with colour change crayons), defined solid or liquid extension (e.g. glass thermometers) and electric signals (e.g. digital thermometers).
There are a number of sensor elements available to change the temperature values into electric signals.

Thermocouples (NiCr-Ni)
Thermocouples consist of two point welded wires of different metals.
The most common thermocouple is NiCr-Ni (Designation K).

Resistance sensors (Pt 100)
Here the resistance change of platin resistance, which is independent of temperature, is used. The multiplier resistor is driven with a constant current and the fall of voltage measured.

Thermistors (NTC)
Temperature measurement with thermistors is also based on a temperature-independent resistance change of the thermocouple. Unlike the Pt 100 thermometers, thermistors have a very negative temperature coefficient.

General rule
Thermocouple probes are fast and have a large measuring range.
Pt 100 and NTC probes are slower, but more precise.
There is a special probe for each application, e.g. insertion probe for measuring in plastic or pasty media.

Thermometer, digital

Temperature measuring device testo 108

By Testo. For fast, simple and precise temperature measurement, above all in the food industry (transport, storage, production, quality testing). Simple operation and handling through two self-explanatory key and a large display. Instrument and waterproof probe (IP 67).

Technical specifications:

Measuring range/resolution	-50.0 to +300.0 °C
Instrument accuracy	±0.5 °C (-30.0 to +70.0 °C) ±0.5 °C ±0.5 % of m.v. (outside)
Probe accuracy (incl. in delivery)	±0.5 °C (-40 to -20 °C) ±0.2 °C (-20 to +70 °C) ±0.5 °C (+70 to +125 °C) ±0.4 % of m.v. (+125 to +300 °C)
Housing dimensions (L x W x H)	140 x 60 x 24.5 mm
Probe dimensions, length /∅	85 / 4 mm
Measuring cycle	2 measurements per second
Battery type	3 x Micro/AAA 1.5 V
Weight	150 g

Delivery incl. standard penetration probe TE Type T, protective cover, calibration protocol and batteries.

Art. No.	Pack Qty.	€
HHY1.1	1	95,70

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Accessories for temperature measuring device testo 108

① **Standard penetration probe TE Type T**, cable length 1.2 m

Measuring range (°C)	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
-50.0 to +300.0	85	4	**HKA0.1**	1	30,10

② **Air sensor TE Type T**, with heat-resistant PTFE connecting cable (up to +250 °C).

Measuring range (°C)	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
-50.0 to +250.0	2000	1.5	**HKA1.1**	1	39,80

③ **Robust stainless steel penetration probe TE Type T (IP 67)**, with heat-resistant FEP connecting cable (up to +200 °C, length 1.2 m)

Measuring range (°C)	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
-50.0 to +350.0	125	4	**HKA2.1**	1	111,80

④ **Thin stainless penetration probe TE Type T**, with heat-resistant connecting cable (up to 250 °C, length 1.2 m)

Measuring range (°C)	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
-50.0 to +250.0	60	1.4	**HKA3.1**	1	97,85

Precision thermometer testo 110

By Testo. High-precision control thermometer for connection to NTC-sensors.
- Acoustic alarm (adjustable limit values)
- Display of Max/Min-values
- Display light
- Auto-hold automatically identifies the final value

Technical specifications:

Measuring range/resolution	-50.0 to +150.0 °C
Accuracy	±0.2 °C (-25 to +75 °C) ±0.5 % of m.v. (+100 to +150 °C) ±0.4 °C (outside)
Working temperature	-20 to +50 °C
Dimensions (W x D x H)	64 x 40 x 182 mm
Weight	171 g

Delivery incl. E-Block battery 9 V and calibration protocol. Supplied without probe (please order separately).

Type	Art. No.	Pack Qty.	€
Precision thermometer testo 110	**EL54.1**	1	105,35

NTC-Temperature sensors for testo 110

Measuring range -50 to +150 °C. Length of lead approx. 1.2 m.

Air sensor
Robust and waterproof.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
115	5	**EL55.1**	1	69,90

Surface probe
Waterproof. For smooth surfaces. With broadened measuring tip ∅ 6 mm.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
115	5	**EL56.1**	1	78,50

Immersion/Penetration probe
Waterproof. With chamfered tip.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
115	5	**EL57.1**	1	67,75

Food probe
Waterproof (IP 67). Made of stainless steel. Pointed, robust.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
125	4	**EL58.1**	1	123,65

Thermometer kit testo 110 with certificate

Delivery incl. thermometer testo 110 (Art. No. EL54.1), Immersion-/penetration probe (Art. No. EL57.1) and ISO-calibration certificate with three calibration points (-18 °C; 0 °C; +60 °C).

Type	Art. No.	Pack Qty.	€
Thermometer kit testo 110	**EL59.1**	1	289,20

Accessories:

Protective cover TopSafe	**EH74.1**	1	31,20
Transport case (for meter and probe)	**EH75.1**	1	40,85
E-Block 9 V battery	**1025.1**	1	4,85

Thermometer, digital

Precision thermometer testo 720

By Testo. For sophisticated measuring in the laboratory and industry.
- Acoustic alarm (adjustable limit values)
- Min/Max-value display
- Display light
- Ideal for laboratory work because the glass-sheated temperature probe is suitable for connection

Technical specifications:

Measuring range/resolution	-100.0 to +800.0 °C
Accuracy	±0.2 % of m. v. (+200 to +800 °C) ±0.2 °C (outside)
Working temperature	-20 to +50 °C
Dimensions (W x D x H)	64 x 40 x 182 mm
Weight	171 g

Delivery incl. E-Block-battery 9 V and calibrating protocol.
Supplied without probe (please order separately).

Art. No.	Pack Qty.	€
EH87.1	1	160,20

Temperature probes Pt 100 for testo 720

Measuring range -50 to +400 °C. Cord length approx. 1.2 m.

Laboratory probe, glass-sheathed (Cl. A)
Glass tube is removable. Resistant to aggressive media.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
200	6	**EH88.1**	1	106,45

Food probe (Cl. A)
Made of stainless steel. Pointed, robust. Watertight (IP 65).

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
125	4	**EH89.1**	1	135,45

Immersion-/Penetration probes (Cl. A)
With chamfered tip. Waterproof.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
114	5	**EH90.1**	1	75,25

Surface probes (Cl. B)
Watertight. With widened measurement tip (∅ 9 mm).

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
114	5	**EH91.1**	1	107,50

Accessories:

Protective cover TopSafe	**EH74.1**	1	31,20
Transport case (for meter and probe)	**EH75.1**	1	40,85
E-Block 9 V battery	**1025.1**	1	4,85

Calibrated precision thermometer testo 112, conformity assessed

By Testo. **Application range:**
- Suitable for certified measuring by public authorities, institutions and for expert reports
- For measuring product temperature in the food industry
- For routine operations in everyday work
- For check measurements during refrigerated transports

Properties:
- PTB-type testing
- Integrated self-check
- Acoustic alarm goes off immediately when limit values have been exceeded or under-run
- Display light
- Min/Max-values
- Declaration of conformity for device and sensor

Technical specifications:

Measuring range/resolution	-50.0 to +300.0 ° C
Accuracy	±0.2 °C (-50 to +200 °C) ±0.3 °C (outside)
Working temperature	-20 to +50 °C
Dimensions (W x D x H)	64 x 40 x 182 mm
Weight	171 g

Note: a new calibration law (MessEG) and new calibration regulations (MessEV) came into force in Germany on 01.01.2015. The previous initial calibration procedure has been be replaced by a new procedure, the so-called conformity assessment procedure. Instead of the certificate of calibration, a declaration of conformity is now issued by the equipment manufacturer and checked by a conformity assessment agency (e.g. Office of Weights and Measures). Equipment can, as before, be recalibrated after two years through any Office of Weights and Measures.

Delivery incl. Pt 100 Immersion-/Penetration probe (L 115 mm, ∅ 5 mm) with attached cable (cable length approx. 1.2 m), declaration of conformity and E-Block battery 9 V.

Art. No.	Pack Qty.	€
EH93.1	1	564,40

Accessories for thermometer testo 112

By Testo.

Safety cover TopSafe, protects from blows and dust

Art. No.	Pack Qty.	€
EH94.1	1	32,20

Transport case for thermometer and probe

Art. No.	Pack Qty.	€
EH75.1	1	40,85

Spare battery E-Block 9 V

Art. No.	Pack Qty.	€
1025.1	1	4,85

Allround-thermometer testo 925

By Testo. Robust thermometer for daily measuring. For connecting with thermocouple probes, Type K. Acoustic alarm goes off immediately when the set limits are either exceeded or under-run. Max/Min-value display. Hold-button. With display-light. **Transfer of measured data is possible via radio with optional radio probe and radio module.**

Technical specifications:

Measuring range	-50.0 to +1000.0 °C
Accuracy	±0.5 °C or 0.3 % of m.v. (-40 to +900 °C) ±0.7 °C or 0.5 % of m.v. (outside)
Resolution	0.1 °C (-50 to +199.9 °C) 1 °C (outside)
Working temperature	-20 to +50 °C
Dimensions (W x D x H)	64 x 40 x 182 mm
Weight	171 g

Delivery incl. E-Block-battery 9 V and calibration protocol.
Supplied without probe (please order seperately).

Art. No.	Pack Qty.	€
EH73.1	1	94,60

Accessories for Allround-thermometer testo 925

Protective cover TopSafe, protects against blows and dirt.

Art. No.	Pack Qty.	€
EH74.1	1	31,20

Transport case for meter and probe

Art. No.	Pack Qty.	€
EH75.1	1	40,85

Extension lead
For thermocouple probe Type K. Length 5 m.

Art. No.	Pack Qty.	€
EH76.1	1	52,70

Spare battery E-Block 9 V for meter testo 925

Art. No.	Pack Qty.	€
1025.1	1	4,85

Spare battery Micro/AAA 1.5 V for radio handle

Art. No.	Pack Qty.	€
1021.2	4	6,40

Temperature probes type K for testo 925

Cord length 1.2 m.

Immersion probe (Cl. 1)
Bendable. Precise and fast. Waterproof. Measuring range -60 to +1000 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
300	1,5	**EH77.1**	1	93,55

Immersion-/Penetration probe (Cl. 2)
Watertight. With chamfered tip. Measuring range -60 to +400 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
114	5	**EH78.1**	1	40,85

Food probe (Cl. 2)
Made of stainless steel. Pointed, robust. Watertight (IP 65).
Measuring range -60 to +400 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
125	4	**EH79.1**	1	74,20

Surface probe (Cl. 2)
For flat surfaces. Waterproof. With widened measurement tip (∅ 6 mm). Measuring range -60 to +400 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
115	5	**EH80.1**	1	58,05

Surface probe (Cl. 2)
For surfaces which are not flat. Watertight and sturdy.
With elastic thermocouple band (measuring tip: ∅ 12 mm).
Measuring range -60 to +300 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
115	5	**EH81.1**	1	119,35

Immersion measurement tip (Cl. 1)
Pliable. Measuring range -200 to +1000 °C. Without handle and connecting lead (please order separately).

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
500	1.5	**EH82.1**	1	26,90

Accessories:

Handle with connecting cable, cable length 1.2 m, suitable for all K-type probes	**EH83.1**	1	70,95

Radio module, radio handle and radio probe for testo 925

Radio module
For cordless transfer of measured data. Frequency 869.85 MHz FSK. Please order radio handle and probe separately (are required when transfering measured data via radio).

Type	Art. No.	Pack Qty.	€
Radio module	**EH84.1**	1	40,85

Radio handle and radio probe, technical specifications:

Measuring cycle	0.5 or 10 sec, adjustable on handle
Range	max. 20 m (open air test site)
Working temperature	-20 to +50 °C
Battery type	radio handle: 2 x Micro/AAA 1.5 V batteries

Radio handle for radio probe

Type	Art. No.	Pack Qty.	€
Radio handle incl. batteries	**EH85.1**	1	96,75

Radio probe for air-/immersion-penetration measurements (Cl. 2)
With chamfered tip. Measuring range -50 to +350 °C.

Type	Art. No.	Pack Qty.	€
Radio probe, L 120 mm, ∅ 5 mm	**EH86.1**	1	50,55

Thermometer, digital

Thermometer P200

By Dostmann. For measuring air, gas, liquids, and plastic materials.
- **Fixed NTC penetration probe** with handle, cable length 60 cm
- Large display
- Min/max and hold function
- Plastic housing, food-safe and waterproof
- Integrated sensor holder for single-hand operation

Technical specifications:

Measuring range	-40 to 200 °C
Resolution	0.1 °C
Accuracy	±1. °C (-25 up 150 °C), ±1.5 °C (outside)
Measuring cycle	1 sec
Protection class	IP 65
Device dimensions (L x W x H)	95 x 60 x 18 mm
Sensor dimensions (L x ∅)	110 x 3.5 mm
Weight	150 g
Power supply	2 x Micro/AAA 1.5 V battery

Delivery incl. fastening clip, table stand and batteries.

Art. No.	Pack Qty.	€
HNN8.1	1	52,65

General information on calibration and calibrating meters

Meters with DAkkS Certificates of Calibration:
A DAkkS Certificate of Calibration is issued by a accredited testing agency (must be approved and is monitored by Deutsche Akkreditierungsstelle [German Accreditation Agency]). Meter meets national standard requirements and can be used in accordance with ISO 9000 Quality Assurance Standards.
Very low preset tolerance (lower than required for works certificate).

The user of DAkkS certified meters can therefore issue internal works certificates. This is particulary of advantage in the Quality Assurance Department of larger firms where measuring instruments used in the Production Department must be tested and calibrated at specific intervals.
Individual test points should be customized depending upon temperature ranges under measurement.

Meters with a Works Certificate of Calibration:
A works certificate of calibration is issued after carrying out a comparison measurement with a DAkkS calibrated meter.
Unit meets national standard requirements and can be used in accordance with **ISO 9000** Quality Assurance Standards.
Tolerance of measurement with works certificates is slightly higher than of a DAkkS certified unit. Individual test points should be customized depending upon temperature ranges under measurement.

Thermometer P300

By Dostmann. For measuring in liquid, paste-like and semi-solid media.
- **Fixed NTC penetration probe** with handle, cable length 1.2 cm
- Large backlit display
- Min/Max and hold function
- Plastic housing, food-safe and splash-proof
- Integrated sensor holder for single-hand operation

Technical specifications:

Measuring range	-40.0 to +200.0 °C
Resolution	0.1 °C
Accuracy	±0.5 °C (0 to 100 °C) ±1.5 °C (outside)
Measuring cycle	1 sec
Protection class	IP 54
Device dimensions (L x W x H)	130 x 65 x 25 mm
Sensor dimensions (L x ∅)	120 x 3.5 mm
Weight	240 g
Power supply	2 x Mignon batteries / AA 1.5 V

Delivery incl. batteries.

Type	Art. No.	Pack Qty.	€
Thermometer P300 standard design	**N359.1**	1	69,55
With ISO calibration certificate (0 °C, +60 °C)	**HT78.1**	1	97,85

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4	6,05

▶ Please note our digital thermometers overview on page 814

Compact thermometer P4000

By Dostmann. For measuring liquid gaseous and powdery media.
With Pt 100 four-conductor sensor technology.
- Plastic splash-proof and washable housing
- Stores min, max, hold and average values
- 1-point adjustment possible
- 2-line LCD display

Technical specifications:

Measuring range	-200 to +850 °C
Resolution	0.1 °C (-99.9 to +399.9 °C) 1 °C (outside)
Accuracy	±0.3 °C
Measurement data memory	20
Port	USB
Protection class	IP 54
Dimensions (L x W x H)	150 x 74 x 32 mm
Weight	217 g
Power supply	2 x Mignon/AA 1.5 V

Optional accessories (please order separately):
Windows software DE Graph and USB cable for online documentation.

Delivery incl. 2 batteries and test protocol.
Without measuring probe (please order separately).

Art. No.	Pack Qty.	€
HNN5.1	1	121,50

Temperature measuring probe Pt 100 for compact thermometer P4000

With handle. Cable length 1 m.

Immersion sensors (Cl. B)
For measuring liquid gaseous and powdery media.

Measuring range (°C)	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
-50 to +350	150	3	**AY91.1**	1	76,55
-50 to +350	300	3	**AY92.1**	1	82,75

Penetration probe (Cl. B)
For measuring solid and powdery media.

Measuring range (°C)	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
-50 to +350	150	4	**AY93.1**	1	76,55

Surface sensor (Cl. B)
With spring-loaded contact area.

Measuring range (°C)	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
-40 to +300	150	6	**AY94.1**	1	174,15

Air probe (Cl. B)
For measuring air and gas temperatures.

Measuring range (°C)	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
-50 to +250	250	4	**AY95.1**	1	98,70

Immersion sensors (Cl. B / 1/3 DIN)
For measuring liquid gaseous and powdery media.

Measuring range (°C)	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
-200 to +450	150	3	**AY96.1**	1	132,80
-200 to +450	300	3	**AY97.1**	1	139,75

Accessories:

Windows Software DE Graph for P4000/P700	**HNN6.1**	1	133,30
USB cable for P4000 series	**HNN7.1**	1	26,90
Mignon battery/AA 1.5 V	**1022.2**	4	6,05

Thermometer P4010

By Dostmann. For measuring liquid gaseous and powdery media.
- **With replaceable thermoelement probe Type K**
- 2-line LCD display
- Stores min, max, hold and average values
- 1-point adjustment possible
- Plastic splash-proof and washable housing

For graphic and tabular documentation, please order Set 2 with software and USB cable.

Technical specifications for device:

Measuring range	-200 to +1370 °C
Resolution	0.1 °C (-99.9 to +399.9 °C); 1 °C (outside)
Accuracy	±0.5 °C
Measurement data memory	20
Port	USB
Protection class	IP 54
Dimensions (L x W x H)	150 x 74 x 32 mm
Weight	217 g
Power supply	2 x Mignon batteries / AA 1.5 V

Technical specifications of sensor:
Immersion/penetration probe Type K Cl. 2. With handle. Cable length 1 m.
Measuring range -40 to +400 °C. Sensor dimensions L 120 x ∅ 3.5 mm.

Set 1, P4010
Delivery incl. immersion/penetration probe Type K Cl 2,
test protocol and batteries.

Art. No.	Pack Qty.	€
HNN9.1	1	143,00

Set 2, P4010
Delivery incl. immersion/penetration probe Type K Cl 2, DE Graph software, USB cable, test protocol and batteries.

Art. No.	Pack Qty.	€
HNP0.1	1	249,40

Accessories for thermometer P4010

Immersion sensor Type K Cl.1
With handle. Cable length 1 m.

Measuring range (°C)	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
-100 to + 1100 °C	300	3	**X196.1**	1	70,95

Thermometer, digital

Precision thermometers P700-series

By Dostmann. **With integral calibrating function for simple compensation of sensor tolerances.** Can be connected either to Pt 100 probe or thermocouple type K, J, L, N, R, S, T. Storage of min/max-values, hold- and mean value. USB-Online-PC-Interface. Integral probe holder. With collapsible clip for standing on desktop. Battery and wall socket operated.

Technical specifications:

Model	P700 and P705	P750 and P755
Measuring range		
Pt 100	-200 to +850 °C	
Type K	-200 to +1760 °C	
Accuracy		
Pt 100	±0.1 °C (-100 to +200 °C) ±0.1 % of m.v. (rest)	±0.03 °C (-50 to +199,99 °C) ±0.05 °C (-200 to +200 °C) ±0.1 % of m.v. (rest)
Type K	±0.2 (0 to +200 °C) ±0.5 (+200 to +1000 °C) ±1.0 °C (rest)	
Resolution Pt 100 and type K	0.1 °C	0.01 °C (-200 to +200 °C) 0.1 °C (rest)
Dimensions (L x W x H)	200 x 93 x 44 mm	
Current supply	1 battery block 9 V	

1-channel thermometer P700
Delivery incl. battery, sensor and power pack please order separately.

Art. No.	Pack Qty.	€
X717.1	1	252,65

2-channel thermometer P705
Like model P700. With additional simultaneous display of 2 measured values or differential temperature display.
Delivery incl. battery, sensor and power pack please order separately.

Art. No.	Pack Qty.	€
X718.1 *	1	306,40

1-channel thermometer P750
Extremely high accuracy of ±0.03 °C. Ideal as a reference for testing ancillary thermometers. Humidity and flow sensors can be attached.
Delivery incl. battery, sensor and power pack please order separately.

Art. No.	Pack Qty.	€
X719.1 *	1	483,75

2-channel thermometer P755
Like model 750. With additional simultaneous display of 2 measured values or differential temperature display.
Delivery incl. battery, sensor and power pack please order separately.

Art. No.	Pack Qty.	€
X720.1 *	1	548,25

Service kit for thermometer P750
Contents: 1-channel thermometer P750 (art.no. X719.1), immersion probe (Art.No. X726.1), 9 V storage battery with battery charger, plug-in power pack and block-battery 9 V, PC-adapter cable and software, case for transporting.

Art. No.	Pack Qty.	€
X721.1 *	1	897,65

* Longer delivery times possible. Please check with our Sales Department

Temperature sensors Pt 100 for P700-series

With 4-conductor technics. Cord length 1 m.

Immersion probes (Cl. B)
Ideal for measuring in liquid, gaseous and powdery media.
Measuring range: -50 to +350 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
150	3	**X722.1**	1	80,65
300	3	**X723.1**	1	86,00

Penetration probe (Cl. B)
For measuring in liquid and powdery media.
Measuring range: -50 to +350 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
150	4	**X724.1**	1	77,40

High-precision immersion probe (Cl. B 1/3 DIN)
Ideal for measuring in liquid, gaseous and powdery media.
Measuring range: -200 to +450 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
300	3	**X726.1**	1	131,15

High-precision immersion probe (Cl. B 1/10 DIN)
For measuring in solid and powdery media.
Measuring range: -200 to +450 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
300	3	**AY99.1**	1	192,45

Temperature sensors type K for P700-series

Cord length 1 m.

Immersion/penetration probe (Cl. 2)
For measuring in liquid, gaseous media. Measuring range: -40 to +400 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
120	3,5	**X727.1**	1	37,65

Immersion probe (Cl. 1)
For measuring in liquid and gaseous media.
Measuring range: -100 to +1100 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
300	1,5	**X728.1**	1	67,75
500	3	**X729.1**	1	76,35

Clip-on probe (Cl. 1)
For measuring on pipes. Measuring range: -40 to +200 °C.

∅ (mm)	Art. No.	Pack Qty.	€
to max. 35	**X730.1**	1	61,30

Multi-purpose sensor (for meters P750/P755)

For humidity and temperature. Cord length 1 m.
Measuring ranges: 0 to 100 % RH, -30 to +80 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
120	20	**X825.1**	1	174,15

Flow sensor (for meters P750/P755)

For air and gas. Cord length 1 m. Measuring range: 0.3 to 20 m/s.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
175	22	**X731.1**	1	779,40

Accessories:

Power supply for P700-series	**H198.1**	1	32,20
E-Block 9 V battery	**1025.1**	1	4,85

1-/2-channel data logger for temperature/humidity

By Dostmann. For measurement data monitoring, e.g. storage and transport conditions, production facilities, greenhouses and refrigerators.

- Pre-programmed data logger (measuring interval: 5 min), ready for immediate use
- Automatic data output as PDF file, no driver installation required
- Integrated USB port
- Windows-compatible software is available for programming the logger (e.g. measuring cycle, alarm limits, start/end of recording), please download software free of charge
- Status and alarm LEDs with audio signal

Technical specifications:

Model		LOG32T	LOG32TH
Measuring range/ resolution	°C	-40.0 to +70.0	
	% RH	-	0.0 to 100.0
Accuracy	°C	±0.5 (-10 to +40) ±1 (outside)	
	% RH	-	±3 (40 to 60) ±3.5 (20 to 40, 60 to 80) ±5 (outside)
Data memory		60 000 datasets	
Measuring cycle		30 s to 24 h	
Dimensions (L x W x D)		100 x 19 x 19 mm	
Weight		70 g	

Delivery incl. ISO Certificate of Calibration, wall mount and 3.6 V lithium battery.

Type	Art. No.	Pack Qty.	€
LOG32T	**CCE2.1**	1	59,15
LOG32TH	**CCE3.1**	1	73,65

Accessories:

Replacement 3.6 V / ½ AA lithium battery	**LT32.1**	1	8,60

General information on calibration and calibrating meters

Meters with DAkkS Certificates of Calibration:
A DAkkS Certificate of Calibration is issued by a accredited testing agency (must be approved and is monitored by Deutsche Akkreditierungsstelle [German Accreditation Agency]). Meter meets national standard requirements and can be used in accordance with ISO 9000 Quality Assurance Standards.
Very low preset tolerance (lower than required for works certificate).

The user of DAkkS certified meters can therefore issue internal works certificates. This is particulary of advantage in the Quality Assurance Department of larger firms where measuring instruments used in the Production Department must be tested and calibrated at specific intervals.
Individual test points should be customized depending upon temperature ranges under measurement.

Meters with a Works Certificate of Calibration:
A works certificate of calibration is issued after carrying out a comparison measurement with a DAkkS calibrated meter.
Unit meets national standard requirements and can be used in accordance with **ISO 9000** Quality Assurance Standards.
Tolerance of measurement with works certificates is slightly higher than of a DAkkS certified unit. Individual test points should be customized depending upon temperature ranges under measurement.

PDF datalogger LOG200-series

By Dostmann. For monitoring and documentation of measured values during transportation and storage.

- Pre-programmed datalogger (measuring interval LOG200: 15 min, LOG210 and LOG220: 5 min)
- Automatic data output as PDF file, no driver installation required
- Status and alarm LEDs with audio signal
- Windows-compatible software for logger programming is available (e.g. measuring cycle, alarm limits); please download software free of charge

Technical specifications:

Model	LOG200	LOG210	LOG220
Measuring parameters	Temperature	Temperature Humidity	Temperature Humidity Pressure
Temperature Measuring range (°C) Accuracy (°C)	-40 to +70 ±0.5 (-10 to +40), ±1.0 (outside)		
Rel. humidity Measuring range (%rF) Accuracy (%rF)	- -	0.0 to 100.0 ±3.5 (20 to 80), ±5 (outside)	
Air pressure Measuring range (hPa) Accuracy (hPa)	- -		300,0 to 1100.0 ±1 (900 to 1100) 0.5% v. end value (outside)
Measured values	150 000	100 000	60 000
Measuring cycle	30 sec to 24 h		
Port	USB port, integrated		
Dimensions L x W x D (mm)	90 x 42 x 20		
Weight (g)	98	93	70
Battery	1 x 3.6 Volt, Lithium ½ AA		
Battery life	Approx. 3 years with measuring interval of 15 min Approx. 2 years with measuring interval of 5 min		

Delivery incl. ISO Certificate of Calibration, wall bracket and battery (3.6 V, Lithium ½ AA).

Type	Art. No.	Pack Qty.	€
LOG200	**EHX3.1**	1	69,65
LOG210	**EHX4.1**	1	82,90
LOG220	**EHX5.1**	1	101,00

Accessories:

Replacement 3.6 V / ½ AA lithium battery	**LT32.1**	1	8,60

1-channel data logger testo 184 series for temperature

By Testo. For monitoring temperature-sensitive products.
Model testo 184 T4 is specially for low temperatures (down to -80 °C).

- With alarm management:
  Adjustable min/max function and cumulative alarm
- The configuration file for logger programming is stored directly on the data logger (no software installation required)
- Automatic data output as PDF file via USB port
- Mobile readout via NFC

Technical specifications:

Model	① testo 184 T3	② testo 184 T4
Measuring range/resolution	-35.0 to +70.0 °C	-80.0 to +70.0 °C
Accuracy	±0.5 °C	±0.8 (-80.0 to -35.1) °C ±0.5 (-35.0 to +70.0) °C
Sensor type	NTC	Pt 1000
Display	yes	no
Measured values	40 000	
Measuring cycle	1 min to 24 h	
Protection class	IP 67	
Dimensions (W x D x H)	44 x 12 x 97 mm	
Weight	45 g	
Battery type	1 CR 2450 battery (3 V)	1 ER 2450 battery (3 V)

Delivery incl. battery and inspection report stored on logger.

Type	Art. No.	Pack Qty.	€
① testo 184 T3	**CXC4.1**	1	107,30
② testo 184 T4	**CXC5.1**	1	181,70

Accessories:

CR 2450 button cell battery (3 V)	**CXC6.1**	1	5,35
ER 2450 button cell battery (3 V)	**CXC7.1**	1	24,75

1-/2-channel mini data logger testo 174 for temperature and humidity

By Testo. For monitoring climatic conditions, for example in storage, in offices and in production areas.

- Memory for 16000 measured values
- With LCD display for current measured value (with model testo 174H display of the current temperature or humidity value), battery status as well as min/max values
- Optical limit alarm (freely selectable values)
- Windows compatible software (data logger programming, for outputting data, graphic and tabular display, printout of data) download software free of charge or order separately. USB interface required for communication between software and data logger.

Technical specifications:

Model	① 1-channel °C logger testo 174T	② 2-channel °C/RH logger testo 174H
Measuring ranges/resolution	-30.0 to +70.0 °C	-20.0 to +70.0 °C 0,0 to 100.0 % RH
Accuracy	±0.5 °C	±0.5 °C ±3 % RH (2 to 98 % RH)
Protection class	IP65	IP20
Measurement data memory	16000	
Measuring cycle	1 min to 24 h	
Dimensions (L x W x D)	60 x 40 x 20 mm	

Delivery incl. 2 x CR 2032 button cell batteries, wall attachment and calibration protocol. Please order USB interface for logger programming separately.

Type	Art. No.	Pack Qty.	€
① testo 174T	**NA06.1**	1	53,70
② testo 174H	**NA07.1**	1	85,80

Accessories for 174-series data logger

Type	Art. No.	Pack Qty.	€
USB interface for programming and reading data from the 174T and 174H loggers	**NA08.1**	1	85,80
CD Comsoft Basic (if free download not required)	**NA09.1**	1	26,80
Button cell battery CR 2032 (3 V)	**P858.1**	1	5,35

testo 175 series 1-/2-channel mini data logger for temperature and humidity

By Testo. Temperature monitoring of cooling and refrigeration rooms as well as long-term monitoring of working and storage areas.

- Memory with capacity for 1 million measured values
- With LCD display for current measured value (with model testo 175 H1 display of current temperature and humidity values), battery status as well as min/max values
- Optical limit alarm (freely selectable values)
- Long battery life using standard batteries
- Simple read-out of data via USB cable or using an SD card (if a USB cable or SD card is required, please order separately). Only data can be collected with the SD card (reprogramming is not possible).
- Windows-compatible software (logger programming, read-out of data, graphic and tabular display of data and printout of data) please download free of charge or order separately. An USB cable is required for communication between the software and logger.

Technical specifications:

Model	1-channel °C logger testo 175 T1	2-channel °C/rH logger testo 175 H1
Temperature		
Measuring range	-35 to +55 °C	-20 to +55 °C
Resolution/accuracy	0.1 °C /±0.5 °C	0.1 °C /±0.4 °C
Humidity		
Measuring range	-	0 to 100 % rel. hum.
Resolution/accuracy	-	1 % rH/±2 % rH (2 to 98 % rH)
Measured data storage	1 million readings	
Measuring cycle	10 s to 24 h	
Dimensions (H x W x D)	89 x 53 x 27 mm	149 x 53 x 27 mm
Protection class	IP 65	IP 54
Battery type	3 micro batteries 1.5 V	

Delivery incl. wall attachment, lock, calibration report and batteries.
Please order software and USB cables for logger programming separately.

Type	Art. No.	Pack Qty.	€
testo 175 T1	**PH31.1**	1	127,95
testo 175 H1	**PH32.1**	1	267,70
Accessories:			
CD Comsoft Basic (if free download not required)	**NA09.1**	1	26,80
USB cable (mini USB to USB), L 2 m	**PH33.1**	1	23,55
2 GB SD card for collecting data	**PH34.1**	1	27,55
Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

LOG100 series 2/3-channel temperature/humidity data logger

By Dostmann. For quality control in the lab and in production, as well as monitoring storage and transport conditions.

- Memory for 60.000 measured values
- LCD display for indication of current measured value, battery status, min/max value and average value
- Limit alarm, audible and visual
- Integrated USB port
- Optionally available with Windows-compatible software (logger programming, data transfer, graphical and tabular representation of data) and external temperature sensor

Technical specifications:

Model	2-channel °C logger	2-channel °C cryogenic logger	3-channel °C/rF logger
Internal °C sensor:			
Measuring range/ resolution	-30.0 to +70.0	-10.0 to +70.0	-30.0 to +70.0
Accuracy	±0.5 (-20 to +50) ±0.7 (outside)	±0.3 (-20 to +50) ±0.7 (outside)	±0.5 (-10 to +40) ±1.0 (outside)
External °C sensor:			
Measuring range/ resolution	-50.0 to +125.0	-200.0 to +250.0	-50.0 to +125.0
Accuracy	±0.5 (0 to +40) ±1.0 (outside)	±0.5	±0.5 (0 to +40) ±1.0 (outside)
Internal rF sensor:			
Measuring range/ resolution	-	-	0.1 to 99.0
Accuracy	-	-	±3
Measuring cycle	1 s to 24 h		
Display operating range (°C)	-10 to +70		
Dimensions L x W x D (mm)	88 x 55 x 20		
Weight (g)	95		

Delivery incl. button cell battery CR 2032, 3 V.
Please order external temperature sensor (sensor dimensions L 40 mm, ∅ 3 mm, cable length 3 m) and logger programming software separately.

Type	Art. No.	Pack Qty.	€
2-channel °C logger	**NA22.1**	1	104,30
2-channel °C cryogenic logger	**NK56.1**	1	149,45
3-channel °C/rF logger	**NA23.1**	1	160,20
Accessories:			
Windows logger programming software with USB cable	**NA24.1**	1	63,45
External °C sensor for NA22.1 and NA23.1, measuring range -50 to +125 °C	**NA25.1**	1	59,15
External °C sensor for NK56.1, measuring range -200 to +250 °C	**NK57.1**	1	73,10
Temperature limiter, W 60 x D 25 x H 25 mm	**PT43.1**	1	23,15
Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

KlimaLogg Pro thermal hygrometer with data logger and wireless sensor

By TFA-Dostmann. For monitoring temperature and humidity.

① **Thermal hygrometer**:
- Display of humidity and temperature values
- Max/Min display with time of day
- **Connectivity for up to 8 RF transmitters**
- Text display with fixed serial number or individual name allocation for stored transmitters
- Custom alarm limits can be set for all channels with audio or visual alarm indication
- Ring buffer with capacity for up to 50 000 datasets
- Datasets can be retrieved directly from the device and via PC
- Data transfer via USB wireless transceiver (range: up to 10 m)
- Windows-compatible data transfer software is available for download free of charge. This software is required for transferring data. Measured values can also be exported as a text file.
- Radio clock with date display
- Battery charge level indicator

Choose between the 2 wireless sensors:

② **Wireless °C/rel. humidity sensor type FS1**
Measuring range/resolution: -30.0 to +60.0 °C, 1 to 99 % rel. humidity
Accuracy: ±1 °C, ±3 % rel. humidity (30 to 75 % rel. humidity)
Range: max. 100 m (free-field)
Dimensions: H 160 x W 44 x D 23 mm
Delivery incl. 2 x 1.5 V Mignon/AA batteries.

③ **Wireless °C sensor with external probe type FS2**
Measuring range/resolution: -30.0 to + 60.0 °C
Accuracy: ±1 °C
Range: max. 100 m (free-field)
Dimensions: H 128 x W 40 x D 23 mm
With external probe (cable length 3 m).
Temperature is measured at the probe only
Delivery incl. 2 x 1.5 V Micro/AAA batteries.

Technical specifications:

Measuring range / resolution	Indoors 1 to +99.0 % rel. humidity Outdoors 1 to +99 % rel. humidity	Indoors -20.0 to +50.0 °C Outdoors -30.0 to +60.0 °C
Accuracy	±3 % rel. hum. (30 to 75 % rel. hum)	±1 °C
Measurement data memory	50 000 datasets	
Measuring cycle	Adjustable in increments of 1/5/10/15/30 min or 1/2/3/6 h	
Dimensions (W x H x D)	137 x 98 x 26 mm	

Delivery incl. USB wireless transceiver and 3 1.5 V Mignon/AA batteries.
Wireless sensors not included. Please order separately.
Please download Windows software free of charge.

Type	Art. No.	Pack Qty.	€
① KlimaLogg Pro thermal hygrometer	**PL21.1**	1	91,40
Accessories:			
② Wireless °C/ rel. humidity sensor type FS1	**PL22.1**	1	24,75
③ Wireless °C sensor with external probe type FS2	**PL23.1**	1	23,25
Mignon battery/AA 1.5 V	**1022.2**	4	6,05
Battery Micro/AAA 1,5 V	**1021.2**	4	6,40

SterilDisk temperature data logger

By Dostmann. For monitoring and recording temperature data in the pharmaceutical and medical fields and in laboratories and food production plants (e.g. for sterilization and pasteurization).
- High temperature range up to 140 °C
- Watertight and pressure-tight up to 10 bar
- Measurement accuracy of ±0.2 °C in the calibrated range from +25 to +140 °C
- Housing made of food-safe steel AISI316L
- Please order Windows-compatible software and disk interface with USB cable (logger programming, data read-out, graphic and tabular representation, data printout) separately.
  Automatic calculation of F0, Z and N values possible

Technical specifications:

Measuring range/resolution	-20.0 to +140.0 °C
Accuracy	±0.2 °C (+25 to +140 °C) ±0.5 °C (outside)
Measurement data memory	20 200
Measuring cycle	≥1 s
Protection class	IP 68
Ambient pressure	up to 10 bar
Port	Disk interface NS
Dimension H x ∅	17.4 x 36 mm
Weight	80 g

Delivery incl. calibration certificate and button battery BR 1632A.
Please order disk interface with USB cable and software separately.

Type	Art. No.	Pack Qty.	€
① SterilDisk data logger	**ENE3.1**	1	510,65
Accessories:			
② Disk interface with USB cable and software for SterilDisk data logger	**ENE4.1**	1	310,70
Replacement battery with seal	**ENE5.1**	1	52,70

▶ Analogue thermometer for autoclaves
see page 809

Temperature monitoring system for smartphones

By Dostmann. For simple monitoring of temperature/humidity at any time and from any place. Call up the data via Internet-capable smartphones.

- For operation in a cable-based network (LAN) with Internet connection
- Data storage on a cloud
- Data access via free App (iOS 7.0 or Android™ 3.2 and higher)
- Smartphone with camera required to scan the QR code at the transmitters
- Individual assignment of transmitter names possible
- Extendible up to 50 transmitter per gateway
- Reception range for transmitters max. 100 m (free field)
- Freely settable alarm limit with notification in the case of an alarm
- Dimensions gateway: L 104 x W 40 x D 28 mm

Technical specifications:

Model	① °C transmitter	② °C/RH Profi transmitter
Internal °C sensor: Measuring range/resolution (°C) Accuracy (°C)	- -	-40.0 to +60.0 °C ±1
External °C sensor: Measuring range/resolution (°C) Accuracy (°C)	±30.0 to +60.0 ±1	-50.0 to +110.0 ±0.5
Internal RH sensor Measuring range/resolution (% RH) Accuracy (% RH)	- -	0.0 to 99.0 ±3 (30 to 80)
Cable length (cm)	100	150
Transmission interval to cloud	7.0 min Alerting in real-time	3.5 min Alerting in real-time
Data memory	90 days	18 months
Data archiving	-	Yes (1x weekly per email)
Display	-	yes
Power supply	2 x 1.5 V AAA	2 x 1.5 V AAA
Dimensions without holder L x W x D (mm) with holder L x W x D (mm)	 87 x 33 x 22 92 x 39 x 33	 129 x 41 x 35 135 x 83 x 61

Delivery incl. gateway unit with power pack, °C transmitter with external temperature sensor and network cable (RJ45). Please order batteries for the °C transmitter separately.

Type	Art. No.	Pack Qty.	€
Starter kit	**ENN0.1**	1	84,95

Accessories:

① °C transmitter with external temperature sensor, without batteries	**ENN1.1**	1	21,45
② °C/RH Profi transmitter with internal temperature/humidity measurement and external temperature sensor, without batteries	**ENN2.1**	1	74,75
Battery Micro/AAA 1,5 V	**1021.2**	4	6,40

Wireless data logger Saveris 2

By Testo. Modern solution for temperature measurement and monitoring in storage, cooling and work rooms.

- Data transfer via WiFi
- Online data storage directly to cloud
- Temperature data can be retrieved and evaluated via Internet-compatible smartphones, tablets or PCs
- Logger configuration via the testo basic cloud (free access), no software installation required
- An e-mail alert is generated if limits are exceeded
- With display for reading current measurement data, limit violations and residual battery life

Model **Saveris 2-T1** with integrated NTC temperature sensor.
Model **Saveris 2-T3** with 2 connections for external TE temperature sensor (please order sensor separately).

Technical specifications:

Model	① Saveris 2-T1	② Saveris 2-T3	
Temperature sensor	internal	external	
		ECK2.1	**ECK3.1**
Measuring range/resolution (°C) Accuracy (°C)	-30.0 to +50.0 ±0.5	-40.0 to +220.0 ±1.5	-200.0 to +40.0 ±2.5
Measuring cycle (min)	15		
Measurement data memory	up to 3 months (ring buffer)		
Reports	manual (.pdf/.csv)		
Protection class	IP65	IP54	
Dimensions H x W x D (mm)	95 x 75 x 30.5		
Weight (g)	240		

Delivery incl. basic cloud access, micro USB cable, wall mount with lock, 4 Mignon 1.5 V batteries, calibration report.

Type	Art. No.	Pack Qty.	€
① Saveris 2-T1	**ECK0.1**	1	129,00
② Saveris 2-T3	**ECK1.1**	1	215,00

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Type K temperature sensor for Saveris 2-T3

With ribbon cable. Cable length 2 m.

Insertion sensor (terminal 1)
For temperature measurement in climate control cabinets, incubators and refrigerators. Measuring range: -40 to +220 °C. Accuracy ±1.5 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
60	5	**ECK2.1**	1	59,35

Low temperature sensor (terminal 3)
For temperature measurement in liquid nitrogen, blast freezers and freezers. Measuring range: -200 to +40 °C. Accuracy ±2.5 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
90	5	**ECK3.1**	1	120,40

Non-contact temperature quick testers

By Testo.

① **Quicktemp 826-T2**

- For non-contact measuring without destroying the packaging
- For monitoring upper **or** lower limits with visual alarm
- **Laser spot marker** for marking the measuring point
- **Acoustic alarm** for upper/lower deviation

② **Quicktemp 826-T4 with nuclear temperature measurement**

- For non-contact measuring without destroying the packaging
- A thin, robust test prod also enables measurement of nuclear temperatures
- For monitoring upper **or** lower limits with visual alarm
- **Supplied with deep-frozen food borer**
- **Laser spot marker** for marking the measuring point
- **Acoustic alarm** for upper/lower deviation

Technical specifications: general (for both models)

Measuring range infrared	-50 to +300 °C
Resolution infrared	0.1 °C
Accuracy infrared	±1.5 °C (-20 to +100 °C) ±2 °C (outside)
Ratio measuring distance : spot	6 : 1
Emissivity	E = 0.95 (adjustable at 1.00)

Technical specifications:
Contact side with penetration probe for type 826-T4

Measuring range	-50 to +230 °C
Resolution	0.1 °C
Accuracy	±0.5 °C (-20 °C to +99 °C) ±1 °C or ±1 % of m.v. (residual range), the higher value being valid

Delivery incl. 2 batteries Micro 1.5 V, belt/wall attachment, watertight protective case Top Safe (IP 67).

Type	Art. No.	Pack Qty.	€
826-T2	**P855.1**	1	95,70
826-T4	**P857.1**	1	149,45

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4	6,40

testo 104-IR multipurpose infrared and penetration thermometer

By Testo. Penetration thermometer combined with an infrared sensor for core and surface temperature measurements.

- Foldaway immersion/penetration probe
- 2-point laser mark for indicating the actual measurement spot
- Large LCD display for easy reading of measurement results

Technical specifications:

Immersion/penetration probe (NTC sensor type)	
Measuring range/resolution	-50.0 to +250.0 °C
Accuracy	±1 °C (-50.0 to -30.1 °C) ±0.5 °C (-30.0 to +99.9 °C) ±1 % of m.v. (outside)
Infrared sensor	
Measuring range/resolution	-30.0 to +250.0 °C
Accuracy	±2.5 °C (-30.0 to -20.1 °C) ±2.0 °C (-20.0 to -0.1 °C) ±1.0 °C or 1.5% of m.v. (outside)
Ratio measuring distance : measuring spot	10 : 1
Emmisivity/increments	0.10 to 1.00
General	
Protection rating	IP65
Dimensions (W x D x H)	48 x 21 x 281 mm (probe folded out) 48 x 21 x 178 mm (probe folded back)
Weight	197 g

Delivery incl. 2 micro 1.5 V batteries and calibration report.

Art. No.	Pack Qty.	€
XK00.1	1	117,20

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Infrared thermometers

①

②

① Mini-Flash infrared thermometer

By Dostmann. For non-contact measuring. Automatic hold-function for approx. 15 s. Lock-function for continuous use.

Technical specifications:

Measuring range/resolution	-33.0 to +220.0 °C
Accuracy infrared	±1.5 °C (0 to +50 °C) ±2.0 °C or 2 % (outside)
Ratio measuring distance : spot	1.3 : 1
Emissivity	E = 0.95 permanently set
Reaction infrared	approx. 500 ms
Working temperature	0 to +50 °C
Dimensions (L x W x D)	68 x 37 x 18 mm
Weight	25 g

Delivery incl. cellbattery CR 2032, 3 V.

Art. No.	Pack Qty.	€
Y400.1	1	35,45

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

② Scantemp 385 infrared thermometer

By Dostmann. For non-contact surface temperature measurement. **With spot laser for marking the measurement zone**. Backlight display. Lock function for continuous use.

Technical specifications:

Measuring range	-35.0 to +365 °C
Resolution	0.1 °C (-35 to 199.9) 1.0 °C (residual measuring range)
Accuracy	±2 °C to ±2 % (largest value applies)
Ratio measurement distance : measurement spot	12 : 1
Emissivity	E=0.95 to E=0.70 (switchable)
Dimensions (L x W x D)	167 x 64 x 34 mm
Weight	150 g

Delivery incl. 2 Micro 1.5 V batteries.

Art. No.	Pack Qty.	€
LY46.1	1	53,65

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

① ②

Infrared thermometers with thermocouple input Scantemp-series

By Dostmann.

① **Scantemp Pro 450**
- Measuring range Infrared max. +500 °C
- With circular-laser for marking measuring point
- **Input for thermocouple sensor NiCr-Ni (Type K)**
- Min/Max/Hold-function
- Differential and mean value storage
- Optical and acoustic alarm when limit value has been exceeded
- LCD-indicator for simultaneous display of reading and min/max- or limit values
- Adjustable emission ratio from 0.10 to 1.00
- With backgroung lighting

Delivery incl. 2 batteries Micro 1.5 V.
Comes without thermocouple sensor, please order separately if needed.

② **Scantemp 490**
Like model Scantemp 450, **however comes with double target-laser which indicates the real measuring field** for each measured distance. Measuring range infrared max. +1000 °C.

Technical specifications:

	Infrared	Thermocouple input
Measuring range	Scantemp Pro 450: -60.0 to +500 °C Scantemp 490: -60.0 to +1000 °C	-64.0 to +1370 °C
Resolution	0.1 °C (-33.0/-60.0 to +199.9) 1 °C (outside)	
Accuracy	±2.0 °C or 2 % of higher value applies	±1.0 °C or 1 % of higher value applies
Ratio Measured distance : Measured spot	Scantemp Pro 450: 11 : 1 Scantemp 490: 50 : 1	
Dimensions (W x D x H)	Scantemp Pro 450: 39 x 79 x 175.2 mm Scantemp 490: 45 x 145 x 215 mm	
Weight	Scantemp Pro 450: 180 g Scantemp 490: 380 g	

Image	Type	Art. No.	Pack Qty.	€
①	Scantemp Pro 450	**EHP6.1**	1	107,00
②	Scantemp 490	**KA38.1**	1	227,90

Accessories for Scantemp-series

Immersion probe (Type K)
Can be used up to max. 1100 °C. Dimensions of probe: L 300 x ∅ 3 mm.

Art. No.	Pack Qty.	€
X196.1	1	70,95

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

NEW

Infrared thermometer testo 835-T1 with thermoelement input

By Testo. Non-contact measurement from a safe distance.

- Reliable IR measurement up to 600 °C with display of min/max values
- Four-point laser indicates the exact measuring range, and thus prevents incorrect measurements
- 50:1 lens allows precise measurements at a great distance (5 m distance = 10 cm measured surface)
- Adjustable emission level table (0.10 to 1.00) allows the measurement of a variety of surfaces
- Integrated emission level (stores 20 values) allows the fast selection of the correct emission level table for the relevant surface
- With freely adjustable alarm management upper and lower levels; acoustic and visual signals indicate if a limit value is exceeded
- Stores up to 200 measurement values, evaluation using software supplied
- Illuminated display for measurements in dark environments
- Input for thermoelement probe present, TE type K-probe (miniature type K connector) please order separately

Technical specifications:

Measuring range	-35.0 to +600.0 °C
Resolution	0.1
Accuracy IR	±2.5 °C (-30.0 to -20.1 °C) and ±1 digit ±1.5 °C (-20.0 to -0.1 °C) and ±1 digit ±1.0 °C (0 to +99.9 °C) and ±1 digit ±1 % of m.v. (outside) and ±1 digit
Accuracy TE type K	±(0.5 °C + 0.5 % of m.v.) and ±1 digit
Measuring distance : measuring spot ratio	50:1
Power supply	3 x Mignon/AA 1.5 V
Dimensions (W x D x H)	63 x 166 x 193 mm
Weight	514 g

Delivery incl. PC software, calibration protocol and batteries.

Art. No.	Pack Qty.	€
HTX0.1	1	213,95

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Accessories for infrared thermometer testo 835-T1

By Testo. **Cable length 1.2 m with miniature type K connector**.

Immersion probe (Cl. 1)
Flexible. Precise and fast. Waterproof.
Measuring range -60 to +1000 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
300	1,5	**EH77.1**	1	93,55

Immersion/penetration probe (Cl. 2)
Waterproof. With bevelled tip. Measuring range: -60 to +400 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
114	5	**EH78.1**	1	40,85

Food probe (Cl. 2)
Made of stainless steel. Sharp, robust. Waterproof (IP 65).
Measuring range -60 to +400 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
125	4	**EH79.1**	1	74,20

Surface probe (Cl. 2)
For flat surfaces. Waterproof. With widened measuring tip (∅ 6 mm). Measuring range: -60 to +400 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
115	5	**EH80.1**	1	58,05

Surface probe (Cl. 2)
For on-flat surfaces. Waterproof and fast-reacting.
With spring thermoelement ribbon (measuring tip: ∅ 12 mm).
Measuring range: -60 to +300 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
115	5	**EH81.1**	1	119,35

Insertion measuring tip (Cl. 1)
Flexible. Measuring range -200 to +1000 °C.
Without handle and connecting cable (please order separately).

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
500	1.5	**EH82.1**	1	26,90

Accessories:

Handle with connecting cable, cable length 1.2 m, suitable for all K-type probes	**EH83.1**	1	70,95

Precision hygrometer

Hygrometer and thermometer. For measuring humidity, dewpoint, steam pressure. Measuring range thermometer: -30 to +50 °C.
Height 250 mm, ∅ 100 mm, weight 192 g.

Art. No.	Pack Qty.	€
1908.1	1	62,05

Thermohygrometer

By TFA-Dostmann. Max/min value monitoring. Wall or table mount.

Technical specifications:

Measuring range/ resolution	20 to 99 % RH	-20.0 to +50.0 °C
Accuracy	±4 % RH (35 to 75 % RH), ±5 % RH (outside)	±1.0 °C (0 to +40 °C) ±1.5 °C (outside)
Dimensions (L x W x D)	104 x 104 x 13 mm	
Weight	50 g	

Delivery incl. cell battery V 2032 GA, 3 V.

Art. No.	Pack Qty.	€
NA63.1	1	20,35

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

Thermohygrometer with alarm-LED

By Dostmann. Robust meter for measuring room temperature in laboratories, production and storage areas etc.

- Quick responding capacitive humidity sensor
- Dew point calculation (td)
- Max-/Min-function
- **LED-alarm indicates when humidity limit value has been exceeded**
- Battery life app. 1000 h at permanent run

Technical specifications:

Measuring range/resolution	0.0 to 99.0 % RH	-40.0 to +70.0 °C
Accuracy	±3.5 % RH (20 at 80 % RH) ±4 % RH (outside)	±0.5 °C
Dimensions (L x W x H)	105 x 105 x 44 mm	
Weight	125 g	

Delivery incl. 2 Micro 1.5 V batteries.

Art. No.	Pack Qty.	€
CK97.1	1	47,55

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Thermohygrometer

By TFA-Dostmann. Max/min value monitoring.
Ideal for desktops or hanging.

Technical specifications:

Measuring range/ esolution	+10 to +99 % RH	-10.0 to +60.0 °C
Accuracy	±5 % RH	±1 °C
Dimensions (L x W x D)	110 x 95 x 20 mm	
Weight	171 g	

Delivery incl. battery Micro 1.5 V.

Art. No.	Pack Qty.	€
Y401.1	1	25,30

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Indoor-/outdoor thermohygrometer

By TFA-Dostmann. **With °C- and RH-outdoor sensor** (cable length approx. 1.5 m). Simultaneous display of °C- and RH-values for inside and outside. Max-/Min-function. Ideal for desktop or wall assembly.

Technical specifications:

Measuring range/resolution	10 to 99 % RH	-10.0 to +60.0 °C
Accuracy	±5 % RH	±0.5 °C
Dimensions (L x W x D)	110 x 101 x 20 mm	
Weight	185 g	

Delivery incl. Micro 1.5 V battery.

Art. No.	Pack Qty.	€
HH28.1	1	37,60

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Thermohygrometers

Thermohygrometer with jumbo-display

By Amarell. Large display (W 79 x H 66 mm) for air humidity, temperature and clock (24-h-display with alarm clock). Memory for min/max-values. Daily memory reset and freezing point alarm (alarm at outdoor temperature ≤0 °C) can be activated. Removable temperature outdoor sensor with 3 m cable. Suitable for desk top or wall attachment.

Technical specifications:

Measuring range/resolution	20 to 99 % RH	Indoor 0.0 to +50.0 °C Outdoor -50.0 to +70.0 °C
Accuracy	±3 % RH	±1.0 °C
Dimensions (L x W x D)	110 x 98 x 21 mm	

Delivery incl. battery Micro 1.5 V.

Art. No.	Pack Qty.	€
AY02.1	1	42,70

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Thermohygrometer testo 623 with history function for measured values

By Testo.

- The large display shows the current and past temperature and humidity values as well as the date and time
- Selection option for temperature or humidity histogram
- Bar graph display of measured values over the last hour (for 5 min measuring cycle), 2 hours (for 10 min measuring cycle), 12 hours (for 1 h measuring cycle), 24 hours (for 2 h measuring cycle) or 12 days (for 24 h measuring cycle)
- Optical alarm (limit freely selectable)
- Min/max function
- Use as desktop or wall-mount unit

Technical specifications:

Measuring range/resolution	0.0 to 100.0 % RH	-10.0 to +60.0 °C
Accuracy	±2 % RH at +25 °C (10 to 90 % RH) ±3 % RH (outside)	±0.4 °C
Operating temperature	-10 to +60 °C	
Dimensions (L x W x D)	185 x 105 x 36 mm	
Weight	240 g	

Delivery incl. calibration protocol and 4 Mignon 1.5 V batteries.

Art. No.	Pack Qty.	€
LY99.1	1	162,35

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Thermohygrometer testo 608-H1/H2

By Testo. Ideal for monitoring room temperature and dew point in storage and clean rooms, laboratories, etc.

- Simultaneous display of **humidity and temperature**
- Dew point calculation td
- Max/min value monitoring
- Humidity sensor is insensitive to dew
- Ideal for desktops or hanging
- **Testo 608-H2 includes LED alarm which indicates when limit has been exceeded**

Technical specifications:

Model	testo 608-H1	testo 608-H2
Measuring range/resolution	+10.0 to +95.0 % RH 0.0 to +50.0 °C -20.0 to +50.0 °C td	+2.0 to +98.0 % RH -10.0 to +70.0 °C -40.0 to +70.0 °C td
Accuracy	±3 % RH ±0.5 °C	±2 % RH ±0.5 °C
Working temperature	0 to +50 °C	-10 to +70 °C
Dimensions (W x H x D)	120 x 89 x 40 mm	

Hygrometer testo 608-H1
Delivery incl. 9 V block battery.

Art. No.	Pack Qty.	€
X226.1	1	74,20

Alarm hygrometer testo 608-H2
Delivery incl. calibrating protocol and battery.

Art. No.	Pack Qty.	€
X227.1	1	107,50

Accessories:

E-Block 9 V battery	**1025.1**	1 piece	4,85

Pocket thermohygrometer testo 610

By Testo.
- With display light
- AUTO-OFF function saves batteries, can be switched off
- Min/Max function, hold function
- Dewpoint calculation (td)

Technical specifications:

Measuring range/resolution	0.0 to 100.0 % RH	-10.0 to +50.0 °C
Accuracy	±2.5 % RH (5.0 up to 95.0 % RH)	±0.5 °C
Dimensions (L x W x H)	119 x 46 x 25 mm	
Weight	250 g	

Delivery incl. wrist strap, belt pouch, protective cap, calibration protocol and 2 batteries Micro 1.5 V.

Art. No.	Pack Qty.	€
HY44.1	1	129,00

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Humidity sticks testo 605-H1

By Testo. Precise humidity sensor with long durability. With calculation of dew point. Sensor is insensitive to dew. AUTO-OFF-function (10 mins). With pivotable display.

Technical specifications:

Measuring range/resolution	5.0 to 95.0 % RH	0.0 to +50.0 °C
Accuracy	±3 % RH	±0.5 °C
Dimensions (L x W x D)	180 x 37 x 36 mm	

Delivery incl. mounting clip and 3 batteries Micro 1.5 V.

Type	Art. No.	Pack Qty.	€
Humidity stick	**P302.1**	1	95,70
Humidity stick with ISO Certificate of Calibration, 75.3 % RH	**P303.1**	1	192,45

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Thermohygrometer Dewpoint Pro

By Dostmann. Robust meter for measuring room climate in laboratories, buildings, etc.
- Fast-response capacitive humidity sensor (measuring cycle 1 s)
- Dew point calculation (td)
- Max/Min- and hold-function
- IP54-splashproof
- Battery life app. 1000 h at permanent run

Technical specifications:

Measuring range/resolution	0.0 to 99.0 % RH	-40.0 to +70.0 °C
Accuracy	±3 % RH (10 to 90 % RH) ±4 % RH (outside)	±0.5 °C
Dimensions (L x W x H)	170 x 50 x 17 mm	
Weight	100 g	

Delivery incl. 2 batteries, Micro 1.5 V.

Art. No.	Pack Qty.	€
CK09.1	1	70,85

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Hygro-thermometer

Precise, compact thermometer with simultaneous display of humidity and temperature. Two humidity reference cells 33 and 75 % RH enable monitoring and calibration. Also features min/max. display. Automatic switch-off.

Technical specifications:

Measuring range/resolution	0.0 to 99.8 % RH	-16.0 to +50.0 °C
Accuracy	±3 % RH	±1 °C
Dimensions (L x W x H)	175 x 42 x 16 mm	

Delivery incl. sturdy case, two reference cells and batteries.

Art. No.	Pack Qty.	€
L895.1	1	251,55

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

Precision hygrometer P770

By Dostmann. **For analysing relative and absolute humidity, temperature, dew-point and flow.** Integrated calibration function for easy compensation of sensor tolerances. **With two sensor connections.** Storage of max-, min-, hold- and average values. USB-Online-PC-interface. Can be battery or wall socket operated.
Dimensions: L 200 x W 93 x D 44 mm.

Technical specifications:

Measuring range/resolution	
Humidity Pt 100 Flow	0.0 to 100.0 % RH -200.0 to +850.0 °C 0.00 to 40.00 m/s
Accuracy	
Humidity Pt 100 Flow	±1.5 % RH ±0.1 °C (-100 to +200 °C) / ±0.1 % of m.v. (rest) 1 % of final value

Delivery incl. battery 9 V block. Comes without probe and power pack (please order separately).

Art. No.	Pack Qty.	€
X732.1	1	354,75

Accessories:

E-Block 9 V battery	**1025.1**	1 piece	4,85
Power supply for P700-series	**H198.1**	1 piece	32,20

Accessories for precision hygrometer P770

With cable, length 1 m.

Multi-purpose probe
For measuring humidity and temperature.
Measuring ranges: 0 to 100 % RH; -30 to +80 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
120	20	**X825.1**	1	174,15

Flow sensor
For air and gases. Measuring range: 0.3 to 20 m/s.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
175	22	**X731.1**	1	779,40

Temperature sensor Pt 100
For measuring in liquid, gaseous and powdery media.
Measuring range -50 to +350 °C.

Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
150	3	**X722.1**	1	80,65
300	3	**X723.1**	1	86,00

Thermohygrometer P330

By Dostmann.
Robust hand-held meter for determining temperature and humidity.
- Capacitance humidity sensor
- Max/Min- and hold function
- Integral sensor holder
- Display background lighting

Technical specifications:

Measuring range/resolution	0 to 99 % RH	-40.0 to +70.0 °C
Accuracy	±3 % RH	±0.5 °C
Max. operating temp.	-40 to +70 °C	
Dimensions (L x W x H)	130 x 70 x 25 mm	
Weight	130 g	

Delivery incl. 2 batteries Mignon/AA 1.5 V.

Art. No.	Pack Qty.	€
AH55.1	1	110,75

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Thermohygrometer testo 625

By Testo. With integral capacitive humidity sensor head for measuring air humidity and temperature. Two row display for indicating relative humidity or dewpoint as well as temperature. The humidity sensor head can be removed when measuring inacessible places and attached to the handle with sensor lead (please order separately). **Further cordless measurement transfer to the meter is possible via radio handle and radio module (please order separately)**.

- Min/Max-values
- Hold-button for retaining measured value
- Display light
- Auto-Off function

Technical specifications:

Measuring ranges/resolution	0.0 to 100.0 % RH	-10.0 to +60.0 °C
Accuracy	±2.5 % RH (+5 to +95 % RH)	±0.5 °C
Working temperature	-20 to +50 °C	
Dimensions (W x D x H)	64 x 40 x 182 mm	
Weight	195 g	

Delivery incl. attachable humidity sensor head, E-Block-battery 9 V and calibrating protocol.

Art. No.	Pack Qty.	€
EH97.1	1	213,95

Accessories for Thermohygrometer testo 625

Handle for attachable humidity sensor head.
Delivery incl. sensor lead (cord length approx. 1.2 m).

Type	Art. No.	Pack Qty.	€
Handle for humidity sensor head	**EH98.1**	1	44,10
Accessories:			
Protective cover TopSafe	**EH74.1**	1	31,20
E-Block 9 V battery	**1025.1**	1	4,85

Radio module and radio handle for testo 625

Radio module for cordless transfer of measured data
Frequency 869.85 MHz FSK.
Please order radio handle separately.

Type	Art. No.	Pack Qty.	€
Radio module	**EH84.1**	1	40,85

Radio handle, technical specifications:

Measuring cycle	0.5 or 10 sec, adjustable on handle
Range	max. 20 m (open air test site)
Battery type	2 x Micro/AAA 1.5 V batteries

Type	Art. No.	Pack Qty.	€
Radio handle incl. batteries	**EH85.1**	1	96,75
Accessories:			
Battery Micro/AAA 1,5 V	**1021.2**	4	6,40

General information on calibration and calibrating meters

Meters with DAkkS Certificates of Calibration:
A DAkkS Certificate of Calibration is issued by a accredited testing agency (must be approved and is monitored by Deutsche Akkreditierungsstelle [German Accreditation Agency]). Meter meets national standard requirements and can be used in accordance with ISO 9000 Quality Assurance Standards.
Very low preset tolerance (lower than required for works certificate).

The user of DAkkS certified meters can therefore issue internal works certificates. This is particulary of advantage in the Quality Assurance Department of larger firms where measuring instruments used in the Production Department must be tested and calibrated at specific intervals.
Individual test points should be customized depending upon temperature ranges under measurement.

Meters with a Works Certificate of Calibration:
A works certificate of calibration is issued after carrying out a comparison measurement with a DAkkS calibrated meter.
Unit meets national standard requirements and can be used in accordance with **ISO 9000** Quality Assurance Standards.
Tolerance of measurement with works certificates is slightly higher than of a DAkkS certified unit. Individual test points should be customized depending upon temperature ranges under measurement.

Thermohygrometers

Precision thermohygrometer HygroPalm 22

By Rotronic. For determining relative humidity and temperature
- Also for measuring equilibrium moisture content and temperature in powders and granulates (only with penetration probe Pro)
- 1-point probe-adjustment via buttons
- With display light
- Battery control
- Casing material: ABS

Technical specifications:

Measuring range/resolution	0.0 to 100.0 % RH	-10.0 to +200.0 °C
Accuracy	±1.5 % RH	±0.3 K
Dimensions (L x W x D)	196 x 72 x 35 mm	
Weight	200 g	

Delivery incl. 9 V block battery. Without measuring probe, calibrating device and humidity standard, please order separately.

Art. No.	Pack Qty.	€
KX08.1	1	316,05

Accessories for thermohygrometer HygroPalm 22

Temperature sensor HC2A-S
Application areas: Indoor temperature control, temperature control during storage etc. With polyethylene filter as sensor protection. Measuring ranges: 0 to 100.0 % RH, -50.0 to +100.0 °C.

Type	Art. No.	Pack Qty.	€
Length 108 mm, ∅ 15 mm	**KX05.1**	1	282,75

Penetration probe, Basic
For measurement in dustfree bulk and building materials such as concrete, brick etc. Also suitable for corn, wheat and granulates. Not suitable for powdery substances. Measuring ranges: 0 to 100.0 % RH, -40.0 to +85.0 °C. With handle and cable (Length 2 m).

Type	Art. No.	Pack Qty.	€
Length 200 mm, ∅ 5 mm	**KX06.1**	1	703,05

Penetration probe Pro
Robust probe for measuring in dusty bulk materials such as flour, sugar and building materials like concrete, brick etc. With steel sinter filter. Measuring ranges: 0 to 100.0 % RH, -40.0 to +85.0 °C. With handle and cable (Length 2 m).

Type	Art. No.	Pack Qty.	€
Length 280 mm, ∅ 10 mm	**KX07.1**	1	780,45

Calibrating device

Type	Art. No.	Pack Qty.	€
for temperature probe HC2-S	**CE88.1**	1	165,55
for penetration probe Basic	**CE89.1**	1	165,55
for penetration probe Pro	**CE90.1**	1	165,55

Humidity standards each with 5 ampoules per humidity value

Type	Art. No.	Pack Qty.	€
10.0 % RH (±0.3 % RH)	**CE92.1**	1	60,85
35.0 % RH (±0.5 % RH)	**CE93.1**	1	60,85
80.0 % RH (±1.2 % RH)	**CE94.1**	1	60,85

Accessories:

E-Block 9 V battery	**1025.1**	1	4,85

Mini material humidity meter, HumidCheck

By Dostmann. With measurement scale for building material and wood. Automatic switch-off. Easy to operate: Remove protective cap and stick measuring electrodes into object to be measured.
With temperature display.

Technical specifications:

Measuring range/resolution	Wood Building material	6 to 42 % 0.2 to 2.0 %
Accuracy	Wood Building material	±2 % (<30 %) ±4 % (>30 %) ±0.1 % (<1.4 %) ±0.2 % (>1.4 %)
Dimensions (W x D x H)	40 x 20 x 80 mm	
Weight	50 g	

Delivery incl. wrist strap and 4 x1.5 V button cell batteries.

Art. No.	Pack Qty.	€
KT96.1	1	26,90

Accessories:

Cell battery V 13 GA (1.5 V)	**1938.1**	1 piece	4,85

Material hygrometer

By Dostmann. For measuring moisture in wood and buildings, e.g. for derived timber products, veneer, plaster, stone floors, paperboard etc. With graphic measuring scale for both parameters. Easy to operate: Remove the protective cap and stick the electrode into the object to be measured.

Technical specifications:

Measuring range	Wood: 6 to 44 % building material: 0.2 to 2.0 %
Accuracy:	Wood: ±1 % building material: ±0.05 %
Dimensions (W x D x H)	40 x 32 x 130 mm
Weight	100 g

Delivery incl. 3 button cell batteries CR 2032, 3 V.

Art. No.	Pack Qty.	€
EX62.1	1	64,45

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

Weather station

For inside measurements only. With thermometer, hygrometer and barometer. Round, with plastic case, ∅ 160 mm. Weight approx. 180 g. Accuracy: hygrometer ±5 %, temperature ±1 °C, barometer ±5-10 %.

Art. No.	Pack Qty.	€
A889.1	1	32,20

Weather station

For inside and outside. With thermometer, hygrometer and barometer. Stainless steel case, ∅ 160 mm. Weight approx. 440 g. Accuracy: barometer ±5-10 %, thermometer ±1 °C, hygrometer ±5 % RH.

Art. No.	Pack Qty.	€
Y246.1	1	66,65

Climate centre

For inside and outside. With hygrometer, barometer and thermometer. Stainless steel case. Dimensions: W 95 x H 280 x D 18 mm, display instruments ∅ 70 mm, weight 380 g.

Art. No.	Pack Qty.	€
X257.1	1	48,35

Satellite-supported meteorological radio station Galileo Plus

By TFA-Dostmann. Regional weather forecasting for 50 different areas in Germany. The meteorological radio stations identify the correct weather region automatically. Data is transmitted several times a day via satellite over a special radio network in 466 MHz frequency range.

- Weather forecast for today and the next 3 days
- Forecast with symbols (36 different weather symbols) for the 4 times of the day (morning, afternoon, evening, night)
- Indication of the highest and lowest temperatures expected for each day
- Transmission of local outside temperature (measuring range -40.0 to +60.0 °C) and air humidity (measuring range 1 to 99 % RH) via wireless outer sender (868 MHz) with max. range 100 m (free field)
- Outside sensor indicates either the current temperature or air humidity. Dimensions of sensor: L 40 x W 130 x D 25 mm
- Clock with alarm and date
- Dimensions of receiver: L 121 x W 131 x D 40 mm

Delivery incl. Receiver with 2 batteries Baby/C 1.5 V, sensor with 2 batteries Mignon 1.5 V.

Art. No.	Pack Qty.	€
HT61.1	1	73,10

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05
Baby/C 1.5 V battery	**1023.2**	2 pieces	4,85

Digital wireless rain gauge Monsun

By TFA-Dostmann. For wireless transmission of precipitation amount (up to 9999 mm) and ambient temperature (max. 30 m range in open air).

- Display of precipitation during the previous hour, 24 hours and total precipitation (since last reset), including time and date of storage
- Display of precipitation amount in a bar chart, the previous 7 days, 7 weeks or 7 months can be successively displayed
- Audible and visual alarms at onset of rainfall
- Max/Min function for interior and exterior temperature
- Programmable temperature alarm for interior and exterior
- Trend arrow for ambient temperature
- Self-draining rainwater tank
- Wall or table mountable receiver.

Technical specifications:

Measuring range	Precipitation amount	0 to 9999 mm
	Exterior temperature	-50 to +70 °C
	Interior temperature	-10 to +50 °C
Dimensions	Receiver unit	W 94 x D 25 x H 122 mm
	Transmitter unit	∅ 132 x H 160 mm
Power supply	Receiver unit	3 1.5 V batteries
	Transmitter unit	2 1.5 V batteries

Delivery incl. rainwater tank (transmitter unit) and batteries.

Art. No.	Pack Qty.	€
XA41.1	1	42,90

Accessories:

Spare exterior transmitter	**XH13.1**	1 piece	19,30
Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

① Pocket absolute pressure gauge, testo 511

By Testo.

- Display-light
- AUTO-OFF function saves batteries, can be switched off
- With barometric levelling
- Min/Max-function
- Tube connections for ID 4 and 6 mm

Technical specifications:

Measuring range/resolution	300.0 to 1200.0 hPa
Accuracy	±3.0 hPa
Units	hPa, mbar, Pa, mmH_2O, mmHg, inH_2O, inHg, psi, m, ft
Max. operating temperature	0 to +50 °C
Dimensions (L x W x D)	119 x 46 x 25 mm
Weight	255 g

Delivery incl. wrist strap, belt bag, protection cap, calibration protocol and 2 batteries Micro 1.5 V.

Art. No.	Pack Qty.	€
HY43.1	1	160,20

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

② Pocket differential pressure gauge testo 510

By Testo. For measuring low differential pressures (e.g. checking filter permeability), gasflow pressure measurement etc.

- With display light
- AUTO-OFF function saves batteries, can be switched off
- With temperature compensation
- Min/Max function, hold function
- With magnets on back for free-hand operation
- Tube connections for ID 4 and 6 mm

Technical specifications:

Measuring range/resolution	0.00 to 100.00 hPa
Accuracy	±0.03 hPa (0 to 0.30 hPa) ±0.05 hPa (0.31 to 1.00 hPa) ±(0.1 hPa + 1.5 % of m.v.) (1.01 to 100 hPa)
Units	hPa, mbar, Pa, mmH_2O, mmHg, inH_2O, inHg, psi
Max. operating temperature	0 to +50 °C
Dimensions (L x W x D)	119 x 46 x 25 mm
Weight	255 g

Delivery incl. silicone rubber connecting hoses (2 x 20 cm), wrist strap, belt pouch, protective cap, calibration protocol and 2 batteries Micro 1.5 V.

Art. No.	Pack Qty.	€
HY42.1	1	138,70

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Carbon dioxide meter Air CO_2ntrol 3000

By Dostmann. For monitoring the CO_2-concentration in buildings e.g. schools, universities and all public facilities.

- Case made of ABS plastic
- **Integrated 24-h data loggers** with READ function (measured values can be retrieved via display) and preset 30-min storage cycle
- Acoustic alarm goes off when a freely set CO_2-value is exceeded
- Battery or outlet operation (Battery life approx. 48 operating hours)

Technical specifications:

	Carbon dioxide	Temperature
Measuring range	0 to 3000 ppm	0 to +50.0 °C
Resolution	1 ppm (0 to 1000 ppm) 5 ppm (1001 to 2000 ppm) 10 ppm (2001 to 3000 ppm)	0.1 °C
Accuracy:	±50 ppm or 5 % (larger value is valid)	±1 °C or ±1 % (larger value is valid)
Dimensions (L x W x D)	165 x 80 x 23 mm	
Weight	600 g	
Current	230 V, 50/60 Hz	

Delivery incl. Power unit and 4 batteries Mignon 1.5 V.

Art. No.	Pack Qty.	€
KL61.1	1	223,60

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Carbon dioxide measuring device CP11

By Rotronic. Monitors CO_2 concentration, relative humidity and temperature.

- Integrated measured value memory and real-time clock
- Audible CO_2 alarm
- Maximum, minimum and average value display
- Calculates the dewpoint (TP) and wet bulb temperature (FKT)
- Large backlit display
- Adjustable auto power off function
- Logger programming, data transfer and representation with Windows compatible software
- Mini USB interface

Technical specifications:

Measuring range/resolution	
CO2	0 to 5 000 ppm
Humidity	0.10 to 99.95 % rel. hum.
Temperature	-20 to +60 °C
Accuracy	
CO_2	±30 ppm, ±5 % of the measured value
Humidity	2.5 % rel. hum. (10 to 90 % rel. hum)
Temperature	±0.3 K
General notes	
Measurement data memory	18,000 values with time stamp, automatic recording (ppm, % rF, °C) 99 single values with time stamp, manual recording (ppm, % rF, °C, TP, FKT)
Battery lifetime	approx. 50 h
Dimensions incl. sensor (H x W x D)	234 x 77 x 42 mm
Weight	290 g

Delivery incl. SW2.1 software, mini USB data cable, storage bag and 4 1.5 V Mignon batteries.
Please order mains adapter separately.

Art. No.	Pack Qty.	€
NL25.1	1	333,25

Accessories:

5 VDC mains adapter	**NL26.1**	1 piece	47,65
Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Densimeters

Density hydrometers

Without thermometer. Graduations: 0.005 g/cm³. Reference temperature 20 °C. Overall length 300 mm. Body ∅ 16 mm, stem ∅ approx.7-10 mm.

Measuring range (g/cm³)	Art. No.	Pack Qty.	€
0.700 to 1,000	**PY81.1**	1	11,15
1,000 to 1.500	**PY82.1**	1	12,40
1.500 to 2,000	**PY83.1**	1	14,20

Hydrometer spindle with twin scales

Without thermometer. Graduations: 0.01 and 1 °Bé. Reference temperature 20 °C. Overall length 350 mm. Body ∅ 18 mm, stem ∅ 9 mm.

Measuring range	Art. No.	Pack Qty.	€
1.00 to 2.00 g/cm³ / 0 to 72 °Bé	**PY84.1**	1	19,70

Density hydrometers

Without thermometer. Graduation 0.001 g/cm³. Reference temperature 20 °C. Total length 300 mm. Body-∅ 16 mm, stem-∅ 6.25 mm.

Measuring range (g/cm³)	Art. No.	Pack Qty.	€
0.600 to 0.700	**HH87.1**	1	11,30
0.700 to 0.800	**HH88.1**	1	11,30
0.800 to 0.900	**HH89.1**	1	11,30
0.900 to 1.000	**HH90.1**	1	11,30
1.000 to 1.100	**HH91.1**	1	12,65
1.100 to 1.200	**HH92.1**	1	12,65
1.200 to 1.300	**HH93.1**	1	12,65
1.300 to 1.400	**HH94.1**	1	13,40
1.400 to 1.500	**HH95.1**	1	13,40
1.500 to 1.600	**HH96.1**	1	13,80
1.600 to 1.700	**HH97.1**	1	13,80
1.700 to 1.800	**HH98.1**	1	13,80
1.800 to 1.900	**HH99.1**	1	13,80
1.900 to 2.000	**HK03.1**	1	13,80

Alcoholometer (breathalyzer)

Without thermometer. Reference temperature 20 °C.

Precision alcoholometer

Measuring range (% Vol.)	Graduation (% Vol.)	Tolerance (% Vol.)	Length (mm)	Art. No.	Pack Qty.	€
10-20	0,1	±0,1	320	**HKX0.1**	1	37,30
30-40	0,1	±0,1	320	**HKX1.1**	1	37,30
40-50	0,1	±0,1	320	**HKX2.1**	1	45,70

Standard alcoholometer

Measuring range (% Vol.)	Graduation (% Vol.)	Tolerance (% Vol.)	Length (mm)	Art. No.	Pack Qty.	€
0-100	1	±1	250	**HKX3.1**	1	27,75

Standard alcoholometer (breathalyzer)

With thermometer. Special filling, blue. Reference temperature 20 °C.

Measuring range (% Vol.)	Graduation (% Vol.)	Measuring range (°C)	Graduation (°C)	Length (mm)	Art. No.	Pack Qty.	€
0-100	1	0 to 30	1	340	**AT55.1**	1	41,50

Density hydrometers acc. to Baumé

Without thermometer. Graduation 0.1 °Bé. Reference temperature 15 °C. Total length 280 mm. Body-∅ 16 mm, stem-∅ 5.25 mm.

Measuring range (°Bé)	Art. No.	Pack Qty.	€
0.0 to 10.0	**HH80.1**	1	11,15
10.0 to 20.0	**HH81.1**	1	11,15
20.0 to 30.0	**HH82.1**	1	11,15
30.0 to 40.0	**HH83.1**	1	12,85
40.0 to 50.0	**HH84.1**	1	12,85
50.0 to 60.0	**HH85.1**	1	13,40
60.0 to 70.0	**HH86.1**	1	13,40

Hydrometers for measuring the density

Made of polycarbonate. Shatterproof. Without thermometer.
Ideal for applications in the food and pharmaceutical industries.

For measuring the density

Measuring range (g/cm³)	Graduation (g/cm³)	Length (mm)	Reference temperature (°C)	Art. No.	Pack Qty.	€
1.000 to 1.220	0,002	300	20	**HKT3.1**	1	78,40
1.200 to 1.420	0,002	300	20	**HKT4.1**	1	78,40
1.400 to 1.620	0,002	300	20	**HKT5.1**	1	78,40

Measuring range (°Bé)	Graduation (°Bé)	Length (mm)	Reference temperature (°C)	Art. No.	Pack Qty.	€
0 to 25	0,2	300	15	**HKT7.1**	1	79,00
0 to 12	0,2	250	15	**HKT8.1**	1	79,00
19 to 31	0,2	250	15	**HKT9.1**	1	78,40

Measuring range (%mas.)	Graduation (%mas.)	Length (mm)	Reference temperature (°C)	Art. No.	Pack Qty.	€
0 to 26	0,2	300	20	**HKT6.1**	1	78,40

DURAN WHEATON KIMBLE
Material DURAN®
A 121 °C

Hydrometer cylinders

Made of DURAN®. Not graduated. With round base and polished rim.
Autoclavable.

Volume (ml)	Height (mm)	∅ (mm)	Art. No.	Pack Qty.	€
380	400	40	**KE08.1**	1	17,75
770	500	50	**KE09.1**	1	28,75

Standard colour selection fan RAL K5

With **213 colour cards**, with a dull finish. Contains colour register RAL 840-HR, coding colours RAL-F 14 and colours RAL-F 81. Ideal for exact determination of colour tone in paper and TLC chromatography, and to determine colours of chemicals, crystals and natural dyes for textile and food colouring.

Art. No.	Pack Qty.	€
0426.1	1	55,85

Rotilabo®-odour strips

For liquids. Made of filter carton 240 g/m². 5 blocks = 300 strips.
Dimensions: W 6 x L 135 mm in blocks of 60 strips.

Art. No.	Pack Qty.	€
1679.1	5	16,70

OZONE test sticks

Simple test for analysis of the OZONE-content in the air.
Test sticks should be placed in a wind-sheltered area and compared to a scale after 10 minutes.

Analysis	O_3
Scale graduation	<90 / 90-150 / 150-210 / >210 µg/m³
Colour change	from white to brown

Art. No.	Pack Qty.	€
L828.1	12	18,25

Test units

Quick test sticks Aquadur®

Ideal for semi-quantitative evaluation of **water mineral content (total hardness).** Suitable as a fast first test of hardness values. Measuring range from 0 °d to over 25 °d. Division into the following degrees of hardness: <3 °d, >5 °d, >10 °d, >15 °d, >20 °, >25 °d. Test stick is dipped into the water sample. The colour changes and hardness can be evaluated after 1 min by comparing it with the supplied scale.
Attention: Test paper should not be touched with fingers.
One pack contains 100 test sticks 6 x 95 mm.
Conversion: 1 °d = 1.8 °f = 1.25 °e = 17.8 mg/l $CaCO_3$

Art. No.	Pack Qty.	€
C725.1	100	23,60

Oil test papers

For speedy detection of oil in water and/or soil. The pale blue paper changes colour to dark blue upon contact with hydrocarbons, especially benzine, fuel oil, lubricating oil, etc.

Technical specifications:

Substance	Colour reactions just visible (mg/l water)	Colour reactions clearly visible (mg/l water)
Petroleum ether (bp. 40-80 °C)	250	400
Motor gasoline (super)	10	25
Fuel oil EL	5	10
Lubricating oil	1	5

Art. No.	Pack Qty.	€
L832.1	100	25,95

Water hardness kit

Testing reagent is added drop by drop to 5 ml water sample until colour changes. Each drop equals 1 °dH. Pack with 2 x 15 ml reagent.

Warning H226-H319-H336

Art. No.	Pack Qty.	€
0519.1	2 x 15 ml	19,90

Test papers

By Macherey-Nagel. For qualitative determination of ions and chemical compounds. The test paper changes colour above a specific detection limit.

Technical specifications:

Test paper	Verification of	Sensitivity limit / colour change
Plumbtesmo	Lead (Pb) Lead ions (Pb^{2+})	5 mg/l Pb^{2+} white-yellow to pink-red
Potassium iodide starch paper	Nitrite ions (NO_2^-) Free chlorine (Cl_2)	1 mg/l NO_2^- 1 mg/l free Cl_2 white to blue-violet
Lead acetate paper	Hydrogen sulphide (H_2S) Sulphide ions (S^{2-})	5 mg/l S^{2-} white to brown/black
Phosphatesmo KM	Sperm, acid phosphatase	in trace amounts white to violet
Watesmo	Water (e.g. in organic solvents)	in trace amounts light blue to dark blue

Test paper	Packaging	Art. No.	Pack Qty.	€
Plumbtesmo	Paper strips, L 40 x W 25 mm	**1252.1**	40	53,50
Potassium iodide starch paper	Roll, L 5 m x W 7 mm	**AXT3.1**	1	13,20
Lead acetate paper	Roll, L 5 m x W 7 mm	**AXT4.1**	1	12,80
Phosphatesmo KM	Paper strips, L 30 x W 15 mm	**AXT5.1**	25	120,00
Watesmo	Roll, L 5 m x W 10 mm	**AXT6.1**	1	33,00

Programme extension!

Quantofix® test strips

By Macherey-Nagel. For semi-quantitive determination of various substances. The test strips consist of a 0.2 mm-thick plastic strip with testing paper attached to the lower end. After the test strip has been moistened, the colouration that appears is compared to a colour scale on the side of the can. The concentration value can be read or a concentration range can be estimated. Dimensions: L 95 x W 6 mm.

*1 Test strips with additional reagents
*2 Test strips with CE marking

Type	Grading scale (mg/l)	Art. No.	Pack Qty.	€
Aluminium Al^{3+} *1	0-5-20-50-200-500	**L865.1**	100	45,80
Ammonium NH_4^+ *1	0-10-25-50-100-200-400	**H920.1**	100	42,30
Ascorbic acid $C_6H_8O_6$	0-50-100-200-300-500-1000-2000	**LT42.1**	100	29,60
Benzalkonium chloride	0-10-25-50-100-250-500-1000	**HNY9.1**	100	27,95
Carbonate hardness CO_3^{2-}	0-3-6-10-15-20	**L863.1**	100	27,95
Chlorine Sensitive Cl_2 *2	0-0,1-0,5-1-3-10	**HPA0.1**	100	27,60
Chlorine Cl_2 *1	0-1-3-10-30-100	**H921.1**	100	55,25
Chloride Cl^-	0-500-1000-1500-2000 ≥3000	**H922.1**	100	31,65
Cyanide CN^- *1	0-1-3-10-30	**L864.1**	100	56,25
EDTA	0-100-200-300-400	**LT47.1**	100	29,30
Iron 100 Fe^{2+}/Fe^{3+}	0-2-5-10-25-50-100	**L830.1**	100	23,50
Formaldehyde HCHO *1	0-10-20-40-60-100-200	**HPA1.1**	100	49,95
Potassium K^+ *1	0-200-400-700-1000-1500	**LT48.1**	100	39,90
Copper Cu^+/Cu^{2+}	0-10-30-100-300	**L831.1**	100	23,95
Molybdenum Mo^{6+} *1	0-5-20-50-100-250	**P921.1**	100	61,65
Nickel Ni^{2+}	0-10-25-50-100-250-500-1000	**LT49.1**	100	28,80
Nitrate NO_3- / Nitrite NO_2^-	NO_3- 0-5-10-25-50-75-100 / NO_2^- 0-0,5-2-5-10-25-50	**HPA2.1**	100	34,50
	NO_3- 0-10-25-50-100-250-500 / NO_2- 0-1-5-10-20-40-80	**C733.1**	100	26,75
Nitrite NO_2-Nitrite NO_2-	0-1-5-10-20-40-80	**C734.1**	100	25,95
	0-100-300-600-1000-2000-3000	**LT43.1**	100	28,20
Nitrite NO_2-/ pH	NO_2- 0-1-5-10-20-40-80 / pH 6,0-6,4-6,7-7,0-7,3-7,6-7,9-8,2-8,4-8,6-8,8-9,0-9,3-9,6	**HL20.1**	100	33,50
Peracetic acid $C_2H_4O_3$ *2	0-5-10-20-30-50	**LT44.1**	100	31,95
	0-50-100-200-300-400-500	**LT45.1**	100	31,95
	0-500-1000-1500-2000	**LT46.1**	100	34,10
Peroxide H_2O_2	0-0,5-2-5-10-25	**L829.1**	100	25,50
Peroxide H_2O_2 *2	0-1-3-10-30-100	**C735.1**	100	25,00
Peroxide H_2O_2	0-50-150-300-500-800-1000	**HPA3.1**	100	25,30
Phosphate PO_4^{3-} *1	0-3-10-25-50-100	**H923.1**	100	39,95
Sulphate SO_4^{2-}	0->400->800->1200->1600	**P922.1**	100	27,70
Sulphite SO_3^{2-}	0-10-25-50-100-250-500-1000	**C736.1**	100	26,20
Zinc Zn^{2+} *1	0-2-5-10-25-50-100	**HPA4.1**	100	43,50
Tin Sn^{2+}	0-10-25-50-100-250-500	**L866.1**	100	40,50

① VISOCOLOR® *alpha* test kits

By Macherey-Nagel. For colorimetric and volumetric procedures.
The use of **multi-component reagents** means that **only 1 reagent is required for analysing** (2 reagents for Cl_2).
Contents: Sample vial with 5 ml ring marking, bottles with drops or powder of required reagents, dosing spoon for powder and colour card.

Type	Measuring range (mg/l)	No. of analysis	Art. No.	Pack Qty.	€
Ammonium NH_4^+	0-0,2-0,5-1-2-3	50	**X319.1**	1	36,00
Carbonate hardness	1 drop = 1°d	100	**T361.1**	1	19,90
Chlorine, Cl_2	0,25-0,5-1,0-1,5-2,0	150	**T362.1**	1	21,10
Total hardness	1 drop = 1°d	50	**T363.1**	1	23,25
Nitrate NO_3^-	2-8-15-30-50	100	**X320.1**	1	34,95
Nitrite NO_2^-	0,05-0,10-0,25-0,5-1,0	200	**T364.1**	1	23,50
pH 5,0-9,0	pH 5,0-5,5-6,0-6,5-7,0-7,5-8,0-8,5-9,0	200	**T365.1**	1	28,25
Phosphate PO_4^{3-}	2-5-10-15-20	70	**X321.1**	1	33,90
Rest hardness °d	0,00-0,04-0,08-0,15-0,30	200	**X322.1**	1	40,50

② VISOCOLOR® *HE* test kits

By Macherey-Nagel. This highly sensitive colorimetric measuring technique enables analysis of minimal substance concentrations. Combined with the application of highly sensitive substances and the application of an optical trick, double irradiation, the **sensitivity compared to other VISOCOLOR® test kits is enhanced by 10 - 100 times**.
Contents: sturdy plastic box, the required reagents, a comparator block for holding the revolving 10-colour disc and the 2 measuring glasses.

* Method in accordance with basic chemical factors of German unit processes.

Type	Measuring range (mg/l)	No. of analysis	Art. No.	Pack Qty.	€
Ammonium NH_4^+	0-0,02-0,04-0,07-0,10-0,15-0,20-0,30-0,40-0,50	110	**T379.1**	1	91,00
Chlorine Cl_2 free+total	0-0,02-0,04-0,06-0,10-0,15-0,20-0,30-0,40-0,60	each 160	**T380.1**	1	91,00
Cyanide CN^-	0-0,002-0,004-0,007-0,010-0,015-0,020-0,025-0,030-0,040	55	**T381.1**	1	91,00
Iron Fe	0-0,01-0,02-0,03-0,04-0,05-0,07-0,10-0,15-0,20	300	**T382.1**	1	91,00
Copper Cu^{2+}	0-0,04-0,07-0,10-0,15-0,20-0,25-0,30-0,40-0,50	150	**T383.1**	1	91,00
Manganese Mn	0-0,03-0,06-0,10-0,15-0,20-0,25-0,30-0,40-0,50	100	**T384.1**	1	91,00
Nitrite NO_2^-	0-0,005-0,010-0,015-0,02-0,03-0,04-0,06-0,08-0,10	150	**T385.1**	1	91,00
Phosphate P	0-0,05-0,10-0,15-0,20-0,3-0,4-0,6-0,8-1,0	300	**T388.1**	1	91,00
Phosphate P (DEV)*	0-0,01-0,02-0,03-0,05-0,07-0,10-0,15-0,20-0,25	100	**T387.1**	1	91,00
Silicium Si	0-0,01-0,02-0,03-0,05-0,07-0,10-0,15-0,20-0,30	120	**T389.1**	1	91,00

VISOCOLOR® *ECO* test kits

By Macherey-Nagel. For colorimetric and volumetric procedures. ECO-test kits are suitable for **the analysis of water contents with low limiting values whereby environmentally hazardous or toxic substances are not used**. With pictogram for easy operation.
Contents: 2 measuring glasses, 20 mm, with screw cap, sliding comparator for holding measuring glasses, colour card, plastic syringe 5 ml, bottles with reagents and dosing spoons.

Assays are suitable for use in photometer PF12, except Art. Nos. X323.1, T367.1, T372.1, T378.1, Y559.1 and T376.1.

Type	Measuring range (mg/l)	No. of analysis	Art. No.	Pack Qty.	€
Ammonium NH_4^+	0-0,2-0,3-0,5-0,7-1-2-3	50	**T366.1**	1	49,60
Calcium Ca^{2+}	1 drop = 5 mg/l	100	**X323.1**	1	31,90
Carbonate hardness	1 drop = 1°d	100	**T367.1**	1	42,15
Chlorine, Cl_2	<0,1-0,1-0,2-0,3-0,4-0,6-0,9-1,2-2,0	150	**T368.1**	1	45,30
Chloride Cl^-	1-2-4-7-12-20-40-60	90	**T369.1**	1	52,00
Chrome (VI) Cr	0,02-0,05-0,10-0,15-0,20-0,30-0,40-0,50	140	**T370.1**	1	52,00
Cyanide CN^-	0-0,01-0,02-0,03-0,05-0,07-0,10-0,15-0,20	100	**X324.1**	1	66,50
Cyanuric acid Cya	10-15-20-30-40-60-80-100	100	**X325.1**	1	81,60
Iron Fe	0-0,04-0,07-0,10-0,15-0,20-0,30-0,50-1,0	100	**T371.1**	1	45,80
Total hardness	Drop = 1°d	100	**T372.1**	1	42,00
Potassium K^+	2-3-4-6-8-10-15	60	**Y556.1**	1	96,70
Silicic acid SiO_2	0-0,2-0,4-0,6-1,0-1,5-2,0-2,5-3,0	80	**Y557.1**	1	56,80
Copper Cu^{2+}	0-0,1-0,2-0,3-0,5-0,7-1,0-1,5	100	**T373.1**	1	49,85
Manganese Mn	0-0,1-0,2-0,3-0,5-0,7-0,9-1,2-1,5	70	**Y558.1**	1	61,40
Nickel Ni^{2+}	0-0,1-0,2-0,3-0,5-0,7-0,9-1,2-1,5	150	**X326.1**	1	75,30
Nitrate NO_3^-	0-4-10-20-30-50-70-90-120	120	**T374.1**	1	44,70
Nitrite NO_2^-	0-0,02-0,03-0,05-0,07-0,1-0,2-0,3-0,5	150	**T375.1**	1	45,85
Phosphate PO_4-P	0-0,2-0,3-0,5-0,7-1-2-3-5	80	**T377.1**	1	43,85
Swimming pool (Chlorine + pH)	CL_2 0,1-0,2-0,3-0,4-0,6-0,9-1,2-2,0 pH 6,9-7,2-7,4-7,6-7,8-8,2	150	**T378.1**	1	58,50
Sulphide S^{2-}	0-0,1-0,2-0,3-0,4-0,5-0,6-0,7-0,8	90	**Y560.1**	1	59,30
Sulfite SO_3^{2-}	1 drop = 1 mg/l	60	**Y559.1**	1	46,35
pH 4,0 - 9,0	pH 4,0-5,0-6,0-6,5-7,0-7,5-8,0-8,5-9,0	400	**T376.1**	1	44,40

Photometer PF-12^{Plus} for water analysis

By Macherey-Nagel. Portable photometre for field and laboratory use with preprogrammed Visocolor®-ECO and Nanocolor® round cuvette tests
- Illuminated graphic display
- Automatic wavelength setting
- Cell shaft for round cells 16 mm AD
- USB-interface for data transfer and power supply
- Dust and waterproof casing according to IP 68

Technical specifications:

Optic	Automatic filter wheel with 7 interference filters
Wave lengths	345/436/470/540/585/620/690 nm
Wave length precision	±2 nm
Light source	Wolfram lamp
Photometric range	±3 E
Photometric accuracy	±1 %
Memory	1000 readings, GLP-conform
Interface	USB 2.0
Dimensions (L x W x D)	215 x 100 x 65 mm

Delivery incl. software DVD, 4 Mignon 1.5 V batteries, 4 empty cuvettes, funnel, beaker, syringe, USB-cord, calibrating cuvette and transport case. Please order USB-power adapter separately if required.

Art. No.	Pack Qty.	€
LP73.1 *	1	950,00

Accessories:

USB-power adapter	**LP74.1** *	1 piece	34,80
Spare cuvettes 16 mm AD with screw cap	**X367.1** *	20 pieces	32,90
Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

* Longer delivery times possible. Please check with our Sales Department

AL100 chlorine photometer

By Aqualytic. For free, bound and total chlorine.
- Internal ring buffer for 16 datasets with real-time clock and date
- Auto-Off function
- Countdown function to maintain reaction time

Determination of chlorine content using reagent tablets.
- Measurement of free chlorine using DPD No. 1
- Measurement of total chlorine using DPD No. 1 + DPD No. 3

Checking the detection accuracy and reproducibility of measurement results using reference standard kit (please order separately).

Technical specifications:

Measuring range/resolution	0.01 to 6.00 mg/l
Measurement tolerances of DPD reagent tablets	0.00 to 1.00 mg/l: ±0.05 mg/l 1.01 to 2.00 mg/l: ±0.10 mg/l 2.01 to 3.00 mg/l: ±0.20 mg/l 3.01 to 4.00 mg/l: ±0.30 mg/l 4.01 to 6.00 mg/l: ±0.40 mg/l
Optics	LEDs, interference filter and photosensor
Wavelength	530 nm Δ λ= 5 nm
Wavelength accuracy	±1 nm
Photometric accuracy at 20-25 °C	3 % FS
Protection class	IP 68
Permissible ambient conditions	5 to 40 °C at 30 to 90 % rel. humidity
Dimensions (L x W x H)	155 x 75 x 35 mm
Weight (incl. batteries)	approx. 260 g

Delivery incl. 3 glass round vials with covers, 1 stirring bar, 1 brush, DPD No. 1 + No. 3 reagent tablets, plastic case and 4 type Micro/AAA batteries.

Art. No.	Pack Qty.	€
YE08.1	1	439,70

Accessories:

DPD No. 1 reagent tablets (free chlorine)	**YE09.1**	100 pieces	22,80
DPD No. 3 reagent tablets (total chlorine)	**YE10.1**	100 pieces	22,80
Replacement cells with cover, H 48 x ∅ 24 mm	**YE11.1**	12 pieces	75,15
Reference standard kit for chlorine (0.5 and 2.0 mg/l)	**YE12.1**	1 piece	68,80
Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Turbidimeter AL250 T-IR

By Aqualytic. With a broad measuring range of 0.01 to 1100 NTU (= TE/F = FNU) and a detection limit of 0.01 NTU, it can be used in different areas from sewage to drinking water. For stained and colourless water.
- With infrared light source
- Backlight LCD display
- Automatic switch-off after 10 min to prolong battery life
- Internal ring buffer for 16 data records with real time clock and date
- Key pad

Technical specifications:

Measuring range	0.01 to 1100 NTU (Auto-range)
Resolution	0.01 to 9.99 NTU 10.0 to 99.9 NTU 100 to 1100 NTU
Accuracy	±2.5 % measured value or 0.01 NTU (0 to 500 NTU) ±5 % of measured value (500 to 1100 NTU)
Optic	Temperature-compensated LED (Wavelength 860 nm)
Dimensions (L x W x H)	190 x 110 x 55 mm
Weight	400 g

Delivery incl. 4 turbidity standards (<0.1, 20, 200, 800 NTU), E-Block-battery 9 V, 2 cuvettes and transport cases.

Art. No.	Pack Qty.	€
LP38.1	1	725,65

Accessories:

Set of turbidity standards (<0,1, 20, 200, 800 NTU)	**LP39.1**	1 piece	233,30
Set of measuring cuvettes with black lid, height 55 mm, ∅ 24 mm	**LP40.1**	12 pieces	111,80
E-Block 9 V battery	**1025.1**	1 piece	4,85

pH-papers

Rotilabo®-universal indicator papers type Eco

For fast and exact measurment of coloured or cloudy and aqueous solutions. Plastic tin with colour scale. On rolls, 5 m long, 7 mm wide.

pH-measuring range	pH graduation	Art. No.	Pack Qty.	€
0,0-10,0	1,0	**AP99.1**	1	6,25
1,0-11,0	1,0	**AX00.1**	1	6,25
1,0-14,0	1,0/2,0	**AX01.1**	1	6,25
0,5-5,0	0,5	**AX02.1**	1	6,25
5,0-9,0	0,5	**AX03.1**	1	6,25
6,5-10,0	0,5	**AX04.1**	1	6,25
9,0-13,0	0,5	**AX05.1**	1	6,25

Universal indicator paper pH 1-11 and pH 1-14

Plastic rotating container with colour scale. Contains 1 roll, 5 m long and 7 mm wide. 1.0 pH intervals. Rolls individually packaged in refill pack.

Type	Art. No.	Pack Qty.	€
Tin pH 1-11 (pH graduation 1-2-3-4-5-6-7-8-9-10-11)	**L861.1**	1	12,00
Refill pack pH 1-11 of 3 rolls	**L862.1**	1	17,90
Tin pH 1-14 (pH graduation 1-2-3-5-6-7-8-9-10-12-14)	**N360.1**	1	11,80
Refill pack pH 1-14 of 3 rolls	**N361.1**	1	17,10

Litmus papers

Comes on rolls, 10 mm wide and 5 m long.

Measuring range	Transition	Colour change	Art. No.	Pack Qty. (roll)	€
blue pH 8.0-5.0	alkalic/acidic	blue/red	**8222.1**	1	10,95
neutral pH 5.0-8.0	to acidic to alkalic	violet/red (violet/blue)	**8223.1**	1	10,95
red pH 5.0-8.0	acidic/alkalic	red/blue	**8224.1**	1	10,95

Refill packs

Measuring range	Transition	Colour change	Art. No.	Pack Qty. (roll)	€
blue pH 8.0-5.0	alkalic/acidic	blue/red	**8409.1**	3	12,80
neutral pH 5.0-8.0	to acidic to alkalic	violet/red (violet/blue)	**8410.1**	3	15,30
red pH 5.0-8.0	acidic/alkalic	red/blue	**8411.1**	3	15,30

Universal pH indicator paper Tritest

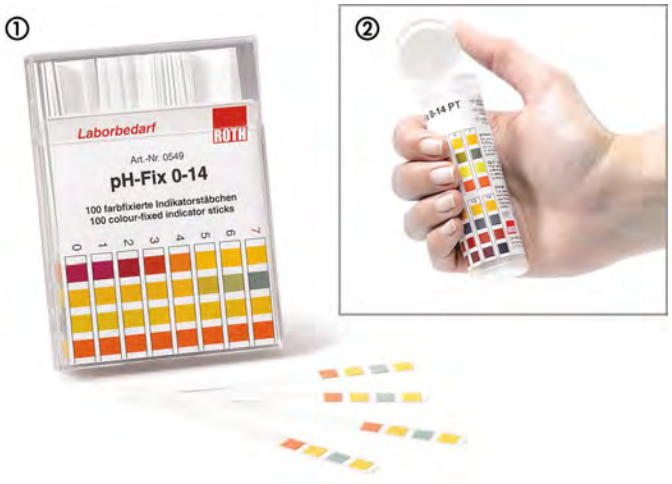
Comes on rolls. With 3 indicator zones (1 main and 2 secondary zones) for better estimation of intermediate values.
Measuring range pH 1-11, steps 1.0 pH.
A pack contains 2 rotating plastic tins with indicator paper and colour scale.
Two different types available.

Width 10 mm, length 5 m per tin.

Type	Art. No.	Pack Qty.	€
Pack of 2 tins	**C726.1**	1	26,70
Refill pack of 3 rolls	**C727.1**	1	26,50

Width 14 mm, length 6 m per tin.
With 2 hydrophobic zones for clearer readings in alkaline range.

Type	Art. No.	Pack Qty.	€
Pack of 2 tins	**C728.1**	1	34,70
Refill pack of 3 rolls	**C729.1**	1	34,70



Universal indicator sticks pH-Fix

Test field made of colour-impregnated cellulose. Colour scale with colour grading included. Reliable, **non-bleeding**. Pack contains 100 sticks (L 85 x W 6 mm).

① In square plastic box

pH-measuring range	pH graduation	Art. No.	Pack Qty.	€
0-14	1,0	**0549.2**	100	12,50
0,0-6,0	0,5	**C730.2**	100	12,40
2,0-9,0	0,5	**H913.2**	100	12,40
4,5-10,0	0,5	**C731.2**	100	12,40
7,0-14,0	0,5	**C732.2**	100	12,40
0,3-2,3	0,3/0,4	**H914.2**	100	12,40
1,7-3,8	0,3	**H915.2**	100	12,40
3,6-6,1	0,3/0,5	**H916.2**	100	12,40
5,1-7,2	0,3	**H917.2**	100	12,40
6,0-7,7	0,3/0,4	**H918.2**	100	12,40
7,5-9,5	0,2/0,4	**H919.2**	100	12,40

② In round plastic box with snap-on lid

Single-handed opening and closing of lid with thumb.

pH-measuring range	pH graduation	Art. No.	Pack Qty.	€
0-14	1,0	**KH69.1**	100	12,90
3,6-6,1	0,3/0,5	**LH91.1**	100	12,95

PEHANON® indicator papers

By Macherey-Nagel. With colour comparison scale on each test strip. Ideal for stained solutions and suspensions, as the resultant colour shift has the same effect on the indicator and comparison colours.
The individual colour zones are separated by hydrophobic gaps.
One tin contains 200 strips (W 11 x L 100 mm).

pH-measuring range	pH graduation	Art. No.	Pack Qty.	€
1-12	1-2-3-4-5-6-7-8-9-10-11-12	**EA47.1**	200	16,90
0-1,8	0-0,3-0,6-0,8-1,0-1,2-1,5-1,8	**AXT7.1**	200	14,40
1,0-2,8	1,0-1,3-1,6-1,8-2,0-2,2-2,5-2,8	**EA48.1**	200	14,90
1,8-3,8	1,8-2,1-2,4-2,7-3,0-3,2-3,5-3,8	**AXT8.1**	200	14,40
2,8-4,6	2,8-3,1-3,4-3,6-3,8-4,0-4,3-4,6	**AXT9.1**	200	14,40
3,8-5,5	3,8-4,0-4,2-4,4-4,6-4,9-5,2-5,5	**EA49.1**	200	14,90
4,0-9,0	4,0-4,5-5,0-5,5-6,0-6,5-7,0-7,5-8,0-8,5-9,0	**AYA0.1**	200	14,40
5,2-6,8	5,2-5,5-5,7-5,9-6,1-6,3-6,5-6,8	**AYA1.1**	200	14,40
6,0-8,1	6,0-6,3-6,6-6,9-7,2-7,5-7,8-8,1	**EA50.1**	200	14,90
7,2-8,8	7,2-7,4-7,6-7,8-8,0-8,2-8,5-8,8	**AYA2.1**	200	14,40
8,0-9,7	8,0-8,2-8,4-8,6-8,8-9,1-9,4-9,7	**EA51.1**	200	14,90
9,5-12,0	9,5-10,0-10,5-11,0-11,5-12,0	**AYA3.1**	200	14,40
10,5-13,0	10,5-11,0-11,5-12,0-12,5-13,0	**AYA4.1**	200	14,40
12,0-14,0	12,0-12,5-13,0-13,5-14,0	**AYA5.1**	200	14,40

Unisol Indicator solutions

By Macherey-Nagel. For pH measurement in weak buffered solutions, in pure water, in surface water and in highly diluted acids or alkalis. Droplets of an indicator solution are added to the sample and the reaction colour is compared to a colour chart.

Delivery incl. 100 ml dropper bottle containing reagent (sufficient for approx. 500 pH measurements), colour chart and 1 type 13/72 measuring cuvette.

Danger H225

Type	pH graduation	Art. No.	Pack Qty.	€
UNISOL 410	4.0-4.5-5.0-5.5-6.0-6.5-7.0-7.5-8.0-8.5-9.0-9.5-10.0	**TK45.1**	1	28,60
UNISOL 113	1-2-3-4-5-6-7-8-9-10-11-12-13	**TK46.1**	1	29,15

Accessories:

Replacement rectangular measuring cuvettes, made of PMMA, type 13/72	**TK47.1**	5	32,45

pH-buffer solutions

pH-Buffer Solutions, ROTI®CALIPURE

- Manufactured from high purity buffer substances
- No need for time-consuming drying and weighing of reagents
- The buffer solutions are adjusted to their respective pH values by comparison with standard buffer solutions (according to DIN 19266 and based on primary reference materials of the PTB and/or NIST)
- Quick and precise calibration of measuring equipment
- Stabilised against algae and bacterial action

pH value	Design	Art. No.	Pack Qty.	Packaging	€
4,00 ±0,02 (20 °C)	colourless	**P712.3**	500 ml	plastic	17,75
		P712.1	1 l	plastic	25,30
		P712.2	10 l	plastic	160,20
	tinted red	**A517.3**	250 ml	twin neck bottle	14,95
		A517.2	500 ml	plastic	17,75
		A517.4	500 ml	twin neck bottle	19,25
		A517.1	1 l	plastic	25,30
		A517.5	10 l	plastic	160,20
7,00 ±0,02 (20 °C)	colourless	**A518.3**	500 ml	plastic	17,75
		A518.1	1 l	plastic	25,30
		A518.2	10 l	plastic	160,20
	tinted green	**P713.3**	250 ml	twin neck bottle	14,95
		P713.4	500 ml	twin neck bottle	19,25
		P713.2	500 ml	plastic	17,75
		P713.1	1 l	plastic	25,30
		P713.5	10 l	plastic	160,20
9,00 ±0,02 (20 °C)	colourless	**A519.1**	1 l	plastic	25,30
		A519.2	10 l	plastic	160,20
		A519.3	500 ml	plastic	17,75
	tinted blue	**P714.1**	1 l	plastic	25,30
		P714.2	500 ml	plastic	17,75
		P714.3	250 ml	twin neck bottle	14,95
10,00 ±0,02 (20 °C)	colourless	**P716.2**	500 ml	plastic	17,75
		P716.1	1 l	plastic	25,30
	tinted blue	**8086.1**	250 ml	twin neck bottle	16,70
		8086.2	500 ml	plastic	18,85
		8086.3	500 ml	twin neck bottle	19,90
		8086.4	1 l	plastic	26,35
		8086.5 *	10 l	plastic	188,15

NEW

Rotilabo® pH buffer solutions

The quantity of reagent contained in a sachet (25 ml) is sufficient for a single calibration.

- Traceable thanks to comparison with standard references from the National Institute of Standards and Technology (NIST) and the National Metrology Institute of Germany (PTB)
- With certificate of analysis for documenting the quality, traceability and accuracy

Type	Accuracy	Art. No.	Pack Qty.	€
pH 4.01	±0.01	**KAY0.1**	20	32,20
pH 7.00	±0.01	**KAY1.1**	20	32,20
pH 10.01	±0.02	**KAY2.1**	20	32,20

pH buffer tablets

For pH tester. Accuracy ±0.05 pH. Dissolve one pH buffer tablet in 20 ml of deionised/distilled water.

pH value	Art. No.	Pack Qty.	€
4	**YT50.1**	100	21,45
7	**YT51.1**	100	21,45
10	**YT52.1**	100	21,45

▶ For other pH buffer solutions, see section Analytical and inorganic reagents.

NEW

Cleaning solution Pepsin / HCl

By Mettler-Toledo. For pH electrodes.
To remove protein contaminations.

Danger H314-EUH208

Art. No.	Pack Qty. (ml)	€
HTE4.1	250	23,90

Cleaning solution thiourea / HCl

By Mettler-Toledo. For pH electrodes.
For cleaning diaphragms with silver-sulphide contaminations.

Warning H351-H361d-H412

Art. No.	Pack Qty. (ml)	€
HTE5.1	250	23,90

Regeneration solution ammonium bifluoride

By Mettler-Toledo. For pH electrodes.
To regenerate the pH-sensitive glass membrane.

Warning H315-H319

Art. No.	Pack Qty. (ml)	€
HTE6.1	25	19,90

Electrolytes

For reference electrodes.

Design	Art. No.	Pack Qty.	€
KCl 3 mol/l saturated with AgCl	**A925.1**	250 ml	19,95
KCl 3 mol/l	**A926.1**	250 ml	19,95

NEW

pH tester CHECK

By Dostmann. Handy digital-pH tester for measuring the pH value of small liquid quantities in narrow vessels.

- Permanently connected pH combination electrode
- Automatic calibration and temperature compensation
- HOLD function
- Battery status display

Technical specifications:

Measuring range	pH °C	0 to 14 0 to +50
Resolution	pH °C	0,1 0,5
Accuracy	pH °C	±0,1 ±1
Calibration		1-/2-/3-point calibration
Installed length		115 mm
Shaft ∅		12 mm
Shaft material		Plastic
Storage solution		3 M KCl
Protection rating		IP 65
Weight		70 g
Power supply		2 x button CR 2032 (3V)

Delivery incl. batteries.
Storage solution and pH buffer solutions, please order separately.

Art. No.	Pack Qty.	€
HPC7.1	1	46,15

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

Tester kits PH 1, PH 5 and PH 5 food

By Dostmann.
- Large LCD display
- Waterproof and dust-proof in accordance with protection class IP67
- Automatic temperature compensation from 0 to 50 °C
- Confirmation when a stable measured value is reached
- Automatic calibration with display of the calibrated ranges
- Multicolour back lighting for status display of measurement mode, calibration and alarm
- PH 5 food tester with insert electrode for solid and semi-solid samples like meat, butter, cheese, yoghurt, dough and creams

Technical specifications:

Type		PH 1	PH 5	PH 5 Food
Measuring range/ resolution	pH mV °C	0.0 to 14.00 - -	-2.00 to 16.00 ±1000 0.0 to 50.0	
Accuracy	pH mV °C	±0,1 - -	±0.01 ±1 ±0.5	
Replaceable electrode		no	yes	
Calibration		1-/2-point calibration	1-/2-/3-point calibration	
Dimensions ∅ x L (mm)		35 x 175	35 x 175	35 x 210

Delivery incl. buffer solution (pH 4.01 and pH 7.00), storage solution, storage case and 4 Micro 1.5 V batteries.

Image	Type	Art. No.	Pack Qty.	€
①	PH 1	**EHX6.1**	1	85,90
②	PH 5	**EHX7.1**	1	134,40
③	PH 5 Food	**EHX8.1**	1	284,90

Accessories:

Replacement electrode for tester PH5	**EHX9.1**	1	59,10
Replacement electrode for tester PH 5 Food	**EHY0.1**	1	189,20
Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

SD 50 pH tester

By Aqualytic.
- Rugged, water resistant housing (IP67)
- Automatic 1/2/3 point calibration
- Automatic temperature compensation
- Auto Off after 8 min
- Memory with storage space for 25 datasets incl. time and date

Technical specifications:

Measuring range/resolution	pH mV °C	0.01 to 14.00 -1800 to 1800 0.1 to 60.0
Accuracy	pH mV °C	±0.05 ±3 ±1
Dimensions (L x W x D)		177 x 43 x 29 mm
Weight		128 g

Delivery incl. electrode; 10 buffer tablets for pH 4, pH 7 and pH 10; carry strap, plastic box and 2 Micro batteries 1.5 V.

Art. No.	Pack Qty.	€
YP28.1	1	138,70

Accessories:

Replacement electrode for pH tester SD 50	**YP29.1**	1 piece	69,90
Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

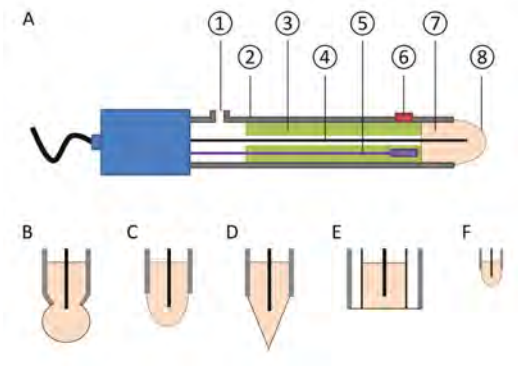


Fig.:
A: Longitudinal section through a pH single-rod measuring cell:
① Filler neck, ② Electrode,③ Reference electrolyte, ④ Outlet, ⑤ Reference outlet, ⑥ Diaphragm, ⑦ Internal buffer, ⑧ pH-sensitive glass membrane
B-F: Application-specific types of pH-sensitive glass membrane

Choosing the right pH single-rod measuring cell

During the pH measurement a pH single-rod measuring cell (see Fig. A) is inserted into the sample solution in such a way that the pH-sensitive glass membrane interacts with the hydrogen ions ("protons") in the sample solution. The resultant voltage potential is dependent on the concentration and is measured by the measuring instrument and converted to a pH value.

pH single-rod measuring cells are distinguished, among other things, by the reference electrolyte, the diaphragms, the shape of the glass membrane and the electrode material (glass or plastic). The sample solution dictates which electrode is most suitable for the pH measurement.

The **reference electrolyte** is stored inside the pH single-rod measuring cell. It is in contact with the sample solution via a special connection, the so-called diaphragm, and can flow into the sample solution in a controlled manner. Reference electrolytes are roughly subdivided into two categories - liquid electrolytes and gel electrolytes.

- pH single-rod measuring cells containing **liquid electrolyte** have a faster response time, greater measurement certainty and longer life. The electrolyte is refillable, but is also completely exchangeable and more heat resistant.
- pH single-rod measuring cells containing **gel electrolyte** incur virtually no loss of electrolyte during the measurement and do not need to be refilled. They are rugged, require little maintenance and affordable, but they are unsuitable for highly acidic/basic solutions with a low ion content.

The connection between the electrolyte and the sample solution is made in a different way. It is important that the diaphragm doesn't become clogged by the sample solution (e.g. by viscous solutions, suspensions, aqueous samples with a high protein content), as otherwise it will not be possible to obtain a correct pH measurement.

- The **ceramic diaphragm** has a porous structure which has a high chemical resistance, but is highly sensitive to contamination. This diaphragm is suitable for standard measurements in aqueous solutions which are free of suspended matter.
- The **platinum diaphragm** consists of fine, smooth platinum wires which are twisted together and fused into the glass shaft of the pH single-rod measuring cell. The electrolyte flows out through cavities between the platinum wires. The platinum diaphragm does not clog up as quickly as the ceramic diaphragm, but it is unsuitable for sample solutions with a strong oxidising or reducing effect.
- The **fibre diaphragm** is similar to the platinum diaphragm, but is less chemically stable. It comprises a non-metallic fibre bundle (e.g. made of nylon) and often contains a gel electrolyte.
- The **ground joint diaphragm** is suitable for measuring pH in contaminated solutions, sludge, suspensions, emulsions and viscous media. The bottom section of the electrode is ground and covered by a sleeve. The electrolyte flows out from the fine gap between the shaft and sleeve at a high velocity. This also allows the pH of sample solutions with a low ion content to be measured. The diaphragm can be cleaned very easily by pushing up the sleeve.
- The **hole diaphragm** is a small connecting hole between the gel electrolytes and the sample medium. This diaphragm is highly resistant to clogging because it does not have a reticular structure.

Depending on application, the pH-sensitive glass membrane is shaped in a specific way (see Fig. B-F).

- For standard applications, the glass membrane has either a **spherical** structure (B) or a **hemispherical** structure (C).
- For insertion measurements in semi-solid, pasty and solid samples, the glass membrane is **tapered** (D).
- For surface measurements and droplet-sized samples, the glass membrane is **flat** (E).
- For small quantities of fluid and sample solutions in narrow vessels, there is a micro version in which the glass membrane is **narrow** and **hemispherical** (F).

Temperature compensation

One of the key factors influencing pH measurements is the temperature. For this reason, only pH values which have been measured at the same temperature should be compared with one another. In order to correlate the pH value with the actual temperature of the sample solution, temperature compensation should be carried out. The temperature can either be entered manually into the pH meter or measured automatically by an additional temperature sensor.

Calibration

A pH single-rod measuring cell is characterised by its zero point and its slope. At a pH of 7 the electrical voltage at the zero point is approx. 0 mV. The slope describes the change of voltage between two pH units. Since these characteristics change as a function of time, the sensor should be calibrated regularly using a calibration solution with a known pH. This is particularly important **after cleaning, maintenance or long periods of storage** of the pH electrode. To obtain more exact test results, **2-point calibration** should be carried out at least once and the **pH buffer solutions is use should have a pH nearest to the expected pH values**.

Storage

pH single-rod measuring cells are stored in an **aqueous, solution with a high ion content**. A solution which matches the inner electrolyte is recommended. The pH 4 buffer solution can be used as an alternative. However, pH single-rod measuring cells should never be stored in distilled water.

For longer periods of storage (several weeks to months), pH single-rod measuring cells can also be stored in a dry state. The electrodes will age more slowly as a result, but the outer hydrated layer on the pH-sensitive glass membrane which forms through contact with aqueous solutions will be irreparably damaged. Therefore, pH single-rod measuring cells which have been stored in a dry state have to be wetted again prior to initial use. For this purpose, the pH single-rod measuring cell is regenerated overnight in the storage solution.

Care and maintenance

With proper care and maintenance, pH single-rod measuring cells will deliver more exact measurement results, shorter response times and last longer.

- After each measurement the electrode must be flushed with deionised water and stored in the storage solution. If the electrode is dabbed with a paper towel, its rough surface should not come into contact with the pH-sensitive glass membrane.
- pH single-rod measuring cells containing liquid electrolyte have to be refilled. It is important that the electrolyte level does not drop below that of the sample solution because it will otherwise flow into the electrode.
- To prevent crystallisation of the electrolyte, the electrolyte should be completely exchanged on a regular basis.
- If air bubbles form inside the measuring cell, they can be removed by carefully shaking the electrode. Air trapped in the vicinity of the glass membrane leads to unstable measurement values.
- If the electrodes or the diaphragm are contaminated, various cleaning solutions can be used.

Useful life

The pH single-rod measuring cell is a **consumable subject** to diminishing performance over time. Its useful life is considerably reduced by high temperatures (>50 °C) and measurements at extreme pH values in particular. However, the type of sample solution, duration and frequency of measurement and, not least, electrode maintenance are also factors which influence the useful life of the measuring cell. Ageing symptoms include longer response time, decreasing slope and zero shift.

LE series pH single-rod measuring cells

By Mettler-Toledo. Affordable pH single-rod chains for various applications.

Technical specifications:

Type	① LE407	② LE409	③ LE438
pH range	0 to 14	0 to 14	0 to 14
Operating range (°C)	0 to +80	0 to +80	0 to +80
Diaphragm	Nylon	Ceramic	Nylon
Electrolyte/ storage solution	Gel / 3 mol/l KCl	3 mol/l KCl + AgCl / 3 mol/l KCl	Gel/3 mol/l KCl
Length (mm)	120	120	120
Shaft ∅ (mm)	12	12	12
Shaft material	Plastic (POM)	Glass	Plastic (POM)
Application	Simple pH measurements	General aqueous solutions	Temperaturecompensated measurements (NTC 30 kΩ)

Type	④ LE420	⑤ LE422	⑥ LE427
pH range	0 to 14	0 to 14	0 to 11
Operating range (°C)	0 to +80	0 to +80	0 to +50
Diaphragm	Ground joint	Ceramic	Ceramic
Electrolyte/ storage solution	3 mol/l KCl	Gel/3 mol/l KCl	Gel/3 mol/l KCl
Length (mm)	120	90	16
Shaft ∅ (mm)	12	4.3	6
Shaft material	Glass	Glass	Glass
Application	TRIS buffers, emulsions, viscous samples, suspensions, media with a low ion content	Low quantities of fluid, narrow vessels	Insertion measurements

Image	Type	Connection	Art. No.	Pack Qty.	€
①	LE407	Fixed cable, length 1 m, BNC	**TC47.1**	1	79,10
②	LE409	Fixed cable, length 1 m, BNC	**HY58.1**	1	97,30
③	LE438	Fixed cable, length 1.2 m, BNC + cinch plug	**HY59.1**	1	155,00
④	LE420	Fixed cable, length 1 m, BNC	**NP41.1**	1	145,00
⑤	LE422	Fixed cable, length 1 m, BNC	**NP42.1**	1	167,00
⑥	LE427	Fixed cable, length 1.2 m, BNC	**TH61.1**	1	168,00

Accessories:

Connecting cable, length 1.2 m, S7 + DIN 19262	**A921.1**	1	46,20
Connecting cable, length 1.2 m, S7 + BNC	**A923.1**	1	40,60

InLab® series pH single-rod measuring cells

By Mettler-Toledo. High-quality pH single-rod chains for various applications. With S7 connector.

Technical specifications:

Type	① InLab®-Easy	② InLab®Routine	③ InLab® Semi-Micro
pH range	0 to 14	0 to 14	0 to 12
Operating range (°C)	0 to +80	0 to +100	0 to +100
Diaphragm	Ceramic	Ceramic	Hole
Electrolyte / storage solution	Gel / 3 mol/l KCl	3 mol/l KCl	Gel / 3 mol/l KCl
Length (mm)	120	120	100
Shaft ∅ (mm)	12	12	6
Shaft material	Polysulfon	Glass	Glass
Application	Simple pH measurements	General aqueous solutions	Low quantities of fluid, narrow vessels

Type	④ InLab®Science	⑤ InLab®Solids	⑥ InLab®Surface
pH range	0 to 12	1 to 11	1 to 11
Operating range (°C)	0 to +100	0 to +80	0 to +50
Diaphragm	Ground joint	Hole	Ceramic ring
Electrolyte / storage solution	3 mol/l KCl	Gel / 3 mol/l KCl	3 mol/l KCl
Length (mm)	120	25	110
Shaft ∅ (mm)	12	6	12
Shaft material	Glass	Glass	Polysulfon
Application	Emulsions, viscous samples, suspensions, media with a low ion content e.g. wastewater, dissolved earth, water-based paints, milk	Insertion measurements e.g. in cream, yoghurt, butter, cheese, meat, fish, dough	surface measurement e.g. on skin, leather, textiles, paper, agar plates; measurement of droplet-sized sample volumes

Delivery without connecting cable. Please order separately.

Image	Product	Art. No.	Pack Qty.	€
①	InLab®Easy	**H948.1**	1	94,90
②	InLab®Routine	**A915.1**	1	156,00
③	InLab®Semi-Micro	**A916.1**	1	236,00
④	InLab®Science	**A917.1**	1	226,00
⑤	InLab®Solids	**A918.1**	1	262,00
⑥	InLab®Surface	**KL07.1**	1	220,00

Accessories:

Connecting cable, length 1.2 m, S7 + DIN 19262	**A921.1**	1	46,20
Connecting cable, length 1.2 m, S7 + BNC	**A923.1**	1	40,60

InLab® series pH single-rod measuring cells with integrated temperature sensor

By Mettler-Toledo. High-quality pH single-rod measuring cells for temperature-compensated measurements.

- pH range: 0 to 14
- Operating range: 0 to +100 °C
- Installed length: 120 mm, shaft ∅: 12 mm

Technical specifications:

Type	① InLab® Expert NTC30	② InLab® Expert Pt 1000
Diaphragm	Hole	Hole
Electrolyte / storage solution	Gel / 3 mol/l KCl	Gel / 3 mol/l KCl
Temperature sensor	NTC 30 kΩ	Pt 1000
Shaft material	Plastic (PEEK)	Plastic (PEEK)
Application	Wide range of applications, including emulsions, suspensions, wastewater and solutions containing proteins and sulphides	

Type	③ InLab® Routine Pro	④InLab® Versatile Pro
Diaphragm	Ceramic	Ceramic
Electrolyte / storage solution	3 mol/l KCl	3 mol/l KCl
Temperature sensor	NTC 30 kΩ	NTC 30 kΩ
Shaft material	Glass	Polysulfon
Application	General aqueous solutions	

Image	Product	Connection	Art. No.	Pack Qty.	€
①	InLab® Expert NTC30	MultiPin™, connecting cable please order separately	**X571.1**	1	203,00
②	InLab® Expert Pt 1000	MultiPin™, connecting cable please order separately	**A920.1**	1	203,00
③	InLab® Routine Pro	MultiPin™, connecting cable please order separately	**N504.1**	1	230,00
④	InLab® Versatile Pro	Fixed cable, length 1.2 m, BNC + cinch plug	**TA11.1**	1	215,00

Accessories:

Connecting cable, length 1.2 m, MultiPin™ + DIN 19262 + banana plug 1x4 mm	**X572.1**	1	89,00
Connecting cable, length 1.2 m, MultiPin™ + BNC + banana plug 1x4 mm	**X573.1**	1	89,00
Connecting cable, length 1.2 m, MultiPin™ + BNC + cinch plug	**N505.1**	1	89,00

BlueLine series pH single-rod measuring cells

By SI Analytics. For general applications: **22 pH, 23 pH, 25 pH and 28 pH**. For more critical measurements: **12 pH, 14 pH and 15 pH**.

Technical specifications:

Type	① 22 pH, 23 pH, 25 pH, 28 pH	② 12 pH, 14 ph, 15 pH
pH range	0 to 14	0 to 14
Operating range (°C)	-5 to +80	-5 to +100
Diaphragm	Fibre	Platinum
Electrolyte/ storage solution	Gel / 3 mol/l KCl	3 mol/l KCl
Length (mm)	120	120
Shaft ∅ (mm)	12	12
Shaft material	Plastic (Noryl)	Glass

Image	Product	Temp. sensor	Connection	Art. No.	Pack Qty.	€
①	22 pH	-	Schott connector, please order connecting cable separately	**N525.1**	1	106,10
①	23 pH	-	Fixed cable, L 1 m, DIN 19262	**N523.1**	1	135,45
①	25 pH	-	Fixed cable, L 1 m, BNC	**N524.1**	1	135,45
①	28 pH	Pt 1000	Fixed cable, L 1 m, DIN 19262 + banana plug (1x 4 mm)	**H772.1**	1	213,95
②	12 pH	-	Fixed cable, L 1 m, DIN 19262	**N520.1**	1	155,90
②	14 pH	NTC 30 kΩ	Fixed cable, L 1 m, DIN 19262 + banana plug (1x4 mm)	**N521.1**	1	242,95
②	15 pH	NTC 30 kΩ	Fixed cable, L 1 m, BNC + banana plug (1x4 mm)	**N522.1**	1	242,95

Accessories:

Connecting cable, Schott connector + DIN 19262	**N526.1**	1	60,10
Connecting cable, Schott connector + BNC	**N527.1**	1	60,10

ScienceLine series pH single-rod measuring cells

By SI Analytics. With fixed cable, length 1 m.

- pH range: 0 to 14
- Operating range: -5 to + 100 °C
- Electrolyte/storage solution: 3 mol/l KCl
- Shaft material: glass

Technical specifications:

Type	① N 42 A	② N 52 BNC
Diaphragm	Ceramic	Platinum
Length (mm)	120	120
Shaft ∅ (mm)	12	12
Application	Standard glass electrodes for aqueous solutions	

Type	③ N 1042 A / N1042 BNC	④N 6000 A / N 6000 BNC
Diaphragm	Ceramic	Platinum
Length (mm)	120	96
Shaft ∅ (mm)	12	3
Application	Temperature-compensated measurements (Pt 1000)	Low quantities of fluid (0.1 ml or higher), narrow vessels

Image	Product	Connection	Art. No.	Pack Qty.	€
①	N 42 A	DIN 19262	**C887.1**	1	231,15
②	N 52 BNC	BNC	**C894.1**	1	237,60
③	N 1042 A	DIN 19262 + banana plug (1x4 mm)	**C889.1**	1	358,00
③	N 1042 BNC	BNC + banana plug (1x4 mm)	**C896.1**	1	358,00
④	N 6000 A	DIN 19262	**C892.1**	1	304,25
④	N 6000 BNC	BNC	**C899.1**	1	304,25

Electrode holder

With cable duct. For three electrodes, opening ∅ 16 mm.
Additional opening ∅ 11 mm. Three joints for high flexibility and adjustment options. Base plate: 110 x 130 mm. Base plate weight: 0.6 kg.
Arm weight: 0.1 kg. Max. arm height: 32 cm.

Type	Art. No.	Pack Qty.	€
Electrode holder	**EHY1.1**	1	88,15

SenTix® series pH single-rod measuring cells

By WTW. With fixed cable, length 1 m.

Technical specifications:

Type	① SenTix®21	② SenTix®41	③ SenTix®81
pH range	0 to 14	0 to 14	0 to 14
Operating range (°C)	0 to +80	0 to +80	0 to +100
Diaphragm	Polyester PET	Polyester PET	Platinum
Electrolyte/storage solution	Gel / 3 mol/l KCl	Gel / 3 mol/l KCl	3 mol/l KCl
Length (mm)	120	120	120
Shaft ∅ (mm)	12	12	12
Shaft material	Plastic (PPE/PS)	Plastic (PPE/PS)	Glass

Product	Temperature sensor	Connection	Art. No.	Pack Qty.	€
SenTix®21	-	DIN 19262	**X174.1**	1	135,45
SenTix®41	NTC 30 kΩ	DIN 19262 + banana plug (1x4 mm)	**X173.1**	1	213,95
SenTix®81	NTC 30 kΩ	DIN 19262 + banana plug (1x4 mm)	**ETC4.1**	1	242,95

Overview of standard connections on pH meters

When selecting a pH single-rod measuring cell, pay attention to the connections. Standardised connections for the pH sensor and the coaxial connector acc. to DIN **19262** and the bayonet connector (**BNC**). For example, **cinch** and **banana** (4 mm) connections are suitable for the temperature sensor.

In the case of the temperature sensor, also pay attention to the sensor type. Either a temperature sensor of the type **NTC 30 kΩ** or **Pt1000** can be connected to most pH meters.

Connection	Connector (pH single-rod measuring cell)	Socket (pH meter)
Coaxial connector acc. to DIN 19262		
BNC		
Cinch		
Banana, 4 mm		

Programme extension!

Storage sets for electrodes

For safe, standby storage of electrodes with shaft ∅ 12 mm.

Set - standard equipment: Screw cap GL 45 incl. 5 seals and bore hole for storing electrodes.

Set 1: Delivery without screw thread bottle and storage solution (please order separately).

Set 2: Delivery incl. 100 ml screw thread bottle and 250 ml storage solution art. no. T138.1.

Type	Art. No.	Pack Qty.	€
Set 1	**KH88.1**	1	32,15
Set 2	**KCN1.1**	1	39,25

Accessories for storage sets

Screw thread vials, 100 ml, H 100 mm

Made of DURAN®, transparent. Without pouring ring and cap.

Art. No.	Pack Qty.	€
T426.1	10	38,90

Redox-electrodes

By SI Analytics. With cable. Has platinum sensor material.
Reference system used silver/silver chloride. Electrolyte KCl 3 mol/l.
With ceramic diaphragm. Length 120 mm. Sensor diameter 1 mm.
Work temperature range 0 to 100 °C.

Type	Art. No.	Pack Qty.	€
With BNC connection	**C900.1**	1	315,00
With DIN connection	**C893.1**	1	251,55

AL10 hand-held pH meter

By Aqualytic.

- Splash-proof membrane keyboard
- Manual single-point or double-point calibration via trimmer

Technical specifications:

Measuring range/resolution	0.01 to 14.00 pH
Accuracy	±0.1 (pH 4.0-10.0) ±0.2 (pH 1.1-3.9 and pH 10.1-13.0) ±0.3 (pH 0.1-1.0 and pH 13.1-14.0)
Dimensions (L x W x H)	208 x 110 x 34 mm

Delivery incl. pH plastic electrodes with gel electrolyte and BNC connector, pH buffer solutions (pH 4.01 and pH 7.00, each 90 ml), protective cover for measuring in difficult conditions, case and E-type block 9 V battery.

Art. No.	Pack Qty.	€
YP68.1	1	179,55

Accessories:

Spare pH plastic electrodes	**YP69.1**	1 piece	75,25
E-Block 9 V battery	**1025.1**	1 piece	4,85

Pocket pH-meters

pH 7-series pocket pH meter

By Dostmann.

- Large screen with simultaneous display of pH or mV value and temperature
- Automatic or manual temperature compensation
- Confirmation when a stable measured value is reached
- Automatic or manual calibration
- Storage of current calibration and display of the electrode status
- Automatic switch-off after 20 min

Technical specifications for pH meter:

pH measuring range/ resolution	pH mV °C	0.00 to 14.00 ±1000 0.0 to +100.0
Accuracy	pH mV °C	±0.01 ±1 ±0.5
Connections	pH °C	BNC Cinch (NTC 30 KΩ)
Calibration - automatic - manual		 1-/2-/3-point calibration (predefined buffer) 1-/2-point calibration (user-defined buffer)
Dimensions (H x W x D)		196 x 86 x 33 mm

Technical specifications for pH combination electrodes:

pH electrode	201T	GEL	2PoreT
pH range	0 to 14		
Operating range (°C)	0 to +60		
Diaphragm	Ceramic	Double	Pores
Electrolyte / storage solution	Gel / 3 mol/l KCl	Gel / 3 mol/l KCl	Polymer / 3 mol/l KCl
Length (mm)	120	120	35
Shaft ∅ (mm)	12	12	6
Shaft material	Plastic		
Temperature sensor	NTC 30 KΩ	-	NTC 30 KΩ
Application	for generally aqueous solutions		for insertion measurements in solid and semi-solid samples such as meat, fruit, butter, etc.

Delivery incl. buffer solution pH 4.01 and 7.00 (per 75 ml), storage solution (35 ml), empty container for water, 100 ml measuring beaker, transport case and 3 Mignon 1.5 V batteries.

Type	Design	Art. No.	Pack Qty.	€
pH 7, set 1	pH combination electrode 201T with integrated temperature sensor	**HAH0.1**	1	361,20
pH 7, set 2	pH combination electrode GEL and external temperature sensor NT55	**HAH1.1**	1	396,70
pH 7 Food, set 3	pH combination electrode 2PoreT with integrated temperature sensor	**HAH2.1**	1	418,20

Accessories:

pH single-rod measuring cell 201T with integrated temperature gauge; measuring ranges: 0 to 14 mS/cm, 0 to +60 °C; shaft length/∅ 120/12 mm; fixed cable L 1 m (BNC/Cinch)	**HAE4.1**	1 piece	107,30
pH combination electrode GEL with fixed cable L 1 m (BNC)	**HAH3.1**	1	84,95
pH combination electrode 2PoreT with fixed cable L 1 m (BNC/Cinch)	**HAH4.1**	1	179,55
Temperature sensor NT55 (NTC 30 kΩ) with fixed cable L 1 m (Cinch)	**HAE5.1**	1	85,95
Mignon battery/AA 1.5 V	**1022.2**	4	6,05

FiveGo™ portable pH meter

By Mettler-Toledo.

- Waterproof and dust-proof in accordance with protection class IP67
- Ergonomic design for comfortable handling
- Simple, user-friendly menu
- Automatic or manual temperature compensation
- Automatically or manually end a measurement; with acoustic and visual endpoint signal
- Automatic calibration with four predefined buffer groups
- Displays the current calibration and has data memory for 200 measurements

Technical specifications for the devices:

Measuring range/resolution	pH mV °C	0.00 to 14.00 -1999 to +1999 0.0 to +100.0
Accuracy	pH mV °C	±0.01 ±01 ±0.5
Connections	pH °C	BNC Cinch (NTC 30 kΩ)
Calibration		1-/2-/3-point calibration
Data memory		200 measurements, current calibration
Dimensions (L x W x H)		169 x 82 x 36 mm

The FiveGo series is available in the following different versions:

- F2-Meter without pH single-rod measuring cell
- F2-Standard with LE438-IP67 pH single-rod measuring cell for water-based samples, including emulsions and suspensions
- F2-Field with LE438-IP67 pH single-rod measuring cell and carrying case
- F2-Food with LE427-IP67 pH single-rod measuring cell for recess measurements in solid and semi-solid samples, such as meat, fruit, butter, yoghurt or cheese

Technical specifications for the pH single-rod measuring cells:

- LE438-IP67 with integrated temperature sensor (NTC 30 kΩ), pH range 0 to 14, range of application 0 to +80 °C, protection class IP67, nylon diaphragm, plastic shaft, shaft length/∅ 120/12 mm, gel-filled
- LE427-IP67 without temperature sensor, pH range 0 to 11, range of application 0 to +50 °C, protection class IP67, ceramic diaphragm, glass shaft, shaft length/∅ 16/6 mm, gel-filled; for automatic temperature compensation, the NTC 30 kΩ temperature sensor (art. no. Y734.1) can be connected. This is sold separately

Delivery incl. calibration bag (pH 4.01, 7.00 and 9.21), electrode clip, wrist strap and four 1.5 V AAA batteries.

Type	Design	Art. No.	Pack Qty.	€
FiveGo F2-Meter	-	**HY66.1**	1	342,00
FiveGo F2-Standard	LE438-IP67	**HY67.1**	1	502,00
FiveGo F2-Field	LE438-IP67, carrying case	**HY68.1**	1	566,00
FiveGo F2-Food	LE427-IP67	**EEP5.1**	1	545,00

Accessories:

LE438-IP67 pH single-rod measuring cell with 1 m fixed cable (BNC + Cinch)	**EEP6.1**	1	172,00
LE427-IP67 pH single-rod measuring cell with 1 m fixed cable (BNC)	**EEP7.1**	1	162,00
NTC 30 kΩ temperature sensor with 1.2 m fixed cable (Cinch)	**Y734.1**	1	83,30
Carrying case with 4 sample bottles	**EEP8.1**	1	89,50

Pocket pH-meters

Seven2Go™-series pocket pH meters

By Mettler-Toledo. Rugged pH meter designed to withstand the harshest environments. Waterproof and dustproof to IP 67. Impact protection housing.

- Automatic and manual temperature compensation
- Automatic, manual and timer-controlled endpoint determination
- User-defined intermittent measurement possible (max. operating time 1 h)
- Intelligent Sensor Management (ISM®) for automatic recognition of ISM® sensors and reading in calibration data

Other features of the Seven2Go™ pro pH/Ion S8 professional pH meter:

- Menu structure with full-text display in 12 languages
- Graphical LCD display
- Memory capacity for 2000 datasets incl. date and time (GLP-compliant)
- Data readout via Micro USB port

Technical specifications:

Model		Seven2Go™ S2	Seven2Go™ pro S8
Measuring range/ resolution	pH mV °C	-2.00 to 20.00 -1999 to +1999 -5.0 to +105.0	-2.000 to 20.000 -2000.0 to +2000.0 -5.0 to +130.0
Accuracy	pH mV °C	±0.01 ±1 ±0.5	±0.002 ±0.01 ±0.2 (0 to +105) ±0.5 (outside)
Connections	pH °C	BNC Cinch (NTC k30 Ω)	BNC Cinch (NTC 30 kΩ)
Calibration points		1-/2-/3-/4-/5-point calibration	1-/2-/3-/4-/5-point calibration
Buffer series: predefined/user-defined		4/1	8/5
Data memory		200 pH values	2000 datasets
Communication port		-	Micro USB
Dimensions H x W x D (mm)		222 x 70 x 35	222 x 70 x 35

Delivery incl. pH plastic electrode InLab® Expert Pro-ISM®-IP67 with built-in temperature sensor (for aqueous samples, including emulsions, suspensions and solutions containing proteins), electrode clip, pH buffer solution in 4.01, 7.00 and 9.21 packs (2 x 30 ml sachets each) and 4 Mignon 1.5 V batteries.
Seven2Go™ pro pH/Ion S8 Standard Kit including software and data cable.

Type	Art. No.	Pack Qty.	€
Seven2Go™ pH/mV S2 standard kit	**CAL2.1**	1	616,00
Seven2Go™ pro pH/Ion S8 standard kit	**CAL3.1**	1	963,00
Accessories:			
pH plastic electrode InLab® Expert Go-ISM®(IP 67), incl. 1.8 m fixed cable (BNC/Cinch), stem length/ ∅ 120/12 mm, gel-filled	**LN43.1**	1	345,00
pH plastic electrode InLab® Expert Go (IP 67), without ISM®, incl. fixed cable 1.8 m (BNC/Cinch), stem length/∅ 120/12 mm, gel-filled	**CY88.1**	1	265,00
Mignon battery/AA 1.5 V	**1022.2**	4	6,05

Pocket pH-meters, models pH 3110 and 3310

By WTW. Dust and waterproof. Come singly or in set.

Standard set equipment: professional case with integrated measuring station and separate compartments for accessories. Complete with stand, beaker, pH-buffer solutions and batteries.

Set 1: standard equipment with pH-meter, model 3110: electrode Sentix® 41 with integrated temperature sensor

Set 2: standard equipment with pH-meter model 3310: electrode Sentix® 41 with integrated temperature sensor, driver software for USB and USB cable (Length 1 m).

Technical specifications:

Model		pH 3110	pH 3310
Measuring range / Resolution	pH mV °C	-2.0 to +19.9, -2.00 to +19.99, -2.000 to +19.999 ±2000 -5.0 to +105.0	
Accuracy	pH mV °C	±0.1, ±0.01, ±0.005 ±1 mV ±0.1	
Connections	pH °C	DIN 19262 banana, 2 x 4 mm (NTC 30 kΩ/Pt 1000)	
AutoRead		Automatic	Automatic/Manual
Calibration		1-/2-/3-point	1-/2-/3-/4-/5-point
Calibration storage		Current calibration	5 calibrations retrievable
Display		7 segment LCD	LCD graphics, backlitt
Data storage		-	Manual 200 records and 5000 time-controlled
Interface		-	Mini-USB
Dimensions (H x W x D)		180 x 80 x 55 mm	
Power supply		4 Mignon/AA 1.5 V batteries	

Type	Design	Art. No.	Pack Qty.	€
3110	without accessories	**KT20.1**	1	535,35
3110	Set 1	**KT21.1**	1	669,75
3310	without accessories	**KT25.1**	1	663,30
3310	Set 2	**KT26.1**	1	857,85
Accessories:				
pH electrode SenTix®41 with integral temperature sensor and fixed cable L 1 m (DIN 19262 + banana plug 1x4 mm)		**X173.1**	1	213,95
pH electrode SenTix®21 with fixed cable L 1 m (DIN 19262)		**X174.1**	1	135,45
Temperature sensor TFK 325		**AN69.1**	1	191,35
Mignon battery/AA 1.5 V		**1022.2**	4	6,05

Benchtop pH-meters

pH 50-series benchtop pH meters

By Dostmann.

- Large screen with simultaneous display of pH or mV value and temperature
- Automatic or manual temperature compensation
- Automatic calibration
- Saves the current calibration
- Confirmation when a stable measured value is reached

Technical specifications:

pH measuring range/ resolution	pH mV °C	0.00 to 14.00 ±1999 0.0 to +100.0
Accuracy	pH mV °C	±0.01 ±1 ±0.5 (+5 to +60), ±1 (outside)
Connections	pH °C	BNC Cinch (NTC 30 KΩ)
Calibration		1-/2-/3-point calibration (pH 4.01 / 7.00 / 10.01)
Data memory		25 measurements, current calibration
Dimensions (L x W x H)		160 x 190 x 70 mm
Power supply		100 to 240 V, 50/60 Hz

Technical specifications for pH combination electrode 201T:
Features integrated temperature sensor, pH-range 0 to 14, operating range 0 to +60 °C, ceramic diaphragm, gel-electrolyte, plastic shaft, shaft length/∅ 120/12 mm.

Delivery incl. buffer solution pH 4.01 and 7.00 (50 ml each), electrode holder and mains adapter.

Type	Design	Art. No.	Pack Qty.	€
pH 50	without pH combination electrode	**HAE2.1**	1	354,75
pH 50 Set	with pH combination electrode 201T	**HAE3.1**	1	406,35

Accessories:

pH single-rod measuring cell 201T with integrated temperature gauge; measuring ranges: 0 to 14 mS/cm, 0 to +60 °C; shaft length/∅ 120/ 12 mm; fixed cable L 1 m (BNC/Cinch)	**HAE4.1**	1	107,30
Temperature sensor NT55 (NTC 30 kΩ) with fixed cable L 1 m (Cinch)	**HAE5.1**	1	85,95
Electrode holder	**EHY1.1**	1	88,15

Laboratory pH meter Lab 855

By SI Analytics.

- Large easy-to-use LCD screen and clearly laid out keypad
- Simultaneous display of pH or mV value and temperature
- Can analyse and store current calibration data
- Adjustable calibration interval
- Stability control for identifying stable readings
- Automatic or manual temperature compensation
- Suitable for battery and mains operation
- Can be set to switch off automatically when battery-operated

Technical specifications:

Measuring range/resolution	pH mV °C	-2.000 to +19.999 ±1200.0 / ±2000 -5.0 to +105.0
Accuracy	pH mV °C	±0.005 ±0.3 / ±1 ±0.1
Connections	pH °C	DIN 19262 Banane, 2 x 4 mm (NTC 30 kΩ/Pt 1000)
Calibration		1-/2-/3-point calibration
Dimensions (L x W x D)		230 x 190 x 80 mm
Power supply		100 to 240 V, 50/60 Hz or 4 x 1.5 V AA batteries

Delivery incl. BlueLine pH electrode 14 pH, calibration pouch (4.00 and 7.00), electrolyte solution 3 mol/l KCl, tripod, universal power supply and batteries.

Art. No.	Pack Qty.	€
EPH2.1	1	900,85

Accessories:

Temperature sensor Pt 1000, made of stainless steel with 1 m fixed cable	**X765.1**	1	273,05
Spare pH-electrode BlueLine 14 pH, with integrated temperature sensor	**N521.1**	1	242,95

▶ BlueLine-series pH single-rod measuring cells see page 858

Benchtop pH-meters

FiveEasy™, FiveEasy Plus™ benchtop pH meters

By Mettler-Toledo.

- Space-saving design with large display
- Simple, user-friendly menu
- Automatic or manual temperature compensation
- Automatically or manually end a measurement; with acoustic and visual endpoint signal
- Automatic calibration with four predefined buffer groups
- Displays the current calibration

Technical specifications for the device:

Model		FiveEasy™	FiveEasy Plus™
Measuring range/resolution	pH mV °C	0.00 to 14.00 -2000 to +2000 0.0 to +100.0	-2.00 to 16.00 -2000 to +2000 -5.0 to +105.0
Accuracy	pH mV °C	±0.01 ±1 ±0.5	±0.01 ±1 ±0.3
Connections	pH °C	BNC Cinch (NTC 30 kΩ)	BNC Cinch (NTC 30 kΩ)
Calibration		1-/2-/3-point calibration	1-/2-/3-/4-/5-point calibration
Data memory		Current calibration	200 measurements, current calibration
Data transmission ports		-	RS 232, USB
Dimensions L x W x H (mm)		227 x 147 x 70	
Power supply		100 to 240 V, 50/60 Hz	

Technical specifications for the LE438 pH electrode:
For water-based samples, including emulsions and suspensions. Features an integrated temperature sensor (NTC 30 kΩ), pH range of 0 to 14, operating range of 0 to +80 °C, nylon diaphragm, plastic shaft (shaft length/ ∅ 120/12 mm respectively); gel-filled.

Delivery incl. electrode arm, calibration sachet (pH 4.01, 7.00 and 9.21) and 12 V power supply. F20- and FP20-standard models – also with LE438 pH electrode.

Model	pH electrode	Art. No.	Pack Qty.	€
FiveEasy™-F20-meter	-	**HY56.1**	1	426,00
FiveEasy™-F20-standard	LE438	**PE70.1**	1	566,00
FiveEasy Plus™-FP20-meter	-	**TE49.1**	1	609,00
FiveEasy Plus™-FP20-standard	LE438	**TE50.1**	1	758,00

Accessories:

LE438 pH electrode with 1.2 m fixed cable (BNC + Cinch)	**HY59.1**	1	155,00

▶ LE-series pH single-rod measuring cells see page 857

▶ For information on pH measurement see page 856

Benchtop pH/ion meters SevenCompact™ S220

By Mettler-Toledo.

- Large colour display (4.3″) with Routine or Expert mode (e.g. for disabling Delete data or Edit data function)
- Menu navigation in 10 languages (DE, GB, FR, ES, IT, PT, CN, JP, KR, RU)
- Automatic 1-/2-/3-/4-/5-point calibration with predefined buffer groups or 1 user-defined group
- Automatic and manual temperature compensation
- Automatic, manual or timed endpoint detection
- Internal measured value memory: saving by pressing key or timed (intermittent) saving (interval is variable from 1 sec to 40 min)
- USB ports for exporting data via USB stick (datasets are exported as a text (.txt) file) or for connecting a USB keyboard
- It is possible to measure ion concentrations using additional ion-selective electrodes (ISE)

Technical specifications:

Measuring range / resolution	pH mV °C	-2.0 to 20.0; -2.00 to 20.00; -2.000 to 20.000 -2000.0 to +2000.0; -2000 to +2000 -5.0 to +130.0
Accuracy	pH mV °C	±0.002 ±0.2 ±0.1
Connections	pH °C	BNC Cinch (NTC 30 kΩ/Pt 1000)
Data memory		1000 sets
Communication ports		RS 232, USB-A, USB-B

pH meter SevenCompact™ S220-basic
Delivery incl. electrode holder and protective sleeve.
Please order pH single-rod measuring cell separately.

Art. No.	Pack Qty.	€
TA09.1	1	896,00

pH meter SevenCompact™ S220-U Kit-Version
Delivery incl. electrode holder, protective sleeve, Versatile Pro plastic pH electrode and two 20 ml buffer bags for pH 4.01/7.00/9.21/10.00.

Art. No.	Pack Qty.	€
TA10.1	1	1059,00

Accessories:

pH-electrode InLab® Versatile Pro, incl. fixed cable 1.2 m	**TA11.1**	1	215,00
pH-electrode InLab® Routine Pro with MultiPin™, connecting cable please order separately	**N504.1**	1	230,00
Connecting cable, length 1.2 m, MultiPin™ + BNC + cinch plug	**N505.1**	1	89,00
NTC 30 kΩ temperature sensor with 1.2 m fixed cable (Cinch)	**Y734.1**	1	83,30

▶ InLab® series pH single-rod measuring cells with integrated temperature sensor, see page 858

Conductivity tester

Conductivity testers COND 1 and COND 5

By Dostmann.

- Large LCD display
- Waterproof and dust-proof in accordance with protection class IP 67
- Automatic temperature correction from 0 to +50 °C
- Confirmation when a stable measured value is reached
- Automatic calibration with display of the calibrated ranges
- For model COND 5: Multicolour back lighting for status display of measurement mode, calibration and alarm

Technical specifications:

Model		① COND 1	② COND 5
Measuring range	EC TDS Salinity °C	0 to 20 mS/cm 0 to 10 ppt - -	0 to 20 mS/cm 0 to 10 ppt 0 to 10 g/l 0 to +50 °C
Resolution	EC TDS Salinity °C	automatic automatic - -	automatic automatic automatic 0.1 °C
Accuracy	EC	±20 µS/cm (0 to 1999 µS/cm) ±0.2 mS/cm (2 to 20 mS/cm)	±2 µS/cm (0 to 199,9 µS/cm) ±20 µS/cm (200 to 1999 µS/cm) ±0,2 mS/cm (2 to 20 mS/cm)
	TDS	±2 ppm (0.1 to 199.9 ppm) ±20 ppm (200 to 1999 ppm) ±0.1 ppt (2.00 to 10.00 ppt)	±2 ppm (0.1 to 199.9 ppm) ±20 ppm (200 to 1999 ppm) ±0.1 ppt (2.00 to 10.00 ppt)
	Salinity	-	±2 mg/l (0.1 to 199.9 mg/l) ±20 mg/l (200 to 1999 mg/l) ±0.1 g/l (2.00 to 10.00 g/l)
	°C	-	±0.2 °C
Calibration		1-/2-point calibration	1-/2-/3-point calibration
Replaceable electrode		no	yes
Reference temperature		+25 °C	+20 / +25 °C
Dimension (L x ∅)		175 x 35 mm	
Weight		130 g	
Power supply		4 x Micro/AAA 1.5 V	

Delivery incl. conductivity solutions (1413 µS/cm and 12.88 mS/cm), storage case and batteries.

Type	Art. No.	Pack Qty.	€
① COND 1	**HPC8.1**	1	99,65
② COND 5	**HPC9.1**	1	149,45

Accessories:

Spare electrode for COND 5	**HPE0.1**	1	55,40
Battery Micro/AAA 1,5 V	**1021.2**	4	6,40

SD 70 conductivity tester

By Aqualytic.

- Rugged, water resistant housing (IP67)
- Automatic 1/2 point calibration (calibration standards: 1413 µS/cm, 12.88 mS/cm) and manual 1/2 point calibration (calibration standards: freely selectable)
- Automatic temperature compensation
- Automatic change-over from µS/cm to mS/cm
- Auto Off after 8 min
- Memory with capacity for 25 datasets incl. time and date

Technical specifications:

Measuring range / resolution	1 to 1999 µS/cm and 2.00 to 20.00 mS/cm 0.1 to 60.0 °C
Accuracy	±3 % of measuring range end value ±1 °C
Dimensions (L x W x D)	177 x 43 x 29 mm
Weight	126 g

Delivery incl. conductivity measuring cell, carry strap, plastic box and 2 batteries micro/AAA 1,5 V.

Art. No.	Pack Qty.	€
YP30.1	1	106,45

Accessories:

Replacement electrode for conductivity tester SD 70	**YP31.1**	1	70,95
Battery Micro/AAA 1,5 V	**1021.2**	4	6,40

▶ Conductivity test solutions see page 868, 870

▶ Test kits for water analysis see page 847

Conductivity meters

NEW

Conductivity meter COND 7+

By Dostmann.

- Large LCD display with simultaneous display of conductivity and temperature
- Temperature correction: automatic from 0 to +100 °C, manual 0 to +80 °C
- Confirmation when a stable measured value is reached
- Automatic calibration with display of the calibrated ranges
- Reference temperature, adjustable cell constant and temperature coefficient

Technical specifications:

Measuring range	EC TDS °C	0 to 200 mS/cm 0 to 100 g/l 0 to +100 °C
Resolution	EC TDS °C	automatic automatic 0.1 °C
Accuracy	EC	±0,4 µS/cm (0 to 19.99 µS/cm) ±4 µS/cm (20.0 to 199.9 µS/cm) ±40 µS/cm (200 to 1999 µS/cm) ±0.4 mS/cm (2.00 to 19.99 mS/cm) ±4 mS/cm (20.0 to 200.0 mS/cm)
	TDS	±0.2 mg/l (0 to 19.99 mg/l) ±2 mg/l (20.0 to 199.9 mg/l) ±20 mg/l (200 to 1999 mg/l) ±0.2 g/l (2.00 to 19.99 g/l) ±1 g/l (20.0 to 100.0 g/l)
	°C	±0.5 °C
Connections	EC °C	BNC Cinch
Calibration	automatic	1-/2-/3-/4 point calibration
	manual	1-point calibration (user-defined)
Reference temperature		+15 to +30 °C
Temperature coefficient		0 to 10.00 %/ °C
Cell constant		0.1 / 1.0 / 10 cm^{-1}
Dimensions (W x H x D)		86 x 196 x 33 mm
Weight		295 g
Power supply		3 x Mignon/AA 1.5 V

Delivery incl. conductivity solutions (1413 µS/cm and 12.88 mS/cm), measuring beaker, storage case and batteries.

Type	Design	Art. No.	Pack Qty.	€
COND 7+ Basic	without conductivity sensor	**HPL7.1**	1	289,20
COND 7+ Set	with conductivity sensor 2301T (0 to 200 mS/cm, 0 to +60 °C)	**HPL8.1**	1	395,60

Accessories:

2301T conductivity sensor with integrated temperature gauge; measuring ranges: 0.01 to 200 mS/cm, 0 to +60 °C; shaft length/∅ 120/12 mm; fixed cable L 1 m (BNC/Cinch)	**HPL9.1**	1	145,15
Conductivity sensor VPT 51 51 with integrated temperature gauge; measuring ranges: 0.1 to 1000 µS/cm, 0 to +60 °C; shaft length/∅ 120/ 12 mm; fixed cable L 1 m (BNC/Cinch)	**HPN0.1**	1	256,95
Mignon battery/AA 1.5 V	**1022.2**	4	6,05

FiveGo™ portable conductivity meter

By Mettler-Toledo.

- Waterproof and dust-proof in accordance with protection class IP 67
- Ergonomic design for comfortable handling
- Simple, user-friendly menu
- Automatic or manual temperature compensation
- Automatically or manually end a measurement; with acoustic and visual endpoint signal
- Automatic calibration with three predefined standards
- Displays the current calibration and has data memory for 200 measurements
- Selectable reference temperature (20 or 25 °C)

Technical specifications for the device:

Measuring range/resolution	EC TDS °C	0.00 µS/cm to 200 mS/cm 0.01 mg/l to 200 g/l 0.0 to 100.0
Accuracy	EC TDS °C	±0.5% of the measured value ±0.5% of the measured value ±0.5 °C
Connection		LTW, 7-pin (IP 67)
Calibration		1-point calibration
Data memory		200 measurements, current calibration
Dimensions (L x W x H)		188 x 77 x 33 mm

Technical specifications for the conductivity sensor:
LE703-IP 67 with integrated temperature sensor, measuring range: 0.01 to 200 mS/cm, plastic shaft, shaft length/∅: 120/12 mm, range of application 0 to +80 °C.

Delivery incl. LE703-IP 67 conductivity sensor, calibration bag (1413 µS/cm and 12.88 mS/cm), electrode clip, wrist strap and four 1.5 V AAA batteries.

Type	Design	Art. No.	Pack Qty.	€
FiveGo F3-Standard	-	**HY63.1**	1	545,00
FiveGo F3-Field	Carry case	**HY64.1**	1	598,00

Accessories:

LE703-IP 67 conductivity sensor with 1 m fixed cable (LTW, 7-pin)	**EEP9.1**	1	140,00
Carrying case with 4 sample bottles	**EEP8.1**	1	89,50
Battery Micro/AAA 1,5 V	**1021.2**	4	6,40

Seven2Go™-series pocket conductivity meter

By Mettler-Toledo. Rugged conductivity meter designed to withstand the harshest environments. Waterproof and dustproof to IP 67.
Impact protection housing.

- Automatic and manual temperature compensation
- Automatic, manual and timer-controlled endpoint determination
- User-defined intermittent measurement possible (max. operating time 1 h)
- Selectable reference temperature (20/25 or °C)
- Intelligent Sensor Management (ISM®) for automatic recognition of ISM® sensors and reading in calibration data

Other features of the Seven2Go™ pro S7:

- Menu structure with full-text display in 12 languages
- Graphical LCD display
- Memory capacity for 2000 datasets incl. date and time (GLP-compliant)
- Data readout via Micro USB port

Technical specifications:

Model		Seven2Go™ S3	Seven2Go™ pro S7
Measuring range/ resolution	EC TDS Salinity °C	0.01 µS/cm to 500 mS/cm 0.01 mg/l to 300 g/l 0.00 to 42.0 psu -5.0 to +105.0	0.01 µS/cm to 1000 mS/cm 0.01 mg/l to 600 g/l 0.00 to 42.0 psu -5.0 to +105.0
Accuracy	EC TDS Salinity °C	±0.5 % ±0.5 % ±0.5 % ±0.2 °C	±0.5 % ±0.5 % ±0.5 % ±0.1 °C
Connections		LTW 7-pin (IP 67)	LTW 7-pin (IP 67)
Calibration points		1	1
Buffer series: predefined user-defined		 3 (84, 1413, 12880 µS/cm) 2	 3 (84, 1413, 12880 µS/cm) 2
Temperature compensation		linear	linear, non-linear
Data memory		200 conductivity values	2000 datasets
Communication port		-	Micro USB
Dimensions H x W x D (mm)		222 x 70 x 35	222 x 70 x 35
Weight (g)		270	290

Delivery incl. conductivity sensor InLab® 738-ISM® (IP 67), electrode clip, conductivity test solutions 1413 µS/cm and 12880 µS/cm (2 x 30 ml sachets each) and 4 Mignon 1.5 V batteries.
Seven2Go™ pro S7 Standard Kit including software and data cable.

Type	Art. No.	Pack Qty.	€
Seven2Go™ conductivity S3 Standard Kit	**CAL4.1**	1	780,00
Seven2Go™ pro conductivity S7 Standard Kit	**CAL5.1**	1	1130,00

Accessories:

Conductivity sensor InLab® 738-ISM® (IP 67), incl. 1.8 m fixed cable (LTW 7-pin), stem length/∅ 120/ 12 mm, measuring range 0.01 to 1000 mS/cm	**LN44.1**	1	455,00
Conductivity sensor InLab® 738 (IP 67), incl. 1.8 m fixed cable (LTW 7-pin), stem length/∅ 120/ 12 mm, measuring range 0.01 to 1000 mS/cm	**CY95.1**	1	404,00
Mignon battery/AA 1.5 V	**1022.2**	4	6,05

Pocket conductometer Cond 3110-/3310-Set

By WTW. Robust, waterproof conductivity meters with parallel temperature display.

- 1-point calibration (calibration standard can be freely selected)
- Non-linear function for high-purity and natural water (non-cond.)
- Optional reference temperature (20 or 25 °C)

Additional features of Cond 3310:

- Integrated data logger
- USB-interface
- Turn-off temperature compensation
- Backlight graphic display
- Additional equipment: CD with driver software for USB and USB cable (Length 1 m)

Technical specifications:

Model		Cond 3110	Cond 3310
Measuring range/ resolution	Conductivity Temperature Salinity	0.1 µS to 1000 mS/cm -5.0 to +105.0 °C 0.0 to 70.0	
	TDS	-	0 to 1999 mg/l, 0 to 199.9 g/l
Accuracy	Conductivity Temperature	±0.5 % of reading ±0.1 °C	
Temperature compensation		Non-cond.	turn-off, non-cond., 0.000 to 10.00 %/C
Calibrating storage		Current calibration	5 calibrations retrievable
Display		7 segment LCD	LCD graphics, backlight
Data storage		-	Manual 200 and time-controlled 5000 records
Interface		-	Mini-USB
Dimensions (H x W x D)		180 x 80 x 55 mm	
Power supply		4 Mignon/AA 1.5 V batteries	

Delivery incl. 4-pol conductivity electrode TetraCon®325 (measuring range 0.001 to 1000 mS/cm), professional case with integrated measuring station and separate compartments for accessories, stand, beaker, conductivity test solutions 1413 µS/cm and batteries.

Model	Art. No.	Pack Qty.	€
Cond 3110-Set	**KT27.1** *	1	1009,45
Cond 3310-Set	**KT28.1** *	1	1161,00

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4	6,05

Conductivity meters

NEW

Conductivity meters Cond 51+

By Dostmann.

- Large LCD display, backlit with simultaneous display of conductivity and temperature
- Automatic and manual temperature compensation
- Automatic calibration with display of the calibrated ranges, storage of current calibration
- Confirmation when a stable measured value is reached
- Reference temperature, adjustable cell constant and temperature coefficient

Technical specifications:

Measuring range	EC TDS °C	0 to 200 mS/cm 0 to 100 g/l 0 to +100.0 °C
Resolution	EC TDS °C	automatic automatic 0.1 °C
Accuracy	EC TDS °C	±0.4 µS/cm (0 to 19.99 µS/cm) ±4 µS/cm (20.0 to 199.9 µS/cm) ±40 µS/cm (200 to 1999 µS/cm) ±0.4 mS/cm (2.00 to 19.99 mS/cm) ±4 mS/cm (20.0 to 200.0 mS/cm) ±0.2 mg/l (0 to 19.99 mg/l) ±2 mg/l (20.0 to 199.9 mg/l) ±20 mg/l (200 to 1999 mg/l) ±0.2 g/l (2.00 to 19.99 g/l) ±1 g/l (20.0 to 100.0 g/l) ±0.5 °C
Connections	EC °C	BNC Cinch
Calibration - automatic - manual		 1-/2-/3-/4 point calibration 1 point calibration (user-defined)
Reference temperature		+15 to +30 °C
Temperature coefficient		0 to 10.00 %/ °C
Cell constant		0.1 / 1.0 / 10 cm^{-1}
Dimensions (L x W x H)		160 x 185 x 70 mm
Weight		550 g
Power supply		100 to 240 V, 50/60 Hz

Delivery incl. conductivity solutions (1413 µS/cm and 12.88 mS/cm), electrode holder and mains adapter.

Type	Design	Art. No.	Pack Qty.	€
COND 51+ Basic	without conductivity sensor	**HXA8.1**	1	446,15
COND 51+ Set	with conductivity sensor 2301T (0 to 200 mS/cm, 0 to +60 °C)	**HXA9.1**	1	532,15

Accessories:

2301T conductivity sensor with integrated temperature gauge; measuring ranges: 0.01 to 200 mS/cm, 0 to +60 °C; shaft length/∅ 120/12 mm; fixed cable L 1 m (BNC/Cinch)	**HPL9.1**	1 piece	145,15
Conductivity sensor VPT 51 51 with integrated temperature gauge; measuring ranges: 0.1 to 1000 µS/cm, 0 to +60 °C; shaft length/∅ 120/12 mm; fixed cable L 1 m (BNC/Cinch)	**HPN0.1**	1 piece	256,95

NEW

Conductivity standards in sachets

The quantity of reagent contained in a sachet (25 ml) is sufficient for a single calibration.

- Traceable thanks to comparison with standard references from the National Institute of Standards and Technology (NIST)
- With certificate of analysis for documenting the quality, traceability and accuracy

Type	Accuracy	Art. No.	Pack Qty.	€
1413 µS/cm	±1 %	**KCX3.1**	20	32,20
12880 µS/cm	±1 %	**KCX4.1**	20	32,20

▶ Further calibration solutions for conductimetry see page 868, 870

FiveEasy™

By Mettler-Toledo.

- Space-saving design with large display
- Simple, user-friendly menu
- Automatic or manual temperature compensation
- Automatically or manually end a measurement; with acoustic and visual endpoint signal
- Automatic calibration with three predefined standards
- Saves the current calibration
- Selectable reference temperature (20 or 25 °C)

Technical specifications:

Measuring range/resolution	EC TDS °C	0.1 µS/cm to 200 mS/cm 0.01 mg/l to 200 g/l 0.0 to +100.0 °C
Accuracy	EC TDS °C	±0.5 % of the measured value ±0.5 % of the measured value ±0.5 °C
Connection		Mini-DIN
Calibration		1-point calibration
Dimensions (L x W x H)		227 x 147 x 70 mm
Power supply		100 to 240 V, 50/60 Hz

Technical specifications for the conductivity sensor:
LE703 featuring integrated temperature sensor,
measuring range: 0.01 to 200 mS/cm, plastic shaft
(shaft length/∅: 120/12 mm respectively), operating range of 0 to +80 °C,
1.0 m fixed cable (mini-DIN).

Delivery incl. LE703 conductivity sensor, electrode arm, calibration sachet (1413 µS/cm and 12.88 mS/cm) and 12 V power supply.

Art. No.	Pack Qty.	€
HY61.1	1	897,00

Conductivity sensors for the FiveEasy™ benchtop conductivity meter

Features an integrated temperature sensor (NTC 30 kΩ).

Technical specifications:

Type	① InLab® 720	② InLab® 751-4 mm	③ LE703
Measuring range	0.1 to 500 µS/cm	0.01 to 100 mS/cm	0.01 to 200 mS/cm
Operating range (°C)	0 to +100	0 to +100	0 to +80
Cell constant/cm	0.06	1.0	0.55
Cell type	2 platinum poles	2 platinum poles	4-pole graphite cell
Shaft material	Glass	Glass	Plastic
Stem length (mm)	120	120	120
Shaft ∅ (mm)	12	4	12
Application	For low-conductivity samples	For taking measurements in small containers	For general conductivity measurements

Delivery incl. 1 m fixed cable and mini-DIN connector.

Type	Art. No.	Pack Qty.	€
① Conductivity sensor InLab® 720, incl. 1.0 m fixed cable (Mini-DIN); measuring range 0.01 to 500 mS/cm	**PP35.1**	1	318,00
② InLab® 751-4 mm	**PP36.1**	1	479,00
③ LE703	**HY62.1**	1	142,00

Conductivity meters

Benchtop conductivity meter SevenCompact™ S230

By Mettler-Toledo.

- Large colour display (4.3″) with Routine or Expert mode (e.g. for disabling Delete data or Edit data function)
- Menu navigation in 10 languages (DE, GB, FR, ES, IT, PT, CN, JP, KR, RU)
- 1-point calibration with 5 predefined groups and 1 user-defined group incl. temperature chart
- Automatic and manual temperature compensation
- Selection of compensation method: Linear, Nonlinear, Ultra-pure water, Off
- Manual cell constant input
- Internal measured value memory: saving by pressing key or timed (intermittent) saving (interval is variable from 1 sec to 40 min)
- USB ports for exporting data via USB stick (datasets are exported as a text (.txt) file) or for connecting a USB keyboard

Technical specifications:

Measuring range / resolution	Conductivity:	0.001 to 1.999 µmS/cm 2.00 to +19.99 µmS/cm 20.0 to 199.9 µmS/cm 200 to 1999 µmS/cm 20.0 to 199.9 mS/cm 200 to 1000 mS/cm
	Temperature:	-5.0 to 105.0 °C
	Salinity:	0.00 to 80.00 psu
	TDS:	0.00 mg/l to 1000 g/l
Accuracy	Conductivity:	±0.5 %
	Temperature:	±0.5 %
	Salinity:	±0.5 %
	TDS:	±0.5 %
Data memory		1000 sets
Communication ports		RS 232, USB-A, USB-B

Conductivity meter SevenCompact™ S230 Basic Kit
Delivery incl. electrode holder, protective sleeve, conductivity sensor InLab 731®-ISM (0.01 to 1000 mS/cm) and two 20 ml calibration bags for 1413 µS/cm and 12.88 mS/cm.

Art. No.	Pack Qty.	€
TA12.1	1	1488,00

Conductivity meter SevenCompact™ S230 USP/EP-Kit
Delivery incl. electrode holder, protective sleeve, conductivity sensor InLab 741®-ISM (0.001 to 500 µS/cm).

Art. No.	Pack Qty.	€
TA13.1	1	1637,00

Accessories for SevenCompact™ S230

By Mettler-Toledo.

4-pole conductivity sensor InLab® 731-ISM® (0-01 mS/cm)
With integrated temperature sensor. Stem material: epoxy.
Stem length: 120 mm, stem ∅ 12 mm. Temperature range: 0 to 100 °C.
Measuring range: 0.01 to 1000 mS/cm.

Art. No.	Pack Qty.	€
TA14.1	1	402,00

2-pole conductivity sensor InLab® 741-ISM® (0.001 µS/cm)
With integrated temperature sensor. Stem material: steel.
Stem length: 120 mm, stem ∅ 12 mm. Temperature range: 0 to 100 °C.
Measuring range: 0.001 to 500 µS/cm.

Art. No.	Pack Qty.	€
TA15.1	1	549,00

Conductivity standards ROTI®CALIPURE

Our conductivity standard solutions are made from high-quality reagents and therefore ensure maximum precision during calibration. They are ready for use and come supplied with a batch-specific certificate of analysis.

- 10 conductivity standards
- Variation in conductivity ±1 % (25 °C)
- Traceable to SRM from NIST
- Aqueous solution

Type	Art. No.	Pack Qty.	€
Conductivity standard 5 µS/cm	**2462.1**	500 ml	170,95
Conductivity Standard 10 µS/cm NEW	**0810.1**	250 ml	117,20
	0810.2	500 ml	170,95
Conductivity Standard 20 µS/cm NEW	**0811.1**	500 ml	62,25
Conductivity Standard 50 µS/cm NEW	**0812.1**	500 ml	62,25
Conductivity standard 84 µS/cm	**2432.1**	500 ml	28,95
	2432.2	1 l	37,55
Conductivity standard 100 µS/cm	**2463.1**	500 ml	66,15
Conductivity standard 147 µS/cm	**2433.1**	500 ml	28,95
	2433.2	1 l	37,55
Conductivity standard 500 µS/cm	**2464.1**	500 ml	66,15
Conductivity standard 1 000 µS/cm	**2465.1**	500 ml	66,15
Conductivity standard 1413 µS/cm	**2434.1**	500 ml	28,95
	2434.2	1 l	37,55
Conductivity Standard 5000 µS/cm NEW	**0814.1**	500 ml	62,25
Conductivity standard 10 000 µS/cm	**2466.1**	500 ml	66,15
Conductivity standard 12 880 µS/cm	**2435.1**	500 ml	28,95
	2435.2	1 l	37,55
Conductivity Standard 20000 µS/cm NEW	**0822.1**	500 ml	62,25
Conductivity Standard 50000 µS/cm NEW	**0831.1**	500 ml	62,25
Conductivity Standard 100000 µS/cm NEW	**0832.1**	500 ml	62,25
Conductivity standard 500 000 µS/cm	**2467.1**	500 ml	66,15

* For additional product data and safety information, see chapter Chemicals A-Z.

NEW

OXY 7 oxygen meter

By Dostmann. For determining dissolved oxygen in liquids.

- Large LCD display with simultaneous display of measured value and temperature
- Automatic calibration with display of the calibrated ranges
- Confirmation when a stable measured value is reached
- Automatic and manual temperature compensation from 0 to +60 °C
- Automatic air pressure compensation
- Manual salinity compensation of 0 to 50 ppt
- Auto Off after 20 minutes

Technical specifications:

Measuring range	O_2 concentration	0 to 50 mg/l
	O_2 saturation	0 to 400%
	Pressure	0 to 1100 mbar
	°C	0 to +60.0 °C
Resolution	O_2 concentration	automatic
	O_2 saturation	automatic
	Pressure	1 mbar
	°C	0.1 °C
Accuracy (with sensor)	O_2 concentration	±0.30 mg/l (0.00 to 19.99 mg/l) ±0.75 mg/l (20.0 to 50.0 mg/l)
	O_2 saturation	±20% (0.0 to 199.9%) ±40% (200 to 400%)
	Pressure	±0.55 mbar
	°C	±0.5 °C
Connections	O_2 °C	BNC Cinch
Calibration		1-/2-point calibration
Dimensions (L x W x H)		86 x 196 x 33 mm
Weight		295 g
Power supply		3 x Mignon/AA 1.5 V

Delivery incl. polarographic oxygen sensor OXY DO7 with integrated temperature sensor, electrolyte solution (30 ml), standard zero calibration solution (30 ml), replaceable membrane, storage case and batteries.

Art. No.	Pack Qty.	€
HPK6.1	1	697,70

Accessories:

OXY DO7 oxygen sensor with fixed cable L 3 m (BNC/Cinch), 2 replaceable membranes and electrolyte solution	**HPK7.1**	1 piece	284,90
Set with 2 replaceable membranes for OXY DO7 sensor	**HPK8.1**	1 piece	63,45
Electrolyte solution (30 ml) for OXY DO7 sensor	**HPK9.1**	1 piece	32,20
Standard zero calibration solution (5 x 30 ml)	**HPL0.1**	1 piece	26,35
Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Pocket oxygen meter Oxi 3310-Set

By WTW. Robust, waterproof pocket meter, battery operated

- Integrated data logger
- USB-interface
- Automatic air pressure compensation sensor
- Backlit graphic display
- Calibrating storage - 5 calibrations are retrievable

Set-equipment

- Meter incl. 4 Mignon/AA 1.5 V batteries
- Galvanic oxygen sensor CellOx®325 with 1.5 m cable (measuring range O_2-concentration: 0 to 50 mg/l)
- Professional case with integrated measuring station and separate compartments for accessories
- Cleaning agent and electrolyte solution
- 3 replaceable membrane heads
- Stand and beaker
- Driver software for USB
- USB-cable (Length 1 m)

Technical specificationsn:

Measuring range / Resolution	O_2-concentration	0.01 to 19.99 mg/l 0.0 to 90.9 mg/l
	O_2-saturation	0.1 to 199.9 % 0 to 600 %
	Partial pressure	0.1 to 199.9 hPa 0 to 1250 hPa
	Temperature	-5.0 to +50.0 °C
Accuracy	O_2-concentration	±0.5 % of reading
	O_2-saturation	±0.5 % of reading
	Partial pressure	±0.5 % of reading
	Temperature	±0.1 °C
Data storage		Manual 200 and time-controlled 5000 records
Interface		Mini-USB
Dimensions (H x W x D)		180 x 80 x 55 mm

Art. No.	Pack Qty.	€
KT29.1 *	1	1470,60

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

NEW

Combi tester PC 5

By Dostmann.
- Large LCD display
- Waterproof and dust-proof in accordance with protection class IP67
- Automatic temperature compensation/correction from 0 to +50 °C
- Confirmation when a stable measured value is reached
- Automatic calibration with display of the calibrated ranges
- Multicolour back lighting for status display of measurement mode, calibration and alarm

Technical specifications:

Measuring range	pH mV EC TDS Salinity °C	-2 to 16 pH ±1000 mV 0 to 20 mS/cm 0 to 10 ppt 0 to 10 g/l 0 to +50 °C
Resolution	pH mV EC TDS Salinity °C	0.01 pH automatic automatic automatic automatic 0.1 °C
Accuracy	pH mV	±0.01 pH ±1 mV
	EC	±2 µS/cm (0 to 199.9 µS/cm) ±20 µS/cm (200 to 1999 µS/cm) ±0.2 mS/cm (2 to 20 mS/cm)
	TDS	±2 ppm (0.1 to 199.9 ppm) ±20 ppm (200 to 1999 ppm) ±0.1 ppt (2.00 to 10.00 ppt)
	Salinity	±2 mg/l (0.1 to 199.9 mg/l) ±20 mg/l (200 to 1999 mg/l) ±0.1 g/l (2.00 to 10.00 g/l))
	°C	±0.2 °C
Calibration	pH/EC	1-/2-/3-point calibration
Reference temperature	EC	+20 / +25 °C
Dimensions (L x ∅)		175 x 35 mm
Weight		130 g
Power supply		4 x Micro/AAA 1.5 V

Delivery incl. buffer solutions (pH 4.01 and 7.00), conductivity solution (1413 µS/cm), storage solution (3 M KCl), 2 measuring beakers, storage case and batteries.

Art. No.	Pack Qty.	€
HPK4.1	1	196,75

Accessories:

Spare electrode for PC 5	**HPK5.1**	1 piece	82,25
Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Combined measuring devices PM 2000 set

Automatic sensor recognition. Robust, coated alu-housing. Automatic calibration. Protective system IP 65.

pH-measurement
- Measuring range/resolution: pH 0.00 to 14.00
- Accuracy: ±0.01 pH
- Automatic temperature compensation: 0 to 100 °C

Conductivity measurement
- Measuring range: 0 µS/cm to 500 mS/cm in 5 measuring ranges
- Measuring cell with integrated temperature sensor
- Error of measurement: to 200 mS = 2 %, to 500 mS = 4 %
- Setting possibility for temperature coefficient (0-3.9 %) and reference temperature (20/25 °C)
- Dimensions of measuring cell: W 32 x D 18 x L 165 mm

Temperature measurement
- Measuring range: -50.0 to +150.0 °C; resolution 0.1 °C
- Accuracy of device: ±0.2 °C
- Probe Pt 1000 Class B

mV-measurement (Redox potential)
- Measuring range: -1000 mV to +1000 mV; resolution 1 mV
- Zero point can be set individually for Redox-electrodes

Technical specifications:

Display	8 digit x 14 segment LCD • 7 mm
Weight	350 g without probe
Housing	Aluminium (black coating)
Dimensions (L x W x H)	138 x 85 x 35 mm
Ambient temperature	0 to +50 °C

Delivery incl. pH/Redox-measuring pre-amplifier with temperature probe, pH-electrode pH62/A7, conductivity measuring cell, 3 lithium-batteries Mignon 1.5 V.
Without Redox electrode, please order separately if required.

Art. No.	Pack Qty.	€
HT24.1	1	600,95

Accessories:

Redox electrode Pt 110	**N389.1**	1 piece	135,45
pH-electrode pH62/AS7	**N385.1**	1 piece	79,35
pH/Redox measuring pre-amplifier with temp.-prove	**N384.1**	1 piece	174,15
Conductivity measuring cell	**X286.1**	1 piece	153,75

Multi-range meters

NEW

PC 7+ hand-held multimeter

By Dostmann. For measuring pH, conductivity and TDS.

- Large LCD display with simultaneous display of measured value and temperature
- Automatic and manual temperature compensation
- Confirmation when a stable measured value is reached
- Automatic calibration with display of the calibrated ranges
- Adjustable reference temperature, cell constant and temperature coefficient

Technical specifications:

Measuring range	pH mV EC TDS °C	0 to 14 pH ±1000 mV 0 to 200 mS/cm 0 to 100 g/l 0 to +100 °C
Resolution	pH mV EC TDS °C	0.1 / 0.01 pH 1 mV automatic automatic 0.1 °C
Accuracy	pH mV EC TDS °C	±0.01 pH ±1 mV ±0.4 µS/cm (0 to 19.99 µS/cm) ±4 µS/cm (20.0 to 199.9 µS/cm) ±40 µS/cm (200 to 1999 µS/cm) ±0.4 mS/cm (2.00 to 19.99 mS/cm) ±4 mS/cm (20.0 to 200.0 mS/cm) ±0.2 mg/l (0 to 19.99 mg/l) ±2 mg/l (20.0 to 199.9 mg/l) ±20 mg/l (200 to 1999 mg/l) ±0.2 g/l (2.00 to 19.99 g/l) ±1 g/l (20.0 to 100.0 g/l) ±0.5 °C
Connections	pH EC °C	BNC BNC Cinch
Calibration	pH EC	1-/2-/3-point calibration (predefined buffer) 1-/2-point calibration (user-defined buffer) 1-/2-/3-/4-point calibration (predefined buffer) 1-point calibration (user-defined buffer)
Reference temperature		+15 to +30 °C
Temperature coefficient		0 to 10.00 %/ °C
Cell constant		0.1 / 1.0 / 10 cm^{-1}
Dimensions (L x ∅)		86 x 196 x 33 mm
Weight		300 g
Power supply		3 x Mignon/AA 1.5 V

Delivery incl. pH single-rod measuring cell 201T (0 to 14 pH, 0 to +60 °C), conductivity sensor 2301T (0 to 200 mS/cm, 0 to +60 °C), buffer solutions (pH 4.01 and 7.00), conductivity testing solutions (1413 µS/cm and 12.88 mS/cm), storage solution (3 M KCl), measuring beaker, transport case and batteries.

Art. No.	Pack Qty.	€
HTE8.1	1	682,65

Accessories:

2301T conductivity sensor with integrated temperature gauge; measuring ranges: 0.01 to 200 mS/cm, 0 to +60 °C; shaft length/∅ 120/12 mm; fixed cable L 1 m (BNC/Cinch)	**HPL9.1**	1 piece	145,15
pH single-rod measuring cell 201T with integrated temperature gauge; measuring ranges: 0 to 14 mS/cm, 0 to +60 °C; shaft length/∅ 120/12 mm; fixed cable L 1 m (BNC/Cinch)	**HAE4.1**	1 piece	107,30
Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Multi-parameter handheld meter AL15

By Aqualytic. For the measurement of pH/redox, conductivity/TDS and oxygen.

- Automatic/manual temperature compensation
- Min/Max and Hold functions
- Automatic/manual storage of up to 16,000 datasets
- Auto Off after 10 min
- Dimensions (incl. protective plating): L 220 x W 120 x D 40 mm. Weight 625 g

Technical specifications:

pH/redox	
Measuring range/resolution	0.01 to 14.00 pH -1999 to +1999 mV
Accuracy	±0.02 pH
Temperature compensation	Automatic: 0 to 65 °C, manual: 0 to 100 °C
Calibration	pH: 1-/ 2-/ 3-point calibration (pH 7. 4 and 10) Redox: 1-point calibration (calibration standards freely selectable)
Conductivity	
Measuring range/resolution	0.201 to 2.000 mS 2.01 to 20.00 mS 20.1 to 200.0 mS
Accuracy	±0.5 % of the measuring range end value
Temperature compensation	Automatic: 0 to 60 °C
Calibration	1-/ 2-/3-point calibration (calibration standards freely selectable)
TDS	
Measuring range/resolution	0.1 to 132.0 ppm / 0.1 ppm 132 to 1320 ppm / 1 ppm 1320 to 13 200 ppm / 10 ppm 13 200 to 132 000 ppm / 100 ppm
Accuracy	±2 % of the measuring range end value
Oxygen	
Measuring range/resolution	0.1 to 20.0 mg/l (dissolved O_2) 0.1 to 100 % (O_2 in air)
Accuracy	±0.4 mg/l ±0.7 %
Temperature compensation	Automatic: 0 to 50 °C
Salt correction	0 to 39 %
Air pressure compensation	0 to 8900 m

Delivery incl. pH plastic electrode with gel electrolyte and BNC connection, temperature sensor, conductivity measuring cell, pH buffers 4 and 7, plastic case and 4 mignon 1.5 V batteries. Does not include oxygen sensor and redox electrode; please order separately.

Art. No.	Pack Qty.	€
YT94.1	1	631,05

Accessories:

Spare pH plastic electrodes	**YP69.1**	1 piece	75,25
Replacement conductivity measuring cell	**YT96.1**	1 piece	61,30
Oxygen sensor	**YT97.1**	1 piece	149,45
Electrolyte for oxygen sensor	**YT98.1**	1 piece	18,85
Redox electrode with BNC connection	**C900.1**	1 piece	315,00
Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

pH-/Conductivity meters SevenGo® Duo

By Mettler-Toledo. Portable two-channel meter for determining pH, mV, conductivity, TDS (Total Dissolved Solids) and salinity.

General information
- Robust, waterproof casing
- Data storage for 99 GLP-data records

pH-measurement
- Automatic 1-/2-/3-point pH calibration with 4 predefined and one user-defined buffer set
- Reproducible results through automatic limit point recognition, automatic buffer identification and temperature compensation

Conductivity measurement
- 1-point calibration with calibration standards (84 / 1413 / 12880 µS/cm)
- Linear temperature compensation
- Selectable reference temperature (20 or 25 °C)

Technical specifications:

Measuring range/resolution	pH EC mV °C Salinity TDS	0.00 to 14.00 0.01 µS/cm to 500 mS/cm -1999 to + 1999 -5.0 to +105 0.00 to 80.00 ppt 0.1 mg/l to 300 g/l
Accuracy	pH EC mV °C	±0.01 ±0.5 % ±1 ±0.5
Storage via keystroke		99 data records
Dimensions (W x D x H)		220 x 90 x 45 mm

pH-/Conductivity meter SevenGo® Duo model SG23-ELK:
Delivery incl. pH-electrode InLab® Expert Go-ISM®, conductivity sensor InLab® 738-ISM® (both IP 67, 2 m cable), 4 batteries Mignon 1.5 V and wrist strap.

Art. No.	Pack Qty.	€
LN41.1	1	1262,00

pH-/Conductivity meter SevenGo® Duo model SG23-FK5:
Delivery incl. pH-electrode InLab® Expert Go-ISM®, conductivity sensor InLab® 738-ISM® (both IP 67, 5 m cable), elastic protective cover, bag with buffer solutions pH (2 bags each; 4.01, 7.00), bag with calibrating standards conductive (2 bags each 1413 and 12880 µS/cm), sample bottles, 4 batteries Mignon 1.5 V, wrist strap and case.

Art. No.	Pack Qty.	€
LN42.1	1	1446,00

Accessories for SevenGo® Duo

By Mettler-Toledo.

① **Spare-IP67-pH-electrode InLab® Expert Go-ISM®:**
Delivery incl. integrated temperature probe and fixed cable (Length 1.8 m). Plastic shaft. Shaft length/∅ 120/12 mm. Gel-filled. BNC/Cinch contact plug.

Art. No.	Pack Qty.	€
LN43.1	1	345,00

② **Spare IP67-4-pole conductivity sensor InLab® 738-ISM®:**
Delivery incl. integrated temperature probe and fixed cable (Length 1.8 m). Plastic shaft. Shaft length/∅ 120/12 mm. Measuring range 0.01 to 1000 mS/cm.

Art. No.	Pack Qty.	€
LN44.1	1	455,00

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

- ▶ pH-buffer solutions see page 853
- ▶ Conductivity test solutions see page 868, 870
- ▶ InLab®-series pH single-rod measuring cells see page 857
- ▶ InLab® series pH single-rod measuring cells with integrated temperature sensor, see page 858
- ▶ For information on pH measurement see page 856

NEW

Table-top multimeter PC 52+

By Dostmann.

- Large LCD display, backlit with simultaneous display of measured value and temperature
- Automatic and manual temperature compensation
- Automatic calibration with display of the calibrated ranges, storage of current calibration
- Confirmation when a stable measured value is reached
- Reference temperature, adjustable cell constant and temperature coefficient

Technical specifications:

Measuring range	pH mV EC TDS °C	0 to 14 pH ±1000 mV 0 to 200 mS/cm 0 to 100 g/l 0 to +100 °C
Resolution	pH mV EC TDS °C	0.01 pH 1 mV automatic automatic 0.1 °C
Accuracy	pH mV EC TDS °C	±0.01 pH ±1 mV ±0.4 µS/cm (0 to 19.99 µS/cm) ±4 µS/cm (20.0 to 199.9 µS/cm) ±40 µS/cm (200 to 1999 µS/cm) ±0.4 mS/cm (2.00 to 19.99 mS/cm) ±0.2 mg/l (0 to 19.99 mg/l) ±2 mg/l (20.0 to 199.9 mg/l) ±20 mg/l (200 to 1999 mg/l) ±0.2 g/l (2.00 to 19.99 g/l) ±1 g/l (20.0 to 100.0 g/l) ±0.5 °C
Connections	pH EC °C	BNC BNC Cinch
Calibration	pH EC	1-/2-/3-point calibration (automatic) 1-/2-point calibration (manual, user-defined) 1-/2-/3-/4-point calibration (automatic) 1-point calibration (manual, user-defined)
Reference temperature		+15 to +30 °C
Temperature coefficient		0 to 10.00 %/ °C
Cell constant		0.1 / 1.0 / 10 cm^{-1}
Dimensions (L x W x H)		160 x 185 x 70 mm
Weight		550 g
Power supply		100 to 240 V, 50/60 Hz

Delivery incl. pH single rod measuring cell 201T with integrated temperature sensor (0 to 14 pH, 0 to +60 °C), conductivity sensor 2301T with integrated temperature sensor (0 to 200 mS/cm, 0 to +60 °C), buffer solutions (pH 4.01 and 7.00), conductivity buffer solutions (1413 µS/cm and 12.88 mS/cm), storage solution (3 M KCl), electrode holder and mains adapter.

Art. No.	Pack Qty.	€
HXC0.1	1	779,40

Accessories:

pH single-rod measuring cell 201T with integrated temperature gauge; measuring ranges: 0 to 14 mS/cm, 0 to +60 °C; shaft length/∅ 120/12 mm; fixed cable L 1 m (BNC/Cinch)	**HAE4.1**	1 piece	107,30
2301T conductivity sensor with integrated temperature gauge; measuring ranges: 0.01 to 200 mS/cm, 0 to +60 °C; shaft length/∅ 120/12 mm; fixed cable L 1 m (BNC/Cinch)	**HPL9.1**	1 piece	145,15
Conductivity sensor VPT 51 51 with integrated temperature gauge; measuring ranges: 0.1 to 1000 µS/cm, 0 to +60 °C; shaft length/∅ 120/12 mm; fixed cable L 1 m (BNC/Cinch)	**HPN0.1**	1 piece	256,95

Overview of standard connections on pH meters

When selecting a pH single-rod measuring cell, pay attention to the connections. Standardised connections for the pH sensor and the coaxial connector acc. to DIN **19262** and the bayonet connector (**BNC**). For example, **cinch** and **banana** (4 mm) connections are suitable for the temperature sensor.

In the case of the temperature sensor, also pay attention to the sensor type. Either a temperature sensor of the type **NTC 30 kΩ** or **Pt1000** can be connected to most pH meters.

Connection	Connector (pH single-rod measuring cell)	Socket (pH meter)
Coaxial connector acc. to DIN 19262		
BNC		
Cinch		
Banana, 4 mm		

SevenExcellence™ combined measuring devices

By Mettler-Toledo. Professional modular system for the measurement of pH, redox, conductivity, TDS and salinity. Up to three modules can in be connected to a basic unit in variable configurations. This means that up to three parameters can be measured in one or more samples.

- High-resolution 7-inch colour display with touchscreen control
- Intuitive menu structure with full-text display (in 10 languages)
- 4-level user management hierarchy with different access rights
- Automatic calibration
- Flexible buffer selection and make-up; pH buffers from various groups can be combined with one another
- Automatic and manual temperature compensation
- Direct measurement or individual analysis methods (for standard conditions)
- Individual, intermittent or series measurement
- Automatic calculation of statistical data (mean values, standard deviation)
- Intelligent Sensor Management (ISM®) for automatic recognition of ISM® sensors and reading in calibration data
- GLP support (PIN protection, GLP-compliant printouts containing all relevant data and monitoring of measurement limits)
- Radio clock for precise display of time and date
- Data storage (20,000 data points, 250 analyses)
- Data export with USB stick or LabX®direct PC software
- Communication ports: USB, Ethernet and RS 232

Technical specifications:

pH/redox	
Measuring range/resolution	-2.000 to +20.000 pH -2000.0 to +2000.0 mV -30.0 to +130.0 °C
Accuracy	±0.002 pH ±0.1 mV ±0.1 °C
Calibration	1-/ 2-/ 3-/ 4-/ 5-point calibration (8 predefined buffer series and 20 user-defined buffer series)
Conductivity	
Measuring range/resolution	0.001 µS/cm to 2000 mS/cm -30.0 to 130.0 °C
Accuracy	±0.5 % of measuring range end value ±0.1 °C
Calibration	1-point calibration (13 predefined standards and 1 user-defined standard)
TDS	
Measuring range/resolution	0.00 mg/l to 1000 g/l
Accuracy	±0.5 % of measuring range end value
Salinity	
Measuring range/resolution	0.00 to 80.00 psu
Accuracy	±0.5 % of measuring range end value

SevenExcellence™ pH Kit Version S400

For the measurement of pH and redox potential.
Basic unit comprising a pH module, electrode holder, pH single-rod measuring cell InLab® Routine Pro-ISM®, buffer solutions (pH 4.01 / 7.00 / 9.21 / 10.00, 2 pouches of each), LabX®direct PC software, AC-adapter.

SevenExcellence™ EC Kit Version S700

For the measurement of conductivity, TDS and salinity.
Basic unit comprising a conductivity module, electrode holder, conductivity sensor InLab® 731-ISM®, conductivity standards (1413 / 12880 µS/cm, 2 pouches of each), LabX®direct PC software, AC-adapter.

SevenExcellence™ pH/EC Kit Version S470

For the measurement of pH, redox, conductivity, TDS and salinity.
Basic unit comprising a pH module, a conductivity module, electrode holder, pH single-rod measuring cell InLab®Expert Pro-ISM®, conductivity sensor InLab® 731-ISM®, buffer solutions (pH 4.01 / 7.00 / 9.21 / 10.00, 2 pouches of each), conductivity standards (1413 / 12880 µS/cm, 2 pouches of each), LabX®direct PC software, AC-adapter.

Type	Art. No.	Pack Qty.	€
pH Kit Version S400	**YX44.1**	1	2180,00
EC Kit Version S700	**YX45.1**	1	2360,00
pH/EC Kit Version S470	**YX46.1**	1	2760,00

Accessories for SevenExcellence™ multimeters

Type	Art. No.	Pack Qty.	€
pH module (without sensor)	**YX47.1**	1	685,00
Conductivity module (without sensor)	**YX48.1**	1	814,00
Plastic pH electrode InLab® ExpertPro-ISM®, including 1.2 m fixed cable (BNC/Cinch)	**YX49.1**	1	268,00
Glass pH electrode InLab® RoutinePro-ISM®, with multi-pin head (without ISM®-cable)	**YX50.1**	1	286,00
ISM® cable for YX50.1, 2 m long (BNC/Cinch-MultiPin)	**YX51.1**	1	112,00
Conductivity sensor InLab® 731-ISM®, incl. 1.2 m fixed cable (Mini-DIN); measuring range 0.01 to 1000 mS/cm	**TA14.1**	1	402,00
① Conductivity sensor InLab® 720, incl. 1.0 m fixed cable (Mini-DIN); measuring range 0.01 to 500 mS/cm	**PP35.1**	1	318,00

▶ Conductivity test solutions see page 868, 870
▶ pH-buffer solutions see page 853

Portable anemometer

For measuring current wind speed with highest and mean values, temperature and windchill factor. Wind speed measurement in m/s, km/h, mph or kn. Display of wind force according to Beaufort on a bar graph-wind scale (0 to 12 bft). LCD-back lighting.

Technical specifications:

Measuring range / resolution	0.2 to 30.0 m/s -30.0 to +60.0 °C
Accuracy	±5 % ±1 °C
Dimensions (L x W x H)	98 x 39 x 17 mm
Weight	110 g

Delivery incl. neoprene bag, shoulder strap and cell button battery CR 2032.

Art. No.	Pack Qty.	€
EY92.1	1	53,70

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

Current sticks testo 405-V1

By Testo. Mini-anemometer with air current and volume flow measurement. Also features pivotable display. Pull-out telescope, max. 300 mm.

Technical specifications:

Measuring range	0 to 10 m/s -20 to +50 °C 0 to 99 990 m^3/h
Accuracy	±(0.1 m/s +5 % of m.v.) (0 to +2 m/s) ±(0.3 m/s +5 % of m.v.) (outside)
Resolution	0.01 m/s / 0.1 °C
Ambient conditions	0 to +50 °C
Sensor probe	Max. length 300 mm, ∅ 37/36 mm

Delivery incl. batteries (3 x Micro 1.5 V) and attachment clip.

Design	Art. No.	Pack Qty.	€
Without Certificate of Calibration	**P304.1**	1	121,50
With ISO Certificate of Calibration, (5 and 10 m/s)	**P305.1**	1	235,45

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Airflow meter testo 425

By Testo. Anemometer with permanently connected thermal flow probe (cord length approx. 1.2 m) incl. telescopic pipe (length of telescope max. 820 mm). Volume flow calculation via input of channel area.

- **Measures of temperature, flow and volume flow**
- Selective and temporal average determination
- Min/Max-values
- Hold-button for retaining measured value
- Display light
- Auto-off function

Technical specifications:

	Thermal	NTC
Measuring ranges	0 to +20 m/s	-20 to +70 °C
Accuracy	±0.03 m/s or 5 % of m.v.	±0.5 °C (0 to +60 °C) ±0.7 °C (outside)
Resolution	0.01 m/s	0.1 °C
Working temperature	-20 to +50 °C	
Dimensions (W x D x H)	64 x 40 x 182 mm	
Weight	285 g	

Delivery incl. airflow meter testo 425 with permanently connected flow probe incl. telescopic pipe, E-Block-battery 9 V and calibration protocol.

Art. No.	Pack Qty.	€
EH95.1	1	436,45

Accessories for air flow meter testo 425

Protective cover TopSafe, protects against blows and dirt

Art. No.	Pack Qty.	€
EH74.1	1	31,20

Emergency bag for meter and probe

Art. No.	Pack Qty.	€
EH96.1	1	31,20

Spare battery E-Block 9 V

Art. No.	Pack Qty.	€
1025.1	1	4,85

①

②

① Mini Luxmeter

For monitoring the lighting conditions in the workplace, warehouses etc.
- Measurement range: up to 40 000 Lux
- Automatic zero calibration
- AUTO-OFF function
- Max Hold display
- Backlit display

Technical specifications:

Measuring range	lx	200.0	2000	20 000	40 000
Resolution	lx	0.1	1	x 10	x 100
Accuracy	±5 %				
Photosensor	Silicon photodiode with filter				
Dimensions W x D x H (mm)	54 x 34 x 157				
Weight (g)	138				

Delivery incl. 9 V E-block battery .

Art. No.	Pack Qty.	€
PK79.1	1	54,85

Accessories:

E-Block 9 V battery	**1025.1**	1 piece	4,85

② Pocket Luxmeter LM37

Ideal for measuring intensity of light. Measuring range 0.01 to 40 000 Lux.
- Choose between lx- and fc-units (fc = foot candelas; 1 fc = 10.764 lx)
- Automatic or manual range-changing switch
- With automatic null balancing
- Low battery display and AUTO-OFF function (can be deactivated)
- Hold function

Technical specifications:

Measuring range	lx fc	39.99 3.999	399.9 39.99	3999 399.9	39990 3999
Resolution	lx fc	0.01 0.001	0.1 0.01	1 0.1	10 1
Accuracy	±3 %				
Photo sensor	Silicium-photo-diode				
Dimensions W x D x H (mm)	54 x 33 x 196				
Weight (g)	180				

Delivery incl. E-block battery 9 V.

Art. No.	Pack Qty.	€
KP25.1	1	96,25

Accessories:

E-Block 9 V battery	**1025.1**	1 piece	4,85

①

②

① Luxmeter

Ideal for measuring intensity of light. Measuring range 0.1 to 200 000 Lux. With large 3½ digit LCD display and data hold function. Compact, sturdy and easy-to operate. High accuracy and rapid readings. With automatic zero point alignment.

Technical specifications:

Measuring range	200, 2000, 20 000, 200 000 Lux
Accuracy	±3 % of m.v. ±4 % of m.v. ±10 digits >1000 Lux
Accuracy rerun	±2 %
Photosensor	Silicium-photo-diode
Working temperature	0 to +40 °C / 80 % rF
Power supply/Battery life	9 V / 200 h
Cable photosensor	1.5 m
Dimensions	photosensor: 100 x 60 x 27 mm optosensor: 135 x 72 x 33 mm
Weight	250 g

Art. No.	Pack Qty.	€
E513.1	1	110,75

② Luxmeter

For measuring lighting intensity within a range of 0.01 up to 400000 Lux
- With bar graph display
- Can choose between lx- and fc-units
- With exceeded range display
- Cosine-adjusted angle
- Min/Max-values and hold function
- Auto-power-off function

Technical specifications:

Measuring range	40.00 lx 40.00 fc	400.0 lx 400.0 fc	4000 lx 4000 fc	40.00 klx 40.00 kfc	400.0 klx
	Please note: 1 fc = 10.764 lx; 1 klx = 1000 lx; 1 kfc = 1000 fc				
Resolution	0.01 lx 0.01 fc	0.1 lx 0.1 fc	1 lx 1 fc	0.01 klx 0.01 kfc	0.1 klx
Accuracy	±3 %				
Sensor	Silicium-photo-diode				
Max. operating temp.	-0 to 40 °C at 80 % rh				
Dimensions (W x D x H)	sensor: 60 x 29 x 92 mm unit: 72 x 35 x 150 mm				
Length of photo sensor cable	150 cm				
Weight	320 g				

Delivery incl. case and 6 Micro 1.5 V batteries.

Art. No.	Pack Qty.	€
EN32.1	1	143,00

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Further measuring instruments

UVA-meter

For mobile measurement of light quality e.g. ambient measurement for plant cultures, etc.

- With 3 measuring ranges
- Low battery display
- Hold function and maximum data logger
- UV-sensor spectrum 320 to 400 nm
- Exceeded range display

Technical specifications:

Measuring ranges	199.9 µW/cm²	1.999 mW/cm²	19.99 mW/cm²
Resolution	0.1 µW/cm²	0.001 mW/cm²	0.01 mW/cm²
Accuracy	±4 %		
Max. operating temperature	0-50 °C at 75 % rh		
Dimensions (W x D x H)	48 x 24 x 155 mm		
Weight	85 g		

Delivery incl. belt holster and 3 Micro 1.5 V batteries.

Art. No.	Pack Qty.	€
EN33.1	1	109,65

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Mini sound level meter

For monitoring permissible noise pollution levels in the workplace, e.g. assessment of office equipment (copiers, printers etc.), and for measuring industrial and environmental noise.

- Max-Min display
- AUTO-OFF function
- Backlit display

Technical specifications:

Measuring range	40.0 to 130.0 dB
Resolution	0.1 dB
Accuracy	±3 dB
Dimensions (W x D x H)	54 x 34 x 157 mm
Weight	131 g

Delivery incl. 9 V E-block battery and wind protection cap.

Art. No.	Pack Qty.	€
PK80.1	1	44,75

Accessories:

E-Block 9 V battery	**1025.1**	1 piece	4,85

Safety glasses 506U

By Univet. Acc. to **EN 166, EN 170.** Clear UV-protective lens made of PC with anti-scratch/anti-fog coating.

- Angle and length adjustable temples
- Soft ear pieces avoid pressure points
- Optimal wearing comfort and adaptation through soft, adjustable nose pad
- Weight 25 g

Frame colour	Art. No.	Pack Qty.	€
white/pink	**CNE8.1**	1	13,40
black/green	**CNE9.1**	1	12,10

ULTRAFIT ear plugs

By 3M. Acc. to EN 352-2. Pre-moulded ear plugs made of thermoplastic elastomer. Thanks to their flat design, they are a perfect fit for any ear canal. To wash the ear plugs use warm soapy water. **Reusable.**
Suitable for sensitive working areas in the foodstuffs and chemicals industries. SNR value: 32 dB.

Type	3M No.	Art. No.	Pack Qty. (pair)	€
① with safety cord	UF01000	**TE80.1**	50	116,10
② with storage box	UF01020	**TE81.1**	50	117,20

▶ Ear protection products from p. 610
▶ Safety glasses from p. 572

Further measuring instruments

Sound-level meter SL328

For monitoring the permitted noise exposure at the workplace and for measuring industrial and environmental noise, e.g. measurement of machine and appliance noise.

- Automatic range switch-over
- With lower and upper range display
- Max hold function for logging the maximum sound level or noise level maximum
- Electronic calibration via integrated oscillator (94 dB, 1 kHz)

Technical specifications:

Measuring range	32.0 to 130.0 dB
Resolution	0.1 dB
Accuracy	±1.5 dB
Dimensions (L x W x D)	206 x 42 x 25 mm
Weight	100 g

Delivery incl. wind protection screen and 2 batteries, Micro 1.5 V.

Art. No.	Pack Qty.	€
EY76.1	1	109,65

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Tachometer testo 465

By Testo. Visual, non-contact speed measurement using reflex marks. Min/max function. Auto-off function.

Technical specifications:

Measuring range	to 99 999 rpm
Distance to object measured	max. 350 mm (14 inch)
Auto-off function	30 sec (average/max./last readings are stored)
Dimensions (L x W x D)	144 x 58 x 20 mm
Weight	145 g

Delivery incl. meter with reflex marks and batteries (2 x Mignon 1.5 V) in a practical case.

Type	Art. No.	Pack Qty.	€
Tachometer set	**P306.1**	1	203,20

Accessories:

Reflex marks, self-adhesive	**P307.1**	5	22,60
Mignon battery/AA 1.5 V	**1022.2**	4	6,05

Geiger-counter Alphaix 3000

Alphaix for attachable Geiger counters. With 5-digit display, time mode for setting measuring intervals and with audible alarm (can be switched off). Battery operated with 9 V-Block battery.
Plastic housing L 120 x W 65 x D 30 mm.
Delivery incl. case for standard unit and counter tubes.
Without counter (please order separately).

Art. No.	Pack Qty.	€
8482.1	1	364,45

Counter tubes for Geiger-counter Alphaix 3000

End window counter type G

- For measuring alpha-radiation from 1.9 MeV, beta-radiation from 0.09 MeV and gamma-radiation from 0.01 MeV
- Dose measuring range 0.0001-1 R/H. Zero rate 30 IPM
- End window diameter 19.83 mm
- Detection limit 4 Bq for caesium 137 (distance 30 mm, length 10 minutes)
- Detection of carbon C^{14} possible

Art. No.	Pack Qty.	€
8484.1	1	408,50

Immersion counter type FSZ

- With two counter probes for measuring liquids and bulk material. Also ideal for foodstuffs with high liquid content.
- Measurement of gamma-radiation from 0.02 MeV and beta-radiation from 0.25 MeV
- Dose measuring range from 0.001-10 R/H. Zero rate 17 IPM
- Detection limit for dry measurements in bulk material in caesium 137 : 0.75 Bq for 25 grammes
- Detection limit for wet measurements in 100 ml caesium 137 solution: for 10 minutes = 63 Bq, for 20 minutes = 46 Bq.

Art. No.	Pack Qty.	€
8486.1	1	375,20

Multi-position counters

Mechanical table counter, multi-position. For counting blood cells, bacterial colonies or for other applications in which different samples must be counted repeatedly. Individual positions count to 999. With sums window for the total count, an acoustic signal is issued after 100 total counts. Rotary knob to reset to 0.

Delivery incl. printed labels for blood cell counts.

Type	L x W x H (mm)	Art. No.	Pack Qty.	€
6-digit	250 x 76 x 56	**ENK8.1**	1	235,45
9-digit	320 x 76 x 56	**ENK9.1**	1	320,35

Manual counter

For mechanical counting from 1 to 9999. Casing made of chromium-plated metal. The counter adds 1 number after each press of the button. Can be reset to 0 using the knob. With retainer ring. Casing ∅ 46 mm. Weight approx. 66 g.

Art. No.	Pack Qty.	€
EE53.1	1	12,40

Laser distance meter

For indoor measurements. Units of measurement: m, in or ft. Backlight display. Adjustable measuring plane (bottom and top edges). Auto power-off after 180 s. Data memory for last 20 readings.

Measurement programs: Individual measurement, continuous measurement (max. 100 measurements) e.g. for checking plans, addition/subtraction of individual measured values, volume measurement and indirect measurement using Pythagoras function.

Technical specifications:

Measuring range	0.050 - 50 m
Resolution	0.001 m (1 mm)
Accuracy	±1.5 mm (5 mm to 10 m)
Dimensions (L x W x D)	115 x 48 x 28 mm
Weight	300 g

Delivery incl. belt bag and 2 Micro 1.5 V batteries.

Art. No.	Pack Qty.	€
TY93.1	1	129,00

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Flow meters with propeller

With 2 hose connectors, length 25 mm, ∅ 6-11 mm. Minimum flow 150 ml/min. Pressure load max. 2 bar. Dimensions: W 90 x H 40 x D 15 mm. Weight 12 g.

Made of styrene-acrylonitrile (SAN)
For water and similar liquids.
Temperature stable up to +30 °C.

Colour	Art. No.	Pack Qty.	€
blue	**1736.1**	1	11,75
red	**E486.1**	1	11,40
black	**E487.1**	1	11,40

Made of polymethylene pentene (PMP)
Can be sterilized. Resistant to most chemicals.
Temperature stable up to +60 °C.

Colour	Art. No.	Pack Qty.	€
blue	**E488.1**	1	14,55
red	**1737.1**	1	14,85
black	**E489.1**	1	14,55

Leakage monitors

Ideal for monitoring all equipment operated by water. Prevents flooding by **automatic water cut-off** via magnetic valve. Highly sensitive moisture sensor sets off audible alarm and closes magnetic valve upon detection of 0.5 mm water.

Technical specifications:

Magnetic valve	¾″-connection and 12 V safety low voltage
Minimum pressure difference	0.5 bar
Moisture sensor	with 2 m cable
Connector shell	with shockproof plug connector and socket

Leakage monitor I

Comes ready to use. With control unit, moisture sensor, magnetic valve and alarm buzzer.

Art. No.	Pack Qty.	€
H481.1	1	137,60

Leakage monitor II

Comes ready to use. With control unit, moisture sensor, magnetic valve and alarm buzzer. Plus machine switch-off function in emergencies (to 16 A, 220 V, 50 Hz).

Art. No.	Pack Qty.	€
H482.1	1	162,35

Accessories for leakage monitors I and II

Extension cord for moisture sensor.

Length (m)	Art. No.	Pack Qty.	€
2	**H499.1**	1	18,10
5	**H500.1**	1	18,50
10	**H501.1**	1	21,45

Flow indicator with ball

Made of **SAN**, transparent, with ball and two hose fittings.
For easy visual monitoring of flow rates. Minimum flow rate: 140 ml/min for liquids, 8 l/min for gases. Temperature stable up to +50 °C.
Connectors for hose inside ∅ 6.5-10 mm.
Dimensions: W 102 x D 57 x H 14 mm. Weight 16 g.

Art. No.	Pack Qty.	€
TT47.1	1	14,80

AQUASTOP® II laboratory cooling water monitor

For monitoring cooling water flow and temperature in the laboratory.
For installation in apparatus that runs without permanent supervision.
Power supply and water supply are cut off in case of irregularities or when the preset temperature limit is exceeded.

Application:

- If the flow rate drops below the preset minimum level, the solenoid valve shuts off the coolant supply and connected electrical device (e.g. heating mantle) is de-energised.
- If the maximum temperature is exceeded, the solenoid valve stays open, the apparatus continues to be cooled and the electrical device is de-energised.

The temperature at the coolant outlet is recorded by the internal NTC sensor integrated in the flow sensor. As an option, an external Pt 100 temperature sensor which automatically deactivates the internal sensor can be installed in a freely selectable position on the test set-up (if required, please order separately).

Features:

- 2-line LED display for simultaneous display of flow rate and temperature
- LED for switching status and alarm indication
- Freely selectable alarm limits
- Acoustic pre-alarm alerts user before final deactivation
- With Schuko socket on the back

Technical specifications:

Flow measuring range	2 to 99 l/h
Temperature measuring range Internal NTC sensor External Pt 100 temperature sensor	 0 to +80 °C 0 to +250 °C
Setting accuracy	±1 l/h or ±1 °C
Fuse	16 A mT (load) 0.5 A mT (solenoid valve) 0.2 A mT (control)
Solenoid valve connections to tap to apparatus	 ¾ inch female thread ¾ inch male thread or ∅ 10 mm tubing connector
Rated power/rated current	35.5 kW / 15 A
Dimensions (W x H x D)	205 x 175 x 78 mm
Weight	1.3 kg
Power supply	230 V, 50 Hz

Delivery incl. solenoid valve, flow sensor with internal NTC sensor and tubing connectors for hoses with 10 mm internal ∅.

Art. No.	Pack Qty.	€
CKY2.1	1	1320,10

Accessories for AQUASTOP® II

External Pt 100 temperature sensor, made of stainless steel 1.4571, dimensions of sensor L 200 x ∅ 4 mm, connecting cable L 2 m, with Lemo connector.

Art. No.	Pack Qty.	€
CKY3.1	1	137,60

Overview top loading balances

Weighing range (g)	Readability (g)	Art. No.	Page
30	0,00001	**CNH8.1** *	900
40/60	0,00001	**CNK0.1** *	900
42/210	0,00001/0,0001	**CTH0.1** *	903
42/120	0,00001/0,0001	**HL85.1** *	898
42/120	0,0001	**HL86.1** *	898
52/120	0,00001 / 0,0001	**KAE3.1** *	896
60/120	0,00001	**CNK4.1** *	902
60/120/220	0,00001	**CNK6.1** *	902
60	0,0001	**ACT1.1** *	897
60	0,0001	**AHC9.1** *	900
60	0,0001	**AHC2.1** *	898
60	0,001	**LY72.1**	883
62 / 252	0,0001/0,001	**CTE2.1** *	887
80	0,0001	**TA63.1**	895
80/220	0,00001/0,0001	**HPT1.1**	895
82	0,00001	**KAE4.1** *	896
82/220	0,00001 / 0,0001	**KAE5.1** *	896
100	0,001	**HK92.1**	889
100	0,001	**KX09.1**	886
102	0,0001	**CTE3.1** *	897
40/60/120	0,00001/0,0001	**CNK2.1** *	900
120/220	0,00001	**HPC4.1** *	901
120	0,0001	**TA64.1**	895
120	0,0001	**NN83.1** *	902
120	0,0001	**KAE6.1** *	896
120	0,0001	**APA8.1** *	901
120	0,0001	**ACT0.1** *	897
120	0,0001	**CTH1.1** *	903
120	0,0001	**CCE5.1** *	899
120	0,0001	**NN59.1** *	900
120	0,0001	**NN46.1** *	898
120	0,0001	**HPP9.1**	894
120	0,001	**EHE8.1**	890
122	0,001	**CTH4.1** *	893
150	0,001	**ACT5.1** *	897
150	0,1	**P961.1**	885
150	0,1	**HL50.1**	884
152	0,0001	**CTE4.1** *	897
200	0,001	**LY69.1**	886
220	0,001	**CTH6.1** *	893
200	0,01	**H723.1**	891
200	0,01	**CT06.1**	886
200	0,01	**HK93.1**	889
200	0,1	**X678.1**	885
200	0,1	**T317.1**	885
210	0,0001	**HPT0.1**	894
210	0,0001	**CTH2.1** *	903
210	0,001	**NN89.1** *	902
210	0,001	**NN65.1** *	900
210	0,001	**NN48.1** *	898
210	0,01	**PH67.1**	888
220	0,0001	**TA65.1**	895
220	0,0001	**PX41.1** *	901
220	0,0001	**ACP9.1** *	897
220	0,0001	**CCE6.1** *	899
220	0,0001	**KAE7.1** *	896
220	0,0001	**NN81.1** *	902
220	0,0001	**NN57.1** *	900
220	0,0001	**NN45.1** *	898
220	0,001	**CCE7.1** *	899
220	0,001	**AX07.1**	892
220	0,001	**EHK0.1**	890
220	0,01	**EHE9.1**	890
250	0,001	**YC31.1**	890
250	0,001	**KX11.1**	889
250	0,0001	**HPT2.1**	895
252	0,0001	**CTE5.1** *	897
300	0,001	**EEH4.1**	890

Weighing range (g)	Readability (g)	Art. No.	Page
300	0,001	**HT19.1**	891
300	0,001	**CHH7.1**	892
320	0,001	**CTH8.1** *	893
300	0,01	**EXC0.1**	894
310	0,0001	**CTH3.1** *	903
310	0,001	**NN87.1** *	902
310	0,001	**NN47.1** *	898
310	0,001	**NN63.1** *	900
310	0,0001	**HPT3.1**	895
320	0,0001	**TA66.1**	895
320	0,0001	**PX42.1** *	901
320	0,001	**KAE8.1** *	896
320	0,001	**ACT4.1** *	897
320	0,1	**P923.1**	885
350	0,001	**LY67.1**	889
350	0,001	**HEH0.1**	889
400	0,01	**AK49.1**	891
400	0,1	**P936.1**	891
410	0,01	**AHE3.1** *	900
410	0,01	**AHC4.1** *	883
420	0,001	**ACT3.1** *	883
420	0,001	**CCE8.1** *	899
420	0,001	**HT20.1**	891
420	0,001	**PX43.1** *	901
420	0,001	**AX08.1**	892
420	0,01	**EHH0.1**	890
420	0,1	**EHH4.1**	890
500	0,1	**ET20.1**	886
510	0,0001	**HPT4.1**	895
510	0,001	**NN61.1** *	900
510	0,001	**AHC3.1** *	898
510	0,001	**NN85.1** *	902
510	0,1	**PH68.1**	888
520	0,001	**KAE9.1** *	896
520	0,001	**CCE9.1** *	899
600	0,01	**CHH8.1**	892
600	0,01	**ET19.1**	886
600	0,01	**LY73.1**	891
610	0,001	**AHE1.1** *	900
610	0,001	**AHH3.1** *	902
610	0,01	**NN51.1** *	898
610	0,01	**NN75.1** *	900
610	0,01	**AHH5.1** *	902
620	0,001	**AX09.1**	892
620	0,001	**ACT2.1** *	897
620	0,001	**ENH3.1**	893
620	0,01	**EHH1.1**	890
620	0,1	**EHH5.1**	890
820	0,01	**ACX0.1** *	897
820	0,01	**AX10.1**	892
1000	0,01	**KX10.1**	886
1000	0,01	**HK97.1**	889
1000	0,1	**H724.1**	891
1000	0,1	**HK99.1**	889
1000	1	**P924.1**	885
1100	0,001	**PX44.1** *	901
1100	0,01	**NN73.1** *	900
1100	0,01	**NN97.1** *	902
1100	0,01	**NN50.1** *	898
1100	0,1	**PH69.1**	888
1220	0,01	**CTK0.1** *	893
1200	0,01	**EHH2.1**	890
1200	0,1	**ET21.1**	886
1500	0,05	**YY32.1**	887
1500	0,5	**YY37.1**	887
1520	0,01	**CCH1.1** *	899
1600	0,01	**L961.1**	891
1600	0,1	**PH70.1**	888

Weighing range (g)	Readability (g)	Art. No.	Page
2000	0,01	**LY70.1**	886
2200	0,01	**CTK2.1** *	893
2000	0,01	**EEH5.1**	890
2000	0,1	**H725.1**	891
2000	0,1	**HL00.1**	889
2000	1	**T318.1**	885
2100	0,01	**NN95.1** *	902
2100	0,01	**NN71.1** *	900
2100	0,01	**NN49.1** *	898
2100	0,1	**AHE7.1** *	900
2100	0,1	**PH71.1**	888
2100	0,1	**AHC6.1** *	898
2200	0,01	**ACT9.1** *	897
2200	0,01	**CCH2.1** *	899
2200	0,01	**EHH3.1**	890
2200	0,01	**AX11.1**	892
2200	0,1	**EHH6.1**	890
2200	0,1	**ACX3.1** *	897
2200	1	**X415.1**	886
2400	0,01	**L962.1**	891
2500	0,01	**YC32.1**	889
2500	0,01	**KX12.1**	889
3200	0,01	**CTK4.1** *	893
3000	0,01	**CHH9.1**	892
3000	0,01	**HT21.1**	891
3000	0,1	**EXC1.1**	894
3000	0,1	**TA62.1**	886
3000	0,1	**YY33.1**	887
3000	0,1	**PA34.1**	886
3000	1	**YY38.1**	887
3000	1	**PA30.1**	886
3000/6000	1/2	**PA43.1**	887
3000/6000	1/2	**PX18.1**	891
3100	0,01	**AHC5.1** *	898
3100	0,01	**NN93.1** *	902
3100	0,01	**NN69.1** *	900
3200	0,01	**ACT8.1** *	897
3200	0,01	**KAH0.1** *	896
3200	0,01	**ENH4.1**	893
3200	0,2	**PH72.1**	888
3500	0,01	**HEH1.1**	889
3500	0,01	**LY68.1**	889
4000	0,1	**Y530.1**	891
4000	1	**P937.1**	891
4100	0,2	**PH73.1**	888
4200	0,01	**PX45.1** *	901
4200	0,01	**CCH3.1** *	899
4200	0,01	**AX12.1**	899
4200	0,01	**ACT7.1** *	897
4200	0,01	**KX14.1**	891
4200	0,1	**KAH2.1** *	896
5000	1	**T319.1**	885
5000	5	**HK43.1**	884
5100	0,01	**NN67.1** *	900
5100	0,01	**NN91.1** *	902
5100	0,1	**NN77.1** *	900
5100	0,1	**NN52.1** *	898
5100	0,5	**PH74.1**	888
5100	1	**NN79.1** *	900
5100	1	**NN53.1** *	898
5200	0,01	**CCK4.1** *	899
5200	0,01	**KAH1.1** *	896
5200	0,1	**ACX2.1** *	897
5200	1	**ET22.1**	886
5200	5	**X416.1**	886
6000	0,03	**YC92.1**	888
6000	0,1	**HEH2.1**	889
6000	0,1	**LY71.1**	886

Weighing range (g)	Readability (g)	Art. No.	Page
6000	0,1	**EEH6.1**	890
6000	0,1	**CHK0.1**	892
6000	0,1	**HL02.1**	889
6000	0,2	**YY34.1**	887
6000	0,5	**PA38.1**	887
6000	0,5	**PA35.1**	886
6000	1	**P938.1**	891
6000	1	**HL05.1**	889
6000	2	**YY39.1**	887
6000	2	**PA31.1**	886
6000/15000	2/5	**PA44.1**	887
6100	0,01	**AHH7.1** *	902
6100	0,01	**AHE5.1** *	900
6100	0,1	**AHC7.1** *	898
6100	0,1	**AHE9.1** *	900
6100	1	**AHH1.1** *	900
6100	1	**AHC8.1** *	898
6200	0,01	**CT72.1**	892
6200	0,01	**ACT6.1** *	897
6200	0,1	**EHH7.1**	890
6400	0,5	**PH75.1**	888
8000	0,05	**YC93.1**	888
8200	0,1	**ACX1.1** *	897
8200	1	**EHH8.1**	890
10000	0,1	**YC33.1**	889
10000	0,5	**PH76.1**	888
10000	1	**HEH3.1**	889
10000	10	**HK44.1**	884
10200	0,01	**PX46.1** *	901
10200	0,1	**PX47.1** *	901
12000	0,1	**L963.1**	891
12000	0,1	**ENH5.1**	893
12000	0,1	**CT73.1**	892
12000	1	**PA39.1**	887
12000	1	**EXC2.1**	894
15000	0,5	**YY35.1**	887
15000	1	**PA36.1**	886
15000	5	**PA32.1**	886
15000	5	**YY40.1**	887
15000/35000	5/10	**PA45.1**	887
16000	0,05	**YC94.1**	888
16000	0,1	**L964.1**	891
16000	0,1	**YC95.1**	888
16000	1,0	**PH77.1**	888
24000	0,1	**L966.1**	891
24000	2	**PA40.1**	887
30000	1	**YY36.1**	887
30000	1	**PA37.1**	886
30000	10	**YY41.1**	887
30000	10	**PA33.1**	886
30000/60000	10/20	**PA46.1**	887
36000	0,1	**YC96.1**	888
36000	0,2	**YC97.1**	888
60000/150000	20/50	**PA47.1**	887
60000	5	**PA41.1**	887
65000	0,2	**YC98.1**	888
65000	0,5	**YC99.1**	888
120000	10	**PA42.1**	887

* Longer delivery times possible. Please check with our Sales Department.

Electronic hanging balances HDB-series

By Kern. With Data-Hold function for "freezing" the weight reading for 5 s. Hook made of stainless steel, folding. AUTO-OFF function engages after 5 min without any load change. Dimensions: W 70 x D 25 x H 105 mm (with hook 195 mm). Weight approx. 150 g.
Delivery incl. 2 batteries Micro 1.5 V.

Model	Weighing range (kg)	Readability (g)	Art. No.	Pack Qty.	€
HDB 5K5N	5	5	**HK43.1**	1	60,00
HDB 10K10N	10	10	**HK44.1**	1	60,00

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Pocket balance model TEE 150-1

- **Weighing range 150 g. Readability 0.1 g**
- Blue, backlite LCD display
- AUTO-OFF function after 2 min without load change, function can be disabled.
- Dimensions of weighing pan: W 60 x D 64 mm
- Overall dimensions of balances: W 67 x D 100 x H 22 mm
- Weight approx. 100 g

Delivery incl. plastic cover and 2 Micro 1.5 V batteries.

Art. No.	Pack Qty.	€
HL50.1	1	38,00

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Pocket balance model TCB

By Kern.
- **Weighing range 200 g. Readability 0.1 g**
- Automatic switch-off after 3 min to prolong battery life
- TARA-function
- Weighing pan rotatable for overload protection
- Dimensions of scales: H 14 mm x Ø 80 mm
- Weight approx. 50 g.

Delivery incl. transport box and two cell-batteries 1.5 V.

Art. No.	Pack Qty.	€
X678.1	1	52,00

Accessories:

Cell battery V 13 GA (1.5 V)	**1938.1**	1 piece	4,85

Electronic pocket balances CM-series

By Kern. **With hinged lid.** Balances in the case are protected against all types of compressive stress. Fitted as standard with tare function, recipe program, automatic switch-off for longer battery life and integrated pocket calculator. Dimensions: balance W 85 x D 130 x H 25 mm, weighing pan 80 x 70 mm. Weight 150 g.
Delivery incl. 2 batteries 1.5 V micro and soft case.

Model	Weighing range (g)	Readability (g)	Art. No.	Pack Qty.	€
CM 150-1N	150	0,1	**P961.1**	1	50,00
CM 320-1N	320	0,1	**P923.1**	1	55,00
CM 1 K1N	1000	1	**P924.1**	1	52,00

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Compact balances CS-series

By Ohaus. Large, high-contrast display (11 mm). Short response time. With low battery display. Automatic switch-off after five minutes when battery operated. Display indicates over/underload. Can be battery or outlet operated. Stainless steel platform. Dimensions: balance 193 x 135 x 39 mm, weighing platform 145 x 133 mm. Weight 470 g.
Delivery incl. outlet pack and 3 batteries Mignon 1.5 V.

Model	Weighing range (g)	Readability (g)	Linearity (±g)	Art. No.	Pack Qty.	€
CS 200	200	0,1	0,1	**T317.1**	1	60,00
CS 2000	2000	1	1,0	**T318.1**	1	60,00
CS 5000	5000	1	1,0	**T319.1**	1	70,00

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

EMB-series compact balances

By Kern.

- Large LCD-display with 15 mm high numbers
- Automatic switch-off after 3 min to prolong battery life, can be disabled
- External adjustment
- TARE-function
- Dimensions of weighing pan:
  ∅ 82 mm for EMB 100-3 and EMB 200-3
  ∅ 105 mm for EMB 200-2 and EMB 600-2
  ∅ 150 mm for all other models
- Dimensions of scales: W 170 x D 240 x H 39 mm
- Battery and outlet
- **Without power unit (please order separately if required)**

Delivery incl. batteries: EMB 2200-0: incl. 2 Mignon 1.5 V batteries.
All other models: incl. 9 V Block battery.

Model	Weighing range (g)	Readability (g)	Linearity (±g)	Art. No.	Pack Qty.	€
EMB 100-3	100	0,001	0,003	**KX09.1**	1	195,00
EMB 200-3	200	0,001	0,003	**LY69.1**	1	210,00
EMB 200-2	200	0,01	0,02	**CT06.1**	1	125,00
EMB 600-2	600	0,01	0,03	**ET19.1**	1	160,00
EMB 1000-2	1000	0,01	0,03	**KX10.1**	1	195,00
EMB 2000-2	2000	0,01	0,03	**LY70.1**	1	205,00
EMB 500-1	500	0,1	0,2	**ET20.1**	1	55,00
EMB 1200-1	1200	0,1	0,3	**ET21.1**	1	78,00
EMB 3000-1	3000	0,1	0,3	**TA62.1**	1	125,00
EMB 6000-1	6000	0,1	0,3	**LY71.1**	1	160,00
EMB 2200-0	2200	1	2	**X415.1**	1	57,00
EMB 5.2 K 1	5200	1	3	**ET22.1**	1	60,00
EMB 5.2 K 5	5200	5	10	**X416.1**	1	55,00

Accessories:

Mains pack for EMB-series	**X417.1**	1	31,00
Mignon battery/AA 1.5 V	**1022.2**	4	6,05
E-Block 9 V battery	**1025.1**	1	4,85

Table balances FCE and FCB-series

By Kern.

Features

- LCD display with 25 mm high digits
- External adjustment
- Power-supply or battery operation
- Dimensions of weighing platform: W 252 x D 228 mm
- Dimensions of balance overall: W 270 x D 345 x H 106 mm
- Automatic switch-off after 3 min without a change of load to prolong battery life

Battery not included, please order separately.
One E-Block 9 V battery is required.

Delivery incl. power unit and work protection cover.

FCE-series with weighing platform made of plastic (ABS)

Model	Weighing range (kg)	Readability (g)	Linearity (±g)	Art. No.	Pack Qty.	€
FCE 3K1N	3	1	2	**PA30.1**	1	110,00
FCE 6K2N	6	2	4	**PA31.1**	1	110,00
FCE 15K5N	15	5	10	**PA32.1**	1	110,00
FCE 30K10N	30	10	20	**PA33.1**	1	110,00

FCB-series with weighing platform made of stainless steel

Model	Weighing range (kg)	Readability (g)	Linearity (±g)	Art. No.	Pack Qty.	€
FCB 3K0.1	3	0,1	0,3	**PA34.1**	1	215,00
FCB 6K0.5	6	0,5	1,5	**PA35.1**	1	195,00
FCB 12K1	12	1	3	**PA36.1**	1	185,00
FCB 30K1	30	1	3	**PA37.1**	1	220,00

Accessories:

E-Block 9 V battery	**1025.1**	1	4,85

Platform balances DE-A- and DE-D-series

By Kern.

Features

- Backlit LCD display with 25 mm high digits
- Function programs for number of items, recipe, percentage weighing and animal weighing
- RS 232 port
- External adjustment
- Power-supply or battery operation
- Dimensions of weighing platform made of stainless steel W 315 x D 305 mm
- Dimensions of display unit: W 225 x D 110 x H 45 mm

Battery not included, please order separately.
One E-Block 9 V battery is required.

Delivery incl. power supply unit.

Standard balances DE-A-series

Model	Weighing range (kg)	Readability (g)	Linearity (±g)	Art. No.	Pack Qty.	€
DE 6K0.5A	6	0,5	1,5	**PA38.1**	1	215,00
DE 12K1A	12	1	3	**PA39.1**	1	215,00
DE 24K2A	24	2	6	**PA40.1**	1	215,00
DE 60K5A	60	5	15	**PA41.1**	1	215,00
DE 120K10A	120	10	30	**PA42.1**	1	215,00

Dual-range balances DE-D-series (automatic switch-over)

Model	Weighing range (kg)	Readability (g)	Linearity (±g)	Art. No.	Pack Qty.	€
DE 6K1D	3 / 6	1/2	2 / 4	**PA43.1**	1	185,00
DE 15K2D	6 / 15	2/5	4 / 10	**PA44.1**	1	185,00
DE 35K5D	15 / 35	5/10	10 / 20	**PA45.1**	1	185,00
DE 60K10D	30 / 60	10/20	20 / 40	**PA46.1**	1	185,00
DE 150K20D	60 / 150	20/50	40 / 100	**PA47.1**	1	195,00

Accessories:

Support for platform balances DE-A, DE-D series	**PA48.1**	1	100,00
E-Block 9 V battery	**1025.1**	1	4,85

Ranger® 3000-series battery-operated industrial balances

By Ohaus.

Applications:

- Piece counting, percent weighing, dynamic weighing (animal weighing), check weighing and accumulating
- Display memory function - display of last stable value, can be initiated manually or automatically
- Adjustable weighing units: kg or g

Equipment:

- External adjustment
- Dimensions of stainless steel weighing platform: W 300 x D 225 mm
- Backlight LCD display
- **Battery operation possible, up to 210 h runtime, approx. 12 h charging time**
- Integrated hook for below-balance weighing
- Adjustable levelling feet and spirit level on the front
- Stability indicator
- Battery charge level indicator
- Automatic deactivation during battery operation (can be switched off)
- RS 232 port

Delivery incl. universal power supply (100-240 V, 50/60 Hz).

External adjustment, non calibratable

Model	Weighing range (kg)	Readability (g)	Linearity (±g)	Art. No.	Pack Qty.	€
R31P1502	1,5	0,05	0,1	**YY32.1**	1	370,00
R31P3	3	0,1	0,2	**YY33.1**	1	370,00
R31P6	6	0,2	0,5	**YY34.1**	1	370,00
R31P15	15	0,5	1	**YY35.1**	1	370,00
R31P30	30	1	2	**YY36.1**	1	370,00

External adjustment, ex works calibrated

Model	Weighing range (kg)	Readability (g)	Linearity (±g)	Art. No.	Pack Qty.	€
R31P1502-M	1,5	0,5	0,1	**YY37.1**	1	430,00
R31P3-M	3	1	0,2	**YY38.1**	1	430,00
R31P6-M	6	2	0,5	**YY39.1**	1	430,00
R31P15-M	15	5	1	**YY40.1**	1	430,00
R31P30-M	30	10	2	**YY41.1**	1	430,00

Table balances FKB-series

By Kern.

Equipment:

- External adjustment
- Functions: part counting, formulation, percentage weighing and animal weighing
- Backlight display
- Suitable for battery and mains operation
- Auto-Off function, switches balance off after 3 min of non-use to conserve batteries, can be deactivated
- RS 232 data port
- Dimensions of stainless steel weighing plate: 240 x 240 mm

Technical specifications:

Model	Weighing range (kg)	Readability (g)	Reproducibility/linearity (±g)
FKB 6K0.02	6	0.03	0.02 / 0.1
FKB 8K0.05	8	0.05	0.05 / 0.15
FKB 16K0.05	16	0.05	0.05 / 0.25
FKB 16K0.1	16	0.1	0.1 / 0.3
FKB 36K0.1	36	0.1	0.1 / 0.5
FKB 36K0.2	36	0.2	0.2 / 0.6
FKB 65K0.2	65	0.2	0.2 / 1
FKB 65K0.5	65	0.5	0.5 / 1.5

Delivery incl. mains adapter. Please order batteries separately.
6 batteries of the type Baby/C are required.

Model	Weighing range (kg)	Art. No.	Pack Qty.	€
FKB 6K0.02	6	**YC92.1**	1	520,00
FKB 8K0.05	8	**YC93.1**	1	480,00
FKB 16K0.05	16	**YC94.1**	1	580,00
FKB 16K0.1	16	**YC95.1**	1	480,00
FKB 36K0.1	36	**YC96.1**	1	550,00
FKB 36K0.2	36	**YC97.1**	1	510,00
FKB 65K0.2	65	**YC98.1**	1	550,00
FKB 65K0.5	65	**YC99.1**	1	510,00

Accessories:

Baby/C 1.5 V battery	**1023.2**	2	4,85

Navigator precision balances

By Ohaus.

Application:

- Various weighing units are adjustable
- Functions: parts counting, percent weighing, check weighing, accumulating and display-hold function

Equipment:

- Stainless steel weighing platform
- External adjustment
- Backlight LCD display
- **Multifunctional infrared sensors for non-contact operation - e.g. contactless control of the zero/tare function to avoid specimen residues on the keypad**
- Spirit level on the front (lights up when switched on)
- Adjustable levelling feet with non-slip rubber pads
- Stability display and overload protection
- Upgradable with RS 232, USB or Ethernet port (please order separately)
- Battery or mains operation possible

Technical specifications:

Model	Weighing range (g)	Readability (g)	Reproducibility/linearity (±g)	Weighing pan (mm)
NV212	210	0.01	0.01 / 0.02	∅ 120
NV511	510	0.1	0.1 / 0.2	190 x 138
NV1101	1100	0.1	0.1 / 0.2	190 x 138
NVT1601	1600	0.1	0.1 / 0.2	230 x 174
NV2101	2100	0.1	0.1 / 0.2	190 x 138
NVT3201	3200	0.2	0.2 / 0.4	230 x 174
NV4101	4100	0.2	0.2 / 0.4	190 x 138
NV5101	5100	0.5	0.5 / 1.0	190 x 138
NVT6401	6400	0.5	0.5 / 1.0	230 x 174
NVT10001	10000	0.5	0.5 / 1.0	230 x 174
NVT16000	16000	1.0	1.0 / 2.0	230 x 174

Delivery incl. AC adapter.
Batteries not included (please order separately. NV models require 4 1.5 V mignon batteries and NVT models 4 Baby/C 1.5 V batteries).

Model	Weighing range (g)	Art. No.	Pack Qty.	€
NV212	210	**PH67.1**	1	240,00
NV511	510	**PH68.1**	1	199,00
NV1101	1100	**PH69.1**	1	220,00
NVT1601	1600	**PH70.1**	1	205,00
NV2101	2100	**PH71.1**	1	230,00
NVT3201	3200	**PH72.1**	1	205,00
NV4101	4100	**PH73.1**	1	225,00
NV5101	5100	**PH74.1**	1	215,00
NVT6401	6400	**PH75.1**	1	205,00
NVT10001	10000	**PH76.1**	1	205,00
NVT16000	16000	**PH77.1**	1	205,00

Accessories for Navigator precision balances

By Ohaus.

Type	Art. No.	Pack Qty.	€
RS 232 port, installation kit with cable	**Y609.1**	1	32,00
USB port, installation kit with cable	**Y610.1**	1	32,00
Ethernet port, installation kit with cable	**PH78.1**	1	67,00

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4	6,05
Baby/C 1.5 V battery	**1023.2**	2	4,85

PCD-series precision balances

By Kern.

Features

- With separate platform for working in glove bags or fume cupboards
- External adjustment
- Functions: part counting, formulation, percentage weighing and animal weighing
- Backlight display
- Various weighing units can be set, e.g. g, ct, free value etc.
- With spirit level and levelling screws
- Draft shield for model PCD 250-3 and PCD 300-3: Dimensions of weighing space: W 146 x D 146 x H 80 mm
- Mains or battery operation
- Auto-Off function, switches balance off after 3 min of non-use to conserve batteries, can be deactivated

Technical specifications:

Model	Weighing range (g)	Readability (g)	Reproducibility/ linearity (±g)	Weighing pan (mm)
PCD 250-3 (W)	250	0.001	0.002 / 0.005	∅ 105
PCD 300-3 (W)	350	0.001	0.002/0.005	∅ 105
PCD 2500-2	2500	0.01	0.02 / 0.05	160 x 160
PCD 3000-2	3500	0.01	0.02/0.05	160 x 160
PCD 6K-4	6000	0.1	0.1/0.3	160 x 160
PCD 10K0.1	10 000	0.1	0.1 / 0.3	160 x 160
PCD 10K-3	10 000	1	1/3	160 x 160

(W) = incl. draft shield.

Delivery incl. mains adapter. Please order batteries separately.
One 9 V E-Block battery is required.

Model	Weighing range (g)	Art. No.	Pack Qty.	€
PCD 250-3 (W)	250	**YC31.1**	1	305,00
PCD 300-3 (W)	350	**HEH0.1**	1	350,00
PCD 2500-2	2500	**YC32.1**	1	295,00
PCD 3000-2	3500	**HEH1.1**	1	350,00
PCD 6K-4	6000	**HEH2.1**	1	260,00
PCD 10K0.1	10000	**YC33.1**	1	240,00
PCD 10K-3	10000	**HEH3.1**	1	190,00

Accessories:

Stand for raising the display unit, stand height 250 mm	**YC34.1**	1	50,00
E-Block 9 V battery	**1025.1**	1	4,85

PCB-series precision balances

By Kern.

Features:

- Backlight LCD display
- Stainless steel platform (Models with ∅ 81 mm have ABS plastic platform)
- External adjustment
- Programs: Piece counting, recipes, percentage and animal weighing
- RS 232-interface
- All models uphold 0.001 g readability and have a wind protection ring
- Battery and outlet operation possible
- AUTO-OFF function after 3 mins to save batteries, feature can be disabled

Technical specifications:

Model	Weighing range (g)	Readability (g)	Reproducibility/ linearity (±g)	Weighing pan (mm)
PCB 100-3	100	0.001	0.001 / 0.003	∅ 81
PCB 250-3	250	0.001	0.001 / 0.005	∅ 81
PCB 350-3	350	0.001	0.001 / 0.005	∅ 81
PCB 200-2	200	0.01	0.01 / 0.02	∅ 105
PCB 1000-2	1000	0.01	0.01 / 0.03	130 x 130
PCB 2500-2	2500	0.01	0.01 / 0.05	130 x 130
PCB 3500-2	3500	0.01	0.01 / 0.05	130 x 130
PCB 1000-1	1000	0.1	0.1 / 0.2	130 x 130
PCB 2000-1	2000	0.1	0.1 / 0.2	130 x 130
PCB 6000-1	6000	0.1	0.1 / 0.3	150 x 170
PCB 6000-0	6000	1	1 / 2	150 x 170

Delivery incl. power unit and work protection cover for keypad and housing. Please order batteries separately.
One E-Block 9 V battery is required.

Model	Weighing range (g)	Art. No.	Pack Qty.	€
PCB 100-3	100	**HK92.1**	1	265,00
PCB 250-3	250	**KX11.1**	1	290,00
PCB 350-3	350	**LY67.1**	1	300,00
PCB 200-2	200	**HK93.1**	1	230,00
PCB 1000-2	1000	**HK97.1**	1	255,00
PCB 2500-2	2500	**KX12.1**	1	290,00
PCB 3500-2	3500	**LY68.1**	1	300,00
PCB 1000-1	1000	**HK99.1**	1	185,00
PCB 2000-1	2000	**HL00.1**	1	215,00
PCB 6000-1	6000	**HL02.1**	1	240,00
PCB 6000-0	6000	**HL05.1**	1	130,00

Accessories:

E-Block 9 V battery	**1025.1**	1	4,85

Scout® SKX- and STX-series precision balances

By Ohaus.

General features of all models:

- With external adjustment
- Draft shield for models with 0.001 g readability (internal height 45 mm)
- Battery and mains operation
- Connection options for data logging (sold separately)

Technical specifications:

Model	Weighing range (g)	Readability (g)	Reproducibility/ linearity (±g)	Weighing pan (mm)
SKX123/STX123 (W)	120	0.001	0.002/0.003	∅ 93
STX223 (W)	220	0.001	0.002/0.003	∅ 93
SKX222/STX222	220	0.01	0.01/0.01	∅ 120
SKX422/STX422	420	0.01	0.01/0.01	∅ 120
SKX622/STX622	620	0.01	0.01/0.02	∅ 120
SKX1202/STX1202	1200	0.01	0.02/0.03	170 x 140
SKX2202/STX2202	2200	0.01	0.02/0.03	170 x 140
SKX421/STX421	420	0.1	0.1/0.1	∅ 120
SKX621/STX621	620	0.1	0.1/0.1	170 x 140
SKX2201/STX2201	2200	0.1	0.1/0.1	170 x 140
SKX6201/STX6201	6200	0.1	0.1/0.2	170 x 140
SKX8200/STX8200	8200	1	1/1	170 x 140

(W) = incl. draft shield

Delivery incl. M1 test weight included in models up to 620 g and mains adapter.
Without batteries (sold separately, 4 Mignon 1.5 V batteries are required).

① **SKX-series**

- Application: Determining density
- Background-lit LCD display

Model	Weighing range (g)	Art. No.	Pack Qty.	€
SKX123 (W)	120	**EHE8.1**	1	390,00
SKX222	220	**EHE9.1**	1	285,00
SKX422	420	**EHH0.1**	1	360,00
SKX622	620	**EHH1.1**	1	390,00
SKX1202	1200	**EHH2.1**	1	435,00
SKX2202	2200	**EHH3.1**	1	465,00
SKX421	420	**EHH4.1**	1	165,00
SKX621	620	**EHH5.1**	1	185,00
SKX2201	2200	**EHH6.1**	1	285,00
SKX6201	6200	**EHH7.1**	1	385,00
SKX8200	8200	**EHH8.1**	1	440,00

② **STX-series with touchscreen and additional features**

- Application: Percent weighing, parts counting, check weighing, dynamic weighing, totalling, and determining density
- Full-colour touchscreen with WQVGA graphic LCD (4.3″ diagonal)
- QWERTY keyboard and numerical keyboard
- 9 different menu language options can be selected
- Up-front level display and adjustable levelling feet

Model	Weighing range (g)	Art. No.	Pack Qty.	€
STX123 (W)	120	**EHH9.1**	1	605,00
STX223 (W)	220	**EHK0.1**	1	705,00
STX222	220	**EHK1.1**	1	465,00
STX422	420	**EHK2.1**	1	565,00
STX622	620	**EHK3.1**	1	605,00
STX1202	1200	**EHK4.1**	1	675,00
STX2202	2200	**EHK5.1**	1	705,00
STX421	420	**EHK6.1**	1	255,00
STX621	620	**EHK7.1**	1	305,00
STX2201	2200	**EHK8.1**	1	465,00
STX6201	6200	**EHK9.1**	1	595,00
STX8200	8200	**EHL0.1**	1	675,00

Accessories:

RS 232 interface kit	**EHL1.1**	1	59,00
USB host interface kit	**EHL2.1**	1	90,00
USB device interface kit	**EHL3.1**	1	69,00
Bluetooth interface kit	**EHL4.1**	1	112,00
Mignon battery/AA 1.5 V	**1022.2**	4	6,05

BTG-series precision balances

Application:

- Percent and counting
- Select from 21 weight units: g, ct, kg, lb, etc.

Features:

- Stainless steel weighing platform
- Backlit display showing the capacity
- With external adjustment
- Three-door glass draft shield on the BTG-303 model (interior height of 150 mm)
- RS 232 data port
- Integrated battery operation for mobile use (up to 40 hrs runtime and approx. 12 hrs charging time)

Technical specifications:

Model	Weighing range (g)	Readability (g)	Reproducibility/linearity (±g)	Weighing pans (mm)
BTG-303 (W)	300	0.001	0.001/0.003	∅118
BTG-2002	2000	0.01	0.01/0.03	188 x 148
BTG-6001	6000	0.1	0.1/0.2	188 x 148

(W) = incl. draft shield

Delivery incl. mains adapter, external additional test weight (class M1) and dust cover (BTG-2002 and BTG-6001 models only).

Model	Weighing range (g)	Art. No.	Pack Qty.	€
BTG-303 (W)	300	**EEH4.1**	1	403,15
BTG-2002	2000	**EEH5.1**	1	333,25
BTG-6001	6000	**EEH6.1**	1	290,25

Electronic laboratory balances 440-series

By Kern. Stainless steel weighing platform. With external adjustment. Programs: piece counting, recipes, percent-weighing and animal weighing with data interface RS 232. Work protection cover supplied as standard. With Art. No. LY72.1 a wind guard ring is also supplied. Can be battery or outlet operated. AUTO-OFF after 3 mins for longer battery life.

Delivery incl. power unit. Please order battery separately.
1 battery E-block 9 V is required.

Weighing range (g)	Readability (g)	Linearity (±g)	Weighing pan (mm)	Art. No.	Pack Qty.	€
60	0,001	0,003	∅ 81	**LY72.1**	1	350,00
200	0,01	0,02	∅ 105	**H723.1**	1	290,00
400	0,01	0,03	∅ 105	**AK49.1**	1	330,00
600	0,01	0,03	∅ 105	**LY73.1**	1	365,00
400	0,1	0,2	130 x 130	**P936.1**	1	185,00
1000	0,1	0,2	130 x 130	**H724.1**	1	245,00
2000	0,1	0,2	130 x 130	**H725.1**	1	270,00
4000	0,1	0,3	170 x 150	**Y530.1**	1	330,00
4000	1	2	170 x 150	**P937.1**	1	160,00
6000	1	2	170 x 150	**P938.1**	1	180,00

Accessories:

E-Block 9 V battery	**1025.1**	1	4,85

Calibrated table balance GAB

By Kern. **Application examples:** dispensing balance for pharmacies; manual mixing of tea, coffee etc.

- Functions: piece counting and percentage weighing
- Weighing with tolerance range: entry of upper/lower limits. A visual signal supports dosing and sorting
- RS 232 port
- Stainless steel weighing plate: 294 x 225 mm
- Overall dimensions: W 320 x D 330 x H 125 mm

Delivery incl. mains adapter.

Weighing range (kg)	Readability (g)	Min. load (g)	Linearity (±g)	Art. No.	Pack Qty.	€
3/6	1/2	20	1/2	**PX18.1**	1	295,00

Electronic laboratory balances 572-series

By Kern. **Robust metal housing**. With external adjustment. Programs: piece counting, recipes, percentage weighing. With data interface RS 232. Self-explanatory operation via an informative yes/no-dialogue in the display. With flush-mounted weighing device. Dimensions: W 180 x D 310 x H 90 mm. Article Nos HT19.1 and HT20.1 comes with wind protection ring (∅ 160 mm, H 60 mm).

Technical specifications:

Model	Weighing range (g)	Readability (g)	Reproducibility / linearity (±g)	Weighing pan (mm)
572-31	300	0.001	0.001 / 0.003	∅ 105
572-32	420	0.001	0.002 / 0.005	∅ 105
572-33	1600	0.01	0.01 / 0.03	∅ 150
572-35	2400	0.01	0.01 / 0.03	∅ 150
572-37	3000	0.01	0.02 / 0.05	∅ 150
572-39	4200	0.01	0.02 / 0.05	∅ 150
572-45	12000	0.1	0.05 / 0.15	200 x 160
572-49	16000	0.1	0.1 / 0.3	200 x 160
572-57	24000	0.1	0.1 / 0.3	200 x 160

Delivery incl. work protection cover for keypad and housing, plus power outlet plug.

Model	Weighing range (g)	Art. No.	Pack Qty.	€
572-31	300	**HT19.1**	1	540,00
572-32	420	**HT20.1**	1	550,00
572-33	1600	**L961.1**	1	500,00
572-35	2400	**L962.1**	1	510,00
572-37	3000	**HT21.1**	1	520,00
572-39	4200	**KX14.1**	1	530,00
572-45	12000	**L963.1**	1	510,00
572-49	16000	**L964.1**	1	510,00
572-57	24000	**L966.1**	1	510,00

EWJ-series precision balances

By Kern.
Application: piece counting and percent weighing.

Features:
- Timer-controlled automatic internal adjustment
- Capacity indication - LED strip indicates available weighing range
- Draft shield comprising four side parts (H = 90 mm) for models up to ≤600 g
- Spirit level
- RS 232 data port

Technical specifications:

Model	Weighing range (g)	Resolution (g)	Reproducibility/ linearity (±g)	Weighing pans (mm)
EWJ 300-3 (W)	300	0.001	0.001 / 0.003	∅ 80
EWJ 600-2M (W)	600	0.01	0.01 / 0.03	∅ 135
EWJ 3000-2 (W)	3000	0.01	0.01 / 0.03	∅ 135
EWJ 6000-1M	6000	0.1	0.1 / 0.3	155 x 145

(W) = incl. draft shield

Delivery incl. work safety hood and AC adapter (230 V, 50 Hz).

Model	Weighing range (g)	Pack Qty.	Not calibratable Art. No.	€	Factory-calibrated Art. No.	€
EWJ 300-3 (W)	300	1	**CHH7.1**	450,00		
EWJ 600-2M (W)	600	1	**CHH8.1**	360,00	**CHK1.1**	426,00
EWJ 3000-2	3000	1	**CHH9.1**	430,00		
EWJ 6000-1M	6000	1	**CHK0.1**	350,00	**CHK2.1**	427,00

EW- and EG-series precision balances

By Kern.
Application:
- Piece counting, percentage weighing, weighing with tolerance range (upper and lower limiting values are programmable; possible setting in g, pieces or %)
- Capacity display
- Various weighing units such as g, ct, oz etc. can be set
- LCD-display with 16 mm high digits

Design:
- Weighing platform made of stainless steel
- **EW-Models with external adjustment, EG-Models with internal switch-on adjustment via knob on the side**
- Adjusting water level
- Bidirectional RS 232 data interface
- Wind protection comes in series with all 0.001-g-models, with removable lid and opening for pipetting (weighing platform W 158 x D 130 x H 78 mm)
- Dimensions of balance: with weighing platform ∅ 118 and 170 x 142 mm: W 180 x D 235 x H 75 mm, with weighing platform 180 x 160 mm: W 190 x D 265 x H 90 mm

Technical specifications:

Model	Capacity (g)	Readability (g)	Reproducibility / linearity (±g)	Platform (mm)
EW/EG 220-3 NM (W)	220	0.001	0.001 / 0.002	∅ 118
EW/EG 420-3 NM (W)	420	0.001	0.001 / 0.003	∅ 118
EW/EG 620-3 NM (W)	620	0.001	0.001 / 0.004	∅ 118
EW 820-2 NM	820	0.01	0.01 / 0.01	170 x 142
EW/EG 2200-2 NM	2200	0.01	0.01 / 0.01	180 x 160
EW/EG 4200-2 NM	4200	0.01	0.01 / 0.02	180 x 160
EW 6200-2 NM	6200	0.01	0.01 / 0.03	180 x 160
EW 12000-1 NM	12000	0.1	0.1 / 0.2	180 x 160

(W)= incl. wind protector

Delivery incl. work protection hood and outlet adapter.

EW-series, with external adjustment

Model	Weighing range (g)	Art. No.	Pack Qty.	€
EW 220-3 NM (W)	220	**AX07.1**	1	620,00
EW 420-3 NM (W)	420	**AX08.1**	1	690,00
EW 620-3 NM (W)	620	**AX09.1**	1	770,00
EW 820-2 NM	820	**AX10.1**	1	540,00
EW 2200-2 NM	2200	**AX11.1**	1	660,00
EW 4200-2 NM	4200	**AX12.1**	1	760,00
EW 6200-2 NM	6200	**CT72.1**	1	810,00
EW 12000-1 NM	12000	**CT73.1**	1	630,00

EG-series, with internal adjustment

Model	Weighing range (g)	Art. No.	Pack Qty.	€
EG 220-3 NM (W)	220	**AX13.1**	1	760,00
EG 420-3 NM (W)	420	**AX14.1**	1	830,00
EG 620-3 NM (W)	620	**AX15.1**	1	930,00
EG 2200-2 NM	2200	**AX16.1**	1	820,00
EG 4200-2 NM	4200	**AX17.1**	1	880,00

PNJ-series precision balances

By Kern.
Application:
Item counting, percentage weighing and checkweighing.

Features:
- With internal adjustment
- Capacity indication - LED strip indicates available weighing range
- Glass draft shield with 3 sliding doors for model with 0.001 g readability (interior height 160 mm)
- Spirit level
- RS 232 data port

Technical specifications:

Model	Weighing range (g)	Resolution (g)	Reproducibility/linearity (±g)	Weighing pans (mm)
PNJ 600-3M (W)	620	0.001	0.001 / 0.004	dia. 140
PNJ 3000-2M	3200	0.01	0.01 / 0.02	190 x 190
PNJ 12000-1M	12000	0.1	0.1 / 0.2	190 x 190

(W) = incl. draft shield

Delivery incl. work protection cover and AC-adapter.

Model	Weighing range (g)	Pack Qty.	Internal adjustment, not calibratable		Internal adjustment, calibrated ex works	
			Art. No.	€	Art. No.	€
PNJ 600-3M (W)	620	1	**ENH3.1**	730,00	**ENH6.1**	796,00
PNJ 3000-2M	3200	1	**ENH4.1**	705,00	**ENH7.1**	771,00
PNJ 12000-1M	12000	1	**ENH5.1**	705,00	**ENH8.1**	782,00

FX-/FZ-series precision balances

By A & D.
Application:
- Percent, counting and animal weighing
- Selectable weight units: g, ct, etc.

Features:
- FX-i models have external adjustment
- FZ-i models have internal adjustment
- **All models with additional WP: Dust and water proofing acc. to IP 65**
- Draft shield for models with 0.001 g readability (internal height 85 mm)
- With RS 232 data port
- Overload protection
- Five-year warranty

Technical specifications:

Model	Weighing range (g)	Readability (g)	Reproducibility/ linearity (±g)	Weighing pan ∅ (mm)
FX-/FZ-120i (W) **FX-/FZ-120i-WP (W)**	122	0.001	0.001/0.002	130
FX-/FZ-200i (W) **FX-/FZ-200i-WP (W)**	220	0.001	0.001/0.002	130
FX-/FZ-300i (W) **FX-/FZ-300i-WP (W)**	320	0.001	0.001/0.002	130
FX-/FZ-1200i **FX-/FZ-1200i-WP**	1220	0.01	0.01/0.02	150
FX-/FZ-2000i **FX-/FZ-2000i-WP**	2200	0.01	0.01/0.02	150
FX-/FZ-3000i **FX-/FZ-3000i-WP**	3200	0.01	0.01/0.02	150

(W) = incl. draft shield

Delivery incl. mains adapter.

Model	Weighing range (g)	Pack Qty.	External adjustment		Internal adjustment	
			Art. No.	€	Art. No.	€
FX-/FZ-120i (W)	122	1	**CTH4.1** *	612,75	**EHP8.1** *	811,65
FX-/FZ-120i-WP (W)	122	1	**CTH5.1** *	1037,40	**CTK6.1** *	1134,15
FX-/FZ-200i (W)	220	1	**CTH6.1** *	645,00	**EHP9.1** *	854,65
FX-/FZ-200i-WP (W)	220	1	**CTH7.1** *	1128,75	**CTK7.1** *	1247,00
FX-/FZ-300i (W)	320	1	**CTH8.1** *	682,65	**EHT0.1** *	892,25
FX-/FZ-300i-WP (W)	320	1	**CTH9.1** *	1214,75	**CTK8.1** *	1354,50
FX-/FZ-1200i	1220	1	**CTK0.1** *	612,75	**EHT1.1** *	811,65
FX-/FZ-1200i-WP	1220	1	**CTK1.1** *	1037,40	**CTK9.1** *	1134,15
FX-/FZ-2000i	2200	1	**CTK2.1** *	645,00	**EHT2.1** *	854,65
FX-/FZ-2000i-WP	2200	1	**CTK3.1** *	1128,75	**CTL0.1** *	1247,00
FX-/FZ-3000i	3200	1	**CTK4.1** *	682,65	**EHT3.1** *	892,25
FX-/FZ-3000i-WP	3200	1	**CTK5.1** *	1214,75	**CTL1.1** *	1354,50

* Longer delivery times possible. Please check with our Sales Department.

Precision scales EK series, explosion-proof

By A & D.
For explosive areas in zones 0.1 and 2.

Application:
- Item counter and percentage weighing
- Acc. to ATEX: II 1G ia IIB T3 Ga
- With external adjustment

Features:
- Backlit display, deactivatable
- Auto power OFF for battery saving (battery life approx. 250 h with backlight off)
- Weighing pan made of stainless steel
- Anti-theft lug, bubble, levelling feet

Technical specifications:

Model	Weighing range (g)	Resolution (g)	Reproducibility/linearity (±g)	Weighing pans (mm)
EK-300EP	300	0.01	0.01 / 0.02	dia. 110
EK-3000EP	3000	0.1	0.01 / 0.02	133 x 170
EK-12KEP	12000	1	1 / 1	133 x 170

Delivery incl. 4 1.5V Mignon batteries.

Please note: use only type-tested replacement batteries (see operating instructions)!

Model	Art. No.	Pack Qty.	€
EK-300EP	**EXC0.1**	1	1290,00
EK-3000EP	**EXC1.1**	1	1290,00
EK-12KEP	**EXC2.1**	1	1290,00

NEW

Analytical balances ADB series

By Kern.

Application:
Item counter and percentage weighing

Features:
- With external adjustment
- Stainless steel weighing platform
- With RS 232 data port
- Overall dimensions of balance incl. draft shield (W): W 230 x D 310 x H 330 mm
- Weighing space dimensions: W 170 x D 160 x H 205 mm

Technical specifications:

Models	Weighing range (g)	Readability (g)	Reproducibility/linearity (±g)	Platform (mm)
ADB 100-4 (W)	120	0,0001	0,0002 / 0,0004	∅ 90
ADB 200-4 (W)	210	0,0001	0,0002 / 0,0004	∅ 90

Delivery incl. mains adapter.

Model	Weighing range (g)	Art. No.	Pack Qty.	€
ADB 100-4 (W)	120	**HPP9.1**	1	620,00
ADB 200-4 (W)	210	**HPT0.1**	1	640,00

ABS-N and ABJ-NM-series analytical balances

By Kern.

Application:

- Parts counting, percentage weighing and batching
- High stability mode and other filter settings are selectable

Equipment:

- ABS-N models have external calibration
- ABJ-NM models have internal automatic calibration, either after a change of temperature >2 °C or time controlled every 4 hours
- Spirit level
- Overall dimensions of balance incl. draft shield: W 210 x D 340 x H 325 mm
- Weighing space dimensions: W 174 x D 162 x H 227 mm

Technical specifications:

Models	Weighing range (g)	Readability (g)	Reproducibility/ linearity (±g)	Platform (mm)
ABS 80-4N (W)	80	0.0001	0.0002 / 0.0003	∅ 91
ABS 120-4N / ABJ 120-4NM (W)	120	0.0001	0.0002 / 0.0003	∅ 91
ABS 220-4N / ABJ 220-4NM (W)	220	0.0001	0.0002 / 0.0003	∅ 91
ABS 320-4N / ABJ 320-4NM (W)	320	0.0001	0.0002 / 0.0003	∅ 91

(W) = incl. wind guard

ABS-N-series, with external calibration

Model	Weighing range (g)	Art. No.	Pack Qty.	€
ABS 80-4N (W)	80	**TA63.1**	1	920,00
ABS 120-4N (W)	120	**TA64.1**	1	1000,00
ABS 220-4N (W)	220	**TA65.1**	1	1070,00
ABS 320-4N (W)	320	**TA66.1**	1	1200,00

ABJ-NM series, with internal calibration, non-calibratable

Model	Weighing range (g)	Art. No.	Pack Qty.	€
ABJ 120-4NM (W)	120	**TA67.1**	1	1050,00
ABJ 220-4NM (W)	220	**TA68.1**	1	1150,00
ABJ 320-4NM (W)	320	**TA69.1**	1	1320,00

ABJ-NM series with internal adjustment, calibrated ex works

Model	Weighing range (g)	Art. No.	Pack Qty.	€
ABJ 120-4NM (W)	120	**TA70.1**	1	1160,00
ABJ 220-4NM (W)	220	**TA71.1**	1	1260,00
ABJ 320-4NM (W)	320	**TA72.1**	1	1430,00

Accessories:

RS 232 port, installation kit with interface cable	**TA73.1**	1	90,00

Analytical balances and semi-micro balances ALJ series

By Kern.

Application:

Function programs: item counter, percentage weighing, balances with tolerance range, animal weighing function and recipe

Features:

- With internal automatic adjustment on temperature change ≥1.2 °C and timer-controlled every 3 h
- Available with or without ionizer: Ionizer for neutralizing electrostatic charging. Push-button activates the ionization blower.
- Data interface RS 232
- Dimensions of weighing compartment with wind protection: W 160 × D 140 × H 205 mm
- Overall dimensions (incl. wind protection) W 210 × D 340 × H 330 mm

Technical specifications:

Models	Weighing range (g)	Readability (g)	Reproducibility/ linearity (±g)	Platform ∅ (mm)
ALJ 200-5DA (W)	80/220	0,00001/ 0,0001	0,00004/0,0001/ 0,0001/0,0002	80
ALJ 250-4A (W)	250	0,0001	0,0001/0,0003	80
ALJ 310-4A (W)	310	0,0001	0,0001/0,0003	80
ALJ 500-4A (W)	510	0,0001	0,0002/0,0004	80

(W) = incl. draft shield.

Delivery incl. protective cover.

① **Standard design**

Model	Weighing range (g)	Art. No.	Pack Qty.	€
ALJ 200-5DA	80/220	**HPT1.1**	1	1680,00
ALJ 250-4A	250	**HPT2.1**	1	1060,00
ALJ 310-4A	310	**HPT3.1**	1	1170,00
ALJ 510-4A	510	**HPT4.1**	1	1860,00

② **Comfort design with ionizer**

Model	Weighing range (g)	Art. No.	Pack Qty.	€
ALJ 200-5DA	80/220	**HPT5.1**	1	2300,00
ALJ 250-4A	250	**HPT6.1**	1	1680,00
ALJ 310-4A	310	**HPT7.1**	1	1790,00
ALJ 510-4A	510	**HPT8.1**	1	2480,00

NEW

Pioneer™ Series semi-micro, analytical and precision balances

By Ohaus.
Application: item counting, percentage weighing and dynamic weighing.
Features:
- Backlit LCD display
- Glass draft shield with 3 sliding doors for models with 0.00001, 0.0001 and 0.001 g readability (interior height 200 mm)
- Models with draft shield are fitted with an antistatic rod for grounding (made from permanent static, electrically conductive ABS)
- Calibration vial, safety lug
- USB and RS 232 data interface

Technical specifications:

Models	Weighing range (g)	Readability (g)	Reproducibility/ linearity (±g)	Weighing pan ∅ (mm)
PX125 D (W)	52/120	0.00001 / 0.0001	0.00002 / 0.0001 0.0001 / 0.0001	80
PX85 (W)	82	0.00001	0.00002 / 0.001	80
PX225D (W)	82/220	0.00001 / 0.0001	0.00002 / 0.001 0.0001 / 0.0001	80
PX124 (W)	120	0.0001	0.0001 / 0.0002	90
PX224 (W)	220	0.0001	0.0001 / 0.0002	90
PX323 (W)	320	0.001	0.001 / 0.002	120
PX523 (W)	520	0.001	0.001 / 0.002	120
PX3202	3200	0.01	0.01 / 0.02	180
PX5202	5200	0.01	0.01 / 0.02	180
PX4201	4200	0.1	0.1 / 0.2	180

(W) = incl. draft shield

Delivery incl. industrial safety cover and mains adapter.

External adjustment, not calibratable

Model	Weighing range (g)	Art. No.	Pack Qty.	€
PX124 (W)	120	**KAC6.1** *	1	1125,00
PX224 (W)	220	**KAC7.1** *	1	1230,00
PX323 (W)	320	**KAC8.1** *	1	780,00
PX523 (W)	520	**KAC9.1** *	1	840,00
PX3202	3200	**KAE0.1** *	1	815,00
PX5202	5200	**KAE1.1** *	1	885,00
PX4201	4200	**KAE2.1** *	1	740,00

Internal adjustment, not calibratable

Model	Weighing range (g)	Art. No.	Pack Qty.	€
PX125D (W)	52/120	**KAE3.1** *	1	2520,00
PX85 (W)	82	**KAE4.1** *	1	2610,00
PX225D (W)	82/220	**KAE5.1** *	1	2710,00
PX124 (W)	120	**KAE6.1** *	1	1320,00
PX224 (W)	220	**KAE7.1** *	1	1425,00
PX323 (W)	320	**KAE8.1** *	1	975,00
PX523 (W)	520	**KAE9.1** *	1	1035,00
PX3202	3200	**KAH0.1** *	1	1010,00
PX5202	5200	**KAH1.1** *	1	1080,00
PX4201	4200	**KAH2.1** *	1	935,00

Internal adjustment, calibrated ex works

Model	Weighing range (g)	Art. No.	Pack Qty.	€
PX125D (W)	52/120	**KAH3.1** *	1	2710,00
PX85 (W)	82	**KAH4.1** *	1	2800,00
PX225D (W)	82/220	**KAH5.1** *	1	2900,00
PX124 (W)	120	**KAH6.1** *	1	1475,00
PX224 (W)	220	**KAH7.1** *	1	1580,00
PX323 (W)	320	**KAH8.1** *	1	1130,00
PX523 (W)	520	**KAH9.1** *	1	1190,00
PX3202	3200	**KAK0.1** *	1	1165,00
PX5202	5200	**KAK1.1** *	1	1235,00
PX4201	4200	**KAK2.1** *	1	1090,00

* Longer delivery times possible. Please check with our Sales Department.

HR-series analytical balances

By A & D.
Application:
- Percent, counting, animal weighing
- Selectable weight units: g, mg, ct etc.

Features:
- HR-A model with external calibration function
- HR-AZ models with internal calibration function
- Backlit LCD display
- Removable full-sized draft shield (internal height 198 mm)
- The sliding doors of the draft shield tilt back to minimise space requirements
- With RS 232 data port
- Spirit level on the front
- Solid metal housing
- Overload protection
- 5 year warranty

Technical specifications:

Models	Weighing range (g)	Resolution (g)	Reproducibility/ linearity (±g)	Weighing pan ∅ (mm)
HR-251A/ HR-251 AZ (W)	62 252	0.0001/ 0.001	0.0001 / 0.0003 0.001 / 0.001	90
HR-100A/ HR-100AZ (W)	102	0.0001	0.0001 / 0.0002	90
HR-150A/ HR-150AZ (W)	152	0.0001	0.0001 / 0.0002	90
HR-250A/ HR-250AZ (W)	252	0.0001	0.0002 / 0.0003	90

(W) = incl. draft shield

Delivery incl. AC adapter.

Model	Weighing range (g)	Pack Qty.	External calibration Art. No.	€	Internal calibration Art. No.	€
HR-251A / HR251AZ (W)	62 / 252	1	**CTE2.1** *	1058,90	**CTE6.1** *	1279,25
HR-100A / HR-100AZ (W)	102	1	**CTE3.1** *	1058,90	**CTE7.1** *	1279,25
HR-150A / HR-150AZ (W)	152	1	**CTE4.1** *	1128,75	**CTE8.1** *	1338,40
HR-250A / HR-250AZ (W)	252	1	**CTE5.1** *	1354,50	**CTE9.1** *	1569,50

* Longer delivery times possible. Please check with our Sales Department.

Entris®-series analytical and precision balances

By Sartorius.
Applications:
- Weighing in percent, counting, animal weighing, conversion, density measurement
- Selectable weight units: g, kg, mg, ct etc.

Features:
- Models with 0.0001 g readability (inner height 240 mm) are supplied with a full draft shield
- Models with 0.001 g readability (inner height 60 mm) readability are supplied with a round glass ring protector
- With RS 232 data interface, antitheft device and spirit level
- Monolithic weighing technology

Technical specifications:

Models	Weighing range (g)	Resolution (g)	Reproducibility/ linearity (±g)	Weighing pan (mm)
Entris 64(i)-1S (W)	60	0.0001	0.0001 / 0.0002	∅ 90
Entris 124(i)-1S (W)	120	0.0001	0.0001 / 0.0002	∅ 90
Entris 224(i)-1S (W)	220	0.0001	0.0001 / 0.0002	∅ 90
Entris 153(i)-1S (W)	150	0.001	0.001 / 0.002	∅ 115
Entris 323(i)-1S (W)	320	0.001	0.001 / 0.002	∅ 115
Entris 423(i)-1S (W)	420	0.001	0.001 / 0.002	∅ 115
Entris 623(i)-1S (W)	620	0.001	0.001 / 0.002	∅ 115
Entris 822(i)-1S	820	0.01	0.01 / 0.03	∅ 150
Entris 2202(i)-1S	2200	0.01	0.01 / 0.03	180 x 180
Entris 3202(i)-1S	3200	0.01	0.01 / 0.03	180 x 180
Entris 4202(i)-1S	4200	0.01	0.01 / 0.03	180 x 180
Entris 6202(i)-1S	6200	0.01	0.01 / 0.03	180 x 180
Entris 2201(i)-1S	2200	0.1	0.1 / 0.3	180 x 180
Entris 5201(i)-1S	5200	0.1	0.1 / 0.3	180 x 180
Entris 8201(i)-1S	8200	0.1	0.1 / 0.3	180 x 180

(W) = incl. draft shield

Delivery incl. universal AC-adapter (100-240 V).

Model	Weighing range (g)	Pack Qty.	External adjustment Art. No.	€	Internal adjustment Art. No.	€
Entris 64(i)-1S (W)	60	1	**ACT1.1** *	1530,00	**ACX6.1** *	1820,00
Entris 124(i)-1S (W)	120	1	**ACT0.1** *	1660,00	**ACX5.1** *	1950,00
Entris 224(i)-1S (W)	220	1	**ACP9.1** *	1790,00	**ACX4.1** *	2080,00
Entris 153(i)-1S (W)	150	1	**ACT5.1** *	957,00	**ACY0.1** *	1210,00
Entris 323(i)-1S (W)	320	1	**ACT4.1** *	1090,00	**ACX9.1** *	1360,00
Entris 423(i)-1S (W)	420	1	**ACT3.1** *	1210,00	**ACX8.1** *	1480,00
Entris 623(i)-1S (W)	620	1	**ACT2.1** *	1410,00	**ACX7.1** *	1680,00
Entris 822(i)-1S	820	1	**ACX0.1** *	976,00	**ACY5.1** *	1210,00
Entris 2202(i)-1S	2200	1	**ACT9.1** *	1080,00	**ACY4.1** *	1360,00
Entris 3202(i)-1S	3200	1	**ACT8.1** *	1210,00	**ACY3.1** *	1480,00
Entris 4202(i)-1S	4200	1	**ACT7.1** *	1350,00	**ACY2.1** *	1620,00
Entris 6202(i)-1S	6200	1	**ACT6.1** *	1530,00	**ACY1.1** *	1820,00
Entris 2201(i)-1S	2200	1	**ACX3.1** *	896,00	**ACY8.1** *	1150,00
Entris 5201(i)-1S	5200	1	**ACX2.1** *	1010,00	**ACY7.1** *	1260,00
Entris 8201(i)-1S	8200	1	**ACX1.1** *	1120,00	**ACY6.1** *	1420,00

Accessories:

Logger type YDP20-OCE (with real-time clock, for printing date, time and statistics)	**N934.1** *	1	919,00
Paper rolls, 5 x 40 m	**N935.1**	1	31,00
Ink ribbon for logger type YDP20-OCE	**N936.1**	1	34,00

* Longer delivery times possible. Please check with our Sales Department.

Practum®-series analytical and precision balances

By Sartorius.

Applications:
- Percent weighing, checking, maximum value, counting, animal weighing
- Selectable weight units: g, kg, mg, ct etc.
- Made in Germany

Equipment:
- With external calibration function
- Touchscreen operation
- 10 different menu language options can be selected
- Full-sized draft shield for models with 0.0001 g / 0.001 g resolution (internal height 209 mm)
- Mini-USB port for automatic detection of Sartorius standard printer YDP40 (please order separately) or direct data transfer e.g. to Microsoft® Excel without additional software. Programmable interval for data output
- Menu lock for protection against accidental manipulation
- Levelling feet and glass level indicator on the front
- Anti-theft device for chain or cable

Technical specifications:

Model	Weighing range (g)	Resolution (g)	Reproducibility/linearity (±g)	Weighing pan ∅ (mm)
64-1S (W)	60	0,0001	0,0001/0,0002	90
124-1S (W)	120	0,0001	0,0001/0,0003	90
224-1S (W)	220	0,0001	0,0001/0,0003	90
213-1S (W)	210	0,001	0,001/0,003	120
313-1S (W)	310	0,001	0,001/0,003	120
513-1S (W)	510	0,001	0,001/0,002	120
412-1S*	410	0,01	0,01/0,03	180
612-1S*	610	0,01	0,01/0,03	180
1102-1S*	1100	0,01	0,01/0,03	180
2102-1S*	2100	0,01	0,01/0,03	180
3102-1S*	3100	0,01	0,01/0,03	180
2101-1S*	2100	0,1	0,1/0,3	180
5101-1S*	5100	0,1	0,1/0,3	180
6101-1S*	6100	0,1	0,1/0,3	180
5100-1S*	5100	1	1/1	180
6100-1S*	6100	1	1/1	180

(W) = incl. draft shield and dust cover; * incl. protective cover for operation

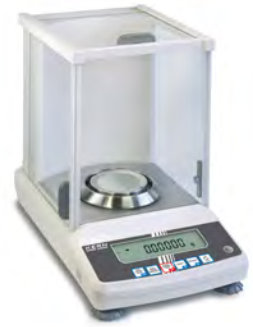
Delivery incl. universal mains-adapter (100-240 V).

Model	Weighing range (g)	Art. No.	Pack Qty.	€
64-1S (W)	60	**AHC2.1** *	1	1700,00
124-1S (W)	120	**NN46.1** *	1	1790,00
224-1S (W)	220	**NN45.1** *	1	1900,00
213-1S (W)	210	**NN48.1** *	1	1180,00
313-1S (W)	310	**NN47.1** *	1	1330,00
513-1S (W)	510	**AHC3.1** *	1	1610,00
412-1S	410	**AHC4.1** *	1	898,00
612-1S	610	**NN51.1** *	1	1040,00
1102-1S	1100	**NN50.1** *	1	1130,00
2102-1S	2100	**NN49.1** *	1	1340,00
3102-1S	3100	**AHC5.1** *	1	1510,00
2101-1S	2100	**AHC6.1** *	1	946,00
5101-1S	5100	**NN52.1** *	1	1130,00
6101-1S	6100	**AHC7.1** *	1	1230,00
5100-1S	5100	**NN53.1** *	1	851,00
6100-1S	6100	**AHC8.1** *	1	946,00

Accessories:

Standard laboratory printer YPD 40 incl. printer paper and connecting cable	**NN54.1** *	1	467,00
Printer paper rolls for printer YDP 40	**NN56.1** *	5	26,95
Mini-USB/USB A data cable	**NN55.1** *	1	38,50

* Longer delivery times possible. Please check with our Sales Department.



ABT-series semi-micro balances

By Kern.

Application:
- Programs: Piece counting, percentage weighing and recipes
- Different filter settings possible
- LCD-display with capacity display
- Different weighing units can be set, e.g. mg, g, ct

Features
- Monolithic weighing technology
- With internal automatic adjustment: that is dependent on time, temperature or individual per keystrokes
- RS 232-interface
- Stainless steel weighing platform
- Overall dimensions of balances incl. windbreak: W 217 x D 356 x H 338 mm
- All glass windbreak (inner height 223 mm)

Technical specifications:

Model	Weighing range (g)	Readability (g)	Reproducibility/Linearity (±g)	Platform (mm)
ABT 120-5DNM (W)	42 / 120	0.00001 / 0.0001	0.00002 / 0.00003 0.0001 / 0.0002	∅ 80

(W) = incl. windbreak

Delivery incl. work protection cover for display.

Model	Weighing range (g)	Pack Qty.	Not calibratable Art. No.	Not calibratable €	Calibrated ex works Art. No.	Calibrated ex works €
ABT 120-5DNM (W)	42/120	1	**HL85.1** *	2000,00	**HL86.1** *	2110,00

* Longer delivery times possible. Please check with our Sales Department.

Analytical and precision balances, Adventurer® series

By Ohaus.

Application:

- Percentage weighing, parts counting, animal weighing, check weighing, density measurement, batching, display-hold function and totalising
- Selectable weight units

Features:

- All balances are available with external adjustment or with AutoCal™ - automatic time and temperature controlled internal calibration
- Colour touchscreen with graphical LCD display and additional mechanical buttons for tare, calibration etc.
- Removable stainless steel weigh pan
- Language selection (nine languages)
- Analytical full-sized draft shield for models with 0.0001 g / 0.001 g resolution (internal height 230 mm)
- Minimum sample weight function - a warning is displayed if the current sample weight is below the defined minimum sample weight
- **Two USB ports - one USB host port on the front for saving weighing data directly to a USB stick (not supplied) and an additional USB port on the back for connecting to a PC**
- RS 232 interface
- Integrated hook for below-balance weighing

Technical specifications:

Model	Weighing range (g)	Resolution (g)	Reproducibility/linearity (±g)	Weighing pans (mm)
AX124 (W)	120	0.0001	0.0001 / 0.0002	dia. 90
AX224 (W)	220	0.0001	0.0001 / 0.0002	dia. 90
AX324 (W)	320	0.0001	0.0001 / 0.0002	dia. 90
AX223 (W)	220	0.001	0.001 / 0.002	dia. 130
AX423 (W)	420	0.001	0.001 / 0.002	dia. 130
AX523 (W)	520	0.001	0.001 / 0.002	dia. 130
AX422	420	0.01	0.01 / 0.02	175 x 195
AX822	820	0.01	0.01 / 0.02	175 x 195
AX1502	1520	0.01	0.01 / 0.02	175 x 195
AX2202	2200	0.01	0.01 / 0.02	175 x 195
AX4202	4200	0.01	0.01 / 0.02	175 x 195
AX5202	5200	0.01	0.01 / 0.02	175 x 195
AX2201	2200	0.1	0.1 / 0.2	175 x 195
AX4201	4200	0.1	0.1 / 0.2	175 x 195
AX8201	8200	0.1	0.1 / 0.2	175 x 195

(W) = incl. draft shield

Delivery incl. power adapter (100-240 V) and safety cover.

External/internal adjustment, not calibratable

Model	Weighing range (g)	Pack Qty.	External adjustment, not calibratable Art. No.	€	Internal adjustment, not calibratable Art. No.	€
AX124 (W)	120	1	**CCE5.1** *	1825,00	**CCH4.1** *	2085,00
AX224 (W)	220	1	**CCE6.1** *	1925,00	**CCH5.1** *	2185,00
AX324 (W)	320	1			**CCH6.1** *	2310,00
AX223 (W)	220	1	**CCE7.1** *	1170,00	**CCH7.1** *	1470,00
AX423 (W)	420	1	**CCE8.1** *	1385,00	**CCH8.1** *	1665,00
AX523 (W)	520	1	**CCE9.1** *	1600,00	**CCH9.1** *	1880,00
AX422	420	1	**EKH8.1** *	900,00	**EKK3.1** *	1180,00
AX822	820	1	**EKH9.1** *	1025,00	**EKK4.1** *	1305,00
AX1502	1520	1	**CCH1.1** *	1145,00	**CCK1.1** *	1445,00
AX2202	2200	1	**CCH2.1** *	1165,00	**CCK2.1** *	1465,00
AX4202	4200	1	**CCH3.1** *	1360,00	**CCK3.1** *	1660,00
AX5202	5200	1			**CCK4.1** *	1880,00
AX2201	2200	1	**EKK0.1** *	825,00	**EKK5.1** *	1125,00
AX4201	4200	1	**EKK1.1** *	1010,00	**EKK6.1** *	1310,00
AX8201	8200	1	**EKK2.1** *	1115,00	**EKK7.1** *	1415,00

Internal adjustment, calibrated ex works

Model	Weighing range (g)	Pack Qty.	Internal adjustment, calibrated ex works Art. No.	€
AX124 (W)	120	1	**EKK8.1** *	2305,00
AX224 (W)	220	1	**EKK9.1** *	2405,00
AX324 (W)	320	1	**EKL0.1** *	2530,00
AX223 (W)	220	1	**EKL1.1** *	1680,00
AX423 (W)	420	1	**EKL2.1** *	1875,00
AX523 (W)	520	1	**EKL3.1** *	2090,00
AX1502	1520	1	**EKL4.1** *	1645,00
AX2202	2200	1	**EKL5.1** *	1665,00
AX4202	4200	1	**EKL6.1** *	1860,00
AX5202	5200	1	**EKL7.1** *	2080,00
AX8201	8200	1	**EKL8.1** *	1615,00

* Longer delivery times possible. Please check with our Sales Department.

Rotilabo®-disposable weighing trays

Made of **PS**, antistatic. For solid and liquid substances. Resistant to diluted acids, alkalis, alcohols. Biologically inert. Temperature stable up to +80 °C.

Natural coloured, transparent

Volume (ml)	Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
20	46	46	8	**1878.2**	500	26,35
100	85	85	24	**1884.1**	500	36,45
330	140	140	22	**0875.2**	500	71,95

Opaque blue, ideal for white substances

Volume (ml)	Length (mm)	Width (mm)	Height (mm)	Art. No.	Pack Qty.	€
20	46	46	8	**2149.2**	500	26,15
100	85	85	24	**2150.1**	500	40,10
330	140	140	22	**2159.2**	500	75,05

Quintix®-series analytical and precision balances

By Sartorius.

Applications:

- Mixing, components, statistics, conversion, percent weighing, checking, maximum value, counting, animal weighing
- Made in Germany

Features:

- With isoCAL - fully automatic, temperature and time controlled internal calibration
- Touchscreen with easy menu navigation
- 10 different menu language options can be selected
- Full-sized draft shield for models with 0.0001 g / 0.001 g resolution (209 mm internal height)
- Mini USB port for automatic detection of Sartorius standard printer YDP40 (please order separately) or direct data transfer e.g. to Microsoft® Excel without additional software. Programmable data output interval
- Password protection - menu lock for protection against accidental manipulation
- Levelling feet and glass level indicator on the front
- Anti-theft device for chain or cable

Technical specifications:

Semi-micro balances

Model	Weighing range (g)	Resolution (g)	Reproducibility/ linearity (±g)	Weighing pan ∅ (mm)
35-1S / -1CEU (W)	30	0.00001	0.00003/0.0001	80
65-1S / -1CEU (W)	40/60	0.00001/ 0.00001	0.00002/0.0001 0.00004/0.0001	90
125D-1S / -1CEU (W)	40/60/120	0.00001/ 0.00001/ 0.0001	0.00002/0.0001 0.00004/0.0001 0.00007/0.0002	80

Analytical and precision balances

Model	Weighing range (g)	Resolution (g)	Reproducibility/ linearity (±g)	Weighing pan ∅ (mm)
64-1S / -1CEU (W)	60	0.0001	0.0001/0.0002	90
124-1S / -1CEU (W)	120	0.0001	0.0001/0.0002	90
224-1S / -1CEU (W)	220	0.0001	0.0001/0.0002	90
213-1S / -1CEU (W)	210	0.001	0.001/0.002	120
313-1S / -1CEU (W)	310	0.001	0.001/0.002	120
513-1S / -1CEU (W)	510	0.001	0.001/0.002	120
613-1S / -1CEU (W)	610	0.001	0.001/0.002	120
412-1S / -1CEU*	410	0.01	0.01/0.03	180
612-1S / -1CEU*	610	0.01	0.01/0.03	180
1102-1S / -1CEU*	1100	0.01	0.01/0.03	180
2102-1S / -1CEU*	2100	0.01	0.01/0.03	180
3102-1S / -1CEU*	3100	0.01	0.01/0.02	180
5102-1S / -1CEU*	5100	0.01	0.01/0.02	180
6102-1S / -1CEU*	6100	0.01	0.01/0.02	180
2101-1S / -1CEU*	2100	0.1	0.1/0.3	180
5101-1S / -1CEU*	5100	0.1	0.1/0.3	180
6101-1S / -1CEU*	6100	0.1	0.1/0.3	180
5100-1S / -1CEU*	5100	1	1/1	180
6100-1S / -1CEU*	6100	1	1/1	180

(W) = incl. draft shield and dust cover; * incl. protective cover for operation

Delivery incl. universal AC-adapter (100-240 V).

Semi-micro balances

Model	Weighing range (g)	Pack Qty.	Internal adjustment, not calibratable Art. No.	€	Internal adjustment, calibrated ex works Art. No.	€
35-1S / -1CEU (W)	30	1	**CNH8.1***	4680,00		
65-1S / -1CEU (W)	40/60	1	**CNK0.1***	5170,00		
125D-1S / -1CEU (W)	40/60/120	1	**CNK2.1***	5620,00	**CNK3.1***	6210,00

* Longer delivery times possible. Please check with our Sales Department.

Analytical and precision balances

Model	Weighing range (g)	Pack Qty.	Internal adjustment, not calibratable Art. No.	€	Internal adjustment, calibrated ex works Art. No.	€
64-1S /-1CEU (W)	60	1	**AHC9.1***	3020,00	**AHE0.1***	3310,00
124-1S / -1CEU (W)	120	1	**NN59.1***	3240,00	**NN60.1***	3570,00
224-1S / -1CEU (W)	220	1	**NN57.1***	3610,00	**NN58.1***	3890,00
213-1S / -1CEU (W)	210	1	**NN65.1***	2350,00	**NN66.1***	2590,00
313-1S / -1CEU (W)	310	1	**NN63.1***	2530,00	**NN64.1***	2760,00
513-1S / -1CEU (W)	510	1	**NN61.1***	3020,00	**NN62.1***	3280,00
613-1S / -1CEU (W)	610	1	**AHE1.1***	3160,00	**AHE2.1***	3390,00
412-1S / -1CEU	410	1	**AHE3.1***	1700,00		
612-1S / -1CEU	610	1	**NN75.1***	1870,00	**NN76.1***	2100,00
1102-1S / -1CEU	1100	1	**NN73.1***	2110,00	**NN74.1***	2340,00
2102-1S / -1CEU	2100	1	**NN71.1***	2350,00	**NN72.1***	2590,00
3102-1S / -1CEU	3100	1	**NN69.1***	2470,00	**NN70.1***	2700,00
5102-1S / -1CEU	5100	1	**NN67.1***	3190,00	**NN68.1***	3430,00
6102-1S / -1CEU	6100	1	**AHE5.1***	3440,00	**AHE6.1***	3660,00
2101-1S / -1CEU	2100	1	**AHE7.1***	1940,00		
5101-1S / -1CEU	5100	1	**NN77.1***	2160,00	**NN78.1***	2400,00
6101-1S / -1CEU	6100	1	**AHE9.1***	2280,00	**AHH0.1***	2510,00
5100-1S / -1CEU	5100	1	**NN79.1***	1750,00	**NN80.1***	1990,00
6100-1S / -1CEU	6100	1	**AHH1.1***	1940,00	**AHH2.1***	2160,00

* Longer delivery times possible. Please check with our Sales Department.

Explorer series precision and analytical balances

By Ohaus.

Applications:

- Numerous balance applications (piece counting, percentage weighing, animal weighing, check weighing, batching etc.) and additional library for saving personal settings
- Various weighing units (e.g. g, mg, ct, etc.) can be set.
- High-resolution colour VGA touchscreen (145 mm diagonal) with QWERTY and block keypads
- Touchscreen display can be detached from the weighing platform (length of cable 1.5 m)

Equipment:

- Metal housing, ABS upper housing shell and stainless steel weighing pan
- All models have fully automatic time and temperature controlled internally calibrated (AutoCal)
- Full-sized draft shield for models with 0.0001 g and 0.001 readability (inside height 230 mm)
- Multifunctional sensors for non-contact operation - e.g. contactless control of the zero/tare function to avoid specimen residues on the keypad. Two sensors on the platform and two on the display are independently adjustable.
- With USB and RS 232 communication ports
- Integrated weighing hook on underside of balance and illuminated spirit level on the front

Technical specifications:

Semi-micro balances

Model	Weighing range (g)	Resolution (g)	Reproducibility/ linearity(±g)	Weighing pan (mm)
EX225D/AD	120/220	0,00001/ 0,0001	0,00002 / 0,0001 0,0001/0,0001	∅ 80

Precision balances

Model	Weighing range (g)	Resolution (g)	Reproducibility/ linearity (±g)	Weighing pan (mm)
EX124/AD (W)	120	0.0001	0.0001 / 0.0002	∅ 90
EX224/AD (W)	220	0.0001	0.0001 / 0.0002	∅ 90
EX324/AD (W)	320	0.0001	0.0001 / 0.0002	∅ 90
EX423 (W)	420	0.001	0.001 / 0.002	∅ 130
EX1103 (W)	1100	0.001	0.001 / 0.002	∅ 130
EX4202	4200	0,01	0,01 / 0,02	190 x 200
EX10202	10200	0,01	0,01 / 0,02	190 x 200
EX10201	10200	0,1	0,1 / 0,1	190 x 200

(W) = incl. draft shield

Delivery incl. mains adapter and protective display cover.

Models with ionizer and automatic doors installed

Model	Weighing range (g)	Pack Qty.	Internal adjustment, not calibratable Art. No.	€	Internal adjustment, calibrated ex works Art. No.	€
EX225D/AD	120/220	1	**HPC4.1** *	7165,00	**HPC5.1** *	7495,00

* Longer delivery times possible. Please check with our Sales Department.

Standard models

Model	Weighing range (g)	Pack Qty.	Internal adjustment, not calibratable Art. No.	€	Internal adjustment, calibrated ex works Art. No.	€
EX224 (W)	220	1	**PX41.1** *	3625,00	**PX48.1** *	3875,00
EX324 (W)	320	1	**PX42.1** *	4135,00	**PX49.1** *	4385,00
EX423 (W)	420	1	**PX43.1** *	3015,00	**PX50.1** *	3235,00
EX1103 (W)	1100	1	**PX44.1** *	4405,00	**PX51.1** *	4625,00
EX4202	4200	1	**PX45.1** *	2985,00	**PX52.1** *	3205,00
EX10202	10200	1	**PX46.1** *	4115,00	**PX53.1** *	4335,00
EX10201	10200	1	**PX47.1** *	2725,00	**PX54.1** *	2945,00

* Longer delivery times possible. Please check with our Sales Department.

Models with Auto door function

Including automatic, side-opening doors. Can be controlled by means of a non-contact sensor. Draft shield cover folding or sliding.

Model	Weighing range (g)	Pack Qty.	Internal adjustment, not calibratable Art. No.	€	Internal adjustment, calibrated ex works Art. No.	€
EX124/AD (W)	120	1	**APA8.1** *	4075,00		
EX224/AD (W)	220	1	**APA9.1** *	4475,00	**APC2.1** *	4725,00
EX324/AD (W)	320	1	**APC0.1** *	4985,00	**APC3.1** *	5235,00

* Longer delivery times possible. Please check with our Sales Department.

Secura®-series analytical and precision balances

By Sartorius.

Applications:

- Mixing, components, statistics, conversion, percent weighing, checking, maximum value, counting, animal weighing
- Made in Germany

Features:

- With isoCAL - internal calibration is performed automatically in a time or temperature controlled manner and after levelling
- Touchscreen optimised for users in the pharmaceuticals laboratory
- **Optoelectronic levelling sensor with interactive user guidance** (if the sensor detects deviations, the risk is indicated immediately and a specific help text is displayed)
- 10 different menu language options can be selected
- Full-sized draft shield for models with 0.0001 g / 0.001 g resolution (209 mm internal height)
- Three configurable safety levels
- Mini USB port for automatic detection of Sartorius standard printer YDP40 (please order separately) or direct data transfer e.g. to Microsoft® Excel without additional software. Programmable interval for data output
- Storage of completed calibration cycles incl. detected deviation

APC functions (Advanced Pharma Compliance) are possible:

- Monitoring of minimum sample weight according to USP
- Blocking of data transfer to printer or computer in case of uncertain weighing results, e.g. unlevelled balance etc.

Please note:

Activation of the APC functions by a separate service.
If this service is desired, additional costs apply.
Please ask our sales staff.

Technical specifications:

Semi-micro balances

Model	Weighing range (g)	Resolution (g)	Reproducibility/ linearity (±g)	Weighing pan ∅ (mm)
125-1S / -1CEU (W)	60/120	0.00001/ 0.00001	0.00002/0.0001 0.00004/0.0001	80
225D-1S / -1CEU (W)	60/120/220	0.00001/ 0.00001/ 0.0001	0.00002/0.0001 0.00004/0.0001 0.00007/0.0002	80

Precision balances

Model	Weighing range (g)	Resolution (g)	Reproducibility/ linearity (±g)	Weighing pan ∅ (mm)
124-1S / -1CEU (W)	120	0.0001	0.0001/0.0002	90
224-1S / -1CEU (W)	220	0.0001	0.0001/0.0002	90
213-1S / -1CEU (W)	210	0.001	0.001/0.002	120
313-1S / -1CEU (W)	310	0.001	0.001/0.002	120
513-1S / -1CEU (W)	510	0.001	0.001/0.002	120
613-1S / -1CEU (W)	610	0.001	0.001/0.002	120
612-1S / -1CEU*	610	0.01	0.01/0.02	180
1102-1S / -1CEU*	1100	0.01	0.01/0.02	180
2102-1S / -1CEU*	2100	0.01	0.01/0.02	180
3102-1S / -1CEU*	3100	0.01	0.01/0.02	180
5102-1S / -1CEU*	5100	0.01	0.01/0.02	180
6102-1S / -1CEU*	6100	0.01	0.01/0.02	180

(W) = incl. draft shield and dust cover; * incl. protective cover for operation

Delivery incl. universal AC-adapter (100-240 V).

Semi-micro balances

Model	Weighing range (g)	Pack Qty.	Internal adjustment, not calibratable Art. No.	€	Internal adjustment, calibrated ex works Art. No.	€
125-1S / -1CEU (W)	60/120	1	**CNK4.1***	6310,00	**CNK5.1***	6910,00
225D-1S / -1CEU (W)	60/120/ 220	1	**CNK6.1***	6660,00	**CNK7.1***	7260,00

* Longer delivery times possible. Please check with our Sales Department.

Analytical and precision balances

Model	Weighing range (g)	Pack Qty.	Internal adjustment, not calibratable Art. No.	€	Internal adjustment, calibrated ex works Art. No.	€
124-1S / -1CEU (W)	120	1	**NN83.1***	4050,00	**NN84.1***	4340,00
224-1S / -1CEU (W)	220	1	**NN81.1***	4490,00	**NN82.1***	4780,00
213-1S / -1CEU (W)	210	1	**NN89.1***	2930,00	**NN90.1***	3210,00
313-1S / -1CEU (W)	310	1	**NN87.1***	3110,00	**NN88.1***	3330,00
513-1S / -1CEU (W)	510	1	**NN85.1***	3770,00	**NN86.1***	3990,00
613-1S / 1CEU (W)	610	1	**AHH3.1***	3900,00	**AHH4.1***	4210,00
612-1S / 1CEU	610	1	**AHH5.1***	2410,00	**AHH6.1***	2640,00
1102-1S / -1CEU	1100	1	**NN97.1***	2630,00	**NN98.1***	2850,00
2102-1S / -1CEU	2100	1	**NN95.1***	2860,00	**NN96.1***	3090,00
3102-1S / -1CEU	3100	1	**NN93.1***	3050,00	**NN94.1***	3270,00
5102-1S / -1CEU	5100	1	**NN91.1***	3930,00	**NN92.1***	4170,00
6102-1S / -1CEU	6100	1	**AHH7.1***	4190,00	**AHH8.1***	4410,00

* Longer delivery times possible. Please check with our Sales Department.

Hygrometer

Semi-micro balances and analytical balances, GR-series

By A & D.

Application:

- Percent, counting
- Selectable weight units: g, mg, ct

Features:

- With internal automatic calibration function which adapts to changes of temperature
- Automatic adaptation to ambient conditions
- **Door opening system** allows the user to open the left or right hand side of the weighing chamber from the front of the balance. For easy access with only one hand free.
- Full-sized draft shield (internal height 215 mm)
- Data storage function for storing 200 units of weighing data for output to PC. Windows-compatible software (for direct readout of data, e.g. in Excel), available for download free of charge.
- Interval storage mode (measuring cycle: 2 sec, 5 sec, 10 sec, 30 sec, 1 min, 2 min, 5 min or 10 min
- With RS 232 data port
- Spirit level on the front
- Five-year warranty

Technical specifications:

Models	Weighing range (g)	Resolution (g)	Reproducibility/ linearity (±g)	Weighing pan ∅ (mm)
GR-202 (W)	42 210	0.00001/ 0.0001	0.00002 / 0.00003 0.0001 / 0.0001	85
GR-120 (W)	120	0.0001	0.0001 / 0.0002	85
GR-200 (W)	210	0.0001	0.0001 / 0.0002	85
GR-300 (W)	310	0.0001	0.0002 / 0.0003	85

(W) = incl. draft shield

Delivery incl. AC-adapter.

			Internal calibration	
Model	Weighing range (g)	Pack Qty.	Art. No.	€
GR-202 (W)	42/210	1	**CTH0.1** *	3606,65
GR-120 (W)	120	1	**CTH1.1** *	2365,00
GR-200 (W)	210	1	**CTH2.1** *	2477,90
GR-300 (W)	310	1	**CTH3.1** *	3230,40

* Longer delivery times possible. Please check with our Sales Department.

MB Basic-series hygrometers

By Ohaus.

Features on both models

- Illuminated display
- RS 232 interface
- 2 selectable switch-off criteria: automatic or time-controlled
- Display: % moisture or weight value as well as temperature and time

Model MB 23

- Heater: Infrared heating system

Delivery incl. protective cover. If you want a holder for sample bowls, please order separately.

Model MB 25

- Heater: halogen heating system

Delivery incl. protective cover and holder for sample bowls.

Technical specifications:

Model	MB 23	MB 25
Weighing range	110 g	
Temperature range	50 to 160 °C (5 °C increments)	
Heating technology	Infrared (no glass)	Halogen
Readability	0.1 % /0.01 g	0.05 % /0.005 g
Reproducibility	0.3 % (3 g sample) 0.2 % (10 g sample)	0.2 % (3 g sample) 0.05 % (10 g sample)
Time settings	1 to 99 min (30 sec increments to 60 min)	
Weighing pan	∅ 90 mm	
Scope of samples	Typically 3 to 20 g, min. 0.5 g	
Dimensions (W x D x H)	165 x 283 x 132 mm	
Weight	2.3 kg	
Power connection	100 to 240 V, 50/60 Hz	

Model	Art. No.	Pack Qty.	€
MB 23	**KT40.1** *	1	1055,00
MB 25	**KT41.1** *	1	1480,00

* Longer delivery times possible. Please check with our Sales Department.

Accessories for MB Basic series hygrometers

Type	Art. No.	Pack Qty.	€
Aluminium disposable sample trays, ∅ 90 x H 7 mm	**X837.1**	80	31,00
Holder for sample bowls for Model MB 23	**KT42.1**	1	42,00
Glass fibre filter, ∅ 90 mm	**X838.1**	200	46,00
Calibration weight 50 g, F1	**N006.1**	1	39,60
Temperature calibration set	**X840.1** *	1	308,00

* Longer delivery times possible. Please check with our Sales Department.

DAB 100-3 moisture analyser

By Kern.

Features:

- Backlight display: % humidity, % dry matter or weight loss in g
- Heat source: Halogen quartz glass heater
- Switch-off criteria:
  - Automatic switch-off (2 mg weight loss in 45 sec)
  - Scheduled switch-off (3 min up to 99 hrs 59 min in 10 sec intervals)
  - Manual switch-off by pressing a button
- Drying modes: Standard, gentle and quick drying
- Internal memory for automatic execution of 15 drying processes and five memory spaces for test results
- RS 232 data port
- Sample viewing window

Technical specifications:

Weighing range	110 g
Temperature range	40 to 199 °C (1 °C increments)
Readability	0.01 %/0.001 g
Reproducibility	0.05 % (5 g sample) 0.02 % (10 g sample)
Time range	3 min up to 99 hrs, 59 min
Weighing pan	∅ 92 mm
Dimensions (W x D x H)	240 x 365 x 180 mm
Weight	4.82 kg
Power supply	220 V, 50 Hz

Art. No.	Pack Qty.	€
EEK2.1	1	1050,00

Accessories:

Disposable aluminium sample pans, 90 mm	**YY18.1**	80	60,00
Glass fibre filter, ∅ 90 mm	**X838.1**	200	46,00
Calibration weight 100 g, F1	**N007.1**	1	44,00

Hygrometer DBS 60-3

By Kern.

Equipment:

- Displays: % humidity, % dry matter, ATRO % or weight loss in g
- Heat source: halogen quartz glass heater
- Switch-off criteria:
  AUTO = drying stops if the set weight loss remains constant for 30 s
  TIME = drying stops on expiration of the set time
  Manual = stop button
- Drying modes: standard drying, phase drying, soft drying, activatable preheating phase and rapid drying
- Internal memory for automatic execution of 10 drying programs and 100 drying processes carried out
- RS 232 data port
- Sample code for up to 99 samples, 2-digit, freely programmable
- Date and time display
- Specimen viewing window

Technical specifications:

Weighing range	60 g
Temperature range	50 to 200 °C (1 °C increments)
Readability	0.01 % / 0.001 g
Reproducibility	0.15 % (2 g specimen) 0.02 % (10 g specimen)
Time range	1 min to 12 h
Weighing pan	∅ 95 mm
Dimensions (W x D x H)	202 x 336 x 157 mm
Weight	4.2 kg
Power supply	220 to 240 V, 50/60 Hz

Art. No.	Pack Qty.	€
TE06.1	1	1270,00

Accessories:

Disposable aluminium sample pans, 90 mm	**YY18.1**	80	60,00
Glass fibre filter, ∅ 90 mm	**X838.1**	200	46,00
Calibration weight 50 g, F1	**N006.1**	1	39,60
Temperature calibration set	**TE07.1**	1	450,00

Hygrometer

Hygrometer MA35M

By Sartorius. For the determination of moisture content in organic and inorganic substances, e.g. in greases, oils, foodstuffs, building materials, wood or paper. For use in chemistry, pharmaceutics, environmental analytics or in sewage treatment plants.

Equipment:
- Heat source: infrared lamp
- RS 232 data port
- Display: % moisture content, % dry matter (residue), ATRO % or in weight values
- 2 selectable switch-off criteria: time controlled and automatic switch-off options (moisture determination ends if no significant weight loss is detected)
- A 30 g calibration weight is required for calibration of the moisture analyzer (please order separately)
- **With window for observation of the sample material**

Technical specifications:

Weighing range	35 g
Temperature range	40 to 160 °C (1 °C increments)
Readability	0.01 % / 0.001 g
Reproducibility	0.20 % (1 g specimen) 0.05 % (5 g specimen)
Time range	0.1 to 99 min
Weighing pan	90 mm
Dimensions (W x D x H)	224 x 366 x 191 mm
Weight	5.8 kg
Power supply	230 V, 50/60 Hz

Delivery incl. sample pan holder.

Art. No.	Pack Qty.	€
NT00.1	1	2390,00

Accessories:

Calibration weight 20 g, F1	**N005.1**	1	36,30
Calibration weight 10 g, F1	**N004.1**	1	34,00
Aluminium disposable sample trays, ∅ 90 x H 7 mm	**X837.1**	80	31,00
Glass fibre filter, ∅ 90 mm	**X838.1**	200	46,00

MB-series moisture analyser

By Ohaus.

Features of both models
- Halogen heating technology
- 4.3″, QVGA, TFT touchscreen and 4 mechanical buttons
- Display results: % moisture, % solids, % moisture absorption, time, temperature, weight, method name
- 13 operating languages
- RS 232, USB host, USB device

Model MB90
- 3 switch-off criteria (manual, time-controlled or automatic)
- Storage of up to 2 methods and 100 test results for each method
- 2 heating profiles (standard and fast)

Model MB120
- 7 switch-off criteria (manual, time-controlled, AutoFree selectable %/s, AutoFree selectable mg/s, A30, A60 and A90)
- Storage of up to 100 methods and 1000 test results for each method
- 4 heating profiles (standard, fast, gentle/ramp and gradual)

Technical specifications:

Model	MB90	MB120
Weighing range (g)	90	120
Temperature range (°C)	40 to 200 (1 °C increments)	40 to 230 (1 °C increments)
Readability	0.01 %/0.001 g	
Reproducibility	0.18 % (3 g sample) 0.02 % (10 g sample)	0.05 % (3 g sample) 0.015 % (10 g sample)
Time setting (h)	48	
Weighing pan (mm)	90	
Dimensions W x H x D (mm)	210 x 180 x 350	
Weight (kg)	5.23	
Power supply	100 or 240 V, 50/60 Hz	

Delivery incl. work protection cover and stainless steel sample tray holder.

Model	Art. No.	Pack Qty.	€
MB90	**HAP1.1** *	1	2390,00
MB120	**HAP2.1** *	1	3555,00

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Aluminium disposable sample trays, ∅ 90 x H 7 mm	**X837.1**	80	31,00
Glass fibre filter, ∅ 90 mm	**X838.1**	200	46,00
Calibration weight 50 g, F1	**N006.1**	1	39,60

Balance table

For analytical laboratories. Absorbs oscillations and vibrations which would otherwise falsify weighing results. Workbench with aluminium profile frame and height-adjustable feet. Polished marble slab (36 kg) as integrated worktop, mounted on absorbent rubber elements. Balance plate dimensions: W 267 x D 405 x H 120 mm.
Outer dimensions fully assembled: W 770 x D 650 x H 815 mm.
Overall weight approx. 55 kg.

Art. No.	Pack Qty.	€
AEP0.1 *	1	990,00

* Longer delivery times possible. Please check with our Sales Department.

Test weights OIML-Class M1

Finely turned brass.
Delivery incl. case. With or without DAkkS calibration certificate.

			Without certificate		With certificate	
Weight (g)	Tolerance (±mg)	Pack Qty.	Art. No.	€	Art. No.	€
50	3	1	**EX28.1**	11,00	**EX35.1**	28,10
100	5	1	**EX29.1**	12,90	**EX36.1**	31,60
200	10	1	**EX30.1**	16,95	**EX37.1**	35,90
500	25	1	**EX31.1**	35,00	**EX38.1**	51,95
1000	50	1	**EX32.1**	51,00	**EX39.1**	69,90
2000	100	1	**EX33.1**	87,90	**EX40.1**	99,60
5000	250	1	**EX34.1**	175,00	**EX41.1**	197,00

Ioniser for balances

By Kern. Suitable for neutralising static charge. Non-conductive samples, e.g. plastic, porcelain, glass etc. is often statically charged. The resultant electromagnetic field between the sample and balance can falsify the weighing result.

- For weighings in the milligramme range or finer
- Blower can be switched on and off

Technical specifications:

"Sample - ion source" distance	approx. 5 to 40 cm
Discharge time	9 s/5 cm, 13 s/10 cm, 100 s/40 cm (with the blower switched on)
Max. air volume	0.06 cm^3/min
Dimensions (W x D x H)	110 x 105 x 60 mm
Weight	310 g
Power supply	110 to 240 V, 50/60 Hz

Art. No.	Pack Qty.	€
CET5.1 *	1	940,00

* Longer delivery times possible. Please check with our Sales Department.

Set of weights OIML-Class M1

Made of finely cut copper.
Delivery incl. wooden box. With or without DAkkS calibration certificate.

			Without certificate		With certificate	
Weights from-to (g)	Number of weights	Pack Qty. (set)	Art. No.	€	Art. No.	€
1-100	9	1	**Y121.1**	100,00	**Y122.1** *	152,00
1-500	12	1	**Y123.1**	158,00	**Y124.1** *	226,00
1-2000	15	1	**Y125.1**	430,00	**Y126.1** *	519,00

* Longer delivery times possible. Please check with our Sales Department.

Set of weights OIML-Class M2

Made of finely cut copper.
Delivery incl. wooden box. With or without DAkkS calibration certificate.

			Without certificate		With certificate	
Weights from-to (g)	Number of weights	Pack Qty. (set)	Art. No.	€	Art. No.	€
1-50	8	1	**Y127.1**	76,00	**Y128.1** *	120,00
1-100	9	1	**Y129.1**	86,00	**Y130.1** *	138,00
1-500	12	1	**Y131.1**	153,00	**Y132.1** *	227,00
1-1000	13	1	**Y133.1**	240,00	**Y134.1** *	320,00
1-2000	15	1	**Y135.1**	390,00	**Y136.1** *	486,00

* Longer delivery times possible. Please check with our Sales Department.

Test weights

Test weights OIML-Class F1

For checking masses acc. to ISO 9000. Brass nickel-plated.
For adjusting (= calibrating) and checking laboratory balances. With case.
Delivery with or without DAkkS calibration certificate.

			Without certificate		With certificate	
Weight (g)	Tolerance (±mg)	Pack Qty.	Art. No.	€	Art. No.	€
1	0,10	1	**N001.1**	29,90	**N151.1**	48,50
2	0,12	1	**N002.1**	28,60	**N152.1**	50,00
5	0,15	1	**N003.1**	31,00	**N153.1**	51,95
10	0,2	1	**N004.1**	34,00	**N154.1**	55,50
20	0,25	1	**N005.1**	36,30	**N155.1**	57,70
50	0,3	1	**N006.1**	39,60	**N156.1**	60,60
100	0,5	1	**N007.1**	44,00	**N157.1**	67,65
200	1,0	1	**N008.1**	59,40	**N158.1**	81,90
500	2,5	1	**N009.1**	82,50	**N159.1**	101,00
1000	5	1	**N010.1**	119,00	**N160.1**	138,00
2000	10	1	**N011.1**	161,00	**N161.1**	201,00

Test weights OIML-Class E2

Made of corrosion-proof, antimagnetic stainless steel. High-polished.
Ideal for adjusting analytical balances.
Delivery incl. individual wooden boxes (velvet lined),
with or without DAkkS calibration certificate.

			Without certificate		With certificate	
Weight (g)	Tolerance (±mg)	Pack Qty.	Art. No.	€	Art. No.	€
20	0.08	1	**Y113.1** *	93,00	**Y114.1** *	119,00
50	0.10	1	**Y115.1** *	104,00	**Y116.1** *	130,00
100	0.15	1	**Y117.1** *	110,00	**Y118.1** *	145,00
200	0.30	1	**Y119.1** *	132,00	**Y120.1** *	165,00

* Longer delivery times possible. Please check with our Sales Department.

Sets of weights OIML class F1

Made of polished and nickel-plated brass.
Delivery incl. wooden case. With or without DAkkS calibration certificate.

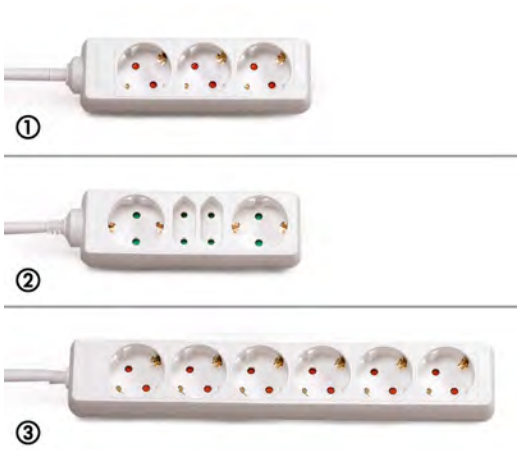
			Without certificate		With certificate	
Weights from-to (g)	Number of weights	Pack Qty. (set)	Art. No.	€	Art. No.	€
1-50	8	1	**YP77.1**	310,00	**YP82.1**	380,00
1-100	9	1	**YP78.1**	350,00	**YP83.1**	433,00
1-200	11	1	**YP79.1**	435,00	**YP84.1**	541,00
1-500	12	1	**YP80.1**	560,00	**YP85.1**	677,00
1-1000	13	1	**YP81.1**	660,00	**YP86.1**	786,00

Sets of weights OIML-Class E2

All milligram weights are in wafer form. 1 to 5 mg made of aluminium,
10 to 500 mg made of nickel silver.
Delivery incl. plastic case, with or without DAkkS calibration certificate.

			Without certificate		With certificate	
Weights from-to (mg)	Number of weights	Pack Qty. (set)	Art. No.	€	Art. No.	€
1-500	12	1	**YP75.1**	320,00	**YP76.1**	525,00

Multiple socket outlets



Type Eco multiple socket outlets

Cable length 1.4 m. Power supply 250 V~, max. 3600 W, 16A.

① **3 way socket outlet** with inverted cups.
Dimensions: W 100 x H 60 x L 200 mm.

② **2+2-way socket outlet** with 2 European standard sockets and 2 PE sockets.
Dimensions: W 70 x H 50 x L 200 mm

③ **6-way socket outlet** with inverted cups.
Dimensions: W 75 x H 60 x L 345 mm.

Design	Art. No.	Pack Qty.	€
① 3-way	**XK32.1**	1	8,85
② 2 + 2-way	**XK33.1**	1	8,85
③ 6-way	**XK34.1**	1	12,15

Socket strips Eco-line, 3-way with switch

Inclined socket arrangement. Illuminated for safety, 2-pole on/off switch.
Dimensions: W 240 x D 100 x H 65 mm. Max. 3500 W, 16 A.
Power supply 230 V.

Design	Art. No.	Pack Qty.	€
Cable length 3 m	**HHN0.1**	1	10,45
Cable length 5 m	**HHN1.1**	1	15,00

Socket strips

Made of highly breakproof special plastic. Inclined plug contacts enable 4/6 right-angle plugs to be used simultaneously. Integrated on/off switch indicates whether operational. With practical device for winding up and storing cable after use. Can also be attached to wall. Wall attachment device incl. With 2 m cable (4-way strip) and 3 m cable (6-way strip). Colour anthracite/bordeaux.

Design	Length (mm)	Art. No.	Pack Qty.	€
4-way socket strip	approx. 320	**E757.1**	1	15,20
6-way socket strip	approx. 410	**E758.1**	1	22,15

Socket strips 6-way

With surge and high-voltage protection.
Protects working appliances from destruction by surges, indirect lightning or spikes in the network up to 4500 A, e.g. by passing the current through inductive load resistors. Inclined plug contacts for up to 6 central and right-angle plugs. Suitable for appliances to max 16 A or 3680 W maximum load. 2-pole on/off switch with pilot light.1.5 m cable H05 VV-F 3G1,0. Shockproof plug 16 A, 230 V.

Colour	Art. No.	Pack Qty.	€
black	**P685.1**	1	24,70
light grey	**P686.1**	1	24,70

Socket strips, 4-way, IP44

Also for use outdoors. With self-closing lids, degree of protection IP 44. Approx. 2 m rubber/neoprene connection cable. Screw hole for fastening. W 410 x D 100 x H 50 mm. Max. 3680 W, 16 A. Power supply 250 V.

Art. No.	Pack Qty.	€
HHN7.1	1	16,10

Multiple socket outlets

IP54-Socket block for 5 plugs

For heavy-duty applications and outdoor use. Splash-proof (IP 54).
Shockproof and breakproof plastic enclosure.
Connection with **RCCB-socket (residual current circuit breaker)**
30 mA protects against dangerous electrical accidents.
Illuminated 2-pin on/off switch with protective lid. 5 splashproof sockets with gasket ring and self-closing flap lid for protection against dirt, in compliance with VDE. Sockets in 45°-array. Cord length 5 m.
Dimensions: L 480 x W 80 x H 62 mm.

Art. No.	Pack Qty.	€
KP32.1	1	50,50

Current distributor with 4 x socket output

With shockproof plug. Made of a highly breakproof special plastic.
With 3 m power cable (rolled up in housing). Very flat (height 60 mm), ∅ 180 mm. Colour black/white.

Art. No.	Pack Qty.	€
E759.1	1	13,90

Socket outlet, 4-way with USB charging function

Made of aluminium. For connecting and switching units directly on the table.
Protective contact socket outlets in 45° arrangement.
2 USB charging sockets. (Total charging current max. 2100 mA).
Safety switch illuminated, 2-pole on/off switch. Cable length: 1.8 m.
Dimensions: W 377 x D 150 x H 95 mm. Max. 3500 W, 16 A.
Power supply 230 V.

Art. No.	Pack Qty.	€
HHN2.1	1	36,45

Safety cable reel

With automatic overheating and accident protection system.
Current is out of at +55 °C and red control lamp flashes.
Wattage 220 V/4 A. Designed for max. 3500 W when cable is rolled out.
With 4 grounded socket outlets and cable with shockproof plug.
Dimensions: H 230 x D 105 mm, ∅ 190 mm.

Design	Art. No.	Pack Qty.	€
Length of cord 5 m	**HHN3.1**	1	20,65
Length of cord 10 m	**4687.1**	1	25,80

Extension leads

PVC-sheathed flexible cord. With shockproof plug.

Length (m)	Art. No.	Pack Qty.	€
3	**Y203.1**	1	12,60
5	**Y204.1**	1	18,75

Plug time switch with storage capacity for 20 switching modes

Shortest indexing time 1 min, every minute programmable. Battery reserve: 3 years. 20 slots (10 in, 10 out). 7-day indexing program with block structure: Daily blocks (Mon-Sun., Mon-Sat, Mon-Fri, Sat-Sun, individual days). Manual changeover between summer/winter time, 12/24 hr mode. An engageable random generator delays the indexing commands by up to 30 minutes. Permissible ambient temperature: -10 to +50 °C. Switching power 16 A. Electrical supply 230 V / 50/60 Hz. **Delivery without** batteries. A CR 2032 (3 V) round cell battery is required for operation. Please order separately.

Art. No.	Pack Qty.	€
CH61.1	1	48,20

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

Time switch

Mechanical and has daily cycle with 96 switching modes. Simple to programme. Shortest switching interval 15 min. accurately synchronized with the power outlet. Working temperature -10 to +55 °C. Max. load 3500 W. Dimensions: H 145 x W 74 x D 39 mm.

Art. No.	Pack Qty.	€
A405.1	1	20,75

Time switch with thermo sensor

Enables time or temperature controlled switching. Operational in time mode, temperature mode or both modes simultaneously. **Time mode** provides 3 possible on/off periods every 24-hours. **Thermostat mode** automatically switches the connected device on when a preset temperature has not been attained.

Technical specifications:

Ideal for temperatures	0 to +40 °C
Accuracy	±1 °C
Sensor cable	1 m
Max. load	up to 3500 W
Dimensions (H x W x D)	130 x 55 x 55 mm
Weight	250 g

Delivery incl. battery Micro 1.5 V.

Art. No.	Pack Qty.	€
C012.1	1	48,35

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Plug time switch

Mechanical. Has a weekly cycle (7 x 24 h). Shortest switching interval is 2 hours. Simple programming (every 2 h) with manual switch. With 84 switching modes. With switching status indicator. Max. load 3500 W.

Art. No.	Pack Qty.	€
C536.1	1	30,65

One-hour signal timers

In plastic housing. With spring drive. When the set time has elapsed, a discreet but easily audible bell signal sounds.
Dimensions: W 70 x D 40 x H 70 mm. Weight approx. 108 g.

Colour	Art. No.	Pack Qty.	€
white	**KN85.1**	1	7,50
white/red	**KN86.1**	1	7,50
white/black	**KN87.1**	1	7,50
white/yellow	**KN88.1**	1	7,50

Rotilabo®-count-down/count-up timer

4-digit LCD display for minute and second. Programmable for 99 min, 59 sec. Timer memory function. Alarm when "0" reached.
With magnet for affixing. Rubberised coating.
Dimensions: ∅ 55 x D 15 mm. Weight 80 g.
Delivery incl. 1.5 V button cell battery.

Colour	Art. No.	Pack Qty.	€
red	**LY66.1**	1	10,70
white	**LY65.1**	1	10,70

Accessories:

Cell battery V 13 GA (1.5 V)	**1938.1**	1 piece	4,85

One-hour signal timer

Stainless steel housing, plastic coating. Shows remaining time in colour. Ringing signal once the time has elapsed. Metal winding movement. Magnetic holder. Dimensions: ∅ 79 x D 32 mm. Weight 118 g.

Art. No.	Pack Qty.	€
EEC7.1	1	11,30

Rotilabo®-count-down-timer

4-digit LCD display for minutes and seconds. Programmable for 99 min, 59 sec. Alarm signal at '0'. Timer memory function. Clip for hanging or standing on desktop, magnet. Dimensions: 88 x 46 x 12 mm, weight 30 g.
Delivery incl. cell battery 1.5 V.

Art. No.	Pack Qty.	€
X396.1	1	9,85

Accessories:

Cell battery V 13 GA (1.5 V)	**1938.1**	1 piece	4,85

Two-hour signal timer

Spring movement. Made of plastic. A clearly audible bell ring signals the end of the preset time. Can be attached to wall.
Dimensions: W 69 x D 40 x H 69 mm.

Art. No.	Pack Qty.	€
N022.1	1	8,85

Rotilabo®-count-down-timer

4-digit LCD display for minutes and seconds. Programmable for 99 min, 59 sec. Alarm signal at '0'. Timer memory function. With clip for hanging and standing, magnet. Dimensions: W 66 x D 56 x H 18 mm, weight 45 g.
Delivery incl. battery Micro 1.5 V.

Art. No.	Pack Qty.	€
X398.1	1	11,25

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Electronic signal timer

With large display. Count down/count up function. Direct numerical entry via 10 key keyboard. Maximum running time 10 h. Alarm signal at "zero". Dimensions W 60 x H 70 x D 25 mm. With attachment magnet, stand, clip and suspension hook. Weight 95 g.
Delivery incl. battery Micro 1.5 V.

Art. No.	Pack Qty.	€
X253.1	1	13,80

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Count-down/count-up timer

Direct numerical input via numerical keypad. Maximum runtime 99 h, 99 min and 99 sec. With On/Off switch to conserve batteries and folding stand. Audio signal at "zero".
Dimensions: W 66 x D 20 x H 108 mm. Weight 67 g.
Delivery incl. 2 Micro 1.5 V batteries.

Art. No.	Pack Qty.	€
TY87.1	1	11,30

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Rotilabo®-signal-timer

With clock, 24 h quartz clock, features a count up/count down function, and has a second subdivision. Ideal for standing upright, attaching to magnetic surfaces or clipping to breast pocket. Intense interval bleeping tone. Dimensions: W 60 x H 60 mm.
Delivery incl. cell battery 1.5 V.

Art. No.	Pack Qty.	€
0773.1	1	13,80

Accessories:

Cell battery V 13 GA (1.5 V)	**1938.1**	1 piece	4,85

NEW

Count-down/count-up timer with quick input

4-digit LCD display for minute and second.
Programmable for 99 min, 50 s.
Easy, **direct time input with 10, 5 and 1-min button, as well as 10-s button**. Deactivatable alarm. With magnetic fastener, stand and mounting ring. Dimensions: L 90 x W 90 x D 17 mm.
Weight 66 g.
Delivery incl. button battery CR 2032, 3 V.

Art. No.	Pack Qty.	€
HPX7.1	1	12,80

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

Rotilabo®-timer

Count-down/count-up feature. Maximum runtime 99 min, 59 s.
Start/stop button with visual timer status indicator (green = time counting down; red = preset time expired).
After the countdown stops, an acoustic signal sounds for 1 min and is indicated visually. Two different volumes or mute mode can selected.
Timer memory function for 3 times. Includes stand, magnet for fixing to metal surfaces and hanging attachment.
Dimensions: L 90 x W 60 x D 20 mm.
Delivery incl. 2 1.5 V micro batteries.

Art. No.	Pack Qty.	€
TA16.1	1	16,10

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

NEW

Count-down timer cube

Cube with 4 preset expiry times. **Simple time entry:** The desired time is selected by turning the corresponding side up. **5, 15, 30 or 60 min can be selected**. The count-down display counts seconds backwards.
Pulsating LED signals operation (can be deactivated).
Adjustable alarm tone (off/quite/loud).
Activatable pre-alarm (10 s before the time expires).
Dimensions: W 60 x D 60 x H 60 mm. Weight 70 g.
Delivery without batteries. Requires 2 1.5 V micro batteries.

Art. No.	Pack Qty.	€
HPC6.1	1	16,10

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

2-channel timer

With two independent channels for separate time measurement.
Count-down/Count-up. Maximum runtime 99 min, 59 sec.
Start/stop button with visual timer status indicator
(green = time counting down; red = preset time expired).
After the countdown stops, an acoustic signal sounds for 1 min and is indicated visually. Two different volumes or mute mode can selected.
Includes stand, magnet for fixing to metal surfaces and hanging attachment.
Dimensions: L 88 x W 75 x D 20 mm.
Delivery without batteries. Requires 2 micro 1.5 V batteries.

Art. No.	Pack Qty.	€
TA55.1	1	17,15

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Short period timer "Shake Awake"

- **With alarm tone, light signal or vibrating alarm. All signal settings can be activated separately or together.**
- Count-down/Count-up
- Four-digit LCD-display for h/min- or min/s-display
- Operation time: 19 h, 59 min or 99 min, 59 s
- With magnet or clip for affixing or standing up
- Dimensions: W 48 x D 31 x H 75 mm, weight 110 g

Delivery incl. 2 Micro 1.5 V batteries.

Art. No.	Pack Qty.	€
EE51.1	1	21,40

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Rotilabo®-signal-timer with clock

With 2 independent channels for separate timing.
Count-down/Count-up. Time is displayed by pressing a function key.
Counts up to 99 h 59 min and 59 sec. Large LCD display. Alarm signal 1 min.
With clamp stand and magnet for attachment to metal surfaces.
Switches automatically to forward counting once timer has reached zero.
Dimensions: H 65 x W 75 x D 15 mm, weight approx. 65 g.
Delivery incl. battery micro 1.5 V.

Art. No.	Pack Qty.	€
A802.1	1	16,75

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Triple Timer XL

With large display (80 x 60 mm) and clock. Three separate timers in one device. All three displays have a count-down function. Max. run time 19 h, 59 min and 59 sec. After the count-down is complete a beep sounds for 1 min and the timer begins to count up. Count-up function for display with 1/100 second display. Memory function. With mounting magnet, wall mount and folding stand. Dimensions: W 103 x D 121 x H 20 mm.
Delivery incl. 2 micro 1.5 V batteries.

Art. No.	Pack Qty.	€
PT76.1	1	18,85

Accessories:

Battery Micro/AAA 1,5 V	**1021.2**	4 pieces	6,40

Laboratory timer

With 24-hour clock and calendar. Count down/count up function.
Extra large LCD display (L 140 x W 40 mm).
Can be programmed for 23 h, 59 min, 59 sec. Alarm signal at „0“. Timer memory function. Dimensions: L 160 x W 90 x D 68 mm.
Delivery incl. battery Baby 1.5 V.

Art. No.	Pack Qty.	€
Y224.1	1	94,50

Accessories:

Baby/C 1.5 V battery	**1023.2**	2 pieces	4,85

Rotilabo®-timer 3-line

Large 3-line LCD display. **Three separate timers in one unit.** Countdown/countup for all three displays and memory function. Counts up to 99 h, 59 min and 59 sec. Alarm signal at "zero". Clock with 12/24 h adjustable format. With clip for hanging and standing and with magnet. Dimensions: W 83 x H 70 x D 22 mm. Weight 80 g.
Delivery incl.1.5 V cell battery.

Art. No.	Pack Qty.	€
P874.1	1	24,50

Accessories:

Cell battery V 13 GA (1.5 V)	**1938.1**	1 piece	4,85

Rotilabo®-stopwatch

Splashproof. 24 hour running time. 1/100 sec display over 30 minutes. Split-time display. Also features clock, calendar and alarm function. Snooze function.
Dimensions: L 69 x W 59 x D 19 mm.
Delivery incl. 1.5 V button cell battery.

Art. No.	Pack Qty.	€
L423.1	1	9,85

Accessories:

Cell battery V 13 GA (1.5 V)	**1938.1**	1 piece	4,85

Stopwatches

Hand stopwatch

Splash-proof. Max. runtime 23 h 59 min 59 sec. 1/100 sec display over 30 minutes. **With count-down timer function.** Readable time intervals. Additionally with time, date, hourly signal and alarm.
Dimensions: W 62 x D 25 x H 75 mm. Weight 95 g.
Delivery incl. button cell battery CR 2032, 3 V.

Art. No.	Pack Qty.	€
EK01.1	1	26,85

Accessories:

Button cell battery CR 2032 (3 V)	**P858.1**	1 piece	5,35

Winding stopwatches

Winding by hand. Brass housing, chrome-plated.

Technical specifications:

Model	**① Basic**	**② Classic**
Max. measuring range	15 min	30 min
Resolution	1/10 sec	1/5 sec
Start/Stop	Winder	Winder
Resetting	Winder	Zero setting
Interval button	No	Yes
Dimensions	∅ 50 mm	
Weight	100 g	

Type	Art. No.	Pack Qty.	€
Basic	**HA62.1**	1	66,45
Classic	**HA63.1**	1	73,05

Stopwatch with calibration certificate

Water-protected ABS-housing. Max. runtime 9 h 59 min 59 sec. 1/100 seconds display. Records of interval time.
Dimensions: L 82 x W 61 x D 28 mm.
Delivery incl. Mignon 1.5 V battery and calibration certificate.

Art. No.	Pack Qty.	€
LK76.1	1	116,10

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Addition stopwatches

Pocket-watch format. With winder. Plastic body, shock-resistant, dust and waterproof. Unbreakable wind up spring. Resolution 1/10 sec. Weight approx. 60 g.

Art. No.	Pack Qty.	€
2050.1	1	105,90

Table stopwatches

Table timers

Large, easy-to-read LCD display. Max. runtime 9 h 5 min 59 sec or 999 min.
2 timers with either separate or simultaneous start/stop operating.
Count up/count down function. **With adjustable volume (max. 90 dB).**
Time resolution 1/10 sec or 1/100 min.
Dimensions: H 170 x W 130 x D 97 mm.
Delivery incl. battery Mignon 1.5 V.

Art. No.	Pack Qty.	€
N317.1	1	116,10

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Mechanical table-top stopwatch Model E-4

Metal casing. 1 sec to 60 min display. Can be wound up with key on back.
24 h run-time. Dimensions: **H 128 x W 115 mm.**
Weight 450 g.

Art. No.	Pack Qty.	€
KH62.1	1	177,40

Analogue table-top stopwatch

Quartz-controlled. Ergonomically designed with optimal stability.
Functions: start/stop/reset plug addition (indefinite).

Technical specifications:

Measuring range	0-60 s / 0-60 min
Inner scale	with 1/100 display
Dial face	∅ 110 mm
Dimensions	175 x 130 x 95 mm
Weight	approx. 375 g

Delivery incl. 1.5 V Mignon battery.

Art. No.	Pack Qty.	€
H735.1	1	134,40

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Mechanical table-top stopwatch Model E-8

1 sec to 60 min display. Can be wound up using a key on the back.
24 h run-time. Dimensions: **H 220 x W 210 mm**, ∅ 207 mm.
Metal casing. Weight 850 g.

Art. No.	Pack Qty.	€
KX02.1	1	231,15

Wall clocks

Wall clock

Comes with additional display for inside temperature and relative humidity.
∅ 265 mm, plastic casing and plastic front.
Delivery incl. Mignon 1.5 V battery.

Art. No.	Pack Qty.	€
KT37.1	1	13,80

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Wall clocks

Enclosure made of brushed aluminium. Glass cover.
∅ 300 mm, depth 41 mm.
Delivery incl. battery Mignon 1.5 V.

Image	Colour clock face	Art. No.	Pack Qty.	€
①	white	**KN89.1**	1	20,35
②	black	**KN90.1**	1	20,35
③	red	**KN91.1**	1	20,35

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Quartz wall clocks

With plastic casing. ∅ 245 mm, 40 mm thick.
Delivery without battery. One battery 1.5 V is required.

Colour	Art. No.	Pack Qty.	€
white	**C333.1**	1	15,00
black	**C334.1**	1	15,00

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Radio wall clocks

Automatic time setting and switch-over to summer/winter time.
Fig. 3 also with digital date display.
Delivery incl. battery Mignon 1.5 V.

Image	∅ (mm)	Art. No.	Pack Qty.	€
①	246	**KN66.1**	1	24,75
②	270	**KN67.1**	1	32,15
③	300	**KN68.1**	1	42,90

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Radio wall clocks

Automatic time setting and switch-over to summer/winter time.
① **Sweep:**
Quiet Sweep movement with no ticking. Plastic housing.
Dimensions: ∅ 302 x D 47 mm, weight 434 g.
② **Corona:**
LED-illuminated dial that uses a light sensor to switch on and off automatically, or alternatively, can be switched on and off manually.
Dimensions: ∅ 308 x D 43 mm, weight 509 g. Separate battery compartment for clock and lighting. Lighting battery life approx. 100 days when used for 8 h/day ("auto" position).
Delivery without batteries. One 1.5 V AA battery (① Sweep) or four 1.5 V AA batteries (② Corona) is/are required.

Image	Type	Art. No.	Pack Qty.	€
①	Sweep	**EEC8.1**	1	31,75
②	Corona	**EEC9.1**	1	38,60

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Radio wall clock with room climate display

With analogue LCD clock and revolving second hand.
Display of date and week day (7 languages), interior temperature (measuring range -10 to +50 °C) and relative humidity (5 to 99 %), calendar week or digital time. Functions can be selected with sensor button.
Dimensions: W 220 x D 31 x H 265 mm. Weight 580 g.
Delivery incl. 4 1.5V Mignon/AA batteries.

Art. No.	Pack Qty.	€
XX18.1	1	69,90

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Radio-controlled wall clocks

Automatic time adjustment and change-over from summer/winter time.
Case ∅ 300 mm, depth 45 mm. With glass cover. Station clockface.
Available with black plastic case or with chromium-plated frame.
Delivery without battery. One battery Mignon 1.5 V is required.

Colour	Art. No.	Pack Qty.	€
black	**L486.1**	1	35,45
chrome	**Y227.1**	1	35,45

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Radio-controlled alarm clock XXL

Automatic time setting and switch-over to summer/winter time.
With large display. Display of interior temperature (-10 to +60 °C), weekday and date. Wake-up alarm with Snooze function.
Wall or table mount. Dimensions: W 235 x H 195 x D 28 mm. Weight: 400 g.
Delivery without batteries. Two 1.5 V mignon batteries are required.

Art. No.	Pack Qty.	€
PY80.1	1	24,20

Accessories:

Mignon battery/AA 1.5 V	**1022.2**	4 pieces	6,05

Pocket calculators

Chemistry-/LifeScience-pocket calculator Chemcode®

Design:
- Keypad with classification of elements and numerical keypad
- Keys for nucleotides for DNS (A, T, G, C) and RNS (A, U, G, C)
- Two-line display with scroll-function
- Scientific calculating functions
- Dimensions: L 136 x W 110 x D 14 mm

Stoichiometric functions

Display: molar mass, ideal gas volume, weighing-in mass in g, amount of substance in mol.

Calculation: total formula, share of single elements or element groups in % or g, amount of substance in g. Conversion of substance concentration (mol/l; molarity) into substance mass concentration (g/l) and inverse, mass-% in molarity. When diluting, it determines the volume to be used in litres and calculates the substance amount in mmol during titration.

Molecularbiological function for PCR®

Display: protein codes, %-share of guanin and cytosin, molar mass of nucleotide sequence and protein sequence, substance amount in nmol, optical density, substance amount of DNS-portion in ng, melting temperature of oligonucleotide.

Lexical functions
- Conversion in °C, F and Kelvin
- Retrieval of different constants (Avogadro, Faraday etc.)
- Function to retrieve chemical, physical and biological properties of the elements and additional information such as melting point, boiling point, electron gativity, detection year, etc.

Delivery incl. 4 spare batteries, cell CR 2025.

Art. No.	Pack Qty.	€
CE95.1	1	120,40

Accessories:

CR 2025 button cell battery (3 V)	**CH14.1**	1 piece	5,35

Solar standard calculator Sharp EL-243S

8-digit LCD display. Solar and battery operated. With root and percentage calculation. Memory. Hinged protective cover (folds by 180°).
Dimensions (open): 11 x 104 x 64 mm, weight approx. 51 g.
Delivery incl. backup-battery.

Art. No.	Pack Qty.	€
LN02.1	1	9,15

Solar pocket calculator LCD1000P

By Olympia. **Water and dustproof housing** according to IP 54.
With shock-absorbing rubber edges. 12-digit LCD display.
Solar and battery operated. Root/percentage calculation. Memory.
Dimensions: L 158 x W 106 x H 40 mm. Weight approx. 146 g.
Delivery incl. backup battery.

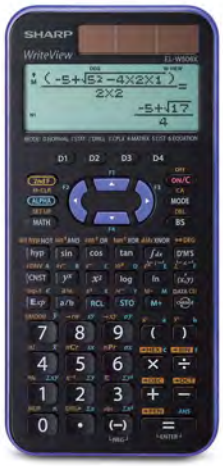
Art. No.	Pack Qty.	€
LN01.1	1	24,35

NEW

Sharp EL-340W solar-powered pocket calculator

12-digit display, movable. Solar- and battery-powered. Number of decimal places (F-3-2-0-A) can be selected. Four-key memory. "00" button. Correction button. Tax calculation. With function for calculating roots and percentages. Dimensions: W 127 x L 185 x H 17 mm, weight 199 g. **Delivery incl.** CR2032 backup battery.

Art. No.	Pack Qty.	€
KCT4.1	1	21,45



Scientific calculator Sharp EL-W506X-VL

Combined solar and battery operation.
4-line display with 96 x 32 dot matrix. Direct algebraic input logic.
4 freely assignable keys for frequently used functions.
4 cursor keys for quick input/processing. Memory retention.
With 556 functions, such as mathematical, trigonometric, statistical and scientific functions. 9 memory variables.
Database with natural constants and metric conversions.
Dimensions: L 168 x W 80 x H 14 mm. Weight 100 g.
Delivery incl. protective cover and backup battery.

Art. No.	Pack Qty.	€
CHA8.1	1	34,55

Solar scientific calculator TI-30 X II S

2-line display for statistics and scientific functions. **11-digit, scrollable entry line** and 10-digit results line. **Combined solar and battery operation.** With many functions, such as automatic simplification of fractions, trigonometry functions, 5 storage variables, random number generator, etc. Dimensions: W 82 x D 155 x H 19 mm. **Delivery incl.** protective bag and backup battery.

Art. No.	Pack Qty.	€
KT82.1	1	31,40

Laboratory Equipment

Autoclaves and accessories	922
Barrel heaters	1013
Block thermostats	984
Burners / igniters	945
Cell disruptors / homogenizers	1067
Centrifuges and accessories	1110
Coffee makers and kettles	962
Compact ultrasonic processors	1067
Cooling incubators	1002
Dispersing / homogenizing systems	1063
Drying and heating cabinets	1006
Histology and pathology equipment	1018
Flocculators	1062
Freezers	909
Heating and magnetic stirrers	1034
Heating devices and laboratory cookers	1020
Heating mantles and heating leads	1014
Hot air blowers	960
Hot air sterilizers	956
Hotplates and cookers	1020
Ice makers	942
Immersion heaters	958
Incubators	995
Incubation shakers	1092
Magnetic stirrers	1025
Magnetic bars	1045
Melting point measuring units	1018
Microwave ovens	959
Mills, mixers	1071
Muffle furnaces	1011
Oil baths	981
Overheadmixer	1103
Pressure digestion vessels	932
Recirculating coolers	971
Refrigerating thermostats	973
Refrigerators / freezers	933
Rocker	1099
Rotary evaporators	991
Rotators / mixers	1096
Shakers, mixers	1079
Steam sterilizers	930
Stirrers and accessories	1050
Tripod and quadrupod stands / heating tiles	957
Thermoshakers	987
Thermostats	964
Thermostat cabinets	940
Vacuum drying cabinets	1012
Vortexer	1074
Water baths	977

High-pressure laboratory autoclaves from Roth

Have a wide application range in research laboratories or for routine examinations. All autoclaves follow the current safety standards and are extremely robust. They should only be operated by qualified staff after taking all of the necessary safety precautions. Features include extremely reliable safety system (bursting disc) which automatically reduces the pressure and prevents the autoclave from being damaged in the case of excess pressure.

Examples of applications:

- Gas reactions under pressure
- Hydrogenation
- Anorganic chemical synthesis
- Organic-chemical synthesis
- Crystal growing
- Material testing
- Disintegration of organic cells

OVERVIEW
High-pressure laboratory autoclaves from ROTH

	Model 0	Model I	Model II			Model IV
Max. working volume (ml)	50	100	200	300	250	500
Max. working pressure (bar)	100	100	100	100	200	100
Heating mantle	none	10 S	20 S	30 S	30 S	50 S
Sampling possible	no	no	yes			yes
Stirrer connection possible	no	no	yes			yes
Temp. measurement in autoclave possible	no	no	yes			yes

High-pressure laboratory autoclave Model 0

50 ml/100 bar
Model 0 is the smallest autoclave in our range. Initially it was developed for prelimenary tests at room temperature. **It is the steel test tube for all pilot studies and pretrials where high pressure is required. It is ideal for situations where glass carius tubes may present a danger.** Model 0 has a threaded head with a threaded opening for fitting to equipment. Openings can be plugged with threaded stoppers.
Sealed with PTFE gaskets (max. 180 °C) or fine silver gaskets (max. 300 °C).
Longer delivery periods possible depending on the size of the autoclave ordered!

Technical specifications: Model 0

Inner volume	75 ml
Working volume	50 ml
Height	approx. 135 mm
Weight	approx. 835 g
Material	made of V4A high grade steel 1.4571
Working temperature	-60 to +300 °C
Working pressure	max. 100 bar
Test pressure	300 bar at +20 °C
Outer-∅ of beaker/head	40/54 mm
Inner-∅ of beaker	30 mm
Base shape	flat outside and inside
Connection thread in head	G ¼″

Basic equipment consists of:

Type	Art. No.	Pack Qty.	€
Model 0, 50 ml cylinder and head ①	**2970.1**	1	840,65
Adapter I ②	**2207.1**	1	1285,70
Fine control valve ③	**H745.1**	1	360,15
Pressure gauge 160 bar ④	**2031.1**	1	203,20
Bursting disc 8.100/bar E	**2199.1**	1	123,65
PTFE - sealing set I (with silver gasket) for bursting disc	**2067.1**	1	60,10
Set of spanners I	**2071.1**	1	42,50

Accessories for gas autoclaving

Type	Art. No.	Pack Qty.	€
PTFE-high-pressure hose 1,5 m	**H996.1**	1	331,10
Reduction adapter for direct connection with gas bottle (please specify gas type)	**2066.1**	1	166,65

Accessories

Type	Art. No.	Pack Qty.	€
Glass liner 50 ml	**H976.1**	1	19,35
Base plate 41, ideal as holder for screwing on autoclave Model 0 and I	**2072.1**	1	450,45
Rotilabo®-tablet magnetic follower 22	**3003.1**	1	9,65
Threaded stopper A	**2052.1**	1	64,40

Spare sealing gaskets

Type	Art. No.	Pack Qty.	€
PTFE gasket 12, for head, valve and reduction adapter	**2160.1**	1	5,05
PTFE gasket 20, for pressure gauge	**2161.1**	1	5,60
PTFE gasket 42, for cylinder/head	**2163.1**	1	6,35
Fine silver gasket set I	**2065.1**	1	198,90

High-pressure laboratory autoclave Model I

100 ml/100 bar

Model I is the standard model in the Roth manufacturing range. Used mostly for in preliminary testing. Model I consists of an autoclave cylinder and a threaded autoclave head. The head has a thread on top for attachment of adapter (to fit bursting disc, pressure gauge and valve). Openings can be plugged with threaded stoppers. Sealed with PTFE gaskets (max. 180 °C) or fine silver gaskets (max. 300 °C). **Longer delivery periods possible depending on the size of the autoclave ordered!**

Technical specifications: Model I

Inner volume	135 ml
Working volume	100 ml
Height	approx. 220 mm
Weight	1210 g
Material	made of V4A high grade steel 1.4571
Working temperature	-60 to +300 °C
Working pressure	max. 100 bar
Test pressure	300 bar at +20 °C
Outer-∅ of beaker/head	40/54 mm
Inner-∅ of beaker	30 mm
Base shape	flat outside and inside
Connection thread in head	G ¼″
Adapter I (T-adapter), with bursting plate protection	
Material	V4A-high grade steel 1.4571 (Adapter to fit bursting disc, valve and pressure gauge)
Adapter openings	G ½″ for pressure gauge G ¼″ for valve

Basic equipment consists of:

Type	Art. No.	Pack Qty.	€
Model I, 100 ml cylinder and head ①	**2001.1**	1	1072,85
Adapter I ②	**2207.1**	1	1285,70
Fine control valve ③	**H745.1**	1	360,15
Pressure gauge 160 bar ④	**2031.1**	1	203,20
Bursting disc 8.100/bar E	**2199.1**	1	123,65
PTFE - sealing set I (with silver gasket) for bursting disc	**2067.1**	1	60,10
Rotilabo®-tablet magnetic follower 22	**3003.1**	1	9,65
Set of spanners I	**2071.1**	1	42,50
Heating mantle 10 S, with magnetic stirrer ⑤	**KCX5.1**	1	2577,85

Accessories for gas autoclaving

Type	Art. No.	Pack Qty.	€
PTFE-high-pressure hose 1,5 m	**H996.1**	1	331,10
Reduction adapter for direct connection with gas bottle (please specify gas type)	**2066.1**	1	166,65

Accessories for assembly/options

Type	Art. No.	Pack Qty.	€
Base plate 41, ideal as holder for screwing on autoclave Model 0 and I	**2072.1**	1	450,45
Threaded stopper A	**2052.1**	1	64,40
Connector fitting for hose	**H746.1**	1	27,95
Glass liner for 100 ml cylinder	**2196.1**	1	20,75

Spare sealing gaskets

Type	Art. No.	Pack Qty.	€
PTFE gasket 12, for head and valve	**2160.1**	1	5,05
PTFE gasket 20, for pressure gauge	**2161.1**	1	5,60
PTFE gasket 42, for cylinder/head	**2163.1**	1	6,35
Fine silver gasket set I	**2065.1**	1	198,90
Silver gasket 12, for head and valve	**2170.1**	1	48,05
Silver gasket 15, for bursting disc 8.100/bar E	**2173.1**	1	42,95
Silver gasket 18, for pressure gauge	**2172.1**	1	42,95
Silver gasket 40, for bursting disc	**2174.1**	1	41,40

▶ For an overview of "High-pressure laboratory autoclaves" see page 922

▶ PTFE-spray, see page 1174

Attention

Due to the shape of the screw thread, cold setting of cylinder and head is possible when screwing these on. This usually leads to them sticking when opening and the thread breaking as a result.

The conducted reaction necessitates coating the thread with a release agent such as PTFE spray (Art. No. K007.1).

Warning: Do not use PTFE screw thread tape!

High-pressure laboratory autoclave Model II

200/300 ml/100 bar, 250 ml/200 bar

Model II is ideal for all reactions where spontaneous gas development and a quick increase in pressure are expected. The units are operated with a large bursting disc, that is built into the autoclave head. Therefore it offers maximum safety in the laboratory. The enlarged autoclave head is screwed directly onto the autoclave cylinder. It contains the bursting disc holder at the top and three threaded openings at the side. For connections with: valves, reduction adapters for pressure gauges and temperature sensors or bursting disk safety device II, (when using magnetic stirrer head MRK 10). Threaded openings can be closed with screw stoppers. Sealed with gaskets made of PTFE (max 180 °C) or fine silver (max 300 °C).

Longer delivery periods possible depending on extent of order!

Technical specifications: Model II

Autoclave head II	
Material	Made of V4A high grade steel 1.4571
Outer-∅ of beaker	69 mm, top head opening for bursting disc 28.100/28.200 or magnetic stirrer MRK 10
Three additional openings on the side of head	G ¼″ for valve, reduction adapter for pressure gauge and temperature sensor or bursting disc safety device II for use with magnetic stirrer head MRK 10
Weight	approx. 1250 g

Autoclave cylinder	**200 ml**	**300 ml**	**250 ml**
Inner volume (ml)	265	350	320
Working volume (ml)	200	300	250
Height (mm)	220	300	300
Weight (g)	1375	1900	2250
Max. working pressure (bar)	100	100	200
Test pressure at +20 °C (bar)	300	300	400
Outer-∅ (mm)	50	50	50
Inner-∅ (mm)	40	40	37
Base shape	flat outside and inside		
Material	made of V4A high grade steel 1.4571		
Working temperature	-60 to +300 °C		

Basic equipment consists of:

Parts necessary for base equipment:

Description	**Art. No.**	**200 ml**	**300 ml**	**250 ml**
200 ml autoclave cylinder ①	**2098.1**	x		
300 ml autoclave cylinder	**2108.1**		x	
250 ml autoclave cylinder	**2094.1**			x
Autoclave head II ②	**2126.1**	x	x	x
Bursting disc 28.100/bar E	**2203.1**	x	x	
Bursting disc 28.200/bar E	**2204.1**			x
Fine control valve ③	**H745.1**	x	x	x
Pressure gauge 160 bar ④	**2031.1**	x	x	
Pressure gauge 250 bar	**2036.1**			x
Reducer for pressure gauge ⑤	**2033.1**	x	x	x
Threaded stopper A	**2052.1**	x	x	x
PTFE-dealing set with silver gasket	**2082.1**	x	x	x
Fine silver gasket set II	**2102.1**			
Tablet magnetic follower 30	**4490.1**	x	x	x
Spanner-Set II	**2078.1**	x	x	x
Heating mantle 20 S for 200 ml	**KCX6.1**	x		
Heating mantle 30 S for 250/300 ml	**KCX7.1**		x	x

Type	Art. No.	Pack Qty.	€
200 ml autoclave cylinder / 100 bar ①	**2098.1**	1	912,70
300 ml autoclave cylinder / 100 bar	**2108.1**	1	1268,50
250 ml autoclave cylinder / 200 bar	**2094.1**	1	934,20
Autoclave head II ②	**2126.1**	1	665,45
Bursting disc 28.100/bar E	**2203.1**	1	130,10
Bursting disc 28.200/bar E	**2204.1**	1	130,10
Fine control valve ③	**H745.1**	1	360,15
Pressure gauge 160 bar ④	**2031.1**	1	203,20
Pressure gauge 250 bar	**2036.1**	1	203,20
Reduction adapter for pressure gauge ⑤	**2033.1**	1	149,45
Threaded stopper A	**2052.1**	1	64,40
PTFE-dealing set with silver gasket	**2082.1**	1	60,10
Fine silver gasket set II	**2102.1**	1	252,65
Tablet magnetic rod 30	**4490.1**	1	10,45
Spanner set II	**2078.1**	1	138,70
Heating mantle 20 S for 200 ml, with magnetic stirrer	**KCX6.1**	1	2577,85
Heating mantle 30 S for 250/300 ml, with magnetic stirrer	**KCX7.1**	1	2577,85

Special accessories for use with gas

Type	Art. No.	Pack Qty.	€
PTFE-high-pressure hose 1,5 m	**H996.1**	1	331,10
Reduction adapter for direct connection with gas bottle (please specify gas type)	**2066.1**	1	166,65

Special accessories for measuring temperatures in autoclave

Type	Art. No.	Pack Qty.	€
Temperature sensor for 200 ml cylinder	**2115.1**	1	338,65
Temperature sensor for 250/300 ml cylinder	**A880.1**	1	338,65
Connection cable between heating mantle/sensor	**KCX9.1**	1	159,10

Special accessories for filling or removing liquid or gas samples

Type	Art. No.	Pack Qty.	€
Adapter with immersion pipe 2 for 200 ml autoclave cylinder	**2043.1**	1	891,20
Adapter with immersion pipe 3 for 250/300 ml	**2044.1**	1	891,20
Fine control valve ③	**H745.1**	1	360,15
PTFE gasket 12, for head and valve	**2160.1**	1	5,05
PTFE gasket 42, for cylinder/head	**2163.1**	1	6,35

Special accessories for stirring

Type	Art. No.	Pack Qty.	€
Magnet stirrer MRK 10	**2359.1**	1	o. r.
Adapter for magnet stirrer	**2358.1**	1	403,15
Bursting disc valve II	**3167.1**	1	966,45
Bursting disc 8.100/bar E	**2199.1**	1	123,65
Silver gasket 15, for bursting disc 8.100/bar E	**2173.1**	1	42,95
Gasing stirrer 2 for 200 ml cylinder	**3184.1**	1	o. r.
Gasing stirrer 3 for 250/300 ml cylinder	**3189.1**	1	o. r.

Special accessories for assembly/options

Type	Art. No.	Pack Qty.	€
Base plate 55, ideal as holder for screwing on autoclave Model II	**2074.1**	1	478,40
Connector fitting for hose	**H746.1**	1	27,95
Glass liner for 200 ml cylinder	**2197.1**	1	24,75
Glass liner for 300 ml cylinder	**2198.1**	1	26,40
Glass liner for 250 ml cylinder	**2192.1**	1	24,65

Spare sealing gaskets

Type	Art. No.	Pack Qty.	€
PTFE gasket 12, for head, valve and reduction adapter	**2160.1**	1	5,05
PTFE gasket 20, for pressure gauge	**2161.1**	1	5,60
PTFE gasket 51, for cylinder	**2164.1**	1	11,80
Fine silver gasket set II	**2102.1**	1	252,65
Silver gasket 12, for head, valve and reduction adapter	**2170.1**	1	48,05
Silver gasket 18, for pressure gauge	**2172.1**	1	42,95
Silver gasket 40, for bursting disc	**2174.1**	1	41,40
Silver gasket 50, for cylinder	**2175.1**	1	51,60

OVERVIEW
High-pressure laboratory autoclaves from ROTH

	Model 0	Model I	Model II			Model IV
Max. working volume (ml)	50	100	200	300	250	500
Max. working pressure (bar)	100	100	100	100	200	100
Heating mantle	none	10 S	20 S	30 S	30 S	50 S
Sampling possible	no	no	yes			yes
Stirrer connection possible	no	no	yes			yes
Temp. measurement in autoclave possible	no	no	yes			yes

Attention

Due to the shape of the screw thread, cold setting of cylinder and head is possible when screwing these on. This usually leads to them sticking when opening and the thread breaking as a result.

The conducted reaction necessitates coating the thread with a release agent such as PTFE spray (Art. No. K007.1).

Warning: Do not use PTFE screw thread tape!

▶ For an exact description of autoclave accessories, see page 927

High-pressure laboratory autoclave Model IV

500 ml/100 bar

Model IV is the largest autoclave in our manufacturing range.
It represents an improved version of the original version from which the other models are derived. Model IV consists of a high grade steel cylinder with flange. The solid stainless steel lid is screwed onto the flange with eight screws. The autoclave head is fitted for a large bursting disc. This provides maximum safety in situations where spontaneous gas production and a quick increase in pressure might occur.
The large autoclave is screwed directly onto the cylinder.
It contains the bursting disc holder at the top and three threaded openings at the side. For connection with: valvesa, reduction adapters for pressure gauges and temperature sensors or bursting disk safety devices II, (when using magnetic stirrer head). Threaded openings can be closed with screw stoppers. Sealed with gaskets made of PTFE (max. 180 °C) or with fine silver gaskets (max. 300 °C).

Longer delivery periods possible depending on the size of the order!

Technical specifications: Model IV

Model IV, consists of cylinder, head, 8 hexagon head bolts and -nuts	
Inner volume	700 ml
Working volume	500 ml
Height	425 mm
Material	made of V4A high grade steel 1.4571
Working temperature	-60 to +300 °C
Working pressure	max. 100 bar
Test pressure	300 bar at +20 °C
Outer-∅ on beaker	60 mm
Inner-∅ of beaker	50 mm
Outer-∅ of lid	125 mm
Base shape	flat outside and inside
Autoclave head II	
Material	made of V4A high grade steel 1.4571
Outer-∅	64 mm; top head opening for bursting disc 28.100 or magnet stirrer MRK 10
Three additional openings on the side of head	G ¼″ for valve, reduction adapter for pressure gauge and temperature sensor or bursting disk safety device II for use with magnetic stirrer head MRK 10

Basic equipment

Type	Art. No.	Pack Qty.	€
500 ml cylinder and head	**K172.1**	1	2100,55
Bursting disc 28.100/bar E	**2203.1**	1	130,10
Fine control valve	**H745.1**	1	360,15
Pressure gauge 160 bar	**2031.1**	1	203,20
Attachment for reduction adapter	**2034.1**	1	338,65
Reduction adapter for pressure gauge	**2033.1**	1	149,45
Threaded stopper A	**2052.1**	1	64,40
PTFE-sealing set with fine silver gasket	**K454.1**	1	51,50
Spanner set IV	**K455.1**	1	99,80
Tablet magnet follower 40, ∅ 40 mm, H 14 mm	**4517.1**	1	19,90
Heating mantle 50 S with magnetic stirrer	**KCX8.1**	1	2577,85

Special accessories for gas autoclaving

Type	Art. No.	Pack Qty.	€
PTFE-high-pressure hose 1,5 m	**H996.1**	1	331,10
Reduction adapter for direct connection with gas bottle (please specify gas type)	**2066.1**	1	166,65

Special accessories for temperature measurement

Type	Art. No.	Pack Qty.	€
Temperature sensor 330 mm with silver gasket	**K456.1**	1	338,65
Connection cable between heating mantle/sensor	**KCX9.1**	1	159,10

Special accessories for adding or removing gaseous or liquid samples

Type	Art. No.	Pack Qty.	€
Adapter with immersion pipe 4	**K457.1**	1	891,20
Fine control valve	**H745.1**	1	360,15
PTFE gasket 12, for head, valve and reduction adapter	**2160.1**	1	5,05
Silver gasket 40, for bursting disc	**2174.1**	1	41,40
Spanner 55	**2187.1**	1	58,05

Special accessories for stirring

Type	Art. No.	Pack Qty.	€
Magnet stirrer MRK 10	**2359.1**	1	o. r.
Adapter for magnet stirrer	**2358.1**	1	403,15
Bursting disc valve II	**3167.1**	1	966,45
Bursting disc 8.100/bar E	**2199.1**	1	123,65
Silver gasket 15, for bursting disc 8.100/bar E	**2173.1**	1	42,95
Gasing stirrer 4	**K458.1**	1	o. r.

Assembly/options

Type	Art. No.	Pack Qty.	€
Connector fitting for hose	**H746.1**	1	27,95
Glass liner for 500 ml cylinders	**2099.1**	1	30,05
Tablet magnet follower 40, ∅ 40 mm, H 14 mm	**4517.1**	1	19,90

Spare sealing gaskets

Type	Art. No.	Pack Qty.	€
PTFE-sealing set with fine silver gasket	**K454.1**	1	51,50
Fine silver gasket set IV	**K459.1**	1	213,95

Autoclaving accessories

Gaskets made of PTFE

Dimension = outer ∅ in mm.

Gasket 12 - for connection to head and valve

Art. No.	Pack Qty.	€
2160.1	1	5,05

Gasket 20 - for reducing adapter/pressure gauge

Art. No.	Pack Qty.	€
2161.1	1	5,60

Gasket 42 - for autoclave cylinder/head (Model 0 and 1)

Art. No.	Pack Qty.	€
2163.1	1	6,35

Gasket 51 - for autoclave cylinder/head (Model II)

Art. No.	Pack Qty.	€
2164.1	1	11,80

Gasket 60 - for autoclave cylinder/head (Model IV)

Art. No.	Pack Qty.	€
2165.1	1	12,30

Gaskets made of fine silver

Dimension = outer ∅ in mm.

Gasket 12 - for connection to head and valve

Art. No.	Pack Qty.	€
2170.1	1	48,05

Gasket 15 - for bursting disc 8.100 E

Art. No.	Pack Qty.	€
2173.1	1	42,95

Gasket 18 - for reducing adapter/pressure gauge

Art. No.	Pack Qty.	€
2172.1	1	42,95

Gasket 40 - for autoclave cylinder/head (Models 0 and I), for bursting disc holder at the top of autoclave head II/IV, and for adapter with immersion pipes 2, 3 and 4

Art. No.	Pack Qty.	€
2174.1	1	41,40

Gasket 50 - for autoclave cylinder/head (Model II)

Art. No.	Pack Qty.	€
2175.1	1	51,60

Gasket 60 - for autoclave cylinder/head (Model IV)

Art. No.	Pack Qty.	€
2176.1	1	55,90

Spanner set

Type	Sizes (no.)	Art. No.	Pack Qty.	€
Set I	14 - 17 - 19 - 22 - 27 - 41	**2071.1**	1	42,50
Set II	14 - 17 - 19 - 22 - 27 - 50 - 2 x 55	**2078.1**	1	138,70
Set IV	14 - 17 - 19 - 22 - 27 - 50 - 55	**K455.1**	1	99,80

Glass liners

It has been proven to be extremely worthwhile to use glass liners in autoclaves when working with very viscous or smearing substances. These special vessels are designed to cope with the pressure and the temperature strain in autoclaves.

For cylinder (ml)	Height (mm)	Outside ∅ (mm)	Art. No.	Pack Qty.	€
50	104	28	**H976.1**	1	19,35
100	185	28	**2196.1**	1	20,75
200	205	38	**2197.1**	1	24,75
250	285	36	**2192.1**	1	24,65
300	285	38	**2198.1**	1	26,40
500	320	48	**2099.1**	1	30,05

Advice for working with silver gaskets
When working with silver gaskets, it is essential to tighten the screw threads very tightly to achieve the necessary seat. We therefore recommend annealing the silver gaskets at +850 °C before use - the gaskets remain softer and more pliable, even when cool, and seal more efficiently.

Autoclaving accessories

Fine control- and check valve

Made of stainless steel. For high pressure laboratory autoclaves.
With 6 mm swagelock tube connection. Multi-positioning range.
Max. pressure range: to max. 210 bar, temperature range: to max. +205 °C.
Delivery incl. screw thread adapter made of high-grade steel
(6 mm pipe for ¼″).

Fine control valve

Art. No.	Pack Qty.	€
H745.1	1	360,15

Optional:

Tube connector fitting

Made of stainless steel. For fine control- and check valve (output side).
Suitable for tubing inner-diameter ¼″.

Art. No.	Pack Qty.	€
H746.1	1	27,95

Screw thread adapter

Made of stainless steel. (6-mm-pipe for ¼″)

Art. No.	Pack Qty.	€
P437.1	1	49,05

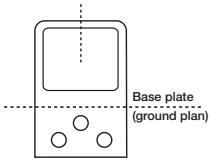
Pressure gauges

Parts that are in contact with the medium (threaded adapter, spring-pipe) are made of high grade steel. White face with black numbers.
Spring-pipe meter technique. With security glass.

Technical specifications:

Temperature media	max. +100 °C
Ambient temperature	-25 to +60 °C
Threaded adapter	G ½″, radial underneath
Outer diameter pressure gauge	100 mm

Measuring range	Art. No.	Pack Qty.	€
0-160 bar	**2031.1**	1	203,20
0-250 bar	**2036.1**	1	203,20



Assembly

Type	Art. No.	Pack Qty.	€
Base plate 41, ideal as holder for screwing on autoclave Model 0 and I	**2072.1**	1	450,45
Base plate 55, ideal as holder for screwing on autoclave Model II	**2074.1**	1	478,40

Sampling connections

With welded-in connection pipe.
For insertion or removal of gaseous or liquid samples.

- Material: V4A high grade steel 1.4571
- Working temperature: max. +300 °C
- Working pressure: max. 200 bar

Adapter with immersion rod 2 for laboratory autoclave Model II (200 ml)

Art. No.	Pack Qty.	€
2043.1	1	891,20

Adapter with immersion rod 3 for laboratory autoclave Model II (250/300 ml)

Art. No.	Pack Qty.	€
2044.1	1	891,20

Adapter with immersion rod 4 for laboratory autoclave Model IV (500 ml)

Art. No.	Pack Qty.	€
K457.1	1	891,20

Threaded stoppers

To close a connection opening G¼″ or G½″.
(e.g. Adapter 2207.1)

Type	for opening	Art. No.	Pack Qty.	€
A	¼ ″	**2052.1**	1	64,40
C	½ ″	**2038.1**	1	282,75

Bursting discs

To be used **for sealing** the bursting disc of the **fine silver gaskets**!
Working temperature max. +300 °C. Made of high-grade steel.

Type	Outside ∅ (mm)	Innner ∅ (mm)	Reaction pressure (bar)	Art. No.	Pack Qty.	€
8.100 E	14	8	100	**2199.1**	1	123,65
28.100 E	40	28	100	**2203.1**	1	130,10
28.060 E	40	28	60	**8135.1**	1	130,10
28.200 E	40	28	200	**2204.1**	1	130,10

Temperature measurements

The temperature probe consists of a thermoelement with an iron-copper nickel thermopair. The thermoelement is welded in a protective tube made of high grade steel 1.4541. It collects the temperature values in the inside of the autoclave and transmits them to WRT 2000x regulator.
Unit displays temperature and regulation of heating unit can be carried out.

To seal, only fine silver gaskets should be used to prevent repeated replacement, which would shorten life expectancy of autoclave.

Temperature probes Fe-Cu-Ni, with fine silver gasket, ∅ 1.5 mm

Length (mm)	Art. No.	Pack Qty.	€
220	**2115.1**	1	338,65
280	**A880.1**	1	338,65
330	**K456.1**	1	338,65

Accessories:

Connection cable between heating mantle/sensor	**KCX9.1**	1	159,10

Gas discharge

PTFE-tubing sheathed in stainless steel for connection to pressure reducer or for direct connection of high pressure tube to gas cylinder in combination with gas cylinder adapter
(Art. No. 2066.1, please order separately).

Technical specifications:

Inner-∅	4.8 mm
Outer-∅	8 mm
Min. bursting pressure	825 bar
Operating pressure	205 bar
Operating pressure valid for working temperature	+20 to +50 °C
Temperature range	-55 to +235 °C
Min. bending radius	51 mm
Length	1.5 m
Thickness of PTFE-tube	1 mm

PTFE-tubing with NPT-inner thread ¼″, on 6 mm connecting sleeve for gas cylinder adapter (Art. No. 2066.1, please order seperately).

Art. No.	Pack Qty.	€
H996.1	1	331,10

PTFE-tubing with NPT-outer thread ¼″, on 6 mm connecting sleeve

Art. No.	Pack Qty.	€
N246.1	1	278,45

Gas cylinder adapter
For **direct connection** of high pressure tube to gas cylinder (max. operating pressure 200 bar). **Please specify gas type**.

Art. No.	Pack Qty.	€
2066.1	1	166,65

Stirrer with permanent magnetic clutch

Type MRK 10. Absolutely gas tight. Vacuum-tight.

Technical specifications:

Height	172 mm
∅	44 mm
Maximum pressure	200 bar
Maximum temperature	300 °C
Torque	20 N · cm
Viscosity	to 1500 mPa · s
Material	V4A high grade steel 1.4435
Working temperature	max. 300 °C
Working pressure	max. 200 bar
Rpm	max. 5000 rpm

Delivery without adapter and gasing stirrers. Please order separately.

Magnet stirrer type MRK 10

Art. No.	Pack Qty.	€
2359.1	1	o. r.

Adapter M 42 - M 30
Adapter for connecting autoclave head II to magnetic stirrer

Art. No.	Pack Qty.	€
2358.1	1	403,15

Gasing stirrers

To use with stirrer MRK 10. Made of high-grade steel 1.4435 and PTFE. ∅ 25 mm. Working temperature: max. +150 °C.

Type	For autoclave cylinder (ml)	Total length (mm)	Art. No.	Pack Qty.	€
2	200	220	**3184.1**	1	o. r.
3	250/300	299	**3189.1**	1	o. r.
4	500	380	**K458.1**	1	o. r.

A 121 °C

Stirrer with magnetic fins

Tablet magnetic followers, PTFE coated.
Symmetrial fins on upper and lower side ensure proper mixing.
The magnetic stirrer can be used with or without glass liner in autoclave cylinder.

For autoclave cylinder (ml)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	22	15	**3003.1**	1	9,65
200/250/300	30	12	**4490.1**	1	10,45
500	40	14	**4517.1**	1	19,90

▶ Sterile indicator strips, see p. 266

NEW

Heating mantles with magnetic stirrer

Specially designed for Roth's high-pressure laboratory autoclaves.
To ensure optimum distribution and use of heat, the heating mantles are precisely adapted to the dimensions of the individual autoclave beaker.

Features:
- High temperature stability
- Integrated magnetic stirrer with continuous speed adjustment without direct drive
- Heating and stirrer can be activated separately
- Temperature adjustment using the digital display and display of the actual temperature of the heating mantles
- **Integrated contact thermometer with full functionality. Option to directly connect the medium temperature sensor thermocouple type J/Fe-Cu-Ni (please order temperature measuring sensor and connection cable separately)**
- Additional safety: Temperature limiter for the internal and external temperature sensors

Technical specifications:

Magnetic stirrer drive	
Speed range	150 to 1500 rpm
Temperature regulator	
Operating temperature range	Adjustable to any value between +8 °C **above** room temperature and 300 °C
Setting accuracy	±1 K
Control accuracy	±8 K
Control accuracy with temperature measuring sensor in the medium	±3 K
Control	Internally via heating mantle, externally via separate temperature gauge (available as an option)
Dimensions (W x D x H)	
Model 10 S	220 x 250 x 319 mm
Model 20 S	220 x 250 x 334 mm
Model 30 S	220 x 250 x 414 mm
Model 50 S	220 x 250 x 455 mm
Power supply	230 V, 50/60 Hz

Type	Heating output (W)	For laboratory autoclaves	Art. No.	Pack Qty.	€
10 S	200	Model I, 100 ml	**KCX5.1**	1	2577,85
20 S	300	Model II, 200 ml	**KCX6.1**	1	2577,85
30 S	400	Model II, 250/300 ml	**KCX7.1**	1	2577,85
50 S	600	Model IV, 500 ml	**KCX8.1**	1	2577,85

Accessories:

Temperature gauge for model II, 200 ml	**2115.1**	1	338,65
Temperature gauge for model II, 250/300 ml	**A880.1**	1	338,65
Temperature gauge for model IV, 500 ml	**K456.1**	1	338,65
Connection cable between heating mantle/sensor	**KCX9.1**	1	159,10

Benchtop steam sterilisers, CertoClav EL-series

By CertoClav. With aluminium chamber.
For steam heating of substances and use in research and development.
Applications: preparation of nutrient media, as well as sterilisation of waste, utensils, bottles and instruments.

Equipment:
- Lid with bayonet lock
- Quadruple pressure safety: safety lock to precvent opening under pressure, antilock safety valve, pressure relief valve and pressure relief vent
- Pressure regulation by control valve
- Alternate versions with different temperature / pressure levels (125/140 °C or 115/121 °C) are available

Technical specifications:

Model	EL 12L	EL 18L
Capacity (l)	12	18
Test pressure (bar)	4.1	
Ventilation method	Flow method	
Inner dimensions (mm)	H 230, ∅ 240	H 360, ∅ 240
Outer dimensions (mm)	H 535, ∅ 250	H 665, ∅ 250
Diagonal	350	465
Wire basket: included / max. number	1/1 pce.	1/2 pce.
Thermometer measuring range (°C)	0 to 160 / 2-increment scale	
Pressure gauge measuring range (bar)	0 to 4 / 0.1-increment scale	
Steam outlet cock (mm)	∅ 10	
Power consumption (W)	1900	
Weight (kg)	7	9
Power supply	230 V, 50/60 Hz	

Delivery incl. precision pressure gauge with maximum trailing pointer, precision thermometer, wire basket and aluminium instrument plate (∅ 225 mm, H 40 mm) with three feet as a base plate over the water.

Model	Volume (l)	Temperature/pressure level	Art. No.	Pack Qty.	€
EL 12L	12	125/140 °C at 1.4/2.7 bar	**TL61.1**	1	2309,10
EL 12L	12	115/121 °C at 0.7/1.2 bar	**TL62.1**	1	2309,10
EL 18L	18	125/140 °C at 1.4/2.7 bar	**TL63.1**	1	2730,50
EL 18L	18	115/121 °C at 0.7/1.2 bar	**TL64.1**	1	2730,50

Accessories for benchtop steam sterilisers CertoClav EL-series

By CertoClav.

Additional wire basket for CertoClav EL 18L
For easy filling with sterilizable material. Inside ∅ 225 mm, H 170 mm. Mesh width: 1/4 inch. 2nd wire basket for model EL 18L or spare wire basket for model EL 12L.

Art. No.	Pack Qty.	€
TL65.1	1	170,85

Seal service kit for EL-series
With cover and valve seal, including seal for steam release cock, pressure gauge and steam release valve.

Art. No.	Pack Qty.	€
TL66.1	1	49,40

Benchtop autoclaves CertoClav Classic and MultiControl 2

By CertoClav. With stainless steel chamber. For culture media processing, as well as sterilisation of equipment and waste. No water connection required. Complementary to the large autoclaves. Space-saving positioning on the laboratory bench.

- Quadruple pressure safety: safety lock to prevent opening under pressure, antilock safety valve, pressure relief valve and pressure relief vent
- CertoLock for locking the lid with a single movement of the hand

CertoClav Classic:

Controlled by precision valves and thermostat. With timer.
Models available with sterilisation temperature of 125/140 °C or 115/121 °C.

CertoClav MultiControl 2:

With freely programmable control system (room temperature to 140 °C). Standard sterilisation programs preinstalled. USB port for connectivity to PC inc. basic software (to display process data).

Technical specifications:

Model	Classic	MultiControl 2
User interface	Manual	LCD display
USB port	-	yes
Timer	analog (0 to 60 min or continuous operation)	digital (1 min to 14 d)
Process logging	-	PC software
Capacity (l)	18	
Test pressure (bar)	4.1	
Inner dimensions (mm)	H 300, ∅ 260	
Outer dimensions (mm)	H 550, ∅ 270	
Diagonal (mm)	424	
Max. wire basket capacity	1 wire basket (please order separately)	
Thermometer measuring range (°C)	0 to 160 / 2-increment scale	Room temp. to 140 (via LCD display)
Pressure gauge measuring range (bar)	0 to 4 / 0.1-increment scale	
Steam outlet cock (mm)	∅ 10	
Power consumption (W)	1300	
Weight (kg)	13	
Power supply	230 V, 50/60 Hz	

Delivery incl.

Classic model: steam outlet cock, precision thermometer and pressure gauge.

MultiControl 2 model: electronic control unit, precision pressure gauge, steam outlet cock and PC software. Please order wire basket separately.

Model	Temperature/pressure level	Art. No.	Pack Qty.	€
Classic	125/140 °C at 1.4/2.7 bar	**CYH3.1** *	1	2193,00
Classic	115/121 °C at 0.7/1.2 bar	**CYH4.1** *	1	2193,00
MultiControl 2	RT to 140 °C to max. 2.7 bar	**CYH5.1** *	1	3147,60

* Longer delivery times possible. Please check with our Sales Department.

Accessories for CertoClav Classic and MultiControl 2

By CertoClav.

Wire basket

For loading items to be autoclaved. Inside ∅ 250 mm, H 230 mm. Mesh size: ¼ inch.

Art. No.	Pack Qty.	€
CYH6.1 *	1	170,85

Seal service set

With cover and safety valve seal as well as seal for steam outlet cock, pressure gauge, steam outlet valve and control valve.

Art. No.	Pack Qty.	€
CYH7.1 *	1	68,70

* Longer delivery times possible. Please check with our Sales Department.

NEW

CertoClav Vacuum Pro-series horizontal table-top autoclave

By CertoClav. For the sterilisation of liquids, solids and waste, e.g. instruments, hollow bodies, porous materials, textiles, plastics, etc.

- Chamber material: stainless steel 1.4301
- Sterilisation temperature 105 to 134 °C, Sterilisation pressure 0.2 to 2.1 bar
- 7″ touch-screen user interface
- 12 sterilisation programs
- Video step-by-step guide can be activated directly on the steriliser
- Integrated steam generator separated from the chamber
- Integrated water tank for distilled water (approx. 4 litres)
- Connections for report generation: USB, SD card, RS 232 and RS 485
- Network-enabled with Ethernet, LAN and Wi-Fi
- Flexible PT-1000 media temperature sensor to measure and regulate the temperature directly in the medium

Technical specifications:

Volume	22 l
Inner dimensions (∅ x D)	250 x 450 mm
Outer dimensions (L x W x H)	650 x 500 x 430 mm
Loading capacities for bottles	46 x 50 ml, 23 x 100 ml, 15 x 250 ml or 8 x 500 ml
Tray set W x L middle drawer Tray set W x L upper/lower drawer	220 x 430 mm 170 x 430 mm
Weight	63 kg
Power supply	220 V, 50/60 Hz

Delivery incl. 3 drawers, drawer enclosure, handle, quick connect waste water hose and CertoCloud basic license.
Please order base plate for bottles and flasks separately.

Art. No.	Pack Qty.	€
KAA6.1 *	1	4627,90

Accessories for CertoClav Vacuum Pro-series

By CertoClav.
Base plate for bottles and flasks.

Art. No.	Pack Qty.	€
KAA7.1 *	1	123,65

* Longer delivery times possible. Please check with our Sales Department.

Pressure digestion vessels

For disintegrations in the Microwave

The energy of microwaves is ideal for disintegrating small sample volumes. Microwaves only interact with the sample material not with the containers. Samples can be heated to boiling point and higher within seconds.

Rotilabo®-digestion vessels are made of isostatically pressed pure TFM. TFM is a modified PTFE made by Hoechst and contains thermoplastic fluorocarbon resins. Therefore an even, pore-free surface can be ensured. Residues from previous samples can not contaminate the measurements.

① Rotilabo®-hydrolysis and digestion vessels

Made of isostatic pressed pure TFM. For samples up to 0.5 g. Vessels are form-stable under pressure (up to 25 bar) and temperature stable (max. 160 °C). Sealing membrane prevents loss of evaporating sample, rupture membrane provides additional safety against pressures that exceed the limit. Collecting vessels and a hose are optionally available for protection of the microwave. They can be used to divert and collect gases and fluids in case the sealing and rupture membrane burst. Please order hose and collecting vessel separately.

Delivery incl. 10 sealing membranes made of PFA and 10 rupture membranes made of PTFE.

Volume (ml)	Innner ∅ (mm)	Inner height (mm)	Max. pressure (bar)	Max. temp. (°C)	Art. No.	Pack Qty.	€
5	15	32	25	+160	**E138.1**	1	342,95
10	16	52	25	+160	**E139.1**	1	564,40
20	22	60	20	+150	**E140.1**	1	450,45
50	33	62	20	+150	**E141.1**	1	623,50
100	35	110	15	+140	**E142.1**	1	559,00

② Rotilabo®-digestion vessels with inserts

With inserts (Inliner) made of TFM. The same can be said for these containers as for the previous hydrolysis and digestion vessels. The easily changed inliners are used for precise weighing of samples, because the whole vessel is usually too heavy for most precision balances. It is also possible to analyse several samples with the same vessel. Collecting vessels and a hose are optionally available to protect the microwave. They can be used to divert and collect gases and fluids in case the sealing and rupture membrane burst. Please order hose and collecting vessel separately.

Delivery incl. 10 sealing membranes made of PFA and 10 rupture membranes made of PTFE.

Volume (ml)	Art. No.	Pack Qty.	€
10	**E143.1**	1	697,70
20	**E144.1**	1	703,05
50	**E145.1**	1	655,75

Accessories for Rotilabo®-digestion vessels

Separate Rotilabo®-inserts (Inliner)

For vials (ml)	Weight (g)	Art. No.	Pack Qty.	€
10	approx. 48	**E146.1**	1	74,75
20	approx. 55	**E147.1**	1	81,50
50	approx. 112	**E148.1**	1	107,00

Sealing and rupture membranes for Rotilabo®-digestion vessels

For vials (ml)	Art. No.	Pack Qty.	€
5	**E149.1**	10	28,45
10/20	**E150.1**	10	36,55
50/100	**E151.1**	10	44,45

Collecting vessels

Made of PFA. Suitable for Rotilabo® digestion vessels. Collecting vessels can be used to collect gases and fluids for protection of the microwave (if the sealing and rupture membrane bursts). Transparent and pore-free. With two connections in the screw cap suitable for hose outside ∅ 6.35 mm (¼″).
Delivery without FEP hose (please order separately).

Volume (ml)	Overall height (mm)	Outside ∅ (mm)	Innner ∅ (mm)	Art. No.	Pack Qty.	€
120	74	66	60	**LT39.1**	1	192,45
240	116	66	60	**LT40.1**	1	231,15

FEP-tubes for collecting and digestion vessels

Temperature range -270 to +205 °C. Flexible, pore-free, gasproof. Transparent. Autoclavable.

Innner ∅ (mm)	Outside ∅ (mm)	Wall thickness (mm)	Art. No.	Pack Qty. (m)	€
4,35 (1 1⁄64″)	6,35 (¼″)	1,0	**Y506.1**	5	45,70

Household Cooling and refrigerating boxes

By Severin.

① **Household cooling box**
- Energy efficiency class (year): A+ (107 kWh)
- Climate class N-ST
- Refrigeration temperature can be regulated from +3 to +7 °C
- Temperature setting range:
  1 (= lowest refrigerating capacity) to 7 (= highest refrigerating capacity)
- Height adjustable feet
- Manual defrosting

② **Household refrigerating box**
- Energy efficiency class (year): A+ (146 kWh)
- Climate class N-ST
- Refrigeration temperature can be regulated from -18 to -24 °C
- Temperature range:
  1 (= lowest refrigerating capacity) to 5 (= highest refrigerating capacity)
- Height adjustable feet
- Manual defrosting

Technical specifications:

Type	Household cooling box	Household refrigerating box
Refrigerating capacity (l)	49	36
Deep-freeze compartment (l)	5* (for temperatures from approx. 0 to -5° C); non-regulable	-
Trays	1 grid tray	1 grid tray
Outer dimensions (mm)		
Width Depth Height	440 480 515	440 480 515
Inner dimensions (mm)		
Width top / bottom Depth top / bottom Height top / bottom	355 / 355 320 / 170 235 / 175	305 / 305 360 / 205 190 / 180
Weight (kg)	18	20

*Dimensions: W 180 x D 270 x H 100 mm

Type	Art. No.	Pack Qty.	€
Household Cooling box	**KP21.1**	1	192,45
Household Ice box	**KP22.1**	1	220,40

Household table-height refrigerators

By Liebherr.

General specifications for both models
- Climate class SN-ST
- Cooling temperature is adjustable from 0 to +9 °C (mechanical control)
- Selectable temperature ranges:
  1 (= lowest cooling capacity) to 7 (= highest cooling capacity)
- Interior light
- Integrable and suitable for rack mounting through front-side ventilation (air exhaust through slits in the worktop) and removable worktop
- Height-adjustable front feet
- 1 variable refrigeration circuit

Model T 1700-20
- Energy efficiency class (year/24 h): A+ (119/0.326 kWh)
- Automatic defrost system

Model T 1504-20
- Energy efficiency class (year/24 h): A+ (183/0.499 kWh)
- With additional freezer compartment
  (average temperature approx. -18 °C)
- Automatic defrost refrigerator compartment,
  manual defrost freezer compartment

Technical specifications:

Type	① T 1700-20	② T 1504-20
Cooling capacity (l)	151	117
Freezer compartment (l)	-	17
Number of glass shelves	4 (3 adjustable)	2 (1 adjustable)
Outer dimensions (mm):		
Width Depth Height	554 623 850	554 623 850
Weight (kg)	37	35,3
Power supply	220-240 V, 50 Hz	

Type	Art. No.	Pack Qty.	€
T 1700-20	**CHH5.1** *	1	535,35
T 1504-20	**CHH6.1** *	1	535,35

* Longer delivery times possible. Please check with our Sales Department.

FK-series refrigerators

By Liebherr.

General specifications of all models

- Cooling temperature is adjustable from +2 to +10 °C.
- With static cooling
- Automatic defrost system
- Mechanical control unit
- Lockable door

Model FKU 1800-20

With additional digital temperature display on outside of door.

Technical specifications:

Type	FKU 1800-20	FK 2640-20	FK 3640-20	FK 4140-20	FK 5440-20
Cooling capacity (l)	160	226	312	352	526
Number of grids (adjustable)	3	3	4	5	4
Power output (W)	100	140	150	150	150
Outer dimensions (mm):					
Width Depth Height	600 600 850	600 610 1250	600 610 1640	600 610 1800	750 730 1640
Inner dimensions (mm):					
Width Depth Height	513 441 702	470 440 1062	470 440 1452	470 440 1612	600 560 1452
Energy consumption in 24 h (kWh)	0,699	0,452	0,454	0,517	0,627
Weight (kg)	37	48	59	69	74
Power supply	220-240 V, 50 Hz				

Delivery incl. height-adjustable grids.

Type	Art. No.	Pack Qty.	€
FKU 1800-20	**NP82.1** *	1	623,50
FK 2640-20	**NP83.1** *	1	711,65
FK 3640-20	**NP84.1** *	1	799,80
FK 4140-20	**NP85.1** *	1	865,40
FK 5440-20	**NP86.1** *	1	1051,35

* Longer delivery times possible. Please check with our Sales Department.

Refrigerators with circulation cooling FKUvsl series

By Liebherr.

General specifications of all models

- Temperature range: +1 to +15 °C
- Mechanical control with stages
- **Digital temperature display outside on the door**
- **Dynamic cooling system** for fast cool-down and even cooling temperature
- Automatic defrost system
- Lockable door

Technical specifications:

Type	FKvsl 2610	FKvsl 3610	FKvsl 5410
Cooling capacity (l)	221	307	520
Number of grids (adjustable)	4	5	5
Power (W)	120	130	150
Outer dimensions (mm)			
Width Depth Height	600 610 1250	600 610 1640	750 730 1640
Inner dimensions (mm)			
Width Depth Height	470 440 1062	470 440 1452	600 560 1452
Housing material/colour	Steel/silver		
Energy consumption in 24 h (kWh)	0,786	0,947	0,983
Weight (kg)	51	62	78
Power supply	220-240 V, 50 Hz		

Delivery incl. height-adjustable grills.

Type	Art. No.	Pack Qty.	€
FKvsl 2610	**HKK5.1** *	1	865,40
FKvsl 3610	**HKK6.1** *	1	1014,80
FKvsl 5410	**HKK7.1** *	1	1227,65

* Delivery times may apply to these products. Please check with our Sales Department

FKUv-series refrigerators

By Liebherr.

General specifications of both models

- Cooling temperature is adjustable from +1 to +15 °C
- With dynamic cooling system (switchable fan, for even temperature distribution)
- Digital temperature display (resolution 1 °C)
- Temperature constancy ±4 K
- Outer design: sheet steel, white, powder coated
- Door opening alarm - if the door is opened for longer than 60 s (can be deactivated)
- Automatic thaw system

FKUv 1610-22
With insulating door made of powder-coated sheet steel.

FKUv 1613-22
With glass door. Additional LED-ceiling light can be switched separately.

Technical specifications:

Type	FKUv 1610-22	FKUv1613-22
Cooling capacity (l)	130	
Number of grills	3 (adjustable)	
Outer dimensions (W x D x H) mm	600 x 611 x 830	
Inner dimensions (W x D x H) mm	440 x 435 x 670	
Energy consumption in 24 h (kWh)	0,698	0,898
Weight (kg)	37	43
Power supply	220-240 V, 50 Hz	

Type	Design	Art. No.	Pack Qty.	€
FKUv 1610-22	With insulating door	**YP21.1** *	1	788,00
FKUv 1613-22	With glass door	**YP22.1** *	1	920,20

* Longer delivery times possible. Please check with our Sales Department.

ES-series laboratory refrigerators and deep freezers

By Thermo.

General specifications of all models

- **Cooling temperature adjustable from:** Refrigerators: 4 to 6 °C; 5 °C is preset Freezers: -19 to -21 °C, -20 °C is preset
- **Digital temperature display (resolution 1 °C)**
- Alarm function for high and low temperature limits (alarm limits have fixed settings; 1 and 11 °C or -15 and -30 °C)
- Standard entries (∅ 16 mm), e.g. for external temperature sensors
- With lockable door

Technical specifications:

Type	151R-AEV-TS	288R-AEV-TS	151F-AEV-TS	232F-AEV-TS
Cooling capacity (l)	151	288	151	232
Alarm	Yes			
Variable cooling temperatures (°C)	4 to 6		-19 to -21	
Max. temperature range (°C)	1 to 10		-18 to -25	
Number of loose shelves	3	5	-	2
Number of baskets	1		3	
Outer dimensions (mm):				
Width Depth Height	595 595 845	595 634 1570	595 595 845	595 634 1570
Inner dimensions (mm):				
Width Depth Height	500 450 705	480 445 1382	500 450 705	437 430 1300
Thawing	Automatic		Manual	
Energy consumption in 24 h (kWh)	0.6	0.5	1.6	1.0
Weight (kg)	65	90	65	90
Power supply	230 V, 50 Hz			

Type	Art. No.	Pack Qty.	€
151R-AEV-TS	**NN39.1** *	1	800,00
288R-AEV-TS	**NN40.1** *	1	1135,00
151F-AEV-TS	**NN41.1** *	1	800,00
232F-AEV-TS	**NN42.1** *	1	1135,00

* Longer delivery times possible. Please check with our Sales Department.

Household freezers G 1213-20 and GP 2033-20

By Liebherr.

- LC display with graphical display of set temperature
- Variable cooling temperatures of -15, -18, -21, -25 and -32 °C
- Drawers with transparent front
- Manual defrost
- Height-adjustable front feet
- 1 variable refrigeration circuit

Model G 1213-20

- Energy efficiency class (year/24 h): A+ (199/0.543 kWh)
- Climate class SN-T

Model GP 2033-20

- Energy efficiency class (year/24 h): A++ (175/0.479 kWh)
- Climate class SN-T

Technical specifications:

Model	G 1213-20	GP 2033-20
Cooling capacity (l)	98	156
Drawers in freezer compartment	3	5
Outer dimensions W x D x H (mm)	553 x 624 x 851	600 x 632 x 1250
Dimensions of upper drawers W x D x H (mm)	375 x 355 x 180	413 x 400 x 160
Dimensions of lower drawer W x D x H (mm)	375 x 184 x 170	413 x 245 x 175
Weight (kg)	41	56
Power supply	220-240 V, 50 Hz	

Delivery incl. drawers.

Type	Art. No.	Pack Qty.	€
G 1213-20	**CHH4.1** *	1	535,35
GP 2033-20	**CTY4.1** *	1	798,75

* Longer delivery times possible. Please check with our Sales Department.

Freezers GGU 1550-21 and GGv 5860-41

By Liebherr.

General specifications of all models

- Housing made of stainless steel
- Power fail indicator
- Door opening alarm
- With lockable door

GGU 1550-21

- **With static cooling**
- Digital temperature display (resolution 1 °C)
- Temperature constancy ±5 °C
- Manual thawing
- 4 shelves/evaporator plates

GGv 5860-41

- **With convection cooling**
- NoFrost technology - products are frozen with cooled recirculated air and moisture is discharged into the open
- Digital temperature display (resolution 1 °C)
- Temperature constancy ±2 °C
- Automatic defrost system
- Height of adjustable feet: 150 to 180 mm

Technical specifications:

Type	GGU 1550-21	GGv 5860-41
Cooling capacity (l)	133	490
Cooling temperature (°C)	-9 to -26	-14 to -28
Number of shelves	4 wire baskets, removable	5 height-adjustable grid shelves with stop and pull-out stop, 1 bottom grid
Compartment height (mm)	3 x 150 / 1 x 170	-
Outer dimensions (mm):		
Width Depth Height	600 615 830	750 750 2064
Inner dimensions (mm):		
Width Depth Height	474 443 676	610 500 1395
Thawing method	Manual	Automatic
Energy consumption in 24 h (kWh)	0,724	3,701
Weight (kg)	41	121
Power supply	220-240 V, 50 Hz	

Type	Art. No.	Pack Qty.	€
GGU 1550-21	**NH36.1** *	1	876,15
GGv 5860-41	**NH37.1** *	1	2618,70

* Longer delivery times possible. Please check with our Sales Department.

Laboratory freezer Froster-Labo 330

By Kirsch.

- Freezing temperature can be adjusted from -5 to -30 °C
- Digital temperature display (Resolution 1 °C)
- Recirculates air cooling for consistent temperature control (switches off when door is opened)
- The freezing cycle is reversed automatically and after a limited time for rapid defrosting
- Drip water evaporation occurs in refrigerating machine room
- Min/Max-temperature storage
- Optic and acoustic limit value alarm
- Outer casing made of galvanized sheet steel, powder coated
- Adjustable feet compensate for uneven surfaces
- With lockable door

Technical specifications:

Refrigerating capacity (l)	300
Alarm	yes
Grids	4
Power (W)	500
Outer dimensions (mm)	
Width Depth Height	740 770 1490
Inner dimensions (mm)	
Width Depth Height	595 530 950
Energy consumption in 24 h (kWh)	4,58
Weight (kg)	125
Current	220-240 V, 50/60 Hz

Art. No.	Pack Qty.	€
KL29.1 *	1	5372,85

* Longer delivery times possible. Please check with our Sales Department.

Household fridge-freezer CUsl 2811

By Liebherr.

- Energy efficiency class (year/24 h): A++ (191/0.523 kWh)
- Climate class SN-ST
- 1 variable refrigeration circuit :
  Cooling temperature is adjustable from 0 to +9 °C (mechanical control)
  Freezer compartment: average temperature -18 °C (non-adjustable)
- Selectable temperature ranges: 1 (= lowest cooling capacity) to 7 (highest cooling capacity)
- Refrigerator compartment with LED interior light, freezer compartment without light
- Height-adjustable front feet

Technical specifications:

Type	**Fridge unit**	**Freezer unit**
Cooling capacity (l)	210	53
Number of shelves	4 glass shelves (3 adjustable)	2 drawers with transparent front
Outer dimensions W x D x H (mm)	550 x 629 x 1612 mm	
Thawing method	Automatic	Manual
Weight (kg)	55	
Power supply	220-240 V, 50 Hz	

Delivery incl. glass shelves and 2 drawers.

Art. No.	Pack Qty.	€
CTY5.1 *	1	810,55

* Longer delivery times possible. Please check with our Sales Department.

Laboratory fridge-freezer 263C-AEV-TS

By Thermo.

- **Cooling temperature adjustable from:**
  Refrigerator: 4 to 6 °C; 5 °C is preset
  Freezer: -20 °C (non-adjustable)
- **Digital temperature display (resolution 1 °C)**
- Alarm function for high and low temperature limits
  (alarm limits have fixed settings; 1 and 11 °C or -15 and -30 °C)
- Standard entries (∅ 16 mm), e.g. for external temperature sensors
- With lockable door

Technical specifications:

Type	Fridge unit	Freezer unit
Cooling capacity (l)	159	109
Alarm	Yes	
Variable cooling temperature (°C)	4 to 6	-20 (non-adjustable)
Max. temperature range (°C)	1 to 10	-18 to -25
Number of loose shelves	3	1
Number of baskets	2 basket halves	2
Outer dimensions (mm):		
Width Depth Height	540 600 1680	
Inner dimensions (mm):		
Width Depth Height	457 450 725	408 415 670
Thawing	Automatic	Manual
Energy consumption in 24 h (kWh)	0.9	
Weight (kg)	95	
Power supply	230 V, 50 Hz	

Art. No.	Pack Qty.	€
NN38.1 *	1	1479,00

* Longer delivery times possible. Please check with our Sales Department.

LCv 4010 laboratory fridge-freezer combination

By Liebherr.

- Adjustable cooling temperature (2 separately adjustable refrigeration circuits)
  Fridge unit: +3 to +16 °C
  Freezer unit: -9 to -30 °C
- Fridge unit with recirculated-air ventilation system, freezer unit with static cooling system
- Digital temperature display
  Resolution, fridge unit: 0.1 °C
  Resolution, freezer unit: 0.1 °C (to -19.9 °C) or 1 °C (from -20 °C onwards)
- Temperature constancy
  Fridge unit: ±2.0 K
  Freezer unit: ±3.5 K
- With lockable door
- Memory for Min/Max temperatures
- Memory function for storing the last three temperature alarms and power failures with date/time/duration of alarm
- Audible and visual limit alarms
- Audible and visual door opening alarms
- Feedthrough for external temperature sensor (∅ 10 mm)
- Energy consumption in 24 h: 1,800 kWh

Technical specifications:

	Fridge unit	Freezer unit
Cooling capacity (l)	240	105
Freezing temperature (°C)	+3 to +16	-9 to -30
Number of surfaces	4 grates, plastic coated	3 drawers
Outer dimensions (mm):		
Width Depth Height	600 615 2000	
Inner dimensions (mm):		
Width Depth Height	440 435 1105	431 435 597
Thawing method	Automatic	Manual
Weight (kg)	91	
Power supply	220-240 V, 50/60 Hz	

Art. No.	Pack Qty.	€
TP33.1 *	1	2568,20

* Longer delivery times possible. Please check with our Sales Department.

LCexv 4010 fridge-freezer combination explosion protected

By Liebherr.
Same as model LCv 4010, but with explosion protected interior in compliance with the safety requirements of EU Directive 94/9/EC (ATEX 95) for the storage of explosive and highly flammable substances in enclosed containers.
Delivery incl. 4 glass shelves for the cooling unit (instead of plastic-coated racks).

Art. No.	Pack Qty.	€
AET2.1 *	1	2621,95

* Longer delivery times possible. Please check with our Sales Department.

Laboratory freezer chests

By Liebherr.

- Temperature adjustment range from -10 to -45 °C
- Digital temperature display
- Resolution: 0.1 °C (to -19.9 °C) or 1 °C (from -20 °C onwards)
- Temperature constancy ±2.5 K
- With static cooling
- Inner shell material: aluminium, white coated
  Door/lid material: steel
- Integrated interior light in chest lid
- Memory for Min/Max temperatures
- Memory function for storing last three temperature alarms and power failures with date/time/duration of alarm
- Audible and visual limit alarms
- Audible and visual lid opening alarms
- Feedthrough for external temperature sensor (∅ 10 mm)

Technical specifications:

Type	LGT 2325	LGT 3725	LGT 4725
Cooling capacity (l)	200	342	431
Outer dimensions (mm):			
Width Depth Height	1132 760 919	1373 808 919	1648 808 919
Inner dimensions (mm):			
Width Depth Height	889 410 630	1170 500 650	1445 500 650
Capacity for cryo racks (please order cryo racks separately)	8 pce.	18 pce.	24 pce.
Thawing method	Manual		
Lock	Yes		
Energy consumption in 24 h (kWh)	2,258	2,928	4,352
Weight (kg)	66	84	96
Power supply	220-240 V, 50/60 Hz		

Type	Art. No.	Pack Qty.	€
LGT 2325	**TP35.1** *	1	1847,95
LGT 3725	**TP36.1** *	1	1966,20
LGT 4725	**TP37.1** *	1	2138,20

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

By Liebherr.

Cryo racks for deep freezer chests

For 11 boxes with max. height 50-53 mm.
Rack dimensions: L 140 x W 140 x H 604 mm.

Art. No.	Pack Qty.	€
LH47.1	1	92,40

NEW

Ultra-low temperature freezer -86 °C HERAfreeze™ HFC390TV

By Thermo.

- Cooling temperature is adjustable from -50 to -86 °C
- Outer housing made of robust steel with powder-baked finish
- Stainless steel interior
- Alphanumeric LED display shows thresholds, system status and alarm messages
- Set-up adjustable for high-temperature and low-temperature alarm
- Backup battery (NiCd Gel battery 12 V) to preserve the display and alarm functions for 48 hours in the event of a power failure
- Access code to protect the setpoint defined
- Lockable door handle
- RS 232 interface and 4 mA up to 20 mA analog outputs

Technical specifications:

Cooling capacity	85 l
Outer dimensions (mm)	
Width Depth Height	724 759 1133
Inner dimensions (mm)	
Width Depth Height	470 470 417
Energy consumption in 24 h	5.3 kWh
Weight	196 kg
Power supply	230 V, 50 Hz

Art. No.	Pack Qty.	€
HPA6.1 *	1	8451,70

* Longer delivery times possible. Please check with our Sales Department.

Refrigerators/Freezers, explosion-proof

TCS-series thermostat cabinets

By Aqualytic. For continuous temperature control in different applications, e.g. microbiological research, BSB requirements etc.

- Temperature range +2 to +40 °C, infinitely adjustable in 0.1 °C increments
- Illuminated LED temperature display for actual/nominal values
- Temperature constancy ±1.0 °C
- With internal sockets for devices which require a power supply, e.g. magnetic stirrer
- Built-in cooling and heating units
- Lockable door
- With height-adjustable grids

Technical specifications:

Type	TC 135 S / TC 140 G	TC 175 S	TC 255 S / TC 256 G	TC 445 S
Cooling capacity (l)	135/140	175	255/255	445
Inserts:				
Grids Bottom grid	3 1	3 1	4 1	4 1
Outer dimensions (mm):				
Width Depth Height	600 (600*) 600 (600*) 850 (819*)	600 610 1250	600 610 1640	750 730 1640
Inner dimensions (mm):				
Width Depth Height	513 441 702	470 440 1062	470 440 1452	600 560 1452
Sockets in usable space (pc.)	4	5	7	9
Energy consumption in 24 h (kWh)	1,35/1,77	1,23	1,54/1,56	1,42
Weight (kg)	39 / 50	51	61 / 77	78.5
Power supply	220-240 V, 50 Hz			

*Outer dimensions excluding worktop.

With standard door

Type	Art. No.	Pack Qty.	€
TC 135 S	**AKX5.1** *	1	1771,60
TC 255 S	**AKX7.1** *	1	2449,95
TC 445 S	**AKX8.1** *	1	2998,20

With glass door, double insulating glass with ABS frame

Type	Art. No.	Pack Qty.	€
TC 140 G	**AKX9.1** *	1	2015,65
TC 256 G	**AKY0.1** *	1	2612,25

* Longer delivery times possible. Please check with our Sales Department. Prices include shipping within Germany.

Explosion-proof laboratory fridges

Explosion-proof in accordance with the guidelines on "Working Safely in Laboratories BG-I 850-0". Enclosed spaces in which hazardous, explosive atmospheres can develop, e.g. rooms where flammable liquids are stored, must be explosion-protected.

- Cooling temperature is infinitely variable from +1 to +15 °C
- Selectable temperature ranges: 1 (= lowest cooling capacity) to 5 (= highest cooling capacity)
- Mechanical control unit
- Digital temperature display (resolution 1 °C)
- Sheet steel housing with impact resistant powder coating
- With lockable door and height-adjustable glass base
- Dynamic cooling system (with forced air ventilation)
- Models EX 220, EX 300 and EX 490 have a fan stop function which switches off the fan when the door is opened
- Automatic condensation drainage into inner catch tank

Technical specifications:

Type	EX 160	EX 220	EX 300	EX 490
Cooling capacity (l)	160	220	300	490
Number of glass shelves	3	4	5	5
Outer dimensions (mm):				
Width Depth Height	600 600 860	600 610 1250	600 610 1640	750 730 1640
Inner dimensions (mm):				
Width Depth Height	513 441 702	470 440 1062	470 440 1452	600 560 1452
Energy consumption in 24 h (kWh)	0,898	0,786	0,947	0,983
Weight (kg)	40	53	64	84
Power supply	220-240 V, 50 Hz			

Delivery incl. height-adjustable glass shelves.

Type	Art. No.	Pack Qty.	€
EX 160	**AKY7.1** *	1	1063,20
EX 220	**AKY8.1** *	1	1128,75
EX 300	**AKY9.1** *	1	1343,75
EX 490	**ALA0.1** *	1	1521,15

* Longer delivery times possible. Please check with our Sales Department. Prices include shipping within Germany.

Refrigerators Mediline, explosion-proof models LKUexv 1610 and LKexv 3910

By Liebherr.
With explosion-proof interior acc. to EU Guideline 94/9/EG (ATEX 95).

General specifications for both models

- Refrigeration temperature adjustable from +3 to +16 °C
- With hot-air ventilation
- Digital temperature display (Resolution 0.1 °C)
- Temperature constancy ±2.0 K
- Memory for min/max temperatures
- Memory function for last three temperature alarms and power cuts with date/time/duration of alarm
- With lockable door
- Optic and acoustic limit value alarm
- Optic and acoustic open door alarm
- Automatic defrosting

Technical specifications:

Model	LKUexv 1610	LKexv 3910
Cooling volume (l)	130	344
Alarm	Yes	Yes
Number of glass shelves	3	5
Outer dimensions (mm):		
Width Depth Height	600 615 820	600 615 1840
Inner dimensions (mm):		
Width Depth Height	455 435 669	455 435 1650
Energy consumption in 24 h (kWh)	0,747	0,865
Weight (kg)	42	70

Type	Art. No.	Pack Qty.	€
LKUexv 1610	**LL34.1** *	1	1493,20
LKexv 3910	**LL33.1** *	1	2041,45

* Longer delivery times possible. Please check with our Sales Department. Prices include transport costs within Germany.

Refrigerators Mediline, explosion-proof models LGUex 1500 and LGex 3410

By Liebherr.
With explosion-proof interior acc. to EU Guideline 94/9/EG (ATEX 95).

General specifications for both models

- Static cooling
- Digital temperature display
  Resolution 0.1 °C (to -19.9 °C) resp. 1°C (from -20 °C)
- Temperature constancy ±2 K
- Memory for min/max temperatures
- Memory function saves the last three temperature alarms and power cuts with date/time/duration of alarm
- With lockable door
- Optic and acoustic limit value alarm
- Optic and acoustic open door alarm
- Manual defrosting

LGUex 1500
Cooling temperature adjustable from -9 to -26 °C

LGUex 3410
Cooling temperature adjustable from -9 to -30 °C

Technical specifications:

Model	LGUex 1500	LGex 3410
Cooling capacity (l)	129	284
Alarm	yes	yes
Drawers Basket	3 1	8 -
Compartment height (mm)	149	185
Outer dimensions (mm):		
Width Depth Height	600 615 820	600 615 1840
Inner dimensions (mm):		
Width Depth Height	454 450 663	420 400 1587
Energy consumption in 24 h (kWh)	0,926	1,309
Weight (kg)	46	89

Type	Art. No.	Pack Qty.	€
LGUex 1500	**LL36.1** *	1	1546,95
LGex 3410	**LL35.1** *	1	2138,20

* Longer delivery times possible. Please check with our Sales Department.

Flake ice maker

Laboratory freezers, Froster-Labex series, explosion-proof

By Kirsch. Interior explosion-proof, in compliance EU guideline 94/9/EG (ATEX 95) and in comp. with laboratory guidelines BGR 120, nr. 3.8.

Model Froster-Labex-70
- Cooling temperature from -15 to -22 °C
- Temperature selection range:
  1 (= lowest cooling capacity) to 5 (= highest cooling capacity)
- With analogue actual value thermometer on inside of door
- Outer cabinet made of galvanized sheet steel, powder-coated
- Manual defrosting

Model Froster-Labex-96
- Cooling temperature adjustable from -5 to -25 °C
- Digital temperature display (Resolution 1 °C)
- Min/Max temperature storage
- Optical and acoustic limiting value alarm
- Outer cabinet made of galvanized sheet steel, powder-coated
- With condense water tray for manual emptying of inner condensate

Technical specifications:

Model	Froster-Labex-70	Froster-Labex-96
Cooling capacity (l)	70	95
Alarm	No	Yes
Output (W)	100	160
Grids Gully grating Drawers	2 1 1	2 - -
Outer dimensions (mm)		
Width Depth Height	480 510 740	540 540 850
Inner dimensions (mm)		
Width Depth Height	350 410[1)] 550	440[2)] 420[3)] 470
Energy consumption in 24 h (kWh)	1,6	2,6
Weight	34 kg	42 kg
Mains supply	220-240 V, 50/60 Hz	

[1)] Usable depth, top 90 mm, bottom 200 mm less
[2)] Usable width 20 mm less
[3)] Usable depth 50 mm less

Type	Art. No.	Pack Qty.	€
Froster-Labex-70	**KL27.1** *	1	2483,25
Froster-Labex-96	**KL28.1** *	1	3493,75

* Longer delivery times possible. Please check with our Sales Department.

Cone ice makers SCOTSMAN® B-series

For making solid and crystal clear cone ice.
Applications: laboratories and industry.

- Stainless steel version, air cooled
- Built-in reservoir
- Insulated removal flap for reduced condensation
- Ice cone size: approx. H 30.5 x ∅ 34 mm (20 g)
- Suitable for use with drinking water and demineralised water

Technical specifications:

Type	B 2508	B 3015
Max. output in 24 h (kg)	25	31
Reservoir capacity (kg)	8	15
Dimensions (W x D x H) mm	390 x 515 x 640	467 x 570 x 690
Operating limits: Room temperature Water temperature Water pressure	min. 10 °C / max. 43 °C min. 5 °C / max. 38 °C min. 0.8 bar / max. 5 bar	
Weight (kg)	31	34
Power supply	230 V, 50 Hz	

Delivery incl. 1 ice scoop, connecting hose ¾″ (length 1.5 m), 1 discharge hose (∅ 20 mm, length 1.5 m).

Type	Art. No.	Pack Qty.	€
B 2508	**NH38.1** *	1	1096,50
B 3015	**NH39.1** *	1	1367,40

* Longer delivery times possible. Please check with our Sales Department.

Flake ice maker

RF-series flake ice maker with ice storage tank Manitowoc Ice

Range of applications: laboratories, research institutes and industry.
Ideal for production of flake and/or broken ice at a temperature of -0.5 °C.
The ice is crystalline-shaped and suitable for pouring.

- With free water drainage
- With integrated storage tank
- Outside cabinet made of stainless steel
- Air-conditioned
- Separate on/off switch
- Suitable for working with drinkng water and demineralised water
- Height adjustable feet (110 to 150 mm)

Technical specifications:

Model	RF 0244	RF 0266P	RF 0385	RF 0399
Max. production volume in 24 h (kg)	82		151	
Tank content (kg)	18	27	40	54
Power consumption (W)	700		1000	
Dimensions (mm)				
Width Depth Height	500 660 842	500 660 952	738 690 1003	783 690 1172
Permissible working temperature	10 to 43 °C			
Weight (kg)	71/75	76/80	102/106	109/113
Power supply	230 V, 50 Hz			

Delivery incl. 1 ice scoop and connection tubes
(one each 1.5 m supply and drainage hose with ¾″-thread).

Type	Art. No.	Pack Qty.	€
RF 0244	**LP30.1** *	1	3042,25
RF 0266	**LP31.1** *	1	3096,00
RF 0385	**LP32.1** *	1	3440,00
RF 0399	**LP33.1** *	1	3526,00

* Longer delivery times possible. Please check with our Sales Department.

Flake ice machines with ice storage tank SCOTSMAN® AF-series

Applications: laboratories, research institutes and industry.

- Stainless steel model, air-cooled
- Environmental-friendly safety refrigerant

The ice flakes have a temperature of -0.5 °C; the irregular, large surface has an extremely good cooling effect.
Each flake is saturated, firm and doesn't stick together.

Model EF 103 AS
With additional waste water pump (waste water can be pumped up to a height of 1.7 m or up to a distance of 15 m).

**All models can be converted to work with demineralized water (conductivity <30 µS) at an extra charge.
Please check with our Sales Department.**

Technical specifications:

Type	AF 80 AS	EF 103 AS
Max. production volume in 24 h (kg)	70	105
Storage capacity (kg)	25	30
Power input (W)	330	470
Dimensions W x D x H (mm)	535 x 626 x 933	592 x 622 x 1126
Operating limits: Room temperature (°C) Water temperature (°C) Water pressure (bar)	 min. 10 / max. 40 min. 5 / max. 35 min. 1 / max. 5	
Weight (kg)	51	63
Current	230 V, 50 Hz	

Delivery incl. 1 scoop, 1 connection hose ¾″ (length 1.5 m),
1 drainage hose (∅ 20 mm, length 1.5 m).

Type	Art. No.	Pack Qty.	€
AF 80 AS	**CK94.1** *	1	3509,90
EF 103 AS	**CK95.1** *	1	4196,80

* Longer delivery times possible. Please check with our Sales Department.

Flake ice maker

NEW

Flake ice maker with separate store RFS series

By Manitowoc.

① **General details of flake ice maker**

- For large production quantities
- Stainless steel design (inside/outside), air-cooled
- Separate On/Off switch
- HACCP-compliant
- Suitable for use with drinking water and demineralised water
- Various combinations of flake ice makers and store available

Technical specifications:

Type	RFS 0300 A	RFS 0650 A
Max. output in 24 h (kg)	171	332
Power consumption (W)	650	1050
Dimensions W x D x H (mm)	559 x 599 x 600	
Perm. operating temperature (°C)	10 to 43	
Weight (kg)	79	104
Power supply	230 V, 50 Hz	

② **General details of base ice store**

- Easy removal of ice due to flap with locking mechanism
- Constant cooling temperature through PE insulation
- Ice shovel holder
- Adjustable feet height (110 to 150 mm)

Technical data of store:

Type	B 320	B 420
Capacity (kg)	95	141
Dimensions W x D x H (mm)	559 x 864 x 965	559 x 864 x 1270
Weight (kg)	34	49

Delivery incl. connection set (1.5 m supply and drain hose with ¾″ thread) and 180 ml ice shovel.

Type	Art. No.	Pack Qty.	€
RFS 0300 A with store B 320	**HPK0.1** *	1	4531,15
RFS 0300 A with store B 420	**HPK1.1** *	1	4595,65
RFS 0650 A with store B 320	**HPK2.1** *	1	6240,40
RFS 0650 A with store B 420	**HPK3.1** *	1	6304,90

* Longer delivery times possible. Please check with our Sales Department.

Rotilabo® ice scraper for refrigerators and freezers

Made of **PP**. Robust design. Practical short handle for cleaning iced refrigerators, freezer cabinets and freezers. Overall length 250 mm. Length of handle 130 mm. Width of scraper 110 mm, strength 4 mm.

Art. No.	Pack Qty.	€
HNH9.1	5	32,20

Ice crusher

Chrome housing. Volume of ice container approx. 900 ml. With hand crank. Grinder made of stainless steel. Dimensions: L 160 x W 135 x H 270 mm.

Delivery incl. ice scoop made of PP.

Art. No.	Pack Qty.	€
LT26.1	1	53,15

Gas burners

Laboratory Bunsen burners

Suitable for propane gas or natural gas. Made of die-cast zinc.
Connection for hose with 9.5 mm internal ∅.

Technical specifications:

Gas type	Temperature (°C)	Consumption (l/h)	Head ∅ (mm)
Propane gas	① 1220 ② 1180	① 40 ② 43	① 17 ② 17
Natural gas	① 1300 ② 1240	① 115 ② 123	① 17 ② 17

① With needle valve and air control

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	145	250	**CHP0.1**	1	32,90
Natural gas	145	250	**CHP1.1**	1	32,90

② With lever stopcock, pilot flame and air control

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	150	310	**C633.1**	1	48,30
Natural gas	150	310	**C634.1**	1	48,85

Laboratory Bunsen burners, acc. to DIN

Acc. to DIN, DVGW approved. Suitable for propane gas or natural gas.
Connection for hose with 9.5 mm internal ∅. Made of die-cast zinc.

Technical specifications:

Gas type	Temperature (°C)	Consumption (l/h)	Head ∅ (mm)
Propane gas	① 1220 ② 1220 ③ 1220 ④ 1210	① 42 ② 40 ③ 42 ④ 44	① 17 ② 17 ③ 17 ④ 17
Natural gas	① 1300 ② 1300 ③ 1250 ④ 1260	① 120 ② 115 ③ 120 ④ 125	① 17 ② 17 ③ 17 ④ 17

① Basic version with air control

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	145	240	**Y561.1**	1	29,00
Natural gas	145	240	**Y562.1**	1	29,00

② With needle valve and air control

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	145	250	**Y563.1**	1	38,65
Natural gas	145	250	**Y564.1**	1	38,65

③ With needle valve, pilot flame and air control

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	145	250	**CHT2.1**	1	45,05
Natural gas	145	250	**CHT3.1**	1	45,05

④ With stopcock, pilot flame and air control

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	150	280	**CHT4.1**	1	47,05
Natural gas	150	280	**CHT5.1**	1	47,05

Teclu burners

Suitable for propane gas or natural gas. Made of die-cast zinc.
Connection for hose with internal ∅ 9.5 mm.

Technical specifications:

Gas type	Temperature (°C)	Consumption (l/h)	Head ∅ (mm)
Propane gas	① 1320 ② 1285 ③ 1380	① 50 ② 53 ③ 76	① 17 ② 17 ③ 32
Natural gas	① 1290 ② 1300 ③ 1330	① 145 ② 150 ③ 218	① 17 ② 17 ③ 32

① With needle valve and air control

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	165	285	**CHP4.1**	1	41,40
Natural gas	165	285	**CHP5.1**	1	41,40

② With stopcock, pilot flame and air control

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	170	310	**CHP8.1**	1	52,15
Natural gas	170	310	**CHP9.1**	1	52,15

③ With needle valve, extended heat output and air control

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	165	360	**CHT0.1**	1	57,90
Natural gas	165	360	**CHT1.1**	1	57,90

Teclu burners, acc. to DIN

Acc. to DIN, DVGW approved. Suitable for propane gas or natural gas.
Connection for hose with 9.5 mm internal dia. Made of die-cast zinc.

Technical specifications:

Gas type	Temperature (°C)	Consumption (l/h)	Head dia. (mm)
Propane gas	① 1320 ② 1285	① 50 ② 53	① 17 ② 17
Natural gas	① 1290 ② 1300 ③ 1330	① 145 ② 150 ③ 218	① 17 ② 17 ③ 32

① With needle valve and air control

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	165	285	**CHT6.1**	1	46,80
Natural gas	165	285	**CHT7.1**	1	46,80

② With stopcock, pilot flame and air control

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	170	310	**Y565.1**	1	61,65
Natural gas	170	310	**Y566.1**	1	61,65

③ With needle valve, extended heat output and air control

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Natural gas	165	360	**CHT9.1**	1	57,90

Laboratory gas burners with suction foot

Acc. to DIN, DVGW approved. Connection for hose with 9.5 mm internal ∅. Suitable for propane gas or natural gas.

With suction foot:
- For stability on all smooth surfaces
- Accidental movement of the burner is largely avoided
- No metal in contact with the standing area

Technical specifications:

Gas type	Temperature (°C)	Consumption (l/h)	Head ∅ (mm)
Propane gas	① 1220 ② 1210 ③ 1320	① 40 ② 44 ③ 50	① 17 ② 17 ③ 17
Natural gas	① 1300 ② 1260 ③ 1290	① 115 ② 125 ③ 145	① 17 ② 17 ③ 17

① **With needle valve and air control** - Bunsen gas burner

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	145	250	**CK28.1**	1	42,50
Natural gas	145	250	**CK29.1**	1	42,50

② **With stopcock, pilot flame and air control** - Bunsen gas burner

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	150	280	**CK30.1**	1	51,55
Natural gas	150	280	**CK31.1**	1	51,55

③ **With needle valve and air control** - Teclu gas burner

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	165	285	**CK32.1**	1	51,55
Natural gas	165	285	**CK33.1**	1	51,55

Laboratory gas burners with double lever stopcock

Acc. to DIN, with DVGW-approval. Connection for hose with inner-∅ 10 mm. For propane gas or natural gas. With double lever stopcock, pilot flame and air regulation.

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	150	290	**CX71.1**	1	57,80
Natural gas	150	290	**CX72.1**	1	57,80

Gas burners

Ideal for propane or natural gas. With **DVGW seal**. Non-tilting base and low centre of gravity guarantee high stability. Burner can be removed from base. Inclination angle can be set to 60°/90°/120° with locking device. With separate chimney for low flame and regulating valve to switch over from main to low flame. A regulating mechanism for air supply enables precise setting of flame temperature. Height depending on angle 100 mm/107 mm, weight 530 g. Suitable for continuous use.

For gas type	Art. No.	Pack Qty.	€
Propane gas	**H612.1**	1	161,75
Natural gas	**H613.1**	1	161,75

Safety lab burners according to Teclu

With thermo sensor safety valve (if the flame extinguishes or the gas supply is interrupted, the safety valve closes automatically). Solid round base. With air regulation and needle valve.

For gas type	Overall height (mm)	Weight (g)	Art. No.	Pack Qty.	€
Propane gas	180	650	**NA04.1**	1	134,40
Natural gas	180	650	**NA05.1**	1	134,40

Rotilabo®-safety gas tubes

For supplying Bunsen burners that operate using gas in accordance with DIN 30665. With non-buckling, elastic coupling sleeve, suitable for all three gas groups acc. to DVGW-Worksheet G 260, controlled and tested as per DIN-DVGW-Reg.-No. DG - 4607 AU 2366. Not suitable for connection to gas cylinders. Inner-∅ 9 mm.

Length (mm)	Art. No.	Pack Qty.	€
50	**1716.1**	1	36,10
60	**A268.1**	1	37,75
75	**1717.1**	1	42,05
100	**1718.1**	1	48,60
125	**A269.1**	1	54,80
150	**1719.1**	1	57,60
200	**A270.1**	1	71,35
300	**A271.1**	1	106,10

Horizontal burner

For soldering, melting, burning-off etc. With piezo ignition. Flame temperatures up to 1300 °C. Sturdy metal construction with slip-resistant piston for one-handed operation. Safety switch. Dimensions: ∅ 30 x H 150 mm. Fillable with lighter gas.
Delivery without filling; please order gas refill separately.

Product	Art. No.	Pack Qty.	€
Horizontal burner	**YE28.1**	1	35,50
Refillable gas (250 ml liquid butane)	**1652.1**	1	3,50

Rotilabo®-gas tubing

For laboratory gas burners that operate using gas in acc. with DIN 30665. Ideal for all 3 gas types, which are described in the German Municipal Services (DVGW). Pamphlet G260. Acc. to DIN 30664 Part 1, without casing and armouring. Suitable for pressures up to 100 mbar. Tested as per DIN-DVGW- Reg.- No. NG - 4607 AU 2362. Not suitable for connection to gas cylinders! ∅-inner 9.5 mm, ∅-outer 14 mm.

Length (m)	Art. No.	Pack Qty.	€
5	**E485.1**	1	49,40

Micro-horizontal burner GB 2001

Ideal for welding, soldering, branding and melting glass, made of chrome and camera plastic. Ignites piezo-electrically, reaching temperatures up to 1300 °C with a fine and focused flame. Cannister for liquid butane in handle, sufficient for approx. 2 hours of normal use. Height 145 mm, weight when empty 200 g. With removable base. For safety reasons, fuel is not included.

Art. No.	Pack Qty.	€
0386.1	1	92,45

Universal refillable gas

With 250 ml liquid butane and 5 different injectors.

Danger H220-H280

Art. No.	Pack Qty.	€
1652.1	1	3,50

▶ Tubing accessories from page 391
▶ Hose brushes see page 1167

Bunsen burner LABOGAZ 206

Works with C 206 D Super cartridge. With Clip & Go assembly system for simple cartridge change. With plastic bell-shaped top.
Flame temperature approx. 1100 °C.
Dimensions without cartridge: height 130 mm, ∅ 90 mm.
Delivery without base and cartridge (please order separately).

Art. No.	Pack Qty.	€
0802.1	1	70,85

Accessories:

Pierce-through cartridge C 206 GLS, butane/propane-mix 80/20 %, ∅ 90, height 90 mm, content 190 g	**0191.2**	8	36,35
Base for bunsen burners Labogaz 206	**X711.1**	1	9,25

Bunsen burner LABOGAZ 470

For use with CV 470 plus cartridge.
Dimensions without cartridge: ∅ 22 mm, height 59 mm.
Delivery without cartridge (please order separately).

Art. No.	Pack Qty.	€
Y650.1	1	74,10

Valve cartridges CV 470 plus

For bunsen burner LABOGAZ 470. Butane/propane-mix (80/20 %).
Valve cartridges can be removed from the unit, even when they are not completely empty. The valve ensures that the gas cannot escape.

Danger H220-H280

Type	Contents	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
CV 470 plus	450 g	109	135	**Y652.1**	2	26,35
CV 470 plus	450 g	109	135	**Y652.2**	12	138,70

Gas cooker Twister® Plus PZ

Easy Clic®-connection for simple assembly of valve cartridges.
With 3 container holders. **Piezo ignition.** Fueled by gas cartridges CV 470 plus.
Continuous operation of cartridge: approx. 2 h with CV 470 plus.
Dimensions (without cartridge): L 105 x W 70 mm, pot holder-∅ 140 mm.
Weight (without cartridge) 285 g.
Delivery without gas cartridge, please order separately.

Art. No.	Pack Qty.	€
EL22.1	1	53,70

Valve cartridges for gas cooker Twister® Plus PZ

Danger H220-H280

Type	Contents	Art. No.	Pack Qty.	€
Cartridges CV 470 plus	450 g	**Y652.1**	2	26,35
Cartridges CV 470 plus	450 g	**Y652.2**	12	138,70

Fine soldering unit Spotflam

Cordless multi-purpose unit with attachable microburner and fine soldering copper tip. Flame can be regulated via air supply slide.
Burns for approx. 4 hours. Can be used for: heating test tubes, sterilizing instruments, hard and soft soldering.
Delivery incl. cartridge CV 360.

Danger H220-H280

Art. No.	Pack Qty.	€
T926.1	1	35,45

Accessories:

Compressed gas can CV 360 with valve, butane gas, contents 52 g	**T927.1**	6	60,15

Soldering blow torch SOUDOGAZ X 2000 and X 2000 PZ

Flame temperature approx. +1800 °C. Weight with cartridge approx. 800 g. Flame adjustment. Gas consumption 120 g/h.
Delivery without cartridge (please order separately).

① **SOUDOGAZ X 2000**

Type	Art. No.	Pack Qty.	€
X 2000	**0777.1**	1	42,50

② **SOUDOGAZ X 2000 PZ with automatic piezoelectric ignition**

Type	Art. No.	Pack Qty.	€
X 2000 PZ	**N183.1**	1	49,35

Accessories:

Pierce-through cartridge C 206 GLS, butane/propane-mix 80/20 %, ∅ 90, height 90 mm, content 190 g	**0191.2**	8	36,35

Mobile hand-held laboratory gas burner powerjet

By WLD-TEC. For all flame protection sterilizers in microbiological or biotechnical applications.

- **Flame temperature approx. 1350 °C**
- Automatic ignition through Piezo effect
- The burner is ignited with the press of a button; the flame extinguishes when button is released
- Infinitely variable adjustment of flame size
- Operation with gas cartridge CG 1750, optimal for laboratories without a central gas supply
- Dimensions: W 150 x H 180 mm

Delivery incl. gas cartridge adapter for cartridge CG 1750. (Please order cartridge CG 1750 separately).

Art. No.	Pack Qty.	€
EL35.1	1	230,05

Gas cartridge CG 1750 for powerjet

By WLD-TEC. With screw valve. Special mix 70/30 butane/propane.

Danger H220-H280

Type	Contents	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
CG 1750	175 g	60	140	**EL36.2**	8	60,10

Mobile hand-held laboratory gas burner powerjet 2

By WLD-TEC.
For connection to the central gas supply (propane-, butane- and natural gas) and for operation with gas cartridge CV 360.

- Flame temperature: approx. 1350 °C with liquid gas and 1300 °C with natural gas
- Automatic ignition through Piezo effect
- The gas only flows when the button is pressed down
- The burner is ignited with the press of a button; the flame extinguishes when button is released
- With locking device to set the flame for mobile continuous burning-off
- Infinitely variable adjustment of flame size
- Dimensions: W 150 x H 210 mm

Delivery incl. gas cartridge adapter for CV 360 cartridge, nozzle for propane-/butane gas and natural gas, hose nozzle with coupling nut, nozzle-socket wrench, screw wrench and stainless steel holder. Please order CV 360 gas cartridge separately.

Art. No.	Pack Qty.	€
EP56.1	1	379,50

Valve gas cartridge CV 360 for powerjet 2

Danger H220-H280

Type	Contents	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
CV 360	52 g	38	140	**T927.1**	6	60,15

Gas cartridges

Valve cartridge

Danger H220-H280

Image	Type	Contents	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
①	CV 360	52 g	38	140	**T927.1**	6	60,15
③	CV 470 plus	450 g	109	135	**Y652.1**	2	26,35
③	CV 470 plus	450 g	109	135	**Y652.2**	12	138,70

Pierce-through cartridge

Danger H220-H280

Image	Type	Contents	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
②	C 206 GLS	190 g	90	90	**0191.2**	8	36,35

Screw valve cartridge

Danger H220-H280

Image	Type	Contents	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
④	CG 1750	175 g	60	140	**EL36.2**	8	60,10

Gas safety burner

Spirits burner

① **Made of stainless steel**

With wick regulating facility and sealing cover. Capacity approx. 85 ml.
Dimensions: ∅ 100 mm, H 65 mm. Weight 105 g.
Delivery incl. wick.

Art. No.	Pack Qty.	€
AL28.1	1	23,15

Replacement wick

For stainless steel alcohol burner (Art. No. AL28.1). L 10 x W 1.2 cm.

Art. No.	Pack Qty.	€
ANL6.1	25	13,15

② **Made of soda lime glass**

With ground sealing cover. Capacity approx. 100 ml.
Dimensions: ∅ 76 mm, H 102 mm. Weight 190 g.
Delivery incl. wick.

Art. No.	Pack Qty.	€
AL29.1	1	14,55

Replacement wick

For soda-lime glass spirits burner (Art. No. AL29.1). L 10 cm, ∅ 6 mm.

Art. No.	Pack Qty.	€
ANL7.1	50	32,80

Methylated spirit

Denatured ethyl alcohol. Suitable for use as a detergent, a fuel additive and an antifreeze agent.

Danger H225-H319

Art. No.	Pack Qty.	€
AL30.1	1 l bottle	8,30
AL30.2	10 l canister	56,45
AL30.3	20 l canister	103,10

Flame 100 gas safety burner

Ideal for sterilization of microbiological instruments and graduated heating of dental tools.

- Housing and burner tube made of stainless steel
- With button function: flame is lit by pressing and extinguished by releasing the function button
- With ignition and flame control, clogging monitor, and overheating protection
- Continuous cartridge operation: 65 min with CV 360, 230 min with C 206, 550 min with CV 470 plus, 210 min with CG 1750
- Suitable for stationary natural gas and propane/butane gas. If cartridges are required, please order gas adapter and cartridge separately
- Operation possible by a foot pedal or an external infrared motion sensor

Technical specifications:

Button	Start / stop with timer, 60 min
Foot pedal	Standard (flame while foot pedal pressed, foot pedal optional)
IR sensor	Standard (flame while hand in detection range of sensor; IR sensor optional)
Dimensions (W x H x D)	89 x 34 x 88 mm
Height with burner tube	94 mm
Weight	385 g

Delivery incl. variable power supply (100 to 240 V, 50/60 Hz), hose nozzle and injectors for natural gas, propane / butane gas. Without foot pedal or IR motion sensor (please order separately, if required).

Art. No.	Pack Qty.	€
NA00.1	1	261,25

Accessories for gas safety burner Flame 100

Standard foot pedal made of stainless steel. Cable length 3 m.

Art. No.	Pack Qty.	€
AN88.1	1	47,65

External IR motion sensor

Art. No.	Pack Qty.	€
NA01.1	1	97,85

Gas safety adapter for Flame 100

Gas safety adapter for cartridge CV 360

For cartridge	Art. No.	Pack Qty.	€
CV 360	**NA02.1**	1	97,85

Gas safety adapter for cartridges C 206, CV 470 plus and CG 1750
With integrated pressure reducer, stopcock and DVGW hose 0.5 m long.

For cartridge	Art. No.	Pack Qty.	€
C 206 GLS	**AN84.1**	1	123,95
CV 470 plus	**AN85.1**	1	125,80
CG 1750	**EX07.1**	1	77,20

Gas cartridges for Flame 100

Type	Contents	Art. No.	Pack Qty.	€
C 206 GLS	190 g	**0191.2**	8	36,35
CV 470 plus	450 g	**Y652.1**	2	26,35
CV 470 plus	450 g	**Y652.2**	12	138,70
CV 360	52 g	**T927.1**	6	60,15
CG 1750	175 g	**EL36.2**	8	60,10

Gas safety burner

Fuego SCS basic gas safety burners

Ideal for heating, burning off, annealing and for application in microbiological safety workbenches.

- 2 standard programs for pedal control
- Featuring an additional button function; flame is lit by pressing, and extinguished by releasing the function button
- Housing/control element made of stainless steel and glass, UV- and solvent resistant
- Burner head can be removed and taken apart
- Tilt adjustment right/left
- Cartridge continuous operation: 40 min with CV 360, 170 min with C 206, 370 min with CV 470 plus,150 min with CG 1750
- Safety devices include: gas safety cutoff, Ignition, flame and temperature monitoring, contamination and assembly monitoring, automatic switch-off and residiual heat indicator
- Ideal for natural gas or propane-/butane gas. Should you require cartridge operation, please order the gas adapter and cartridges separately

Technical specifications:

Operating mode:	
Pedal	Standard (Flame when pedal is pressed down) Start/Stop with monitoring timer (up to 60 min)
Dimensions (W x H x D)	103 x 49 x 130 mm
Weight	700 g

Delivery incl. pedal, switching power supply (100 to 240 V, 50/60 Hz), hose nozzle with union nut, loop holder and nozzles for natural gas, propane-/butane gas.

Art. No.	Pack Qty.	€
HA64.1	1	449,35

Accessories for Fuego SCS series

Gas-safety adapter for cartridge CV 360
With integrated pressure regulator.

For cartridge	Art. No.	Pack Qty.	€
CV 360	**HC48.1**	1	91,50

Gas-safety adapter for cartridge C 206, CV 470 plus and CG 1750
With integrated pressure regulator, stop cock and DVGW-hose, length 0.5 m.

For cartridge	Art. No.	Pack Qty.	€
C 206 GLS	**AN84.1**	1	123,95
CV 470 plus	**AN85.1**	1	125,80
CG 1750	**EX07.1**	1	77,20

Gas cartridges for gas safety burners Fuego SCS series

Type	Contents	Art. No.	Pack Qty.	€
C 206 GLS	190 g	**0191.2**	8	36,35
CV 470 plus	450 g	**Y652.1**	2	26,35
CV 470 plus	450 g	**Y652.2**	12	138,70
CV 360	52 g	**T927.1**	6	60,15
CG 1750	175 g	**EL36.2**	8	60,10

Safety laboratory gas burner Fuego SCS / SCS pro

General specifications of both models:

Ideal for heating, burning-off and annealing as well as for use in microbiological safety workbenches.

- Animated graphic display with buzzer: installation and operating instructions with symbols, user ID, gas consumption display and cooling time reminder
- Casing/control elements made of stainless steel and glass, UV and solvent proof
- 6 programs for DoubleClick IR sensor, key, pedal and temperature control for precise heating of media with burning time display
- Safety devices: see Fuego SCS basic
- Zero-pressure shutoff: for releasing residual gas pressure after use
- Angle adjustment and removable burner head
- Ideal for natural, propane or butane gas. If cartridges are required, please order gas adapter and cartridge separately

Fuego SCS pro

- Same as Fuego SCS, but **with independent supply**
- Additional tilt sensor with gas safety shutoff

Delivery incl. 2 x 1.2 V Mignon batteries.
Operating time: up to 9 h continuous duty. Charging time: approx. 3 h.

Technical specifications:

Foot pedal	Standard (flame when pedal is pressed) Start/stop with watchdog timer (1 sec to 2 h)
IR sensor, DoubleClick (connectible)	Start/stop with watchdog timer (1 sec to 2 h) Auto-Off with timer (1 sec to 2 h)
Detection range of IR sensor	5-100 mm, adjustable
Dimensions (W x D x H)	103 x 130 x 49 mm

Delivery incl. IR sensor, inoculation loop holder, power adapter, hose connector with union nut and nozzles for natural gas, propane/butane gas.
Without foot switch (if required, please order separately).

Type	Art. No.	Pack Qty.	€
Fuego SCS	**EX06.1**	1	538,60
Fuego SCS pro	**LE17.1**	1	614,90

Pedal button for Fuego SCS

Standard foot pedal made of stainless steel. Cable length 3 m.

Art. No.	Pack Qty.	€
AN88.1	1	47,65

Wireless pedal button set enables operation of pedal without bothersome cable. Range 2 to 5 m. Frequency 2.4 GHz. Radio-controlled pedal button made of stainless steel.
Delivery incl. RF-stick, Radio-controlled pedal and 2 batteries Mignon 1.5 V.

Art. No.	Pack Qty.	€
KA26.1	1	125,80

Gas safety burner

Gasprofi 1 SCS *micro* gas safety burner

Space-saving laboratory gas burners for microbiology, cell biology and biotechnology.

Features:

- 4 standard programs for IR-sensor and foot pedal
- Featuring an additional button function; flame is lit by pressing, and extinguished by releasing the function button
- Housing and control element are made of stainless steel
- Can be fueled either with natural gas or propane-/butane gas
- Inclination adjustment can be set on right/left
- Cartridge continuous operation: 45 min with CV 360, 170 min with C 206, 345 min with CV 470 plus
- Removable burner head

Technical specifications:

Foot pedal	Standard (flame when pedal is pressed down) Start/Stop with control timer, 60 min
IR-sensor	Start/Stop with control timer, 60 min Auto-Off with learning function: 1 sec to 60 min
Coverage area of IR-sensors	5-50 mm, adjustable
Dimensions (W x H x D)	85 x 49 x 86 mm
Weight	930 g

Delivery incl. stainless steel foot pedal, IR-sensor, nozzles for natural gas and propane-/butane gas, hose nozzle with union nut and power supply plug. Should you require cartridge operation, please order the gas adapter and cartridge separately.

Art. No.	Pack Qty.	€
AN82.1	1	481,60

Accessories for Gasprofi 1 SCS *micro* gas safety burners

Gas-safety adapter for cartridge CV 360
With integral pressure regulator.

For cartridge	Art. No.	Pack Qty.	€
CV 360	**HC48.1**	1	91,50

Gas-safety adapter for cartridge C 206, CV 470 plus and CG 1750
With integral pressure regulator, stop valve and DVGW-hose, length 0.5 m.

For cartridge	Art. No.	Pack Qty.	€
C 206 GLS	**AN84.1**	1	123,95
CV 470 plus	**AN85.1**	1	125,80
CG 1750	**EX07.1**	1	77,20

Gas cartridges for Gasprofi 1 SCS *micro*

Type	Contents	Art. No.	Pack Qty.	€
CV 360	52 g	**T927.1**	6	60,15
CV 470 plus	450 g	**Y652.1**	2	26,35
CV 470 plus	450 g	**Y652.2**	12	138,70
CG 1750	175 g	**EL36.2**	8	60,10
C 206 GLS	190 g	**0191.2**	8	36,35

Fully automatic inoculating loop carousels auto*loop*^{PRO}

Enables **safety laboratory burners, like the Fuego SCS-series**, to be moved to sterilizing stations. The microprocessor-controlled carousel identifies when loops are removed and returned, and it automatically rotates and controls sterilizing. For max. 4 inoculating loops.

Features:

- Fully graphic DOT-Matrix display shows extraction position of cool loops and remaining cooling time, residual heat display and flame sterilisation time
- Adjustable sterilizing time: 1 to 15 sec, adjustable cooling time: 1 to 45 sec
- Made completely of stainless steel and anodised aluminium. Display is protected by special glass
- Sterilisation monitor controls the safe and reliable sterilisation of the inoculating loops. Symbol indicates if inoculating loops have been sterilized properly. 3-step setting of sensor intensity (low to high annealing intensity possible, for thin or thick inoculating wire)
- Excess temperature protection and residual heat display
- Dimensions: W 135 x H 305 x D 180 mm
- Power supply via burner pedal bush

Delivery incl. 4 loop holders, 4 inoculating loops and base. Safety lab gas burner, Fuegeo SCS-series, is required to operate the carousel (please order separately if not available).

Art. No.	Pack Qty.	€
LH88.1	1	1139,50

Accessories for auto*loop*^{PRO}

Splash protection
For safe handling of pathogenic material, slotted.

Art. No.	Pack Qty.	€
HY19.1	1	54,10

Gas safety burner

Gas safety burner, phoenix II

For use in microbiological safety work benches.

- LED colour display with choice of languages
- Plain text menu navigation and display of burning time left
- UV-resistant, can be flamed (stainless steel housing, special glass display)
- Can be tilted left or right
- 4 operating modes:
  Button function: flame activation and deactivation by pressing function button. Flame extinguishes after a preset period
  IR sensor: contact-free activation of flame via IR sensor. Flame extinguishes after a preset period
  Foot-operated push-button: flame burns as long as the foot press-button remains pressed
  Foot switch: flame burns when the foot switch is pressed and extinguishes when pressed again or after a preset time
- Flame, ignition and contamination monitoring
- Ideal for natural, propane or butane gas. Can be operated with gas cartridges CV 360. C 206 and CV 470 plus (please order the required gas adapter separately) or from the central gas supply

Technical specifications:

Foot-operated push-button	Conventional
Foot switch	Start/stop or with automatic shut-off (1 s to 120 min)
IR sensor operation	Start/stop with automatic shut-off (1 s to 120 min)
Detection range IR sensor	Three ranges can be selected: directly on the sensor, 30 mm or 80 mm
Dimensions (W x D x H)	125 x 160 x 85 mm

Delivery incl. IR sensor, stainless steel foot-operated push-button/ foot switch and power unit (100 to 240 V, 50/60 Hz), hose fitting, natural gas and propane/butane nozzles.

Art. No.	Pack Qty.	€
TA01.1	1	536,45

Accessories for phoenix II gas safety burner

Gas adapter for cartridge CV 360

For cartridge	Art. No.	Pack Qty.	€
CV 360	**TA02.1**	1	107,00

Gas adapter for cartridges C 206 and CV 470 plus
With built-in pressure reducer and 0.5 m safety gas hose.

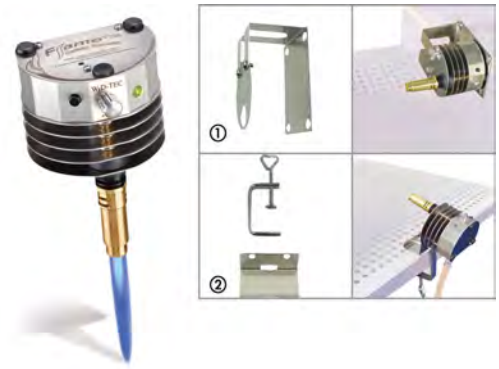
For cartridge	Art. No.	Pack Qty.	€
C 206 D Super	**TA03.1**	1	112,90
CV 470	**TA04.1**	1	112,90

Accessories:

Glass splash guard	**TA05.1**	1	49,35
Stainless steel draft shield	**TA06.1**	1	38,60

Gas cartridges for phoenix II

Type	Contents	Art. No.	Pack Qty.	€
CV 360	52 g	**T927.1**	6	60,15
CV 470 plus	450 g	**Y652.1**	2	26,35
C 206 GLS	190 g	**0191.2**	8	36,35



Flame 110 overhead gas burner

Heats dental tools, sterilises microbiological instruments or flame deburred/ flame polished plastic and rubber mouldings in an industrial environment.

- **Variable flame from any direction – even upside down (depending on positioning)**
- With button function: flame is started and stopped by pressing the function button
- With gas safety shutoff and overtemperature protection
- Can be operated using optional footswitch or external IR motion sensor. If required, please order separately.

Technical specifications:

Button	Start / stop with timer, 60 min
Foot pedal	Standard (flame while foot pedal is pressed; please order foot pedal separately)
IR sensor	Standard (flame while hand in detection range of sensor; please order IR sensor separately)
Dimensions (H x ∅)	135 x 88 mm
Weight	580 g

Delivery incl. fixing plate for overhead attachment and 100 to 240 V power supply, 50/60 Hz. Without gas adapter and cartridge (please order separately).

Art. No.	Pack Qty.	€
YP70.1	1	482,70

Accessories for Flame 110 overhead gas burner

Standard foot pedal made of stainless steel. Cable length 3 m.

Art. No.	Pack Qty.	€
AN88.1	1	47,65

External IR motion sensor Cable length 0.4 m.

Art. No.	Pack Qty.	€
NA01.1	1	97,85

① **Lateral bracket.** Made of stainless steel.

Art. No.	Pack Qty.	€
YP71.1	1	40,65

② **Horizontal bracket.** Made of stainless steel.

Art. No.	Pack Qty.	€
YP72.1	1	33,00

Gas safety adapter for Flame 110

For C 206 and CV 470 plus cartridges with pressure reducer, shutoff valve and DVGW tubing (length 0.5 m).

For cartridge	Art. No.	Pack Qty.	€
C206 D Super	**YP73.1**	1	150,00
CV 470 plus	**YP74.1**	1	151,40

Gas cartridges for Flame 110

Type	Contents	Art. No.	Pack Qty.	€
C 206 GLS	190 g	**0191.2**	8	36,35
CV 470 plus	450 g	**Y652.1**	2	26,35
CV 470 plus	450 g	**Y652.2**	12	138,70

Inoculation loop sterilisers

Infrared sterilising station SteriMax-series

By WLD-TEC. For sterilizing inoculating loops, needles and instruments. Ideal for laboratories and safety workbenches where gas and open fires cannot be used. Simply hold the inoculating loop in the quartz glass sterilizing tube to sterilize. The loop is sterile after approx. 5 to 7 seconds.

- Made of stainless steel
- Residual heat display warns against high temperatures
- Angle can be adjusted 7 times
- Integrated splash protection
- Trays for 3 instruments

Technical specifications:

Model	SteriMax 15	SteriMax 21
Quartz glass tube-∅ (mm)	15	21
Quartz glass tube length (mm)	118	161
Sterilizing temperature (°C)	900 to 950	
Average warm-up time (min)	7 to 9	
Output (W)	160	225
Dimensions W x H x D (mm)	175 x 129 x 139	175 x 129 x 169
Weight (g)	960	1060
Power supply	230 V, 50/60 Hz	

Type	Art. No.	Pack Qty.	€
SteriMax 15	**KL88.1**	1	508,50
SteriMax 21	**LH89.1**	1	563,30

A 121 °C

Inoculating loop holder

Made of stainless steel. Loops are fixed with union nut. For inoculating loops with wire-∅ 0.6-1.0 mm. Set sorted by colour: blue, yellow, red, black. Length: 245 mm. Autoclavable at 121 °C.

Type	Art. No.	Pack Qty.	€
Inoculating loop holder set	**KL97.1**	4	55,80

Accessories: Inoculating loops

Made of **special stainless steel**. Wire-∅ 0.6 mm.
Delivery without inoculating loop holder, please order separately.

Type	Art. No.	Pack Qty.	€
Loop ∅ inside 3 mm	**KL99.1**	10	28,85
Loop ∅ inside 5 mm	**KN00.1**	10	28,85

Made of **platinum/iridium**. Wire-∅ 0.6 mm.
Delivery without inoculating loop holder, please order separately.

Type	Art. No.	Pack Qty.	€
Loop ∅ inside 1 mm	**KN01.1**	1	105,35
Loop ∅ inside 3 mm	**KN02.1**	1	105,35
Loop ∅ inside 5 mm	**KN03.1**	1	105,35

Infrared inoculation loop steriliser SteriMax smart

By WLD-TEC. Specially focussed infrared light creates an IR hotspot and sterilises inoculation loops at a temperature from 750 to 1000 °C within 5-10 sec.

- Auto start by non-contact IR sensor technology
- Adjustable sterilisation and cool-down timer for two users by touch operation
- Ready for use straight from the box without heat-up phase
- Dynamic Thermocontrol sterilisation timer for the utilisation of residual heat to speed up subsequent sterilisation cycles
- Housing made of special toughened glass and stainless steel
- With removable quartz glass annealing tube

Technical specifications:

Quartz glass annealing tube	
Temperature	750 to 1000 °C
Outer/inner ∅, length	19/16 mm, 112 mm
General information:	
Timers	Sterilisation timer: 5-10 sec Inoculation loop cool-down timer: 0-25 sec
Safety devices	Residual heat indicator, overtemperature protection and autom. unit switch-off
Power requirement	approx. 600 W
Heat source	IR halogen spotlamp
Dimensions (W x H x D)	110 x 170 x 200 mm
Weight	1.8 kg
Power supply	220-240 V, 50/60 Hz

Delivery incl. quartz glass annealing tube, inoculation loop holder with ∅ 3 mm inoculation loop and support for 3 inoculation loop holders.

Art. No.	Pack Qty.	€
ACN7.1	1	812,70

Accessories:

Replacement quartz glass annealing tube	**ACN8.1**	1	34,20

Hot air sterilizers

For dry-sterilizing of instruments. Units are fitted with glass balls approx. 310 g, and can reach a temperature of 240 °C. Sterilization time: 10-30 seconds. Glass balls are included.

Small unit

Capacity 70 W. Warm-up period 15 min. Inner ∅ 50 mm. Outer dimensions: L140 x W 120 x H 140 mm.

Design	Art. No.	Pack Qty.	€
Without timer	**E996.1**	1	345,10
With timer (30 s)	**E997.1**	1	398,85

Large unit

Capacity 100 W. Warm-up period 30 min. Inner ∅ 70 mm. Outer dimensions: L 195 x W 145 x H 154 mm.

Design	Art. No.	Pack Qty.	€
Without timer	**E998.1**	1	370,90
With timer (30 s)	**E999.1**	1	456,90

Spare glass balls

Design	Art. No.	Pack Qty.	€
1 Pack qty. contains approx. 310 g	**H660.1**	1	32,20

Electrical Bunsen burner BA6101

Suitable for laboratories in which no gas and naked flames are allowed to be used. Ideal for heating test tubes, crucibles, small bottles and beakers. Max. temperatur 800 °C. The ceramic heating element is located in the upper part of the stainless steel cylinder. 80 % of max. temperature is reached in approx. 4 min and maximum temperature is reached in approx. 12 min.

Equipment: heat output regulator MC5 with special sleeve for attaching a stand rod (max. ∅ 12.5 mm) and indicator lamps for "Power On" and "Output regulator operation".

Technical specifications:

Max. temperature	800 °C
Inner dimensions of heating element (∅ x H)	60 x 45 mm
Outer dimensions of chimney (∅ x H)	120 x 180 mm
Dimensions of heat output regulator (W x D x H)	95 x 130 x 105 mm
Output	480 W
Power supply	220 V, 50/60 Hz

Delivery incl. variable heat output regulator MC5.

Art. No.	Pack Qty.	€
YL73.1	1	670,00

Infrared burner IRB 1

By Edmund Bühler. Compact. Is extremely effective because it uses modern IR-radiation burner technology. Excellent for speedy, no-contact heating operations in laboratories, schools and at work. On/off switch with control lamp. Housing remains cool. Long-life infrared radiator element. Additional power control switch available. Max. temperature of **heating surface 750 °C.** Power supply: 250 W, 230 V. Dimensions: L 100 x W 100 x H 100 mm, weight 850 g.

Art. No.	Pack Qty.	€
L487.1	1	320,35

Accessories:

Power control switch	**L488.1**	1	285,95
Support rod for IRB 1 & 2	**L489.1**	1	20,75

Infrared burner IRB 2

By Edmund Bühler. Infrared heater for high temperatures up to **900 °C**. **With integrated output control**, for variable adjustment between 0 and 100 %. Speedy and even heating **with no open flame.** Electronic parts are protected against overflowing liquids. Features also include additional side protection of burner. With ceramic heating element and excess temperature protection. Comes in safe-to-touch enclosure. **Embedded grips** enable safe transport. A cross recess allows flat vessels to be laid directly on heating element. Electrical supply: 800 W/230 V. Dimensions: W 150 x D 150 x H 170 mm, weight 2250 g.

Art. No.	Pack Qty.	€
P910.1	1	555,80

Accessories:

Support rod for IRB 1 & 2	**L489.1**	1	20,75

Gas lighter

Ignition sparks triggered by piezoelectronic device. Made from coloured plastic and stainless metal. Length 220 mm, weight 85 g.

Art. No.	Pack Qty.	€
1949.1	1	17,15

Lighter with flame

Handy igniter with loop for hanging. Size of flame can be regulated. Refillable. With safety device. Length of gas igniter 256 mm, length of stainless steel igniter 110 mm. Weight approx. 67 g.

Art. No.	Pack Qty.	€
P960.1	1	13,80

Universal refill gas

With 250 ml liquid butane and 5 different injectors.

Danger H220-H280

Art. No.	Pack Qty.	€
1652.1	1	3,50

- ▶ Thermometers can be found from page 810
- ▶ Vacuum pump for moist gases see page 372

Tripod stands

Zinc coated from annealed cast iron. Unscrewable legs.

Ring-∅ inside (mm)	Height (mm)	Art. No.	Pack Qty.	€
100	180	**KC15.1**	1	14,85
120	210	**KC16.1**	1	16,10
140	210	**KC17.1**	1	18,55
150	240	**KC18.1**	1	20,10

Tripod stands

Can be taken apart. Made of Remanit 4301 high-grade steel. Height 210 mm.

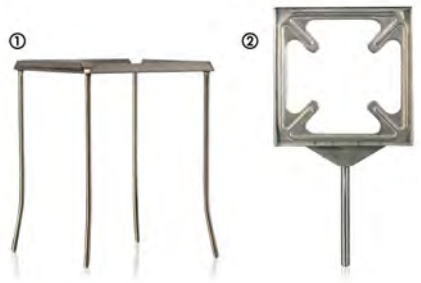
Ring-∅ inside (mm)	Art. No.	Pack Qty.	€
100	**9167.1**	1	24,15
120	**9170.1**	1	24,65
140	**9171.1**	1	26,85
160	**9172.1**	1	29,00
180	**9175.1**	1	32,05

Extension legs

Fit all tripods. With adjustment screws. Can be extended to a total length of 370 mm.

Art. No.	Pack Qty.	€
9179.1	3	30,55

Accessories gas burners / Immersion heaters



DURAN WHEATON KIMBLE

① Lab quadruped stands

For glass ceramic protective tiles. Made of heat-resistant chrome-nickel steel, with four fet and sturdy design for excellent stability.
Please order the matching glass ceramic protective tiles separately.

Size (mm)	Height (mm)	Art. No.	Pack Qty.	€
135 x 135	210	**HH18.1**	1	27,70
155 x 155	210	**HH19.1**	1	31,10
175 x 175	220	**HH20.1**	1	36,40

② Tile holders

For glass ceramic protective tiles. Made of chrome nickel steel.
Please order matching glass ceramic protective tiles separately.

Size (mm)	Art. No.	Pack Qty.	€
135 x 135	**HH21.1**	1	24,65
155 x 155	**HH22.1**	1	29,00
175 x 175	**HH23.1**	1	33,95

DURAN WHEATON KIMBLE

Glass ceramic protective tiles

Temperature resistant from -200 to +700 °C. 4 mm thick.

Size (mm)	Art. No.	Pack Qty.	€
135 x 135	**A385.1**	1	17,50
155 x 155	**0619.1**	1	18,80
175 x 175	**A386.1**	1	21,90

Wire supports

Asbestos-free. Made of zinc plated wire mesh, with nonhazardous special covering (ceramic fibers). Excellent heat conduction. Long life.

Size (mm)	Art. No.	Pack Qty.	€
120 x 120	**1861.1**	1	4,55
160 x 160	**1862.1**	1	5,35

Rotilabo®-triangles for melting crucibles

Made of galvanised steel with smooth clay pipes.

Clay pipe length (mm)	Max. ring ∅ of tripod (mm)	Art. No.	Pack Qty.	€
40	120	**KN11.1**	5	12,15
50	130	**KN12.1**	5	12,85
60	140	**KN13.1**	5	13,15
80	160	**KN15.1**	5	13,95

Safety lab immersion coil heaters

For 220 V ~.With automatic switch-off. Lab immersion coil heaters do not become defective when handled improperly (e.g. overheating due to lack of water, water has boiled away or operation without any water).
The control unit can be reset. Switch-off at approx. 120 °C.
Both models are suitable for water only.

Technical specifications:

Model	Small model	Large model
Power	1000 W	2000 W
Immersion depth	min. 70 mm max. 200 mm	min. 120 mm max. 280 mm
Dimensions	L 300 mm x ∅ 46 mm	L 380 mm x ∅ 53 mm
Connecting cord	750 mm, with right-angle plug	900 mm, with right-angle plug
Weight, without cord	150 g	280 g
Heating element material	Nickel-plated brass	
Probe material	Nickel-plated copper	

Type	Power (W)	Art. No.	Pack Qty.	€
Small model	1000	**0116.1**	1	51,50
Large model	2000	**0117.1**	1	53,65

Microwave ovens

Simple-immersion coil heater

With melting point protection. Power 1000 W. Immersion depth 160 mm. Cable length 750 mm.

Art. No.	Pack Qty.	€
1002.1	1	17,15

Microwave oven with grill

By Severin.

- Housing made of stainless steel, brushed
- Interior volume approx. 23 l, painted
- Microwave power approx. 900 W, 9 power stages possible incl. thawing and grilling stages
- Separate grilling stage approx. 1000 W, with additional rack
- Microwave and grill can be combined
- Removable revolving plate (∅ 270 mm)
- 30-min-timer with signal tone
- Inner dimensions: L 335 x D 320 x H 190 mm
  Outer dimensions: L 483 x D 400 x H 281 mm
- Power supply 230 V, 50 Hz

Art. No.	Pack Qty.	€
AT41.1	1	170,95

Microwave oven

By Severin.

- High refractory housing
- Inside volume approx. 20 l
- Microwave power approx. 700 W
- 5 adjustable power stages
- 350-min-timer with signal tone
- Removable revolving plate (∅ approx. 254 mm)
- Inner dimensions: W 305 x D 290 x H 165 mm
  Outer dimensions: W 435 x D 345 x H 254 mm
- Power supply 230 V, 50 Hz

Art. No.	Pack Qty.	€
CT41.1	1	106,35

Microwave oven with grill- and hot air functions

By Severin.

- Housing with heat resistant coating
- Interior volume approx. 30 l
- Microwave power approx. 900 W, adjustable in 5 power stages
- With separate grill approx. 1100 W and hot air function approx. 2500 W
- Microwave, grill and hot air can be switched on separately or combined
- Removable revolving plate (∅ 315 mm)
- Digital multifunction display
- Quick-button enables unit to start immediately at full power
- 99-min-timer with signal tone
- Inner dimensions: L 335 x D 340 x H 200 mm
  Outer dimensions: L 520 x D 510 x H 335 mm
- Power supply 230 V, 50 Hz

Art. No.	Pack Qty.	€
AT40.1	1	278,45

Microwave oven

By Bosch.
- Interior volume approx. 17 l
- Microwave output 800 W
- 5 adjustable output stages (800/600/360/180/90 W)
- Digital display for time of day or count-down
- 30-min. timer with acoustic signal
- Removable glass rotary plate (∅ approx. 245 mm)
- Memory function saves 1 parameter combination of time and microwave output
- Inner dimensions: W 290 x D 300 x H 184 mm
  outer dimensions: W 462 x D 320 x H 280 mm
- Electrical supply 220-230 V, 50 Hz

Art. No.	Pack Qty.	€
KN83.1	1	212,85

Large-capacity microwave with grill and hot air functions

By Sharp.
- Stainless steel housing
- Interior volume approx. 40 l, stainless steel
- **Optimal inside volume for heating e.g. 1 litre laboratory threaded bottles etc.**
- Microwave power approx. 1050 W, 5-times adjustable
- Quartz crystal grill approx. 1300 W
- Hot air function approx. 1450 W (10 steps: 40 to 250 °C)
- Microwave grill and hot air can be switched on together or separately
- Ceramic revolving plate (∅ 362 mm)
- Timer max. 90 min
- Inner dimensions: W 375 x D 395 x H 272 mm
  outer dimensions: W 550 x D 535 x H 368 mm
- Weight approx. 21 kg
- Power supply 230 V, 50 Hz

Art. No.	Pack Qty.	€
HX94.1	1	568,70

Hot air dryer

By Braun. With press-on concentration nozzle. Two heat/fan stages.
Power 1200 watt. Removable filter for easy cleaning.
Hanging loop. 2 m power cable. Power supply 230 V, 50 Hz.

Art. No.	Pack Qty.	€
P096.1	1	31,15

Hot air blower HL 1920 E

By Steinel. With temperature and air flow control.
9-step temperature adjustment using adjustment wheel.
Blower control via 3-step operating switch.

Technical data:

Power	2000 W		
Operating stage Air flow rate Temperature	Stage 1 150 l/min 50 °C	Stage 2 150 to 300 l/min 50 to 600 °C	Stage 3 300 to 500 l/min 50 to 600 °C
Temperature adjustment	in 9 steps		
Dimensions (W x D x H)	253 x 84.5 x 200 mm		
Weight	850 g		
Power supply	220-230 V, 50/60 Hz		

Art. No.	Pack Qty.	€
AKN4.1	1	78,45

Accessories for hot air blower HL 1920 E

By Steinel.

Wide stream nozzle
For attaching to blower, ensures an even distribution of air. Width 50 mm.

Art. No.	Pack Qty.	€
1946.1	1	12,15

Reducing nozzle
For attaching to blower, for directed heat. ∅ 14 mm.

Art. No.	Pack Qty.	€
1947.1	1	12,15

Hot air tools

Hot air dryer

By Braun. For warm and cold air. With three heating and two cooling stages.
Power 2200 W. Removable filter for easy cleaning.
Delivery incl. loop for hanging and attachable nozzle. 2 m power cable.
Power supply 230 V, 50/60 Hz.

Art. No.	Pack Qty.	€
Y399.1	1	73,05

HG 2320 E LCD hot air blower

Electronically controlled with continuously variable air flow rate and temperature control. Visual display of temperature and speed (resolution in 10-°C increments) via LCD. Residual heat display.
4 stored programs for temperature and air flow. With softgrip handle.

Technical specifications:

Output	2300 W
Temperature	Setting 1: 80 °C Setting 2: 80 to 650 °C
Air flow	Setting 1: 150 l/min Setting 2: 150 to 500 l/min
Dimensions (L x W x H)	253 x 86.5 x 200 mm
Weight	960 g
Voltage	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
ALN9.1	1	150,00

Accessories for HG 2320 E hot air blower

Wide jet nozzle,
simply push-on, for extensive air distribution. Width 50 mm.

Art. No.	Pack Qty.	€
1946.1	1	12,15

Reducing nozzle,
simply push-on, for concentrated heat. ∅ 14 mm.

Art. No.	Pack Qty.	€
1947.1	1	12,15

Hot air gun HG 2220 E

By Steinel. Temperature adjustment from 80 to 630 °C in 9 steps by adjusting wheel. Air flow control in 2 stages from 150 to 500 l/min.

Technical specifications:

Power (W)	2200	
Operating stage Air flow rate (l/min) Temperature (°C)	Stage 1 150 to 300 80 to 630	Stage 2 300 to 500 80 to 630
Temperature adjustment	in 9 steps	
Dimensions L x W x H (mm)	337 x 75 x 89	
Weight (g)	610	
Power supply	220-230 V, 50/60 Hz	

Art. No.	Pack Qty.	€
CEP4.1	1	150,00

Accessories for HG 2220 E hot air gun

Wide spray nozzle
Attachable, wide air distribution. Width 50 mm.

Art. No.	Pack Qty.	€
1946.1	1	12,15

Reduction nozzle
Attachable, for directional heat flow. ∅ 14 mm.

Art. No.	Pack Qty.	€
1947.1	1	12,15

Fan heater AEG HS 203 T

By AEG. With automatic frost protection: the heater switches on automatically when room temperature is below 5 up to 8 °C.
Variable temperature setting up to 45 ° C.

- Connection capacity: 2000 W
- Two heat stages (1000/2000 W)
- Cold stage
- Dimensions approx. W 245 x H 260 x D 135 mm
- Power supply 230 V, 50/60 Hz.

Art. No.	Pack Qty.	€
X434.1	1	42,95

Coffee machine with timer

By Severin. Power 800 watts. For up to 8 cups. 1-l-thermos flask with screw cap. Level indicator on glass jug for fresh water. With cable storage bay. On/off switch with control lamp. Swivel filter 1 x 4 with drip stopper.

Colour	Art. No.	Pack Qty.	€
white	**AT37.1**	1	56,55
black	**KN84.1**	1	53,70

Kettles

By Severin. Powerful, removeable kettle. Heating capacity approx. 2000 W. **Max. capacity 1.7 l**. Cordless with separate base. **Automatic steam stop.** On/off switch with indicator light. Transparent water level display on both sides. Spout with sieve. Overheating (heating element switches off automatically when there is no water in kettle or when the heating element becomes calcified) and excess temperature safety system. Electrical supply 220 V, 50 Hz.

Colour	Art. No.	Pack Qty.	€
white	**Y527.1**	1	30,35
black	**KT58.1**	1	28,95

SENSEO®-Coffee-Pads machine

By Philips. Suitable for coffee pads. 1 or 2 cups possible. Heating 1450 W. Height-adjustable coffee spout for cup height up to 110 mm. Removable water container, **volume 0.9 l (8 cups)**. Automatic switch-off. Control light indicates inadequate water level, heating and brewing standby. Chalk indicator. Cord length 1 m. Dimensions: L 378 x W 232 x H 388 mm. Mains supply 220-240 V, 50-60 Hz.
Delivery incl. 2 pad holders (for 1-2 cups).

Art. No.	Pack Qty.	€
KP12.1	1	155,90

Kettle

By Bosch. Stainless steel body. 1.7 l capacity.
Heating capacity: approx. 1800 watts. Safety lid lock. 360° centre connecter for easy lifting and placing. Indicator light. Concealed heating element. Boil-dry protection. Automatic steam stop. The kettle switches itself off automatically after the kettle is removed from the base.
On/Off switch. Cord retractor. Weight 1.25 kg.
Mains connection 220-240 V, 50-60 Hz.

Art. No.	Pack Qty.	€
PK59.1	1	52,15

Kettle

By Severin. Casing made of high grade stainless steel, capacity approx. 1.5 l. Power capacity approx. 1800 W. Cordless with separate base. **Automatic steam stop.** On/off switch. Continuously adjustable thermostat with indicator lamp. The water heater cuts out after the set temperature or the boiling point is reached. **360°-central-cordless-system (can be attached from any direction)**. Overheating (heating element switches off automatically when there is no water in kettle or when the heating element becomes calcified) and excess temperature safety system. Covered heating element. Cord storage.
Colour stainless steel, brushed/black. Power supply 220 V, 50 Hz.

Art. No.	Pack Qty.	€
Y533.1	1	45,10

Kettle with temperature adjustment

Made of stainless steel and glass. Volume 1.7 l. Adjustable temperature from 40 to 100 °C in 5 °C steps. Automatic switch-off after the set temperature has been reached. Separate keep-hot function for approx. 30 min (selectable only in the temperature range from 40 to 95 °C). With LCD display. Detachable lid for easier cleaning, large opening. Concealed heating element. Overheating protection. Power 2200 W. Dimensions: W 240 x D 150 x H 260 mm.
Power supply 220-240 V, 50/60 Hz.

Art. No.	Pack Qty.	€
HHY9.1	1	84,20

Thermos flasks Columbus 2000

By Leifheit. With practical snap. High-quality, double-walled vacuum flask. With aroma press button for single-handed pouring.
Contents 1 litre.

Colour	Art. No.	Pack Qty.	€
① black	**X232.1**	1	23,55
② blue	**X233.1**	1	23,55
③ white	**X231.1**	1	23,55

Rotilabo®-thermal jug

With insulating body made of stainless steel.
Pump mechanism for easy pouring. Carry handle. Capacity: 3 l.
Dimensions: H 360 x ∅ 150 mm. Weight: approx. 1.6 kg.

Art. No.	Pack Qty.	€
YE85.1	1	53,65

Immersion thermostats SC 100, SC 150 and AC 200

By Thermo.

Standard thermostats SC 100 and SC 150

- Simultaneous display of set and actual temperature
- Display resolution 0.1 or 0.01 °C can be selected
- Pumps have a 2 step turbulence reduction system
- USB interface (except SC 100)
- Head can be turned in 90°-increments in bath
- Immersion depth 90 to 145 mm
- Over-temperature warning
- **With screw clamp for bath tub max. 26 mm**

Advanced Thermostat AC 200

like SC 100 and SC 150, but also comes with:

- Pumps have a 3 step turbulence reduction system
- Programmable application temperature alarm with user-selected signal tone (on/off), safe temperature condition or switch-off function
- Interval programming, with the option of being able to alter the interval during operation
- Timer with real-time clock for critical applications
- **With bath bridge (adjustable from 300 to 800 mm) for attaching to bath tubs**

Technical specifications:

Model	SC 100	① SC 150	② AC 200
Working temperature (°C)	+25 to +100	+25 to +150	+25 to +200
Temperature constancy (K)	±0.02		±0.01
Heating capacity (W)	2000		
Max. pump pressure (mbar)	300		475
Max. flow (l/min)	17		20
Max. pump pressure (mbar)	-		330
Dimensions W x H x D (mm)	165 x 333 x 195		165 x 368 x 195
Safety class	I (NFL)	III (FL)	

I (NFL) = non-flammable liquids
III (FL) = flammable liquids

Type	Art. No.	Pack Qty.	€
SC 100	**LP51.1** *	1	987,00
SC 150	**LP52.1** *	1	1361,00
AC 200	**LP53.1** *	1	1989,00

* Longer delivery times possible. Please check with our Sales Department.

Accessories for immersion thermostats SC 100, SC 150 and AC 200

By Thermo.

Tap water cooling spiral for SC 100, SC 150

Art. No.	Pack Qty.	€
PE43.1 *	1	160,00

Tap water cooling spiral for AC 200

Art. No.	Pack Qty.	€
LP55.1 *	1	160,00

* Longer delivery times possible. Please check with our Sales Department.

Circulating thermostats with integral bath

By Thermo.

- Has a pump circulating set and is ideal for tempering external and closed applications
- Simultaneous display of set and actual temperature
- Display resolution 0.1 or 0.01 °C can be selected
- Bath tubs made of polyphenylene oxide (PPO)
- Thermostat heads can be turned invariably in 90° steps in bath (except SC 100-S5P)
- Pumps with 2 step turbulence reduction system
- Tube olives for tubes with inner-∅ 8 and 12 mm
- Integrated handles
- If bath lid or cooling spiral are required, please order separately

Technical specifications:

Model	① SC 100-S5P	SC 100-S14P	SC 100-S21P
Working temperature (°C)	Working temperature of 13 °C **over** room temperature to +100 °C		
Temperature constancy (K)	±0.02		
Heating capacity (W)	2000		
Max. pump pressure (mbar)	300		
Max. flow (l/min)	17		
Bath volume (l)	3 to 5	8 to 14	13 to 21
Bath opening (mm) Depth (mm)	130 x 135 160	300 x 190 160	300 x 375 160
Safety class	I (NFL)		

I (NFL) = non-flammable liquids

Type	Art. No.	Pack Qty.	€
SC 100-S5P	**LP57.1** *	1	1219,00
SC 100-S14P	**LP58.1** *	1	1332,00
SC 100-S21P	**LP59.1** *	1	1345,00

* Please check with our Sales Department for delivery period of these products.

Accessories for SC 100-S5P, SC 100-S14P and SC 100-S21P

By Thermo.

Tap water cooling spiral for SC 100-S5P

Art. No.	Pack Qty.	€
PE44.1 *	1	343,00

Tap water cooling spiral for SC 100-S14P and SC 100-S21P

Art. No.	Pack Qty.	€
LP55.1 *	1	160,00

Accessories:

Bath lid for SC 100-S5P	**LP61.1** *	1	77,30
Bath lid for SC 100-S14P	**LP62.1** *	1	124,00
Bath lid for SC 100-S21P	**LP63.1** *	1	156,00

* Longer delivery times possible. Please check with our Sales Department.

Immersion thermostats, CORIO™ C-series

By Julabo. For internal standard applications.
Flexible use, e.g. for changing bath tanks.

Technical specifications:

Model	CORIO™ C	CORIO™ CD
Working temperature (°C)	+20 to +100	+20 to +150
Temperature constancy (K)	±0.03	
Display resolution (°C)	0.1	
Setting resolution (°C)	0.1	
Heating output (W)	2000	
Max. pump pressure (mbar)	100	350
Max. flow (l/min)	6	15
Dimensions W x D x H (mm)	132 x 160 x 362	
Safety class	I (NFL)	III (FL)

I (NFL) = non-flammable liquids
III (FL) = flammable liquids

Delivery incl. bath clamp for wall thickness up to 30 mm.

Type	Art. No.	Pack Qty.	€
CORIO™ C	**CXX7.1** *	1	676,00
CORIO™ CD	**CXX8.1** *	1	786,00

* Longer delivery times possible. Please check with our Sales Department.

Water cooling coil

By Julabo.
For **CORIO™ C series thermostats.**
Suitable for work at near ambient temperature.
Attachable cooling coil for counter-cooling with cooling water.

Art. No.	Pack Qty.	€
CXX9.1	1	99,00

Stainless steel bath tanks

By Julabo.
For **CORIO™ C series immersion thermostats.**
Suitable for temperatures of up to 150 °C.

Volulme (l)	Outer dimensions L x W x D (mm)	Inner dimensions L x W x D (mm)	Art. No.	Pack Qty.	€
5	350 x 190 x 180	300 x 150 x 150	**CXY0.1**	1	232,00
13	380 x 330 x 180	330 x 300 x 150	**CXY1.1**	1	400,00
17	380 x 330 x 230	330 x 300 x 200	**CXY2.1**	1	470,00
19	560 x 330 x 180	500 x 300 x 150	**CXY3.1**	1	460,00
27	560 x 330 x 230	500 x 300 x 200	**CXY4.1**	1	590,00

Immersion thermostat, model MA

By Julabo.
- MULTI-DISPLAY (LED) for actual value and up to 3 desired values, excess and insufficient temperature warning functions, excess temperature protection and for pumping capacity stage
- PID-Temperature control with disturbance offset
- **Pumping capacity electronically adjustable in steps**
- Membrane keypad for setting desired values, warning and safety values and various other menu functions
- Early-warning system warns of sinking liquid levels before safety cut-off engages
- Adjustable excess temperature protection system has LED indicator
- With RS 232-interface
- Excess temperature and sub-level protection for flammable tempering liquids (FL)

Technical specifications:

Working temperature	+20 to +200 °C
Temperature constancy	±0.01 K
Heater capacity	2 kW
Max. flow	11 to 16 l/min
Max. pump pressure	0.45 bar
Dimensions (W x D x H)	130 x 150 x 330 mm

Delivery incl. clamps for max 26 mm thick bath tubs.

Art. No.	Pack Qty.	€
Y891.1 *	1	1417,00

* Longer delivery times possible. Please check with our Sales Department.

Attachable cooling spiral

By Julabo.
For immersion thermostat MA.
Suitable for working near the ambient temperature.

Art. No.	Pack Qty.	€
L328.1	1	102,00

Immersion thermostats Alpha, Silver and Gold

By Lauda.

① **Alpha**
- Three-key operation
- LED-display with 0.1 °C display resolution
- Display of set and actual temperature
- Heating and malfunction indicator lamps
- With timer function (max. runtime 99 h, 59 min)
- With screw clamp for saple tubs up 25 mm thick

② **Silver**
- LCD-display with 0.01 °C display resolution
- Operated with cursor keys and softkeys
- Simultaneous display of set and actual temperature
- Pump with six adjustable output levels
- With screw clamp for sample tubs up 25 mm thick
- USB-port

③ **Gold**
- Colour TFT-display with 0.01 °C display resolution
- Operated with cursor keys and softkeys
- Simultaneous display of set and actual temperature
- Graphical display of temperature characteristics
- Interval programming
- Timer
- Programmer with five programs and 150 segments
- Pump with six adjustable output levels
- With screw clamp for sample tubs up to 25 mm thick
- USB-port

Technical specifications:

Model	① Alpha	② Silver	③ Gold
Working temperature (°C)	+25 to +100	+20 to +200	
Temperature constancy (K)	±0.05	±0.01	
Heating capacity (kW)	1.5	2.0	2.6
Max. pump pressure	0.2	0.55	
Max. flow (l/min)	15	22	
Min. bath depth (mm)	150		
Safety class	I (NFL)	III (FL)	

III (FL) = flammable liquids;
I (NFL) = non-flammable liquids

Type	Art. No.	Pack Qty.	€
Alpha	**KP35.1** *	1	826,00
Silver	**LX94.1** *	1	1400,00
Gold	**LX95.1** *	1	1810,00

* Longer delivery times possible. Please check with our Sales Department.

Accessories for immersion thermostats Alpha, Silver and Gold

By Lauda.

Attachable cooling spiral for immersion thermostats Alpha

Art. No.	Pack Qty.	€
KP44.1 *	1	60,90

Attachable cooling spiral for immersion thermostats Silver and Gold

Art. No.	Pack Qty.	€
LX96.1 *	1	134,00

* Longer delivery times possible. Please check with our Sales Department.

Sample tubs

By Lauda.
Suitable for immersion thermostat models Alpha, Silver and Gold.

Stainless steel bath tubs
Up to 200 °C. With drain outlet.

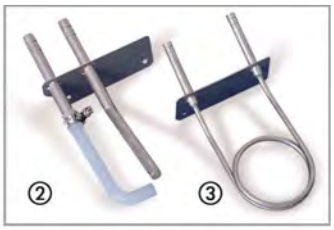
Volume (l)	Inner length (mm)	Inner width (mm)	Inner height (mm)	Art. No.	Pack Qty.	€
3,5	240	135	150	**LX97.1** *	1	305,00
11	329	300	150	**LX98.1** *	1	434,00
16	329	300	200	**LX99.1** *	1	513,00
19	505	300	150	**LY00.1** *	1	553,00
25	505	300	200	**LY01.1** *	1	600,00
40	750	300	200	**LY02.1** *	1	1340,00

* Longer delivery times possible. Please check with our Sales Department.

Polycarbonate tubs
Up to 100 °C. Transparent.

Volume (l)	Inner length (mm)	Inner width (mm)	Inner height (mm)	Art. No.	Pack Qty.	€
6	420	130	160	**LY03.1** *	1	257,00
12	315	300	160	**LY04.1** *	1	383,00
15	130	416	310	**LY05.1** *	1	383,00
20	490	300	160	**LY06.1** *	1	510,00

* Longer delivery times possible. Please check with our Sales Department.



Bath thermostats CORIO™ C-BT-series

By Julabo.
Applications: sample temperature control, sample preparation for serology and clinical chemistry, analysis and materials testing.

Technical specifications:

Model	① C-BT5	② C-BT19	③ C-BT27
Working temperature (°C)	+20 to +100		
Temperature constancy (K)	±0.03		
Display resolution (°C)	0.1		
Setting resolution (°C)	0.1		
Heating output (W)	2000		
Max. pump pressure (mbar)	100		
Max. flow (l/min)	6		
Bath opening (mm) Bath depth (mm)	150 x 150 150	300 x 350 150	300 x 350 200
Bath volume (l)	3 to 5	14 to 19	20 to 27
Dimensions W x D x H (mm)	230 x 380 x 380	380 x 580 x 380	380 x 580 x 430
Safety class	I (NFL)		

I (NFL) = non-flammable liquids

Delivery incl. transparent bath tank made of Makrolon.

Type	Art. No.	Pack Qty.	€
CORIO™ C-BT5	**CXY5.1** *	1	843,00
CORIO™ C-BT19	**CXY6.1** *	1	945,00
CORIO™ C-BT27	**CXY7.1** *	1	985,00

* Longer delivery times possible. Please check with our Sales Department.

Water cooling coil

By Julabo.
For CORIO™ C-series thermostats. Suitable for work at near ambient temperature. Attachable cooling coil for counter-cooling with cooling water.

Art. No.	Pack Qty.	€
CXX9.1	1	99,00

Immersion thermostats with baths Alpha A-series

By Lauda. For tempering liquids to max +85 °C in open vessels.

- 3-key operation
- LED-Display, display resolution 0.1 °C
- Actual or set value
- With timer function (max. runtime 99 h, 59 min)
- Control indicator lamp for heating and breakdown
- Pump capacity can be reduced to 5 l/min
- Thermostats can be attached via clamp and are therefore suitable for all standard baths (bath depth min. 150 mm)
- Can be upgraded with pump circulating set and ideal for tempering external, closed applications (please order separately)

Technical specifications:

Model	Alpha A 6	① Alpha A 12	Alpha A 24
Working temperature (°C)	+25 to +100		
Temperature constancy (K)	±0.05		
Heating capacity (W)	1500		
Max. pump pressure (mbar)	200		
Max. flow (l/min)	15		
Bath volume (l)	2.5 to 5.5	8 to 12	18 to 25
Bath opening (mm) Bath depth (mm)	145 x 161 150	235 x 161 200	295 x 374 200
Safety class	I (NFL)		

I (NFL) = non-flammable liquids

Delivery incl. bath made of stainless steel.

Type	Art. No.	Pack Qty.	€
Alpha A 6	**KP36.1** *	1	1225,00
Alpha A 12	**KP37.1** *	1	1300,00
Alpha A 24	**KP38.1** *	1	1520,00

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

② Pump circulating set	**KP39.1**	1	60,90
③ Water pipe cooler coil for Alpha-series	**KP44.1** *	1	60,90

* Longer delivery times possible. Please check with our Sales Department.

▶ Rotitherm®-heating and cooling mediums see page 1180

Circulating bath thermostats

Circulating thermostats E5-series

With possible temperature control in stainless steel bath.
Temperature control of small, external,
closed vessels possible via pressure pump.

E5-series

- For max. working temperatures +100 °C
- Programmable timer function (up to 99.99 min)
- LCD display, display resolution 0.1 °C
- Actual or set value reading, (set value reading via keystroke, actual value reading is permanently visible)
- Adjustable key locking mechanism
- Limit value signal optical and/or acoustic
- Adjustable set value limit and automatic alarm
- Excess temperature and sub-level protection for non flammable temperature control liquids (NFL)

E5s-series

Like model E5, however for max working temperatures +150 °C.

Technical specifications:

Model	E5-B4	E5-B6	E5-B12	E5-B16
Working temperature (°C)	+25 to +100			
Constancy of temperature (K)	±0.1			
Heating capacity (W)	1000			
Max. pump pressure (mbar)	120			
Max. flow (l/min)	5			
Bath volume (l)	4	6	12	16
Bath opening W x D (mm)	115 x 115	230 x 75	230 x 270	
Bath depth (mm)	150			200

Model	E5s-B4	E5s-B6	E5s-B12	E5s-B16	E5s-B22
Working temperature (°C)	+25 to +150				
Constancy of temperature (K)	±0.1				
Heating capacity (W)	1800				
Max. pump pressure (mbar)	120				
Max. flow (l/min)	5				
Bath volume (l)	4	6	12	16	22
Bath opening W x D (mm)	115 x 115	230 x 75	230 x 270		
Bath depth (mm)	150			200	250

Delivery incl. bath tub lid, pump outlet and cooling coil.

Type	Bath volume	Max. temp. (°C)	Art. No.	Pack Qty.	€
E5-B4	4	+100	**KA69.1** *	1	1139,50
E5-B6	6	+100	**KA70.1** *	1	1214,75
E5-B12	12	+100	**KA71.1** *	1	1263,15
E5-B16	16	+100	**KA72.1** *	1	1300,75
E5s-B4	4	+150	**KA73.1** *	1	1187,90
E5s-B6	6	+150	**KA74.1** *	1	1263,15
E5s-B12	12	+150	**KA75.1** *	1	1300,75
E5s-B16	16	+150	**KA76.1** *	1	1333,00
E5s-B22	22	+150	**KA77.1** *	1	1365,25

* Longer delivery times possible. Please check with our Sales Department.

Bath/circulation thermostats, CORIO™ CD-B-series

By Julabo. For internal standard applications.
Flexible use, e.g. for changing bath tanks.

- External pump connections each with 2 connectors for hoses with 8 and 12 mm inner ∅
- Simple changeover between internal and external circulation
- USB port
- Integrated drain screw (except in model CD-B5)

Technical specifications:

Model	CD-B5	① CD-B13	② CD-B27
Working temperature (°C)	+20 to +150		
Temperature constancy (K)	±0.03		
Display resolution (°C)	0.1		
Setting resolution (°C)	0.1		
Heating output (W)	2000		
Max. flow (l/min)	15		
Max. pump pressure (mbar)	350		
Bath opening (mm) Bath depth (mm)	150 x 150 150	300 x 180 150	300 x 350 200
Bath volume (l)	3 to 5	9 to 13	17 to 27
Dimensions W x D x H (mm)	230 x 380 x 410	380 x 400 x 420	380 x 580 x 470
Safety class	III (FL)		

III (FL) = flammable liquids

Delivery incl. stainless steel bath tank.

Type	Art. No.	Pack Qty.	€
CORIO™ CD-B5	**CXY8.1** *	1	1219,00
CORIO™ CD-B13	**CXY9.1** *	1	1410,00
CORIO™ CD-B27	**CYA0.1** *	1	1600,00

* Longer delivery times possible. Please check with our Sales Department.

Water cooling coil

By Julabo. For CORIO™ CD-series thermostats.
Suitable for work at near ambient temperature.
Integrable cooling coil for counter-cooling with cooling water.

Art. No.	Pack Qty.	€
CYA1.1	1	98,00

Accessories:

Bath lid for CORIO™ CD-B5	**CYA2.1**	1	98,00
Bath lid for CORIO™ CD-B13	**CYA3.1**	1	136,00
Bath lid for CORIO™ CD-B27	**CYA4.1**	1	154,00

Circulating bath thermostats

Heat thermostats E 4 S and E 20 S

By Lauda. With bath tubs rated for up to 200 °C.
Inner basin made of stainless steel. Outer shell made of powder-coated sheet steel. Supplied complete with cooling spiral.

Circulating thermostat E 4 S
- **For temperature control of external, closed circuits and simultaneous temperature control in a thermostat bath**
- LCD display with 0.01 °C display resolution
- Operated with cursor keys and softkeys
- Simultaneous display of set and actual temperature
- USB port
- Pump connections with 13 mm plastic connector as standard
- **Delivery incl.** bath lid

Heat thermostat E 20 S
- **For internal temperature control of liquids in a bath**
- LCD display with 0.01 °C display resolution
- Operated with cursor keys and softkeys
- Simultaneous display of set and actual temperature
- USB port
- **Delivery without** bath lid (please order separately)

Technical specifications:

Model	E 4 S	E 20 S
Working temperature	+20 to +200 °C	
Temperature constancy	±0.01 K	
Heating output	2.0 kW	
Max. pump pressure	0.55 bar	
Max. flow	22 l/min	
Bath capacity	3.5 l	19 l
Bath opening	135 x 105 mm	300 x 365 mm
Bath depth	150 mm	
Safety class	III (FL)	

III (FL) = flammable liquids

Type	Art. No.	Pack Qty.	€
Circulting thermostat E 4 S	**LX89.1** *	1	1950,00
Heat thermostat E 20 S	**LX90.1** *	1	2220,00

Accessories:

Bath lid, made of stainless steel, two-piece for E 20 S	**LX91.1** *	1	198,00

* Longer delivery times possible. Please check with our Sales Department.

Circulating thermostats with stainless steel bath

By Thermo. For temperature control of external, closed circuits, e.g. densimeters, viscometers, photometers, refractometers, etc. Simultaneous temperature control in thermostat bath possible.

- Simultaneous display of set and actual temperature
- Display resolution 0.1 or 0.01 °C can be selected
- Stainless steel bath for oil
- Thermostat heads can be turned invariably in 90° steps in the bath
- Pumps with 2 step turbulence reduction system
- Drainage outlet (on the front)
- Bath with handles
- Olives for tubes with 8 and 12 mm inner-Ø
- A water cooling coil is optionally available (please order separately).

Technical specifications:

Model	SC 150-S13	SC 150-S21
Working temperature (°C)	Working temperature of +13 °C **over** room temperature to +150 °C	
Temperature constancy (K)	±0.02	
Heating capacity (W)	2000	
Max. pump pressure (mbar)	300	
Max. flow (l/min)	17	
Bath volume (l)	8 to 13	9 to 21
Bath opening (mm) Depth (mm)	239 x 110 200	296 x 310 150
Safety class	III (FL)	

III (FL) = flammable liquids

Delivery incl. circulating set for external circulation and bath lid.

Type	Art. No.	Pack Qty.	€
SC 150-S13	**LP64.1** *	1	2103,00
SC 150-S21	**LP65.1** *	1	2265,00

Accessories:

Water cooling spiral for cooling tasks. Can be connected to tap	**LP55.1** *	1	160,00

* Longer delivery times possible. Please check with our Sales Department.

Circulating bath thermostats

Bath and circulating thermostats models MA-12 and MA-26

By Julabo. For external temperature control of measuring instruments, gauge heads and other closed objects. Simultaneous temperature control in thermostat bath possible.

- MULTI-DISPLAY (LED) indicates actual value, up to 3 set values, excess and low temperature warning signals, excess temperature protection and pump performance stages
- Setting/display resolution 0.01 °C (to 99.99 °C), 0.1 °C (from 100 °C)
- PID-Temperature control with disturbance offset
- **Pumping capacity electronically adjustable in steps**
- Keypad for setting desired values, warning and safety values and various other menu functions
- Early-warning system warns of sinking liquid levels before safety cut-off engages
- Adjustable excess temperature protection system has LED indicator
- With RS 232-interface
- Excess temperature and sub-level protection for flammable tempering liquids (FL)

Technical specifications:

Model	MA-12	MA-26
Working temperature (°C)	+20 to +200	
Temperature constancy (K)	±0.01	
Heater capacity	2 kW	
Max. flow (l/min)	11 to 16	
Max. pump pressure (bar)	0.45	
Bath opening W x D (mm)	220 x 150	220 x 300
Bath depth (mm)	200	200
Bath volume (l)	12	26
Dimensions W x D x H (mm)	300 x 430 x 450	360 x 610 x 450

Delivery incl. stainless steel bath tub, lid for tub, cooling spiral and pump outlets.

Type	Art. No.	Pack Qty.	€
Model MA-12	**Y893.1** *	1	2526,00
Model MA-26	**Y894.1** *	1	2846,00

* Longer delivery times possible. Please check with our Sales Department.

Circulating bath thermostat PC300-S7

By Thermo. For temperature control in bath or external open and closed circuits.

- 8-language full text display and numerical input via keys in large colour display
- Powerful pressure and suction pump allows open and closed external applications
- Pump with 5-stage turbulence reduction system
- 5-interval programming with 10 segments; options for ramp processing during operation
- Programmable application temperature alarm with signal that can be selected by the user (On/Off) or switch-off function
- Timer with real-time clock for critical applications
- USB interface
- With stainless steel bath
- Thermostat heads can be turned invariably in 90° steps on the bath
- Drain orifice (on the front) and handles
- Connectors for tubes with 8 and 12 mm inner ∅

Technical specifications:

Working temperature (°C)	+20 to +300 °C
Temperature constancy (K)	±0.01 K
Heating output (W)	3000 W
Max. flow (l/min)	24 l/min
Max. pump pressure (mbar)	560 mbar
Max. pump suction (mbar)	380 mbar
Bath capacity (l)	7 l
Bath opening (mm) Depth (mm)	239 x 110 mm 200 mm
Safety class	III (FL)

III (FL) = flammable liquids

Delivery incl. circulation set for external circulation and bath lid.

Art. No.	Pack Qty.	€
PE45.1 *	1	3546,00

Accessories for circulating bath thermostats PC300-S7 and PC200-S30

By Thermo.

Attachable cooling spiral for PC300-S7

Art. No.	Pack Qty.	€
PE47.1 *	1	312,00

* Longer delivery times possible. Please check with our Sales Department.

Recirculating coolers

Thermoelectric circulation thermostats LAUDA LOOP

By Lauda.
Applications: temperature control for refractometers, polarimeters, electrophoresis chambers or small bioreactors.
- Refrigerant-free temperature control with Pertier technology
- Power-controlled fans
- 3-key operation with OLED display, display resolution 0.1 °C
- RS 232 interface

Technical specifications:

Model		LOOP L 100	LOOP L 250
Alpha		4 to 80	
Temperature constancy (K)		±0.1	
Heating output (W)		200	400
Cooling capacity (W)	20 °C	120	250
	10 °C	60	130
Max. pump pressure (mbar)		800	
Max. flow (l/min)		2.6	
Capacity (l)		0.3	
Dimensions: W x D x H (mm)		175 x 301 x 266	261 x 368 x 312
Weight (kg)		6.9	11.9
Power supply		230 V, 50/60 Hz	

Delivery incl. pump connection glands for hoses with ID 6.4 mm.

Type	Art. No.	Pack Qty.	€
LOOP L 100	**HHY7.1** *	1	1895,00
LOOP L 250	**HHY8.1** *	1	2960,00

* Longer delivery times possible. Please check with our Sales Department.

Accel-series circulating coolers

By Thermo. For external, closed applications with water as a tempering medium, for example for cooling electrophoresis equipment.
The integrated stainless steel bath design minimises the volume and evaporation of tempering medium, however it does not allow access to the bath for direct tempering of samples.
Features:
- Digital temperature display
- LCD-Display with multi-lingual text menu control (German, English, French)
- 5 user-defined set temperatures
- Energy savings feature
- Liquid level indicator
- 2.8 litres internal volume of bath
- Pump speed control - allows the user to set the pump speed at either 50 or 100 % for tighter control
- Pump for hoses with 12 mm inner-∅
- With discharge nozzle on the front for convenient changing of water
- USB-port
- Low-level alarm

Technical specifications:

Model	Accel 250	Accel 500
Working temperature range (°C)	-10 to +80	
Temperature constancy (K)	±0.1	
Heating power (W)	2000	
Cooling capacity at 20 °C (W)	250	500
Pump pressure (mbar)	300	
Pump rate of delivery (l/min)	15	
Dimensions L x W x H (mm)	620 x 232 x 487	
Weight (kg)	30	

Type	Art. No.	Pack Qty.	€
Accel 250	**PE51.1** *	1	2477,00
Accel 500	**APT5.1** *	1	3018,00

* Longer delivery times possible. Please check with our Sales Department.

▶ Rotitherm®-heating and cooling mediums see page 1180

Recirculating coolers

F-series compact recirculating coolers

By Julabo. **Applications:** rotary evaporator, Soxhlet extractors, distillation equipment, gas chromatographs etc.
For external, closed-circuit applications.

Equipment:
- LED temperature display, display resolution 0.1 °C
- PID temperature control
- Draincock for easy drainage
- Level indicator

Technical specifications:

Model		① F250	② F500	F1000
Working temperature range (°C)		-10 to +40	0 to +40	
Temperature constancy (K)		±0.5		
Heating output (W)		0		
Cooling capacity (W)	20 °C	250	500	1000
	10 °C	220	400	700
	5 °C	210	300	550
	0 °C	180	250	250
	-5 °C	90	-	-
Max. pump pressure (mbar)		350	500	1000
Max. pump flow (l/min)		15	24	23
Capacity (l)		1.7 to 2.6	5 to 7.5	7 to 9.5
Dimensions W x D x H (mm)		240 x 400 x 520	375 x 440 x 590	375 x 490 x 640
Weight (kg)		27	34	45
Power supply		230 V, 50 Hz		

Delivery incl. 2 hose connectors suitable for hoses with 8 and 10 mm inner ∅ (model F250) or hoses with 8 and 12 mm inner ∅ (model F500, F1000).

Type	Art. No.	Pack Qty.	€
F250	**AXX4.1** *	1	2060,00
F500	**AXX5.1** *	1	2935,00
F1000	**HHK6.1** *	1	3670,00

* Longer delivery times possible. Please check with our Sales Department.

Microcool recirculating coolers

By Lauda.
Applications: cooling of rotary evaporators, distillation systems and analytical apparatus, as well as supply of cold traps.

Features
- LED temperature display, display resolution 0.1 °C
- Time-controlled starting and shutdown of the circulation chiller (Auto-Start or Auto-Shut-Down-Timer)
- Illuminated sight glass for checking the thermostating liquid level
- Filler neck on top of apparatus at front
- Removable front grid for cleaning the condenser
- RS 232 interface

Additional features of MC 600 and MC 1200
- Bypass adjusting wheel for regulating the pump pressure
- Pressure gauge for displaying the pump pressure
- Four rollers with holding brakes

Technical data:

Model	① MC 250	② MC 600	③ MC 1200
Working temperature range	-10 to +40 °C		
Temperature constancy	±0.5 °C		
Heating capacity	0 W		
Cooling capacity (W)			
+20 °C	250	600	1200
+10 °C	200	500	1050
0 °C	150	360	750
-10 °C	90	150	400
Pump pressure (mbar)	350	1300	
Pump delivery rate (l/min)	16	35	
Capacity (l)	2 to 4	4 to 8	7 to 14
Timer	1 min up to 99 h, 59 min		
Dimensions W x D x H (mm)	200 x 350 x 465	350 x 480 x 595	450 x 550 x 650
Weight (kg)	26	51	64
Power supply	230 V, 50 Hz		

Delivery incl. 10 mm pump connector (model MC 250).
Two 10 mm hose connectors with a G ¾" union nut are required for models MC 600 and MC 1200. Please order separately.

Type	Art. No.	Pack Qty.	€
① MC 250	**AEP2.1** *	1	2190,00
② MC 600	**AEP3.1** *	1	3020,00
③ MC 1200	**AEP4.1** *	1	3810,00

Accessories:

10 mm hose connector with G ¾" union nut	**AEP5.1** *	1	14,65

* Longer delivery times possible. Please check with our Sales Department.

Refrigerating thermostats

Refrigerating circulating thermostats

By Thermo. For temperature control in bath or for open and closed external circuits.

- Simultaneous display of set and actual temperature
- Display resolution 0.1 or 0.01 °C can be selected
- Stainless steel bath
- Thermostat heads can be turned invariably in 90° steps on the bath
- Drain cock (on the front)
- With integrated handles
- Olives for tubes with 8 and 12 mm inner ∅

Technical specifications:

Model	SC 100-A10	SC 150-A25
Working temperature (°C)	-10 to +100	-25 to +150
Temperature constancy (K)	±0.02	
Heating output (W)	2000	
Cooling capacity at 20 °C (W)	240	500
Max. flow (l/min)	17	
Max. pump pressure (mbar)	300	
Bath capacity (l)	6	12
Bath opening (mm) Depth (mm)	137 x 124 150	173 x 183 200
Safety class (FL)	I	III

I (NFL) = non-flammable liquids
III (FL) = flammable liquids

Delivery incl. bath lid and circulation set for external circulation.

Type	Art. No.	Pack Qty.	€
SC 100-A10	**PC14.1** *	1	2801,00
SC 150-A25	**PC15.1** *	1	3893,00

* Longer delivery times possible. Please check with our Sales Department.

Refrigerating circulating thermostats, CORIO™ CD-F-series

By Julabo. For temperature control of samples in baths or for enclosed external instruments such as refractometers, polarimeters, photometers, viscosimeters, electrophoresis cells, chromatography columns and rotary evaporators.

- External pump connections each with 2 connectors for hoses with 8 and 12 mm inner ∅
- With drain outlet
- Handles (front and back) for easy transportation
- USB port

Technical specifications:

Model		① CORIO™ CD-200F	② CORIO™ CD-300F	② CORIO™ CD-600F
Working temperature range (°C)		-20 to +150	-25 to +150	-35 to +150
Temperature constancy (K)		±0.03		
Display resolution (°C)		0.1		
Setting resolution (°C)		0.1		
Heating output (W)		2000		
Cooling capacity (kW)	at 20 °C 0 °C -20 °C	0.22 0.17 0.06	0.31 0.28 0.11	0.6 0.53 0.22
Max. pump pressure (mbar)		350		
Max. flow (l/min)		15		
Bath opening (mm) Bath depth (mm)		130 x 150 150		220 x 150 150
Bath volume (l)		3 to 4		5 to 7.5
Dimensions W x D x H (mm)		230 x 390 x 650	240 x 420 x 660	330 x 470 x 690
Safety class		III (FL)		
Power supply		230 V, 50 Hz		

III (FL) = flammable liquids

Delivery incl. bath lid.

Type	Art. No.	Pack Qty.	€
CORIO™ CD-200F	**CYA5.1** *	1	2978,00
CORIO™ CD-300F	**HHK5.1** *	1	3448,00
CORIO™ CD-600F	**CYA6.1** *	1	4328,00

* Longer delivery times possible. Please check with our Sales Department.

Refrigerating thermostats

Table refrigerating thermostats Alpha RA-series

By Lauda. For controlling temperature of external, closed electric loads. Simultaneous internal temperature control possible.

- 3-key operation
- LCD display, display resolution 0.1 °C
- Actual or set value
- With timer function (max. runtime 99 h, 59 min)
- Control lamp for heating, cooling and breakdown.
- Front panel can be removed to clean the condenser
- With drain outlet on the back to empty tempering liquid
- Bath tubs made of stainless steel

Technical specifications:

Model	Alpha RA 8	Alpha RA 12	Alpha RA 24
Working temperature (°C)	-25 to +100		
Temperature constancy (K)	±0.05		
Heating capacity (W)	1500		
Cooling capacity at 20 °C (W)	225	325	425
Max. pump pressure (mbar)	200		
Max. flow (l/min)	15		
Bath volume (l)	5 to 7.5	9.5 to 14.5	14 to 22
Bath opening (mm)	165 x 190	300 x 190	350 x 290
Bath depth (mm)	160		
Safety class	I (NFL)		

I (NFL) = non-flammable liquids

Delivery incl. lid for bath and circulating pump kit.

Type	Art. No.	Pack Qty.	€
Alpha RA 8	**KP41.1** *	1	3070,00
Alpha RA 12	**KP42.1** *	1	3640,00
Alpha RA 24	**KP43.1** *	1	4550,00

* Longer delivery times possible. Please check with our Sales Department.

Table refrigerating thermostat models RE 415 S and RE 415 G

By Lauda. For controlling temperature of external loads. Simultaneous internal temperature control possible. Compact outer dimensions.
Delivery incl. thermostat with drain outlet, recessed handles and bath lid.

① **RE 415 S**
- LCD display with 0.01 °C display resolution
- Operation by means of cursor keys and softkeys
- Simultaneous display of set and actual temperature
- USB port
- Hose connectors for hoses with 10 mm inside ∅

② **RE 415 G**
- Colour TFT display with 0.01 °C display resolution
- Operation by means of cursor keys and softkeys
- Simultaneous display of set and actual temperature
- Graphical display of temperature characteristics
- Interval function
- Timer
- USB port
- Hose connectors for hoses with 10 mm inside ∅

Technical specifications:

Model	① RE 415 S	② RE 415 G
Working temperature	-15 to +200 °C	
Temperature constancy	±0.02 K	
Display resolution	0.01 °C	
Setting resolution	0.01 °C	
Heating output	2.0 kW	2.6 kW
Cooling capacity at 20 °C	180 W	
Max. pump pressure	0.55 bar	
Max. flow	22 l/min	
Bath capacity	4 l	
Bath opening / bath depth	130 x 105 / 160 mm	
Safety class	III (FL)	

III (FL) = flammable liquids

Type	Art. No.	Pack Qty.	€
RE 415 S	**LX92.1** *	1	3620,00
RE 415 G	**LX93.1** *	1	4040,00

* Longer delivery times possible. Please check with our Sales Department.

Refrigerating thermostats

Refrigerating circulating thermostat model F12-MA

By Julabo. For temperature control of external closed instruments such as photometers, refractometers, viscometers, etc. Simultaneous temperature control of smaller objects is possible directly in the thermostat bath. Equipped with drain valve for emptying tempering liquid and with removable ventilation grid.

- MULTI-DISPLAY (LED) indicates actual value, up to 3 set values, excess and low temperature warning signals, excess temperature, and stage pump performance protection
- PID-Temperature control with disturbance offset
- **Pumping capacity electronically adjustable in steps**
- Membrane keypad for setting desired values, warning and safety values and various other menu functions
- Early-warning system warns of sinking liquid levels before safety cut-out engages
- Adjustable excess temperature protection visible via LED
- With RS 232-interface
- Excess temperature and sub-level protection for flammable tempering liquids (FL)

Technical specifications:

Working temperature	-20 to +200 °C
Temperature constancy	±0.01 K
Heater capacity	2 kW
Cooling capacity at 20 °C	160 W
Max. flow	11 to 16 l
Max. pump pressure	0.45 bar
Bath opening (W x D)	150 x 160 mm
Bath depth	150 mm
Bath volume	4.5 l
Dimensions (W x D x H)	200 x 360 x 560 mm

Art. No.	Pack Qty.	€
Y896.1 *	1	3717,00

* Longer delivery times possible. Please check with our Sales Department.

①

Refrigerating circulating thermostats AC-series

By Thermo. For temperature control in bath or for open and closed external circuits.

- Simultaneous display of set and actual temperature
- Display resolution 0.1 or 0.01 °C can be selected
- Stainless steel bath
- Thermostat heads can be turned invariably in 90° steps on the bath
- Drain cock (on the front)
- With integrated handles
- Connectors for tubes with 8 and 12 mm inner-∅
- A bath lid is included with the AC 150-A25 B model. If a bath lid is required for the AC 150-A10B model, please order separately.

Technical specifications:

Model	**AC 150-A10B**	**① AC 150-A25B**
Working temperature (°C)	-10 to +100	-25 to +150
Temperature constancy (K)	±0.01	
Heating capacity (W)	2000	
Cooling capacity at 20 °C (W)	250	500
Max. pump pressure (mbar)	475	
Max. flow (l/min)	20	
Max. pump pressure (mbar)	330	
Bath volume (l)	18 to 30	13 to 20
Bath opening (mm)	295 x 375	220 x 243
Bath depth (mm)	200	230
Safety class	III (FL)	

III (FL) = flammable liquids

Delivery incl. circulating set for external circulation.

Type	Art. No.	Pack Qty.	€
AC 150-A10B	**LP68.1** *	1	4212,00
AC 150-A5B	**LP69.1** *	1	4346,00
Accessories:			
Bath lid for AC 150-A10B	**LP71.1** *	1	141,00

* Longer delivery times possible.Please check with our Sales Department.

VersaCool 7 refrigerating circulating thermostats

By Thermo. For heating and cooling. For external closed-circuit temperature control tasks or direct use in circulating baths.

- Languages: German, English, French and four others
- Intuitively operated colour touchscreen (screen size 14.4 cm)
- Electronically adjustable pump output levels (40 to 100 %)
- Graphical display of temperature profile
- Programmable with 30 program steps for up to 10 different programs (max. process time per program step 999 h, max. 10 repetitions per step)
- Integrated data logger incl. 4 GB SSD card
- USB port for reading out the data logger and storing ramp profiles. Ramp profiles can be used for various baths by using the download and upload functions of the USB flash drive
- Overtemperature protection
- RS 232, RS 485 and Micro USB port
- Bluetooth communication port - for remote control and monitoring via iOS or Android smartphone
- Timer function
- Pt 100 external sensor connection for measurement and control in external system. Please order temperature sensor Pt 100 separately

Technical specifications:

Operating temperature range		-20 to +150 °C
Temperature constancy		±0.02 K
Heating capacity	at 230 V at 115 V	2000 W 1200 W
Cooling capacity	20 °C 0 °C -10 °C -20 °C	425 W 200 W 100 W 50 W
Max. pump pressure		1200 mbar
Max. pump flow		14.6 l
Bath capacity		7 l
Bath opening		173 x 297 mm
Bath depth		150 mm
Dimensions (W x D x H)		258 x 585 x 474 mm
Safety class		III (FL)
Weight		36 kg
Power supply		200-240 V, 50/60 Hz to 100-120V, 50/60 Hz

III (FL) = flammable liquids

Delivery incl. bath lid (can be attached to open right or left or placed loosely on top), 2 hose connectors for hoses with 8 and 12 mm inner ∅ and 4 GB SSD card.

Art. No.	Pack Qty.	€
CAY7.1 *	1	6808,00

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

Stainless steel sensor probe Pt 100, L 150 x ∅ 3 mm, 3 m connecting cable	**CAY8.1** *	1	470,00
Software for controlling VersaCool 7 and reading out the data logger	**CAY9.1** *	1	94,50

* Longer delivery times possible. Please check with our Sales Department.

Refrigerating circulating thermostats F32-ME and FP50-ME

By Julabo. For heating and cooling. For external closed-circuit temperature control tasks or direct use in thermostat baths.

Equipment:

- VFD display for indicating set values and actual values, display resolution 0.01 °C
- PID temperature control
- Electronically adjustable pump output levels
- Early warning system for low liquid level.
- Adjustable high temperature cut-out
- Integrated programmer for 1 program with 10 program steps
- Pt 100 external sensor connection for measurement and control in external system. If external control is required, please order Pt 100 sensor separately

Technical specifications:

Model		**① F32-ME**	**② FP50-ME**
Working temperature (°C)		-35 to +200	-50 to +200
Temperature constancy (K)		±0.01	
Heating output (W)		2000	
Cooling capacity (W)	20 °C 0 °C -20 °C -30 °C -40 °C	450 390 150 60 -	900 800 500 320 160
Max. pump pressure (mbar)		230 to 450	
Max. pump flow (l/min)		11-16	
Bath volume (l)		8	
Bath opening (mm)		180 x 120	
Bath depth (mm)		150	
Dimensions W x D x H (mm)		310 x 420 x 640	420 x 490 x 700
Safety class		III (FL)	
Weight (kg)		37	55
Power supply		230 V, 50 Hz	

III (FL) = flammable liquids

Delivery incl. 2 hose connectors for hoses with 8 and 10 mm inner ∅.

Type	Art. No.	Pack Qty.	€
F32-ME	**AXY6.1** *	1	5442,00
FP50-ME	**AXY7.1** *	1	7207,00

Accessories:

Stainless steel sensor probe Pt 100, L 300 x ∅ 6 mm, 1.5 m connecting cable	**AXY8.1** *	1	273,00

* Longer delivery times possible. Please check with our Sales Department.

Water baths

Low-temperature circulation thermostat AC200-G50

By Thermo. For temperature control of samples in baths or for open external instruments such as jacketed reaction vessels. Typical applications: material tests, analytical equipment, calibration and crystallisation.

- Languages: German, English, French and two others
- Timer with real-time clock
- Ramp programming for 1 ramp with 30 steps
- Alarm for temperature too high/too low, level alarm
- 3 stage pump
- External pump connections each with 2 connectors for hoses with 8 and 12 mm inner ∅

Technical specifications:

Working temperature		-50 to +200 °C
Temperature constancy		±0.01 K
Display resolution		0.01 °C
Setting resolution		0.01 °C
Heating capacity		2000 W
Cooling capacity at	20 °C -20 °C -40 °C	1000 W 600 W 180 W
Max. pump pressure		475 mbar
Max. flow		20 l/min
Max. pump suction		330 mbar
Bath opening Bath depth		208 x 104 mm 200 mm
Bath capacity		6 to 12 l
Dimensions (W x D x H)		419 x 554 x 851 mm
Weight		62 kg
Safety class		III (FL)

III (FL) = flammable liquids

Delivery incl. bath lid.

Art. No.	Pack Qty.	€
CYX2.1 *	1	6388,00

* Longer delivery times possible. Please check with our Sales Department.

Water baths, WB-series

- Stainless steel inner tank
- LCD display for displaying nominal/actual temperature values
- Integrated digital clock (1 min to 99 h, 59 min or continuous)
- Overheating protection
- Heater exposed on floor

WB-12 and WB-22: operating temperature range from 5 °C **and** room temperature to 100 °C (adjustment range from 10 to 100 °C).

WB-22-P: operating temperature range from 5 °C **and** room temperature to 85 °C (adjustment range from 10 to 85 °C). With built-in circulation pump for faster and more even heat distribution within the bath.

Technical specifications:

Model	WB-12	WB-22	WB-22-P
Useable volume			
Capacity approx. (l)	12	22	22
Width (mm)	390	490	490
Depth (mm)	220	290	290
Height (mm)	150	150	150
Units			
Width (mm)	480	680	680
Depth (mm)	310	365	365
Height incl. lid (mm)	375	395	395
Temperature constancy (±K)	0.5	0.5	0.2
Heating capacity (kW)	900	1100	1100
Max. number of test tubes	4	8	8
Weight	12	18	19
Power supply	230 V, 50 Hz		

Delivery incl. removable shelf and stainless steel cover.

Type	Art. No.	Pack Qty.	€
WB-12	**EEA3.1**	1	521,40
WB-22	**EEA4.1**	1	854,65
WB-22-P	**EEA5.1**	1	946,00

Test tube rack for WB series water baths

Type	Art. No.	Pack Qty.	€
for 20 test tubes with ∅ 13 mm	**EEA6.1**	1	57,95
for 20 test tubes with ∅ 18 mm	**EEA7.1**	1	57,95
for 5 test tubes with ∅ 31 mm	**EEA8.1**	1	57,95

Water baths Aqualine

By Lauda.
For working temperature range 30 to 95 °C (temperature settings range from 10 to 95 °C).
- Inside tub made of stainless steel
- Homogeneous temperature distribution and easy cleaning as heating elements are under bath tub (no fixtures inside tub)
- With digital temperature display
- Integrated overheating protection

Technical specifications:

Model	AL 5	AL 12	AL 18	AL 25
Useable space				
Volume (l)	5	11.7	18.2	25.2
Bath opening (mm)	300 x 151	329 x 300	505 x 300	505 x 300
Bath depth (mm)	150	150	150	200
Units				
Width (mm)	343	372	548	548
Depth (mm)	186	335	335	335
Height with lid (mm)	290	325	325	375
Temperature constancy (±K)	0.2			
Heating output (kW)	0.5	1.0	1.2	
Power supply	230 V, 50/60 Hz			

Delivery incl. roof-shaped lid for bath made of plastic. Prevents condensed water from dripping into the samples when opening the lid.

Type	Art. No.	Pack Qty.	€
AL 5	**HA68.1**	1	680,00
AL 12	**HA69.1**	1	755,00
AL 18	**HA70.1**	1	881,00
AL 25	**HA71.1**	1	957,00

Water baths WBT-series

For working range from 25 to 100 °C.
- Inside tub made of stainless steel
- Microprocessor-controlled temperature control units
- Digital temperature display
- Adjustable upper and lower desired value limit
- Visual and/or acoustic limit value alarm (acoustic)
- With dry run protection
- The memory function saves 3 parameter combinations of set temperature and time
- Tub is empied via outlet with screw drain plug on base. A drain cock is also available as an option (please order separately)
- Water bath WBT 1 is supplied with a round flad lid, all other models are equipped with a slanting lid
- Heater exposed on floor.

Delivery incl. removable shelf.

Technical specifications:

Model	WBT 1	WBT 6	WBT 12	WBT 22
Useable space				
Volume (l)	approx. 1-2	approx. 2-6	approx. 4-12	approx. 6-22
Bath opening (mm)	∅ 130	215 x 230	390 x 230	455 x 230
Bath depth (mm)	120	120	120	170
Unit				
Width (mm)	230	320	490	570
Depth (mm)	240	340	340	340
Height with lid (mm)	220	260	260	310
Temp. constancy (±K)	0,25	0,60	0,60	0,60
Heating output (W)	700	1000	1600	2000
Weight (kg)	5	7.5	10.5	12.5
Power supply	230 V, 50-60 Hz			

Type	Art. No.	Pack Qty.	€
WBT1	**EA02.1** *	1	640,70
WBT6	**EA03.1** *	1	747,15
WBT12	**EA04.1** *	1	860,00
WBT22	**EA05.1** *	1	951,40

Accessories for water baths WBT-series

Round test tube racks for water bath WBT 1
Made of stainless steel. Holding capacity of bath: 1 per pack

Type	Art. No.	Pack Qty.	€
for 36 test tubes ∅ 10.5 mm	**EA07.1** *	1	78,50
for 36 test tubes ∅ 11.5 mm	**EA08.1** *	1	78,50
for 24 test tubes ∅ 14.5 mm	**EA09.1** *	1	78,50
for 16 test tubes ∅ 18.5 mm	**EA10.1** *	1	78,50
for 6 test tubes ∅ 32 mm	**EA11.1** *	1	78,50

Test tube racks for water baths WBT 6 to WBT 22
Made of stainless steel. Holding capacity of water baths: WBT 6 = 3 racks, WBT 12 = 5 racks, WBT 22 = 6 racks.

Type	Art. No.	Pack Qty.	€
for 56 test tubes ∅ 10.5 mm	**EA12.1** *	1	53,75
for 56 test tubes ∅ 11.5 mm	**EA13.1** *	1	53,75
for 33 test tubes ∅ 14.5 mm	**EA14.1** *	1	53,75
for 18 test tubes ∅ 18.5 mm	**EA15.1** *	1	53,75
for 6 test tubes ∅ 32 mm	**EA16.1** *	1	53,75

Drain cock for water baths WBT 1 to WBT 22

Type	Art. No.	Pack Qty.	€
Drain cock, complete	**EA17.1**	1	79,55

* Longer delivery times possible. Please check with our Sales Department.

Water baths

Water bath precision series

By Thermo.

- **For a working temperature range of 30 to 100 °C** (except for the GP 02 model which can only be used up to 90 °C)
- Microprocessor-controlled temperature regulator
- Digital temperature display
- Integrated timer for programming on/off times, timer function (1 to 99 mins) or continuous operation
- Memory function can save up to four setpoint temperatures
- Equipped with protection against overheating
- Model GP 15 Dual (5/10 l) comes with two baths, the temperature of which can be controlled separately. A different temperature can be set for each bath.
- Heating elements under the bath tank (no fittings in bath tank)
- Internal water drainage tube with integrated quick-release coupling (only with models GP 10, GP 20, GP 28 and GP 15 Dual)

Technical specifications:

Model	GP 02	① GP 05	GP 10	② GP 20	GP 28	③ GP 15 Dual
Usable volume						
Capacity (l)	2	5	10	20	28	5/10
Width (mm)	155	300	330	500	500	300/330
Depth (mm)	138	154	301	297	297	154/301
Height (mm)	150	150	150	150	200	150/150
Units						
Width (mm)	199	355	383	555	555	587
Depth (mm)	230	246	393	392	392	392
Height without lid (mm)	233	232	233	233	282	233
Temperature constancy (±K)	±0.2					
Heating output (W)	200	300	800	1200	1200	300/800
Power supply	100-155 V / 200-230 V, 50/60 Hz					

Delivery incl. transparent lid.

Type	Art. No.	Pack Qty.	€
GP 02	**HAC0.1**	1	620,00
GP 05	**HAC1.1**	1	687,00
GP 10	**HAC2.1**	1	828,00
GP 20	**HAC3.1**	1	932,00
GP 28	**HAC4.1**	1	1037,00
GP 15 Dual	**HAC5.1**	1	1407,00

Pura™-series water baths

By Julabo.

For a temperature range from 25 to 99.9 °C.

- Digital temperature display
- Internal timer function (max. 99 h, 59 min in 1-min steps), with signal after expiry of the time, optionally with or without heating switch-off
- Integrated drain cock (for tubes with ID 12 mm)
- Easy to clean, since there are not fittings in the bath
- USB port
- Enamelled basin base
- Boil-dry protection and carrier handles installed
- **Foldable bath cover available as accessory, please order separately**

Technical specifications:

Model	① Pura™ 4	② Pura™ 10	Pura™ 14	③ Pura™ 22	Pura™ 30
Usable volume					
Capacity (l)	0.4 to 4.8	1 to 10	1 to 14	2 to 22	2 to 30
Bath opening W x D (mm)	120 x 270	220 x 270	300 x 270	540 x 270	760 x 270
Bath depth (mm)	170				
Units					
Width (mm)	210	310	420	630	850
Depth (mm)	380				
Height incl. lid (mm)	300				
Temperature constancy (±K)	0.2				
Heating capacity (kW)	0.8	1.3	1.3	2	2
Weight (kg)	5	6.2	9.5	13	16.5
Power supply	230 V, 50/60 Hz				

Image	Type	Art. No.	Pack Qty.	€
①	Pura™ 4	**HCH1.1**	1	720,00
②	Pura™ 10	**HCH2.1**	1	815,00
	Pura™ 14	**HCH3.1**	1	850,00
③	Pura™ 22	**HCH4.1**	1	930,00
	Pura™ 30	**HCH5.1**	1	1110,00

Accessories for Pura™-series water baths: foldable bath cover, transparent

Type	Art. No.	Pack Qty.	€
for Pura™ 4	**HCH6.1**	1	89,00
for Pura™ 10	**HCH7.1**	1	140,00
for Pura™ 14	**HCH8.1**	1	152,00
for Pura™ 22	**HCH9.1**	1	184,00
for Pura™ 30	**HCK0.1**	1	226,00

Water baths WNB-series

By Memmert.

Features

- Temperature setting ranges from 10 to 95 °C, with additional boiling level optional
- Control range begins at least 5 °C **above** ambient temperature
- Available with shaking device (see next page)
- With programmable hold-time and switch-on delay
- Electronic microprocessor-PID-regulator
- Mechanical temperature limiter TB
- Integrated digital clock (from 1 min to 99 h and 59 min)
- Stainless steel work area
- Bath can be emptied via outlet valve
- Heater is located under deep-drawn, easy-to-clean ribs.
- **We recommend ordering the matching floor grid if no test tube racks are to be used**

Technical specifications:

Models	WNB 7	WNB 10	WNB 14	WNB 22	WNB 29	WNB 45
Useable space						
Volume approx. (l)	7	10	14	22	29	45
Length (mm)	240	350	350	350	590	590
Width (mm)	210	210	290	290	350	350
Height (mm)	140	140	140	220	140	220
Device						
Length (mm)	468	578	578	578	818	818
Width (mm)	356	356	436	436	516	516
Height, with flat lid (mm)	238	238	238	296	238	296
Height, with slanting lid (mm)	337	337	347	405	343	401
Number of ring openings (flat lid)	1	3	6	6	8	8
∅ openings (flat lid) (mm)	187	107	87	87	107	107
Accuracy, temporal / spatial	±0.1 / ±0.25 °C					

① Water baths with slanting lid

Type	Art. No.	Pack Qty.	€
WNB 7	**L362.1** *	1	655,00
WNB 10	**L363.1** *	1	734,00
WNB 14	**L364.1** *	1	802,00
WNB 22	**L365.1** *	1	888,00
WNB 29	**L366.1** *	1	1093,00
WNB 45	**L367.1** *	1	1312,00

② Water baths with flat lid and set of rings

Type	Art. No.	Pack Qty.	€
WNB 7	**L368.1** *	1	669,00
WNB 10	**L369.1** *	1	752,00
WNB 14	**L370.1** *	1	825,00
WNB 22	**L402.1** *	1	911,00
WNB 29	**L403.1** *	1	1148,00
WNB 45	**L404.1** *	1	1367,00

* Longer delivery times possible. Please check with our Sales Department.

Test tube trays for WNB 10 / WNB 14 / WNB 22 / WNB 29 / WNB45

By Memmert.

Test tube trays, 2-row

No. of holes	∅ (mm)	Width (mm)	Art. No.	Pack Qty.	€
40	10	40	**L406.1** *	1	49,90
40	12	40	**L407.1** *	1	49,90
24	14,5	42	**L408.1** *	1	49,90
24	18	50	**L409.1** *	1	49,90
20	21	55	**L410.1** *	1	55,40
12	32	80	**L411.1** *	1	58,80

Test tube trays, 3-row

No. of holes	∅ (mm)	Width (mm)	Art. No.	Pack Qty.	€
60	10	50	**L412.1** *	1	58,80
60	12	55	**L413.1** *	1	58,80
36	14,5	60	**L414.1** *	1	58,80
36	18	70	**L415.1** *	1	58,80
30	21	80	**L416.1** *	1	58,80

Test tube trays, 4-row

No. of holes	∅ (mm)	Width (mm)	Art. No.	Pack Qty.	€
80	10	64	**L417.1** *	1	67,80
80	12	75	**L418.1** *	1	67,80
48	14,5	85	**L419.1** *	1	67,80
48	18	95	**L420.1** *	1	70,35
40	21	110	**L421.1** *	1	70,35

* Longer delivery times possible. Please check with our Sales Department.

Test tube trays for WNB 7

No. of holes	∅ (mm)	Art. No.	Pack Qty.	€
56	18	**L422.1** *	1	83,50

Floor grids for water baths, WNB-series

Both sides can be used. Height 30 mm or 60 mm.

Type	Art. No.	Pack Qty.	€
For WNB 7	**N895.1** *	1	49,15
For WNB 10	**N896.1** *	1	51,10
For WNB 14/22	**N897.1** *	1	56,70
For WNB 29/45	**N898.1** *	1	116,00

* Longer delivery times possible. Please check with our Sales Department.

▶ For water bath preservatives, see page 1151

Heating bath HBR 4 control with magnetic drive

By IKA. **Effective volume 4 l**. Interior is free of heating coils (no fixtures in bath tub). Made of stainless steel. Optionally low-viscosity oil (50 mPas) or water as heat transfer medium. Digital display for desired, actual and safety temperatures as well as for speed. **Integrated magnetic drive rotates heating medium,** which enables better heat distribution in bath. Heating element under the bath tank (no fittings in bath tank). With RS 232-interface. Two carrying handles.

Technical specifications:

Heating function	
Temperature range	Room temp. max 200 °C
Heating capacity	1000 W
Setting accuracy	±1 K
Deviation (3 l H_2O, 90 °C)	±1 K
Temperature display	digital
Stirrer drive	
rpm-range	100 to 800 rpm
General specifications	
Volume	4 l
Inner height / -∅	Height 160 mm, ∅ 200 mm
Outer height / -∅	Height 250 mm, ∅ 250 mm
Weight	4.4 kg
Power supply	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
LN86.1	1	3425,00

① Set of rings for water bath HBR 4 control

To cover bath. Consists of 10 rings with a ∅ of 25 to 185 mm. Prevents dust, heat loss or water contamination of oil baths and oil mist formation when working with oil.

Art. No.	Pack Qty.	€
9700.1	1	480,00

② Intermediate bottom for water bath HBR 4 control

Made of stainless steel. For better heat distribution or without disrupting the movement of the rotating stirring bar.

Art. No.	Pack Qty.	€
9689.1	1	220,00

Oil baths, ONE-series

By Memmert.

Features

- Temperature setting ranges from +20 to +200 °C
- Control range begins at least 5 °C above ambient temperature
- Digital setpoint setting (0.1 °C-increments) and actual value display
- Integrated digital clock (1 min to 999 h)
- Stainless steel work area
- With programmable hold-time and switch-on delay
- We recommend ordering the corresponding grid if no test tube rack is to be used
- Bath can be emptied via outlet valve

Technical specifications:

Models	ONE 7	ONE 10	ONE 14	ONE 22	ONE 29	ONE 45
Useable space						
Volume approx. (l)	7	10	14	22	29	45
Length (mm)	240	350	350	350	590	590
Width (mm)	210	210	290	290	350	350
Height (mm)	140	140	140	220	140	220
Housing						
Length (mm)	468	578	578	578	818	818
Width (mm)	356	356	436	436	516	516
Height (mm)	337	337	347	405	343	401
Accuracy temporal / spatial (°C)	±0.3 / ±1.0					

Delivery incl. slanting lid.

Type	Art. No.	Pack Qty.	€
ONE 7	**EX21.1** *	1	1003,00
ONE 10	**EX22.1** *	1	1065,00
ONE 14	**EX23.1** *	1	1121,00
ONE 22	**EX24.1** *	1	1205,00
ONE 29	**EX25.1** *	1	1397,00
ONE 45	**EX26.1** *	1	1597,00

Grids for oil baths, ONE-series

By Memmert. Both sides can be used. Height 30 mm or 60 mm.

Type	Art. No.	Pack Qty.	€
For ONE 7	**N895.1** *	1	49,15
For ONE 10	**N896.1** *	1	51,10
For ONE 14/22	**N897.1** *	1	56,70
For ONE 29/45	**N898.1** *	1	116,00

Test tube racks for ONE 10 to ONE 45

By Memmert. Test tube racks, 2-row.

No. of holes	∅ (mm)	Width	Art. No.	Pack Qty.	€
40	12	40	**L407.1** *	1	49,90
24	18	50	**L409.1** *	1	49,90

* Longer delivery times possible. Please check with our Sales Department.

Water bath with circulation pump WPE 45

By Memmert.

Equipment:

- Digital display for temperature or countdown timer (1 min to 999 h)
- Pump can be switched on and off
- Pump switch-off at end of program
- Textured stainless steel housing
- Bath drainage by drain valve
- For use, we recommend a bottom grid (please order separately)

Overheat protection (3-level)

- If overheating occurs due to a fault, the heater is switched off when the setpoint is exceeded by approx. 10 °C.
- Independently working, adjustable electronic overtemperature controller TWW (protection class 3.1) or temperature limiter TWB (protection class 2)
- Mechanical temperature limiter TB (protection class 1) for heater switch-off when max. bath temperature is exceeded by approx. 30 °C

Technical specifications:

Working temperature range	15 °C **above** room temperature up to +95 °C and additional boiling mode (only available when pump is switched off)
Temperature adjustment range	10 to 95 °C
Temperature constancy (in time/space)	±0.1/±0.3 °C
Display resolution	0.1 to 95 °C
Heating output	2800 W
Capacity	45 l
Inner dimensions (L x W x H)	590 x 350 x 220 mm
Outer dimensions (L x W x H)	818 x 516 x 401 mm
Weight	35 kg
Power supply	230 V, 50-60 Hz

Delivery incl. stainless steel gable cover.

Art. No.	Pack Qty.	€
YY20.1	1	1819,00

Accessories: bottom grid for water bath with circulation pump WPE 45

Usable on both sides. Height 30 or 60 mm.

Art. No.	Pack Qty.	€
N898.1 *	1	116,00

* Longer delivery times possible. Please check with our Sales Department.

Shaking water bath SBS40

By Stuart.

- Optionally available with tray for back and forth shaking movements (type SBS40/1) or tray for circular movements (type SBS40/2)
- The shaking movement is produced by inserting the tray
- Loading configurations per tray: e.g. Erlenmeyer flasks - 8 x 250 ml or 6 x 500 ml or 4 x 1000 ml
- Each tray includes 15 springs for attaching bottles, beakers and bulbs in different sizes
- Digital temperature display (resolution 0.1 °C)
- With overheating protection and drain cock

Technical specifications:

Capacity	24 l
Working temperature range	Infinitely adjustable from 19 to 95 °C, control range starts at 10 °C above ambient temperature
Temperature stability	±0.25 °C
Shaking frequency	20 to 130 rpm, infinitely adjustable
Shaking amplitude (stroke)	20 mm
Inner dimensions (W x D x H)	300 x 500 x 200 mm
Outer dimensions (W x D x H)	335 x 580 x 320 mm
Weight	17 kg
Power supply	230 V, 50 Hz

Delivery without stainless steel cover, shaking tray and test tube racks (please order separately).

Art. No.	Pack Qty.	€
AK06.1 *	1	2765,00

Accessories:

Shaking tray SBS40/1 for back and forth movement	**AK07.1** *	1	528,00
Shaking tray SBS40/2 for circular movement	**AK08.1** *	1	558,00
Stainless steel gable cover with insulated handle	**AK09.1** *	1	349,00

* Longer delivery times possible. Please check with our Sales Department

Accessories for shaking water bath SBS40

By Stuart. **Test tube racks**

Made of stainless steel. Max. capacity of a shaking tray: 2 pce.

Type	Art. No.	Pack Qty.	€
For 143 reaction vials 1.5/2.0 ml	**XY08.1**	1	245,00
For 120 culture tubes ∅ 13 mm	**XY09.1**	1	246,00
For 72 culture tubes ∅ 16 mm	**XY10.1**	1	246,00
For 30 culture tubes ∅ 26 mm	**XY11.1**	1	246,00
For 56 centrifuge tubes 15 ml	**XY12.1**	1	246,00
For 25 centrifuge tubes 50 ml	**XY13.1**	1	246,00

WNB-series water baths with shaking device

By Memmert.

- Adjustment range from 10 to 95 °C, with additional heat setting
- Range of adjustment begins at 5 °C **above** ambient temperature
- Integrated digital clock (1 min to 99 h and 59 min)

With 15 mm horizontal back-and-forth shaking strokes.
Continuously variable frequency adjustment (35 to 160 strokes per min).
Delivery incl. mounting frame for perforated mounting plate and test tube rack. Bath drainage by drain valve.

Note: to operate the water bath, you require either a perforated mounting plate with fixing clamps or test tube racks (please order separately). The perforated mounting plate includes a holding basket which is also sufficient for general operation.

Without lid. If a stainless steel lid is required, please include with first order.

Technical specifications:

Model	WNB 14	WNB 22	WNB 29	WNB 45
Useable volume				
Capacity approx. (l)	14	22	29	45
Length (mm)	350	350	590	590
Width (mm)	290	290	350	350
Height (mm)	140	220	140	220
Unit				
Length (mm)	578	578	818	818
Width (mm)	436	436	516	516
Height (mm), with lid	347	405	343	401
Max. holding capacity of holding clamps				
100 ml flask 200 ml flask 300 ml flask 500 ml flask	12 6 6 5	12 6 6 5	18 14 14 8	18 14 14 8
Time/space resolution	±0.1 / ±0.25 °C			
Power supply	230 V, 50/60 Hz			

Type	Art. No.	Pack Qty.	€
WNB 14	**N899.1** *	1	1390,00
WNB 22	**N900.1** *	1	1476,00
WNB 29	**YL74.1** *	1	2070,00
WNB 45	**YL75.1** *	1	2289,00

* Longer delivery times possible. Please check with our Sales Department.

Accessories for WNB-series water baths with shaking device

By Memmert.

Steam-trapping slanting lid

Type	Art. No.	Pack Qty.	€
For WNB 14 and WNB 22	**N901.1** *	1	102,00
For WNB 29 and WNB 45	**YL76.1** *	1	180,00

Perforated fixative plate for clamps with basket

Type	Art. No.	Pack Qty.	€
For WNB 14 and WNB 22	**N902.1** *	1	105,00
For WNB 29 and WNB 45	**YL77.1** *	1	188,00

Clamps for flasks

Type	Art. No.	Pack Qty.	€
Clamps for 100 ml flasks	**N903.1** *	1	29,35
Clamps for 200 ml flasks	**N904.1** *	1	32,00
Clamps for 300 ml flasks	**N905.1** *	1	33,70
Clamps for 500 ml flasks	**N906.1** *	1	35,60

Insert racks for test tubes for WNB 14 and 22

Type	Art. No.	Pack Qty.	€
Insert racks for 110 test tubes ∅ 14.5 mm	**N907.1** *	1	125,00
Insert racks for 90 test tubes ∅ 18.0 mm	**N908.1** *	1	125,00
Insert racks for 25 test tubes ∅ 32.0 mm	**N909.1** *	1	125,00

Insert racks for test tubes for WNB 29 and 45

Type	Art. No.	Pack Qty.	€
Insert racks for 216 test tubes ∅ 14.5 mm	**YL78.1** *	1	233,00
Insert racks for 180 test tubes ∅ 18 mm	**YL79.1** *	1	233,00
Insert racks for 54 test tubes ∅ 32 mm	**YL80.1** *	1	233,00

* Longer delivery times possible. Please check with our Sales Department.

▶ Microcentrifuge tube see page 490

Digital single/dual block thermostats

For precise heating of reaction vials, test tubes, type Falcon® centrifuge tubes and 96 well PCR trays.

- Stainless steel housing
- With LED temperature display
- Integrated timer function
- Suitable for one or two interchangeable blocks depending on model

Technical specifications:

Working temperature range	5 °C **above** ambient temperature up to 150 °C
Temperature adjustment range	0 to 150 °C
Resolution / accuracy	±0.3 °C / 0.1 °C
Integrated timer	1 min to 99 h, 59 min in 1-min steps or continuous operation container blocks
Heating-up time	approximately 35 min to 100 °C
Dimensions (W x D x H)	210 x 290 x 120 mm
Power supply	230 V, 50/60 Hz

Delivery incl. lift rod for changing blocks and detachable lid for microlitre container blocks. Does not include interchangeable blocks (please order separately).

Type	Capacity	Art. No.	Pack Qty.	€
Single block thermostat	1 interchangeable block	**PY25.1**	1	385,95
Dual block thermostat	2 interchangeable blocks	**YC47.1**	1	475,15

Interchangeable blocks for single/dual block thermostats

Made of aluminium.

Interchangeable blocks for reaction vials
Dimensions: W 90 x D 76 x H 51 mm

Type	Usable for	Art. No.	Pack Qty.	€
48 reaction vials 0.2 ml	Single/dual	**PY26.1**	1	138,70
24 0.5 ml reaction vials	Single/dual	**PY27.1**	1	138,70
24 1.5 ml reaction vials	Single/dual	**PY28.1**	1	138,70
20 reaction vials 2.0 ml	Single/dual	**PY29.1**	1	138,70

Interchangeable blocks for test tubes/sample vials
Dimensions: W 90 x D 76 x H 51 mm

Type	Usable for	Art. No.	Pack Qty.	€
20 tubes ∅ 12 mm	Single/dual	**PY30.1**	1	138,70
12 tubes ∅ 16 mm	Single/dual	**PY31.1**	1	138,70
6 tubes ∅ 20 mm	Single/dual	**YC48.1**	1	107,25
6 tubes ∅ 25 mm	Single/dual	**YC49.1**	1	107,25

Interchangeable blocks for type Falcon® centrifuge tubes
Dimensions: W 90 x D 76 x H 83 mm

Type	Usable for	Art. No.	Pack Qty.	€
12 centrifuge tubes 15 ml	Single/dual	**PY32.1**	1	138,70
5 centrifuge tubes 50 ml	Single/dual	**PY33.1**	1	138,70

Interchangeable block for custom fabrication
Dimensions: W 90 x D 76 x H 51 mm

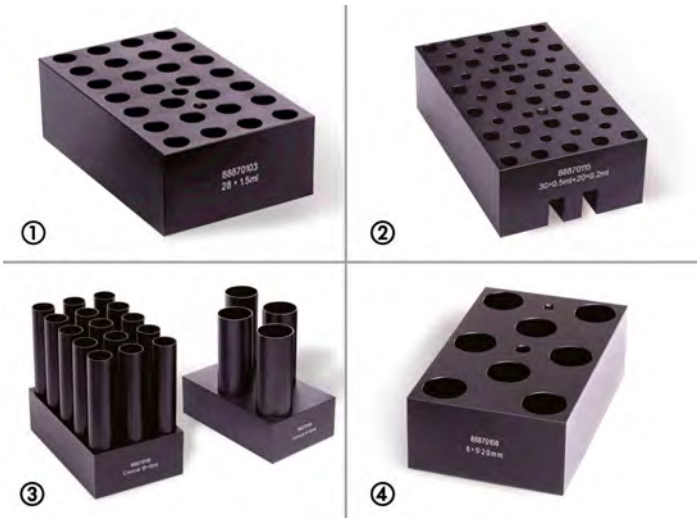
Type	Usable for	Art. No.	Pack Qty.	€
Without drill holes	Single/dual	**YC50.1**	1	107,25

Interchangeable blocks for 96 well PCR trays and microtitration plates

Please note: only 1 PCR block or microtitration plate can be used in a dual-block thermostat (due to block size).

Type	Usable for	Art. No.	Pack Qty.	€
PCR plate, 96 well (with/without frame)	Single	**PY34.1**	1	292,40
PCR plate, 96 well (with/without frame)	Dual	**YC51.1**	1	277,35
Microtitration plate, 96 well	Dual	**YC52.1**	1	209,65

Block thermostats



Touchscreen block thermostats

By Thermo. For precision temperature control of reaction vials, test tubes and centrifuge vials of the type Falcon®.

- 4.3″ touchscreen display with time and temperature display
- PID thermostat
- Integrated timer function
- 10 user-definable programs for up to 5 successive steps with different temperature and operating time
- Connectivity for external Pt 1000 temperature sensor (please order separately); in this case, temperature is controlled and displayed using the external sensor instead of the built-in temperature sensor

Technical specifications:

Operating temperature range	5 °C **above** ambient temperature up to 130 °C
Temperature adjustment range	0 to 135 °C
Resolution / accuracy	±1 °C / 0.1 °C
Timer	0 to 99 h 59 min in 1 min increments or continuous operation
Heating-up time	1/2 block thermostat: 30 to 130 °C approximately 20 min 4-block thermostat: 30 to 130 °C approximately 25 min
Dimensions (W x D x H)	1-block thermostat: 200 x 373 x 100 mm 2-block thermostat: 200 x 403 x 100 mm 4-block thermostat: 200 x 535 x 100 mm
Weight	1-block thermostat: 3.4 kg 2-block thermostat: 3.7 kg 4-block thermostat: 5.1 kg
Power supply	200-240 V, 50/60 Hz

Delivery incl. lift rod for changing blocks.
Does not include interchangeable blocks (please order separately).

Type	Capacity	Art. No.	Pack Qty.	€
1-block thermostat	1 exchangeable thermoblock	**CTN8.1**	1	521,00
2-block thermostat	2 exchangeable thermoblocks	**CTN9.1**	1	591,00
4-block thermostat	4 exchangeable thermoblocks	**CTP0.1**	1	722,00

Exchangeable thermoblocks for touchscreen block thermostats

① Exchangeable thermoblock for reaction vials
Dimensions: W 124 x D 76 x H 39 mm.

Type	Art. No.	Pack Qty.	€
28 reaction vials 1.5 ml	**CTP1.1**	1	63,70
28 2 reaction vials 2.0 ml	**CTP2.1**	1	63,70

② Combined exchangeable thermoblocks for reaction vials
Dimensions: W 124 x D 76 x H 39 mm.

Type	Art. No.	Pack Qty.	€
30/20 reaction vials 0.5/0.2 ml	**CTP3.1**	1	123,00
18/10 reaction vials 1.5/2.0 ml	**CTP4.1**	1	90,00

③ Exchangeable thermoblocks for centrifuge vials of type Falcon®
Dimensions: W 124 x D 76 x H 113 mm.

Type	Art. No.	Pack Qty.	€
15 centrifuge tubes 15 ml	**CTP5.1**	1	299,00
4 centrifuge tubes 50 ml	**CTP6.1**	1	299,00

④ Exchangeable thermoblocks for test tubes
Dimensions: W 124 x D 76 x H 39 mm.

Type	Art. No.	Pack Qty.	€
15 tubes ∅ 16 mm	**CTP7.1**	1	85,60
12 tubes ∅ 18 mm	**CTP8.1**	1	85,60
8 tubes ∅ 20 mm	**CTP9.1**	1	69,20

External temperature sensor

Type	Art. No.	Pack Qty.	€
External Pt 1000 temperature sensor	**CTT0.1**	1	27,50

Single-block thermostat Accublock™ Mini

For precision temperature control of 12 x 1.5 ml reaction vials.

- Temperature adjustment via digital display
- Digital display of actual temperature
- Acoustic timer adjustable from 1 min to 19 h, 59 min (has no effect on heater performance; no shutdown upon expiration of the timer)
- Integrated aluminium block; ports have been adapted to fit 1.5 ml reaction vials

Technical specifications:

Operating temperature range	5 °C **above** ambient temperature up to 100 °C
Temperature adjustment range	20 to 101 °C
Resolution	0.1 °C
Temperature accuracy	±0.2 °C
Heating-up time	approximately 20 min to 100 °C
Dimensions (W x D x H)	110 x 140 x 55 mm
Weight	1.4 kg
Mains connection	230 V, 50/60 Hz

Delivery incl. AccuRack™ for fast loading and unloading of reaction vials.

Art. No.	Pack Qty.	€
PE74.1	1	374,10

Rotilabo®-block thermostat model H 250

Block thermostat for use in biological, physical and chemical laboratories.

Features

- Two removeable aluminium blocks
- Digital temperature display (set/actual value)
- **With connection for external temperature sensor (please order separately)**
- Control LED for heating, set/actual value control and time
- **Integrated short-time alarm (1 to 480 min), time setting in minute increments.**
- Switching function of timer:
  1. Timer without influencing heater function
  2. Timer switches the heater off after the time has lapsed
- Stainless steel casing with solid Al hotplate
- **For faster heating times and higher temperature precision: the block inserts can be fixed to the hotplate with a screw**

Technical specifications:

Working temperature range	+25 to +250 °C
Temperature constancy	±0.1 K
Heating times	to 100 °C approx. 15 min to 200 °C approx. 30 min
Timer signal	acoustic
Unit dimensions (W x D x H)	240 x 280 x 110 mm
Dimensions of heating blocks (W x D x H)	78 x 115 x 49 mm
Heating capacity	500 W
Voltage	230 V, 50/60 Hz

Delivery incl. block thermostat H 250, screws, 6 kt-wrench and removal rod. Comes without heating blocks (please order separately).

Art. No.	Pack Qty.	€
Y264.1	1	779,40

Accessories for Rotilabo®-block thermostat model H 250

Heating blocks for different reaction tubes

Type	Art. No.	Pack Qty.	€
24 tubes/test tubes ∅ 10 mm	**Y265.1**	1	132,25
24 tubes/test tubes ∅ 12 mm	**Y266.1**	1	132,25
12 tubes/test tubes ∅ 16 mm	**Y267.1**	1	132,25
12 tubes/test tubes ∅ 19 mm	**Y268.1**	1	132,25

Heating blocks for centrifuge tubes

Type	Art. No.	Pack Qty.	€
40 centrifuge tubes 0.5 ml	**Y269.1**	1	132,25
24 centrifuge tubes 1.5 ml	**Y270.1**	1	132,25
24 centrifuge tubes 2.0 ml	**Y271.1**	1	132,25

External temperature sensor

Type	Art. No.	Pack Qty.	€
External temperature sensor Pt 100	**Y272.1**	1	170,95

Cooling and heating block thermostat TK 23

By Hettich Benelux. For dry, clean and speedy **cooling and heating.** For centrifuge tubes, sample vials and microtiter plates.

Features:

- **Cooling function up to 16 °C below room temperature, heating up to +90 °C**
- Active counter-cooling with Peltier elements
- LCD-display with background lighting for all set and actual values
- **Allows direct input of temperature curves**

Programmable control:
Programmable with 30 program steps for up to 9 different programs. Program-parameters: Set temperature, process time (max. 99 h / endless), rise time (The time in which the set temperature should be reached) etc.

Technical specifications:

Working temperature range	16 °C **below** room temperature up to +90 °C
Temperature setting range	-10 to +90 °C
Accuracy / Resolution	±0.1 °C / 0.1 °C
Medium heating speed	approx. 4 °C/min from +41 °C
Medium cooling speed	approx. 5 °C/min below +20 °C approx. 2 °C/min to +20 °C
Dimensions (W x D x H)	220 x 345 x 195 mm

Delivery without changing block
(please order the changing block separately).

Type	Capacity	Art. No.	Pack Qty.	€
Cooling and heating block thermostat TK 23	2 changing blocks	**HA03.1**	1	1803,85

Changing blocks for block-thermostat TK 13

By Hettich Benelux. For additional suitable blocks, please see changing blocks for cooling and heating ThermoMixers.

Changing blocks for centrifuge tubes

Type	Art. No.	Pack Qty.	€
24 reaction vials 1.5 ml tapered	**AY23.1** *	1	244,05
24 reaction vials 2.0 ml cylindrical	**AY24.1** *	1	244,05

Changing blocks for sample tubes

Type	Art. No.	Pack Qty.	€
14 centrifuge tubes, each 15 ml, type Falcon®	**AY27.1** *	1	337,55

* Longer delivery times possible. Please check with our Sales Department.

Heating thermoshaker

By Thermo. For heating and mixing in 0.5/1.5 ml reaction vials, 50 ml test tubes or 96-well plates. With circular shaking action.

Applications: cultivating bacteria and yeast, enzyme reactions, denaturation of DNA, RNA and proteins, etc.

- VFD display
- PID controller for constant shaking action and precise temperature control
- Programmable with 10 program steps for max 7 different programs (program parameters: nominal temperature, process time per program step and shaking frequency)
- 2 timer modes (1 min to 99 h, 59 min):
  - Process time does not begin to elapse until nominal temperature is reached
  - Timer starts immediately after setting the required process time

Technical specifications:

Operating temperature range	5 °C **above** ambient temperature up to +100 °C
Temperature adjustment range	0 to +100 °C
Resolution / accuracy	±0.5 °C / 0.1 °C
Average heating rate:	approx. 5 °C/min from +41 °C
Max. recommended shaking frequency	Block for 96 well plates: 150 to 1500 rpm Block for 0.5 ml vials: 150 to 1200 rpm Block for 1.5 ml vials: 150 to 1200 rpm Block for 50 ml tubes: 150 to 800 rpm
Timer	1 min to 99 h, 59 min / continuous operation
Shaking stroke	2 mm
Dimensions (W x D x H)	249 x 325 x 120 mm
Weight	8.3 kg
Voltage	230 V, 50/60 Hz

Delivery without interchangeable block (please order separately).

Shaking movement	Capacity	Art. No.	Pack Qty.	€
round	1 insertion block	**ATX7.1** *	1	1176,00

* Longer delivery times possible. Please check with our Sales Department.

Interchangeable blocks for heating thermoshaker

By Thermo.

Interchangeable blocks for reaction vials
Dimensions: W 98 x D 76.5 x H 30/41 mm

Type	Art. No.	Pack Qty.	€
48 reaction vials 0.5 ml tapered	**ATX8.1** *	1	147,00
24 reaction vials 1,5 / 2,0 ml tapered	**ATX9.1** *	1	254,00

Interchangeable block for 96-well plates
Dimensions: W 111 x D 76.5 x H 15 mm

Type	Art. No.	Pack Qty.	€
PCR plate 96-well	**ATY0.1** *	1	294,00

Interchangeable block for test tubes 50 ml (∅ 30 mm)
Dimensions: W 98 x D 76.5 x H 51 mm

Type	Art. No.	Pack Qty.	€
6 test tubes 50 ml (∅ 30 mm)	**ATY1.1** *	1	254,00

* Longer delivery times possible. Please check with our Sales Department.

Cooling and heating thermoshaker Basic and Pro

Applications: enzyme reactions, transformations, denaturation of DNA and RNA, isolation of DNA fragments from agarose gels, proteins, protein purification and cultivation of bacteria or yeasts.

Features:
- Two-line plain text display with backlit LCD display
- Simultaneous display of actual and nominal values
- Timer operation: 1 min to 99 h, 59 min; adjustable in 1 min increments or continuous operation
- Shortmix function

Heating thermoshaker Basic
- For rapid heating and mixing
- Memory function saves 5 combinations of rpm and time parameters

Cooling and heating thermoshaker Pro
- For cooling, heating and mixing
- 5 individually adjustable program segments with an option for combining segments to create a ramp or to activate each segment individually

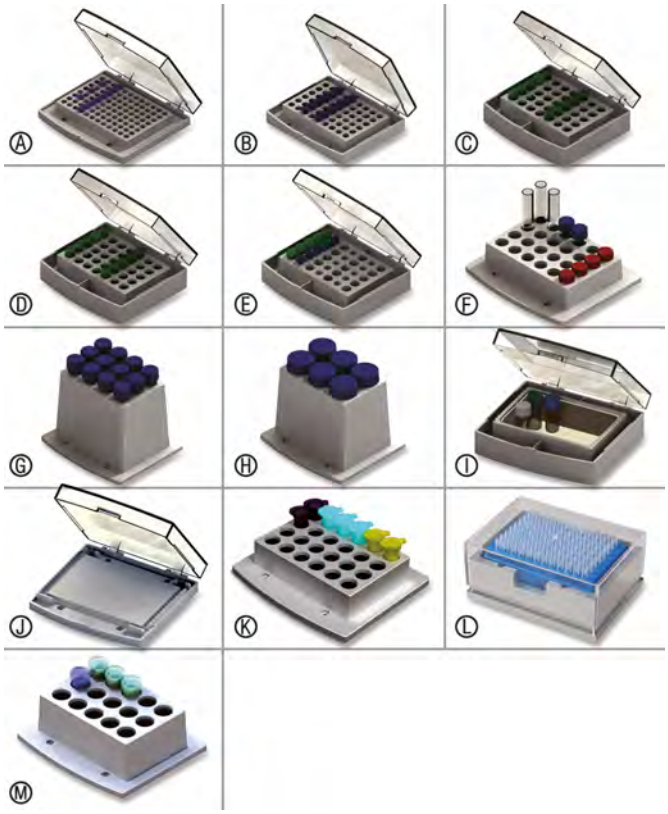
Technical specifications:

Operating temperature range	Basic: Pro:	5 °C **above** room temperature up to +100 °C 20 °C **below** room temperature up to +100 °C
Temperature adjustment range	4 to +100 °C	
Resolution / accuracy	<±0.5 / 0.1 °C	
Average heating rate:	from 20 to 100 °C in approx. 13 min	
Medium cooling rate *	Basic: Pro:	- from 100 to 20 °C in approx. 14 min from 20 to 4 °C in approx. 13 min
Timer	1 min to 99 h, 59 min / continuous operation	
Shaking frequency	200 to 1500 rpm adjustable in increments of 10	
Shaking stroke	2 mm	
Dimensions (W x D x H)	220 x 280 x 170 mm	
Weight	9 kg	
Voltage	230 V, 50 Hz	

*at 22 °C room temperature

Delivery without exchangeable thermoblocks (please order separately; refer to Exchangeable thermoblocks for cooling and heating thermoshaker Basic and Pro).

Type	Temperature range	Capacity	Art. No.	Pack Qty.	€
Basic	Heating	1 exchangeable thermoblock	**CPL7.1**	1	1386,75
Pro	Heating and cooling	1 exchangeable thermoblock	**CPL8.1**	1	2031,75



Exchangeable thermoblocks for cooling and heating thermoshaker Basic and Pro

Suitable for Basic and Pro models

Exchangeable thermoblocks incl. lid for reaction vials

Image	Type	Art. No.	Pack Qty.	€
A	96 PCR vials 0.2 ml	**CPL9.1**	1	295,65
B	54 reaction vials 0.5 ml	**CPN0.1**	1	295,65
C	35 reaction vials 1.5 ml	**CPN1.1**	1	295,65
D	35 reaction vials 2.0 ml	**CPN2.1**	1	295,65
E	15 reaction vials 0.5 and 20 x 1.5 ml	**CPN3.1**	1	295,65
M	15 reaction vials 5 ml (max. 1200 rpm)	**CPN4.1**	1	295,65

Exchangeable thermoblocks for sample tubes and vials

Image	Type	Art. No.	Pack Qty.	€
F	24 sample tubes ∅ 12 mm (max. 1200 rpm)	**CPN5.1**	1	295,65
K	24 test tubes ∅ 14 mm (max. 1200 rpm)	**CPN6.1**	1	295,65

Exchangeable thermoblocks for centrifuge tubes

Image	Type	Art. No.	Pack Qty.	€
G	12 centrifuge vials 15 ml type Falcon® (max. 750 rpm)	**CPN7.1**	1	295,65
H	6 centrifuge vials 50 ml type Falcon® (max. 750 rpm)	**CPN8.1**	1	295,65

Water bath block incl. lid

Image	Type	Art. No.	Pack Qty.	€
I	Water bath block (L 103 x W 67 x D 29 mm)	**CPN9.1**	1	295,65

Exchangeable thermoblock incl. lid for microtiter plates

Image	Type	Art. No.	Pack Qty.	€
J	Microtiter plates 96	**CPP0.1**	1	295,65

Exchangeable thermoblock incl. lid for deepwell plate

Image	Type	Art. No.	Pack Qty.	€
L	96 well deepwell plate (max. 900 rpm, max. up to 80 °C only)	**CPP1.1**	1	295,65

Cooling and heating Thermoshaker thermal mixer

By Thermo.
Applications: genetic analysis, DNA and RNA extraction, sample preparation and many more.

Features

- Heating/cooling and shaking can be performed independently
- LCD display shows setpoint and actual values for runtime, shaking frequency and temperature
- Digital timer function with alarm signal
- Short heating and cooling times, and shaking frequency reached fast

Technical specifications:

Operating temperature range		15 °C **below** room temperature up to +100 °C
Temperature adjustment range		4 to +100 °C
Accuracy	at 4 °C at 37 °C at 100 °C	±0.6 K ±0.1 K ±0.3 K
Resolution		0.1 °C
Average heating rate:		5 °C/min
Medium cooling rate		from 100 to 25 °C in approx. 15 min (5 °C/min) from 25 to 4 °C in approx. 8 min (1.8 °C/min)
Timer		1 min to 96 h (in 1-min increments)
Shaking frequency		250 to 1400 rpm adjustable in increments of 10
Shaking stroke		2 mm
Dimensions (W x H x D)		205 x 130 x 230 mm
Weight		4 kg
Voltage		120-240 V, 50/60 Hz

Delivery without interchangeable blocks (please order separately, see exchangeable thermoblocks for cooling and heating Thermoshaker thermal mixer).

Temperature range	Capacity	Art. No.	Pack Qty.	€
Heating and cooling	1 exchangeable thermoblock	**HEH6.1**	1	1733,00

Exchangeable thermoblocks for cooling and heating Thermoshaker thermal mixer

By Thermo.

Interchangeable blocks for reaction vials

Image	Type	Art. No.	Pack Qty.	€
①	24 1.5 ml reaction vials	**HEH7.1**	1	893,00
-	24 reaction vials 2.0 ml	**HEH8.1**	1	893,00
②	20 reaction vials 0.2 ml and 12 x 1.5 ml	**HEH9.1**	1	893,00
③	20 reaction vials 0.5 ml and 12 x 1.5 ml	**HEK0.1**	1	893,00

Interchangeable blocks for 96-well plates

Image	Type	Art. No.	Pack Qty.	€
④	96-well plates or tube strips for rimless plates and plates with mid-height rim and round indentations.	**HEK1.1**	1	893,00

Heating thermoshaker, models MHR 13 / MHR 23 / MHL 23

By Hettich Benelux. For dry, clean and speedy **heating and mixing**. For centrifuge tubes, vials and microtiter plates.

Round shaking movement (Model MHR 13 / 23): Particularly ideal for dissolving critical DNA-pellets in the tips of conical centrifuge tubes.

Linear shaking movement (Model MHL 23): Jerky movement for better mixing of low sample volumes in the µl-range.

Features for all models:

- With timer, short-mix-function (e.g. for vortexing) and interval shaking with snipping effect
- Background-light LCD-display for all set and actual values
- **With direct input of temperature curves with different shaking frequencies**
- Control unit can be removed for connection to an extension lead

Programmable control:
Programmable with 30 program steps for max 9 different programs. Program-parameters: Set temperature, process time (max. 99 h / infinite), rise time (time in which the set temperature should be reached), shaking frequency, interval shaking, breaks etc.

Double heating thermoshaker MHR 23 / MHL 23
Suitable for 2 insertion blocks. Same position when stopped.

Technical specifications:

Working temperature range	3 °C **above** room temperature to +130 °C
Temperature setting range	0 to +140 °C
Accuracy / resolution	±0.1 °C / 0.1 °C
Medium heating speed	approx. 4 °C/min from +41 °C approx. 5 °C/min to +40 °C
Shaking frequency	MHR 13 / MHR 23: 200 to 1500 rpm MHL 23: 200 to 1300 rpm
Shaking stroke	3 mm
Dimensions (W x D x H)	220 x 345 x 160 mm
Voltage	110/220 V, 50 Hz

Delivery incl. control panel. Comes without changing blocks (please order separately, see changing blocks for cooling and heating thermoshakers).

Type	Shaking movement	Capacity	Art. No.	Pack Qty.	€
MHR 13	round	1 changing block	**HA05.1** *	1	1976,95
MHR 23	round	2 changing blocks	**EY98.1** *	1	2257,50
MHL 23	linear	2 changing blocks	**EY99.1** *	1	2257,50

* Longer delivery times possible. Please check with our Sales Department.

▶ Interchangeable blocks, see page 990

Cooling and heating thermoshaker MKR 13 and MKR 23

By Hettich Benelux. For dry, clean and speedy **cooling, heating and mixing**. Suitable for centrifuge tubes, vials and microtiter plates.

Round shaking movement: Especially suited for dissolving critical DNA-pellets in the conical tips of conical centrifuge tubes.

Features:

- **Cooling function up to 16/10 °C below room temperature, heating up to +100/75 °C**
- Active counter-cooling with Peltier elements
- The coolers with speed-regulated ventilators conduct the heat and the cold outside
- With timer, short-mix-function (e.g. for vortexing) and interval shaking with snipping effect
- LCD-display with background lighting for all set and actual values
- **Direct input of temperature curves with different shaking frequencies.**

Programmable control:
Programmable with 30 program steps for up to 9 different programs. Program-parameters: Set temperature, process time (max. 99 h / endless), rise time (the time in which the set temperature should be reached), shaking frequency, interval shaking, interval etc.

Technical specifications:

Working temperature range	MKR 13: 16 °C **below** room temperature to +100 °C MKR 23: 13 °C **below** room temperature to +75 °C
Temperature setting range	MKR 13: -10 to +105 °C MKR 23: 0 to +75 °C
Accuracy / Resolution	MKR 13: ±0.1 °C / 0.1 °C MKR 23: ±0.3 °C / 0.1 °C
Medium heating speed	approx 5 °C/min from +41 °C approx 6 °C/min to +40 °C
Medium cooling speed	approx 3 °C/min below +20 °C approx 7 °C/min to +20 °C
Shaking frequency	MKR 13: 200 to 1500 rpm MKR 23: 200 to 1200 rpm
Shaking lift	3 mm
Dimensions (W x D x H)	220 x 345 x 195 mm
Voltage	110/220 V, 50 Hz

Delivery incl. control panel. Comes without insertion block (please order separately, see insertion blocks for cooling and heating thermoshakers).

Type	Shaking movement	Capacity	Art. No.	Pack Qty.	€
MKR 13	round	1 Changing block	**HA02.1** *	1	2257,50
MKR 23	round	2 Changing blocks	**KA68.1** *	1	2711,15

* Longer delivery times possible. Please check with our Sales Department.

Interchangeable blocks for cooling and heating thermoshaker

By Hettich Benelux.
Suitable for models
MHR 13, MHR 23, MHL 23, MKR 13, MKR 23 and TK 23.
Made of aluminium.

Interchangeable blocks for centrifuge tubes

Type	Art. No.	Pack Qty.	€
96 reaction vials 0.2 ml tapered	**AY21.1** *	1	244,05
8 reaction vials 0.5 ml tapered	**AY22.1** *	1	244,05
24 reaction vials 1.5 ml tapered	**AY23.1** *	1	244,05
24 reaction vials 2.0 ml cylindrical	**AY24.1** *	1	244,05
24 reaction vials 0.5 and 1.5 ml (combined block)	**ANN7.1** *	1	338,65

Interchangeable blocks for sample vials

Type	Art. No.	Pack Qty.	€
24 sample vials ∅ 10.3 x D 46 mm, round bottom	**AY25.1** *	1	337,55
24 sample vials ∅ 16.5 x D 46 mm, round bottom	**AY26.1** *	1	337,55
24 sample vials ∅ 12.0 x D 20 mm, flat bottom	**TA95.1** *	1	244,05
24 sample vials ∅ 15.0 x D 30 mm, flat bottom	**TA96.1** *	1	244,05
24 sample vials ∅ 17.0 x D 30 mm, flat bottom	**TA97.1** *	1	244,05
24 sample vials ∅ 19.0 x D 25 mm, flat bottom	**TA98.1** *	1	244,05
12 sample vials ∅ 23.0 x D 56 mm, flat bottom	**TA99.1** *	1	244,05
8 sample vials ∅ 28.0 x D 40 mm, flat bottom	**TC00.1** *	1	337,55

Interchangeable blocks with lid (for block insulation) for centrifuge tubes

Type	Art. No.	Pack Qty.	€
14 centrifuge tubes, each 15 ml, type Falcon®	**AY27.1** *	1	337,55
6 centrifuge tubes, each 50 ml, type Falcon®	**AY28.1** *	1	337,55

Interchangeable blocks for cuvettes

Type	Art. No.	Pack Qty.	€
36 rectangular cells, 12.5 mm outer width	**TC01.1** *	1	337,55

Interchangeable blocks for deepwell plate

Type	Art. No.	Pack Qty.	€
96-well deepwell plate	**TC02.1** *	1	337,55

Interchangeable blocks for custom design

Type	Art. No.	Pack Qty.	€
Without hole, H 25 mm	**TC03.1** *	1	224,70
Without hole, H 37 mm	**TC04.1** *	1	244,05
Without hole, H 50 mm	**TC05.1** *	1	244,05

Interchangeable blocks for microtiter plates

Type	Art. No.	Pack Qty.	€
Microtiter plate 96, U-/V-profile	**AY29.1** *	1	337,55
Microtiter plate 96, flat profile	**AY30.1** *	1	337,55

Interchangeable blocks for PCR®-plates

Type	Art. No.	Pack Qty.	€
PCR-plate 96, V-profile	**AY31.1** *	1	337,55
PCR-plate 384	**AY32.1** *	1	337,55

Interchangeable blocks for DURAN®-bottles

Type	Art. No.	Pack Qty.	€
2 DURAN® bottles 50 ml, ∅ 47 mm, D 60 mm	**ANN8.1** *	1	395,60
1 DURAN® bottle 250 ml, ∅ 71.5 mm, D 74 mm	**ANN9.1** *	1	450,45

Interchangeable blocks for cryo-vials

Type	Art. No.	Pack Qty.	€
24 cryo-vials, ∅ 13 mm, D 30 mm, flat bottom	**ANP0.1** *	1	338,65
24 cryo-vials, ∅ 13 mm, D 40 mm, round bottom	**ANP1.1** *	1	338,65

* Longer delivery times possible. Please check with our Sales Department.

Rotary evaporators

NEW

Rotary evaporators RV 3-series

By IKA. Usable in the chemical, pharmaceutical and bio-industry, in the fields of research and development, production and quality assurance, in laboratories and in plant engineering.

- 4-l water heating bath with digital temperature display and handles
- Mechanical end stop for lift
- Manual lift
- Adjustable insertion angle
- Continuous speed adjustment via rotary knob and display scale
- Piston fixture with integral push-off mechanism for easy changing of evaporating flasks

Technical specifications:

Speed range	20 to 300 rpm
Temp. range of heating bath	up to 99 °C
Heating output	1350 W
Setting accuracy	1 K
Control deviation	1 K
Heating bath capacity	4 l
Dimensions of heating bath (W x D x H)	330 x 325 x 190 mm
Hose connectors	For hoses ID 8 mm (water and vacuum hoses)
Dimensions with glassware (W x D x H)	440 x 330 x 530 mm
Weight	8 kg
Voltage	100-240 V, 50/60 Hz

Delivery incl. heating bath and vertical glassware. With PTFE inlet tube and 1000 ml evaporating flask (NS 29/32) and 1000 ml receiving flask (KS 35/20).

Type	Design	Art. No.	Pack Qty.	€
RV 3 V	Standard glassware	**KAX8.1** *	1	2098,00
RV 3 V-C	Coated glassware	**HTX5.1** *	1	2237,00

* Longer delivery times possible. Please check with our Sales Department

RV 8-series rotary evaporators

By IKA.

General information:

- Manual lift with integrated safety lift-out-function (single-handed operation, suitable for left and right handed users)
- Digital displays for rotation speed and heating bath temperature
- Adjustable immersion angle and height
- Piston fixture with integral push-off mechanism for easier changing of evaporating flasks
- Available in two versions: with standard glassware or coated glassware (condenser and receiving flask are coated for shatter protection).

Heating bath HB digital

- Universal water / oil heating bath with integral carrying handles
- Locking function prevents accidental changing of heating bath settings
- Run-dry monitoring
- Adjustable safety temperature

Technical specifications:

Speed range	5 to 300 rpm
Temp. range of heating bath	From room temperature to 180 °C
Heating output	1300 W
Setting accuracy	1 °C
Control deviation	±1 K
Heating bath capacity	4 l
Dimensions of heating bath (W x D x H)	330 x 325 x 190 mm
Adjustable head angle	0 to 45 °
Hose connectors	For hoses ID 8 mm (water and vacuum hoses)
Dimensions without glassware (W x D x H)	510 x 345 x 490 mm
Dimensions with glassware (W x D x H)	630 x 345 x 760 mm
Weight	17.2 kg

Delivery incl. heating bath and vertical glassware. With PTFE inlet tube and 1000 ml evaporating flask (NS 29/32) and 1000 ml receiving flask (KS 35/20).

Model	Design	Art. No.	Pack Qty.	€
RV 8 V	Standard vertical glassware	**NH24.1** *	1	2638,00
RV 8 V-C	Coated vertical glassware	**NH25.1** *	1	2786,00

* Longer delivery times possible. Please check with our Sales Department.

①

Rotary evaporator RV 10-series

By IKA.

General features of all models:

- **Motorised lift (stroke displacement 140 mm) with adjustable height limit**
- Digital speed display
- Rotates intermittently clockwise and anticlockwise for drying processes (interval cycle for direction reversal is adjustable from 1 to 60 s)
- Timer function for time lapse controls (1 to 199 min)
- Water-oil heating bath with integrated carry handles
- Heating bath with adjustable safety circuit
- Push-off mechanism to loosen tightly fitting flasks
- Includes Woulff bottle

RV 10 digital

- Temperature adjustment/display via scale
- Control deviation ±5 K
- Heating bath with digital temperature display
- Control deviation ±1 K

① **RV 10 auto**

Model with integrated vacuum controller for automatic distillation, both for volume-based processes and full drying depending on application.

- Integrated solvent library contains distillation-specific parameters for standard distillation, expandable by user.
- Programmable volume-controlled distillation processes
- Colour graphic display shows distillation curves
- Ramp programming (speed/time and vacuum/time)
- Automatic ventilation and switch-off of heating bath after test

Technical specifications:

Model	RV 10 digital	RV 10 auto
Speed range	20 to 280 rpm	
Temp. range of heating bath	From room temperature to 180 °C	
Heating output	1300 W	
Setting accuracy	1 K	
Control deviation	±1 K	
Heating bath capacity	4 l	
Dimensions of heating bath (W x H x D)	330 x 325 x 190 mm	
Adjustable head angle	0 to 45 °	
Integral vacuum controller	no	yes
Required accessories	-	Solenoid valve RV 10.4002
Hose connectors	For hoses ID 8 mm (water and vacuum hoses)	
Dimensions without glassware (W x D x H)	530 x 410 x 570 mm	
Dimensions with glassware (W x D x H)	680 x 410 x 990 mm	
Weight	28 kg	

Delivery incl. heating bath and vertical glassware. A PTFE inlet tube, 1000 ml evaporator flask (NS 29/32) and 1000 ml receiving flask (KS 35/20) are included.
Available in two versions: with standard glassware or coated glassware (condenser and receiving flask are coated for shatter protection).

RV 10 digital

Model	Design	Art. No.	Pack Qty.	€
RV 10 digital V	Standard glassware	**PE52.1** *	1	3979,00
RV 10 digital V-C	Coated glassware	**PE53.1** *	1	4312,00

RV 10 auto

Additional **delivery incl.** magnetic valve laboratoryvacuum RV 10.4002. (The integrated check valve prevents external interference with the working pressure of the recipient. Tube clip for tubes ID 10 mm.)

Model	Design	Art. No.	Pack Qty.	€
RV 10 auto V	Standard glassware	**PE54.1** *	1	6600,00
RV 10 auto V-C	Coated glassware	**PE55.1** *	1	7002,00

* Longer delivery times possible. Please check our Sales Department.

▶ Vacuum pump systems, see p. 381

Rotary evaporators

Rotary evaporators Hei-VAP-series

By Heidolph. For standard distillation, crystallization, upgrading solutions and separating solvents.

General features for all models:

- Control panel: Removeable, with cable connection (length 1.3 m) for remote control operation
- Fast and easy reduction of steam feedthrough
- Heating bath switches off automatically when set bath temperature has been exceeded by 5 °C or when water level is too low
- Double-wall heating bath protects against burns and insulates against heat loss
- Safe changing of bath liquid via nozzle
- All models are available either as a space-saving version with vertical cooler (Model G3) or in the standard version with diagonal cooler (G1)
- XL-cooler for higher evaporation rate through improved seal and extended cooling surface

① **Hei-VAP Value digital**

- Digital display showing nominal and actual heating bath temperatures
- Model with manual lift
- Rotary speed and temperature of hotbath can be set via knobs

Hei-VAP Advantage HL

- Model with manual lift
- Digital 3.5" LCD display with speed indicator, heating bath temperature and steam temperature (Please note: A boiling temperature sensor is required to indicate the steam temperature. Please order separately.)
- With timer function to end operation automatically

② **Hei-VAP Advantage ML**

- Like Hei-VAP Advantage HL, but with motor-driven lift
- The sample with motor-driven lift evaporators is protected against thermal damage, because the flask is automatically lifted out of bath in the event of a power cut.

Technical specifications:

Model	Hei-VAP Value HL	Hei-VAP Advantage HL	Hei-VAP Advantage ML
Manual / Motor-driven lift	Manual lift		Motor-driven lift
Lifting speed	manually		approx. 30 mm/s
Speed range	20 to 280 rpm		
Speed indicator	Digital	3.5“ LCD display	
Temperature range of heating bath	20 to 210 °C		
Heating power	1300 W		
Control accuracy of heating bath	±1 K		
Volume of heating bath	4.5 l		
∅ Heating bath	255 mm		
Timer	no	yes	yes
Remote control functions - Start Rotation - Start Heating bath - Lift	 yes yes no	 yes yes no	 yes yes yes
Dimensions W x D x H (mm)	395 x 490 x 430		395 x 420 x 430
Evaporation rate 20/40 °C - Acetone - Ethanol - Water	2.4 / 4.7 l/h 1.6 / 3.2 l/h 0.5 / 1.0 l/h		
Voltage	230 V, 50/60 Hz		

Delivery incl. devices with heating bath and glass kit. Glass kit consists of glass sleeve shaft, cooler, discharge tube, evaporator flask 1000 ml (standard ground joint 29/32) and collecting flask 1000 ml (standard ground joint 35/20).

Hei-VAP Value digital with standard glass kit

Glass kit	Design	Art. No.	Pack Qty.	€
Diagonal cooler G1	Manual lift	**LH08.1** *	1	2923,00
Vertical cooler G3	Manual lift	**LH09.1** *	1	3145,00
Vertical cooler G3 XL	Manual lift	**HEX3.1** *	1	3270,00

Hei-VAP Value digital with coated glass kit

Glass kit	Design	Art. No.	Pack Qty.	€
Diagonal cooler G1B	Manual lift	**LH10.1** *	1	3011,00
Vertical cooler G3B	Manual lift	**LH11.1** *	1	3261,00
Vertical cooler G3B XL	Manual lift	**HEX4.1** *	1	3402,00

Hei-VAP Advantage with standard glass kit

Glass kit	Design	Art. No.	Pack Qty.	€
Diagonal cooler G1	Manual lift (Model HL)	**LH12.1** *	1	3163,00
Diagonal cooler G1	Motor-driven lift (Model ML)	**LH13.1** *	1	3403,00
Vertical cooler G3	Manual lift (Model HL)	**LH14.1** *	1	3490,00
Vertical cooler G3 XL	Manual lift	**HEX5.1** *	1	3637,00
Vertical cooler G3	Motor-driven lift (Model ML)	**LH15.1** *	1	3695,00
Vertical cooler G3 XL	Motor-driven lift (Model ML)	**HEX6.1** *	1	3844,00

Hei-VAP Advantage with coated glass kit

Glass kit	Design	Art. No.	Pack Qty.	€
Diagonal cooler G1B	Manual lift (Model HL)	**LH16.1** *	1	3247,00
Diagonal cooler G1B	Motor-driven lift (Model ML)	**LH17.1** *	1	3454,00
Vertical cooler G3B	Manual lift (Model HL)	**LH18.1** *	1	3597,00
Vertical cooler G3B XL	Manual lift	**HEX7.1** *	1	3749,00
Vertical cooler G3B	Motor-driven lift (Model ML)	**LH19.1** *	1	3796,00
Vertical cooler G3B XL	Motor-driven lift (Model ML)	**HEX8.1** *	1	3949,00

* Longer delivery times possible. Please check with our Sales Department.

Accessories for rotary evaporators Hei-VAP-series

By Heidolph.

Boiling temperature sensor for digital display of steam temperature. Only for Hei-VAP Advantage HL/ML

Art. No.	Pack Qty.	€
X818.1	1	210,00

Protective shield for attaching to rim of bath

Art. No.	Pack Qty.	€
LH20.1	1	118,00

Protective cover

Art. No.	Pack Qty.	€
LH21.1	1	275,00

N°ICE electronic ice bath

By Techne. Space-saving sample chiller with general-purpose heat treatment bath for various vial types and sizes. Ceramic beads are used instead of ice as a chilling medium. This allows unlimited cooling times and avoids the problem of floating samples in thawing ice as well as contamination by coolants. As a time saving option, the bucket of beads can be pre-incubated in the fridge and simply inserted into the unit as and when required.

- Peltier cooling technology
- Max. capacity approx. 60 1.5 ml vials
- Ceramic beads are autoclavable and suitable for multiple use

Technical specifications:

Temperature range / resolution	0.0 to 40.0 °C
Temperature accuracy	±1 °C
Average cooling time from 20 to 4 °C	approx. 60 min
Average cooling time from 20 to 0 °C	approx. 3-4 h
Dimensions (L x W x H)	190 x 240 x 225 mm
Dimensions of heat treatment bath (L x W x H)	155 x 108 x 70 mm
Weight	4.5 kg
Power supply	100-230 V, 50/60 Hz

Delivery incl. aluminium heat treatment bath and 1.7 kg of ceramic beads (∅ 1.5-2.5 mm).

Art. No.	Pack Qty.	€
AKN5.1	1	1290,00

Accessories:

Replacement heat treatment bath	**AKN6.1**	1	118,00
Replacement ceramic beads, ∅ 1.5-2.5 mm, 1.7 kg	**AKN7.1**	1	107,00

▶ Drying cabinets from p. 1006

Inca mini microtiter plate incubator

For a single standard microtiter plate.

- Minimum space requirement
- Temperature or runtime display (3-digit LCD display)
- Timer with audio signal (does not affect heater function; no deactivation on expiration of timer).
- ABS plastic housing

Technical specifications:

Temperature range	+5 °C **above** ambient temperature up to 45 °C
Resolution of temperature display	0.5 °C
Temperature adjustment range	10 to 45 °C
Temperature variation	±0.5 °C
Timer	1 to 999 min in 1-min increments
Dimensions (W x D x H)	120 x 180 x 100 mm
Permissible ambient temperatures	10 to 40 °C at 80 % rel. humidity
Heating output	15 W
Weight	920 g
Power supply	100-230 V, 50/60 Hz

Art. No.	Pack Qty.	€
YX78.1	1	493,45

Rotilabo®-microtest plates

Made of transparent **PS**. With 96 alphanumerically coded cavities. Different base profiles available. Produced under sterile working conditions. Stackable.
Dimensions: L 128 x W 85 x H 15 mm.

Delivery without cover plate, please order separately.

Type	Volume per well (µl)	Art. No.	Pack Qty.	€
① U-profile (round)	345	**9291.1**	100	47,20
② V-profile (conical)	335	**9292.1**	100	53,70
③ F-profile (flat)	405	**9293.1**	100	58,05

Cover plates for Rotilabo®-microtest plates

Made of **PS**. Prevents contaminations and liquid loss.

Art. No.	Pack Qty.	€
9297.1	100	42,95

DipSlide incubator EM4

Lightweight, small incubator specially designed for DipSlides. With transparent, easily removable cover for quick insertion and removal of DipSlides. Easy to operate, even for inexperienced users. A stand insert and a thermometer are also supplied. Also usable without a stand for incubation of Petri dishes and contact plates.

Technical specifications:

Capacity	23 DipSlides
Temperature range	Room temperature to 44 °C
Capacity	4 l
Inner dimensions (W x H x D)	180 x 125 x 180 mm
Outer dimensions (W x H x D)	230 x 180 x 230 mm
Weight	1,5 kg
Power supply	220 V, 25 W

Art. No.	Pack Qty.	€
KK43.1	1	461,20

Cultura® M mini incubator

For the incubation of 18 dip slides (e.g. Roti®-DipSlides) or 12 petri dishes for verification of bacteria, fungi and yeasts, as well as other small-sized vials.

- **Operating temperature range from +5 °C above room temperature to 45 °C; temperature adjustment range from 25 to 45 °C**
- Thermometer in tube with special petroleum filling. Measuring range 7 to 60 °C. Graduations 1 °C. Accuracy ±1 °C. Dimensions: H 95 x ∅ 25 mm.
- Transparent full-vision door for visual inspection
- Minimal footprint, i.e. space-saving

Technical specifications:

Volume	4 l
Temperature variance	±1 °C
Internal dimensions (W x D x H)	220 x 150 x 120 mm
External dimensions (W x D x H)	310 x 168 x 155 mm
Weight	1.1 kg
Power supply	230 V, 50 Hz

Delivery incl. test thermometer in tube and shelf.

Art. No.	Pack Qty.	€
AHH9.1	1	235,45

Accessories for Cultura® M mini incubator

Multirack

Suitable for mini incubator Cultura® M. Made of ABS.
For 18 vials (∅ 25 to 30 mm). Dimensions: W 213 x D 142 x H 50 mm.

Art. No.	Pack Qty.	€
AHK0.1	1	75,20

Mini incubator

Space-saving unit for incubating culture bottles, petri dishes, microtitration plates and other small-volume vessels.

- **Operating temperature range from + 5 °C above ambient temperature to 60 °C; temperature adjustment range from 20 to 60 °C**
- Cable conduit (∅ 55 mm) at the rear
- Loading options, e.g. 48 petri dishes or 28 microtitration plates in 96 well format
- Thermometer holder (∅ 7 mm) on the top allows the inner temperature to be monitored

Technical specifications:

Capacity	9.2 l
Temperature deviation at 37 °C	±0.7 °C
Inner dimensions (W x Dx H)	230 x 200 x 200 mm
Outer dimensions (W x D x H)	285 x 280 x 335 mm
Shelves: standard / max. number	1 / 3
Shelf dimensions (L x W)	220 x 180 mm
Weight	8.3 kg
Power supply	230 V, 50/60 Hz

Delivery incl. 1 shelf. Please order thermometer separately.

Art. No.	Pack Qty.	€
YC53.1	1	525,70

Accessories:

Additional shelf, L 220 x W 180 mm	**YC54.1**	1	48,35
Glass thermometer, -20 to +100 °C, 1 °C graduations	**E742.1**	1	11,80

Small incubator Heratherm IMC18

By Thermo.

- Minimal footprint for space-restricted lab areas
- Microprocessor control
- Round edges make it easy to clean
- With Peltier cooling
- Interior lighting facilitates sample monitoring
- Fan for air circulation; runs permanently and is not adjustable

Technical specifications:

Capacity	18 l
Temperature range	17 to 40 °C
Resolution of temperature display	1 °C
Temperature deviation at 37 °C	temporal: ±0.2 °C, spatial: ±1.2 °C
Inner dimensions (W x H x D)	180 x 310 x 290 mm
Outer dimensions (W x H x D)	260 x 415 x 470 mm
Shelves: Standard / max. quantity	2 / 3
Max. load-carrying capacity of removable insert	2 kg
Weight	7.2 kg
Power supply	100-240 V, 50/60 Hz

Delivery incl. 2 shelves.

With glass front – standard model

Art. No.	Pack Qty.	€
PL74.1	1	701,00

With darkened front panel
For incubation without the influence of light, cool, long-term storage in the dark, light-sensitive micro-organisms, and much more.

Art. No.	Pack Qty.	€
HAP4.1	1	754,00

Accessories:

Additional shelves for IMC18	**PL75.1**	1	33,90

TIN-series small incubators

- **Operating temperature range from +5 °C above room temperature to 70 °C; temperature adjustment range from 20 to 70 °C**
- Digital timer (adjustable from 1 min to 99 hrs or continuous run)
- Glass window in the door for monitoring the samples
- Natural air flow (convection)
- Stainless steel interior
- Test opening (∅ 5 mm) on top e.g. for introducing sensors

Technical specifications:

Type	TIN-IN16B	TIN-IN35B
Capacity (l)	16	35
Temperature deviation at 37 °C (°C)	±0.4	
Inner dimensions W x H x D (mm)	270 x 230 x 255	360 x 300 x 320
Outer dimensions, W x D x H (mm)	505 x 370 x 400	595 x 440 x 460
Shelves: Standard/max. number	2/6	
Heating time up to 37 °C (min)	18	22
Weight (kg)	23	33
Rated power (W)	85	125
Power supply	230 V, 50/60 Hz	

Type	Volume (l)	Art. No.	Pack Qty.	€
TIN-IN16B	16	**EEH0.1**	1	768,65
TIN-IN35B	35	**EEH1.1**	1	903,00

Accessories for TIN-series incubators

Stainless steel rack

For model	Art. No.	Pack Qty.	€
TIN-IN16B	**EEH2.1**	1	51,60
TIN-IN35B	**EEH3.1**	1	64,35

NEW

BD-S Solid.Line incubators

- **Operating temperature range from +5 °C above room temperature to 70 °C**
- APT.line™ preheating chamber technology
- Natural convection
- Adjustable exhaust air flap
- Controller with timer function (1 min to 99 h)
- Inner door made of safety glass
- Integrated Class 3.1 temperature safety device (DIN 12880) with visual alarm

Technical specifications:

Type	BD-S 056	BD-S 115
Volume (l)	62	118
Resolution for temperature display (°C)	1	
Inner dimensions W x H x D (mm)	400 x 440 x 350	550 x 550 x 390
Outer dimensions W x H x D (mm)	614 x 625 x 580	764 x 735 x 662
Racks: Standard/max. number	2/4	2/5
Temperature deviation at 37 °C: Temporal °C Spatial °C	 ±0.1 ±0.7	 ±0.2 ±0.5
Weight (kg)	41	57
Power supply	230 V, 50 Hz	

Delivery incl. two chrome-plated racks.

Type	Art. No.	Pack Qty.	€
BD-S 056	**KCT5.1**	1	1171,75
BD-S 115	**KCT6.1**	1	1591,00

Accessories for Solid.Line incubators and drying ovens

Racks, chrome-plated

for type	Art. No.	Pack Qty.	€
BD-S 056 / ED-S 056 / FD-S 056	**KCT7.1**	1	36,55
BD-S 115 / ED-S 115 / FD-S 115	**KCT8.1**	1	52,70

Heratherm incubators

By Thermo.
General Protocol and **Advanced Protocol models**

General features:
- **Outside temperature range:**
  General Protocol model: from +5 °C above room temperature to 75 °C
  Advanced Protocol model: from +5 °C above room temperature to 105 °C
- Interior made of stainless steel
  General Protocol model: stainless steel 1.4016
  Advanced Protocol model: stainless steel 1.4301
- Housing interior with round edges make it easy to clean
- With additional interior glass door
- RS 232 port
- Natural convection minimizes dessication of samples; air circulation achieves more accurate temperatures
- Outlet connection 230 V, 50 Hz
- **Delivery incl.** 2 removable inserts

Technical specifications:

Type	IGS60	IGS100	IGS180	IMH60	IMH100	IMH180
Capacity (l)	75	117	194	66	104	178
Inner dimensions (mm)						
Width	354	464	464	354	464	464
Height	508	608	708	508	608	708
Depth	414	414	589	368	368	543
Outer dimensions[1] (mm)						
Width	530	640	640	530	640	640
Height	720	820	920	720	820	920
Depth	565	565	738	565	565	738
Removable inserts						
Delivery incl.	2					
Max. capacity	13	16	19	13	16	19
Other						
Rated power (W)	300	520	710	850	1100	1300
Weight (kg)	40	51	65	45	56	70
Temperature deviation at 37 °C						
temporal (°C)	±0.2			±0.1		
spatial (°C)	±0.6			±0.6/±0.2[2]	±0.6/±0.3[2]	±0.6/±04[2]

[1] Depth of handle and display (65 mm) not included in the measurement; adjustable feet (35 mm)
not included in height - clearance required to back wall: 80 mm

[2] Values refer to: fan switched off/fan at full speed

General Protocol incubators
- Integrated timer (1 min up to 99 h, 59 min)
- Microprocessor control
- Actual temperature display
- Setting accuracy ±0.1 K
- Automatic over temperature alarm

Models with natural convection

Type	Volume (l)	Temperature range up to °C	Art. No.	Pack Qty.	€
IGS60	75	75	**PL96.1** *	1	1269,00
IGS100	117	75	**PL97.1** *	1	1790,00
IGS180	194	75	**PL98.1** *	1	2491,00

* Longer delivery times possible. Please check with our Sales Department.

Incubators Advanced Protocol
- Digital timer for daily/weekly on/off cycles
- Setting accuracy ±0.1 K
- Cable conduit (∅ 50 mm) at the rear
- Automatic over temperature alarm
- With varnished housing
- With air-circulation fan: dual convection with settable fan speed from 0 (corresponds to natural convection) to 100 %

Models with air-circulation fan

Type	Volume (l)	Temperature range up to °C	Art. No.	Pack Qty.	€
IMH60	66	105	**PL99.1** *	1	1959,00
IMH100	104	105	**PP00.1** *	1	2608,00
IMH180	178	105	**PP01.1** *	1	3729,00

* Longer delivery times possible. Please check with our Sales Department.

Accessories for incubators Heratherm

By Thermo.
Removable insert kit: 1 removable insert with 2 attachment clamps.

Type	Art. No.	Pack Qty.	€
IGS60	**PP02.1**	1	103,00
IGS100	**PP03.1**	1	127,00
IGS180	**PP04.1**	1	138,00
IMH60	**PP05.1**	1	103,00
IMH100	**PP06.1**	1	127,00
IMH180	**PP07.1** *	1	138,00

* Longer delivery times possible. Please check with our Sales Department.

IN and INplus incubators

By Memmert.

General features:

- **Operating temperature range from 5 °C above room temperature to 80 °C**
  Set temperatures from 20 to 80 °C
  Adjustment accuracy 0.1 K
- Interior made of stainless steel (1.4301)
- Fully insulated stainless steel door (two-wing from size 450 upwards)
- **With additional inner glass door**
- Fresh air supply by electronically adjustable exhaust flap
- Structured stainless steel housing
- Incl. factory calibration certificate valid for +37 °C

Other features:

- **Natural air circulation (convection)**
- German, English, French and Spain language options
- Digital timer (adjustable from 1 min to 99 d, 23 h) or continuous duty
- "SetpointWAIT" function - process time does not start until the nominal temperature is achieved

Technical specifications:

Model sizes	**30**	**55**	**75**	**110**	**160**	**260**	**450**[1)]	**750**[1)]
Capacity (l)	32	53	74	108	161	256	449	749
Inner dimensions (mm):								
Width	400	400	400	560	560	640	1040	1040
Height	320	400	560	480	720	800	720	1200
Depth	250	330	330	400	400	500	600	600
Outer dimensions (mm):								
Width	585	585	585	745	745	824	1224	1224
Height	707	787	947	867	1107	1186	1247	1726
Depth (without door handle)[2)]	434	514	514	584	584	684	784	784
Stainless steel grids								
Delivery incl.	1	1	2	2	2	2	2	2
Max. capacity	3	4	6	5	8	9	8	14
Other								
Power consumption (W)	800	1000	1250	1400	1600	1700	1800	2000
Power supply	230 V, 50/60 Hz							
Weight (kg)	44	55	65	74	96	110	170	215
Temperature variation								
Time (°C) Spatial (°C)	Model IN <±0.2 / model INplus <±0.05 Model IN <±0.7 / model INplus <±0.7							

1) With castors, movable and lockable
2) Door handle: 56 mm

Delivery incl. stainless steel grids
(models 30 and 55: 1 grid, models 75 to 750: 2 grids)

IN models

- Graphical single TFT display with touchscreen for operation and display of temperature, program runtime and air flap position
- Integrated data logger with 10-year memory
- With Ethernet communication port for log data readout
- Overtemperature protection

Type	Model size	Art. No.	Pack Qty.	€
IN	30	**TY30.1** *	1	1028,00
IN	55	**TY31.1** *	1	1269,00
IN	75	**TY32.1** *	1	1503,00
IN	110	**TY33.1** *	1	1733,00
IN	160	**TY34.1** *	1	2361,00
IN	260	**TY35.1** *	1	3118,00
IN	450	**TY36.1** *	1	4153,00
IN	750	**TY37.1** *	1	5615,00

* Longer delivery times possible. Please check with our Sales Department.

INplus models

- Two graphical TFT displays with touchscreen for operation and display of temperature, program runtime, air damper position and graphical display of program flow
- Integrated data logger with 10-year memory
- **Display of recorded log data (max. 10000 values correspond to approx. 1 week) directly on the instrument**
- Application-specific correction of heat output distribution between the upper and lower heating groups within an adjustment range from -50 to +50 %
- With Ethernet communication port for log data readout as well as for transmitting and launching programs and online logging
- With sterilization program: 4-hour program at 160 °C for sterilization of the interior incl. all fittings and all sensors
- **USB port for installing programs and reading out the data logger incl. software (to create ramp programs and 7-day programs)**
- Definition of individual Min/Max values for high/low temperature protection

Type	Model size	Art. No.	Pack Qty.	€
INplus	30	**TY38.1** *	1	1716,00
INplus	55	**TY39.1** *	1	1936,00
INplus	75	**TY40.1** *	1	2185,00
INplus	110	**TY41.1** *	1	2454,00
INplus	160	**TY42.1** *	1	3061,00
INplus	260	**TY43.1** *	1	3736,00
INplus	450	**TY44.1** *	1	4847,00
INplus	750	**TY45.1** *	1	6353,00

* Longer delivery times possible. Please check with our Sales Department.

Programme extension!

Microbiological incubators, models BD and BF

By Binder.

General features:

- **Operating temperature range from 7 °C and room temperature to 100 °C**
  Setting temperatures from 30 to 100 °C
  Setting accuracy: ±0.1 °C
- Models with volumes of 400 l or higher come with a double-panel door
- With integrated timer with range from 0 to 99 h
- With additional inner door of safety glass
- 100 °C disinfection routine for reduced cross-contamination
- Adjustable air renewal and rear exhaust ∅ 50 mm
- Class 3.1 temperature safety device (DIN 12880) with visual alarm
- Mains connection 230 V, 50/60 Hz

Models BD/BF 56, BD/BF 115 and BD/BF 260 also have:
USB port for recording data (time, actual temperature value, set temperature value, etc.)

Technical specifications:

Models		BD 23	BD 56/ BF 56	BD 115/ BF 115	BD 260/ BF 260	BD 400/ BF 400	BD 720/ BF 720
Capacity (l)	BD BF	20 -	57 59	112 114	253 257	400 400	737 734
Inner dimensions (mm):							
Width	BD BF	222 -	360 400	510 550	610 650	1000 1000	960 1000
Height	BD BF	330 -	420 440	530 550	760 780	800 800	1280 1300
Depth	BD BF	277 -	380 340	420 380	545 510	500 500	600 565
Outer dimensions (mm):							
Width		435	560	710	815	1235	1165
Height		495	625	735	965	1025	1560
Depth [1]	BD BF	620 -	640 640	680 680	815 815	860 875	910 910
Grids, chrome plated							
Delivery incl.		2	2	2	2	2	2
Max. capacity		3	4	5	7	10	15
Other							
Rated power (W)	BD BF	200 -	300 400	350 400	850 900	850 850	1250 1250
Power supply		230 V, 50/60 Hz					
Weight (kg)	BD BF	26 -	38 38	54 54	85 85	135 145	170 165
Temperature variance							
temporal (°C)	BD BF	±0.2 -	±0.2 ±0.1	±0.1 ±0.1	±0.2 ±0.1	±0.1 ±0.2	±0.1 ±0.1
spatial (°C)	BD BF	±0.5 -	±0.5 ±0.3	±0.4 ±0.3	±0.4 ±0.3	±0.5 ±0.4	±0.5 ±0.4

1) Incl. door handle and exhaust

Delivery incl. 2 grids, chrome plated.

BD models
With natural air circulation (convection)

Type	Model size	Art. No.	Pack Qty.	€
BD	23	**CKE6.1** *	1	1512,55
BD	56	**CKE7.1** *	1	1495,35
BD	115	**CKE8.1** *	1	2011,35
BD	260	**CKE9.1** *	1	3407,75
BD	400	**CKH0.1** *	1	4877,30
BD	720	**CKH1.1** *	1	6628,45

* Longer delivery times possible. Please check with our Sales Department.

BF models
With forced air circulation (fan)

- Fan speed cannot be regulated or switched off
- Timer function selection:
  - Heater is switched off when the set time expires
  - The set timer does not start until the actual value reaches the selected set value. Heater is switched off when the set time expires.
  - Heater is switched on after set time expires and stays in continuous operation.

Type	Model size	Art. No.	Pack Qty.	€
BF	56	**CKH2.1** *	1	2030,70
BF	115	**CKH3.1** *	1	2650,95
BF	260	**CKH4.1** *	1	4128,00
BF	400	**CKH5.1** *	1	5158,95
BF	720	**CKH6.1** *	1	6889,70

* Longer delivery times possible. Please check with our Sales Department.

Accessories for incubators of models BD and BF

By Binder.
Grids, chrome plated

for type	Art. No.	Pack Qty.	€
BD 23	**CKE0.1**	1	46,05
BD 56	**CKE1.1**	1	73,65
BF 56	**ECY1.1**	1	73,65
BD 115	**CKE2.1**	1	113,95
BF 115	**ECY2.1**	1	113,95
BD 260	**CKE3.1**	1	212,85
BF 260	**ECY3.1**	1	212,85
BD 400, BF 400	**CKE4.1**	1	234,35
BF 720	**HPA7.1**	1	255,85

Heratherm high-capacity incubators

By Thermo.

General features:

- Free-standing units with fixed rollers
- With internal glass door
- Stainless steel interior
- RS 232 port
- Mains connection 230 V, 50 Hz

Technical specifications:

Type	IGS400	IGS750	IMH400-S	IMH750-S
Capacity (l)	405	747	381	702
Inner dimensions (mm)				
Width	544	1004	544	1004
Height	1307	1307	1335	1335
Depth	569	569	524	524
Outer dimensions[1] (mm)				
Width	778	1261	778	1261
Height	1545	1545	1545	1545
Depth	770	770	770	770
Removable shelves				
Delivery incl.	2			
Max. capacity	39			
Other				
Rated power (W)	1200	1500	1400	1600
Weight (kg)	145	201	144	205
Temperature deviation at 37 °C				
temporal (°C)	±0.4		±0.2	
spatial (°C)	±0.5	±1.3	±0.2	±0.3

[1] not including depth of handle and display (65 mm) and height of rollers (108 mm); required clearance to rear panel 120 mm.

Delivery incl. 2 stainless steel perforated shelves.

General Protocol:

- **Operating temperature range from +5 °C above room temperature to 75 °C**
- With natural convection
- Integrated timer (1 min to 99 h, 59 min)
- Actual temperature display; setting accuracy ±0.1 K

Type	Volume (l)	Temperature range up to °C	Art. No.	Pack Qty.	€
IGS400	405	75	**XH26.1** *	1	4283,00
IGS750	747	75	**XH27.1** *	1	5861,00

Advanced Protocol:

- **Operating temperature range from +5 °C above room temperature to 105 °C**
- Setting accuracy ±0.1 K
- Mechanical convection - 2-stage fan: can run fast or slow, but cannot be switched off
- Cable feedthrough (∅ 19 mm), e.g. for fitting sensors
- An audible alarm sounds if the door is accidentally left open
- Switch on/off after a pre-set time
- Weekly setting or real-time control
- Programmable control for temperature ramps and dwell times (memory for 10 programs each with 10 individual steps)

Type	Volume (l)	Temperature range up to °C	Art. No.	Pack Qty.	€
IMH400-S	381	105	**XH28.1** *	1	5355,00
IMH750-S	702	105	**XH29.1** *	1	6764,00

Accessories for Heratherm high-capacity incubators

By Thermo.

Perforated shelf kit: 1 shelf with 2 supports.

for type	Art. No.	Pack Qty.	€
IGS400, IMH400-S	**XH30.1** *	1	215,00
IGS750, IMH750-S	**XH31.1** *	1	287,00

* Longer delivery times possible. Please check with our Sales Department.

Incubator inserts

Made of PP, stackable. For easy organisation of petri dishes and convenient transfer to other incubation or storage systems.
With 16 ventilation holes and 2 labelling spaces.
Outer dimensions: L 251 x W 237 x H 35 mm.
Loading options: e.g. 5 Petri dishes ∅ 100 mm or 15 Petri dishes ∅ 60 mm or 21 culture bottles 25 cm².

Art. No.	Pack Qty.	€
YC19.1	3	60,75

Peltier cooling incubators IPP-series

By Memmert.

General features:

- **Operating temperature range from 0 to 70 °C**
  Set temperatures from 0 to 70 °C
  Adjustment accuracy 0.1 K
- Interior made of stainless steel (1.4301)
- Fully insulated stainless steel door (two-wing from size 450 upwards)
- **With additional inner glass door**
- Structured stainless steel housing
- Incl. factory calibration certificate valid for +10 °C and +37 °C

Other features:

- Language settings: German, English, French and Spanish
- Digital timer (adjustable from 1 min to 99 d, 23 h) or continuous duty
- "SetpointWAIT" function - process time does not start until the nominal temperature is achieved

Technical specifications:

Model sizes	**30**	**55**	**110**	**260**
Capacity (l)	32	53	108	256
Inner dimensions (mm):				
Width	400		560	640
Height	320	400	480	800
Depth[1)]	250	330	400	500
Outer dimensions (mm):				
Width	585		745	824
Height	707	787	867	1186
Depth (without door handle)[2)]	524	604	674	774
Stainless steel grids				
Delivery incl.	1	1	2	2
Max. capacity	3	4	5	9
Other				
Number of Peltier elements	1	1	2	3
Power consumption (W)	125	175	350	525
Power supply	230 V, 50/60 Hz			
Weight (kg)	51	62	80	115
Temperature variation				
Time (°C) Spatial (°C)	0.1 0.4			

1) Less 10 mm for Peltier fan
2) Door handle: 56 mm

Delivery incl. stainless steel grids
(models 30 and 55: 1 grid, models 110 and to 260: 2 grids)

IPP models

- Graphical single TFT display with touchscreen for operation and display of temperature and program runtime
- Integrated data logger with 10-year memory
- With Ethernet communication port for log data readout
- Overtemperature protection

Type	Model size	Art. No.	Pack Qty.	€
IPP	30	**TY46.1** *	1	2537,00
IPP	55	**TY47.1** *	1	2762,00
IPP	110	**TY48.1** *	1	4119,00
IPP	260	**TY49.1** *	1	5760,00

Models IPP-Soc

Same as model IPP, but version with inner socket
(current capacity 220 V/2.2 A) can be switched off via the master switch and is not separately switchable.

Type	Model size	Art. No.	Pack Qty.	€
IPP-Soc	30	**TY50.1** *	1	2877,00
IPP-Soc	55	**TY51.1** *	1	3102,00
IPP-Soc	110	**TY52.1** *	1	4459,00
IPP-Soc	260	**TY53.1** *	1	6100,00

* Longer delivery times possible. Please check with our Sales Department.

IPPplus models

- Two graphical TFT displays with touchscreen for operation and display of temperature, program runtime, air damper position and graphical display of program flow
- Integrated data logger with 10-year memory
- **Display of recorded log data (max. 10000 values correspond to approx. 1 week) directly on the instrument**
- Application-specific correction of the heat output distribution between the upper and lower heating groups within an adjustment range from -50 to +50 %
- With Ethernet communication port for log data readout as well as for transmitting and launching programs and online logging
- **USB port for installing programs and reading out the data logger incl. software (to create ramp programs and 7-day programs)**
- Definition of individual Min/Max values for high/low temperature protection

Type	Model size	Art. No.	Pack Qty.	€
IPPplus	30	**TY54.1** *	1	2855,00
IPPplus	55	**TY55.1** *	1	3079,00
IPPplus	110	**TY56.1** *	1	4392,00
IPPplus	260	**TY57.1** *	1	6149,00

* Longer delivery times possible. Please check with our Sales Department.

Cooling incubators

Peltier cooling incubators KT-series

By Binder.

General features:

- **Operating temperature range: from 4 to 100 °C**
  Setting accuracy: ±0.1 °C
- 5.7 inch LCD monitor and turn/push button for input
- Variable time and weekday programming
  - Storage capacity for up to 60 programs (in KT 53 version) or 100 programs (in KT 115 version)
  - Measurement data can be saved to internal memory
  - Readout of programs and data via USB port
  - Adjustable fan speed (min. speed 30 %)
- With additional inner door of safety glass
- Ethernet interface
- Class 3.1 temperature safety device (DIN 12880) with visual and audible alarms

Technical specifications:

Models	KT 53	KT 115
Volume (l)	53	102
Inner dimensions (mm):		
Width	400	600
Height	400	455
Depth	334	355
Outer dimensions (mm):		
Width	660	860
Height	635	715
Depth[1)]	695	815
Stainless steel grids		
Delivery incl.	2	2
Max. capacity	5	6
Other		
Rated power (W)	400	700
Power supply	200-240 V, 50/60 Hz	
Weight (kg)	63	83
Temperature variance		
temporal (°C)	±0.1	
spatial (°C)	±0.3	±0.3

1) incl. door handle

Delivery incl. 2 stainless steel grids.

Type	Art. No.	Pack Qty.	€
KT 53	**CKK0.1** *	1	4268,85
KT 115	**CKK1.1** *	1	5238,50

* Longer delivery times possible. Please check with our Sales Department.

Cooling incubators KB-series

By Binder.

General features:

- **Operating temperature range:**
  KB 23: from 0 to 100 °C
  KB 53 and KB 115: from -5 to 100 °C
  Setting accuracy: ±0.1 °C
- **Cooling compression refrigerator**
- Controller with 2 programs each with 10 individual steps
  - Integrated 7 day programmable timer with real time function
  - Adjustable ramp function via program editor
  - Adjustable fan speed (min. speed 30 %)
- With additional inner door of safety glass
- Class 3.1 temperature safety device (DIN 12880) with visual and audible alarms
- Mains connection 230 V, 50 Hz

Technical specifications:

Models	KB 23	KB 53	KB 115
Volume (l)	20	53	115
Inner dimensions (mm):			
Width	222	400	600
Height	330	400	480
Depth	277	330	400
Outer dimensions (mm):			
Width	435	635	835
Height	620	835	1025
Depth[1)]	595	660	700
Stainless steel grids			
Delivery incl.	2	2	2
Max. capacity	3	4	5
Other			
Power consumption (W)	340	460	460
Power supply	230 V, 50 Hz		
Weight (kg)	44	75	106
Temperature variance			
Temporal (°K)	±0.1		
Spatial (°K)	±0.3	±0.2	±0.2

1) incl. door handle

Delivery incl. 2 stainless steel grids.

Type	Art. No.	Pack Qty.	€
KB 23	**CKH7.1** *	1	4684,85
KB 53	**CKH8.1** *	1	5088,00
KB 115	**CKH9.1** *	1	6081,30

* Longer delivery times possible. Please check with our Sales Department.

Cooling incubators

Cooling incubators Heratherm® IMP series

By Thermo.
Applications: Development processes for new products, quality assurance in the food, beverage and cosmetics industry, water analysis, as well as cell culture and microbiological analyses.

General features:
- **Operating temperature range: from 5 to 70 °C**
  Setting accuracy: ±0.1 °C
- Pelleting technology
- Heated door minimizes condensation
- Timer with weekly/daily or real-time mode
- Programming option for defined temperature ramps, with cooling and dwell time: storage of up to 10 programs with 10 temperature stages, loop program and selection mode at end of cycle
- Adjustable over-temperature shut-down
- Fan speeds adapt for power optimization
- Inside glass door for sample monitoring
- **Cable conduit for data monitoring (42 mm) on rear side**
- RS 232 interface
- Stainless steel interior (1.4301/ASTM 304)

Technical specifications:

Model		IMP180 table device	IMP400 floor-mounted device
Capacity (l)		178	381
Inner dimensions (mm)			
Width		464	544
Height		708	1335
Depth		543	524
Outer dimensions (mm)			
Width		640	778
Height		920*	1545**
Depth		738*	770**
Removable shelves			
Max. capacity		9	17
Shelf size W x D (mm)		439 x 505	528 x 498
Other			
Power consumption (Wh/h)		80	150
Power supply		100-230 V, 50/60 Hz	
Weight		97	216
Temperature variance			
temporal (°C)		±0.1	
spatial (°C)	at 20 °C at 37 °C	±0.2 ±0.5	±0.3 ±0.7

*Depth of handle/display not included in depth (65 mm); adjustable feet not included in height (35 mm)
**Depth of handle/display not included in depth (65 mm); rollers not included in height (180 mm)

Delivery incl. 2 stainless steel perforated shelves.

Standard version

Type	Art. No.	Pack Qty.	€
IMP180	**HCE7.1** *	1	5684,00
IMP400	**HCE8.1** *	1	7895,00

With inside socket - not switchable

Type	Art. No.	Pack Qty.	€
IMP180	**HCE9.1** *	1	6316,00
IMP400	**HCH0.1** *	1	8421,00

* Longer delivery times possible. Please check with our Sales Department.

Accessories for cooling incubators Heratherm® IMP series

By Thermo.
Removable shelf kit: 1 shelf with 2 supports

Product	Art. No.	Pack Qty.	€
IMP180	**PP07.1** *	1	138,00
IMP400	**XH30.1** *	1	215,00

* Longer delivery times possible. Please check with our Sales Department.

CO_2 incubator Midi 40

By Thermo. For use in cell culture to breed small cultures, or where space is limited in the laboratory.

- **Working temperature from +5 °C above room temperature to 60 °C (in steps of 0.1 °C) and CO_2 concentrations up to 20 % (in steps of 0.1 %)**
- Digital display for easy input of °C, CO_2 content and alarm limits
- Setpoints can be secured using a key-operated switch to prevent unwanted alteration of the operating parameters
- Seam-free interior made of stainless steel (non-corrosive stainless steel, type 304) with 4 extractable shelves
- Removable water container for a relative humidity of up to 95 %
- Inside door made of safety glass is heated by the outside door to avoid condensation
- To supply the incubator with CO_2, a separate gas cylinder or a central compressed-gas tank is required
- Conditioned water (demineralised/distilled and autoclaved and/fully desalinated/distilled and autoclaved) is required for humidification

Technical specifications:

Capacity	40 l
Temperature deviation at 37 °C	±0.4 K
CO_2 consistency	±0.10 %
Internal dimensions (W x D x H)	305 x 355 x 355 mm
Outer dimensions (W x D x H)	470 x 597 x 465 mm
Dimensions perforated trays (W x D)	343 x 292 mm
Required input pressure	1.0 bar, 99.5 Vol.-% medical classification CO_2
Intake-air filtration	CO_2 filter, PTFE filter 0.3 µm
Weight	32 kg
Power supply	230 V, 50/60 Hz

Delivery incl. 4 perforated stainless steel trays, water container (∅ 12.7 mm), CO_2 filter and hose set (ID 1.59 mm, AD 6.35 mm, approx. L 0.5 m).

Art. No.	Pack Qty.	€
ETT3.1 *	1	4143,00

* Longer delivery times possible. Please check with our Sales Department.

CO_2 incubator BB 15

By Thermo. With air jacket heating for constant temperature as well as a second control circuit that assumes control of the set temperature in the case of a fault. The chamber floor is used as water reservoir (an electric suction pump is included in the scope of delivery for changing the water). The large water surface and direct heat transfer from the heated base achieve a faster humidity recovery time.

- **Working temperature from 3 °C above room temperature to 55 °C (in steps of 0.1-°C) and CO_2 concentrations up to 20 % (in steps of 0.1-%)**
- Digital display for °C and CO_2 content
- Tube penetration 42 mm in the rear wall allows operation of additional devices
- Stainless steel interior
- Constant moisture at 37 °C approx. 95 % rF
- Additional inside door made of glass, heated outside door
- To supply the incubator with CO_2, a separate gas cylinder or a central compressed-gas tank is required
- Conditioned water (demineralised/distilled and autoclaved and/fully desalinated/distilled and autoclaved) is required for humidification

Technical specifications:

Capacity	151 l
Temperature deviation time / space	±0.1 / ±0.5 K
CO_2 consistency	±0.3 %
Inner dimensions (W x H x D)	470 x 607 x 530 mm
Outer dimensions (W x H x D)	637 x 867 x 766 mm
Dimensions perforated trays (W xD)	423 x 455 mm
Shelves **Delivery incl.** / max. capacity	3 / 10
Required input pressure	0.8 to 1.0 bar, 99.5 Vol.-% medical CO_2 quality
Intake-air filtration	CO_2 filter, PTFE filter 0.3 µm, filter housing PP
Weight	70 kg
Power supply	230 V, 50/60 Hz

Delivery incl. 3 perforated plate insert, hose set (ID 4 mm, AD 10 mm, approx. L 3 m), CO_2 filter and electric immersion pump.

Art. No.	Pack Qty.	€
ETT4.1 *	1	5274,00

* Longer delivery times possible. Please check with our Sales Department.

LHT high-temperature laboratory ovens

By Carbolite Gero.

- For maximum temperatures of 400, 500 or 600 °C depending on unit type
- Only 10 minutes recovery time at 400 or 500 °C after the door has been open for 1 min
- Polished stainless steel inner chamber
- Rugged powder coated outer housing
- High-performance recirculating air fan in the inner chamber (non-regulable)
- Adjustable digital overtemperature protection
- PID thermostat with digital display (nominal/actual temperature display)

Technical specifications:

Type	LHT 4/30	LHT 5/30	LHT 6/30
Capacity (l)	30		
Max. temperature (°C)	400	500	600
Dimensions			
Inner dimensions W x H x D (mm)	300 x 300 x 305		
Outer dimensions W x D x H (mm)	830 x 570 x 570		
Removable shelves			
Delivery incl. / max. capacity (pce.)	2 / 2		
Temperature variation			
Temporal (°C)	±0.5		
Spatial (°C)	±5		
Other			
Heating rates up to max. temp. (min)	50	50	70
Power consumption (W)	1000	2000	2000
Weight (kg)	73		
Power supply	230 V, 50 Hz		

Delivery incl. 2 grid shelves.

Type	Art. No.	Pack Qty.	€
LHT 4/30	**NP16.1** *	1	5198,70
LHT 5/30	**NP17.1** *	1	6375,85
LHT 6/30	**NP18.1** *	1	6968,15

* Longer delivery times possible. Please check with our Sales Department.

NEW

ED-S and FD-S Solid.Line drying ovens

- **Operating temperature range from +7 °C (ED-S) or +10 °C (FD-S) above room temperature to 250 °C**
- APT.line™ preheating chamber technology
- Adjustable exhaust air flap
- Controller with timer function (1 min to 99 h)
- Integrated Class 2 temperature safety device (DIN 12880) with visual alarm

ED-S
With natural air movement (convection)

FD-S
With circulating air (fan speed cannot be controlled or deactivated)

Technical specifications:

Type	ED-S 056/FD-S 056	ED-S 115/FD-S 115
Volume (l) ED-S	62	118
Volume (l) FD-S	55	106
Resolution for temperature display (°C)	1	
Inner dimensions W x H x D (mm) ED-S	400 x 440 x 350	550 x 550 x 390
Inner dimensions W x H x D (mm) FD-S	400 x 440 x 310	550 x 550 x 350
Outer dimensions W x H x D (mm)	614 x 625 x 580	764 x 735 x 630
Racks: Standard/max. number	2/4	2/5
Temperature deviation at 37 °C: ED-S	temporal: ±0.8 °C, spatial: ±2.8 °C	
Temperature deviation at 37 °C: FD-S	temporal: ±0.5 °C, spatial: ±2.6 °C	
Weight (kg)	41	57
Power supply	230 V, 50 Hz	

Delivery incl. two chrome-plated racks.

Type	Art. No.	Pack Qty.	€
ED-S 056	**KCT9.1**	1	1128,75
FD-S 056	**KCX0.1**	1	1376,00
ED-S 115	**KCX1.1**	1	1408,25
FD-S 115	**KCX2.1**	1	1795,25

Accessories for Solid.Line incubators and drying ovens

Racks, chrome-plated

for type	Art. No.	Pack Qty.	€
BD-S 056 / ED-S 056 / FD-S 056	**KCT7.1**	1	36,55
BD-S 115 / ED-S 115 / FD-S 115	**KCT8.1**	1	52,70

Universal heating and drying cabinets

By Memmert.
UN, UNplus, UF and UFplus models

General features:
- **Operating temperature range from 5 °C (UN/UNplus) or 10 °C (UF/UFplus) above room temperature to 300 °C**
  Set temperatures from 20 to 300 °C
  Adjustment accuracy to 99.9 °C: 0.1 K from 100 °C: 0.5 K
- Interior made of stainless steel (1.4301)
- Fully insulated stainless steel door (two-wing from size 450 upwards)
- Fresh air supply by electronically adjustable exhaust flap
- Structured stainless steel housing
- **Incl.** factory calibration certificate valid for +160 °C
- **Power supply of models 30 to 260: 230 V, 50/60 Hz**
  Power supply of models 450 and 750:
  400 V and 3 x 220 V, 50/60 Hz

Other features:
- German, English, French and Spain language options
- Digital timer (adjustable from 1 min to 99 d, 23 h) or continuous duty
- "SetpointWAIT" function - process time does not start until the nominal temperature is achieved

Technical specifications:

Model sizes	30	55	75	110	160	260	450[1]	750[1]
Capacity (l)	32	53	74	108	161	256	449	749
Inner dimensions (mm):								
Width	400	400	400	560	560	640	1040	1040
Height	320	400	560	480	720	800	720	1200
Depth[2]	250	330	330	400	400	500	600	600
Outer dimensions (mm):								
Width	585	585	585	745	745	824	1224	1224
Height	707	787	947	867	1107	1186	1247	1726
Depth (without door handle)[3]	434	514	514	584	584	684	784	784
Stainless steel grids								
Delivery incl.	1	1	2	2	2	2	2	2
Max. capacity	3	4	6	5	8	9	8	14
Other								
Power consumption (W)	1600	2000	2500	2800	3200	3400	5800	7000
Power supply	230 V, 50/60 Hz						400 V and 3 x 220 V, 50/60 Hz	
Weight (kg)	44	55	65	74	96	110	170	215
Temperature variation								
Time (°C) Spatial (°C)	Models UN/UF <±0.5 / models UNplus/UFplus <±0.25 Models UN/UF <±2.7 / models UNplus/UFplus <±2.2							

1) With castors, movable and lockable
2) Less 39 mm for forced air circulation (convection) equipment
3) Door handle: 56 mm

Delivery incl. stainless steel grids
(models 30 and 55: 1 grid, models 75 to 750: 2 grids)

Models UN and UF
- Graphical single TFT display with touchscreen for operation and display of temperature, program runtime and air flap position
- Integrated data logger with 10-year memory
- With Ethernet communication port for log data readout
- Overtemperature protection
- **Additional feature of UF model:** low-noise air turbine for air circulation mode (air turbine can be adjusted and switched off)

Type UN, with natural air circulation (convection)

Type	Model size	Art. No.	Pack Qty.	€
UN	30	**TX98.1** *	1	1000,00
UN	55	**TX99.1** *	1	1159,00
UN	75	**TY00.1** *	1	1414,00
UN	110	**TY01.1** *	1	1640,00
UN	160	**TY02.1** *	1	2184,00
UN	260	**TY03.1** *	1	2891,00
UN	450	**TY04.1** *	1	3832,00
UN	750	**TY05.1** *	1	5199,00

Type UF, with forced air circulation (ventilator)

Type	Model size	Art. No.	Pack Qty.	€
UF	30	**TY06.1** *	1	1190,00
UF	55	**TY07.1** *	1	1433,00
UF	75	**TY08.1** *	1	1695,00
UF	110	**TY09.1** *	1	1980,00
UF	160	**TY10.1** *	1	2607,00
UF	260	**TY11.1** *	1	3324,00
UF	450	**TY12.1** *	1	4353,00
UF	750	**TY13.1** *	1	5875,00

* Longer delivery times possible. Please check with our Sales Department.

Models UNplus and UFplus
- Two graphical TFT displays with touchscreen for operation and display of temperature, program runtime, air damper position and graphical display of program flow
- Integrated data logger with 10-year memory
- **Display of recorded log data (max. 10000 values correspond to approx. 1 week) directly on the instrument**
- Application-specific correction of heat output distribution between the upper and lower heating groups within an adjustment range from -50 to +50 %
- With Ethernet communication port for log data readout as well as for transmitting and launching programs and online logging
- Definition of individual Min/Max values for high/low temperature protection
- **USB port for installing programs and reading out the data logger incl. software (to create ramp programs and 7-day programs)**
- **Additional feature of UF/UFplus models:** low-noise air turbine for air circulation mode (air turbine can be adjusted and switched off)

Type UNplus, with natural air circulation (convection)

Type	Model size	Art. No.	Pack Qty.	€
UNplus	30	**TY14.1** *	1	1666,00
UNplus	55	**TY15.1** *	1	1818,00
UNplus	75	**TY16.1** *	1	2023,00
UNplus	110	**TY17.1** *	1	2319,00
UNplus	160	**TY18.1** *	1	2888,00
UNplus	260	**TY19.1** *	1	3455,00
UNplus	450	**TY20.1** *	1	4453,00
UNplus	750	**TY21.1** *	1	5841,00

Type UFplus, with forced air circulation (ventilator)

Type	Model size	Art. No.	Pack Qty.	€
UFplus	30	**TY22.1** *	1	1757,00
UFplus	55	**TY23.1** *	1	2086,00
UFplus	75	**TY24.1** *	1	2301,00
UFplus	110	**TY25.1** *	1	2653,00
UFplus	160	**TY26.1** *	1	3306,00
UFplus	260	**TY27.1** *	1	3929,00
UFplus	450	**TY28.1** *	1	5002,00
UFplus	750	**TY29.1** *	1	6550,00

* Longer delivery times possible. Please check with our Sales Department.

Drying and warming cabinets

Heratherm drying cabinets

By Thermo.
General Protocol and Advanced Protocol models

General features:
- **Temperature range:**
  General Protocol model: 50 to 250 °C
  Advanced Protocol model: 50 to 330 °C
- Interior made of stainless steel
  General Protocol model: stainless steel 1.4016
  Advanced Protocol model: stainless steel 1.4301
- Smooth housing interior and round edges make it easy to clean
- Automatic over temperature alarm
- Microprocessor control
- Setting accuracy ±1 K
- RS 232 port
- **Natural convection** for gentle drying and heating with low air turbulence (e. g. powder or film) or **air circulating** for fast drying and heating
- Outlet connection 230 V, 50 Hz

Technical specifications:

Type	OGS60/ OGH60	OGS100/ OGH100	OGS180/ OGH180	OMS60/ OMH60	OMS100/ OMH100	OMS180/ OMH180
Capacity (l)	65/61	105/99	176/168	66/62	104/97	179/170
Inner dimensions (mm)						
Width	328	438	438	354	464	464
Height	480	580	680	508	608	708
Depth	415/389	414/389	589/564	368/343	368/343	543/518
Outer dimensions[1] (mm)						
Width	530	640	640	530	640	640
Height	720	820	920	720	820	920
Depth	565	565	738	565	565	738
Removable inserts						
Delivery incl.	2					
Max. capacity	13	16	19	13	16	19
Other						
Rated power (W)	1800	3100	3100	1400	3060	3060
Weight (kg)	42/44	53/55	66/69	42/44	53/55	66/69
Temperature deviation at 150 °C						
temporal (°C)	±0.4/ ±0.3	±0.4/ ±0.3	±0.4/ ±0.3	±0.3/ ±0.2	±0.3/ ±0.2	±0.3/ ±0.2
spatial (°C)	±4.4/ ±2.5	±4.0/ ±3.0	±4.0/ ±2.5	±2.8/ ±1.8	±2.5/ ±1.3	±2.8/ ±1.8

[1] Depth of handle and display (65 mm) not included; adjustable feet (35 mm) not included in height.

Delivery incl. 2 removable inserts.

Drying cabinets Heratherm General Protocol:
- Integrated timer (1 min up to 99 h, 59 min)
- Actual temperature display
- Models with air-circulation fan: air turbine cannot be set or switched off

General Protocol with natural convection

Type	Volume (l)	Temperature range up to °C	Art. No.	Pack Qty.	€
OGS60	65	250	**PL56.1** *	1	1098,00
OGS100	105	250	**PL57.1** *	1	1618,00
OGS180	176	250	**PL58.1** *	1	2207,00

* Longer delivery times possible. Please check with our Sales Department.

General Protocol with air-circulating fan

Type	Volume (l)	Temperature range up to °C	Art. No.	Pack Qty.	€
OMS60	66	250	**PL59.1** *	1	1445,00
OMS100	104	250	**PL60.1** *	1	2020,00
OMS180	179	250	**PL61.1** *	1	2778,00

* Longer delivery times possible. Please check with our Sales Department.

Drying cabinets Heratherm Advanced Protocol
- Switch on/off after a pre-set time
- Weekly setting or real-time control
- Programmable control for temperature increase interval times (memory for 10 programs each with 10 individual steps)
- Bushing (∅ 19 mm) at the back enables sensor to be inserted, e.g. for independent data monitoring
- Housing varnished on outside
- Models with air-circulation fan: controllable fan speed for application-specific air flow rates (cannot be switched off completely)

Advanced Protocol with natural convection

Type	Volume (l)	Temperature range up to °C	Art. No.	Pack Qty.	€
OGH60	61	330	**PL62.1** *	1	1685,00
OGH100	99	330	**PL63.1** *	1	2196,00
OGH180	168	330	**PL64.1** *	1	2778,00

Advanced Protocol with air-circulating fan

Type	Volume (l)	Temperature range up to °C	Art. No.	Pack Qty.	€
OMH60	62	330	**PL65.1** *	1	2088,00
OMH100	97	330	**PL66.1** *	1	2770,00
OMH180	170	330	**PL67.1** *	1	3588,00

* Longer delivery times possible. Please check with our Sales Department.

Accessories for Heratherm drying cabinets

By Thermo.
Removable shelf kit: 1 shelf with 2 supports

for type	Art. No.	Pack Qty.	€
OGS60, OGH60	**PL68.1**	1	68,80
OGS100, OGH100	**PL69.1**	1	92,00
OGS180, OGH180	**PL70.1**	1	116,00
OMS60, OMH60	**PL71.1**	1	68,70
OMS100, OMH100	**PL72.1**	1	92,20
OMS180, OMH180	**PL73.1**	1	116,00

Programme extension!

Universal heating and drying ovens, models ED, FD and FED

By Binder.

- **Operating temperature range from 15 °C and room temperature to 300 °C**
  Setting temperatures from 30 to 300 °C; Setting accuracy: ±1 °C
- Adjustable air renewal and rear exhaust ∅ 50 mm
- Models with volumes of 400 l or higher come with a double-panel door
- With integrated timer with range from 0 to 99 h
- **Power supply of models 23 to 260: 230 V, 50/60 Hz**
  Power supply of models 400 and 720: 400 V, 50/60 Hz. 3 N ~

Models ED/FD/FED 56, ED/FD/FED 115
and ED/FD/FED 260 also have: USB port for recording data

Technical specifications:

Models		ED 23/ FD 23	ED 56/ FD 56/ FED 56	ED 115/ FD 115/ FED 115	ED 260/ FD 260/ FED 260	ED 400/ FED 400	ED 720/ FED 720
Capacity (l)	ED FD FED	20 20 -	57 60 60	114 116 116	255 259 259	400 - 400	743 - 741
Inner dimensions (mm):							
Width	ED FD/FED	222 222	360 400	510 550	610 650	1000 1000	960 1000
Height	ED FD/FED	330 330	420 440	530 550	760 780	800 800	1280 1200
Depth	ED FD FED	300 300 -	380 345 345	425 385 385	550 515 515	520 - 500	605 - 610
Outer dimensions (mm):							
Width		435	560	710	810	1235	1165
Height		495	625	735	965	1025	1590
Depth[1)]	ED FD FED	620 605 -	640 640 640	680 680 680	815 815 815	860 - 875	910 - 910
Grids, chrome plated							
Delivery incl.		2	2	2	2	2	2
Max. capacity		3	4	5	7	10	15
Other							
Rated power (W)	ED FD/FED	800 800	1050 1100	1250 1300	2250 2300	3400 3400	5000 5000
Power supply		230 V, 50/60 Hz				400 V, 3 N ~	
Weight (kg)	ED FD FED	22 33 -	40 40 40	50 50 50	85 85 85	125 - 145	161 - 162
Temperature variance							
temporal (°C)	ED FD/FED	±0.3 ±0.3	±0.4 ±0.3	±0.4 ±0.3	±0.7 ±0.3	±0.3 ±0.3	±0.5 ±0.3
spatial (°C)	ED FD FED	±2.5 ±2.2 -	±2.5 ±1.7 ±1.4	±2.0 ±1.7 ±1.2	±2.0 ±1.5 ±1.5	±3.0 - ±2.5	±3.6 - ±3.0

1) Incl. door handle and exhaust

Delivery incl. 2 grids, chrome plated.

ED models
With natural air circulation (convection)

Type	Art. No.	Pack Qty.	€
ED 23	**CKA5.1** *	1	1368,50
ED 56	**CKA6.1** *	1	1296,45
ED 115	**CKA7.1** *	1	1911,35
ED 260	**CKA8.1** *	1	3572,25
ED 400	**CKA9.1** *	1	4625,75
ED 720	**CKC0.1** *	1	6345,75

Model FD
With forced air circulation (fan)
Fan speed cannot be regulated or switched off

Type	Art. No.	Pack Qty.	€
FD 23	**CKC1.1** *	1	1788,80
FD 56	**CKC2.1** *	1	1720,00
FD 115	**CKC3.1** *	1	2367,15
FD 260	**CKC4.1** *	1	3918,40

* Longer delivery times possible. Please check with our Sales Department.

Model FED
With forced air circulation (fan)
- Adjustable fan speed (min. speed 30 %)
- 1 programmable temperature ramp
- RS 422 port
- Timer function selection:
  - Heater is switched off when set time expires
  - The set timer does not start until the actual value reaches the selected set value. Heater is switched off when the set time expires.
  - Heater is switched on after set time expires and stays in continuous operation.

Type	Art. No.	Pack Qty.	€
FED 56	**CKC5.1** *	1	2323,10
FED 115	**CKC6.1** *	1	3093,85
FED 260	**CKC7.1** *	1	4513,95
FED 400	**CKC8.1** *	1	5789,95
FED 720	**CKC9.1** *	1	7760,45

* Longer delivery times possible. Please check with our Sales Department.

Accessories for heating ovens and drying cabinets of models ED, FD and FED

By Binder.
Grids, chrome plated

for type	Art. No.	Pack Qty.	€
ED 23, FD 23	**CKE0.1**	1	46,05
ED 56	**CKE1.1**	1	73,65
FD 56, FED 56	**ECY1.1**	1	73,65
ED 115	**CKE2.1**	1	113,95
FD 115, FED 115	**ECY2.1**	1	113,95
ED 260	**CKE3.1**	1	212,85
FD 260, FED 260	**ECY3.1**	1	212,85
ED 400, FED 400	**CKE4.1**	1	234,35
ED 720	**CKE5.1**	1	255,85
FED 720	**HPA7.1**	1	255,85

Heratherm high capacity drying cabinets

By Thermo.
General features:
- Free-standing units with fixed rollers
- Stainless steel interior
- RS 232 port
- Mains connection 230 V, 50 Hz

Technical specifications:

Type	OGS400	OGS750	OMH400	OMH750
Capacity (l)	419	774	396	731
Inner dimensions (mm)				
Width	544	1004	544	1004
Height	1307	1307	1335	1335
Depth	590	590	545	545
Outer dimensions[1] (mm)				
Width	778	1261	778	1261
Height	1545	1545	1545	1545
Depth	770	770	770	770
Removable shelves				
Delivery incl.	2			
Max. capacity	39			
Other				
Rated power (W)	2400	3000	2400	3000
Weight (kg)	136	182	135	185
Temperature deviation at 150 °C				
temporal (°C)	±0.5		±0.3	±0.4
spatial (°C)	±3.0	±3.7	±2.1	±3.1

[1] not including depth of handle and display (65 mm) and height of rollers (108 mm); required clearance to rear panel 120 mm.

Delivery incl. 2 removable shelves.

General Protocol:
- **Operating temperature range from 10 °C above room temperature to 250 °C**
- With natural convection
- Integrated timer (1 min to 99 h, 59 min)
- Actual temperature display; setting accuracy ±1 K

Type	Volume (l)	Art. No.	Pack Qty.	€
OGS400	419	**XH32.1** *	1	3841,00
OGS750	774	**XH33.1** *	1	5309,00

* Longer delivery times possible. Please check with our Sales Department.

Advanced Protocol:
- **Operating temperature range from10 °C above room temperature to 250 °C**
- Setting accuracy ±1 K
- Mechanical convection - 2-stage fan: can run fast or slow, but cannot be switched off
- Cable feedthrough (∅ 19 mm), e.g. for fitting sensors
- An audible alarm sounds if the door is accidentally left open
- Switch on/off after a pre-set time
- Weekly setting or real-time control
- Programmable control for temperature ramps and dwell times (memory for 10 programs each with 10 individual steps)

Type	Volume (l)	Art. No.	Pack Qty.	€
OMH400	396	**XH34.1** *	1	4971,00
OMH750	731	**XH35.1** *	1	6552,00

Accessories for Heratherm high-capacity drying cabinets

By Thermo.
Wire mesh shelf kit: shelf with 2 supports.

for type	Art. No.	Pack Qty.	€
OGS400, OMH400	**XH36.1** *	1	186,00
OGS750, OMH750	**XH37.1** *	1	225,00

* Longer delivery times possible. Please check with our Sales Department.

Economy laboratory furnaces ELF series

By Carbolite Gero. For temperatures up to 1100 °C.

- General-diffuse heating coils on both side walls
- Furnace chamber comprising vacuum formed fibre insulation
- With abrasion-resistant base plate
- Double-walled housing for low ambient temperatures
- Short heating-up times of approx. 35 min
- Exhaust vent (∅ 30 mm)
- Forward hinged door
- PID thermostat with digital display (nominal/actual temperature display)
- Input of a temperature control profile with 2 segments (heating rate and hold time) using the timer function
- Built-in timer function (runtime: 99 h and 59 min)
- The timer can be operated in 5 different modes, e.g. the timer waits until the set temperature is reached, then begins to count down and on expiration shuts off the heater.
- **Please pay attention to supply voltages**

Technical specifications:

Type	ELF 11/6b	ELF 11/14b	ELF 11/23
Capacity (l)	6	14	23
Inner dimensions (mm)			
Width	180	220	255
Height	165	210	235
Depth	200	300	400
Outer dimensions (mm)			
Width	410	450	505
Height	580	630	715
Depth	420	520	660
Other			
Power consumption (W)	2000	3000	6100
Weight (kg)	20	31	52
Power supply	230 V, 1-phase, 50 Hz with safety plug 16 A fuse		230 V, 2-phase, 50 Hz with 16A CEE plug 16 A fuse per phase

Type	Volume (l)	Art. No.	Pack Qty.	€
ELF 11/6b	6	**HY65.1** *	1	2544,55
ELF 11/14b	14	**XK56.1** *	1	2883,15
ELF 11/23	23	**XK57.1** *	1	3532,45

* Longer delivery times possible. Please check with our Sales Department.

AAF Series Economy muffle/ashing furnaces

By Carbolite Gero. For temperatures up to 1100 °C.

- Ceramic muffles heated from 4 sides for good temperature homogeneity (AAF 11/3 and AAF 11/7), AAF 11/18 model is heated from 2 sides with covered heating elements
- Parallel swing-up doors
- Hot door insulation is always facing away from the user
- Vacuum-formed fibre insulation
- Heating-up time: approx. 100 min
- Preheated air intake for optimal temperature distribution
- Air exchange rate: approx. 5 to 6 air changes per minute
- Exhaust outlet with vent (∅ 50 mm)
- With door contact switch
- PID thermostat with digital display (nominal/actual temperature display)
- Input of a temperature control profile with 2 segments (heating rate and hold time) using the timer function
- Built-in timer function (runtime: 99 h and 59 min)
- The timer can be operated in 5 different modes, e.g. the timer waits until the set temperature is reached, then begins to count down and on expiration shuts off the heater.
- **Please pay attention to supply voltages**

Technical specifications:

Type	AAF 11/3	AAF 11/7	AAF 11/18
Capacity (l)	3	6.9	18.4
Inner dimensions (mm)			
Width	150	170	196
Height	90	90	235
Depth	250	455	400
Outer dimensions (mm)			
Width	375	430	505
Height	585	650	705
Depth	485	740	675
Other			
Power consumption (kW)	2.1	3.9	7.25
Weight (kg)	22	63	70
Power supply	230 V, 1-phase, 50 Hz with safety plug 16 A fuse	230 V, 2-phase, 50 Hz with 16A CEE plug 16 A fuse per phase	230 V, 3-phase, 50 Hz with 16A CEE plug 16 A fuse per phase

Delivery incl. Inconel bottom trays with handle (AAF11/3 and AAF11/7) or Inconel rack with handle for loading with samples on two levels (AAF11/18).

Type	Volume (l)	Art. No.	Pack Qty.	€
AAF 11/3	3	**HY89.1** *	1	3345,40
AAF 11/7	6,9	**XK54.1** *	1	4554,80
AAF 11/18	18,4	**XK55.1** *	1	6155,45

* Longer delivery times possible. Please check with our Sales Department.

Vacuum drying cabinets

Vacuum drying cabinet Heraeus® VT-series

By Thermo. Fields of application: pharmaceutics, biochemistry, cosmetics industry and electronics. Ideal for gentle, rapid drying and for thermal treatment of temperature-sensitive or easily decomposable substances and electronic components. Vacuum drying eliminates any danger of contamination of sensitive samples through floating particles and the risk of oxidation is lower.

General features of all models:

- **Working temperature of 15 °C above room temperature to +200 °C**
- Max. physical temperature tolerance ±4 °C (at 200 °C)
- Analogue pressure display
- **Attainable end vacuum: 0.01 mbar**
- Inner trays are made of corrosion-proof, electropolished stainless steel (1.4571)
- Double-plated safety glass in door window
- Microprocessor-controlled temperature regulator
- Digital temperature display
- Jacket heating
- Temperature control limiter (protection class 2 in acc. with DIN 12880)
- In-house vacuum or a vacuum pump is required for operation. Please order vacuum connection set separately.

VT 6025 comfort
Inert gas connection (AD ∅ 4 mm) with precision valve and pressure relief valve for precise discharge of non-flammable, non-toxic gases (VDI 20465).

Technical specifications:

Effective space volume	25 l
Outer dimensions (W x D x H)	480 x 450 x 600 mm
Inner dimensions (W x D x H)	300 x 307 x 275 mm
Trays: standard / max. number	2 / 4
Nominal output	1.3 kW
Tube shaft for vacuum connection	∅ 20 mm
Weight	58 kg
Power supply	230 V, 50/60 Hz

Type	Design	Art. No.	Pack Qty.	€
VT 6025	without inert gas connection	**Y718.1**	1	5098,00
VT 6025 comfort	with inert gas connection	**ATN9.1**	1	5805,00

Accessories for Heraeus® VT-series

By Thermo.

Spare tray

Art. No.	Pack Qty.	€
Y719.1	1	157,00

Vacuum connection set
For connection to vacuum pump, tube ID 10 mm

Art. No.	Pack Qty.	€
Y720.1 *	1	218,00

* Longer delivery times possible. Please check with our Sales Department.

Vacuum drying cabinets VD series

By Binder.
Fast, gentle drying of temperature-sensitive samples.

- **Operating temperature range from room temperature 15 °C to 200 °C**
- Reliable end vacuum up to 0.01 mbar
- Controller with ramp function (2 programs each with up to 10 sections)
- Setting of temperature, runtime, temperature-dependent delayed switch-off, delayed switch-on, weekly programs
- **Inert gas connection**
- Safety glass with splinter protection
- Class 2 temperature limiter (DIN 12880) with visual alarm
- Interior and door insides made of stainless high-grade steel V4A
- In-house vacuum or a vacuum pump is required for operation

Delivery without vacuum closure set for pumps (please order separately).

Technical specifications:

Type	VD 23	VD 53
Volume (l)	23	53
Inner dimensions W x H x D (mm)	285 x 295 x 285	400 x 340 x 400
Outer dimensions W x D x H (mm)	515 x 500 x 665	635 x 550 x 775
Shelves: standard / max. quantity	2/4	2/5
Temperature monitoring spatial/temporal (°C)	1,5/0,1	2/0,1
Rated power (kW)	0,8	1,2
Vacuum connection with small flange	16 DN	
Inert gas connection with flow limiter	3/8 RP (")	
Weight (kg)	63	95
Power supply	230 V, 50/60 Hz	

Delivery incl. 2 aluminium inserts/expansion racks.

Type	Art. No.	Pack Qty.	€
VD 23	**HTA6.1** *	1	6224,25
VD 53	**HTA7.1** *	1	8290,40

* Longer delivery times possible. Please check with our Sales Department.

Accessories for vacuum drying cabinets VD series

Aluminium inserts/expansion racks

Type	Art. No.	Pack Qty.	€
For VD 23	**HTA8.1**	1	287,05
For VD 53	**HTA9.1**	1	350,45

Vacuum connection set
For connection to a vacuum pump.
Delivery incl. 2.5 m vacuum hose (ID 8 mm), aluminium clamping ring, universal centring ring, small flange with hose shaft and hose clamps.

Art. No.	Pack Qty.	€
HTC0.1	1	245,10

Tubes furnace

Tube furnace MTF series

By Carbolite Gero.
For the heat treatment of small amounts of samples. Directly wound resistance wire heating system on a ceramic supporting tube.

- Horizontal configuration; control is located directly below the furnace
- PID temperature controller with digital display
- Input of a temperature control profile with 2 segments (heating rate and hold time) using the timer function
- Built-in timer function (runtime: 99 h and 59 min)
- The timer can be operated in 5 different modes, e.g. the timer waits until the set temperature is reached, then begins to count down and, on expiry, shuts off the heater.

Technical specifications:

Type	MTF 12/25/250	MTF 12/25/400	MTF 12/38/250	MTF 12/38/400
Maximal temperature (°C)	1200			
Permanent operating temperature (°C)	1100			
Tube inner ∅ (mm)	25		38	
Heated length (mm)	250	400	250	400
Heat-up time (min)	15	25	25	25
Outside dimensions H x W x D (mm)	375 x 370 x 375		430 x 450 x 375	
Length of furnace housing (mm)	300	450	300	450
Max. power (W)	700	1000	1000	1500
Weight (kg)	10	15	15	17
Power supply	230 V, single-phase, 50 Hz with shock-proof plug			

Type	Art. No.	Pack Qty.	€
MTF 12/25/250	**HEX9.1** *	1	3379,80
MTF 12/25/400	**HEY0.1** *	1	3745,30
MTF 12/38/250	**HEY1.1** *	1	3563,65
MTF 12/38/400	**HEY2.1** *	1	4078,55

* Longer delivery times posiible. Please check with our Sales Department.

Electric barrel heaters WODL-series

By Winkler. Ideal for heating and reducing the viscosity of solids and liquids in barrels and canisters allowing them to be filled into smaller containers or pumped more easily.

Features:
- Direct heating at place of installation
- Outside casing made of siliconised glass cloth
- Simple attachment via tension belt with adjustable snap lock
- Temperature range: room temp. max 70 °C
- Infinitely adjustable temperature setting (Scale in 10 °C-steps)
- 3 m connecting cable
- Voltage 230, 50/60 Hz

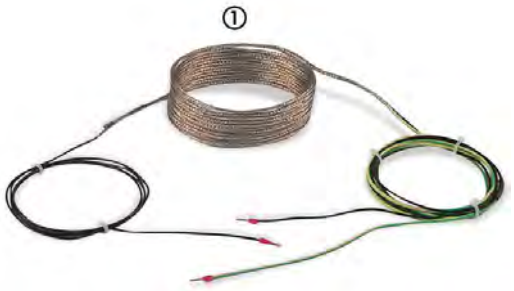
Technical specifications:

Model	Container	Output (W)	Dimensions W x L (mm)	Heated length (mm)
WODL-30	Canister 30 l	75	200 x 1020	900
WODL-60	Canister 60 l	150	300 x 1250	1200
WODL-120	Canister 120 l	250	400 x 1650	1500
WODL-220	Barrels 200-220 l	375	500 x 1950	1800

Type	Art. No.	Pack Qty.	€
WODL-30	**LK10.1** *	1	622,45
WODL-60	**LK11.1** *	1	623,50
WODL-120	**LK12.1** *	1	699,85
WODL-220	**LK13.1** *	1	736,40

* Longer delivery times possible. Please check with our Sales Department.

Heating leads



Laboratory heating cords HSS-series

With braided resistance wires. Ideal for temperatures **to max. 450 °C.**
High flexibility enables cord to be used for extremely close coiling radius (<15 mm). **Not moisture proof.**

- Connector cable: 1.5 m
- Min. bending radius: 6 mm
- ∅: 3.5 to 4.5 mm
- No shockproof plug, please order separately

For control system, see accessories for heating leads.

Model	Length (m)	Power (W)	Art. No.	Pack Qty.	€
I	0,6	75	**C996.1**	1	76,35
II	1	100	**C997.1**	1	82,60
III	2	250	**C998.1**	1	107,00
IV	3	350	**C999.1**	1	123,65
V	4	500	**E001.1**	1	140,85
VI	5	600	**E002.1**	1	163,40

① Laboratory heating cables HST-series

Ideal for **temperatures to max. 250 °C. Moisture-proof.**
With braided resistance wires. High tensile strength. Pliant and flexible.

- Connector cable: 1.5 m
- Min. bending radius: 10 mm
- ∅: 2.5 to 3.5 mm
- No shockproof plug, please order separately

For control system, see accessories for heating leads.

Model	Length (m)	Power (W)	Art. No.	Pack Qty.	€
I	1,1	30	**C993.1**	1	81,20
II	2	50	**C994.1**	1	89,20
III	4	100	**C995.1**	1	110,75

Installation set

For assembling a shockproof plug to heating cords or cables.
Set consists of shockproof plug and a silicone tube.
Silicone tube: Length 1.5 m, ∅ 8 mm.

Art. No.	Pack Qty.	€
E059.1	1	24,65

Glass fabric tape

With silicone adhesive. To attach heating leads. Adhesive to +200 °C.
Dimensions width 15 mm, length 50 m.

Art. No.	Pack Qty.	€
E060.1	1	85,90

Glass fiber tape

Ideal for bending and wrapping heating leads and temperature sensors.
Suitable to max. +450 °C.
Dimensions: 0.16 mm thick, width 25 mm, length 50 m.

Art. No.	Pack Qty.	€
E061.1	1	35,50

▶ Temperature control unit for heating leads see page 1015

Laboratory heating tapes HBSI/HBS-series

Technical specifications:

Type	① HBSI	② HBS
Nominal temperature	200 °C	450 °C
Mains connection:	1.5 m	0.5 m
Min. bending radius	20 mm	10 mm
Dimensions (thickness x width)	5 x 24 mm	5 x 30 mm

For control system, see accessories for heating leads.

① HBSI-Heating tape

Ideal for **temperatures to max. 200 °C. Moisture-proof.**
With braided resistance wires. Flexible, hard-wearing and grounded. Protective grounding on each individual lead. Covered in a silicone sheath for extra protection against environment influence or mechanical damage. PTFE insulation also protects heating conductor from chemical influence.
Delivery incl. shockproof plug.

Model	Length (m)	Power (W)	Art. No.	Pack Qty.	€
I	1	100	**E003.1**	1	164,50
II	2	200	**E004.1**	1	196,75
III	3	300	**E005.1**	1	242,95
IV	4	400	**E006.1**	1	299,95
V	5	500	**E007.1**	1	364,45

② HBS-Heating tape

Ideal for temperatures **to max. 450 °C.** Due to high working temperature, it is **not moisture-proof**. With braided resistance wires.
Pliant, highly flexible and earthed.
Delivery incl. shockproof plug.

Model	Length (m)	Power (W)	Art. No.	Pack Qty.	€
I	0,5	100	**C988.1**	1	118,25
II	1	250	**C989.1**	1	127,95
III	2	500	**C990.1**	1	155,90
IV	3	750	**C991.1**	1	208,55
V	5	1250	**C992.1**	1	297,80

▶ Socket strips, see page 908
▶ Thermometers from page 810

Temperature control unit HT 30

Accessories for heating leads and heating tapes

Multi-purpose use. With 220 V socket. Capacity 2200 W. With electronic power output to 10 A. The unit enables controlled and gentle heating of heating lines/heating mantles. Electronic power disc allows connected nominal capacity to be reduced from 100 % to 0 % or to be adjusted to individual needs. Adjustment of digital desired value for exact setting of required temperature **(control and operation process possible only via separate Pt 100 sensor)**. The actual temperature can read off an LED trend display or an optional actual temperature display (please order separately).

Technical specifications:

Switching capacity at 220 V	2300 W
Accuracy	1 %
Gain control	0.5 % to 5 %
Protection class	I
System of protection	IP 30
Mains cable	1.5 m (detachable), with shock proof plug on the backside
Dimensions of enclosure	75 x 115 x 145 mm

Delivery without temperature sensor, please order seperately.

Art. No.	Pack Qty.	€
E047.1	1	575,15

Temperature sensor Pt 100 for thermostat HT 30

Sheath made of stainless steel 1.4571.

For regulating heating cords and heating tape

With cable (L 1 m) and connector.

Temp. range	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
250 °C	30	3	**E048.1**	1	107,30
500 °C	50	4	**E049.1**	1	127,95

For regulating heating mantles

With cable (L 1.5 m), handle and connector.

Temp. range	Length (mm)	∅ (mm)	Art. No.	Pack Qty.	€
450 °C	160	3	**AEP8.1**	1	155,90
450 °C	250	3	**AEP9.1**	1	170,95
450 °C	500	3	**AET0.1**	1	177,40

① Actual temperature display for thermostat HT 30

For digital display of the actual temperature of the optional temperature sensor. Display resolution 1 °C.
Dimensions: L 60 x W 80 x D 20 mm. Length of power cord 1 m.

Art. No.	Pack Qty.	€
CHC8.1	1	176,30

Pilz®-standard heating mantles WHG series

By Winkler. For working temperatures up to 450 °C.

- Heating element made of highly flexible glass fiber yarn for even heat distribution and gentle treatment of round flasks
- With heating zone switch
- **Up to 1000 ml with the built-in heating zone switch in the feed cable, from 2000 ml heating zone switch in housing**
- Heating mantles 500 to 20000 ml: Bottom opening ∅ 60 mm
- Attachment to support rings or tripod stands with clasps
- Length of power cable: 1.5 m
- **With protective switch**
- Power supply voltage: 230 V, 50/60 Hz

① Model WHG2 - For working temperatures up to 450 °C

for flask vol. (ml)	Heating zones	Power (W)	Flask ∅ (mm)	Art. No.	Pack Qty.	€
25	1	40	41	**KH06.1**	1	350,45
50	1	70	51	**KH07.1**	1	358,00
100	2	110	64	**KH08.1**	1	361,20
250	2	200	85	**KH09.1**	1	367,65
500	2	300	105	**KH10.1**	1	384,85
1000	2	450	131	**KH11.1**	1	449,35
2000	2	700	166	**KH12.1**	1	667,60
3000	2	800	185	**KH13.1**	1	742,85
4000	2	1000	207	**KH14.1**	1	780,45
5000	2	1200	223	**KH15.1**	1	918,05
6000	2	1400	236	**KH16.1**	1	936,35
10000	2	2000	279	**KH17.1**	1	1229,80
20000	2	2800	345	**KH18.1**	1	1697,45

② Model WHG4R - For working temperatures up to 450 °C, however with increased heating output and 4 heating zones

for flask vol. (ml)	Heating zones	Power (W)	Flask ∅ (mm)	Art. No.	Pack Qty.	€
4000	4	1000	207	**KH25.1**	1	1145,95
6000	4	1400	236	**KH26.1**	1	1261,00
10000	4	2000	279	**KH27.1**	1	1577,05
20000	4	2800	345	**KH28.1**	1	2016,70

Heating mantles

Tripod stand for standard heating mantles

① Made of stainless steel. For supporting standard heating mantles, Models WHG2, WHG2R and WHG4R.

Heating mantle (ml)	Ring-∅ (mm)	Art. No.	Pack Qty.	€
100	110	**KH29.1**	1	140,85
250	140	**KH30.1**	1	140,85
500	160	**KH31.1**	1	140,85
1000	188	**KH32.1**	1	140,85
2000	222	**KH33.1**	1	140,85
3000	238	**KH34.1**	1	169,85
4000	261	**KH35.1**	1	172,00
5000	277	**KH36.1**	1	188,15
6000	291	**KH37.1**	1	210,70
10000	334	**KH38.1**	1	287,05
20000	410	**KH39.1**	1	339,70

Support rings for standard heating mantles

② Made of stainless steel. For supporting standard heating mantles Models WHG2, WHG2R and WHG4R in tripods.

Heating mantle (ml)	Ring-∅ (mm)	Art. No.	Pack Qty.	€
25	90	**KH40.1**	1	55,60
50	90	**KH41.1**	1	56,15
100	110	**KH42.1**	1	57,80
250	140	**KH43.1**	1	58,90
500	160	**KH44.1**	1	60,00
1000	188	**KH45.1**	1	62,20
2000	222	**KH46.1**	1	65,60
3000	238	**KH47.1**	1	88,10
4000	261	**KH48.1**	1	92,45

Shockproof plug with multi-pole coupling

③ For heating mantles in the WHG and WHLG series
Doesn't have residual current circuit breaker function.
Use when the operator network incorporates a residual current circuit breaker system. Cable length 1.0 m. Voltage 230 V.

Art. No.	Pack Qty.	€
PP37.1	1	19,30

Please note:
Older heating mantles may only be operated with a residual current circuit breaker (FI).

Pilz®-heating mantles WHLG series

By Winkler. For working temperatures up to 450 °C.
- Heating element made of highly flexible glass fiber yarn for even heat distribution and gentle treatment of round flasks
- Plastic coated metal housing
- **Model WHLSG2/ER - With spill-proof heating basin made of metal for catching any spilt liquids should the glass vessel break**
- With integrated fitting for connection of stand clamps. Please order stand clamps separately.
- Length of power cable: 1.5 m
- **With protective plug**
- Power supply voltage: 230 V, 50/60 Hz

① Model WHLG2 - With built-in heating zone switch

for flask vol. (ml)	Heating zones	Power (W)	Dimensions ∅ x H (mm)	Art. No.	Pack Qty.	€
50	1	50	160 x 180	**KE87.1**	1	306,40
100	1	100	160 x 180	**KE88.1**	1	310,70
250	2	150	160 x 180	**KE89.1**	1	317,15
500	2	200	210 x 190	**KE90.1**	1	342,95
1000	2	300	210 x 190	**KE91.1**	1	384,85
2000	2	500	280 x 220	**KE92.1**	1	435,40
3000	2	600	280 x 220	**KE93.1**	1	465,50

② Model WHLG2/ER - With power controller for infinitely variable adjustment from 0 to 100 %

for flask vol. (ml)	Heating zones	Power (W)	Dimensions ∅ x H (mm)	Art. No.	Pack Qty.	€
50	1	50	160 x 180	**KE94.1**	1	373,05
100	1	100	160 x 180	**KE95.1**	1	375,20
250	2	150	160 x 180	**KE96.1**	1	389,15
500	2	200	210 x 190	**KE97.1**	1	420,35
1000	2	300	210 x 190	**KE98.1**	1	460,10
2000	2	500	280 x 220	**KE99.1**	1	535,35
3000	2	600	280 x 220	**KH00.1**	1	564,40

③ Model WHLSG2/ER - With spill-proof heating basin made of metal and power controller for infinitely variable adjustment from 0 to 100 %

for flask vol. (ml)	Heating zones	Power (W)	Dimensions ∅ x H (mm)	Art. No.	Pack Qty.	€
250	2	120	160 x 180	**KH01.1**	1	539,65
500	2	200	210 x 190	**KH02.1**	1	561,15
1000	2	300	210 x 190	**KH03.1**	1	577,30
2000	2	500	280 x 220	**KH04.1**	1	626,75

Accessories for Pilz®-heating mantles

By Winkler.
Stand clamps
For attaching heating mantles, Models WHLG2, WHLG2/ER and WHLSG2/ER in tripods. For max. ∅ 13 mm support rods.

Art. No.	Pack Qty.	€
KH05.1	1	31,85

Heating mantles

① ②

Heating mantles ITA-series

- Max. heating temperature range up to 450 °C
- Heating element protected against escape of fluid
- Infinitely variable temperature control via dial with 10-step scale
- "Chimney effect" for cool housing outer walls
- LED power indicator during operation
- Housing surface made of ABS
- Version with electro-magnetic stirring function available
- Dimensions: W 192 x D 290 x H 131 mm
- Power supply voltage: 230 V, 50 Hz

① **Standard model**

for flask vol. (ml)	Flask ∅ (mm)	Power (W)	Art. No.	Pack Qty.	€
100	64	150	**HCK2.1**	1	513,85
250	85	200	**HCK3.1**	1	535,35
500	105	300	**HCK4.1**	1	564,40
1000	131	400	**HCK5.1**	1	575,15

② **Design with magnetic stirrer**
Speed range 200 to 800 rpm.

for flask vol. (ml)	Flask ∅ (mm)	Power (W)	Art. No.	Pack Qty.	€
100	64	150	**HCK6.1**	1	912,70
250	85	200	**HCK7.1**	1	933,10
500	105	300	**HCK8.1**	1	951,40
1000	131	400	**HCK9.1**	1	965,35

Pilz®-heating mantles, model WHU2ER

By Winkler. For operating temperature up to 450 °C.
- Heating element made of highly flexible glass fibre yarn for even heat distribution and gentle treatment of round flasks
- **With power controller for continuously variable adjustment from 0 to 100 %**
- Plastic coated metal housing
- With integrated fitting for connecting a stand clamp. Please order stand clamp separately
- **With protective plug with FI function** (length of cable 1 m)
- Power supply voltage: 230 V, 50/60 Hz

for flask vol. (ml)	Heating zones	Power (W)	Dimensions ∅ x H (mm)	Art. No.	Pack Qty.	€
4000	2	700	288 x 166	**NP32.1** *	1	775,10
5000	2	860	318 x 166	**NP33.1** *	1	887,95
6000	2	1000	318 x 166	**NP34.1** *	1	932,05
10 000	2	1400	368 x 194	**NP35.1** *	1	1044,90
20 000	2	2400	438 x 234	**NP36.1** *	1	1407,20

Accessories for Pilz®-heating mantles, model WHU2ER

By Winkler. **Stand clamp STK 1**

Made of cast aluminium. For attaching the heating mantles to stands. For stand rods up to ∅ 13 mm.

Art. No.	Pack Qty.	€
NP37.1 *	1	28,95

* Longer delivery times possible. Please check with our Sales Department.

CFS battery capillary filling device

To quickly and safely fill melting-point determination capillaries. Suitable for capillaries with a diameter of 1 to 1.5 mm and a length of 60 to 100 mm.
- Lengthy stoking and tapping are no longer required, the capillaries are cleanly and repeatedly filled to the bottom
- No direct contact with dangerous substances
- Clear housing protects against glass breakage

Usage:
The capillaries are carefully inserted into the filling funnel until their open side matches the lowest point of the funnel. Insert the funnel containing the capillaries into the unit. By turning the funnel guide, the height is adjusted until the capillaries touch the bottom and the funnel overlaps the guide by a few millimetres (see figure). The funnel is filled with a spatula tip's worth of the sample, and the unit switches on. The capillaries are filled using powerful vibrations. The unit switches off automatically after 10 seconds. The filling process can be repeated as often as required.

Note: The samples must be dry and finely powdered.
Unit dimensions: ∅ 80 x height 140 mm.
Delivery incl. AC-adapter.

Art. No.	Pack Qty.	€
YT60.1	1	304,25

MPM series melting point measuring units

For measuring the melting point of pulverulent substances in glass capillaries.

Equipment features of all models:

- Digital temperature control
- Indirect, non-glare and anti-dazzle illumination of the substance during visual measurement using the magnifier
- Height-adjustable table tripod (360 to 460 mm)
- With USB interface
- Software makes it possible to create a measurement log in PDF format (incl. diagram with transparency progression for the MPM-HV 3 model)

MPM-HV 3 semi-automatic/fully automatic multi-function unit
For testing one sample.
Choice of two measuring procedures (visual or automatic).
Fully automatic measurement: Set the required temperature (approx. 3 °C below the expected melting point).
Once the preselected temperature is reached, a filled capillary is inserted.

MPM-H 3 semi-automatic unit
For testing a maximum of three samples at the same time.
Semi-automatic melting point measuring unit. Once the preselected temperature is reached, a filled capillary is inserted and a visual inspection of the capillary is performed using the magnifier. After the "Start" button is pressed again, the unit continues to heat up at a rate of 1 °C/min.
As soon as the sample has melted, the value can be read on the display.

Technical specifications:

Measuring range	25.0 to 360.0 °C
Resolution	0.1 °C
Accuracy	±0.4 °C
Heat-up rate during quick heating	To 200 °C – approx. 4 min to 350 °C – approx. 8 min
Heat-up rate during measuring	1 °C/min
Magnifier	3-way
Dimensions (W x D x H)	230 x 65 x 260 mm
Weight	Unit 4 kg, tripod 2.8 kg
Power supply	115-230 V, 50 Hz

Delivery incl. required melting point measuring unit and 100 melting point tubes, USB cable, software and protective cover.

Type	Art. No.	Pack Qty.	€
MPM-HV 3	**HCE4.1**	1	1607,15
MPM-H 3	**HCE5.1**	1	1424,40

Accessories:

Melting point tubes, open at one side. External ∅ 1.45 mm, internal ∅ 1.0 mm, length 80 mm	**HCE6.1**	100	9,65

Microscope slide drying bench MH6616

By Electrothermal. For faster preparation of microscope slides.
For up to 50 microscope slides (76 x 26 mm). Suitable for temperatures ranging from 10 °C **above** room temperature to 100 °C.

Microscope slides can be placed in various positions:

- On the drying bars
- Leaning against the drying bars
- Placed flat without the drying bars

Technical specifications:

Heating output	150 W
Max. hot plate temperature	100 °C
Dimensions (W x D x H)	390 x 180 x 95 mm
Heating output	150 W
Weight	1.8 kg
Power supply	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
YL72.1	1	652,00

Tissue flotation bath MH8517

By Electrothermal. For flotation and drying of sectioned tissue samples. Suitable for use in pathological, histological, chemical and bacteriological laboratories.

- Matt black PTFE coating on aluminium vessel allows observation and manipulation of specimens
- With wide edge for placement and drying of sections
- A temperature of 45 °C is reached in approx. 40 min
- With over-temperature cut-out
- A bath lid is available to protect water against contamination. Please order separately

Technical specifications:

Capacity	2.25 l
Temperature range	from 10 °C **above** room temperature to 70 °C (temperature adjustment range from 30 to 80 °C)
Accuracy	±0.5 °C
Inner dimensions (∅ x H)	220 x 80 mm
Outer dimensions (∅ x H)	330 x 140 mm
Output	240 W
Weight	2.7 kg
Power supply	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
YL70.1	1	764,00

Accessories:

Bath lid for tissue flotation bath MH8517	**YL71.1**	1	116,00

Electric sand baths model ST 72 and ST 82

With variable temperature adjustment. Temperature range 50 to 300 °C. Very sturdy model for continuous operation. Hotplates made of aluminium alloy with screwed on and sealed high-grade steel frame, working height 50 mm. Even heat distribution. Housing made of high-grade steel. 1.7 m power cable.

Technical specifications:

Model	ST 72	ST 82
Output (W)	2200	2850
Dimensions W x D x H (mm)	360 x 360 x 220	360 x 510 x 220
Weight (g)	1400	2100

Type	Art. No.	Pack Qty.	€
ST 72	**L165.1** *	1	1261,00
ST 82	**L166.1** *	1	1474,90

* Longer delivery times possible. Please check with our Sales Department.

High-speed incinerator model SVR/E

Max. 950 °C with infinitely variable temperature control. For single and series incineration - even of liquid substances. The upper level has 8 openings each with 34 mm ∅ and will hold a porcelain crucible of max. 50 mm ∅ for drying or preheating. Upper part and housing made of high-grade steel. Integrated 120-minute signal clock with switch for continuous operation. Comes ready-to-use with 1.5 m cable and shockproof plug.

Technical specifications:

Output	2500 W
Dimensions	450 x 310 x 180 mm
Weight	7000 g
Voltage	220 V

Art. No.	Pack Qty.	€
L163.1 *	1	1592,10

Accessories:

Spare heating element	**L164.1** *	1	346,15

* Longer delivery times possible. Please check with our Sales Department.

▶ Multi-sockets, see page 908

Hotplates

With variably adjustable temperature setting. Control lamp. Lower part with high heat-resistance coating.

Two models available:
- Upper part enamelled white
- Upper part brushed stainless steel

Technical specifications:

Type	Hotplates, single	Twin hotplate
Output	1500 W	1500 W / 1000 W
∅ Heating ring	180 mm	180 / 150 mm
Dimensions (W x D x H) Upper part enamelled white	250 x 290 x 85 mm	500 x 290 x 85 mm
Dimensions (W x D x H) Upper part brushed stainless steel	262 x 285 x 80 mm	460 x 290 x 77 mm

Type	Design	Art. No.	Pack Qty.	€
Hotplates, single	Upper part enamelled white	**P853.1**	1	42,95
Hotplates, single	Upper part brushed stainless steel	**EC13.1**	1	49,25
Twin hotplate	Upper part enamelled white	**K705.1**	1	49,35
Twin hotplate	Upper part brushed stainless steel	**EC14.1**	1	69,90

CT 1810 ceramic glass heating plate

- With plastic housing
- Schott Ceran® cooking surface
- Stepless temperature regulation (power control from 7 to 100 %; scale with 12 stages)
- Overheating protection, residual heat indicators and pilot light

Technical specifications:

Heating output	1800 W
Max. hot plate temperature	450 °C
Heated zone	∅ 180 mm
Dimensions (W x D x H)	400 x 300 x 80 mm
Weight	2.4 kg
Electrical supply	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
NA85.1	1	153,75

▶ Pots adapted for induction see page 128

Glass ceramic hotplate CT 2203/TC

- Housing made of brushed stainless steel
- Dual circuit heating technology
- Large heating zone can be switched on (∅ 210 mm)
- Schott Ceran® cooking surface
- With 9-stage heating power
- Heating element with extremely short warm-up time
- Control lamp, residual heat display
- Automatic operating time limitation
  (1 to 10 h depending on cooking temperature stage)

Technical specifications:

Heating power	1000 W (∅ 140 mm) 2200 W (∅ 210 mm)
Max hotplate temperature	460 °C
Heated zone	∅ 140 or ∅ 210 mm
Dimensions (W x D x H)	305 x 410 x 75 mm
Weight	3.2 kg
Power supply	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
EY75.1	1	214,50

Induction hotplate CT 2215/IN

A magnetic coil generates the heat directly in the bottom of the pot.
Can only be used with induction-suitable pots.

- Housing made of stainless steel
- Schott Ceran®-hotplate
- Temperature selection in 21 stages from 60 to 260 °C
- Power selection in 9 stages
  (70/130/180/270/350/500/820/1280/2200 W)
- Electronic regulation using touch controls
- Timer: 1 to 99 min
- Pot detector
- Automatic power-off and audio signal
- Residual heat and operation indicator

Technical specifications:

Heating output	2200 W
Temperature selection is stages from	60 to 260 °C, adjustable in 10 °C increments
Heated zone	∅ 80 to 200 mm
Dimensions (L x W x H)	380 x 333 x 65 mm
Electrical supply	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
NA86.1	1	204,15

Twin hotplate CT 3400/E

- With brushed stainless steel housing and Ceran®-glass-ceramic cooktop
- Freely-adjustable energy control using retractable rotary knob
- Dual-circuit heating technology:
  1st heating zone: ∅ 145 mm
  2nd heating zone: selectable ∅ (140 or 210 mm)
- Warning lamps, residual heat indicator and overheating protection

Technical specifications:

Heating capacity	∅ 145 mm = 1200 W ∅ 140/210 mm = 2200 W
Max. hot plate temperature	460 °C
Dimensions (W x D x H)	550 x 310 x 65 mm
Weight	3.7 kg
Power supply	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
CHK9.1	1	285,95

A 121 °C

Stainless steel pots

Made of high-grade 18/10 steel. With sandwich base and handles. Suitable for use on hot plates and induction hobs, not usable on magnetic stirrers. Suitable lids please order separately. Autoclavable.

Volume (l)	∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
2,5	160	130	**EE93.1**	1	25,25
3,5	200	110	**EE94.1**	1	32,15
4	200	150	**EE95.1**	1	35,05

Lids

For stainless steel pans. Made of high-grade 18/10 steel. Welded handles.

∅ (mm)	Art. No.	Pack Qty.	€
160	**EE98.1**	1	8,90
200	**EE99.1**	1	12,10

Hotplates

REC digital hotplate

- Glass ceramic installation surface
- Digital display of hotplate nominal temperature (adjustable in 5 °C increments)
- Hot Top Indicator (hot surface warning)
- Elevated control panel for protection against leaking fluids

Technical specifications:

Heating output	800 W
Max. hot plate temperature	25 to 550 °C
Control accuracy	±10 K
Mounting surface	180 x 180 mm
Dimensions (W x D x H)	203 x 344 x 94 mm
Weight	3.3 kg
Power supply	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
ACP8.1	1	311,75

CultureTemp™ 37 °C cell culture hotplate

Housing made of PP, hotplate made of aluminium. Improves the viability of cells after removal from the incubator. With digital display and non-adjustable hotplate temperature of 37 °C. Acoustic timer adjustable from 1 to 15 min (has no effect on heater performance; no shutdown upon expiration of the timer). With LED for monitoring the heating function.

Technical specifications:

Hotplate temperature	37 °C (non-adjustable)
Temperature stability	±1 °C
Timer	1 to 15 min in 1-min increments
Set-up dimensions (W x D)	203 x 178 mm
Dimensions (W x D x H)	249 x 254 x 57 mm
Weight	1.1 kg
Power supply	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
CHC7.1	1	536,45

Digital hotplates C-MAG HP-series

By IKA.

General information for all models

- Base made of glass ceramics
- Temperature setting via digital display (LED)
- Digital display of hotplate desired temperature
- Error code malfunction indicator
- Fixed safety circuit of 550 °C
- Hot Top Indicator (warning in case of hot surface)

Models C-MAG HP 7 and C-MAG HP 10:
Additionally with DIN-socket 12878 for connecting an electronic contact thermometer e.g. ETS-D5 for high-precision temperature control.

Technical specifications:

Model	C-MAG HP 4	C-MAG HP 7	C-MAG HP 10
Heating capacity (W)	250	1000	1500
Max. hotplate temperature (°C)	50 to 500		
Control accuracy (K)	±10		
Platform surface W x D (mm)	100 x 100	180 x 180	260 x 260
Dimensions W x D x H (mm)	150 x 260 x 105	220 x 330 x 105	300 x 415 x 105
Weight (kg)	3	5	6
Power supply	230 V, 50/60 Hz		

Type	Art. No.	Pack Qty.	€
C-MAG HP 4	**LN75.1**	1	499,00
C-MAG HP 7	**LN76.1**	1	549,00
C-MAG HP 10	**LN77.1**	1	749,00

Hotplates US150 and UC150

By Stuart.

Features

- Microprocessor-controlled heating element
- Platforms are optionally available in glass ceramic (generally good resistance to chemical attack, high temperature, 120 x 120 mm heated zone) or aluminium (very rugged, 150 x 150 mm heated zone)
- Temperature control with LED display, colour LEDs aid reading current actual temperature
- Safety warning lamp comes on at temperatures over 50 °C

Technical specifications:

Model	US150	UC150
Heating output (W)	700	500
Hotplate material	Aluminium/silicon coated	Glass ceramic
Heated zone (mm)	150 x 150	120 x 120
Max. hotplate temperature (°C)	325	450
Hotplate surface (mm)	150 x 150	150 x 150
Dimensions W x D x H (mm)	172 x 248 x 120	172 x 248 x 120
Weight (kg)	2.2	
Mains connection	230 V, 50 Hz	

Type	Art. No.	Pack Qty.	€
US150	**PY70.1**	1	373,00
UC150	**PY71.1**	1	371,00

Digital hotplate SD 160

By Stuart. Hotplate with high temperature stability.

- Microprocessor-controlled
- Safety warning indicator light for temperatures over +50 °C
- Digital display with simultaneous desired/actual temperature readings
- Aluminium hotplate enables even heat distribution

Technical specifications:

Heater capacity	700 W
Max. hotplate temp.	8 °C **above** ambient temperature up to 325 °C
Adjustable temperature	20 to 325 °C
Display resolution	1 °C
Temperature fluctuation in working plate area	±0.2 °C at 37 °C ±1.0 °C at 150 °C
Temperature stability	±0.25 °C
Surface hotplate (W x D)	160 x 160 mm
Dimensions (W x D x H)	190 x 300 x 110 mm
Weight	2.5 kg
Current	230 V, 50 Hz

Art. No.	Pack Qty.	€
AH85.1	1	859,00

Infrared laboratory cooker SLK 12

By SI Analytics.

- With glass-ceramic hob
- Heating area with 2 zones for small and large vessels
- Stainless steel housing with steel base
- Non-heated edge zones allow vessels to be partially heated or completely taken off the hob
- Indicator lamp for indication of operating state and residual heat

Technical specifications:

Heating output	700/1700 W
Max. hot plate temperature	approx. 550 °C
Heated zones	∅ 110 / ∅ 180 mm
Hotplate surface (W x D)	300 x 300 mm
Dimensions (W x D x H)	330 x 300 x 73 mm
Weight	4.5 kg
Power supply	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
TP34.1	1	525,70

Hotplates

Infrared hotplate CR 300

By Stuart.
- Chemically resistant ceramic surface
- With safety warning lamp for temperatures over 50 °C
- Efficient infrared heating at 900 W
- Heats 1 litre of water 30 % faster than conventional ceramic hotplates at 1200 W
- For a liquid volumes up to 10 l

Technical specifications:

Heater capacity	900 W
Max. hotplate temp.	50 to 450 °C
Heated area	∅ 140 mm
Surface hotplate (W x D)	300 x 300 mm
Dimensions (W x D x H)	300 x 365 x 105 mm
Weight	4 kg
Current	230 V, 50 Hz

Art. No.	Pack Qty.	€
EE52.1 *	1	1018,00

* Longer delivery times possible. Please check with our Sales Department.

Hotplates CB 500 and SB 500

By Stuart. With a large working surface for heating several samples, e.g. 30 beakers à 100 ml. Safety warning lamp for temperatures over +50 °C.

Technical specifications:

Model	**CB 500**	**SB 500**
Heating capacity (W)	2250	1500
Hotplate material	ceramic	aluminium
Heated zone (mm)	450 x 250	500 x 300
Max. hotplate temp. (°C)	50 to 375	50 to 300
Surface hotplate W x D (mm)	500 x 300	
Dimensions W x D x H (mm)	520 x 360 x 130	
Weight (kg)	12	
Current	230 V, 50 Hz	

Model	Art. No.	Pack Qty.	€
CB 500	**Y407.1** *	1	995,00
SB 500	**Y408.1** *	1	985,00

* Longer delivery times possible. Please check with our Sales Department.

Hotplates CB 300 and SB 300

By Stuart. Safety warning indicator light for temperatures over 50 °C.

Technical specifications:

Model	**CB 300**	**SB 300**
Heating capacity (W)	1200	600
Hotplate material	ceramic	aluminium
Heated zone (mm)	200 x 200	300 x 300
Max. hotplate temp. (°C)	50 to 450	50 to 300
Surface hotplate W x D (mm)	300 x 300	
Dimensions W x D x H (mm)	300 x 365 x 105	
Weight (kg)	6	
Current	230 V, 50 Hz	

Model	Art. No.	Pack Qty.	€
CB 300	**Y409.1** *	1	765,00
SB 300	**Y410.1** *	1	750,00

* Longer delivery times possible. Please check with our Sales Department.

Digital hotplates SD 300 and SD 500

By Stuart. With large surface area for simultaneous heating of several samples.
- Microprocessor-controlled
- Surface area Model SD 300: 300 x 300 mm
  Surface area Model SD 500: 300 x 500 mm
- Digital display with a resolution of 1 °C
- Aluminium hotplate enables even heat distribution

Technical specifications:

Model	**SD 300**	**SD 500**
Heater capacity	600 W	1500 W
Max. hotplate temp.	50 to 300 °C	
Temperature fluctuation in working plate area	±2 °C	
Temperature stability	±1.5 °C	
Dimensions (W x D x H)	320 x 365 x 105 mm	520 x 360 x 130 mm
Weight	6.0 kg	12.0 kg
Current	230 V, 50/60 Hz	

Type	Art. No.	Pack Qty.	€
SD 300	**AH86.1** *	1	1022,00
SD 500	**AH87.1** *	1	1145,00

* Longer delivery times possible. Please check with our Sales Department.

Laboratory cooker/stirrer model SLR

By SI Analytics. For stirring and heating liquids.
- With glass-ceramic hotplate
- Residual heat display and excess temperature protection
- Temperature shock resistance over 700 °C
- With large, clear LCD display
- **Bar graph indicates average speed of stirrer and average heating capacity**
- Heating capacity can be set in 24 different stages
- By attaching Pt 1000 temperature sensor the temperature control can be regulated between 25 °C and 200 °C (accuracy ±2 to ±5 K) depending on amount of liquid, heat capacity and ambient temperature
- Please order temperature sensor, support rod and holder separately

Technical specifications:

Heating function	
Heating capacity	900 W
Heated area	∅ 155 mm
Max. hotplate temp.	approx. 550 °C
Setting accuracy with temp. sensor	1 °C
Digital set/actual temperature with connected temperature sensor	
Stirring function	
Max. speed	100 to 1100 rpm
Setting accuracy	approx. 10 rpm
Set/actual speed display	yes
Max. stirring volume	20 l
General specifications	
Hotplate surface	235 x 235 mm
Dimensions (L x W x H)	370 x 240 x 85 mm
Max. load	25 kg
Current	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
T989.1	1	938,50

Accessories for laboratory cooker SLR

By SI Analytics.

Temperature sensor
With stainless steel shaft (V4A). Sensor Pt 1000.
Measuring range -30 to +200 °C. Length 170 mm, ∅ 4 mm.
1 m fixed cable with 2 x 4 mm pin plug.

Art. No.	Pack Qty.	€
T990.1	1	210,70

Support rod
With fastening nut (M8) made of stainless steel. Length 450 mm, ∅ 10 mm.

Art. No.	Pack Qty.	€
T991.1	1	57,95

Holder
For temperature sensor Pt 1000.
Clamp with extension rod made of stainless steel.

Art. No.	Pack Qty.	€
T992.1	1	206,40

Acid-resistant hotplate CP 300

By Stuart. Ideal for aggressive liquids, concentrated acids or alkaline solutions, for trace analysis etc.

Design:
- Hotplate enclosure made of PTFE with ceramic hotplate surface
- Safety warning indicator light for temperatures over +50 °C
- Remote controllable via separate control unit with PTFE-coated connection lead (control unit can be positioned outside working area)

Technical specifications:

Heating power	900 W
Hotplate material	Ceramic
Housing material	PTFE
Max. hotplate temp.	400 °C
Heated area	200 x 200 mm
Surface hotplate (W x D)	300 x 300 mm
Dimensions (W x D x H)	320 x 360 x 60 mm
Control line: Length	2 m
Weight	11 kg
Current	230 V, 50 Hz

Art. No.	Pack Qty.	€
KN92.1 *	1	3199,00

* Longer delivery times possible. Please check with our Sales Department.

Overview of hotplate- and magnetic stirrer

Max. stirring volume (l)	Speed range (rpm)	Hotplate	No. of stirring places	Material of stirrers surface	Art. No.	Page
0,25	80-1500	No	15	High grade steel	**EHY9.1**	1032
0,250	300-1800	No	1	PP	**KE48.1**	1026
0,4	80-1500	No	6	High grade steel	**EHY8.1**	1032
0,8	15-1500	No	1	Polyester film	**KX33.1**	1027
0,8	130-990	No	15	High grade steel	**X544.1**	1033
1	0-1500	No	1	Glass	**KX28.1**	1027
1,0	2500	No	1	Polyester film	**0863.1**	1027
1	10-1200	No	4	ABS	**CK78.1** *	1033
1	130-1400	No	1	High grade steel	**LY27.1**	1031
1,5	0-1300	No	1	ABS	**CC53.1**	1028
1,5	0-1500	No	1	Glass	**KX23.1**	1027
1,5	130-1400	No	1	High grade steel	**EH16.1** *	1032
2	0-1000	Yes	5	High grade steel	**XT36.1**	1035
2	0-1200	No	5	High grade steel	**XT33.1**	1033
3	0-1100	No	1	ABS	**AAN1.1**	1025
3	80-2000	No	6	High grade steel	**X176.1**	1033
3	80-2000	No	15	High grade steel	**X177.1**	1033
3	100-1500	No	1	ABS	**XP52.1**	1026
3	200-1500	Yes	1	Ceramic coated steel	**TT79.1**	1036
3	130-1000	No	1	High grade steel	**X543.1**	1028
3	200-1500	Yes	1	High grade steel	**TT78.1**	1036
4	0-1000	Yes	10	High grade steel	**XT37.1**	1035
4	0-1200	No	10	High grade steel	**XT34.1**	1033
4	10-1800	No	1	ABS	**AH70.1**	1030
5	0-2200	No	1	PVDF	**EP84.1**	1027
5	10-1500	No	1	Glass	**KAA8.1**	1029
5	80-2000	No	1	High grade steel	**LY28.1**	1028
5	100-1500	Yes	1	Glass ceramics	**XT59.1**	1040
5	100-1500	Yes	1	Ceramics	**LN35.1**	1039
5	100-1500	No	1	Ceramics	**LN38.1**	1028
6	0-1000	Yes	15	High grade steel	**XT38.1**	1035
6	0-1200	No	15	High grade steel	**XT35.1**	1033
8	100-1200	No	1	Epoxide coating steel	**EHY7.1**	1026
10	100-1500	Yes	1	Ceramics	**LN36.1**	1039
10	100-1500	Yes	1	Ceramics	**LY79.1**	1040
10	100-1500	Yes	1	Glass ceramics	**XT60.1**	1040
10	100-2000	Yes	1	High grade steel	**Y888.1**	1036
15	50-1500	Yes	4	Aluminium	**CKK3.1**	1034
15	50-1500	Yes	1	Aluminium	**AAN2.1**	1035
15	50-1500	Yes	1	Glass ceramics	**CKK2.1**	1037
15	50-2000	Yes	1	Enamel coating	**XT24.1**	1038
15	50-2000	Yes	1	High grade steel	**XT23.1**	1038
15	100-1500	Yes	1	Aluminium	**KN94.1** *	1043
15	100-1500	Yes	1	Ceramics	**LN37.1**	1039
15	100-1500	No	1	Ceramics	**LN40.1**	1025
15	100-1500	Yes	1	Glass ceramics	**XT61.1**	1040
15	100-1500	Yes	1	Ceramics	**KN93.1** *	1040
15	100-1500	Yes	3	Aluminium, Silicone alloy	**KN82.1**	1034
15	100-2000	Yes	1	Aluminium	**CHA5.1**	1038
15	100-2000	Yes	1	Ceramics	**PY73.1**	1038
15	100-2000	Yes	1	Glass ceramics	**CHA6.1**	1038
15	100-2000	Yes	1	Aluminium	**PY72.1**	1038
20	0-1500	No	1	High grade steel	**XP53.1**	1026
20	30-1400	Yes	1	Silumin with ceramic layer	**HA13.1**	1044
20	100-2000	Yes	1	Aluminium with ceramic layer	**HLN1.1**	1039
20	50-1500	Yes	1	Aluminium	**HPA5.1**	1042
20	50-1500	Yes	1	Aluminium	**EY83.1**	1042
20	50-1500	Yes	1	Aluminium	**EYE7.1**	1037
20	50-1700	Yes	1	Enamel coating	**XT55.1**	1043
20	50-1700	Yes	1	High grade steel	**XT54.1**	1043
20	100-1000	No	1	POM	**EH13.1** *	1031
20	100-1000	No	1	High grade steel	**EH14.1** *	1031
20	100-1400	Yes	1	Silumin with ceramic layer	**HA10.1**	1041
20	100-1400	Yes	1	Silumin with ceramic layer	**HA08.1**	1041
20	100-1400	Yes	1	Silumin with ceramic layer	**HCK1.1**	1041
38	200-1300	No	1	ABS/PC	**HH66.1**	1030
38	200-1300	No	1	ABS/PC	**HH67.1**	1030
40	100-2000	No	1	High grade steel	**Y822.1**	1029

* Longer delivery times possible. Please check with our Sales Department.

Rotilabo®-mini magnetic stirrer M 3

- For stirring volumes up to 3 l
- Continuously adjustable speed range
- ABS housing

Technical specifications:

Stirring volume (H_2O)	3 l
Max. speed	1100 rpm
Motor power (output):	0.6 W
Mounting surface	130 x 150 mm
Permissible operating temperature	5 to 40 °C at 80 % rel. humidity
Dimensions (W x D x H)	130 x 150 x 50 mm
Weight	400 g
Power supply	100 to 240 V, 50/60 Hz

Art. No.	Pack Qty.	€
AAN1.1	1	81,70

Magnetic stirrers

Mini magnetic stirrer Topolino

By IKA. For maximum stirring volume 250 ml.
- Infinitely variable speed range
- PP base

Technical specifications:

Stirring volume (H_2O)	250 ml
Speed range	300 to 1800 rpm
Motor power: Input / output	1.1 / 0.8 W
Max. magnetic rod (L x ∅)	40 x 6 mm
Platform size	∅ 80 mm
Max. operating temperature	5 to 40 °C at 80 % rh
Dimensions (W x D x H)	95 x 110 x 40 mm
Weight	300 g

Delivery incl. power unit.

Art. No.	Pack Qty.	€
KE48.1	1	109,00

Small magnetic stirrer – AGE

Robust epoxy-coated steeling casing.
Control panel is recessed to protect it against leaking liquids.

Technical specifications:

Stirring volume (H_2O)	8 l
Speed	100 to 1200 rpm
Motor rating input / output	40/30 W
Mounting surface	171 x 190 mm
Dimensions (W x D x H)	171 x 190 x 75 mm
Permissible ambient conditions	5 to 40 °C at 80 % rel. humidity
Weight	1.8 kg
Power supply	230 V, 50 Hz

Art. No.	Pack Qty.	€
EHY7.1	1	162,35

RSM-series magnetic stirrers

RSM-10 B
- Speed adjustment via digital display (LED display)
- ABS housing and platform

RSM-01 S
- With stainless steel platform
- Solid metal housing
- Levelling feet for uneven surfaces

Technical specifications:

Type	**① RSM-10 B**	**② RSM-01 S**
Max. stirring capacity H_2O (l)	3	20
Speed (rpm)	100-1500	0-1500
Motor power: input / output (W)	5 / 3	30 / 18
Speed display	LED	-
Speed display accuracy (rpm)	10	-
Installation surface (mm)	∅ 135	
Dimensions W x D x H (mm)	155 x 215 x 75	160 x 280 x 85
Weight (kg)	0.8	2.8
Power supply	200-240 V, 50/60 Hz	

Type	Art. No.	Pack Qty.	€
RSM-10 B	**XP52.1**	1	161,25
RSM-01 S	**XP53.1**	1	295,65

Magnetic stirrers

Small magnetic stirrer MINI-MR standard

By IKA. Ideal for simple stirring operations **to 1000 ml**.
White set-up plate with centring points, ideal for titrations and for observing colour reactions.

Technical specifications:

rpm range:	2500 rpm
Motor power: reception / delivery	3/2 W
Platform	115 x 115 mm, Polyester foil
Outer dimensions (W x H x D)	115 x 37 x 129 mm
Weight	250 g
Current	100-240 V, 50/60 Hz

Art. No.	Pack Qty.	€
0863.1	1	219,00

Magnetic stirrers, lab disc

By IKA. Adjustable reversing operation with direction change every 30 sec.
- High IP protection (IP 65)
- Flat housing

Technical specifications:

Max. Stirring volume (H_2O)	800 ml
Speed range	150 to 1500 rpm
Motor power: Input / Output:	5 / 3 W
Platform size	∅ 100 mm
Dimensions (W x D x H)	116 x 175 x 12 mm
Current	100 to 240 V, 50/60 Hz

Art. No.	Pack Qty.	€
KX33.1	1	289,00

Small magnetic stirrer Hei-Mix S

By Heidolph. Electronic speed control.
With PVDF platform and polyamide housing.

Technical specifications:

Stirring volume (H_2O)	5 l
Speed max.	2200 rpm
Connection capacity	7 W
Platform	∅ 104 mm
Dimensions (W x D x H)	126 x 140 x 80 mm
Max. operating temperature	0-40 °C at 80 % rh
Weight	1.2 kg

Art. No.	Pack Qty.	€
EP84.1	1	234,00

Small magnetic stirrer, color squid / big squid

By IKA. With digital speed display (LED).
Glass platform, plastic base made of TPC-ET.

Technical specifications:

Model	**① color squid**	**② big squid**
Max. stirring volume (H_2O)	1000 ml	1500 ml
Max. speed	0 to 2500 rpm	
Speed display	digital	
Motor power: Intake / Output	3 / 2 W	
Platform	∅ 115 mm	∅ 160 mm
Dimensions W x D x H (mm)	145 x 160 x 45 mm	183 x 203 x 45
Power supply	100 to 240 V, 50/60 Hz	

Type	Art. No.	Pack Qty.	€
① Color squid white	**KX28.1**	1	299,00
② Big squid white	**KX23.1**	1	299,00

Mono Direct and Maxi Direct Digital magnetic stirrers

By Thermo.

General specifications of both models

- Nonwearing Cimarec stirrer drive
- Stainless steel housing
- Automatic start-up for safe acceleration of the stirring rod

Mono Direct

- Up to 3 litres stirring capacity
- LED status display

Maxi Direct Digital

- Up to 5 litres stirring capacity
- With digital stirring speed display
- Constant stirring at low speeds of 80 rpm
- A memory function stores the most recent settings

Technical specifications:

Model	Mono Direct	Maxi Direct Digital
Max. stirring capacity H_2O (l)	3	5
Speed (rpm)	130 to 1000	80 to 2000
Dimensions W x D x H (mm)	180 x 215 x 35	
Output settings (W)	1/5	5/10/15/20
Protection class	IP 32	IP 62
Perm. operating temperatures	-10 to +40 °C at 95 % rH	
Weight (g)	1400	2500

Type	Art. No.	Pack Qty.	€
Mono Direct	**X543.1**	1	209,00
Maxi Direct Digital	**LY28.1**	1	504,00

Portable magnetic stirrer SM27

By Stuart. Housing made of ABS-plastic. **Outlet or battery-operated**, can also be used in climatic cabinest, incubators and in field research. Battery-service life approx. 600 h.

Technical specifications:

Max. stirring volume (H_2O)	1.5 l
rpm range	to 1300 rpm
Ambient temperature	-0 to 40 °C at 80 % rh
Dimensions (W x D x H)	150 x 160 x 70 mm
Weight	1.3 kg

Delivery incl. 4 Mono 1.5 V batteries. Please order power unit separately.

Art. No.	Pack Qty.	€
CC53.1	1	449,00

Accessories:

Power unit for magnetic stirrer SM27	**CC54.1**	1 piece	98,70
12-V-Adapter (for cigarette lighter)	**CC55.1**	1 piece	79,95
Mono/D 1.5 V battery	**1024.2**	2 pieces	6,35

Magnetic stirrers C-MAG MS-series

By IKA.

- Glass ceramic platform
- Offset operation surface protects against spilt liquids

Technical specifications:

Model	C-MAG MS 4	C-MAG MS 10
Max. stirring volume H_2O (l)	5	15
rpm-range	100 to 1500 rpm	
Motor power: Input / Output	15 / 1.5 W	
Platform surface W x D (mm)	100 x 100	260 x 260
Dimensions W x D x H (mm)	150 x 260 x 105	300 x 415 x 105
Permissible working temperature	5 to 40 °C at 80 % rh	
Weight (kg)	3	6
Power supply	230 V, 50/60 Hz	

Type	Art. No.	Pack Qty.	€
C-MAG MS 4	**LN38.1**	1	499,00
C-MAG MS 10	**LN40.1**	1	749,00

Magnetic stirrers

NEW

KMO 3 basic magnetic stirrer

By IKA.
- Illuminated, flat mounting surface made of glass (intensity can be adjusted to three different levels, max. 15000 lx)
- Locking button
- Automatic reversal of direction of rotation (30, 60, 90 or 120 s) can be set

Technical specifications:

Stirring capacity (H_2O)	5 l
Speed range	10 to 1500 rpm
Setting accuracy speed	10 rpm
Motor power	9 W
Mounting surface (W x D)	140 x 120 mm
Dimensions (W x H x D)	153 x 62.5 x 227 mm
Weight	1.2 kg
Permissible operating temperatures	5 to 40 °C at 80% RH
Power supply	100-240 V, 50/60 Hz

Art. No.	Pack Qty.	€
KAA8.1	1	749,00

Magnetic stirrer POWER DIRECT

By Thermo.
Powerful magnetic stirrer for max 40 litre stirring volume.
Compact and flat design. Broad magnetic field enables stirring over a 40 mm range. Ideal for thick glass bases, round flasks or double-shelled containers.
- Stainless steel housing
- Quick-stop within 2 sec
- 4-stage stirring power (5/10/15/20 watt)
- Digital display for exact speed setting
- Memory function for last settings

Technical specifications:

Stirring volume (H_2O)	100 ml to 40 l
Rpm range	100 to 2000 rpm
Dimensions (W x D x H)	240 x 294 x 30 mm
Tolerable working temperature	-10 to +40 °C at 95 % rF
Weight	3 kg

Delivery incl. long-range power unit (100-240 V/24 VDC).

Art. No.	Pack Qty.	€
Y822.1	1	881,00

Magnetic followers, KOMET 50

By Thermo. Extra strong magnetic followers, more than three times the torque of conventional followers. PTFE-coated.
Round. Dimensions: ∅ 21 mm x L 50 mm.
Ideal for magnetic stirrer POWER DIRECT.

Art. No.	Pack Qty.	€
Y825.1	1	38,90

A 121 °C

Rotilabo® Economy magnetic bars

PTFE coated. Similar to cylindrical magnetic bar, but with rounded edges to intensify the stirring effect even at low speeds. Autoclavable.

∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
3	12	**XA17.1**	10	10,55
8	25	**XA18.1**	10	13,90
8	40	**XA19.1**	10	15,95
8	50	**XA20.1**	10	21,00

▶ For magnetic stirring rods, see page 1045

Magnetic stirrers MegaMag Genie® and Digital MegaMag Genie®

By Scientific Industries. From gentle to intensive mixing of low-viscous liquids. Housing made of ABS/PC.

① **MegaMag Genie®**
Strong magnetic stirrer for up to 38 litres.

② **Digital MegaMag Genie®** like MegaMag Genie®, but additionally with speed and time setting (Timer function) via digital display. Speed can be increased in 10 rpm increments.

Technical specifications:

Model	MegaMagGenie®	Digital MegaMag Genie®
Number of stirring points	1	
Stirring volume (H_2O) per stirring point (l)	38	
Speed range (rpm)	200 to 1300	
Speed display	Scale	Digital
Timer	-	1 to 99 min or permanent operation
Platform size L x W (mm)	305 x 305	
Dimensions L x W x H (mm)	305 x 310 x 130	
Permissible ambient conditions	0 to 38 °C at 95 % rh	
Weight	3000 g	

Type	Art. No.	Pack Qty.	€
① MegaMag Genie®	**HH66.1**	1	818,10
② Digital MegaMag Genie®	**HH67.1**	1	1024,50

Programmable magnetic stirrer MagStir Genie® and multipoint stirrer MultiMagStir Genie®

By Scientific Industries.
General features of both models:

For gentle mixing (e.g. of cell suspensions) in interval operation. Reversing mode can be adjusted for a more effective mixing of the medium.

- Microprocessor-controlled
- Stirring power can be pre-selected (Low, Medium, High) depending on the different stirring requirements, e.g. stirring power "High" for viscous liquids
- Interval and reversing mode possible

Four programs are available:

- **Manual-Mode**
  For stirring without/with a direction of rotation change-over (reversal operation) and timer-function (1 sec to 99 h).
- **Automatic-Mode**
  For activating operator-defined stirring profiles.
- **Profile-Mode**
  For programming and saving 4 operator-defined stirring profiles. Each stirring profile can save 9 different intervals e.g. speed, stirring direction (clockwise or anti-clockwise), intervals acceleration (from 5 to 300 rpm per sec) and time (including stirring intervals).
- **Setup-Mode**
  For programming the manual mode. The following are programmable: ramp acceleration from 5 to 300 rpm per sec (i.e. the time required until the set speed has been reached), the stirring power as well as the length and interval function of the automatic rotational direction change-over (adjustable from 1 sec to 59 min).

Multipoint magnetic stirrers MultiMagStir Genie®

With 4 synchronous-running stirring points for routine testing. Suitable for 4 Erlenmeyer flasks or 1000 ml beakers.

Technical specifications:

Model	MagStir Genie®	MultiMagStir Genie®
Number of stirring places	1	4
Max. stirring volume (H_2O) per stirring place	4000 ml	1000 ml
Distance between stirring points	-	165 mm
Speed max.	10 to 1800 rpm	10 to 1200 rpm
Speed accuracy	±0.1 %	
Max. operating temperature	0 to 38 °C at 95 % rh	
Area per stirring point	∅ 100 mm	∅ 75 mm
Dimensions (W x D x H)	160 x 200 x 55 mm	325 x 375 x 48 mm
Max. load	5000 g	10000 g
Weight	1000 g	3200 g

Type	Art. No.	Pack Qty.	€
MagStir Genie®	**AH70.1**	1	669,75
MultiMagStir Genie®	**CK78.1** *	1	1327,65

* Longer delivery times possible. Please check with our Sales Department.

Magnetic stirrers

Magnetic stirrers MOBIL 10 and MOBIL 25, remote-controllable

By Thermo.

General features of both models:

Ideal for stirring in warming cabinets, climatic test cabinets and cold chambers. Also for integration in systems.

- Remote-controllable (wired) via separate control unit, Telemodule 10 M
- Motor quick-stop without after-running for high operational safety, protects glass vessels from breaking
- Infinitely adjustable speed

Magnetic stirrer MOBIL 10

Easy-to clean and robust casing **made of POM**

Magnetic stirrer MOBIL 25

Watertight and pressure-resistant enclosed stainless steel casing for direct stirring in hot water baths or in steam sterilizers

Technical specifications for magnetic stirrers:

Type	MOBIL 10	MOBIL 25
Max. stirring volume (H_2O)	0.1 to 20 l	
rpm range	100 to 1000 rpm	
Stirring capacity	10 W	
Housing material	POM	high-grade steel 1.4305
Dimensions (∅ x H)	128 x 34 mm	
Control line length/∅	2 m/0.4 mm	
Max. operating temperature	+5 to +56 °C at 95 % rh	-10 to +143 °C in saturated steam
Permissible operating overpressure/vacuum	-	+3.0/-1.0 bar
System of protection	IP 66	IP 68
Weight	0.7 kg	1.7 kg

Technical specifications for Telemodule 10 M:

Constancy of speed	±1 %
Nominal stirring power	10 W
Dimensions (W x D x H)	63 x 96 x 50 mm
Safe ambient temperature	+10 to +40 °C at 80 % rh
System of protection	IP 20
Weight	0.5 kg
Current	230 V, 50/60 Hz

Delivery without control unit Telemodule 10 M, please order separately (is required to operate device).

Type	Art. No.	Pack Qty.	€
MOBIL 10, without Telemodule 10 M	**EH13.1** *	1	458,00
MOBIL 25, without Telemodule 10 M	**EH14.1** *	1	938,00

Accessories:

Control unit Telemodule 10 M	**EH15.1** *	1	262,00

* Longer delivery times possible. Please check with our Sales Department.

Micro Magnetic stirrer Cimarec

By Thermo. With induction drive. Compact design for low stirring volumes. Ideal for operation in demanding environments and water baths.

Micro magnetic stirrer

- High temperature resistance up to 95 °C in water and 120 °C in air
- Hermetically-sealed stainless steel housing, waterproof and dustproof to IP 68
- Can be remotely controlled with separate Telemodul 20 C control unit

Telemodul 20 C control unit

- Graphic display
- Vertical mixing (Shake mode)
- 3 function-definable program keys for quick starting of routines
- Three-stage adjustable start-up times for safe acceleration of the magnetic rod
- Intermittent operation with freely selectable stirring times and intervals as well as rotation direction reversal (5 sec to 1 h)
- Four-stage adjustable nominal stirring power (25/50/75/100 %)

Technical specifications of magnetic stirrer:

Max. stirring capacity (H_2O)	1 l
Speed range	130 to 1400 rpm
Stirring power	2/4/6/8 W
Dimensions (W x D x H)	48 x 48 x 16 mm
Control cable length / ∅	2 m / 4 mm
Perm. operating temperature in air	-10 to +120 °C at 95 % rH
Perm. operating temperature in water	0 to +95 °C at 100 % rH
Protection class	IP 68
Weight	0.2 kg

Technical specifications of Telemodul 20 C:

Speed constancy	±1 %
Output voltage	20 VDC
Dimensions (W x D x H)	155 x 165 x 95 mm
Perm. ambient temperature	0 to +40 °C at 80 % rH
Electrical supply	100-240 V, 50/60 Hz

Delivery incl. Micro Magnetic stirrer and Telemodul 20 C control unit.

Art. No.	Pack Qty.	€
LY27.1	1	769,00

Magnetic stirrer Compact 20, remote controllable

By Thermo. For stirring applications directly in water baths (up to +50 °C), hot and cold chambers, in damp brooding chambers and for built in systems.

Magnetic stirrer Compact 20
- Stainless steel housing
- Non-wearing Cimarec-inductive drive
- Remote controllable via separate control unit Telemodul 20 C
- Hermetically sealed; waterproof in compliance with IP 68

Technical specifications:

Max. stirring volume (H_20)	1.5 l
Rpm range	130 to 1400 rpm
Dimensions (W x D x H)	120 x 120 x 35 mm
Control line: Length / ∅	2 m/4 mm
Max. operating temperature	-10 to +56 °C at 100 % rh
Permissible operating temperature in water	0 to +50 °C
Weight	1 kg

Control unit Telemodul 20 C
- Microprocessor steering
- Grafic display
- Vertical mixing (shake-mode)
- 3 allocatable program keys for speedy starting of routines, the last setting at any one time will be automatically stored
- Three-stage adjustable start-up time for safe acceleration of magnetic rod
- Interval operation with freely selectable stirring and break times plus reversal of rotation direction (5 sec to 1 h)
- Four-stage adjustable nominal stirring power (25/50/75/100 %), higher power for viscous fluid volumes, reduced power for heat-free long-term operation

Technical specifications:

Constancy of speed	±1 %
Nominal stirring power	20 W
Output voltage	20 VDC
Dimensions (W x D x H)	155 x 165 x 95 mm
Safe ambient temperature	0 to +40 °C at 80 % rh
Input voltage	100-240 V, 50/60 Hz
Weight	0.6 kg

Delivery incl. Magnetic stirrer Compact 20 and control unit Telemodul 20.

Art. No.	Pack Qty.	€
EH16.1 *	1	777,00

* Longer delivery times possible. Please check with our Sales Department.

Digital 6 and 15 multipoint magnetic stirrer

- Stainless steel plate
- Digital speed display
- Constant speed, even after changes in medium viscosity
- With timer (1 to 900 sec or continuous mode) or adjustable reversing mode with opposite direction of rotation (5 to 900 sec)

Technical specifications:

Type	Digital 6	Digital 15
Magnetic stirrer drive		
Number of stirring points	6	15
Stirring capacity per stirring point (ml)	400	250
Clearance between stirring points (mm)	100	74
Speed display	LED	
Motor power: input/output (W)	3.6/3.0	9/8
Speed range (rpm)	80-1500	
Setting accuracy (rpm)	10	
Footprint per stirring point (mm)	∅ 85	∅ 64
Other		
Dimensions: W x D x H (mm)	230 x 370 x 52	
Permitted operating temperature	5 to 40 °C at 80% rel. humidity	
Weight (kg)	1.75	2.1
Power supply	100-240 V, 50-60 Hz	

Type	Art. No.	Pack Qty.	€
Digital 6 multipoint magnetic stirrer	**EHY8.1**	1	656,85
Digital 15 multipoint magnetic stirrer	**EHY9.1**	1	917,00

Magnetic stirrers

Multi-position magnetic stirrer POLY 15

By Thermo. Durable Cimarec-stirring mechanism. Powder-coated stainless steel housing. Digital display enables exact speed setting.
Memory function stores final settings used.
For max. 15 x 250 ml beakers or 6 x 1000 ml Erlenmeyer flasks.

Technical specifications:

Stirring points	15
Volume per stirring place	1 to 800 ml
Stirring capacity	10 W
Rpm	130 to 990 rpm
Dimensions (W x D x H)	240 x 420 x 35 mm
Ambient working temperature	-10 to +40 °C at 95 % rh
Weight	6000 g

Art. No.	Pack Qty.	€
X544.1	1	841,00

Multipoint magnetic stirrers 6 and 15

By Thermo.
Features
- With Cimarec stirring mechanism
- Stainless steel shell. Hermetically sealed.
  Shell is therefore water/dustproof, easy to clean and to service
- **Not suitable for underwater operation**
- 4-stage (5/10/15/20 watt) adjustable stirring power; higher power output for larger and viscose stirring volume, reduced power for heat-free, long-time operation
- **4-digit LED display**
- Memory function stores final settings used

Technical specifications:

Model	Multipoint 6	Multipoint 15
Number of stirring points, e.g. for	6 6 Erlenmeyer flasks 1000 ml	15 15 glass beakers 250 ml
Distance between points	130 mm	65 mm
Volume per stirring place	1 ml to approx. 3000 ml	
Rpm range:	80 to 2000 rpm	
Dimensions (W x D x H)	240 x 420 x 35 mm	
Protective system acc. to DIN 40050	IP 64	
Ambient temperature	-10 to +56 °C at 100 % rh	
Current	230 V, 50/60 Hz	

Type	Art. No.	Pack Qty.	€
Multipoint 6	**X176.1**	1	1324,00
Multipoint 15	**X177.1**	1	1659,00

RO series multi-position magnetic stirrer

By IKA. A silent-running coil drive ensures identical speeds in all stirring positions. This allows mass screenings to be performed under reproducible conditions.

- Digital speed display
- Stainless steel surface
- Stirring positions are arranged in line to make maximum use of surface area (1 x 5. 2 x 5 or 3 x 5)
- Adjustable reversing mode with change of direction (adjustable to 30/60/90/120 s)
- Eco mode for fatigue-free extended operation with reduced output (max. speed is limited to 600 rpm)

Technical specifications:

Model	RO 5	RO 10	RO 15
Magnetic stirrer drive			
Number of stirring positions	5	10	15
Max. stirring capacity per stirring position (l)	0.4		
Max. stirring capacity with other vessels (l)	2	4	6
Distance between stirring positions (mm)	90		
Speed display	LED		
Speed range (rpm)	0 to 1200		
Setting accuracy (rpm)	10		
Installation surface (mm)	120 x 470	190 x 470	280 x 470
Other			
Dimensions W x D x H (mm)	120 x 570 x 60	190 x 570 x 60	280 x 570 x 60
Weight (kg)	3	5	7
Power supply	100-240 V, 50/60 Hz		

Type	Art. No.	Pack Qty.	€
RO 5	**XT33.1**	1	1299,00
RO 10	**XT34.1**	1	1499,00
RO 15	**XT35.1**	1	2099,00

Multi-position magnetic stirrer with heater type AM4

- Four independently controlled stirring/heating positions
- With aluminium hotplates
- Powerful motor keeps stirring speeds constant even when viscosity changes

Technical specifications:

Magnetic stirrer drive	
Number of stirring points	4
Max. stirring capacity (H_2O) per stirring position	15 l
Speed display	Scales
Speed per stirring position	50 to 1500 rpm
Heating function	
Max. temperature per stirrer/hotplate	50 to 370 °C
Heating capacity	4 x 600 W
Installation area per stirrer/hotplate	∅ 155 mm
Centre-to-centre distance between individual stirring positions	186 mm
Other	
Dimensions (W x D x H)	715 x 246 x 115 mm
Weight	8.6 kg
Power supply	230 V, 50 Hz

Art. No.	Pack Qty.	€
CKK3.1	1	1328,70

Rotilabo®-stirring magnets - removers

Different types and lengths available. With powerful magnet.
Ideal for retrieving lost magnetic rods or "fishing" them out of liquid.

Material	∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
PTFE	10	150	**E448.1**	1	13,95
PTFE	10	250	**E449.1**	1	15,00
PTFE	10	350	**E450.1**	1	18,25
PTFE	10	450	**E451.1**	1	19,25
PP	10	350	**E452.1**	1	11,30
PP	10	450	**E453.1**	1	12,40

Multipoint magnetic stirrer with hotplate SB 162-3

By Stuart.
Equipment:

- Hotplates with aluminium/silicone alloy for uniform temperature distribution
- The stirring/heating points have independent control system
- With separate safety warning lamp for each stirrer/hotplate; lights up when hotplate temperature exceeds 50 °C

Technical specifications:

Magnetic stirrer drive	
Number of stirring points	3
Max. stirring volumes (H_2O) per stirring point	15 l
Speed display	Scales
Rpm range	100 to 1500 rpm
Heating function	
Max. temperature per stirrer/hotplate	325 °C
Heating output	3 x 700 W
Installation area per stirrer/hotplate	160 x 160 mm
Other	
Dimensions (W x D x H)	600 x 270 x 110 mm
Weight	11 kg
Current	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
KN82.1	1	1379,00

RT series multi-position magnetic stirrer with heater

By IKA. For simultaneous mixing at 5, 10 or 15 stirring positions with identical intensity and homogeneous temperature distribution.

- Digital speed and temperature display
- **With integrated heating/cooling plate**
- Stainless steel surface
- Stirring positions are arranged in-line for optimal use of surface area (1 x 5. 2 x 5 or 3 x 5)
- Adjustable reversing mode with change of direction (adjustable to 30/60/90/120 s)
- Eco mode for fatigue-free extended operation with reduced output

Technical specifications:

Model	RT 5	RT 10	RT 15
Magnetic stirrer drive			
Number of stirring positions	5	10	15
Max. stirring capacity per stirring position (l)	0.4		
Max. stirring capacity with other vessels (l)	2	4	6
Distance between stirring positions (mm)	90		
Speed display	LED		
Speed range (rpm)	0 to 1000		
Setting accuracy (rpm)	10		
Heating function			
Temperature display	LED		
Temperature range (°C)	From room temperature to 120 °C		
Max. medium temperature (depending on vessel) (°C)	70		
Setting accuracy (K)	±1		
Installation surface (mm)	110 x 495	180 x 495	270 x 495
Other			
Dimensions W x D x H (mm)	120 x 610 x 60	190 x 610 x 60	280 x 610 x 60
Weight (kg)	4	7.5	10.5
Power supply	220-240 V, 50/60 Hz		

Type	Art. No.	Pack Qty.	€
RT 5	**XT36.1**	1	2299,00
RT 10	**XT37.1**	1	2999,00
RT 15	**XT38.1**	1	3799,00

Rotilabo®-heating and magnetic stirrer MH 15

- Aluminium hotplate with protective coating
- With elevated control panel to protect against leaking liquids
- Constant speed, even after changes in medium viscosity
- Front panel with °C and rpm-scale

Technical specifications:

Magnetic stirrer drive	
Max. stirring capacity (H_2O)	15 l
Max. speed	50 to 1500 rpm
Motor rating input / output	30 / 23 W
Heating function	
Heating output	600 W
Temperature range	50 to 370 °C
Mounting surface	∅ 155 mm
Other	
Dimensions (W x D x H)	165 x 280 x 115 mm
Weight	2.6 kg
Power supply	230 V, 50 Hz

Art. No.	Pack Qty.	€
AAN2.1	1	245,10

Heating and magnetic stirrers

Heating and magnetic stirrer RH basic 2

By IKA.
- Stainless steel hotplate
- Preset safety circuit limits hotplate temperature to 400 °C

Technical specifications:

Magnetic stirrer	
Stirring volume (H_2O)	10 l
Motor power: Input / Output	15 W / 2 W
Rpm range	100 to 2000 rpm
Heater	
Heating power	400 W
Temperature range	Room temperature to max. 320 °C
Control accuracy	±15 K
Platform surface	∅ 125 mm
Others	
Dimensions (W x D x H)	168 x 220 x 105 mm
Weight	2400 g

Art. No.	Pack Qty.	€
Y888.1	1	369,00

Rotilabo®-stirring magnets bars - set I

Set consists of the 10 magnets most commonly used.
PTFE-coated magnets, cylindric.
Come in a plain, polystyrene storage box (pocket format).
Dimensions: L 120 x W 93 x D 12 mm.

Art. No.	Pack Qty. (set)	€
C267.1	1	27,85

Magnetic stirrers with heating RSM-10HS and RSM-10HP

- Temperature and speed adjustment via digital display (LED display)
- Digital display of nominal and actual temperature
- **Direct connection for medium temperature probe Pt 1000** (if required, please order separately)
- Fixed safety circuit of 320 °C
- Platform made of stainless steel or ceramic coated steel (optional)

Technical specifications:

Type	**RSM-10HS**	**RSM-10HP**
Magnetic stirrer drive		
Max. stirring capacity (H_2O)	3 l	
Speed range	200 to 1500 rpm	
Speed display	LED	
Speed display accuracy	10 rpm	
Motor rating input / output	5 / 3 W	
Heating function		
Hotplate material	Stainless steel	Ceramic coated steel
Temperature range	From room temperature to 280 °C	
Temperature display	LED	
Heating output	500 W	
Temperature control accuracy	±10 K	
Control accuracy with sensor probe immersed in medium (please order sensor separately)	±2 K	
Set-up area	∅ 135 mm	
Other		
Dimensions (W x D x H)	155 x 215 x 100 mm	
Weight	1.4 kg	
Power supply	200-240 V, 50/60 Hz	

Type	Art. No.	Pack Qty.	€
RSM-10HS	**TT78.1**	1	274,15
RSM-10HP	**TT79.1**	1	284,90

Accessories for RSM-10HS and RSM-10HP

Temperature probe Pt 1000
Made of V4A. Length of probe 190 mm, ∅ 3 mm. Handle 50 mm.

Art. No.	Pack Qty.	€
TT80.1	1	80,65

Stand kit
For attaching a single sensor probe.
Delivery incl. stand rod M8 (L 340 mm, ∅ 10 mm),
holding rod for Pt 1000 sensor (L 160 mm, ∅ 10 mm) and cross sleeve.

Art. No.	Pack Qty.	€
YK80.1	1	64,50

Rotilabo®-magnetic stirrer with heating MH 20 Digital set with integrated contact thermometer

- Temperature and speed setting via digital display
- Integrated contact thermometer with full functionality for direct control of the medium temperature up to 250 °C via Pt 100 sensor (please order accessory for fastening the sensor separately)
- Aluminium hotplate with protective coating made of ceramic
- Constant speed, even after changes in medium viscosity
- A safety warning lamp indicates temperatures above 50 °C
- Adjustable safety circuit for the hotplate temperature (50 to 370 °C)

Technical specifications:

Magnetic stirrer drive	
Max. stirring capacity (H_2O)	20 l
Speed display	digital
Max. speed	50 to 1500 rpm in steps of 10 rpm
Heating function	
Heating output	630 W
Temperature display	digital
Temperature range for hotplate	50 to 370 °C
Setting accuracy	±1 K with temperature sensor ±5 K without temperature sensor
Control accuracy with temperature sensor in the medium	±2 K
Control accuracy, temperature without sensor	±10 K
Mounting surface	∅ 155 mm
Other	
Dimensions (W x D x H)	165 x 280 x 115 mm
Weight	2.6 kg
Power supply	230 V, 50-60 Hz

Delivery incl. heating and magnetic stirrer MH 20 Digital and stainless steel temperature sensor Pt 100, ∅ 3 mm, L 250 mm.

Art. No.	Pack Qty.	€
EYE7.1	1	446,15

Accessories for Rotilabo®-magnetic stirrer with heater MH 20 Digital set

Accessories for fastening the sensor

Type	Art. No.	Pack Qty.	€
Stand rod	**EYE8.1**	1	32,15
Holder for temperature sensor	**EYE9.1**	1	44,65

Spare temperature sensor Pt 100

Type	Art. No.	Pack Qty.	€
Spare stainless steel temperature sensor Pt 100, ∅ 3 mm, L 250 mm	**EYH0.1**	1	99,90

AREC.T heating and magnetic stirrer with timer

- Digital display of heating plate setpoint temperature
- Hotplate made of white ceramic
- With elevated control panel to protect against leaking liquids
- Safety warning lamp comes on at temperatures over 50 °C
- Powerful motor keeps stirring speeds constant even when viscosity changes
- **Timer - switches the stirring and heating function off on expiration of the preset countdown**

Technical specifications:

Magnetic stirrer drive	
Max. stirring capacity (H_2O)	15 l
Speed display	Scale
Max. speed	50 to 1500 rpm
Motor power input	30 W
Heating function	
Heating capacity	800 W
Temperature range	Room temperature to 550 °C
Temperature display	LED
Setting accuracy	±5 K
Control accuracy	±10 K
Mounting surface	180 x 180 mm
Countdown function	
Timer function	1 to 999 min in 1-min increments
Other	
Dimensions (W x D x H)	203 x 344 x 94 mm
Weight	3.5 kg
Power supply	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
CKK2.1	1	451,50

Heating and magnetic stirrers

US152 and UC152 series heating and magnetic stirrer

By Stuart.

Features:

- Microprocessor-controlled heating system
- Platforms are optionally available in glass ceramic (good resistance to chemicals, withstands high temperature, 120 x 120 mm heated zone) or aluminium (very rugged, 150 x 150 mm heated zone)
- A safety warning lamp indicates temperatures above 50 °C

US152 and UC152 with scale

Temperature control with LED display, colour LEDs aid reading current actual temperature.

US152D and UC152D with LED display

With digital display of actual temperature.
Operating temperature range from 5 °C and room temperature to 325/450 °C (model US152D/UC152D).
Minimum setting temperature 25 °C.
Setting accuracy/resolution: ±5 °C. Control accuracy ±10 °C.

Technical specifications:

Model	② US152	③ US152D	① UC152	④ UC152D
Magnetic stirrer drive				
Max. stirring capacity H_2O (l)	15			
Speed range (rpm)	100 to 2000			
Heating function				
Hotplate material	Aluminium/silicon-coated		Glass ceramic	
Max. hotplate temperature (°C)	325		450	
Temperature display	Scale	LED	Scale	LED
Heating output (W)	700		500	
Heated zone (mm)	150 x 150		120 x 120	
Hotplate surface (mm)	150 x 150			
Other				
Dimensions W x D x H (mm)	172 x 248 x 120			
Weight (kg)	2.9			
Power supply	230 V, 50 Hz			

Type	Art. No.	Pack Qty.	€
US152	**PY72.1**	1	410,00
US152D	**CHA5.1**	1	485,00
UC152	**PY73.1**	1	438,00
UC152D	**CHA6.1**	1	495,00

RH series heating and magnetic stirrer

By IKA.

- With adjustable safety circuit for hot plate temperatures from 50 to 370 °C
- With DIN 12878 socket for connecting an electronic contact thermometer, e.g. ETS-D5 (please order separately, see contact thermometer), to control the medium temperature.

Additional features of RH digital

- Digital display of temperature and speed
- Error code display
- Easy operation by membrane keyboard

Technical specifications:

Type	RH basic	RH digital
Magnetic stirrer drive		
Stirring volume of H_2O (l)	15	
Motor power: input / output (W)	15/2	
Speed display	Scale	LED
Speed range (rpm)	50 to 2000	
Heating function		
Heating power (W)	600	
Temperature display	Scale	LED
Temperature range (°C)	50 to 320	
Setting accuracy (K)	-	±5
Control accuracy (K) with temperature probe in medium (please order contact thermometer ETS-D5 separately)	±0.5	
Installation surface (mm)	∅ 135	
Other		
Dimensions W x D x H (mm)	160 x 246 x 90	
Weight (kg)	2	
Power supply	220-240 V, 50/60 Hz	

Stainless steel hotplate

Type	Art. No.	Pack Qty.	€
RH basic	**XT23.1**	1	499,00
RH digital	**XT24.1**	1	599,00

Hotplate with enamel coating

Type	Art. No.	Pack Qty.	€
RH basic	**XT25.1**	1	599,00
RH digital	**XT26.1**	1	699,00

Accessories:

Type H 102 protective hood for RH basic	**XT27.1**	1	16,00
Type H 103 protective hood for RH digital	**XT28.1**	1	16,00

Magnetic stirrers with heating C-MAG HS-series

By IKA.

General information for all models

- Hotplate made of glass ceramics
- Temperature setting via digital display (LED)
- Digital display of hotplate desired temperature
- Error code malfunction indicator
- Fixed safety circuit of 550 °C
- Hot Top Indicator (Warning in case of hot surface)

Models C-MAG HS 7 and C-MAG HS 10:
Additionally has a DIN-socket 12878 for connecting to an electronic contact thermometer e.g. ETS-D5 for high-precision temperature control.

Technical specifications:

Model	C-MAG HS 4	C-MAG HS 7	C-MAG HS 10
Magnetic stirrer drive			
Max. stirring volume H_2O (l)	5	10	15
Speed indicator	Scale		
rpm-range	100 to 1500 rpm		
Motor power: Input / Output	15 / 1.5 W		
Heating function			
Heating output (W)	250	1000	1500
Temperature range (°C)	50 to 500		
Control accuracy (K)	±10		
Platform surface W x D (mm)	100 x 100	180 x 180	260 x 260
Other			
Dimensions W x D x H (mm)	150 x 260 x 105	220 x 330 x 105	300 x 415 x 105
Weight (kg)	3	5	6
Power supply	230 V, 50/60 Hz		

Type	Art. No.	Pack Qty.	€
C-MAG HS 4	**LN35.1**	1	499,00
C-MAG HS 7	**LN36.1**	1	549,00
C-MAG HS 10	**LN37.1**	1	749,00

Heater and magnetic stirrer AREX-6 digital complete set

- Heating plate made of aluminium with ceramic coating
- Clear white LED display with icons for easy identification and navigation through the menus
- Temperature and speed setting via digital display
- Integrated contact thermometer with full functionality, for direct control of the medium temperature up to 250 °C via Pt 100 sensor
- Timer function - switches the stirring and heating function off on expiration of the preset countdown
- Adjustable reversing mode with change of direction (from 5 s to 99 min, 59 x in 1s steps)
- Independent safety circuits protect the device in the event of overtemperature
- Adjustable max. temperature limit
- Probe Detector Alarm: Detects if the temperature sensor is not immersed in the medium
- Resistant cast housing (IP 42)
- Constant speed, even after changes in medium viscosity

Technical specifications:

Magnetic stirrer drive	
Max. stirring capacity (H2O)	20 l
Speed display	digital
Max. speed	30 to 1700 rpm in steps of 5 rpm
Heating function	
Heating output	600 W
Temperature range	Room temperature to 370 °C
Temperature display	digital
Setting accuracy	1 °C
Control accuracy	±1 °C
Mounting surface	∅ 135 mm
Countdown function	
Timer function	1 to 99 min in 1-min increments
Other	
Dimensions (W x D x H)	160 x 280 x 105 mm
Weight	2.6 kg
Power supply	230 V, 50/60 Hz

Delivery incl. stainless steel temperature measuring probe Pt 100 (∅ 3 mm, L 250 mm), tripod rod and holder for temperature sensor.

Art. No.	Pack Qty.	€
HLN1.1	1	648,25

Accessories for heater and magnetic stirrer AREX-6 Digital

Type	Art. No.	Pack Qty.	€
Spare stainless steel temperature sensor Pt 100, ∅ 3 mm, L 250 mm	**EYH0.1**	1	99,90
Temperature sensor, glass-coated Pt 100, ∅ 5 mm, L 250 mm	**HLN2.1**	1	143,00
Silicone protective hood for AREX-6 Digital	**HLN3.1**	1	25,65

Magnetic stirrer with heater C-MAG HS 7 complete set

By IKA.

Magnetic stirrer with heater C-MAG HS 7

- Ceramic glass heating plate
- Temperature setting via digital display (LED)
- Digital display of set heating plate temperature
- Error code display in the event of mistake
- Fixed safety circuit of 550 °C
- Hot Top Indicator (hot surface warning)
- Bushing for connecting a contact thermometer ETS-D5

Technical specifications:

Magnetic stirrer drive	
Max. stirring capacity (H_2O)	10 l
Speed display	Scale
Speed range	100 to 1500 rpm
Motor rating input / output	15 / 1.5 W
Heating function	
Heating output	1000 W
Temperature range	50 to 500 °C
Control accuracy	±10 K
Set-up dimensions (W x D)	180 x 180 mm
Other	
Dimensions (W x D x H)	220 x 330 x 105 mm
Weight	5 kg
Electrical supply	230 V, 50/60 Hz

Contact thermometer ETS-D5:
Control of medium temperature with display of actual temperature. Bushed connection according to DIN 12878 for connecting a contact thermometer. Temperature regulation to prevent overheating.

Technical specifications:

Measuring/control range	-50 to 450 °C
Resolution	0.1 °C
Measuring accuracy	±0.2 K
Setting accuracy	±0.1 K
Control deviation	±0.5 K
Dimensions (W x D x H)	82 x 22 x 83 mm

Complete set, delivery incl.

- Heating and magnetic stirrer C-MAG HS 7
- Contact thermometer ETS-D5 incl. stainless steel temperature sensor Pt 1000
- Support rod, holding rod and boss head clamp

Art. No.	Pack Qty.	€
LY79.1	1	849,00

C-MAG HS-Digital series heater and magnetic stirrer

By IKA.

- Ceramic glass heating plate
- Large LCD display for simultaneous display of actual and nominal hot plate temperature (actual temperature display by connected temperature sensor with 0.1 °C resolution)
- Direct connectivity for Pt 1000.60 medium temperature sensor
- **Integrated contact thermometer with full functionality**
- Error code display in the event of fault
- Hot surface warning
- Safety circuit with default setting of 550 °C for hot plate temperature

Technical specifications:

Model	HS 4 digital	HS 7 digital	HS 10 digital
Magnetic stirrer drive			
Max. stirring capacity H_2O (l)	5	10	15
Motor power: power input / output (W)	15 / 1.5		
Speed display	Scale		
Speed range (rpm)	100 to 1500		
Heating function			
Heating output (W)	250	1000	1500
Temperature display	LCD		
Temperature range (°C)	50 to 500		
Setting accuracy (K)	±1		
Control accuracy with temperature probe immersed in medium (K)	±0.5		
Installation surface (mm)	100 x 100	180 x 180	260 x 260
Other			
Dimensions W x D x H (mm)	150 x 260 x 105	215 x 330 x 105	300 x 415 x 105
Weight (kg)	3	5	6
Power supply	230 V, 50/60 Hz		

Delivery incl. Pt 1000.60 stainless steel temperature sensor.

Type	Art. No.	Pack Qty.	€
HS 4 digital	**XT59.1**	1	622,00
HS 7 digital	**XT60.1**	1	726,00
HS 10 digital	**XT61.1**	1	882,00

Accessories for C-Mag HS-Digital series

By IKA.

Accessories for attaching temperature sensor PT 100

Type	Art. No.	Pack Qty.	€
Stand rod	**A315.1**	1	60,00
Clamp	**A316.1**	1	26,00
Holder rod	**HA16.1**	1	26,00

Temperature sensor

Type	Art. No.	Pack Qty.	€
Replacement stainless steel temperature measuring sensor Pt 1000.60	**XT31.1**	1	117,00
Glass temperature measuring sensor Pt 1000.70	**XT32.1**	1	129,00

Magnetic stirrers with heating MR Hei-Standard

By Heidolph.
Features:
- Heating power 800 W
- Max stirring volume 20 l
- Hotplate made of silumin with ceramic layer
- Independent safety circuit switches off the heating 25 °C over the preset hotplate temperature with a separate circuit
- Residual heat warning

Technical specifications:

Magnetic stirrer drive	
Max stirring volume (H_2O)	20 l
Speed range	100 to 1400 rpm
Control accuracy of speed	±2 %
Heater function	
Heating power	800 W
Temperature range	Room temperature to 300 °C
Setting accuracy	±5 K
Control accuracy temperature	±5 K
Platform size	∅ 145 mm
Other	
Dimensions (W x D x H)	173 x 277 x 94 mm
Weight	2.6 kg

Art. No.	Pack Qty.	€
HA08.1	1	625,00

Accessories:

Silicone cover	**HA09.1**	1	18,00

▶ Contact thermometer see page 1044

MR Hei-Tec and MR Hei-Connect magnetic stirrer with heating

By Heidolph.
- Digital display of hotplate set temperature and set speed
- Heating power 800 W
- Max. stirring volume 20 l
- Hotplate made of silumin with ceramic layer
- Independent safety circuit switches off the heating 25 °C over the preset hotplate temperature with a separate circuit
- **Direct connection of medium temperature sensor PT 1000 possible**. (Please order required temperature sensor and accessories for mounting the sensor probe separately).
- Integrated contact thermometer with full functionality
- Residual heat warning

Model MR Hei-Connect
- With RS 232 interface for process documentation and reproducible results
- With timer function (1 to 999 min)

Technical specifications:

Magnetic stirrer drive	
Max stirring volume (H_2O)	20 l
Rpm range	100 to 1400 rpm
Control accuracy of speed	±2 %
Heater function	
Heating power	800 W
Temperature range	Room temperature to 300 °C
Setting accuracy	±1 K
Control accuracy temperature	±5 K
Control accuracy with optional sensor in medium	±1 K
Platform size	∅ 145 mm
Other	
Dimensions (W x D x H)	173 x 277 x 94 mm
Weight	2.6 kg

Type	Art. No.	Pack Qty.	€
MR Hei-Tec	**HA10.1**	1	726,00
MR Hei-Connect	**HCK1.1**	1	961,00

Accessories:

Silicone cover for control panel and unit	**HA12.1**	1	18,00

Accessories for MR Hei-Tec and MR Hei-Connect magnetic stirrer

By Heidolph.

Temperature probe PT 1000 made of V4A

Art. No.	Pack Qty.	€
T041.1	1	128,00

Temperature probe PT 1000 with glass sheath

Art. No.	Pack Qty.	€
T042.1	1	183,00

Stand kit
For attaching a single sensor probe.
Delivery incl. M10 stand rod (L 425 mm, ∅ 13 mm) and holding device with cable terminal strip (L 85 mm).

Art. No.	Pack Qty.	€
ALN8.1	1	117,00

Heating and magnetic stirrer RCT basic *safety control*

By IKA.

- Temperature and speed control via digital display
- Digital display of preset safe temperature limit
- Hot top indicator (warns when surface is hot)
- Adjustable safety circuit to regulate hotplate temperature (50 to 360 °C)
- Hotplate made of aluminium
- **Direct connection of medium temperature sensor PT 1000 possible**. (Please order the accessories for attaching the sensor separately).
- Integrated contact thermometer with full functionality
- DIN socket 12878 for connecting an electronic contact thermometer e.g. ETS-D5 for precise temperature control (please order separately, see contact thermometer)

Technical specifications:

Magnetic stirrer drive	
Max stirring volume (H_2O)	20 l
Motor power: input / output	16 / 9 W
Speed display	digital
Rpm range	50 to 1500 rpm
Heater function	
Heating power	600 W
Temperature display	digital
Temperature range	Room temperature to 310 °C
Setting accuracy	±1 K
Control accuracy with temperature sensor in medium (contact thermometer ETS-D5 please order separately)	PT 1000: ±1 K ETS-D5: ±0.5 K
Platform size	∅ 135 mm
Other	
Dimensions (W x D x H)	160 x 270 x 85 mm
Weight	2.5 kg

Delivery incl. protective hood and PT 1000 temperature sensor.

Art. No.	Pack Qty.	€
EY83.1	1	749,00

Accessories for RCT basic *safety control*

By IKA

Accessories for attaching temperature sensor PT 1000

Type	Art. No.	Pack Qty.	€
Stand rod	**A315.1**	1	60,00
Clamp	**A316.1**	1	26,00
Holder rod	**HA16.1**	1	26,00

Spare protective hood H 100 for RCT basic

Type	Art. No.	Pack Qty.	€
Spare protective hood	**HY25.1**	1	16,00

NEW

Heater and magnetic stirrer RCT digital

By IKA.

- Hot plate made of aluminium
- Clear display, including set-point/actual value display of temperature and speed
- Housing surface made of hardened glass for optimum cleaning and chemical resistance
- **Integrated contact thermometer with full functionality for direct control of the medium temperature**
- Detects "Sensor in medium"
- Adjustable safety circuit (50 to 360 °C)
- **Integrated timer function**
- Adjustable automatic reversal of direction of rotation (10 sec to 10 min) and pause time (3 sec to 5 min)
- **Direction of rotation of magnetic motor settable to left or right**
- Warning if surface becomes too hot
- USB/RS 232 interface

Technical specifications:

Magnetic stirrer drive	
Max. stirring capacity (H2O)	20 l
Speed range	50 to 1500 rpm in increments of 10 rpm
Speed display	LCD
Heating function	
Heating output	600 W
Temperature display	LCD
Temperature range	Room temp. up to 310 °C
Setting accuracy	1 °C
Control accuracy with temperature measuring sensor in the medium	0.5 K
Mounting surface	∅ 135 mm
Countdown function	
Timer function	99 h, 99 min and 59 sec
Other	
Dimensions (W x D x H)	160 x 270 x 85 mm
Weight	2.4 kg
Power supply	220-230 V, 50/60 Hz

Delivery incl. stainless steel temperature measuring sensor Pt 1000.60 (∅ 3 mm, L 230 mm).

Art. No.	Pack Qty.	€
HPA5.1	1	875,00

Accessories for RCT digital

Accessories for fastening a measuring probe Pt 1000

Type	Art. No.	Pack Qty.	€
Stand rod	**A315.1**	1	60,00
Clamp	**A316.1**	1	26,00
Holder rod	**HA16.1**	1	26,00

Temperature measuring sensor

Type	Art. No.	Pack Qty.	€
Replacement stainless steel temperature measuring sensor Pt 1000.60	**XT31.1**	1	117,00
Glass temperature measuring sensor Pt 1000.70	**XT32.1**	1	129,00

Heating and magnetic stirrers with large hotplate model CB 302 and SB 302

By Stuart.

Features

- Hotplate comes either in chemically-resistant ceramic or robust aluminium
- Safety warning lamp for temperatures over 50 °C

Technical specifications:

Model	CB 302	SB 302
Magnetic stirrer drive		
Max stirring volume (H_2O)	15 l	
Speed display	Scale	
rpm range	100 to 1500 rpm	
Heating function		
Heating power	1200 W	600 W
Temperature range	Max. room temperature 450 °C	Max. room temperature 300 °C
Hotplate material	Ceramic	Aluminium
Heated area	200 x 200 mm	300 x 300 mm
Hotplate surface	300 x 300 mm	
Other		
Dimensions (W x D x H)	300 x 365 x 105 mm	
Weight	7 kg	
Power supply	230 V, 50 Hz	

Type	Art. No.	Pack Qty.	€
CB 302	**KN93.1** *	1	971,00
SB 302	**KN94.1** *	1	998,00

* Longer delivery times possible. Please check with our Sales Department.

RET control-visc safety magnetic stirrer with heater

By IKA.

Type

- Digital display of time and speed
- Straightforward TFT display for easy navigation through menus
- Temperature display resolution 0.01 °C
- Connectivity for Pt 100.70 temperature probe
- **Integrated contact thermometer with full functionality**
- Timer and countdown function
- Magnet break-off detection, intermittent mode
- USB and RS 232 ports for activation and documentation of the magnetic stirrer

pH function

- With integrated pH electrode connection (BNC socket)
- Measuring range 0 to 14 pH; resolution 0.01 pH; accuracy ±0.1 pH
- Does not include pH single-rod measuring cell (please order separately; you will find a large selection of pH electrodes with BNC connectors in the section "Measuring instruments")

Integrated weighing function

- Max. weighing range 5000 g, readability 1 g
- Linearity ±1 g

Technical specifications:

Magnetic stirrer drive	
Max. stirring capacity (H2O)	20 l
Motor rating input / output	16/9 W
Speed display	TFT
Speed range	50 to 1700 rpm
Heating function	
Heating output	600 W
Temperature display	TFT
Temperature range	Room temp. up to 340 °C
Setting accuracy	±0.1 K
Control accuracy with temperature probe immersed in medium	±0.2 K
Mounting surface	∅ 135 mm
Other	
Dimensions (W x D x H)	160 x 270 x 85 mm
Power supply	220-240 V, 50/60 Hz

Delivery incl. Pt 100.70 stainless steel temperature probe and type H 104 protective hood.

Type	Art. No.	Pack Qty.	€
RET control-visc with stainless steel hot plate	**XT54.1**	1	1349,00
RET control-visc with enamelled hot plate	**XT55.1**	1	1399,00

Accessories for RET control

Accessories for attaching temperature sensor Pt 100.70

Type	Art. No.	Pack Qty.	€
Stand rod	**A315.1**	1	60,00
Clamp	**A316.1**	1	26,00
Holder rod	**HA16.1**	1	26,00

Stainless steel temperature sensor

Type	Art. No.	Pack Qty.	€
Replacement Pt 100.70 stainless steel temperature sensor	**H949.1**	1	112,00
Glass Pt 100.51 temperature sensor	**XT56.1**	1	257,00

Replacement protective hood for RET control

Type	Art. No.	Pack Qty.	€
Protective hood H 104	**XT30.1**	1	16,00

Magnetic stirrer with heating MR Hei-End

By Heidolph.

- Heater capacity 800 W
- **Digital display of speed and temperature (set- and actual value)**
- Max stirring volume 20 l
- Hotplate made of silumin with ceramic layer
- Independent safety circuit switches the heating off as soon as a pre-set temperature difference, above the set-temperature has been reached
- With display indicating residual heat when the device has been switched off until the temperature falls below 50 °C
- Comes with RS 232 interface and analog outlet
- A Pt 1000 temperature sensor can be connected directly (please order separately)
- Residual heat warning

Technical specifications:

Magnetic stirrer drive	
Max. stirring volume (H_2O)	20 l
Speed display	digital
Rpm range	30 to 1400 rpm
Control accuracy of speed	±1 %
Heating function	
Heater capacity	800 W
Temperature display	digital
Ideal for temperatures	max. room temperature 300 °C
Setting accuracy	±1 K
Control accuracy temperature	±5 K
Control accuracy with sensor in medium (with optional PT 1000)	±0.2 K
Platform	∅ 145 mm
Others	
Dimensions (W x D x H)	173 x 277 x 94 mm
Weight	2.6 kg

Art. No.	Pack Qty.	€
HA13.1	1	1276,00

Accessories:

Silicone cover for control panel and unit	**HA12.1**	1	18,00

Accessories for magnetic stirrers MR Hei-End

By Heidolph.

Temperature sensor Pt 1000 made of V4A

Art. No.	Pack Qty.	€
T041.1	1	128,00

Temperature sensor Pt 1000 with glass sheath

Art. No.	Pack Qty.	€
T042.1	1	183,00

Stand kit

For attaching a single sensor probe.

Delivery incl. M10 stand rod (L 425 mm, ∅ 13 mm) and holding device with cable terminal strip (L 85 mm).

Art. No.	Pack Qty.	€
ALN8.1	1	117,00

Contact thermometer ETS-D5

By IKA.

- For all magnetic stirrers with contact thermometer terminals according to DIN 12878
- Temperature control overheating
- Different control modes (= operating modes) can be selected

Technical specifications:

Temperature	
Temperature measuring range	-50 to 450 °C
Resolution	0.1 °C
Accuracy	±0.2 K
Setting accuracy	0.1 K
Standard tolerance	±0.5 K
General specifications	
Dimensions without sensor (W x D x H)	82 x 22 x 83 mm
Current	230 V, 50 Hz

Delivery incl. stainless steel sensor Pt 1000 type H 67.60 (L 260 mm, ∅ 3 mm) and connector cable. Please order the accessories for attaching the contact thermometer separately.

Art. No.	Pack Qty.	€
EY84.1	1	349,00

Accessories for contact thermometers ETS-D5

By IKA.

Type	Art. No.	Pack Qty.	€
Extension lead, L 1 m	**K859.1**	1	172,00
Measuring probe with glass sheath, L 260 x ∅ 6 mm	**K856.1**	1	249,00
Spare measuring probe Pt 1000 type H 62.51, L 260 x ∅ 3 mm	**K855.1**	1	169,00
Stand rod	**A315.1**	1	60,00
Clamp	**A316.1**	1	26,00
Holder rod	**HA16.1**	1	26,00

Magnetic followers

121 °C

Rotilabo® Economy magnetic bars

PTFE coated. Similar to cylindrical magnetic bar, but with rounded edges to intensify the stirring effect even at low speeds. Autoclavable.

∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
3	12	**XA17.1**	10	10,55
8	25	**XA18.1**	10	13,90
8	40	**XA19.1**	10	15,95
8	50	**XA20.1**	10	21,00

121 °C

Rotilabo®-micro-magnetic bars

PTFE coated. For very small vessels. Autoclavable.

∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
1.5	8	**PK70.1**	10	12,40
1.5	15	**PK74.1**	10	20,40
2	2	**PK65.1**	10	13,95
2	5	**0955.2**	10	16,70
2	7	**0973.2**	10	13,95
3	3	**PK66.1**	10	16,05
3	6	**PK68.1**	10	10,70
3	8	**PK71.1**	10	13,45
3	10	**PK72.1**	10	12,85
3	13	**PK73.1**	10	13,80
3	20	**PK75.1**	10	23,15
3	30	**PK76.1**	10	25,60

121 °C

Rotilabo®-triangular magnetic stirring rods

PTFE-coated. Autoclavable.

∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
6	12	**1661.1**	1	2,50
8	20	**1662.1**	1	4,10
8	25	**5069.1**	1	2,80
14	25	**4551.1**	1	4,05
9	35	**4557.1**	1	3,80
14	40	**1825.1**	1	4,15
12	50	**1842.1**	1	4,65
14	55	**1843.1**	1	5,35
18	80	**1844.1**	1	7,00

121 °C

Rotilabo®-cylindric magnetic stirring bars

PTFE-coated. Autoclavable.

∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
2	5	**0955.1**	1	2,10
2	5	**0955.2**	10	16,70
3	6	**AKP1.1**	1	2,30
3	6	**AKP1.2**	10	18,10
2	7	**0973.1**	1	1,85
2	7	**0973.2**	10	13,95
3	8	**0989.1**	1	2,15
3	8	**0989.2**	10	16,30
6	10	**0994.1**	1	2,05
6	10	**0994.2**	10	13,90
4,5	12	**0999.1**	1	1,85
4,5	12	**0999.2**	10	12,80
6	13	**AKP2.1**	1	2,55
6	13	**AKP2.2**	10	20,25
8	13	**AKP3.1**	1	3,05
8	13	**AKP3.2**	10	24,10
10	13	**AKP4.1**	1	3,20
10	13	**AKP4.2**	10	25,35
4,5	15	**1204.1**	1	1,95
4,5	15	**1204.2**	10	11,65
6	15	**AKP5.1**	1	2,35
6	15	**AKP5.2**	10	18,85
6	20	**AKP6.1**	1	2,45
6	20	**AKP6.2**	10	19,80
7	20	**AKP7.1**	1	2,70
7	20	**AKP7.2**	10	22,05
8	20	**1237.1**	1	2,45
8	20	**1237.2**	10	15,60
5	25	**AKP8.1**	1	2,80
5	25	**AKP8.2**	10	23,15
6	25	**2152.1**	1	2,30
6	25	**2152.2**	10	18,15
8	25	**AKP9.1**	1	3,00
8	25	**AKP9.2**	10	24,20
6	30	**2153.1**	1	2,50
6	30	**2153.2**	10	20,00
7	30	**AKT0.1**	1	2,90
7	30	**AKT0.2**	10	23,25
8	30	**AKT1.1**	1	3,20
8	30	**AKT1.2**	10	25,70
6	35	**1292.1**	1	2,70
6	35	**1292.2**	10	21,30
7	40	**AKT2.1**	1	3,20
7	40	**AKT2.2**	10	25,70
8	40	**1306.1**	1	2,80
8	40	**1306.2**	10	21,45
8	45	**1309.1**	1	3,20
8	45	**1309.2**	10	25,70
8	50	**1482.1**	1	3,80
8	50	**1482.2**	10	30,65
12	55	**1484.1**	1	9,65
10	60	**1486.1**	1	4,75
10	60	**1486.2**	10	37,45
10	70	**AKT3.1**	1	5,95
10	70	**AKT3.2**	10	52,70
10	80	**1487.1**	1	6,70
10	80	**1487.2**	10	52,60
12	120	**1488.1**	1	25,80

Magnetic followers

A 121 °C

Rotilabo®-magnetic stirring rods with centre ring

PTFE-coated. Cylindric. Autoclavable.

∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
3	8	**1489.1**	1	2,50
3	8	**1489.2**	10	19,90
4,5	12	**1490.1**	1	2,50
4,5	12	**1490.2**	10	21,00
4,5	15	**1491.1**	1	2,50
4,5	15	**1491.2**	10	19,90
6	20	**1500.1**	1	2,50
6	20	**1500.2**	10	19,90
6	25	**1553.1**	1	2,60
6	25	**1553.2**	10	22,60
6	30	**1555.1**	1	2,80
6	30	**1555.2**	10	23,65
6	35	**1556.1**	1	2,90
8	40	**1600.1**	1	3,55
8	45	**1610.1**	1	3,80
8	50	**1613.1**	1	4,25
10	60	**1614.1**	1	4,85
10	70	**1659.1**	1	5,95

A 121 °C

Rotilabo®-glass-encased magnetic bars

Magnetic core coated with borosilicate glass, cylindrical. Smooth surface offering universal chemical resistance. Temperature stable up to 350 °C. Autoclavable.

∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
5	6	**PK60.1**	10	42,80
5	12	**PK61.1**	10	47,20
6	25	**PK62.1**	10	49,35
8	45	**PK63.1**	10	53,25
8	60	**PK64.1**	10	56,80

A 121 °C

KOMET stirring magnets

Extra strong stirring magnets. More than three times the torque of conventional stirrers. For viscous media, high speed up to 2000 rpm and more distance between stirring rod and magnetic stirrer. PTFE-coated. Autoclavable.

Type	∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
Komet 15	9	15	**Y823.1**	1	19,30
Komet 30	12	29	**Y824.1**	1	29,95
Komet 50	21	50	**Y825.1**	1	38,90
Komet 90	24	90	**Y826.1**	1	136,50

A 121 °C

Rotilabo®-ellipsoidal magnetic stirring rods

PTFE-coated. Autoclavable.

∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
5	10	**NK66.1**	1	3,90
6	15	**NK67.1**	1	3,55
10	25	**NK68.1**	1	5,20
10	30	**NK69.1**	1	6,35
10	20	**1848.1**	1	3,00
12	25	**1849.1**	1	3,35
13	35	**NK70.1**	1	7,85
13	40	**NK71.1**	1	8,95
16	30	**1853.1**	1	4,25
16	35	**1895.1**	1	4,95
20	40	**1896.1**	1	6,35
20	50	**1897.1**	1	8,20
20	64	**1909.1**	1	10,70
20	70	**1928.1**	1	12,70

A 121 °C

Rotilabo®-dumbell magnetic stirring rods

Very good stirring properties due to side stabilizing disc. Autoclavable.

∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
8	35	**1943.1**	1	12,40
8	55	**1957.1**	1	13,55

▶ Heating and magnetic stirrers from page 1025

Magnetic followers

A 121 °C

Rotilabo®-tube stirring magnets

PTFE coated. Autoclavable.

∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
9	6	**LT59.1**	1	2,90
10	6	**LT60.1**	1	3,05
20	10	**LT61.1**	1	3,40
30	12	**LT62.1**	1	4,25

A 121 °C

Rotilabo®-special stirring magnets

PTFE coated. Autoclavable.

Ball shaped

∅ (mm)	Art. No.	Pack Qty.	€
12	**LT63.1**	1	3,55

Bulb stirring magnet, height 6 mm.

∅ (mm)	Art. No.	Pack Qty.	€
9	**LT64.1**	1	2,50

A 121 °C

Rotilabo®-tablet form style stirring magnet

PTFE-coated. Autoclavable.

∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
22	15	**3003.1**	1	9,65
30	12	**4490.1**	1	10,45
40	14	**4517.1**	1	19,90

A 121 °C

Rotilabo®-stirring magnets

In different colours, PTFE-coated. Autoclavable.

Colour	∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
red	2	5	**A937.1**	1	3,90
red	2	7	**A938.1**	1	4,10
red	3	10	**A939.1**	1	4,20
red	3	13	**A940.1**	1	4,55
yellow	2	5	**A941.1**	1	3,90
yellow	2	7	**A942.1**	1	4,10
yellow	3	10	**A943.1**	1	4,20
yellow	3	13	**A944.1**	1	4,55
blue	2	5	**A945.1**	1	3,90
blue	2	7	**A946.1**	1	4,10
blue	3	10	**A947.1**	1	4,20
blue	3	13	**A948.1**	1	4,55

A 121 °C

Rotilabo® magnetic bars, cross-shaped

PTFE coated. All-purpose magnetic bar with stable rotation position. Autoclavable.

∅ (mm)	Height (mm)	Art. No.	Pack Qty.	€
10	5	**XA21.1**	10	23,45
20	8	**XA22.1**	10	29,60
25	9	**XA23.1**	10	33,90
30	10	**XA24.1**	10	40,10
38	11	**XA25.1**	5	26,85
50	15	**XA26.1**	5	50,45
60	20	**XA27.1**	5	71,85

Magnetic followers

A 121 °C

Rotilabo®-stirring magnets with centre ring

PTFE-coated, in different colours. Autoclavable.

Colour	∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
red	8	13	**A950.1**	1	4,30
red	8	15	**A951.1**	1	4,75
red	8	22	**A952.1**	1	5,30
red	8	25	**A953.1**	1	5,60
red	8	38	**A954.1**	1	6,35
red	8	51	**A955.1**	1	6,70
red	13	75	**A956.1**	1	13,15
yellow	8	13	**A958.1**	1	4,30
yellow	8	15	**A959.1**	1	4,75
yellow	8	22	**A960.1**	1	5,30
yellow	8	25	**A961.1**	1	5,60
yellow	8	38	**A962.1**	1	6,35
yellow	8	51	**A963.1**	1	6,70
yellow	13	75	**A964.1**	1	13,15
blue	8	13	**A966.1**	1	4,30
blue	8	15	**A967.1**	1	4,75
blue	8	22	**A968.1**	1	5,30
blue	8	25	**A969.1**	1	5,60
blue	8	38	**A189.1**	1	6,35
blue	8	51	**A190.1**	1	6,70
blue	13	75	**A191.1**	1	13,15

Rotilabo®-stirring magnets bars - set I

Set consists of the 10 magnets most commonly used.
PTFE-coated magnets, cylindric.
Come in a plain, polystyrene storage box (pocket format).
Dimensions: L 120 x W 93 x D 12 mm.

Contents:

Length (mm)	∅ (mm)	number
15 20 25	4.5 7 6	1 2 2
30 40 50	6 8 8	1 2 2

Art. No.	Pack Qty. (set)	€
C267.1	1	27,85

A 121 °C

Rotilabo®-magnetic vane stir bar

PTFE-coated. For effective stirring, e.g. in test tubes, centrifuge tubes, reaction vials etc.
Heat stable from -200 to +250 °C. Autoclavable.

Image	Type	Height (mm)	∅ (mm)	For test tube ∅ (mm)	Art. No.	Pack Qty.	€
①	triangular	9	5,5	6-7	**YH15.1**	10	35,50
①	triangular	11	8	9-10	**YH16.1**	10	36,55
②	triangular, long	16	10	11-12	**YH17.1**	10	41,95
③	round	10	13	14-15	**YH18.1**	10	37,65
④	round, long	20	13	14-15	**YH19.1**	10	45,90

Rotilabo®-stirring magnets bars - set II

PTFE-coated, cylindric magnets. **18 rods assorted** in practical storage box, dimensions: L 187 x W 97 x D 32 mm.
Assortment of most widely used stirring magnets.

Contents:

Length (mm)	∅ (mm)	number
10 15 20	6 6 7	2 2 2
25 30 40	8 8 8	2 2 2
50 60 80	8 10 10	2 2 2

Art. No.	Pack Qty. (set)	€
X171.1	1	49,45

Magnetic followers

121 °C

Rotilabo®-turbo-magnetic bar set III

PTFE-encased magnetic bar, cylindrical. Samarium-cobalt magnet has a strong magnetic field compared to conventional solenoid. Identified by a black marking (chemically inert). **14 pce. in standard sizes, sorted**, in a handy storage box. Dimensions: L 187 x W 97 x D 32 mm. Autoclavable.

Contents:

Length (mm)	∅ (mm)	Quantity
8 12	3 4.5	2 2
20 25	6 6	2 2
30 40	6 8	2 2
50 60	8 10	1 1

Art. No.	Pack Qty. (set)	€
PK77.1	1	80,10

121 °C

Beakerliner magnetic bars

With guide cage. PTFE-encased magnetic core mounted axially in a PTFE guide cage. No shear action on the bottom of the beaker, smooth running in glass beakers, even on an uneven bottom. Autoclavable.

Suitable for low type beakers (ml)	Cage outer ∅ (mm)	Cage height (mm)	Stirring bar ∅ x L (mm)	Art. No.	Pack Qty.	€
250, 400	67	21	8 x 50	**TA88.1**	1	107,40
600, 800, 1000	74	29	9 x 60	**TA89.1**	1	127,95
2000	103	32	10 x 80	**TA90.1**	1	205,35

Rotilabo®-stirring magnets - removers

Different types and lengths available. With powerful magnet.
Ideal for retrieving lost magnetic rods or "fishing" them out of liquid.

Material	∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
PTFE	10	150	**E448.1**	1	13,95
PTFE	10	250	**E449.1**	1	15,00
PTFE	10	350	**E450.1**	1	18,25
PTFE	10	450	**E451.1**	1	19,25
PP	10	350	**E452.1**	1	11,30
PP	10	450	**E453.1**	1	12,40

Stir bar catcher

Made of PS. With powerful permanent magnet. For retention of magnetic bars and easy transfer of solutions. Suitable for magnetic bars with max. length 80 mm. Dimensions: L 87 x W 28 x H 42 mm.

Art. No.	Pack Qty.	€
YC30.1	1	23,15

Stirring spatula

Made of **PP**, white. For stirring different specimens.
Length 244 mm, rod ∅ 6 mm.

Art. No.	Pack Qty.	€
TT16.1	10	10,50

A 121 °C

Rotilabo®-stirring rods

For stirring different types of samples.
Different models and dimensions available. Autoclavable.

Made of flexible PTFE. With spatulate ends. Rod-∅ 8 mm.

Length (mm)	Art. No.	Pack Qty.	€
150	**EX96.1**	1	5,15
200	**EX97.1**	1	5,85
250	**EX98.1**	1	6,60
300	**EX99.1**	1	7,65

Made of PTFE with stainless steel core. Can be bent if required.
Remains bent. Round ends. Rod-∅ 6 mm.

Length (mm)	Art. No.	Pack Qty.	€
150	**EY00.1**	1	7,15
200	**EY01.1**	1	7,85
250	**EY02.1**	1	8,25
300	**EY03.1**	1	10,60
350	**EY04.1**	1	12,10
400	**EY05.1**	1	13,35

A 121 °C

Stirring magnet fish-clip® holders

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

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

Delivery incl. magnetic follower.

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

Accessories for magnetic follower holders fish-clip®

Type	Art. No.	Pack Qty.	€
Clamp stopper made of silicone for NS 19/26	**Y901.1**	1	4,85
Clamped joint GL 25	**Y903.1**	1	10,45
Clamped joint GL 32 with NS-adapter 29/32	**Y906.1**	1	35,45

Roti®-Speed-stirrer

For universal use, e.g. for stirring even the smallest samples in reaction vials etc.

- Ergonomic pen handle
- High-quality steel spring chuck and quality ball bearings for perfectly smooth operation
- Locking button enables easy changing of tools
- **Speed infinitely adjustable from 5000 to 20 000 rpm**
- Powerful motor for constant torque
- Length 220 mm, weight 230 g
- Complete with mains adapter in portable case
- **Please order stirring apparatus separately!**

Art. No.	Pack Qty.	€
N372.1	1	99,45

Stainless steel tools for Roti®-Speed-stirrer

High-performance stirring tools

Ideal for mixing and suspending samples.
Excellent for effective mixing. Good flow form. ∅ stirring shaft 3 mm.

Image	Length (mm)	Stirrer ∅ (mm)	Art. No.	Pack Qty.	€
①	90	7	**N373.1**	1	35,95
②	98	11	**N539.1**	1	38,65

High-performance tool, type micro pestle

Cone-shaped micro pestle for applications in 1.5 ml centrifuge tubes.
Stirring shaft-∅ 3 mm. Cone reduces from 8 to 2.5 mm, cone length 15 mm.

Image	Length (mm)	Stirrer ∅ (mm)	Art. No.	Pack Qty.	€
③	98	8	**EX63.1**	1	37,55

Accessories:

Rotilabo®-micro-centrifuge tubes, 1.5 ml, made of PP, graduated, colourless	**4182.1**	1000	17,15

Additional tools for Roti®-Speed-stirrer

Combined set, 13-piece. Suitable for Roti® speed stirrer.
For cutting, separating, milling, polishing and drilling.

Set content:
1 ball-shaped fine cutter 2.3 mm, 1 cylindrical fine cutter 2.3 mm,
1 ball-shaped white corundum abrasive pencil 5.0 mm
and 1 cone-shaped white corundum abrasive pencil 5.0 mm,
1 micro drill 1.0 and 2.3 mm,
5 cutting discs ∅ 22 mm,
1 saw blade ∅ 22 and
1 tool holder ∅ 2.35 mm.

Image	Art. No.	Pack Qty.	€
④	**YY99.1**	1	14,65

Rod mixers

① **Model M 100d**

For grinding, stirring and mixing samples. Suitable both for small and large amounts. Two-stage switch: **7000 rpm and 10 000 rpm**. Power supply 230 V, 50 Hz. **Capacity 120 W**.
Dimensions: overall length 320 mm, ∅ protective mantle 58 mm. Weight 850 g. Comes with multi-function knife and wall attachment.

Art. No.	Pack Qty.	€
8290.1	1	100,85

② **Model G 200:**

Suitable for volumes from 1 to 20 litres.
Two-stage switch: **10 000 rpm and 17 000 rpm**.
Power supply 230 V, 50 Hz. **Capacity 200 W**.

Art. No.	Pack Qty.	€
C527.1	1	198,90

ES and DLS laboratory stirrers

① **ES model**
- For simple stirring tasks
- Clamping range of chuck 1 to 10 mm
- Push-through stirring element

② **DLS model**
- Electronic control for constant speed even after change in viscosity of medium
- Digital display of nominal and actual speed
- Integrated timer function (adjustable up to 999 min, 59 s)
- Clamping range of chuck 1 to 10 mm
- Push-through stirring element

Technical specifications:

Model	① **ES**	② **DLS**
Stirring volume of H_2O (l)	15	25
Max. viscosity (mPa · s)	1000	25 000
Motor power: input / output (W)	45/30	180/120
Max. torque on stirrer shaft (N · cm)	15	40
Speed range (rpm)	50 to 1300	50 to 2000
Speed display	Scale	LCD
Extension arm ∅/length (mm)	13/150	
Dimensions W x D x H (mm)	80 x 200 x 160	80 x 196 x 215
Weight (kg)	1.3	2.5
Power supply	80 to 260 V, 50/60 Hz	

Delivery without stirring apparatus, stand and boss head (please order separately - refer to stirrer accessories).

Type	Art. No.	Pack Qty.	€
① ES	**ACP3.1**	1	496,65
② DLS	**ACP4.1**	1	860,00

Mechanical laboratory stirrer RZR 1

By Heidolph.
- For simple stirring tasks
- 2-step gear
- Max. chucking capacity 8 mm
- Push-through stirring element

Technical specifications:

Stirring volume (H_2O)	20 l
Max. viscosity	40 000 mPa · s
Motor rating input / output	77/18 W
Max. torque at the stirrer shaft	100 N · cm
Speed range I	35 to 250 rpm
Speed range II	280 to 2200 rpm
Speed display	Scale
Extension arm ∅/length	13/300 mm
Dimensions W x H x D	71 x 250 x 172 mm
Weight	2.7 kg
Power supply	230 V, 50 Hz

Delivery without stirring apparatus, stand and bosshead (please order separately - refer to stirrer accessories).

Art. No.	Pack Qty.	€
CLT4.1	1	596,00

RSO series laboratory stirrers

① **Analogue stirrers RSO-20A/40A**
For stirring volumes of up to 20/40 l. With digital LED speed display. Extremely quiet running. Speed continuously variable up to 2200 rpm. Stirrer tools can be inserted. Clamping range of chuck 0.5 to 10 mm.

② **Digital/electronic stirrer model RSO-20D**
For stirring capacities up to 20 l as well as constant speed at changing medium viscosity. With LCD speed display. Display of nominal and actual speed or trend torque display. RS 232 port Soft starting. Stirrer tools can be inserted. Clamping range of chuck 0.5 to 10 mm.

Technical specifications:

Model	RSO-20A	RSO-20D	RSO-40A
Stirring volume of H_2O (l)	20		40
Max. viscosity (mPa · s)	10 000		50 000
Motor power: input / output (W)	70 / 50		130 / 100
Max. torque (N · cm)	30		60
Speed range (rpm)	50 to 2200		
Speed deviation on load reversal (rpm)	-	±3	-
Torque display	no	yes	no
RS 232 port	no	yes	no
Extension arm ∅ / length (mm)	16 / 200		
Dimensions W x D x H (mm)	83 x 186 x 220		
Weight (kg)	2.5		3.5
Voltage	100-240 V, 50-60 Hz		

Delivery without stirrer tools, stand and bosshead (please order separately).

Type	Art. No.	Pack Qty.	€
RSO-20A analogue with LED display	**TA74.1**	1	639,65
RSO-20D digital with LCD display	**TA75.1**	1	854,65
RSO-40A analogue with LED display	**TA76.1**	1	962,15

③ Stand set for RSO series laboratory stirrers

With locknut to additionally secure the stand rod and prevent accidental removal. Chucking capacity of cross sleeve for stand and extension arm: 4 to 24 mm. Max. weight load: 5 kg.
Dimensions: W 200 x D 310 x H 800 mm.
Delivery incl. stand plate, stand rod, cross sleeve and immersion limiter to prevent accidental piercing of the vessel base.

Art. No.	Pack Qty.	€
TA77.1	1	209,65

NEW

Hei-TORQUE core stirrer

By Heidolph. Suitable for low- to medium-viscosity media.
Digital target/actual speed display.
Timer function (1 s to 99 h, 59 min and 59 s).
"Max button" for short-term operation at maximum speed.
"Quick-Chuck" with clamping range from 0.5 to 10.5 mm.

Technical specifications:

Stirring capacity (H_2O)	25 l
Max. viscosity	10,000 mPa · s
Motor power: input/output	105/75 W
Max. torque at the stirrer shaft	40 N · cm
Speed range	20 to 2000 rpm
Speed display	TFT display, monochrome, 2"
Extension arm ∅/length	13 x 160 mm
Dimensions W x H x D	70 x 281.5 x 195 mm
Weight	2.3 kg
Power supply	100–240 V, 50/60 Hz

Delivery without stirring tool, stand and boss head
(please order separately – see stirrer accessories).

Art. No.	Pack Qty.	€
KAY6.1	1	849,00

EUROSTAR 20-series electronic laboratory stirrers

By IKA. A microprocessor controlled system ensures that a constant speed is maintained. Electronic safety circuit for shutting off device in case of fault or overload. Discrepancies between nominal and actual speeds are corrected automatically and continuously. For constant speed even with changes in medium viscosity.

- Digital speed display
- Continuously variable speed
- Push-through stirrer shafts
- Chuck tensioning range 0.5 to 10 mm (EUROSTAR 20 digital only)
- EUROSTAR 20 high speed digital: drive shaft with tapered seat for supplied precision stirrer shaft R 6000 (L 280 mm, max. immersion depth 220 mm). Special precision stirrer is separately available.

Technical specifications:

Model	**① EUROSTAR 20 digital**	**② EUROSTAR 20 high speed digital**
Stirring volume of H_2O (l)	15	20
Max. viscosity (mPa · s)	10000	
Motor power: power input / output (W)	56/44	171/133
Max. torque at the stirrer shaft (N· cm)	20	
Speed range (rpm)	30 to 2000	150 to 6000
Speed display	LED	
Extension arm ∅ / length (mm)	16/220	
Dimensions W x D x H (mm)	86 x 208 x 248	86 x 208 x 325
Weight (kg)	4.4	5.3
Power supply	230 V, 50/60 Hz	

Delivery without stirring tool, stand and sleeve
(please order separately - see Stirrer accessories).

Type	Art. No.	Pack Qty.	€
EUROSTAR 20 digital	**XT16.1**	1	925,00
EUROSTAR 20 high speed digital	**XT17.1**	1	1784,00

Accessories for EUROSTAR 20 high speed digital:

By IKA.
Special precision stirrers
Only suitable for use with precision stirrer shaft R 6000 of the EUROSTAR 20 high speed digital. Max. speed 6000 rpm.

Type	Art. No.	Pack Qty.	€
Propeller stirrer, stirrer ∅ 55 mm	**AHK5.1**	1	219,00
Propeller stirrer, stirrer ∅ 45 mm	**AHK6.1**	1	179,00
Dissolver stirrer, stirrer ∅ 42 mm	**AHK7.1**	1	249,00

Accessories for EUROSTAR 20-serie:

By IKA.
Quick-action chuck
Stirring tools can be replaced without a chuck key.
Not suitable for EUROSTAR 20 high speed digital.

Type	Art. No.	Pack Qty.	€
Quick-action chuck for EUROSTAR 20 digital	**XT18.1**	1	89,00

NEW

MINISTAR series electronic laboratory stirrers

By IKA. Constant speed over the entire speed range.
- Digital speed display
- Continuously adjustable speed
- Push-through stirrer shafts
- Clamping range of chuck 0.5 to 10 mm

Technical specifications:

Model	MINISTAR 20 digital	MINISTAR 40 digital	MINISTAR 80 digital
Stirring volume of H_2O (l)	15	25	50
Max. viscosity (mPa · s)	10,000	30,000	60,000
Motor power: input/output (W)	60/46		
Max. torque on stirrer shaft (N · cm)	20	40	80
Speed range (rpm)	50 to 2000	50 to 1000	50 to 500
Speed display	LED		
Extension arm ∅ / length (mm)	13/160		
Dimensions: W x D x H (mm)	70 x 193 x 148		
Weight (kg)	1.56	1.72	1.72
Power supply	100–240 V, 50/60 Hz		

Delivery without stirrer tools, stand, or bosshead
(please order separately - see stirrer accessories).

Type	Art. No.	Pack Qty.	€
MINISTAR 20 digital	**KAK8.1**	1	859,00
MINISTAR 40 digital	**KAK9.1**	1	959,00
MINISTAR 80 digital	**KAL0.1**	1	1059,00

NEW

Microstar series electronic laboratory stirrers

By IKA. Constant speed over the entire speed range.
- Digital speed display
- Continuously adjustable speed
- Push-through stirrer shafts
- Clamping range of chuck 0.5 to 10 mm

Technical specifications:

Model	MICROSTAR 7.5 digital	MICROSTAR 15 digital	MICROSTAR 30 digital
Stirring volume of H_2O (l)	5	10	20
Max. viscosity (mPa · s)	4000	8000	20,000
Motor power: input/output (W)	32/22		
Max. torque on stirrer shaft (N · cm)	7.5	15	30
Speed range (rpm)	50 to 2000	50 to 1000	50 to 500
Speed display	LED		
Extension arm ∅ / length (mm)	13/160		
Dimensions: W x D x H (mm)	60 x 173 x 126		
Weight (kg)	1.18	1.26	1.26
Power supply	100-240 V, 50/60 Hz		

Delivery without stirrer tools, stand, or bosshead
(please order separately - see stirrer accessories).

Type	Art. No.	Pack Qty.	€
MICROSTAR 7.5 digital	**KAK5.1**	1	799,00
MICROSTAR 15 digital	**KAK6.1**	1	859,00
MICROSTAR 30 digital	**KAK7.1**	1	899,00

Stirrer RW 20 digital

By IKA. **For stirring volumes of up to 20 l.** Robust, slim-line stirrer **with digital display.** Two speed ranges for standard use from 60 to 2000 rpm. Clamping range of chuck 0.5 to 10 mm. Stirrer tools can be inserted.

Technical specifications:

Stirring volume (H_2O)	20 l
Max. viscosity	10 000 mPa · s
Motor power: input / output	70 / 35 W
Max torque at chuck clamping (at 100 rpm)	150 N · cm
rpm range I	60 to 500 rpm
rpm range II	240 to 2000 rpm
Speed display	Digital
Extension rod-∅ / Length	13 mm / 160 mm
Dimensions (W x D x H)	88 x 212 x 294 mm
Weight	3100 g
Current	230 V, 50 Hz

Delivery without stirrer tools, stand, or bosshead (please order separately - see stirrer accessories).

Art. No.	Pack Qty.	€
EY86.1	1	1149,00

Hei-TORQUE Value series Electronic laboratory stirrers

By Heidolph. For constant speed, even after changes in medium viscosity Glass display with touch elements. Safety-oriented start/stop function (slide for start/stop). Protection class IP 54.

- Digital display of nominal/actual speed
- Continuously adjustable speed
- Push-through stirrer shafts
- Display of torque trend to detect changes in viscosity (using symbols)
- Clamping range of chuck 2.5 to 12.5 mm
- Quick-Chuck quick-action chuck

Technical specifications:

Model	**Hei-TORQUE Value 100**	**Hei-TORQUE Value 200**	**Hei-TORQUE Value 400**
Stirring volume (H_2O) (l)	50		100
Max. viscosity (mPa · s)	60 000	100 000	250 000
Motor power input / output (W)	90/50	120/80	150/90
Max. torque on stirrer shaft (N · cm)	100	200	400
Speed range (rpm)	10 to 2000		100 to 400
Speed range II (rpm)	-	-	20 to 2000
Speed display	Digital monochrome 2.4″		
Extension arm ∅ / length (mm)	13/160		
Dimensions W x D x H (mm)	86 x 241 x 257		93 x 241 x 257
Weight (kg)	4.1	5.0	5.2
Power supply	230 V, 50/60 Hz		

Delivery without stirring apparatus, boss head and stand (please order separately - see stirrer accessories).

Type	Art. No.	Pack Qty.	€
Hei-TORQUE Value 100	**CLT1.1**	1	1365,00
Hei-TORQUE Value 200	**CLT2.1**	1	1740,00
Hei-TORQUE Value 400	**CLT3.1**	1	2220,00

Electronic laboratory stirrers Hei-TORQUE Precision series

By Heidolph. For constant speed, even after changes in medium viscosity Glass display with touch elements. Safety-oriented start/stop function (slide for start/stop). Protection class IP 54.

- Digital display for
  - Countdown function (adjustable from 1 min to 24 h)
  - Storage of 7 favourites (combination of countdown and rpm)
  - Ramp function with up to 7 steps
  - Graphical display of process progress
  - Time
- Continuously adjustable speed
- Plain text torque display with value (resolution 0,1 N · cm)
- Push-through stirrer shafts
- USB port
- Quick-Chuck quick-action chuck with clamping range 2.5 to 12.5 mm
- **For Hei-TORQUE Precision 100 and 200 models:** Stir counter-clockwise

Technical specifications:

Model	Hei-TORQUE Precision 100	Hei-TORQUE Precision 200	Hei-TORQUE Precision 400
Stirring volume (H_2O) (l)	50		100
Max. viscosity (mPa · s)	60 000	100 000	250 000
Motor power input / output (W)	90/50	120/80	150/90
Max. torque on stirrer shaft (N · cm)	100	200	400
Speed range (rpm)	10 to 2000		100 to 400
Speed range II (rpm)	-	-	20 to 2000
Speed display	3.2″ digital colour		
Extension arm ∅ / length (mm)	13/160		
Dimensions W x D x H mm	86 x 273 x 241		93 x 273 x 241
Weight (kg)	4,1	5,0	5,2
Voltage	230 V, 50 Hz		

Delivery without stirring apparatus, boss head and stand not included (please order separately - refer to stirrer accessories).

Type	Art. No.	Pack Qty.	€
Hei-TORQUE Precision 100	**CPK0.1** *	1	1625,00
Hei-TORQUE Precision 200	**CPK1.1** *	1	1980,00
Hei-TORQUE Precision 400	**CPK2.1** *	1	2610,00

* Longer delivery times possible. Please check with our Sales Department.

EUROSTAR-40/60/100/200 digital electronic laboratory stirrer

By IKA. A microprocessor controlled system ensures that a constant speed is maintained. Electronic safety circuit for shutting off device in case of fault or overload. Discrepancies between nominal and actual speeds are corrected automatically and continuously. For constant speed even with changes in medium viscosity.

- Digital speed display
- Continuously variable speed
- Push-through stirrer shafts
- Chuck tensioning range 0.5 to 10 mm

Technical specifications:

Model	EUROSTAR 40 digital	EUROSTAR 60 digital	EUROSTAR 100 digital	EUROSTAR 200 digital
Stirring volume of H_2O (l)	25	40	100	100
Max. viscosity (mPa · s)	30000	50000	70000	100000
Motor power: power input / output (W)	112/87	168/132	174/142	121/99
Max. torque at the stirrer shaft (N · cm)	40	60	100	200
Speed range (rpm)	30 to 2000		30 to 1400	6 to 400
Speed range II (rpm)	-			30 to 2000
Speed display	LED			
Extension arm ∅ / length (mm)	16/220			
Dimensions W x D x H (mm)	86 x 208 x 248			91 x 209 x 274
Weight (kg)	4.4			4.6
Power supply	230 V, 50/60 Hz			

Delivery without stirring tool, stand and sleeve (please order separately - see stirrer accessories).

Type	Art. No.	Pack Qty.	€
EUROSTAR 40 digital	**XT19.1**	1	1246,00
EUROSTAR 60 digital	**XT20.1**	1	1350,00
EUROSTAR 100 digital	**XT21.1**	1	1974,00
EUROSTAR 200 digital	**XT22.1**	1	2494,00

Accessories for EUROSTAR-40/60/100/200 digital

By IKA.

Quick-action chuck

Stirring tools can be replaced without a chuck key.

Product	Art. No.	Pack Qty.	€
Quick-action chuck for EUROSTAR-series	**XT18.1**	1	89,00

EUROSTAR 60/100 control electronic laboratory stirrers

By IKA. **With removable remote control and digital TFT display.**
A microprocessor controlled system ensures that a constant speed is maintained. **Integrated torque trend indicator** measures the change in viscosity of the sample. Electronic safety circuit for shutting off device in case of fault or overload. Discrepancies between nominal and actual speeds are corrected automatically and continuously.
For constant speed even with changes in medium viscosity.

- Programmable functions, e.g. start/stop function (adjustable up to 9 h, 59 min, 59 sec)
- **Integrated temperature measurement function (a temperature sensor is required to display temperatures, please order separately)**
- Intermittent mode (adjustable up to 59 min, 59 sec)
- Timer (adjustable up to 99 h, 59 min, 59 sec)
- Continuously variable speeds
- Push-through stirrer shafts
- With RS 232 port and USB port
- Chuck tensioning range 0.5 to 10 mm

Technical specifications:

Model	EUROSTAR 60 control	EUROSTAR 100 control
Stirring volume of H_2O (l)	40	100
Max. viscosity (mPa · s)	50000	70000
Motor power: power input / output (W)	168/131	174/142
Max. torque at the stirrer shaft (N · cm)	60	100
Speed range (rpm)	30 to 2000	30 to 1300
Speed display	TFT	
Change of rotation direction (clockwise or anticlockwise)	No	Yes
Extension arm ∅ / length (mm)	16/220	
Dimensions W x D x H (mm)	86 x 230 x 267	
Power supply	230 V, 50/60 Hz	

Delivery without stirring tool, stand and sleeve (please order separately - see stirrer accessories).

Type	Art. No.	Pack Qty.	€
EUROSTAR 60 control	**XT44.1**	1	1870,00
EUROSTAR 100 control	**XT45.1**	1	2390,00

Accessories:

By IKA.
Stainless steel temperature sensor type H 67.60
L 250 x ∅ 3 mm. With sensor cable L 1 m.

Art. No.	Pack Qty.	€
HCE3.1	1	119,00

Plate stands

With anti-slip foil on plate.The support rod is also fixed under the plate with a nut to prevent accidental removal of rod. Support rod-∅: 16 mm. Max. load: 5 kg.

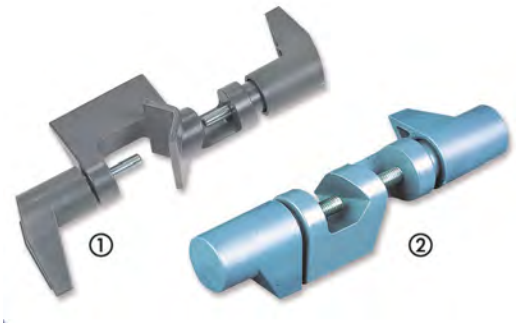
Type	Width (mm)	Depth (mm)	Height (mm)	Art. No.	Pack Qty.	€
R1825	200	316	560	**CC13.1**	1	247,00
R1826	200	316	800	**CC14.1**	1	272,00
R1827	200	316	1000	**CC15.1**	1	296,00

H-stands

Suitable for large, heavy units and attachments, e.g. stirrer.
With H-foot for non-tilting stand. With compensator screw for uneven workplaces. Support rod-∅: 34 mm. Max. load: 10 kg.
Model R 2723 also comes with pressure spring telescopic support stand for smooth moving of heavy units or attachments. Height of lift: 390 mm.

Type	Width (mm)	Depth (mm)	Height (mm)	Art. No.	Pack Qty.	€
R2722	460	420	1010	**CC16.1**	1	636,00
R2723	460	420	620-1010	**CC17.1**	1	1179,00

Stirrer accessories



Cross sleeves

Made with aluminium casting.

Type	for stand type	Clamping range stand (mm)	Clamping range bracket (mm)	Art. No.	Pack Qty.	€
① R 270	R 2722, R 2723	25-36	5-21	**CC18.1**	1	101,00
② R 182	R 1825, R 1826, R 1827	6-16	6-16	**CY92.1**	1	75,00

Agitator types

Anchor agitator: Reduced deposits on the vessel wall. Tangential stream with high shear rate. Suitable for semi-fluid mediums (medium to high viscosity).

Dissolver agitator: Radial stream. High turbulence and shear forces. For use at medium to high speeds.

Surface agitator: Less turbulence. Gentle handling of the product. For use at low to medium speeds.

Half-moon agitator: The semi-round shape of the agitator blade is ideally suited to agitating in round-bottomed flasks, the tip function makes it easy to insert the agitator shaft into vessels which have been ground or have a narrow neck. Suitable for agitating liquids with low to medium viscosity. For use at medium speeds.

Propeller agitator: Standard agitator. Axial direction. For mixing mediums with low to medium viscosity. Ideal for homogenising and suspending.

Centrifugal agitator: Double-leaf; thanks to the moveable agitator leaf, the agitator shaft can be easily inserted into the vessels with a narrow neck. The leaves open when the speed increases. For use at medium to high speeds.

S2-series H-stands

S2 and S2 XXL models
Made of V2A. The support rod is additionally secured with a nut which prevents it from being unscrewed accidentally. Support rod ∅ 25 mm. With levelling screw. Max. weight load: 4 kg.

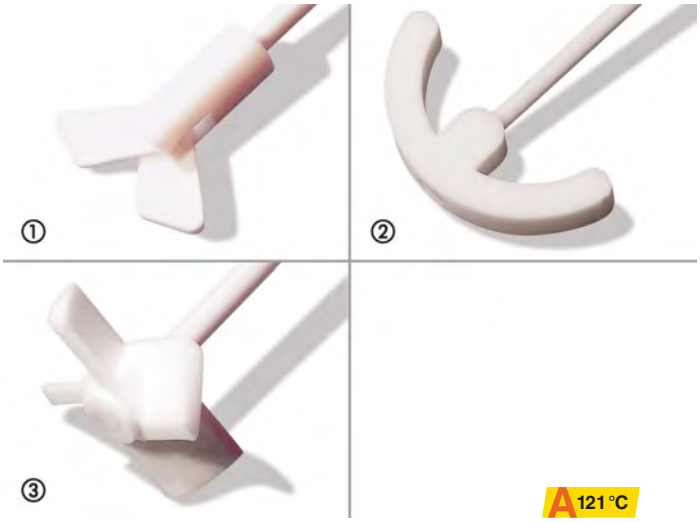
Tele S2 model
same as S2 and S2 XXL but with retractable support rod variable in length from 725 to 1025 mm. Support rod ∅ 32 mm.

Type	Width (mm)	Depth (mm)	Height (mm)	Art. No.	Pack Qty.	€
① S2	345	420	700	**TL67.1**	1	247,00
S2 XXL	345	420	1000	**TL68.1**	1	291,00
② Tele S2	345	420	725-1025	**TL69.1**	1	585,00

Accessories for S2-series H-stands

③ **Clamp**
Made of V2A and cast aluminium. For rod ∅ 13 to 32 mm.

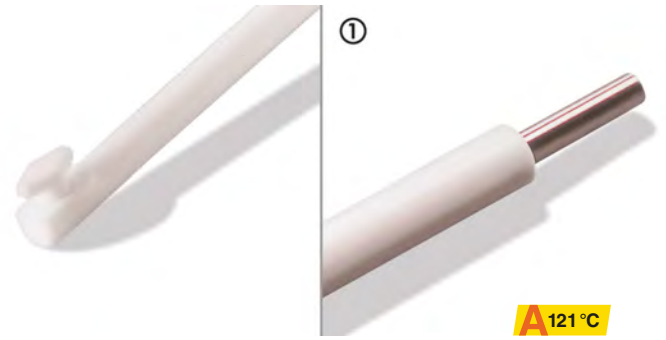
Art. No.	Pack Qty.	€
TL70.1	1	108,00



Rotilabo®-Eco stirrer shafts

Made of **PTFE-coated** stainless steel. Chemically inert and non-breakable. Temperature stable from -200 to +250 °C. Shaft- ∅ 6 mm. Autoclavable.

Image	Type	Shaft length (mm)	Stirrer ∅ (mm)	Art. No.	Pack Qty.	€
①	Centrifugal	300	40	**YT25.1**	1	61,30
①	Centrifugal	400	40	**YT26.1**	1	62,25
①	Centrifugal	500	50	**YT27.1**	1	63,45
②	Armature	300	80	**YT28.1**	1	49,45
②	Armature	400	80	**YT29.1**	1	50,00
②	Armature	500	80	**YT30.1**	1	50,55
③	Propeller	300	40	**YT31.1**	1	58,50
③	Propeller	400	40	**YT32.1**	1	60,65
③	Propeller	500	50	**YT33.1**	1	64,00



Rotilabo®-stirrer shafts

Made of **PTFE-coated** stainless steel. For replaceable stirrer blades; please order separately. Temperature stable from -200 to +250 °C. Autoclavable.

Shaft length (mm)	Shaft ∅ (mm)	Art. No.	Pack Qty.	€
300	6	**YT08.1**	1	35,05
400	6	**YT09.1**	1	35,70
500	6	**YT10.1**	1	37,10
300	8	**YT11.1**	1	46,05
400	8	**YT12.1**	1	46,25
500	8	**YT13.1**	1	47,10
550	9,5	**YT14.1**	1	47,85
650	9,5	**YT15.1**	1	48,40

① **With tapered chucking ∅ 6.35 mm** (length 50 mm) for easier stirrer shaft insertion.

Shaft length (mm)	Shaft ∅ (mm)	Art. No.	Pack Qty.	€
650	9,5	**YT16.1**	1	49,45
750	9,5	**YT17.1**	1	51,00
650	10	**YT18.1**	1	57,00
750	10	**YT19.1**	1	58,00

Rotilabo®-stirrer blades with smooth ends

Made of PTFE. Suitable for Rotilabo® stainless steel stirrer shafts (Art. No. YT08.1ff). Hole ∅ 6.5 mm, blade thickness 3.2 mm. Temperature stable from -200 to +250 °C. Autoclavable.

Suitable for round-bottom flasks	Dimensions L x W (mm)	Art. No.	Pack Qty.	€
250 ml	65 x 25	**YT20.1**	5	21,40
500 ml	75 x 25	**YT21.1**	5	22,50
2000 ml	105 x 25	**YT22.1**	5	25,30
4000 ml	125 x 25	**YT23.1**	5	26,70
6000 ml	150 x 25	**YT24.1**	5	29,25

Stirring blades made of high-grade steel

Encased in PTFE. Stirrer is completely made of PTFE. High-grade steel core provides for the required hold in the spring chuck of stirrer. Stirring unit and blade are firmly attached together: will not be separated in the rotating media once stirrer has been switched off. As the stirred materials only have contact with PTFE, the stirring blades are almost totally chemical-resistant and are stable during high temperature operations. **Stirring blades are similar to (KPG) glass blades and can be replaced by them. With tapered collet, for easier clamping of stirrer shafts.**

Crescent

Length (mm)	∅ Chuck (mm)	Shaft ∅ (mm)	Dimensions blade (mm)	Art. No.	Pack Qty.	€
450	6,5	8	90 x 24 x 3	**K072.1**	1	167,70
450	8	10	90 x 24 x 3	**K074.1**	1	170,95
600	6,5	8	90 x 24 x 3	**K073.1**	1	179,55
600	8	10	90 x 24 x 3	**K075.1**	1	196,75
800	14	16	125 x 35 x 3,5	**K076.1**	1	277,35

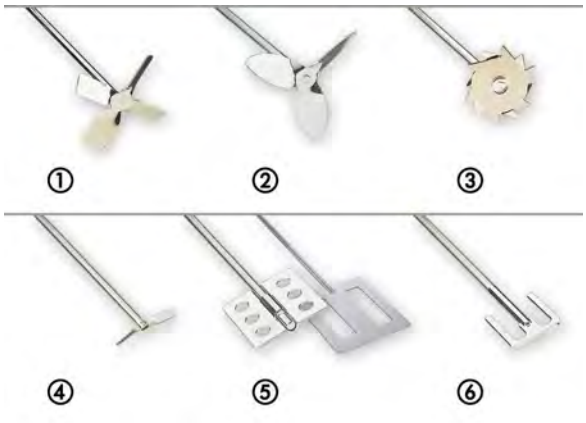
Propeller

Length (mm)	∅ Chuck (mm)	Shaft ∅ (mm)	Dimensions blade (mm)	Art. No.	Pack Qty.	€
450	4,7	6	∅ 50	**K077.1**	1	159,10
450	6,5	8	∅ 75	**K078.1**	1	212,85
450	8,0	10	∅ 75	**K079.1**	1	226,85

Anchor

Length (mm)	∅ Chuck (mm)	Shaft ∅ (mm)	Dimensions blade (mm)	Art. No.	Pack Qty.	€
360	6,5	8	60 x 40	**K080.1**	1	202,10
600	6,5	8	100 x 60	**K081.1**	1	244,05

Stirrer accessories



Stirring blades

By IKA. For laboratory stirrers. Made of high-grade steel, except the anchor stirrer (Art.No. Y443.1 and Y444.1) and propeller stirrer (Art.No. A328.1) which are made of fine cast metal. Individual choice depends on use, viscosity and amount of medium.

① Propeller stirrer, 4-winged

Stirrer ∅ (mm)	∅ Shaft (mm)	Shaft length (mm)	Max. speed (rpm)	Art. No.	Pack Qty.	€
50	8	350	2000	**0867.1**	1	129,00
100	8	540	800	**Y436.1**	1	159,00
150	13	800	600	**Y437.1**	1	559,00

② Propeller stirrers, 3-winged

Stirrer ∅ (mm)	∅ Shaft (mm)	Shaft length (mm)	Max. speed (rpm)	Art. No.	Pack Qty.	€
45	8	350	2000	**A328.1**	1	259,00
140	10	550	800	**Y438.1**	1	259,00
140	10	800	400	**Y439.1**	1	309,00

③ Dissolver stirrer

Stirrer ∅ (mm)	∅ Shaft (mm)	Shaft length (mm)	Max. speed (rpm)	Art. No.	Pack Qty.	€
80	8	350	2000	**A322.1**	1	229,00

④ Centrifugal stirrer

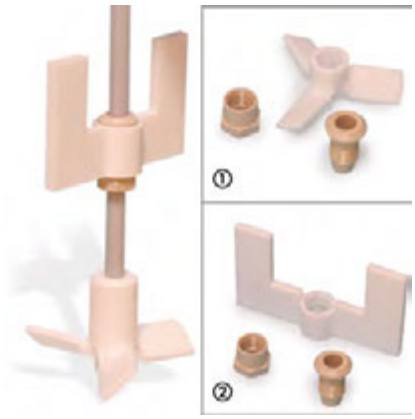
Stirrer ∅ (mm)	∅ Shaft (mm)	Shaft length (mm)	Max. speed (rpm)	Art. No.	Pack Qty.	€
60/15	8	350	2000	**A324.1**	1	139,00
100/24	8	550	800	**Y440.1**	1	189,00

⑤ Paddle stirrer

Stirrer ∅ (mm)	∅ Shaft (mm)	Shaft length (mm)	Max. speed (rpm)	Art. No.	Pack Qty.	€
70	8	550	800	**Y441.1**	1	149,00
150	10	550	800	**Y442.1**	1	309,00

⑥ Anchor stirrer

Stirrer ∅ (mm)	∅ Shaft (mm)	Shaft length (mm)	Max. speed (rpm)	Art. No.	Pack Qty.	€
45	8	350	1000	**Y443.1**	1	329,00
90	8	350	1000	**Y444.1**	1	399,00



Spare blades for stirrer shafts

Made of a PTFE/PEEK compound. For fixing on to stirrer shafts made of PTFE with metal core, glass or metal. The spare blades can be positioned freely and fixed securely in height and turning position with the aid of a clamping attachment.
Temperature stable from -200 to +250 °C, without strain.
Delivery incl. flat wrench

① Propeller-spare blades, 3-winged

for shaft ∅ (mm)	Dimensions blade (mm)	Art. No.	Pack Qty.	€
8	∅ 75	**CK98.1**	1	85,50
10	∅ 75	**CK99.1**	1	76,90

② Anchor-spare blades

for shaft ∅ (mm)	Dimensions blade (mm)	Art. No.	Pack Qty.	€
8	60 x 40	**CT00.1**	1	85,90
8	100 x 60	**CT01.1**	1	121,50
10	80 x 50	**CT02.1**	1	93,00
10	100 x 60	**CT03.1**	1	117,20

DURAN
WHEATON
KIMBLE
Material
DURAN®

KPG stirrer shafts

Made of DURAN®. Shaft contact surface (L 160 mm) ground and polished.

① Type WG 10 with propellor stirrer, 4-blade.
Suitable for flasks with min. 60 mm inner neck ∅. Stirrer ∅ 58 mm.

Shaft ∅ x L (mm)	Art. No.	Pack Qty.	€
10 x 320	**NL72.1**	1	66,00
10 x 370	**NL73.1**	1	66,00

② Type WS 10 with centrifugal stirrer with movable blades.
Suitable for flasks with min. 25 mm inner neck ∅. Circle ∅ 57 mm.

Shaft ∅ x L (mm)	Art. No.	Pack Qty.	€
10 x 320	**NL76.1**	1	67,20
10 x 370	**NL77.1**	1	67,20
10 x 410	**NL78.1**	1	67,20
10 x 440	**NL79.1**	1	71,40

Stirrer accessories

Material
DURAN®

KPG-Stirrers with side stirring blade

Made of DURAN®. Stirring blade and securing screw made of PTFE.
For NS 29/32. Length of the ground and polished KPG-running surface 160 mm. Drive pin ∅ 8 x L 40 mm.

for round bottom flasks (ml)	Agitator shaft ∅ x L (mm)	Dimensions blade (mm)	Art. No.	Pack Qty.	€
100	10 x 310	50 x 18 x 3	**KL66.1**	1	78,70
250/500	10 x 310	68 x 24 x 3	**KL67.1**	1	80,25
1000/2000/3000	10 x 390	75 x 24 x 3	**KL68.1**	1	82,15
4000/5000	10 x 480	125 x 24 x 3	**KL69.1**	1	108,60

KPG-Stirrers with movable blades

Made of DURAN®. Stirring blade made of PTFE.
With ground, polished shaft and coupling pin. For NS 29/32.
Shaft-∅ 10 mm. Drive pin ∅ 8 x L 40 mm.

for round bottom flasks (ml)	Length (mm)	Stirring circle (mm)	Art. No.	Pack Qty.	€
100/250	310	50	**KL71.1**	1	73,00
500	310	90	**KL72.1**	1	72,60
1000	400	90	**KL73.1**	1	72,60
2000/3000	460	90	**KL74.1**	1	73,25
4000/5000	520	90	**KL75.1**	1	73,05

Material
DURAN®

Accessories for KPG-stirrers

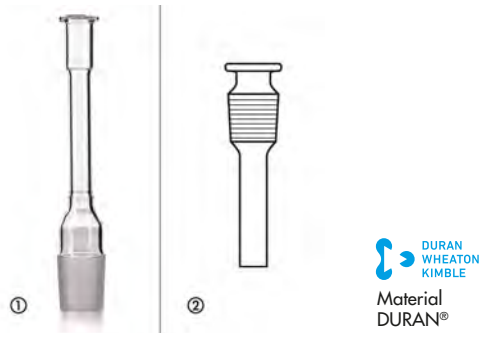
Made of DURAN®.

① **KPG-bearing sleeve (stirring stopper)**
Core: standard ground glass joint 29 /32.
Contact surface ground and polished.

Nominal ∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
10	125	**KX58.1**	1	51,20

② **KPG-agitator**
Shaft contact surface ground and polished.

Nominal ∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
10	240	**KX59.1**	1	27,00



DURAN WHEATON KIMBLE

Material
DURAN®

KPG stirrer bearings

Made of DURAN®. Stirrer contact surface ground and polished, either above the ground glass cone (type HQ 10) or below the ground glass cone (type HT 10). With ground glass cone 29/32 and glycerine reservoir (only type HQ 10, Art. No. NL68.1).

Type	Stirrer contact surface ∅ x L (mm)	Total length (mm)	Art. No.	Pack Qty.	€
① HQ 10	10 x 75	170	**NL68.1**	1	58,65
② HT 10	10 x 65	120	**NL69.1**	1	89,80

Flexible glass agitator coupling

For stirring in glass apparatus with KPG-stirrers. Counterbalances any inexactness in assembly. An exact alignment of agitator motor and shaft is unnecessary. Operates as an elastic link between laboratory stirrer and agitator shaft. Ideal for motor shafts with 8 to 10 mm chucking capacity and stirring tools with ∅ 8 to 10 mm shaft.

Art. No.	Pack Qty.	€
KL60.1	1	104,85

All-purpose stirrer plugs

For round flasks. Glass part made of borosilicate. Liner, sealing and pressure screw made of PTFE. Mostly chemical and temperature stable. Reliably leakproof, even during long-term use. Total length 140 mm. Patented under DE 35 12 647. Can be used without lubricant.

Cone (ground glass)	Shaft ∅ (mm)	Art. No.	Pack Qty.	€
45	8	**1791.1**	1	203,75
45	10	**1792.1**	1	203,75
29	8	**1793.1**	1	203,75
29	10	**1794.1**	1	203,75

Set of seals for all-purpose stirrer plug

Made of PTFE/silicone, 4 pieces.

Shaft ∅ (mm)	Art. No.	Pack Qty. (set)	€
8	**X532.1**	1	31,75
10	**X533.1**	1	37,10

DURAN WHEATON KIMBLE
Material DURAN®

KPG stirrer plugs, type HB 10

Made of DURAN®. Stirrer guide (GL 32 threaded tube with ground glass cone) with matching stirrer socket. Contact surface ground and polished, ∅ 10 x L 75 mm. GL screw cap with O-ring allows the stirrer shaft to be sealed.

Cone (ground glass)	Art. No.	Pack Qty.	€
24/29	**NL70.1**	1	56,85
29/32	**NL71.1**	1	58,30

PTFE stirrer plugs for standard ground-glass joints

Ground element made of **PTFE** with GL 25 screw cap made of **PPS** . Guide for stainless steel, glass and PTFE stirrer shafts. Embossed ring seals on the PTFE ground glass cone to fit ground glass sleeve. With special seal made of PTFE and FPM O-ring. Controlled pressure of the GL screw cap on the O-ring ensures proper sealing against the stirrer shaft. Temperature stable from -50 to 250 °C.

Cone (ground glass)	for shaft ∅ (mm)	Total length (mm)	Art. No.	Pack Qty.	€
19/26	8	65	**CKN9.1**	1	42,90
24/29	8	69	**CKP0.1**	1	47,20
24/29	10	70	**CKP1.1**	1	57,45
29/32	8	74	**CKP2.1**	1	42,95
29/32	10	72	**CKP3.1**	1	41,40
45/40	10	80	**CKP4.1**	1	63,95

Clutch for laboratory stirrer assembly

Corrosion-proof, made of PTFE. with rod end made of elastic polyamide. Prevents cuts, ensures proper working even at high rpm and during long-term use.
Stirring rod: ∅ 5-8 mm.
Shaft: ∅ 7 mm, length 120 mm.

Art. No.	Pack Qty.	€
2939.1	1	87,65

Flock testers AL-series

By Aqualytic. For various applications, e.g. for testing the effectiveness of flocculants and precipitants.

AL30 analog
- Accommodates 4 low form beakers up to 1000 ml in size
- Portable, for mobile use
- Stirring points are arranged in a circle around a lamp
- Switchable centre column light (OFF/ON)
- Speed and time adjustment by rotary knob
- Height adjustment of the stirrer blades during operation
- **Delivery incl.** 12-V adapter (for the cigarette lighter) and mains adapter

AL40 and AL50
- Accommodates 4/6 low or high form beakers up to 1000 ml in size
- Illuminated back panel for glare-free sample observation
- Switchable backlight (OFF/ON)
- Continuously variable stirring speed
- Digital rpm and timer display
- Height adjustment of the stirrer blades during operation
- **Delivery incl.** mains adapter

Technical specifications:

Type	AL30 analog	AL40	AL50
Number of stirring points	4	4	6
Speed range	20-40-50-100-120 rpm	10 to 300 rpm / continuous operation	
Timer	0 to 30 min / continuous operation	0 to 999 min / 0 to 99 h / continuous operation	
Dimensions L x W x H (mm)	250 x 320 x 250	645 x 347 x 260	935 x 347 x 260
Weight (kg)	4.9	13	17
Power supply	100-240 V, 50/60 Hz		

Delivery without beakers, please order separately.

Type	Stirring points	Art. No.	Pack Qty.	€
AL30 analog	4	**YC36.1** *	1	1338,40
AL40	4	**YC37.1** *	1	1864,05
AL50	6	**YC38.1** *	1	2201,60

* Longer delivery times possible. Please check with our Sales Department.

Accessories:

1000 ml beaker, low form	**C118.1**	1	12,20
1000 ml beaker, high form	**C130.1**	1	12,40
1000 ml Griffin beaker, PMP, low form	**2899.1**	1	8,85

▶ Absorbers for chemicals from page 719
▶ Lubricating grease and other lubricants, see page 1171

Flocculator SW6

By Stuart. For reproducible analysis of flocculation conditions during sewage water treatment.

- **For simultaneous treatment of 6 samples in beakers up to 1000 ml**
- Uniform adjustable stirring speed for similar conditions on all sampling areas
- Digital-display for speed and time
- **With timer-function**
  Acoustic alarm indicates end of set time and all stirring units are switched off. The timer then counts the minutes from when the agitor blades stand still
- The stainless steel agitor blades can be adjusted in height during the run
- The device has an illuminated base and black rear wall for antiglare and high-contrast observation of samples
- **Memory-function stores 2 parameter-combinations of speed and time**

Technical specifications:

Number of stirring places	6
rpm range	25 to 250 rpm
Timer function	0 to 99 min /continuous run
Output	200 W
Dimensions (W x D x H)	750 x 210 x 460 mm
Weight	17 kg
Current	230 V, 50 Hz

Delivery without beakers, please order separately.
Devices for simultaneous addition of reagents and flocculators is also available.

Art. No.	Pack Qty.	€
CA98.1	1	2869,00

Accessories:

Charging mechanism	**CA99.1**	1	199,00
1000 ml beaker, high form	**C130.1**	1	12,40

Dispersing system T 10 basic ULTRA-TURRAX®

By IKA. Systems can be hand-held or used on a stand.

- **For volumes from 0.5 to 100 ml**
- Infinitely adjustable speed setting
- Easy changing of dispersing tools with quick-clamp coupling
- Plastic disposable dispersing tools for PCR-analytics are available (please ask our Sales Department)

Technical specifications:

Motor power: input / output	125 / 75 W
rpm range	8000 to 30000 rpm
Speed display	Scale
Max. on-time ON / OFF	max. 10 min / min. 5 min
Dimensions (W x D x H)	56 x 66 x 178 mm
Weight	0.5 kg

Delivery incl. storage case and arm clamp R 200.
Please order dispersing tools, muffle and stand separately.

Art. No.	Pack Qty.	€
EH01.1	1	1199,00

Dispersing tool for T 10 basic

By IKA. Made of stainless steel. Enables you to change and dismantle tools for cleaning without using additional tools.

Type	**S 10 N - 5 G**	**S 10 N - 8 G**	**S 10 N - 10 G**
Working range (ml)	0.5 to 10	1 to 50	1 to 100
∅ Stator (mm)	5	8	10
∅ Rotor (mm)	3.8	6.1	7.6
Gap length between stator and rotor (mm)	0.1	0.25	0.2
Immersion depth Min/Max (mm)	20 / 75	20 / 95	20 / 100
Materials touching product	PTFE, AISI 316L		
Ideal for temperatures	to 180 °C		
Ultimate fineness, suspensions	5-25 µm		
Ultimate fineness, emulsions	1-10 µm		

Type	Art. No.	Pack Qty.	€
S 10 N - 5 G	**EH02.1**	1	1186,00
S 10 N - 8 G	**EH03.1**	1	1186,00
S 10 N - 10 G	**EH04.1**	1	1186,00

Accessories for T 10 basic

By IKA.

Type	Art. No.	Pack Qty.	€
Small stand R 104, W 242 x D 355 mm rod-∅ 10 mm, stand rod-height 370 mm	**EH05.1**	1	143,00
Clamp	**A316.1**	1	26,00

T 18 digital ULTRA-TURRAX®-dispersing system complete set

By IKA.
Dispersing system T 18 digital ULTRA-TURRAX®
High-speed dispersing system. Additional speed range enables working at high peripheral velocity.
- With digitised speed display
- Compact, slim form

Technical specifications:

Motor capacity: input / ouput	500 W / 300 W
Speed adjustment	progressively adjustable
rpm range	3000 to 25 000 rpm
Speed display	LED
Dimensions (W x D x H)	87 x 106 x 271 mm
Weight	2500 g
Protective system in acc. with DIN 40050	IP 20
Current	220-240 V, 50/60 Hz

Dispersing tool S 18 N - 19 G
Technical specifications:

Operative range	10 to 1500 ml
∅ stator	19 mm
∅ rotor	12.7 mm
Materials touching product	PTFE, AISI 316L

Complet set delivery incl.
- Ultra Turrax®
- Extension rod and dispersing tools S 18 N - 19 G
- Boss head and stand must be ordered separately

Art. No.	Pack Qty.	€
XX04.1	1	1899,00

Accessories for T 18 digital

By IKA.
Dispersing tool S 18 N - 10 G
Technical specifications:

Operative range	1 to 100 ml
∅ stator	10 mm
∅ rotor	7.5 mm
Materials touching product	PTFE, AISI 316L

Art. No.	Pack Qty.	€
T598.1	1	938,00

POLYTRON® PT 1200 E handheld disperser

By Kinematica. Ideal for quick processing of small sample quantities.
Soft start (active after power-on, e.g. at preselected speed).
Application volumes from 0.05 to 250 ml.

Technical specifications:

Motor rating (input / output)	100/72 W
Speed adjustment	Continuously variable
Speed range	500 to 25 000 rpm
Speed display	Scale
Dimensions (W x D x H)	44 x 55 x 220 mm
Weight	440 g (drive) 310 g (power adapter)
Power supply	230 V, 50/60 Hz

Delivery incl. benchtop power adapter.
Please order disperser unit and special stand ST-P 13/320 separately.

Art. No.	Pack Qty.	€
CLX3.1 *	1	1245,95

* Longer delivery times possible. Please check with our Sales Department.

Disperser units for PT 1200 E

Applications: homogenisation of animal and vegetable tissue samples in a variety of liquids and volumes, extraction of active ingredients/ substances from vegetable samples, disruption of animal and vegetable cells as well as intensive mixing.

Technical specifications:

Model	PT-DA 03/2 EC-E050	PT-DA 05/2 EC-E085	PT-DA 07/2 EC-E107	PT-DA 12/ 2EC-E123
Working range (ml)	0.05 to 2	0.1 to 5	0.5 to 10	3 to 250
Stator ∅ (mm)	3.5	5.5	7.8	12
Rotor ∅ (mm)	2.2	3.0	5.0	9.0
Min/max immersion depth (mm)	20/50	25/85	25/107	25/123
Materials in contact with product	PTFE, AISI 316L			
Temperature range (°C)	up to 180			
Approx. suspension fineness (µ)	5			
Approx. emulsion fineness (µ)	1			

Type	Art. No.	Pack Qty.	€
PT-DA 03/2EC-E050	**CLX4.1** *	1	1095,45
PT-DA 05/2EC-E085	**CLX5.1** *	1	1159,95
PT-DA 07/2EC-E107	**CLX6.1** *	1	1218,00
PT-DA 12/2EC-E123	**CLX7.1** *	1	1298,60

ST-P13/320 stainless steel plate stand

Delivery incl. anti-slip mat with height-adjustable mounting for drive and base station. Dimensions: L 130 x W 150 x H 320 mm. Weight 1 kg.

Art. No.	Pack Qty.	€
CLX8.1 *	1	186,00

* Longer delivery times possible. Please check with our Sales Department.

POLYTRON® PT 2500 E stand dispersion unit

By Kinematica. Powerful motor keeps constant even when viscosity changes. Digital actual speed display (3-digit).
Application volumes from 0.05 to 2500 ml.

Technical specifications:

Motor rating (input / output)	500/300 W
Speed adjustment	Continuously variable
Speed range	500 to 30 000 rpm
Speed display	Digital
Dimensions (L x W x H)	157 x 76 x 236 mm
Weight	1.8 kg
Power supply	230 V, 50/60 Hz

Delivery incl. boom (∅ 12 mm). Dispersion units, please order boss head and stand separately.

Art. No.	Pack Qty.	€
CLT8.1	1	1548,00

Dispersion units for POLYTRON® PT 2500 E

Applications: production of fine dispersions and emulsions, dispersing of plant, human or animal tissue, resins and pigments.
The dispersion units for the PT 1200 E drive from the current catalogue can also be used.

Technical specifications:

Model	**PT-DA 12/ 2EC-E157**	**PT-DA 20/ 2EC-E192**	**PT-DA 25/ 2EC-E192**
Working range (ml)	0.2 to 250	100 to 2000	100 to 2500
Stator ∅ (mm)	11.8	20	25
Rotor ∅ (mm)	9	15	18
Approx. min/max immersion depth (mm)	30/157	30/192	30/107
Materials in contact with product	PTFE, AISI 316L		
Temperature range (°C)	up to 180		
Approx. suspension fineness (µ)	5		
Approx. emulsion fineness (µ)	1		

Type	Art. No.	Pack Qty.	€
PT-DA 12/2EC-E157	**CLT9.1**	1	1416,85
PT-DA 20/2EC-E192	**CLX0.1**	1	1304,00
PT-DA 25/2EC-E192	**CLX1.1**	1	1602,85

ST-P20/600 stainless steel plate stand

Dimensions: L 200 x W 310 x H 600 mm. Weight 2.5 kg.
Delivery incl. two stand rods and boss head.

Art. No.	Pack Qty.	€
CLX2.1 *	1	341,85

* Longer delivery times possible. Please check with our Sales Department.

Dispersing System ULTRA-TURRAX® T 25 digital

By IKA.
High-performance dispersing system with a wide field of application.
Examples of application:
For producing emulsions and dispersions, for homogenizing sewage samples and for sample preparation.
- Workable volume (H_2O): 1 to 2000 ml
- Infinitely variable speed setting
- **With digital speed display**

Technical specifications:

Motor power: reception / delivery	700/500 W
rpm range	3000 to 25 000 rpm
Speed display	digital
Dimensions (W x D x H)	87 x 106 x 271 mm
Weight	2.5 kg
Mains connection	220-240 V, 50/60 Hz

Delivery incl. ULTRA-TURRAX® T 25 digital with extension rod (L 175 x ∅ 13 mm). Please order dispersing tools, boss head, and stand separately.

Art. No.	Pack Qty.	€
AN58.1	1	1899,00

Dispersing tools for ULTRA-TURRAX® T 25 digital

By IKA.

Technical specifications:

Model	**S 25 N - 8 G**	**S 25 N - 18 G**	**S 25 N - 25 G**
Working range (ml)	1 to 50	10 to 1500	50 to 2000
∅ Stator (mm)	8	18	25
∅ Rotor (mm)	6.1	12.7	17
Gap between Stator and Rotor (mm)	0.25	0.3	0.5
Immersion depth Min/Max (mm)	27/85	40/165	40/165
Materials touching product	PTFE, AISI 316L		
Ideal for temperatures	up to 180 °C		
Final fineness, suspension (µm)	10-50	10-50	15-50
Final fineness, emulsion (µm)	1-10		

Type	Art. No.	Pack Qty.	€
S 25 N - 8 G	**AN59.1**	1	1294,00
S 25 N - 18 G	**AN60.1**	1	970,00
S 25 N - 25 G	**AN61.1**	1	1240,00

Dispersing/Homogenizing systems

Polytron® PT 10-35 GT stand dispersing unit

By Kinematica. For working volumes of up to 8 l. Powerful motor keeps constant even when viscosity changes. Soft start (e.g. at a preselected speed). Audible fault warning. Digital actual speed display (3-digit).

Technical specifications:

Motor rating (input/output)	1200/800 W
Speed adjustment	Continuously variable
Speed range	500 to 30,000 rpm
Speed display	Digital
Dimensions (L x W x H)	95 x 210 x 247 mm
Weight	3.2 kg
Power supply	230 V, 50 Hz

Delivery incl. extension arm (∅ 13 mm, L 200 mm).
Dispersion units, please order boss head and stand separately.

Art. No.	Pack Qty.	€
EET2.1	1	2158,60

Dispersing aggregates for Polytron® PT 10-35 GT

PT-DA 20/2EC-F193 and PT-DA 30/2EC-F250 aggregates
For producing dispersions and emulsions.
Disperses plant and animal tissue, resins and pigments.
Can be used for cell disruption.

Biotrona® PT-DA 36/3BEC-F250 aggregate
For highly turbulent mixing with low shear forces.
Rapidly dissolves and suspends solids.
For tasks that involve mixing highly viscous media.

Technical specifications:

Model	PT-DA 20/ 2EC-F193	PT-DA 30/ 2EC-F250	PT-DA 36/ 3BEC-F250
Working range (ml)	20 to 2000	100 to 4000	500 to 8000
Stator ∅ (mm)	20	30	36
Rotor ∅ (mm)	15	23	30
Approx. min./max. immersion depth (mm)	40/170	40/230	90/230
Materials in contact with product	PTFE, AISI 316L	GL-Bronze/ AISI 316L	
Temperature range (°C)	Max. 180		
Approx. suspension fineness (µ)	1 to 20	5 to 25	n.a.
Approx. emulsion fineness (µ)	1 to 5	1 to 10	n.a.

Type	Art. No.	Pack Qty.	€
PT-DA 20/2EC-F193	**EET3.1**	1	1525,45
PT-DA 30/2EC-F250	**EET4.1**	1	1932,85
PT-DA 36/3BEC-F250	**EET5.1**	1	2253,20

NEW

ULTRA-TURRAX® T 25 easy clean digital dispersion unit

By IKA.
Application: homogenising samples, emulsifying cosmetics or suspending paints.

- Processing volume (H_2O): 1 to 2000 ml
- Brushless motor with low noise level
- Continuous speed adjustment
- With digital speed display
- Integrated timer function (max. 1 s to 99:59 h)
- Special tools available for quick and easy cleaning of the dispersion tools (only S 25 EC-C-18G-ST)
- USB interface

Technical specifications:

Motor rating (input/output)	500/400 W
Speed range	3000 to 25,000 rpm
Speed display	LED
Dimensions (W x D x H)	89 x 161 x 270 mm
Weight	4.5 kg
Power supply	220-240 V, 50/60 Hz

Delivery incl. ULTRA-TURRAX® T 25 easy clean digital with extension arm (L 175 x ∅ 13 mm).
Please order dispersion tool, sleeve and stand separately.

Art. No.	Pack Qty.	€
HYK7.1	1	1999,00

Dispersion tools for ULTRA-TURRAX® T 25 easy clean digital dispersion unit

By IKA.
Technical specifications:

Model	S 25 N - 8 G	① S 25 EC-C-18 G-ST	S 25 N - 25 G
Working range (ml)	1 to 50	10 to 1500	50 to 2000
Stator ∅ (mm)	8	18	25
Rotor ∅ (mm)	6.1	13.4	17
Gap width between stator and rotor (mm)	0.25	0.25	0.5
Min/max immersion depth (mm)	27/85	35/150	40/165
Materials in contact with product	AISI 316L Ceramic		
Temperature range (°C)	Up to 180		
Approx. suspension fineness (µm)	10–50	10–50	15–50
Approx. emulsion fineness (µm)	1–10		

Type	Art. No.	Pack Qty.	€
S 25 N - 8 G	**AN59.1**	1	1294,00
① S 25 EC-C-18 G-ST	**HYK8.1**	1	1199,00
S 25 N - 25 G	**AN61.1**	1	1240,00

Compact Ultrasonic Processors UP50H and UP100H

By Hielscher.
- Small, compact ultrasonic processors
- Application range: ultrasonic processingor homogenizing of liquids and disintegration of cells
- With pulse switch for temperature sensitive samples
- Useable as hand or stand unit (please order stand separately)

Technical specifications:

Model	UP50H	UP100H
For vol. max. (ml)	200	500
Output (W)	50	100
Working frequency	30 kHz, is regulated automatically	
Power regulator	Amplitude 20 to 100 %, infinitely variable	
Pulse range	10 to 100 % per seconde, infinitely variable	
Dimensions L x W x H (mm)	180 x 130 x 50	
Protection	IP 40	
Weight (g)	800	
Power supply	230 V, 50/60 Hz	

Delivery incl. unit with case and stand holder for stand with ∅ 16 mm, without sonotrode (please order separately).

Type	Art. No.	Pack Qty.	€
UP50H	**Y509.1** *	1	2381,15
UP100H	**Y510.1** *	1	2773,50

Sonotrodes for UP50H and UP100H

By Hielscher.
Made of titanium. Length 80 mm.

Technical specifications:

Type	Sample volume (ml)	Tip-∅ (mm)	max. immersion depth (mm)
MS1	0.1-5	1	5
MS2	2-50	2	30
MS3	5-200	3	30
MS7	20-500	7	30

Type	Art. No.	Pack Qty.	€
MS1	**Y512.1** *	1	335,40
MS2	**Y513.1** *	1	272,00
MS3	**Y514.1** *	1	272,00
MS7	**Y515.1** *	1	221,45

Accessories for UP50H / UP100H

Stand
Made of stainless steel. Base plate L 300 x W 150 mm.
Height 600 mm. ∅ 16 mm.

Art. No.	Pack Qty.	€
Y525.1 *	1	209,65

* Longer delivery times possible. Please check with our Sales Department.

Ultrasonic homogenizers SONOPULS-series

By Bandelin.
Application: Cell disruption, homogenizing, emulsifying, suspending, process acceleration, sonochemistry and degassing.
- LED-display for pulsation, time as well as actual value display of the amplitude
- Amplitude setting range: 10 to 100 %
- Ultrasonic operation modes: Continuous or pulsating (for temperature-sensitive samples); Pulse range 10 to 100 %, can be saved
- Continuous run or timer operation (adjustable 1 s to 99 min; can be saved)
- Operating frequency 20 kHz constant sound
- Outlet supply: 230 V, 50/60 Hz

Technical specifications:

Model	SONOPULS HD 2070-set	SONOPULS HD 2200-set
For volume to	50 ml	900 ml
Max. HF-power	70 W	200 W
Scope of delivery	• Generator • Ultrasonic transformer • Graduated horn SH 70 G • Micro tip MS 73, ∅ 3 mm	• Generator • Ultrasonic transformer • Booster horn SH 213 G • Titan plate TT 13, ∅ 13 mm

Please order support frame separately.
Optionally available: Noise protection box for reducing noise level.

Type	Art. No.	Pack Qty.	€
HD 2070-Set	**HC85.1** *	1	2901,45
HD 2200-Set	**HC86.1** *	1	3536,75

Sonotrodes for HD 2070 and HD 2200

By Bandelin.

Technical specifications:

Model	Tip-∅ (mm)	Length (mm)	Volume HD 2070 (ml)	Volume HD 2200 (ml)
Micro tips MS 72	2	191	1 to 25	2 to 30
Micro tips MS 73	3	175	2 to 50	50 to 90
Conical tips KE 76	6	135	8 to 100	10 to 350
Titan plate TT 13	13	5	10 to 200	20 to 900

Type	Art. No.	Pack Qty.	€
Micro tips MS 72	**HC87.1** *	1	208,55
Micro tips MS 73	**HC88.1** *	1	146,20
Conical tips KE 76	**HC89.1** *	1	159,10
Titan plate TT 13	**HC90.1** *	1	67,75

Accessories for SONOPULS HD 2070 and HD 2200

By Bandelin.

Support frame set HG 20: Made of stainless steel.
For mounting the ultrasonic transformer. With brackets.

Art. No.	Pack Qty.	€
HC93.1 *	1	996,55

* Longer delivery times possible. Please check with our Sales Department.

Digital ultrasonic disintegrator UP200Ht

By Hielscher.
Applications: sample preparation, homogenisation, dispersion, disagglomeration (e.g. nanoparticles), emulsification, lysis and cell disruption, extraction, degassing and sonochemistry.

- Use as handheld device or mounted on a stand
- Colour touch display and digital setting and monitoring functions
- Amplitude or power output control
- Countdown function: 0.1 sec to 99 d
- Automatic data storage on integrated SD card reader in 100 ms cycles; records amplitude, power output, time and temperature
- Temperature range monitoring: acoustic irradiation is interrupted if the medium temperature is above or below the setpoint
- Operation and monitoring via LAN cable, i.e. a browser can be used for display and remote control (no need to install software on PC)
- With LED sample illuminator
- Protection against dry running

Technical specifications:

Output	200 W
Operating frequency	26 kHz
Power output control	Amplitude 20 to 100 %, continuously variable in 1 % increments
Pulse range	10 to 100 % per second, in 0.1 sec increments, 100 % = continuous duty
Temperature display (with connected sensor)	-50 to +200 °C
Dimensions (W x H x D)	300 x 190 x 90 mm
Weight	1.4 kg
Power supply	100 to 240 V, 50/60 Hz

Delivery incl. carry case, boom arm (L 200 x ∅ 12 mm), cross clamp, 3 m network cable, 1 GB SD/USB combo card and Pt 100 temperature sensor. Please order sonotrodes and stand separately.

Art. No.	Pack Qty.	€
YH05.1 *	1	3450,75

Accessories for ultrasonic disintegrator UP200Ht

By Hielscher.
Sonotrodes
Made of titanium.

Type	Sample volume (ml)	Length (mm)	Tip ∅ (mm)
S26d2	2 to 50	120	2
S26d7	20 to 500	95	7
S26d14	50 to 1000	80	14

Type	Art. No.	Pack Qty.	€
S26d2	**YH06.1** *	1	295,65
S26d7	**YH07.1** *	1	295,65
S26d14	**YH08.1** *	1	317,15

Stand
Made of stainless steel.
Base plate L 300 x W 150 mm. Height 600 mm. ∅ 16 mm.

Art. No.	Pack Qty.	€
Y525.1 *	1	209,65

* Longer delivery times possible. Please check with our Sales Department.

Cell disruptors Disruptor Genie® analog and digital

By Scientific Industries. Suitable for a variety of homogenization processes of yeast cells, bacteria, plant and animal tissue and pellet resuspensions using glass beads (please order separately), or anything that requires extremely violent high-speed agitation.

Disruptor Genie® analog
- With fixed set speed
- Timer: 0 to 15 minutes or continuous operation

Disruptor Genie® digital
- With variable speed control
- Timer: 0 to 99 min or continuous operation
- After 10 minutes, the mixer switches to "sleep"-mode

Technical specifications:

Type	Disruptor Genie® analog	Disruptor Genie® digital
Speed range	2850 rpm	Adjustable from 1000 to 2850 rpm
Speed display/timer	- / scale	digital / digital
Time range	0 to 15 min	0 to 99 min
Dimensions (L x W x H)	165 x 122 190 mm	
Weight	4.5 kg	
Electrical supply	230 V, 50/60 Hz	

Delivery incl. TurboMix®-holder and mount for 12 microcentrifuge tubes 1.5/2.0 ml. Glass beads please order separately.

Type	Art. No.	Pack Qty.	€
Disruptor Genie® Analog	**AH30.1**	1	750,35
Disruptor Genie® Digital	**PA66.1**	1	869,70

Accessories:

Spare-holder for 12 microcentrifuge tubes 1.5/2.0 ml	**AH31.1**	1	102,45
Glass beads ∅ 0.1 mm	**N029.1**	450 g	63,75
Glass beads ∅ 0.5 mm	**N030.1**	450 g	63,75
Glass beads ∅ 1.0 mm	**N031.1**	450 g	63,75
Glass beads ∅ 2.7 mm	**N032.1**	450 g	63,75

Recommended useage of beads:

Material	∅ Beads (mm)
Bacteria	0.1
Yeast/fungi	0.5
Tissue	1.0

BeadBeater®

For rapid, efficient and safe cell disintegration.

Method of operation:
A fast running impeller wheel accelerates the movement of small beads in a specially formed vessel to a very high speed. The system is completely hermetically sealed and allows no air to enter into the sample, preventing harmful aerosols from forming. The unit is easy-to-use and maintenance free. The beads precipitate within a few seconds and can be reused.

- Suitable for sample volume max. 100 g (wet weight) in 200 ml media
- Ideal for sensitive proteins and enzymes

Delivery incl. 350 ml vessel made of PC. Beads please order separately.

Art. No.	Pack Qty.	€
N025.1	1	1273,90

Spare vessel for BeadBeater®

Type	Art. No.	Pack Qty.	€
Spare vessel, 350 ml, PC	**N026.1**	1	98,40
High-grade steel vessel, 350 ml	**N027.1**	1	252,65
① Vessel, PC, stainless steel guide bushing,15 ml	**EN04.1**	1	353,70
② Vessel, PC, stainless steel guide bushing, 50 ml	**EN05.1**	1	353,70

Accessories for BeadBeater®

Glass Beads

∅ (mm)	Art. No.	Pack Qty. (g)	€
0,1	**N029.1**	450	63,75
0,5	**N030.1**	450	63,75
1,0	**N031.1**	450	63,75
2,7	**N032.1**	450	63,75

Zirconia/Glass-Beads

∅ (mm)	Art. No.	Pack Qty. (g)	€
0,1	**N033.1**	450	91,30
0,5	**N034.1**	450	91,30
1,0	**N035.1**	450	91,30
2,3	**N036.1**	450	91,30

Zirconia-Beads

∅ (mm)	Art. No.	Pack Qty. (g)	€
0,7	**N037.1**	450	159,10
1,0	**N038.1**	450	159,10
2,0	**N039.1**	450	159,10

Stainless steel Beads

∅ (mm)	Art. No.	Pack Qty. (g)	€
1,5	**P329.1**	45	91,40

▶ Clips for bags, see page 560
▶ Homogenizing bags, see page 259

BagMixer® 400-series

By Interscience. The Bag Mixer® ensures safe and easy separation of bacteria from solid samples. A sterile plastic bag is added together with the closed sample and a diluent into the Bag Mixer®. For most samples 30 to 60 seconds mixing is sufficient. The filtrate can then be removed with a pipette and analysed immediately without any danger of changing or contamination. Housing and mixing chamber are made of rustproof stainless steel.

BagMixer® 400 P
- With stainless steel flap
- Preset speed (8 strokes/s)
- Adjustable mixing time: 30 to 210 sec or permanent run

BagMixer® 400 W
- With glass flap made of armour plate glass
- Preset speed (8 strokes/s)
- Adjustable mixing time: 30 to 210 sec or permanent run
- **Delivery incl**. drip pan

BagMixer® 400 CC
- With glass flap made of armour plate glass
- LCD display indicates mixing time and speed
- Variable speed setting: 4, 6, 8 or 10 strokes/s
- Adjustable mixing time: 1 sec to 1 h with count-down display or permanent run
- With additional indicator display for mixing blade intensity
- Distance between mixing blades and door can be adjusted for better results
- **Delivery incl.** drip pan

Technical specifications:

Capacity	50 to 400 ml
Dimensions (L x W x H)	420 x 260 x 265 mm
Weight	16.5 kg
Current	220/110 V, 50/60 Hz

Note: stainless steel rack can only be used in combination with closure clips (please order separately).

Type	Art. No.	Pack Qty.	€
① BagMixer 400 P	**KL16.1** *	1	1859,75
② BagMixer 400 W	**T211.1** *	1	2320,95
③ BagMixer 400 CC	**KL17.1** *	1	3031,50
④ Rack made of high-grade steel for 10 bags	**T213.1** *	1	153,75
Closure clips	**T212.1** *	10	31,20

* Longer delivery times possible. Please check with our Sales Department.

Accessories for homogenizers

Homogenizing bags

Sterile. Whirl-Pak® made of PE for use with homogenizer (Stomacher® 400 circulator, Bag Mixers®). Thickness: 100 µm. With labelling area and filter. A third layer of finely perforated PE enables solids to be separated when used in homogenizers.

Type	Art. No.	Pack Qty.	€
Homogenizing bags W 150 x H 230 mm	**P310.2**	250	219,30
Homogenizing bags W 190 x H 300 mm	**P311.2**	250	273,05

BagMixer® 400 S / SW lab blenders

By Interscience. Effective mixing of solid or liquid samples in laboratory blender bag. Optimal microorganism extraction. Sample material is quickly prepared for analysis without complex cleaning.

General specifications of both models
- Digital display of speed and time
- Adjustable mixing intensity
- Removable pedals
- 4 adjustable speeds: 4, 6, 8, 10 impacts/sec
- Adjustable mixing time: 1 to 59 minutes or continuous operation
- LightCode System: colour LED light under the door indicates the mixing status (green: mixing operation finished; orange: active mixing operation)
- LED interior light
- Integrated drip pan
- Low noise (approx. 48 dB)

② **SW model**
- Window flap with double glazing
- LiquidSensor: mixing stops immediately and automatically if a leak is detected by the sensor

Technical specifications:

Capacity	50 to 400 ml
Dimensions (W x D x H)	290 x 450 x 37 mm
Weight	26 kg
Power supply	110-240 V, 50/50 Hz

Type	Art. No.	Pack Qty.	€
① BagMixer® 400 S	**CEC0.1** *	1	3492,70
② BagMixer® 400 SW	**CEC1.1** *	1	4284,95

* Longer delivery times possible. Please check with our Sales Department.

Homogeniser bag stand BagOpen®

For opening and holding bags.
For single 400 ml bags. Self-adhesive pads adhere to the outer walls of the bag and to the side walls of the stand and hold the bag open. Reduces risk of sample contamination.
Dimensions: W 80 x D 150 x H 250 mm.
Delivery incl. 2 adhesive pads.

Art. No.	Pack Qty.	€
XX17.1	1	117,20

Stomacher® 400 circulator

By Seward.
Ideal for extracting, mixing, homogenizing or dispersing.
Capacity 80 to 400 ml. The Stomacher® 400 circulator is indispensible in the laboratory when preparing and blending food samples and other substances for analysis. The sample and diluent are placed into the machine in a sealed plastic bag. The bag is held securely in the unit during treatment. There is no contact between the sample and machine. This eliminates any danger of contamination. With regard to hygiene, security and general efficiency the Stomacher® 400 circulator compares well with other units, which must be cleaned or even sterilized after use. Blending takes only 30 seconds for most substances.

Procedure:
Two reciprocating paddles beat against the bag repeatedly and press its contents against the door. This quiet and yet powerful movement distributes the sample quickly so that the extraction of soluble substances and the detection of even deep-seated micro-organisms is easier than when using standard blending processes.The sample can be removed from the bag with a pipette after blending. The Stomacher® 400 circulator can be reused again immediately.

Special Characteristics:
- Control panel: keyboard and LCD display
- Count Down display indicates processing
- User-defined speed and time setting
  - 3 programs can be stored for easier operation
  - Setting possibilities:
  1.) Paddle speed (rpm: 200/low, 230/normal, 260/high)
  2.) Time (from 1 sec to 99 min and 59 sec)
- Durable and robust aluminium casing

Dimensions: W 350 x D 335 x H 280 mm. Weight 23 kg.
Power supply 220 V, 50 Hz

Delivery incl. 1000 homogenizing bags standard.

Type	Art. No.	Pack Qty.	€
Stomacher® 400 circulator	**H453.1** *	1	4830,00
Rack for 10 Stomacher® bags	**H454.1** *	1	167,70

* Longer delivery times possible. Please check with our Sales Department.

Homogenizing bags

Made of **PE**. γ-**sterile**. 70 µm thick. Suitable for use in homogenizers. Available with and without filter. The filter holds back solid particles and stops the pipettes from becoming blocked.

Volume (ml)	W x H (mm)	Filter type	Art. No.	Pack Qty.	€
80	105 x 150	without	**AYY6.1**	1500	102,15
400	180 x 300	without	**EP15.1**	500	47,25
400	190 x 300	over whole surface	**EP16.1**	500	225,75
400	190 x 300	side filters	**EP17.1**	500	224,70
3500	380 x 510	without	**AYY7.1**	100	34,35

A 10 basic analysis mill

By IKA. Comminutes hard, brittle materials, as well as soft and fibrous materials. Integrated cooling water connections (for hoses with an inner ∅ of 8 mm). A choice of stainless steel beaters and a cutter that can be swapped depending on the material to be comminuted.
Can only be operated with the lid closed.

- Digital timer (can be set to between 1 sec and 5 min) that shows the comminuting time
- Interval function (if the timer function has been activated, the equipment runs for 15 sec and then stops for 1 sec, repeating this pattern until the set time has elapsed)

Technical specifications:

Usable volume	50 ml
Power: Consumption/output	300/240 W respectively
Max. duty time	5 min on/10 min off
Max. speed (fixed)	25,000 rpm
Max. circumferential speed	70 m/sec
Max. feed size	6 mm (impact grinding) 10 mm (cutting)
Grinding chamber can be cooled by	Water: Yes Dry ice: Yes Liquid nitrogen: No
Dimensions (W x D x H)	130 x 145 x 250 mm
Weight	2.9 kg
Power supply	220-240 V, 50/60 Hz

Delivery incl. ① A 10.1 stainless steel beater (stainless steel 1.4034) suitable for most brittle materials up to a Mohs hardness of 5 and A 10.4 grinding chamber reducer (stainless steel 1.4301) for small sample material volumes.

Art. No.	Pack Qty.	€
EEA9.1	1	1749,00

Accessories for A 10 basic analysis mill

By IKA.

② **A 10.3 carbide beater**
Made from tungsten carbide for relatively hard materials up to a Mohs hardness of 9.

Art. No.	Pack Qty.	€
EEC0.1	1	235,00

③ **A 10.2 star-shaped cutter**
For fibrous materials such as paper and plant material, as well as plastics, including material with a low specific weight.

Art. No.	Pack Qty.	€
EEC1.1	1	127,00

Mohs' hardness scale
Designation of degree of hardness of minerals, metals and other products at different hardness stages. Each stage is marked by a reference mineral.

1 Mohs	talc	6 Mohs	feldspar
2 Mohs	gypsum	7 Mohs	quartz
3 Mohs	calcite	8 Mohs	topaz
4 Mohs	fluorspar	9 Mohs	corundum
5 Mohs	apatite	10 Mohs	diamond

A11 basic analysis mill

By IKA. Batch mills with two milling processes:
- **Impact milling of hard, brittle grinding material** with a stainless steel beater up to max. Mohs' hardness scale 6 (beater is included in delivery)
- **Blade milling of soft, fibrous grinding material** with a cutting knife (not included in delivery)

Damp and sticky process materials can be ground with addition of water. A standard grinding beaker made of ETFE, fiber-glass reinforced with stainless steel inlet (AISI 316L), effective volume 80 ml is included in the delivery. This enables you to embrittle the grinding material with liquid nitrogen directly in the grinding chamber.

Technical specifications:

Capacity: input / output	300 / 160 W
Max. operating time	Short-time service (KB 1/10): 1 min ON / 10 min OFF
On-load speed	19 500 rpm
No-load speed	28 000 rpm
Peripheral speed	53 m/s
System of protection	IP 43
Dimensions (W x D x H)	85 x 85 x 240 mm
Weight	1500 g
Mains supply	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
T534.1	1	2099,00

Accessories for A11 basic analysis mill

By IKA.

Cutting blade (made of stainless steel AISI 440B)

Art. No.	Pack Qty.	€
T539.1	1	153,00

Beater for grinding material to max. Moh's hardness scale 9 (made of stainless steel AISI 440B)

Art. No.	Pack Qty.	€
T536.1	1	195,00

Funnel
Prevents splashing when filling liquid nitrogen into standard 80 ml grinding beaker.

Art. No.	Pack Qty.	€
Y974.1	1	213,00

Grinding beaker (actual volume 250 ml)
made of PC with stainless steel inlet. Not suitable for N_2-cooling, only to be used with double beaters (Art. No. Y975.1).

Art. No.	Pack Qty.	€
T535.1	1	533,00

Doublebeater
made of titanium. Max. Moh's hardness 3.
Only to be used with 250 ml grinding beaker (Art. No. T535.1).

Art. No.	Pack Qty.	€
Y975.1	1	420,00

Spare grinding beaker (effective volume: 80 ml)

Art. No.	Pack Qty.	€
T537.1	1	389,00

Spare beater (max. Moh's hardness scale 6)

Art. No.	Pack Qty.	€
T538.1	1	90,00

Universal blender

By Severin.

Features

- Capacity approx. 260 W
- Polystyrole beaker 650 ml
- Max. speed approx. 3900 rpm
- Pulse switch
- Stainless steel blade
- Rubber anti-slip device

Art. No.	Pack Qty.	€
Y384.1	1	34,35

Stand mixer

By Severin. For simple mixing and emulsifying tasks.

Features

- Removable 1.5 l glass mixing attachment with removable drip tray
- Capacity approx. 550 W
- Two speed settings with additional pulse mode option
- Lid with opening for refilling
- Removeable stainless steel blade
- Dimensions: L 210 x W 180 x H 402 mm
- Cord wind

Art. No.	Pack Qty.	€
X477.1	1	53,70

La Moulinette XXL blender

Blends foods such as meat, nuts, herbs and vegetable samples within just a few seconds.

- Motor power 1000 W
- Easy to operate - to blend samples, simply push down the lid about three times
- Total capacity 550 ml, capacity of blending container 300 g
- Cover for processing viscous foods
- Transparent container for monitoring food preparation
- Cable storage compartment
- Dimensions: W 194 x H 353 x D 194 mm
- Weight 2.8 kg
- Mains connection 230 V, 50 Hz

Art. No.	Pack Qty.	€
CCE4.1	1	120,40

Universal mixer RBB pro

For milling, mixing and emulsifying.

Features:

- 3 adjustable speeds (4000, 8000 and 14000 rpm)
- **Power consumption 550 W**
- Stainless steel motor housing, chrome plated
- Safety control system: motor only runs when lid is closed
- With soft start feature (prevents liquids from splashing up after switching on)
- With overload/overheating safety cut-out
- With pulse function, for stirring briefly
- Blending beaker is impact resistant and dishwasher safe, capacity 2 l
- Dimensions total: H 493, ∅ 190 mm
- Dimensions of mixer attachments: H 265 x W 182 mm
- Power supply: 230 V, 50 Hz

Delivery incl. specified blending beaker and lid with hole for adding ingredients.

Type	Art. No.	Pack Qty.	€
Universal mixer with polycarbonate beaker	**PT04.1**	1	848,20
Universal mixer with stainless steel beaker	**PT05.1**	1	1056,75

Laboratory universal mixer with type RMBL sound protection hood

For reducing, mixing and emulsifying.

Features:
- 6 speed settings
- Version with protective hood for noise reduction and increased safety in the laboratory
- 12 storable cycles for automatic processing (max. cycle duration 30 min, time is determined by current mixing operation)
- Pulse function
- Stainless steel motor base
- Thermal circuit breaker

Technical specifications:

Power requirement	900 W for continuous operation
Speed settings	1300, 3500, 6000, 8700, 12 000 and 16 000 rpm
Dimensions	W 225 x D 265 x H 495 mm
Weight	app. 10 mm
Power supply	230 V, 50 Hz

Delivery incl. sound protection hood. Without mixing attachment (please order required mixing attachment separately).

Art. No.	Pack Qty.	€
CYX5.1	1	1515,75

Mixing attachments for universal mixer RMBL

Cutter head type "Laboratory":
Made of stainless steel. For ultra fine processing and low quantities.

Cutter head "High-Power":
Made of stainless steel. 4 blades shaped for optimal stirring, intensive and quick processing, as well as crushing ice cubes.

Type	Art. No.	Pack Qty.	€
125 ml glass attachment incl. laboratory cutter head	**CYX6.1**	1	276,30
250 ml glass attachment incl. laboratory cutter head	**CYX7.1**	1	285,60
500 ml glass attachment incl. laboratory cutter head	**CYX8.1**	1	422,50
1000 ml glass attachment incl. laboratory cutter head	**CYX9.1**	1	459,05
2000 ml polycarbonate attachment incl. High-Power cutter head	**CYY0.1**	1	183,85
2000 ml stainless steel attachment incl. High-Power cutter head	**CYY1.1**	1	378,40

Universal mixer GK 900 W

For thorough reducing, mixing and emulsifying.

Features
- Infinitely adjustable from 1000 to 17 000 rpm
- **Power consumption 900 W**
- Die cast zinc motor housing, chrome-plated
- With soft start (prevents liquid from splashing up after switching on)
- Safety control: motor only runs lid is attached
- With overload and overheating protection
- Motor block dimensions: height 226 mm, ∅ 190 mm
- Power supply: 230 V, 50/60 Hz

Choice of four different mixing beakers:
- 4 l polycarbonate attachment. Dimensions: W 300 x H 280 mm
- 2 l polycarbonate attachment. Dimensions: W 240 x H 280 mm
- 4 l stainless steel attachment. Dimensions: W 290 x H 300 mm
- 2 l stainless steel attachment. Dimensions: W 230 x H 280 mm

Type	Art. No.	Pack Qty.	€
Universal mixer with 4 l polycarbonate beaker	**X534.1**	1	1363,10
Universal mixer with 2 l polycarbonate beaker	**CYX3.1**	1	1170,70
Universal mixer with 4 l stainless steel beaker	**CYX4.1**	1	1548,00
Universal mixer with 2 l stainless steel beaker	**X535.1**	1	1363,10

Test tube shaker lab dancer

By IKA. For mixing small sample amounts via touch function.
- For small tubes with a ∅ of up to 30 mm such as test tubes, centrifuge tubes and vials
- With preset rpm of 2800 rpm

Technical specifications:

Shaking movement	Rotary
Shaking lift	4.5 mm
Speed range	2800 rpm
Max. shaking volume	1 test tube 50 ml
Motor power: Input / output	1.2 / 0.8 W
Dimensions (W x H x D)	100 x 70 x 110 mm
Weight	550 g

Delivery incl. wall power supply 12 V.

Art. No.	Pack Qty.	€
AN62.1	1	299,00

Vortexer, small shakers

NEW

Rotilabo® Mini Vortex test tube shaker

Made from ABS and silicone materials. Specially designed for low space requirements and mixing small sample quantities by means of a touch function.

- For small containers with a diameter of up to 30 mm such as test tubes, centrifuge tubes, reaction vials, etc.
- With fixed speed setting of 4500 rpm
- Quiet operation with good mixing effect

Technical specifications:

Shaking motion	Circular, vibrating
Shaking stroke	6 mm
Speed range	4500 rpm
Dimensions (W x H x D)	110 x 75 x 130 mm
Weight	0.9 kg
Power supply	100-240 V, 50/60 Hz

Delivery incl. plug-in power supply 12 V and two standard silicone attachments.

Art. No.	Pack Qty.	€
HXH6.1	1	99,15

Rotilabo®-vortex mixing adapters

For 1.5 ml microcentrifuge tubes. Ideal for all vortex or test tube shakers with rubber plate or mounting device for test tubes. Features solid shaft with affixed round plate for holding microcentrifuge tubes.
A second movable plate prevents the tubes from falling out.
Shaft length 165 mm with rounded grip (∅ 25 mm) on top end.

Design	Art. No.	Pack Qty.	€
For 8 micro-centrifuge tubes	**L660.1**	1	121,50
For 20 micro-centrifuge tubes	**L661.1**	1	137,60

RS series test tube shakers

General information for both models
For mixing small sample quantities in test tubes, centrifuge tubes, reaction vials etc.

- Continuous / touch operation
- Robust housing design
- Slip-resistant silicon feet

RS-VF 10
With fixed speed of 2500 rpm

RS-VA 10
With variable speed control from 0 to 2500 rpm

Technical specifications:

Type	RS-VF 10	RS-VA 10
Shaking motion	circular, vibrating	
Shaking stroke	4 mm	
Speed range	2500 rpm	0-2500 rpm
Dimensions (W x H x D)	127 x 160 x 130 mm	
Weight	3.5 kg	
Mains connection	220-230 V, 50 Hz	

Delivery incl. standard attachment for test tubes and small containers.

Type	Art. No.	Pack Qty.	€
RS-VF 10	**PX87.1**	1	133,30
RS-VA 10	**PX88.1**	1	165,55

Accessories for RS series test tube shakers

One-hand attachment, large
For single-handed shaking of Erlenmeyer flasks, bottles etc.
With rubber mat (∅ 99 mm).

Art. No.	Pack Qty.	€
PX89.1	1	34,40

Vortexer, small shakers

Test tube shaker with infrared sensor type ZX4

- IR sensor mode or continuous duty is selectable
- When the non-contact IR sensor is activated, the test tube shaker starts the typical vortex movement at the previously set speed as soon as a test tube is detected in the immediate vicinity
- Rugged housing with non-slip feet

Technical specifications:

Shaking motion	Circular, vibrating
Shaking stroke	4.5 mm
Speed range	0 to 3000 rpm
Dimensions (W x D x H)	150 x 165 x 130 mm
Weight	2.7 kg
Mains voltage	100 to 240 V, 50/60 Hz

Delivery incl. standard attachment for test tubes and small vessels.

Art. No.	Pack Qty.	€
ACN9.1	1	177,40

Accessories for test tube shaker type ZX4

① **Attachment for 19 1.5/2.0 ml reaction vials**

Art. No.	Pack Qty.	€
ACP0.1	1	39,05

② **Attachment for 5 sample vials ∅ 16 mm**

Art. No.	Pack Qty.	€
ACP1.1	1	39,05

③ **Attachment for 4 centrifuge vials 50 ml (29 mm)**

Art. No.	Pack Qty.	€
ACP2.1	1	47,65

Vortex mixer with multifunctional attachment

Suitable for continuous or intermittent operation, with touch function, activated by applying pressure to the shaker attachment.

- With multifunctional attachment for six different vial types and a microtiter plate:
  2 x 50 ml centrifuge vials (horizontal loading)
  2 x 15 ml centrifuge vials (horizontal loading)
  4 x 1.5/2.0 ml reaction vials (vertical loading)
  6 x 0.5 ml reaction vials (vertical loading)
  24 x 0.2 ml reaction vials (vertical loading)
  2 x 5 ml reaction vials (horizontal loading)
  1 x microtiter plate

- A standard attachment for single-handed shaking of test tubes and vials is also integrated in the multifunctional platform
- Speed adjustment in 3 stages
- Attachment can be removed for cleaning

Technical specifications:

Shaking motion	Circular, vibrating
Shaking stroke	3.7 mm
Speed range	1000, 2000 or 3000 rpm
Dimensions (W x H x D)	171 x 197 x 190 mm
Weight	4 kg
Power supply	220 to 240 V, 50/60 Hz

Art. No.	Pack Qty.	€
CNH7.1	1	225,75

▶ Stands for centrifuge tubes see page 237

Vortexer, small shakers

Shaker Vortex Genie® 1

By Scientific Industries.

- Robust construction with high stability
- For speedy and intensive mixing of samples
- Unit starts automatically at maximum speed by pressing down the holder, thus reducing the vortex time

Technical specifications:

Shaking motion	rotary
Speed max.	2700 rpm
Safe ambience conditions	-0 to +38 °C at 95 % rh
Dimensions of unit (L x W x H)	165 x 122 x 190 mm
Weight	4.0 kg
Current	230/240 V, 50 Hz

Delivery incl. standard holder (Inner-∅ 25 mm) for one-handed shaking of test tubes, sample vials and centrifuge tubes.

Art. No.	Pack Qty.	€
AH32.1	1	315,00

Accessories for shaker Vortex Genie® 1

By Scientific Industries.

Shaker dish (∅ 75 mm)

For single-handed shaking of beakers, Erlenmeyer flasks, bottles etc.
Delivery without rubber plate (please order separately, necessary for operating with shaker dish).

Art. No.	Pack Qty.	€
P507.1	1	34,35

Rubber plate, with knobs

Art. No.	Pack Qty.	€
P508.1	1	34,35

Test tube shakers REAX top and REAX control

By Heidolph. Compact, high-performance shakers. Relatively heavy, pressurized housing for high safety. The shaker has been constructed in such a way that it prevents splashing liquid from penetrating into the unit. Practical changeover switch from interval to continuous operation.

Technical specifications:

Model	REAX top	REAX control
Motion	circular, vibrating	
Shaking frequency	0 to 2500 rpm	
Orbit	5 mm	
Control accuracy	not controlled	±2 %
Power consumption	42 W	42 W
Weight	3300 g	
Dimensions (W x D x H)	134 x 172 x 105 mm	
System of protection	IP 22	
Ambient temperature	+5 to +40 °C at 85 % rh	

Delivery incl. small receptacle plate for vials up to 20 mm ∅.

Type	Art. No.	Pack Qty.	€
REAX top	**L952.1**	1	284,00
① REAX control	**L953.1**	1	414,00

Accessories for REAX top and REAX control

By Heidolph.

② **Mounting plate, large**
For flasks up to 50 ml.

Art. No.	Pack Qty.	€
L954.1	1	32,00

③ **Supporting rod with vessel holder**
For secure holding of test tubes and flasks in continuous operation. Supporting rod made of V2A, length 210 mm.

Art. No.	Pack Qty.	€
H826.1	1	78,00

④ **Holding rack 10**
For max. 10 centrifuge tubes (∅ 10 mm, L 60 mm).

Art. No.	Pack Qty.	€
L955.1	1	32,00

Vortexer, small shakers

Vortex-Genie®-series

By Scientific Industries. Robust and reliable shakers for speedy mixing and shaking of samples

- Multiple accessories: e.g. adapter tops for test tubes, beakers, centrifuge tubes etc.
- Adapter tops can be changed easily with the snap fit system

① **Vortex-Genie® 2**
Interval operation (with automatic start and by pressing the top) or permanent run possible.

② **Vortex-Genie® 2T with integrated timer**
Possible settings: 1 to 60 sec (Interval operation), 1 to 60 min (Hands-free mode) or permanent run.

③ **Digital Vortex-Genie® 2 with speed and time adjustment (Timer function) via digital display**
Possible settings: 1 to 99 sec (Interval operation), 1 to 99 min (Hands-free mode) or permanent run. Mixer switches over to "Sleep"-mode after 10 minutes without operation. Speed can be increased in 10 rpm increments.

④ **Digital Vortex Genie® 2 Pulse**
same as Digital Vortex Genie® 2, with additional functions (but without touch function):

- Programmable pulse function for various applications
- Depending on the selected pulse and interval times, the mixer can be used for high-speed and intensive mixing of specimens or for intermittent mixing
- The programmable pulse function is, for example, suited to heat-sensitive specimens which are required to be held in suspension without heating
- Pulse and interval times (On/Off) are adjustable from 0.1 sec to 99 min

Technical specifications:

Model	① Vortex-Genie® 2	② Vortex-Genie® 2T	③ + ④ Digital Vortex-Genie® 2/ Digital Vortex Genie® 2 Pulse
Shaking movement	circular		
Speed display/Timer	Scale/No	Scale/Scale	Digital/Digital
rpm range (rpm)	600 to 2700	600 to 2700	500 to 2850
Timer: Interval operation Hands-free mode	-	 1 to 60 sec 1 to 60 min	 1 to 99 sec 1 to 99 min
Dimensions L x W x H (mm)	165 x 122 x 165		
Permissible ambient conditions	0 to 38 °C at 95 % rh		
Weight (kg)	4		
Mains supply	230 V, 50/60 Hz		

Delivery incl. standard top (Inner-∅ 25 mm) and shaking plate (∅ 75 mm).

Type	Art. No.	Pack Qty.	€
① Vortex-Genie® 2	**P505.1**	1	364,45
② Vortex-Genie® 2T	**X561.1**	1	431,10
③ Digital Vortex-Genie® 2	**HH64.1**	1	465,50
④ Digital Vortex-Genie® 2 Pulse	**PK04.1**	1	504,20

Accessories for Vortex-Genie®-series

By Scientific Industries.

① **TurboMix® holder**
For simultaneous shaking of twelve 1.5/2.0 ml microcentrifuge tubes. Suitable for cell disintegration with glass beads. Higher efficiency when mixing.

Type	Art. No.	Pack Qty.	€
TurboMix®	**P517.1**	1	287,05

② **Spare standard holder**
For single-handed shaking of test tubes.

Type	Art. No.	Pack Qty.	€
Spare standard holder	**P506.1**	1	34,35

③ **Shaker dish and spare rubber plate**
For single-handed shaking of beakers, Erlenmeyer flasks, bottles, etc.

Type	Art. No.	Pack Qty.	€
Shaker dish	**P507.1**	1	34,35
Rubber plate	**P508.1**	1	34,35

Accessories for Vortex-Genie®-series

By Scientific Industries.

④ **Shaker dish and holder for microcentrifuge tubes**
For shaking and mixing samples in microcentrifuge tubes.

Type	Art. No.	Pack Qty.	€
Shaker dish ∅ 15 cm	**P509.1**	1	50,00
Holder for 60 microcentrifuge tubes	**P510.1**	1	30,35

⑤ **Shaker dish and holder for micro well plates**
Ideal for shaking cell cultures and other samples in microwell plates.

Type	Art. No.	Pack Qty.	€
Shaker dish ∅ 15 cm	**P509.1**	1	50,00
Holder for microtitre plates	**P511.1**	1	31,00

⑥ **Angular dish and rubber bands**
For shaking and mixing samples in beakers, Erlenmeyer flasks, bottles. Vessels are safely secured with rubber bands.

Type	Art. No.	Pack Qty.	€
Angular dish	**P512.1**	1	128,50
Rubber bands	**P513.1**	2	9,90

⑦ **Angular dish and holders for test tubes**
For shaking several test tubes simultaneously.

Type	Art. No.	Pack Qty.	€
Angular dish	**P512.1**	1	128,50
Holder for 12 test tubes 9-16 mm	**P514.1**	1	17,75
Holder for 8 test tubes 14-29 mm	**P515.1**	1	23,60
Holder for 4 test tubes 29-37 mm	**P516.1**	1	17,35

Holder for centrifuge tubes
For shaking and mixing samples in centrifuge tubes.

Type	Art. No.	Pack Qty.	€
Holder for 12 centrifuge tubes 15 ml (∅ 17 x L 120 mm)	**LY19.1**	1	165,05
⑧ Holder for 6 centrifuge tubes 50 ml (∅ 30 x L 115 mm)	**LY20.1**	1	150,50
⑨ Holder for 6 centrifuge tubes 50 ml, 6 centrifuge tubes 15 ml and 12 microcentrifuge tubes 1,5/2,0 ml	**XX95.1**	1	187,05

Vortexer, small shakers

Vortex 2 test tube shaker

By IKA. For short operation (touch function) or continuous operation.
- Stands firmly thanks to sturdy zinc die-cast casing
- Attachments click into place
- Numerous accessories, e.g. attachments for reaction vessels, microtitration plates, etc.

Technical specifications:

Shaking motion	Circular, vibrating
Shaking stroke	4 mm
Speed range	500 to 2500 rpm
Dimensions (W x D x H)	120 x 140 x 138 mm
Weight	3.9 kg
Power supply	220-240 V or 115 V or 100 V, 50/60 Hz

Delivery incl. standard attachment VG 3.1.

Art. No.	Pack Qty.	€
EHP7.1	1	229,00

Attachments for Vortex 2

By IKA.

① **Replacement standard attachment VG 3.1**

Art. No.	Pack Qty.	€
EE35.1	1	10,00

② **Single-handed attachment VG 3.2**
For shaking conical flasks, bottles, etc. with one hand.
With rubber insert (∅ 88 mm).

Art. No.	Pack Qty.	€
EE36.1	1	21,00

③ **Universal attachment VG 3.3**
For attaching different inserts for test tubes and microtitration plates, etc.
Please order separately. See accessories for universal attachment VG 3.3.

Art. No.	Pack Qty.	€
EE37.1	1	23,00

Accessories for universal attachment VG 3.3

By IKA.

④ **Test tube inserts**

Type	Art. No.	Pack Qty.	€
for 54 reaction vials 1.5/2.0 ml (Type VG 3.31)	**EE38.1**	1	56,00
for 18 test tubes ∅ 10 mm (Type VG 3.32)	**EE39.1**	1	29,00
for 12 test tubes ∅ 12 mm (Type VG 3.33)	**EE40.1**	1	29,00
for 8 test tubes ∅ 16 mm (Type VG 3.34)	**EE41.1**	1	29,00
for 8 test tubes ∅ 20 mm (Type VG 3.35)	**EE42.1**	1	29,00

⑤ **Erlenmeyer flask tightening strap VG 3.36**
Tightening strap for 1 Erlenmeyer-/round flask from 100 to 250 ml.

Type	Art. No.	Pack Qty.	€
Erlenmeyer tightening strap VG 3.36	**EE43.1**	1	29,00

⑥ **Microtiter plate insert VG 3.37**, for 1 microtiter plate

Type	Art. No.	Pack Qty.	€
Microtiter plate insert VG 3.37	**EE44.1**	1	29,00

Test tube shaker Vortex Genius 3

By IKA. For short-time operation (touch function), activated by pressing the top of the shaker, or for continuous operation.
- Infinitely adjustable speed setting
- With a variety of accessories: e.g. attachment for test tubes, centrifuge tubes etc. (please order separately)
- Simple "Click-on" of attachment

Technical specifications:

Shaking motion	rotary
Shaking stroke	4 mm
Adjustable speed range	500 to 2500 rpm
Dimensions (W x D x H)	127 x 149 x 136 mm

Delivery incl. standard attachments for test tubes and small vessels.

Art. No.	Pack Qty.	€
EE34.1	1	369,00

Attachment for Vortex Genius 3

By IKA.

① **Spare standard attachment VG 3.1**

Art. No.	Pack Qty.	€
EE35.1	1	10,00

② **Single-hand attachment VG 3.2**
For single-handed shaking of Erlenmeyer flasks, bottles etc.
With rubber insert (∅ 88 mm).

Art. No.	Pack Qty.	€
EE36.1	1	21,00

③ **Universal attachment VG 3.3**
Ideal for mounting different inserts for test tubes and microtiter plates, etc.
Please order separately. See accessories for universal attachment VG 3.3.

Art. No.	Pack Qty.	€
EE37.1	1	23,00

Accessories for universal attachment VG 3.3

By IKA.

④ **Test tube inserts**

Type	Art. No.	Pack Qty.	€
for 54 reaction vials 1.5/2.0 ml (Type VG 3.31)	**EE38.1**	1	56,00
for 18 test tubes ∅ 10 mm (Type VG 3.32)	**EE39.1**	1	29,00
for 12 test tubes ∅ 12 mm (Type VG 3.33)	**EE40.1**	1	29,00
for 8 test tubes ∅ 16 mm (Type VG 3.34)	**EE41.1**	1	29,00
for 8 test tubes ∅ 20 mm (Type VG 3.35)	**EE42.1**	1	29,00

⑤ **Erlenmeyer flask tightening strap VG 3.36**
Tightening strap for 1 Erlenmeyer-/round flask from 100 to 250 ml.

Type	Art. No.	Pack Qty.	€
Erlenmeyer tightening strap VG 3.36	**EE43.1**	1	29,00

⑥ **Microtiter plate insert VG 3.37**, for 1 microtiter plate

Type	Art. No.	Pack Qty.	€
Microtiter plate insert VG 3.37	**EE44.1**	1	29,00

Vortex 4 basic small shaker

By IKA. Suitable for shaking small vessels. Suitable for short-time use (touch function), activated by applying pressure to the shaker attachment, or for continuous operation. Rugged die cast zinc housing.

Two operating modes are selectable.
Mode A: safe mode with attachment detection and speed limiter.
Mode B: without attachment detection.

Technical specifications:

Shaking motion	rotary
Shaking stroke	4.5 mm
Max. speed	3000 rpm
Speed display	Scale
Timer	No
Time range	-
Dimensions (W x D x H)	176 x 190 x 63 mm
Weight	3.0 kg

Scope delivery Vortex 4 basic incl.: Standard attachment MS 3.1. ①, Universal attachment MS 3.3 ② and single-hand attachment MS 1.21 ③.

Art. No.	Pack Qty.	€
TK48.1	1	381,00

Attachments for Vortex 4 basic

By IKA.

① Replacement standard attachment MS 3.1

Art. No.	Pack Qty.	€
EY89.1	1	15,00

⑤ Microtitration attachment MS 3.4

Art. No.	Pack Qty.	€
EY91.1	1	47,00

② Universal attachment MS 3.3

For attachment of various inserts for test tubes and sample tubes.
See Accessories for universal attachment 3.3.
Please order inserts separately.

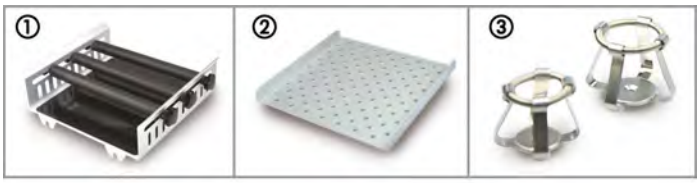
Art. No.	Pack Qty.	€
TK50.1	1	15,00

Accessories for universal attachment 3.3

By IKA.

One-hand attachment and test tube inserts

Product	Art. No.	Pack Qty.	€
③ One-hand attachment (type MS 1.21)	**TK51.1**	1	21,00
For 14 test tubes, each ∅ 10 mm (type MS 1.31)	**TK52.1**	1	47,00
④ For 6 test tubes, each ∅ 12 mm (type MS 1.32)	**EY90.1**	1	47,00
For 4 test tubes, each ∅ 16 mm (type MS 1.33)	**TK53.1**	1	47,00



RS-series platform shakers

Suitable for agitating 5 Petri dishes, with optional attachment for Erlenmeyer flasks.

- Max. load capacity: 3 kg
- Continuous speed adjustment

Technical specifications:

Model	RS-OS 5	RS-LS 5
Type of motion	orbital	linear
Speed range (rpm)	0 to 200	
Shaking amplitude (stroke in mm)	20	
Shaking area W x D (mm)	240 x 240	
Dimensions W x D x H mm	245 x 125 x 310	
Weight (kg)	3.1	
Perm. ambient conditions	4 to +40 °C at 80 % RH	
Power supply	100 to 240 V, 50/60 Hz	

Delivery incl. tray top with 6 fixing straps.

Type	Art. No.	Pack Qty.	€
RS-OS 5	**CAX8.1**	1	499,90
RS-LS 5	**CAX9.1**	1	499,90

Accessories for RS series platform shakers

① Universal tray
Various loading options, e.g. 6 250 ml Erlenmeyer flasks.
Delivery incl. 3 adjustable clamping rolls.

Type	Art. No.	Pack Qty.	€
Universal tray	**CAY0.1**	1	145,15

② Spring clip tray
For shaking Erlenmeyer flasks.
With holes for individual fastening of spring clips.
Delivery without spring clips (please order separately).

Type	Art. No.	Pack Qty.	€
Spring clip tray	**CAY1.1**	1	145,15

③ Spring clips

Type	Art. No.	Pack Qty.	€
Spring clips for 25 ml flasks (max. 18)	**CAY2.1**	1	28,95
Spring clips for 50 ml flasks (max. 18)	**CAY3.1**	1	31,10
Spring clips for 100 ml flasks (max. 9)	**CAY4.1**	1	31,10
Spring clips for 250 ml flasks (max. 6)	**CAY5.1**	1	40,75
Spring clips for 500 ml flasks (max. 4)	**CAY6.1**	1	43,70

Digital orbital shaker

- Circular movement
- Plates, petri dishes, glass plungers and culture bottles can be secured flexibly using rubber straps
- Digital display of speed and running time
- Electronic speed control with softstart function
- Loading options: e.g. 9 x 250 ml Erlenmeyer flasks or 4 x 500 ml Erlenmeyer flasks or 4 x 1000 ml Erlenmeyer flasks or 16 x 250 ml beakers or 4 x 1000 ml beakers

Technical specifications:

Speed control range	20 to 300 rpm
Shaking amplitude (stroke)	19 mm
Timer	1 min to 49 h or continuous operation
Shaking surface area	279 x 279 mm
Dimensions (W x D x H)	314 x 312 x 197 mm
Loading capacity	4.5 kg
Ambient conditions	+2 to +40 °C at 80 % rel. humidity
Power supply	100-240 V, 50/60 Hz

Delivery incl. platform with rubber mat and 8 rubber straps.

Art. No.	Pack Qty.	€
PY67.1	1	736,40

Platform shaker mini 100 Orbital-Genie™

By Scientific Industries.

- Max. load capacity: 3 kg
- Continuous speed adjustment
- Optionally extendible to 3 tiers with additional platforms (see figure ①; please order separately)

Technical specifications:

Action	orbital
Speed range	20 to 100 rpm
Shaking amplitude (stroke)	19 mm
Shaking area (W x D)	290 x 290 mm
Dimensions (W x D x H)	350 x 350 x 90 mm
Weight	3.5 kg
Permissible ambient conditions	0 to +38 °C at 95% RH
Power supply	230 V, 50 Hz

Delivery incl. dish attachment and anti-slip mat.

Art. No.	Pack Qty.	€
HHP1.1	1	883,65

① Attachment system for Mini 100 Orbital-Genie™

By Scientific Industries.
With additional platforms, extendible as 2nd and 3rd tier.
Shaking area dimensions 290 x 290 mm.
Dimensions: W 318 x D 318 x H 114 mm. Weight 1.3 kg.

Art. No.	Pack Qty.	€
HHP2.1	1	168,80

Shakers Titramax 100 and Vibramax 100

By Heidolph. For universal use.
- Motion: circular vibrating
- Infinitely adjustable speed setting
- Speed display scale
- With overheating protection
- Minimal self-heating
- Maintenance-free motor

Technical specifications:

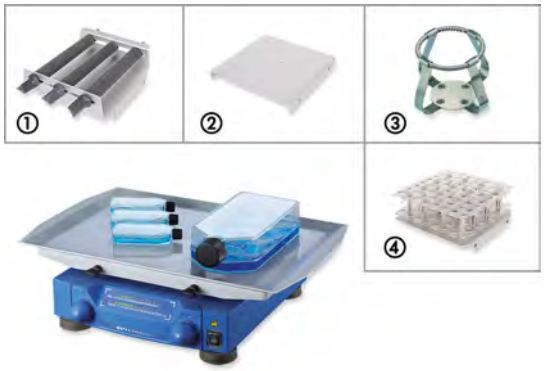
Model	Titramax 100	Vibramax 100
rpm range	150 to 1350 rpm	
Orbit	1.5 mm	3 mm
Weight capacity	2 kg	
Time switch	0 to 120 min or continuous run	
Power consumption	15 W	
Dimensions of working surface (W x D)	220 x 220 mm	
Dimensions of unit (W x H x D)	245 x 125 x 310 mm	
System of protection	IP 30	
Weight	5500 g	
Current	230/240 V, 50/60 Hz	

① **Titramax 100**
The purpose-made holders can hold up to 4 microtiter plates, size 85 x 128 mm.

② **Vibramax 100**
Standard equipment: Rubber platform with beaded edge.
Optional accessory: platform with two tension rollers (please order separately).

Type	Art. No.	Pack Qty.	€
Titramax 100	**H831.1** *	1	898,00
Vibramax 100	**H832.1** *	1	918,00
Accessories:			
③ Universal-top for Vibramax 100, with 2 adjustable tighteners	**H833.1** *	1	125,00
Clamping roller for universal attachment	**LY48.1** *	1	35,00

* Longer delivery times possible. Please check with our Sales Department.



Orbital shaker KS 130 basic complete set

By IKA. Suitable for mixing liquids in various vessels through the use of different attachments.

- Circular movement
- Speed display: 10 LED display bar with scale in graduations of 80 rpm
  Time adjustment: 10 LED display bar with scale in increments of 5 min
- Max. shaking weight: 2 kg

Technical specifications:

Speed control range	80 to 800 rpm
Shaking amplitude (stroke)	4 mm
Timer	5 to 50 min or continuous duty
Dimensions (W x D x H)	270 x 316 x 98 mm
Perm. ambient conditions	+5 to +50 °C at 80 % rel. humidity
Weight	8.8 kg

Delivery incl. dish attachment AS 130.3 (surface area: W 340 x D 220 mm) for culture bottles and petri dishes with integrated non-slip mat.

Art. No.	Pack Qty.	€
PA19.1	1	1499,00

Attachment systems and accessories for KS 130 basic shaker

By IKA.

① **Universal attachment AS 130.1**
Can be adjusted to fit all types of vessel with infinitely adjustable clamping rolls. Surface area: 220 x 220 mm.
Delivery incl. 3 clamping rolls.

Model	Art. No.	Pack Qty.	€
Universal attachment AS 130.1	**PA23.1**	1	313,00

② **Fixing clip attachment AS 130.2**
Suitable for shaking round bottomed flasks, volumetric flasks and Erlenmeyer flasks, etc. Dimensions: W 230 x D 230 x H 24 mm.
Holding clamps not included (please order separately).

Model	Art. No.	Pack Qty.	€
Fixing clip attachment AS 130.2	**PA24.1**	1	94,00

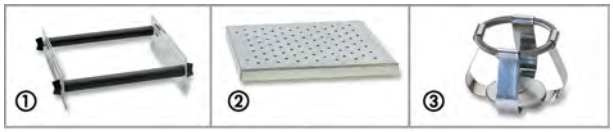
③ **Fixing clips**

Model	Art. No.	Pack Qty.	€
Fixing clips for 25 ml flasks (max. 20)	**X185.1** *	1	22,00
Fixing clips for 50 ml flasks (max. 12)	**X186.1** *	1	22,00
Fixing clips for 100 ml flasks (max. 12)	**X187.1** *	1	22,00
Fixing clips for 200/250 ml flasks (max. 4)	**X188.1** *	1	43,00
Fixing clips for 500 ml flasks (max. 4)	**X189.1** *	1	43,00

* Longer delivery times possible. Please check with our Sales Department.

④ **Test tube attachment AS 130.4**
For intensive shaking of small tubes, test tubes and centrifuge tubes, etc. For 64 test tubes with diameters from 10 to 16 mm.
Minimum test tube height: 80 mm. Dimensions: W 200 x D 230 x H 95 mm.

Model	Art. No.	Pack Qty.	€
Test tube attachment AS 130.4	**PA25.1**	1	211,00



Rotamax 120 platform shaker

By Heidolph. Suitable for agitating 5 petri dishes, with optional attachment for Erlenmeyer flasks up to 1000 ml.

- Max. load capacity: 2 kg
- Continuous speed adjustment
- Speed display with scale

Technical specifications:

Type of motion	Orbital
Speed range	20-300 rpm
Shaking amplitude (stroke)	20 mm
Timer	0-120 min / continuous operation
Shaking area (W x D)	220 x 220 mm
Dimensions (W x H x D)	245 x 125 x 310 mm
Weight	5.5 kg
Perm. ambient conditions	0 to +50 °C at 80 % rH
Power supply	230 V, 50/60 Hz

Delivery incl. non-slip rubber mat with raised edge.

Art. No.	Pack Qty.	€
LY47.1	1	985,00

Accessories for Rotamax 120 platform shaker

By Heidolph.

① **Universal attachment**
With 2 adjustable clamping rollers

Product	Art. No.	Pack Qty.	€
Universal attachment	**H833.1** *	1	125,00

Clamping roller for universal attachment
Additional clamping roller suitable for universal attachment.

Product	Art. No.	Pack Qty.	€
Clamping roller for universal attachment	**LY48.1** *	1	35,00

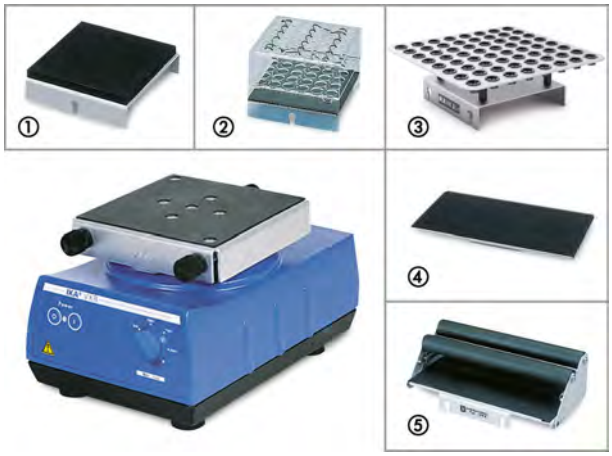
② **Tablar 100 perforated platform**
For shaking Erlenmeyer flasks. Perforated for individual arrangement of flasks, secured with spring clips.
Delivery without spring clips (please order separately).

Product	Art. No.	Pack Qty.	€
Tablar 100 perforated platform	**LY49.1** *	1	75,00

③ **Spring clips for Tablar 100**

Product	Art. No.	Pack Qty.	€
Spring clips for 25 ml flasks (max. 16)	**HL12.1** *	1	18,00
Spring clips for 50 ml flasks (max. 16)	**HL13.1** *	1	21,00
Spring clips for 100 ml flasks (max. 8)	**HL14.1** *	1	24,00
Spring clips for 250 ml flasks (max. 5)	**HL15.1** *	1	31,00
Spring clips for 500 ml flasks (max. 3)	**HL16.1** *	1	33,00
Spring clips for 1000 ml flasks (max. 2)	**HL17.1** *	1	39,00

* Longer delivery times possible. Please check with our Sales Department.



Shaker VXR basic Vibrax®

By IKA.

Features

- Movement: circular
- Infinitely adjustable speed setting
- Speed display with scale
- Load max. 2 kg (including platform)
- Units have been designed for continuous operation
- **Delivery without platform** (please order separately)

Technical specifications:

Rpm range	0 to 2200 rpm
Shaking stroke	4 mm
Motor power: input / output	35/13.2 W
Dimensions (W x D x H)	157 x 247 x 130 mm
Weight (without platform)	5700 g

Art. No.	Pack Qty.	€
Y517.1	1	1399,00

Top systems for shaker VXR basic

By IKA.

① **Single-hand top VX 1**
For shaking single, not fixed vessels from 1 to 250 ml.
Dimensions: W 130 x D 135 x H 40 mm. Weight 160 g.

Art. No.	Pack Qty.	€
Y518.1	1	89,00

② **Test tube glass holder VX 2**
For up to 36 test tubes or centrifuge tubes with ∅ 16 mm.
Dimensions: W 140 x D 145 x H 115 mm. Weight 300 g.

Art. No.	Pack Qty.	€
Y519.1	1	369,00

③ **Test tube rack VX 2E**
For shaking of up to 64 1.5 ml test tube.
Dimensions: W 210 x D 210 x H 39 mm. Weight 368 g.

Art. No.	Pack Qty.	€
Y520.1	1	359,00

④ **Tray top VX 7**
For gentle shaking, e.g. culture flasks and petri dishes.
Dimensions: W 410 x D 210 x H 40 mm. Weight 740 g.

Art. No.	Pack Qty.	€
Y521.1	1	261,00

⑤ **Universal top VX 8**
For quick and secure clamping of e.g. two 500 ml Erlenmeyer flasks.
Span range 25 to 135 mm. Min. height of vessel 80 mm.
Dimensions: W 265 x D 136 x H 60 mm. Weight 760 g.

Art. No.	Pack Qty.	€
Y522.1	1	628,00

① + ②

③

Shakers

By Heidolph. Infinitely adjustable speed. With timer or permanent run capabilities. Different attachments can be mounted as required. Weight 8 kg. Electrical supply 230/240 V, 50/60 Hz.

Technical specifications:

Model	UNIMAX 1010	PROMAX 1020	DUOMAX 1030	POLYMAX 1040
Motion	circular	back and forward	see-saw	three dimensional tumbling
Shaking frequency (rpm)	30-500	20-250	2-50	2-50
Orbit (mm)	10	32	-	-
Angle	-	-	5°	5°
W x D x H (mm)	320 x 375 x 125	320 x 375 x 125	320 x 375 x 185	320 x 375 x 195
Table (mm)	258 x 290	258 x 290	258 x 290	258 x 290
Speed display	digital	digital	Scale	Scale
Timer	digital 0 - 999 min	digital 0 - 999 min	timer 0 - 120 min	timer 0 - 120 min

Delivery incl. rubber support with beaded rim. Can be used with incubator (compatible with Incubator 1000, Art. No. H844.1).

① UNIMAX 1010

Rotating (circular) movement. Digital display. Membrane keyboard control panel. Shaking frequency can be set with the turn switch.

Art. No.	Pack Qty.	€
H834.1 *	1	1521,00

PROMAX 1020

Back and forward movement. Digital display. Key pad control panel. Shaking frequency can be set with the turn switch.

Art. No.	Pack Qty.	€
H835.1 *	1	1474,00

DUOMAX 1030

Seesaw motion, angle of inclination 5°. Rotary switch control.

Art. No.	Pack Qty.	€
H836.1 *	1	1412,00

③ POLYMAX 1040

Three dimensional tumbling motion, angle of inclination 5°. Rotary switch control.

Art. No.	Pack Qty.	€
H837.1 *	1	1430,00

* Longer delivery times possible. Please check with our Sales Department.

Accessories for UNIMAX 1010, PROMAX 1020, DUOMAX 1030 and POLYMAX 1040

By Heidolph.

Type	Art. No.	Pack Qty.	€
Tray for 14 Erlenmeyer flasks 50 ml	**H838.1** *	1	180,00
Tray for 9 Erlenmeyer flasks 100 ml	**H839.1** *	1	166,00
② Tray for 5 Erlenmeyer flasks 250 ml	**H840.1** *	1	153,00
Tray for 4 Erlenmeyer flasks 500 ml	**KA78.1** *	1	151,00
Tray for 2 Erlenmeyer flasks 1000 ml	**KA79.1** *	1	142,00
Tray with 2 tension rolls, general-purpose use	**H841.1** *	1	246,00
Tray for 4 separating funnels 50 ml or 100 ml	**H842.1** *	1	236,00

* Longer delivery times possible. Please check with our Sales Department.

Incubator 1000 for 5 kg-class shakers

By Heidolph.

Properties

- Rapid heating, no condensation in system
- Dimensions of incubation hood: W 546 x H 267 x D 394 mm
- Suitable for large volume or high vessels, e.g. Erlenmeyer flasks up to 1000 ml
- Compatible with Unimax 1010, Promax 1020, Duomax 1030 and Polymax 1040 models (please order separately)
- Hinged hood

Technical specifications of heating module:

Ideal for temperatures	+5 °C **over** room temperature to 65 °C
Heating	electr. recirculating air heating with fan
Heating capacity	300 W
Temperature control	electronic, with 2-digit display of set and actual value
Temperature accuracy	±2 K to 50 K; ±4 K from 50 to 65 K
Temperature sensor	Pt 100
Power supply	230/240 V, 50/60 Hz

Delivery incl. heating module with incubation hood.

Art. No.	Pack Qty.	€
H844.1 *	1	1761,00

* Longer delivery times possible. Please check with our Sales Department.

Shaker Multi Reax

By Heidolph.

Properties:

- Digital rpm display
- Motion: circular, vibrating
- Has overheating protection
- Time switch: 0 to 999 min (with acoustic signal) or continuous run
- With space for 26 tubes, ∅ 10 to 16 mm, length max. 160 mm and for 12 tubes, ∅ 16 to 32 mm, length max. 120 mm

Technical specifications:

rpm	150 to 2000 rpm
Orbit	3 mm
Power consumption	33 W
Dimensions of unit (W x D x H)	270 x 410 x 172 mm
Safe ambient conditions	-0 to +50 °C at 80 % rh
Weight	9800 g
Current	230/240 V, 50 Hz

Art. No.	Pack Qty.	€
Y359.1 *	1	1311,00

* Longer delivery times possible. Please check with our Sales Department.

Small shakers KM 2 battery-driven and KM 2

By Edmund Bühler.

② **Small shakers KM 2 Battery**

- Circular shaking movement
- LED display to set the speed and runtime, as well as the representation of the charging status
- Low heat emission also enables **use in refrigerators or incubators** (working temperature between +4 and +45 °C at 95 % rF.)
- Mains-free operation via rechargeable battery (minimum operating time under max. load 40 h)
- Battery can be recharged with a mains/battery charger or switched on permanent run. Mains pack have to be placed outside refrigerator/incubator.

Delivery incl. basic unit including vibration platform and fine-rib mat.

① **Small shaker KM 2**

- Space-saving circular shaker
- LED display to set the speed and runtime
- Robust, hard-wearing shell

Delivery incl. basic unit including vibration platform and fine-rib mat.

Technical specifications for KM 2 battery-driven and KM 2:

rpm range	30 to 220 rpm
Shaking amplitude (stroke)	20 mm
Time switch	0 to 99 h, 59 min /continuous run
Shaking surface (W x D)	200 x 295 mm
Max. load	2 kg
Dimensions (W x D x H)	250 x 415 x 145 mm
Weight	approx. 10 kg

Type	Art. No.	Pack Qty.	€
KM 2 battery-driven with mains pack	**H696.1** *	1	1917,80
KM 2	**L646.1** *	1	1479,20

* Longer delivery times possible. Please check with our Sales Department.

Accessories for KM 2 battery and KM 2

By Edmund Bühler.

③ **Universal tray**

Can be individually fit with spring clips. Length 300 x W 356 mm. Suitable for loading e.g. 8 x 500 ml or 12 x 250 ml Erlenmeyer flasks. Without spring clips (for spring clips, see shaker-accessories).

Art. No.	Pack Qty.	€
L647.1	1	212,85

Tension roller KM

To fix standing vessels safely on small shaker KM 2 battery-driven and KM 2. Suitable for loading e.g. 2 x 1000 ml or 9 x 100 ml Erlenmeyer flasks. Tension roller KM is attached to the rim of shaker vibrating plate with star grip screws.

Art. No.	Pack Qty.	€
T519.1	1	47,30

KL 2 combination shaker

By Edmund Bühler. Practical small shaker which can be switched over at any time **from circular to reciprocating movement**.

- **Max. load: 2 kg**
- Variable, electronic control
- Accessories (Tension roller, Clamping roller, Spring roller, see shaker accessories)
- Suitable for loading e.g. 4 x 500 ml or 2 x 1000 ml Erlenmeyer flasks
- Standard equipment: basic unit including platform system with 3 tension rollers h and fine-rib mat

Technical specifications:

rpm range	30 to 420 rpm
Shaking amplitude (stroke)	8 mm
Time switch	0 to 120 min / continuous run
Shaking surface (W x D)	300 x 300 mm
Dimensions (W x D x H)	355 x 455 x 195 mm
Weight	12.5 kg
Current	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
P436.1 *	1	1749,05

* Longer delivery times possible. Please check with our Sales Department.

Flask shaker SF1

By Stuart. Simulates a powerful hand movement.

- For max. 8 Erlenmeyer flasks or 500 ml screw thread bottles
- Robust construction with 4 vibration-absorbing feet

Technical specifications:

Speed	8-800 oscillations/min
Timer	10-60 min / permanent operation
Shaking amplitude (stroke)	1.5 mm
Load capacity	3 kg
Dimensions (W x D x H)	780 x 270 x 240 mm
Weight	8.3 kg
Mains supply	230 V, 50 Hz

Delivery incl. clamps.

Art. No.	Pack Qty.	€
EP81.1 *	1	1787,00

* Longer delivery times possible. Please check with our Sales Department.

Laboratory shakers Unimax 2010, Promax 2020 and Polymax 2040

By Heidolph. Can be used with various tops for mixing liquids in Erlenmeyer flasks, staining troughs and Petri dishes.

- Digital Speed display
- **Large platform for holding numerous samples, shaking surface: W 390 x D 340 mm**
- Max. load capacity 10 kg

Technical specifications:

Model	Unimax 2010	Promax 2020	Polymax 2040
Movement type	circular	reciprocating	tumbling
Speed range (rpm)	20 to 400		2.5 to 50
Shaking amplitude stroke (mm)	20		-
Angle of inclination (°)	-		5
Timer	0-120 min / permanent operation		
Dimensions W x D x H (mm)	426 x 455 x 135		426 x 455 x 208
Perm. ambient conditions	0 to +50 °C at 80 % rh		
Weight (kg)	16		
Power supply	230/240 V, 50 Hz		

Delivery incl. rubber top with beaded edge rim.

Type	Art. No.	Pack Qty.	€
Unimax 2010	**HL06.1** *	1	2192,00
Promax 2020	**HL07.1** *	1	2296,00
① Polymax 2040	**HL08.1** *	1	2321,00

* Longer delivery times possible. Please check with our Sales Department.

Adapter systems and accessories for laboratory shakers

By Heidolph.

② Base frame for tension rollers

Together with tensions rollers for attaching various vessels.
Delivery without tensions rollers, please order separately.

Type	Art. No.	Pack Qty.	€
Base frame for tension rollers	**HL09.1** *	1	170,00

③ Tension roller for base frame

Together with base frame for attaching various standing vessels.
Suitable for loading: e.g. 20 Erlenmeyer flasks 100 ml or 9 Erlenmeyer flasks 500 ml. Please order at least 2 rollers.

Type	Art. No.	Pack Qty.	€
Tension roller for base frame	**HL10.1** *	1	54,00

④ Universal tray 2000

For shaking Erlenmeyer flasks. With bore holes for individual mounting with spring clips.
Delivery without spring clips, please order separately.

Type	Art. No.	Pack Qty.	€
Universal tray 2000	**HL11.1** *	1	170,00

⑤ Spring clips for universal tray 2000

Type	Art. No.	Pack Qty.	€
Spring clip for 25 ml flask (max. 36)	**HL12.1** *	1	18,00
Spring clip for 50 ml flask (max. 36)	**HL13.1** *	1	21,00
Spring clip for 100 ml flask (max. 23)	**HL14.1** *	1	24,00
Spring clip for 250 ml flask (max. 12)	**HL15.1** *	1	31,00
Spring clip for 500 ml flask (max. 9)	**HL16.1** *	1	33,00
Spring clip for 1000 ml flask (max. 5)	**HL17.1** *	1	39,00
Spring clip for 2000 ml flask (max. 3)	**KA43.1** *	1	55,00

* Longer delivery times possible. Please check with our Sales Department.

Compact shakers KS-series

By Edmund Bühler.
Models KS:

- Model KS 15 A: circular movement
- Model KS 15 B: reciprocating movement
- Without digital display

Models KS control:

- Model KS 15 A control: circular movement
- Model KS 15 B control: reciprocating movement
- With digital display of set/actual speed
- Preset-function of last selected setting respectively programming of selective sequences (shaking frequency/length possible)

Technical specifications:

Speed range	30 to 420 rpm
Shaking amplitude (stroke)	17 mm
Weight capacity	15 kg
Time switch	KS 15 A/B control: 1 min - 100 h / continuous operating KS 15 A/B: 0- 120 min or continuous run
Dimensions (W x D x H)	510 x 490 x 150 mm
Weight	22 kg
Current	230 V, 50/60 Hz

Delivery without top (please order separately).
With the incubation hood TH 15 unit can be used as shaking incubator (please order separately Art. No. L492.1, see shaker-accessories).

Type	Art. No.	Pack Qty.	€
KS 15 A	**P432.1** *	1	1811,40
KS 15 B	**P433.1** *	1	1872,65
KS 15 A control	**L490.1** *	1	2288,70
KS 15 B control	**L491.1** *	1	2355,35

* Longer delivery times possible. Please check with our Sales Department.

Accessories for compact shakers KS-series

By Edmund Bühler.

Standard attachment Combifix KS

Attachment rack with 3 tensioning bars and finely fluted rubber mat. Shaking surface 400 x 275 mm. For safe attachment of standing vessels. Can be loaded with: e.g. 20 Erlenmeyer flasks 100 ml or 2 Erlenmeyer flasks 2000 ml. Can also be used for other vessels when additional bars are used (see shaker accessories).

Art. No.	Pack Qty.	€
T497.1 *	1	367,65

Universal tray KS

Coated tray with holes which can be individually fit with spring clips or test tube racks. Shaking surface 430 x 300 mm.
Suitable for loading e.g. 15 x 250 ml or 5 x 1000 ml Erlenmeyer flasks.
Delivery without spring clips
(please order separately, see shaker-accessories).

Art. No.	Pack Qty.	€
P434.1 *	1	240,80

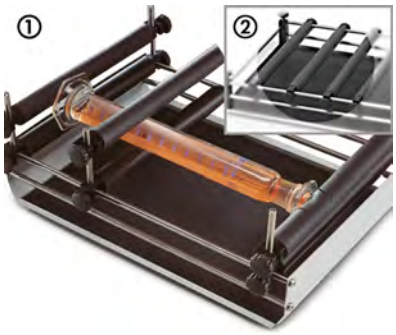
* Longer delivery times possible. Please check with our Sales Department.

Clamping roller / Spring roller

Fits
- Compact shaker KS 15A/B (L490.1, L491.1, P432.1, P433.1)
- Compact shaker (P436.1)
- Standard tray KS (T497.1)

For securing spherical separating funnels both rollers are required.

Type	Art. No.	Pack Qty.	€
Clamping roller	**L669.1**	1	117,20
Spring roller	**L670.1**	1	103,45



Tension rollers h / v

Fits

Compact shaker KS 15A/B (L490.1, L491.1, P432.1, P433.1), compact shaker KL 2 (P436.1) and standard tray KS (T497.1)

Tension roller h

Ideal for securing all vessels with flat base, e.g. Erlenmeyer flasks, glass beakers, test tube holders.

Tension roller v

Is used in combination with tension roller h to secure lying vessels or to support the side of tall vessels.

Max distance between rollers: 60 mm

Type	Art. No.	Pack Qty.	€
① Tension roller v	**L668.1**	1	86,45
② Tension roller h	**P435.1**	1	69,70

Test tube trays made of stainless steel

Can be secured to platforms with tension bars h. Can be attached to the standard trays: in combination with the swivel base (please order separately). Swivel base also enables the angle of the rack to be varied.

Type	Art. No.	Pack Qty.	€
for 68 test tubes ∅ 14 mm	**T498.1**	1	68,95
for 44 test tubes ∅ 16 mm	**T499.1**	1	68,95
for 44 test tubes ∅ 18 mm	**T500.1**	1	68,95
for 14 sample-/centrifuge tubes ∅ 30 mm	**AH14.1**	1	81,95
Swivel base for test tube holders	**T501.1**	1	42,90

Spring clips

For securing Erlenmeyer flasks on the multi-purpose platforms.

Type	Art. No.	Pack Qty.	€
for 10 ml Erlenmeyer flasks	**L648.1**	1	16,15
for 25 ml Erlenmeyer flasks	**L649.1**	1	17,20
for 50 ml Erlenmeyer flasks	**L650.1**	1	18,30
for 100 ml Erlenmeyer flasks	**L651.1**	1	21,85
for 250 ml Erlenmeyer flasks	**L652.1**	1	27,55
for 500 ml Erlenmeyer flasks	**L653.1**	1	32,15
for 1000 ml Erlenmeyer flasks	**L654.1**	1	35,50
for 2000 ml Erlenmeyer flasks	**L655.1**	1	48,20

Incubation hood TH 15

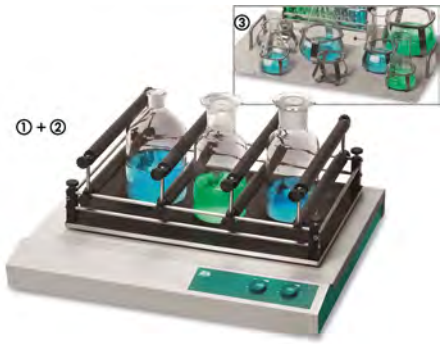
Fits
- Compact shaker KS 15A/B (L490.1, L491.1, P432.1, P433.1)
- Micro titre plate shaker TiMix 5 (T490.1, T491.1, T492.1)

Technical specifications:

Ideal for temperatures	+5 °C over room temperature to +50 °C
Temperature sensor	Pt 100
Control accuracy	±1 % of set value
Air circulation	240 m^3/h
Dimensions (L x W x H)	510 x 460 x 470 mm
Power supply	230 V, 50/60 Hz, 343 VA

Art. No.	Pack Qty.	€
L492.1 *	1	3219,65

* Longer delivery times possible. Please check with our Sales Department.



Universal shakers SM 30

By Edmund Bühler. Desktop shakers for high load in permanent run.

- All desired parameters can be set with control knobs
- Electronic speed control with gentle start-up
- Consistant of speed and run times are also possible with different loads
- Time switch: 0 to 120 min or continuous run
- Different shaking movements:
  Model A: revolvable
  Model B: see-saw (horizontal)
  Model C: can be switched over from circulating to see-saw

Together with the incubation hood TH 30 can be used as a shaking incubator (Please order incubation hood separately).

Technical specifications:

Speed range	15 to 300 rpm, infinitely variable
Shaking amplitude (stroke)	26 mm (Models A + C) 30 mm (Model B)
Max. load	30 kg
Ambient temperature	5 to 50 °C at 85 % rh
Dimensions (W x D x H)	680 x 615 x 160 mm
Weight	32 kg
Current	230 V, 50/60 Hz

Delivery incl. base unit plus vibrating plate and rubber mat. Comes without holder (please order desired holder separately).

Type	Art. No.	Pack Qty.	€
① Model A	**AH15.1** *	1	2911,10
Model B	**AH16.1** *	1	2972,40
Model C	**AH17.1** *	1	3853,90

Attachment systems for universal shakers SM 30

By Edmund Bühler.

Attachment rack Combifix SM, Set A

Rack with 5 tensioning bars h. For secure attachment of different standing vessels. Can be loaded with: e.g. 6 Erlenmeyer flasks 2000 ml or 20 Erlenmeyer flasks 250 ml.

Art. No.	Pack Qty.	€
AH18.1 *	1	409,60

② **Platform rack Combifix SM, Set B**

Rack with 4 tensioning bars h and 4 tensioning bars v.
Ideal for clamping horizontal vessels between the bars or for high vessels.
Distance between bars h + v: max. 60 mm.
Loading: e.g. 6 Erlenmeyer flasks 2000 ml or 12 Erlenmeyer flasks 500 ml.

Art. No.	Pack Qty.	€
AH19.1 *	1	510,65

③ **Universal tray SM**

Laminated board with bore holes for individual attachment of spring clips and test tube racks. Can be loaded with: e.g. 11 Erlenmeyer flasks 1000 ml or 23 Erlenmeyer flasks 250 ml.
Delivery without spring clips and test tube racks
(please order separately, see shaker accessories).

Art. No.	Pack Qty.	€
AH20.1 *	1	275,20

* Longer delivery times possible. Please check with our Sales Department.

Incubation hood TH 30

By Edmund Bühler. Heating and cooling chambers with standard and UV-lighting. Combined with the SM-shakers it can be used either as a complete shaking incubator or independently. A socket for smaller appliances is mounted inside the hood.

Standard features:

- Coated metal casing with 3 windows
- The front door opens upwards
- Safety switch-off of UV-light and automatic stop of shaker when front door is opened (when combined with universal shakers SM 30)

Technical specifications:

Ideal for temperatures	5 °C above room temperature to 50 °C
Temperature constancy	±1 % of desired value
Lighting	Standard 15 W UV-lighting 15 W
Temperature sensor	PT 100
Inner dimensions (W x D x H)	660 x 540 x 430 mm (High enough for 2 l Erlenmeyer flasks)
Outer dimensions (W x D x H)	680 x 610 x 560 mm
Weight	33 kg
Current	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
AH21.1 *	1	4094,70

Options:
Extended temperature range up to 60 °C.
Installation of additional heating appliances is possible to achieve temperatures of max 60 °C. **Please order with first order, if required.**

Art. No.	Pack Qty.	€
AH22.1 *	1	258,00

Cooling device for TH 30

Installation of cooling coil and connecting sleeves for connection of an external cooling device (circulating cooler etc. Please order separately). Depending on the cooling capacity of the cooling device, temperatures of app. 5 °C below room temperature can be achieved.
Please order with first order, if required.

Art. No.	Pack Qty.	€
AH23.1 *	1	589,10

* Longer delivery times possible. Please check with our Sales Department.

CO_2-resistant orbital shaker KM CO_2

By Edmund Bühler.

Features:

- Circular movement
- High-grade materials and stainless steel components especially for CO_2 concentrations up to 20 % and humidity of up to 95 % rF
- External control unit (corded L 2.0 m, ∅ 12 mm) with LED display for speed (resolution 5 rpm) and runtime (resolution 1 min). Control unit can be fastened to magnetic surfaces.
- Low heat emission

Technical specifications:

Speed control range	30 to 220 rpm
Shaking amplitude (stroke)	20 mm
Load capacity	2 kg
Timer	0 to 99 h, 59 min or continuous operation
Shaking area (W x D)	200 x 295 mm
Dimensions (W x D x H)	230 x 340 x 145 mm
Permissible ambient conditions	4 to 45 °C at 95 % rel. humidity; 0 to 20 % (CO_2 concentration)
Weight	7.6 kg
Power supply	230 V, 50/60 Hz

Delivery incl. external control unit and base unit with rubber mat.

Art. No.	Pack Qty.	€
ENE2.1	1	2413,40

Accessories for CO_2-resistant orbital shaker KM CO_2

By Edmund Bühler.

Universal tray

For individual equipping with spring clips. L 300 x W 356 mm. Variable loading options, e.g. 5 x 1000 ml Erlenmeyer flasks or 12 x 250 ml Erlenmeyer flasks.
Delivery without spring clips (spring clips see shaker accessories).

Art. No.	Pack Qty.	€
L647.1	1	212,85

Tension roller KM

For secure fastening of standing vessels. Suitable for loading e.g. 2 x 1000 ml or 12 x 50 ml Erlenmeyer flasks. The tension roller KM is attached to the rim of shaker vibrating plate with star grip screws.

Art. No.	Pack Qty.	€
T519.1	1	47,30

CO_2 resistant orbital shaker

By Thermo.

Features:

- Circular movement
- Protects specially treated mechanical components against CO_2 concentrations of up to 20 % and humidity of up to 95 %
- External control unit (corded L 2.0 m, ∅ 6 mm) with LED display for speed (resolution 1 rpm) and runtime (resolution 1 min)
- Low-maintenance magnetic drive
- Minimal heat emission, does not affect the conditions inside the CO_2 incubator
- Stainless steel construction for protection against corrosive CO_2 gas

Technical specifications:

Speed control range	30 to 300 rpm
Shaking amplitude (stroke)	19 mm
Load capacity	6 kg
Timer	0 to 99 h 59 min or continuous operation
Dimensions (W x D x H)	360 x 300 x 96 mm (shaker) 95 x 158 x 26 mm (control unit)
Permissible ambient conditions	4 to 60 °C at 95 % rel. humidity; 0 to 20 % (CO_2 concentration)
Weight	13 kg
Power supply	100-240 V, 50/60 Hz

Delivery incl. external control unit. Without all-purpose aluminium pullout tray and fixing clips (please order separately).

Art. No.	Pack Qty.	€
CXT3.1	1	2624,00

Accessories for CO_2 resistant orbital shaker

All-purpose aluminium pullout tray

For shaking Erlenmeyer flasks. Perforated for individual arrangement of flasks, secured with spring clips.
Delivery without fixing clips (please order separately).

Type	Art. No.	Pack Qty.	€
All-purpose aluminium pullout tray	**CXT4.1**	1	157,00

Fixing clips

Type	Art. No.	Pack Qty.	€
Fixing clips for 50 ml flasks (max. 30)	**CXT5.1**	1	9,95
Fixing clips for 100 ml flasks (max. 15)	**CXT6.1**	1	10,50
Fixing clips for 150 ml flasks (max. 15)	**CXT7.1**	1	13,50
Fixing clips for 200 ml flasks (max. 15)	**CXT8.1**	1	16,50
Fixing clips for 250 ml flasks (max. 15)	**CXT9.1**	1	15,50
Fixing clips for 500 ml flasks (max. 9)	**CXX0.1**	1	22,95
Fixing clips for 1000 ml flasks (max. 6)	**CXX1.1**	1	35,90
Fixing clips for 2000 ml flasks (max. 4)	**CXX2.1**	1	52,60
Fixing clips for 3000 ml flasks (max. 2)	**CXX3.1**	1	65,70
Fixing clips for 5000 ml flasks (max. 1)	**CXX4.1**	1	87,50

Test tube racks

Variable inclination angle. Dimensions: L 285 x W 125 x H 175 mm.

Type	Art. No.	Pack Qty.	€
For 40 ∅ 16 mm tubes (max. 2)	**CXX5.1**	1	84,10

Shakers for microtitration plates

Shaker Multi Vortex Genie®

By Scientific Industries. Robust and reliable shaking device for mixing and shaking of samples in Erlenmeyer flasks or vials.

Properties

- Digital display for speed and time
- Speed increase in steps of 10 rpm
- Robust metal case
- Secure stand at high speed thanks to supports with high vibration damping
- Can be loaded with e. g. max. 6 Erlenmeyer flasks 250 ml or 2 multi racks each for 12 test tubes (max. tube ∅ 10-29 mm, length min. 85 mm)
- After 10 minutes not in use, the mixer switches to "sleep" mode

Technical specifications:

Type of motion	circular, vibrating
Speed control range	250 to 950 rpm
Timer	1 to 99 min or continuous operation
Orbit	4 mm
Shaking area (W x D)	238 x 264 mm
Loading capacity	4.0 kg
Dimensions (W x D x H)	310 x 270 x 195 mm
Perm. ambient conditions	0 to +38 °C at 90 % rH
Weight	11.3 kg
Power supply	230 V, 50 Hz

Delivery incl. platform with clamp/tension roller (for securely attaching standing vessels) and 2 multi-racks.

Art. No.	Pack Qty.	€
LX88.1 *	1	2270,40

* Longer delivery times possible. Please check with our Sales Department.

MicroPlate Genie®-series microtitre plate shakers

By Scientific Industries. Specially designed for small samples in MT plates.

- Circular movement
- High speed for optimal mixing

MicroPlate Genie®
For powerful shaking of 1 MT plate.

Digital MicroPlate Genie® Pulse
like MicroPlate Genie®, but with extra functions:

- Digital display of speed and running time
- Choice of standard shake mode or pulse mode
- Depending on the selected pulse and pause duration, rapid and vigorous mixing or an intermittent mixing function is available
- Pulse and pause duration (On/Off) is adjustable from 0.1 sec to 99 min

Multi-MicroPlate Genie®
For reliable shaking of 4 MT plates. An additional attachment for a further 4 MT plates is optional (please order separately).

Technical specifications:

Type	MicroPlate Genie®	Digital MicroPlate Genie® Pulse	Multi-MicroPlate Genie®
Number of microtitration plates	for 1 MT plate		for 4 MT plates (8 MT plates with optional attachment)
Speed control range (rpm)	750 to 2700	500 to 2850	750 to 2700
Shaking amplitude (mm)	1		
Speed display/Timer	Scale/Scale	Digital / Digital	Scale/Scale
Time range	1 to 60 min / continuous duty		
Dimensions W x D x H (mm)	165 x 165 x 165		350 x 240 x 165
Weight (kg)	2.75		3.7
Power supply	230 V, 50/60 Hz		

Image	Type	Art. No.	Pack Qty.	€
①	MicroPlate Genie®	**CH98.1** *	1	636,40
②	Digital MicroPlate Genie® Pulse	**XP69.1** *	1	840,65
③	Multi-MicroPlate Genie®	**EH53.1** *	1	824,55

* Longer delivery times possible. Please check with our Sales Department

Attachment for Multi-MicroPlate Genie®

By Scientific Industries. For 4 additional MT-plates attached.
As a 2nd rack on top of the standard attachment.
Can only be used together with Multi-MicroPlate Genie® (EH53.1).

Art. No.	Pack Qty.	€
EH54.1	1	149,45

Shakers for microtitration plates

Magnetic shaker Monoshake

By Thermo. Ideal for shaking liquids in microwell plates
- Space efficient overall size
- Movement: circular
- Automatic centric zero positioning of shaking platform

Technical specifications:

Rpm range	100 to 2000 rpm
Shaking amplitude (stroke)	2 mm
Accuracy zero position	±0.1 mm
Ambient temperature	+5 to +40 °C at 95 % rh
Housing material	Aluminium/brass (nickel-plated)
Dimensions (W x D x H)	146 x 103 x 47 mm
Current	230 V, 50 Hz

Art. No.	Pack Qty.	€
X826.1 *	1	882,00

* Longer delivery times possible. Please check with our Sales Department

▶ For microtiter plates, see page 479

Rotilabo®-microtest plates

Made of transparent **PS**. With 96 alphanumerically coded cavities.
Different base profiles available. Produced under sterile working conditions.
Stackable.
Dimensions: L 128 x W 85 x H 15 mm.
Delivery without cover plate, please order separately.

Type	Volume per well (µl)	Art. No.	Pack Qty.	€
① U-profile (round)	345	**9291.1**	100	47,20
② V-profile (conical)	335	**9292.1**	100	53,70
③ F-profile (flat)	405	**9293.1**	100	58,05

▶ For multichannel pipettors, see page 449

Compact microtiter shaker

By Thermo.
For strong shaking of 4 MT plates.

- Digital display of speed and running time
- Reaction vial holders are optionally available as accessories (please order 2 identical frames separately).
  2 frames must be attached to the MT shaker for a balanced operation.

Technical specifications:

Speed control range	150 to 1200 rpm
Shaking amplitude	3 mm
Timer	1 min to 99 h, 59 min / continuous operation
Shaking area (W x D)	267 x 185 mm
Load capacity	4 kg
Permissible ambient conditions	4 to 60 °C at 80 % rel. humidity
Weight	7.7 kg
Dimensions (W x D x H)	249 x 329 x 127 mm
Power supply	100-240 V, 50/60 Hz

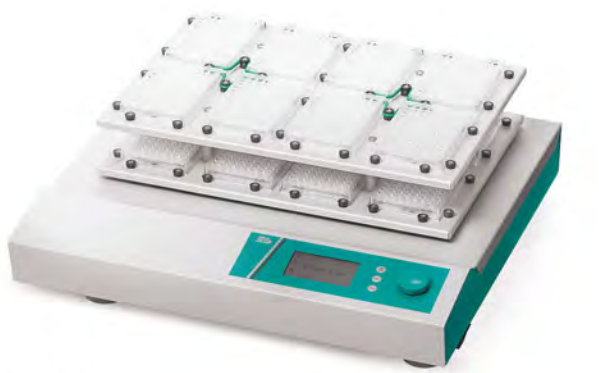
Art. No.	Pack Qty.	€
HKP3.1	1	912,00

Accessories:

Holder for 80 (5 x 16) reaction vials 1.5 ml	**HKP4.1**	1	28,10
Holder for 30 x 3 ml 10 x 15 ml centrifuge tubes	**HKP5.1**	1	23,10
Holder for 12 (2 x 6) 50 ml centrifuge tubes	**HKP6.1**	1	23,10

Shakers for microtitration plates

① + ⑤



② + ③ + ④

Microwell plate shakers TiMix 5

By Edmund Bühler.
Available with either platforms for **8 or 16 microtitre plates**.
A variety of other platforms enable various other applications.
Adjustable mass balance ensures stability with different loads.
Temperature control of samples is possible when an incubation hood (TH 15) is placed on device (please order separately).

Model TiMix 5

High speed for best possible mixing of small sample volumes.
Delivery incl. basic unit without platform (please order separately).

Model TiMix 5 control

With digital display of set/actual speed. Preset-function of last selected setting or programming of selective sequences possible (shaking frequency/length).
Delivery incl. basic unit without platform (please order separately).

Technical specifications:

Model	TiMix 5	TiMix 5 control
Time switch	0 to 120 min /continuous run	1 min to 30 h / continuous run
rpm range	100 to 1400 rpm, electronically infinitely variable	
Shaking amplitude (stroke)	3 mm	
Weight capacity	max. 5 kg	
Shaking surface (W x D)	400 x 300 mm	
Dimensions (W x D x H)	460 x 470 x 188 mm	
Weight	approx. 18 kg	

Type	Art. No.	Pack Qty.	€
① TiMix 5	**T490.1** *	1	2188,70
② TiMix 5 control	**T491.1** *	1	2859,50

* Longer delivery times possible. Please check with our Sales Department

Platforms / accessories for Microwell plate shakers TiMix 5

By Edmund Bühler.

③ Standard top TiMix 5

For 8 microtiter plates and for Microwell-, Deepwell- and other plates in microtiter plate-format.

Art. No.	Pack Qty.	€
T493.1 *	1	269,85

④ Extension plate TiMix 5

For an additional 8 plates on a 2nd level on top of the standard top TiMix 5. Comes with attachment material.

Art. No.	Pack Qty.	€
T494.1 *	1	297,80

⑤ Top with tension bushes for microtiter plates

For 8 standard-microwell plates.

Art. No.	Pack Qty.	€
T495.1 *	1	424,65

Platform with large spring collets for 2 microwell plates

Directly on top of each other.

Art. No.	Pack Qty.	€
T496.1 *	1	482,70

Universal tray without spring clips (spring clips see shaker accessories).

Art. No.	Pack Qty.	€
P434.1 *	1	240,80

Standard platform KS

With 3 tension bars h for different vessels with flat base.

Art. No.	Pack Qty.	€
T497.1 *	1	367,65

Incubation hood TH 15

Temperature control of samples possible when incubation hood is attached. (see shaker accessories).

Art. No.	Pack Qty.	€
L492.1 *	1	3219,65

* Longer delivery times possible. Please check with our Sales Department.

Incubation shaker

Microtitration plate shakers SSM5 and SSL5

By Bibby Scientific.

- A combination of high speed and low amplitude produces the vibration shaking action required to mix small quantities
- Digital display of speed and running time
- Reaction vial holders are optionally available as accessories (please order separately). Up to 2 racks can be attached to one appliance

Technical specifications:

Type	SSM5	SSL5
Number of microtitration plates	For 4 MT plates	For 8 MT plates
Speed display	LED	
Speed control range (rpm)	250 to 1250 in increments of 10	
Shaking amplitude	1.5 mm	
Timer display	LED	
Timer	1 s to 9999 min / continuous operation	
Shaking area (mm)	220 x 220	306 x 306
Load capacity (kg)	1	2
Permissible ambient conditions	4 to 40 °C at 80 % rel. humidity	
Dimensions W x D x H (mm)	240 x 300 x 160	360 x 420 x 160
Power supply	230 V, 50 Hz	

Delivery incl. anti-slip mat.

Type	Art. No.	Pack Qty.	€
SSM5	**YH91.1** *	1	1005,00
SSL5	**YH92.1** *	1	1989,00

Accessories:

Holder for 50 microcentrifuge tubes 1.5 ml	**YH93.1** *	1	130,00
Holder for 50 microcentrifuge tubes 0.5 ml	**YH94.1** *	1	126,00
Holder for 50 microcentrifuge tubes 0.2 ml	**YH95.1** *	1	119,00

* Longer delivery times possible. Please check with our Sales Department.

NEW

Incubation shaker for microtiter plates

By Ohaus. For immunoassays and hybridizations.

- **For 4 standard microtiter plates**
- LED display for temperature, speed and time
- Timer with acoustic alarm
- Setpoint memory: display of last value set
- Soft start
- Available with standard lid or with opaque lid for light-sensitive samples

Technical specifications:

Temperature range	+5 °C **above** ambient temperature up to 65 °C
Resolution of temperature display	1 °C
Temperature adjustment range	5 to 65 °C
Temperature constancy	±0.5 °C at 37 °C
Speed control range	100 to 1200 rpm
Shaking amplitude (stroke)	3 mm
Timer	1 s to 9999 min or continuous operation
Dimensions (W x D x H)	279 x 432 x 197 mm
Weight	13.6 kg
Power supply	230 V, 50/60 Hz

Type	Art. No.	Pack Qty.	€
With transparent lid	**HTA4.1** *	1	1730,00
With opaque lid	**HTA5.1** *	1	1730,00

* Delivery times may apply to these products. Please check with our Sales Department

Incubation shaker

Small incubation shaker

By Ohaus. For cell cultures, bacteria suspensions and hybridizations.
- LED display for temperature, speed and time
- Timer with acoustic alarm
- Setpoint memory: display of last value set
- Soft start

Technical specifications:

Shaking movement	circular
Temperature range	+5 °C **above** ambient temperature up to 65 °C
Resolution of temperature display	1 °C
Temperature adjustment range	5 to 65 °C
Temperature constancy	±0.5 °C at 37 °C
Speed control range	100 to 1200 rpm
Shaking amplitude (stroke)	3 mm
Timer	1 to 9999 min or continuous operation
Shaking area (W x D)	197 x 279 mm
Internal dimensions (W x D x H)	211 x 287 x 145 mm
Dimensions (W x D x H)	279 x 432 x 270 mm
Weight	13.6 kg
Power supply	230 V, 50/60 Hz

Delivery incl. universal attachment for fastening retaining clips for Erlenmeyer flasks (please order retaining clips separately).

Art. No.	Pack Qty.	€
HTC1.1 *	1	1970,00

Accessories:

Holding clamps for flasks 25 ml (max. 20)	**HTC2.1** *	1	26,60
Holding clamps for flasks 50 ml (max. 15)	**HTC3.1** *	1	27,60
Holding clamps for flasks 125 ml (max. 8)	**HTC4.1** *	1	27,60
Holding clamps for flasks 250 ml (max. 5)	**HTC5.1** *	1	27,60

* Delivery times may apply to these products. Please check with our Sales Department

Incubation shaker 2D/3D

By Ohaus. For hybridization processes, cell cultures, blotting techniques and colouring/dying of gels.
- LED display for temperature, speed/inclination angle and time
- Timer with acoustic alarm
- Inclination angle adjusts electronically (even when device is in operation)
- Setpoint memory: display of last value set
- Soft start

Technical specifications:

Model	**Thermo-Shake 2D**	**Thermo-Shake 3D**
Action	Rocking motion	Wobbling motion
Temperature range	+5 °C **above** ambient temperature up to 65 °C	
Resolution for temperature display (°C)	1	
Set temperature (°C)	5 to 65	
Temperature constancy	±0.5 °C at 37 °C	
Speed control range (rpm)	1 to 50	1 to 30
Tilt angle (°)	0 to 15	0 to 20
Timer	1 to 9999 min or continuous operation	
Shaking area W x D (mm)	191 x 254	184 x 235
Internal dimensions W x D x H (mm)	197 x 273 x 97	197 x 273 x 86
Dimensions W x D x H (mm)	279 x 432 x 297	
Weight (kg)	10	
Power supply	230 V, 50/60 Hz	

Delivery incl. base tray with universal mat.

Type	Art. No.	Pack Qty.	€
Thermo-Shake 2D	**HTC6.1** *	1	2300,00
Thermo-Shake 3D	**HTC7.1** *	1	2530,00

Accessories for incubation shaker 2D/3D

Studded mats for test tubes

Type	Art. No.	Pack Qty.	€
Studded mat for Thermo-Shake 2D	**HTC8.1** *	1	42,00
Studded mat for Thermo-Shake 3D	**HTC9.1** *	1	42,00

* Delivery times may apply to these products. Please check with our Sales Department

Incubation shaker

KS 3000 i control incubator shaker

By IKA. For shaking, mixing and heating/cooling samples.
- Circular movement
- LED display for speed and time adjustment as well as temperature
- With RS 232 port and USB port
- Additional PT 1000.60 temperature probe for temperature control directly within samples (included)

Technical specifications:

Temperature range	5 °C **above** ambient temperature up to +80.0 °C
Temperature accuracy / resolution	±0.1 °C / 0.1 °C
Control accuracy with sensor probe	±0.5 K
Speed control range	10 to 500 rpm
Shaking amplitude (stroke)	20 mm
Timer	1 min to 999 h or continuous operation
Inner dimensions (W x D x H)	330 x 330 x 260 mm
Outer dimensions (W x D x H)	465 x 695 x 430 mm*
Heating output	1000 W
Power supply	230 V, 50/60 Hz

*Required floor space: 600 x 600 mm

Delivery without rack attachment
(please order desired rack attachment separately).

Art. No.	Pack Qty.	€
XT43.1 *	1	4999,00

Attachment systems for KS 3000 i control

By IKA.

① **Universal attachment AS 260.1**

Suitable for use with all types of vessel thanks to infinitely adjustable clamping rolls. Installation surface 320 x 320 mm. Variable loading options, e.g. 8 250 ml Erlenmeyer flasks or 15 100 ml Erlenmeyer flasks.

Delivery incl. 4 clamping rolls.

Type	Art. No.	Pack Qty.	€
Universal attachment AS 260.1	**X182.1** *	1	523,00

② **Fixing clip attachment AS 260.2**

Suitable for shaking round-bottom flasks, volumetric flasks and Erlenmeyer flasks, etc. Dimensions: W 330 x D 330 x H 24 mm.
Does not include fixing clips (please order separately).

Type	Art. No.	Pack Qty.	€
Fixing clip attachment AS 260.2	**X184.1** *	1	134,00

Fixing clips

Type	Art. No.	Pack Qty.	€
Fixing clips for 25 ml flasks (max. 31)	**X185.1** *	1	22,00
Fixing clips for 50 ml flasks (max. 23)	**X186.1** *	1	22,00
Fixing clips for 100 ml flasks (max. 23)	**X187.1** *	1	22,00
Fixing clips for 200/250 ml flasks (max. 11)	**X188.1** *	1	43,00
Fixing clips for 500 ml flasks (max. 9)	**X189.1** *	1	43,00
Fixing clips for 1000 ml flasks (max. 5)	**PA26.1** *	1	43,00

③ **Dish attachment AS 260.3**

For the gentle movement of cell cultures or nutrient media in petri dishes etc. Installation surface: 320 x 320 mm.

Type	Art. No.	Pack Qty.	€
Dish attachment AS 260.3	**X183.1** *	1	113,00

* Longer delivery times possible. Please check with our Sales Department.

Incubation shaker KS 4000 i control

By IKA.
- Movement: circular
- LED display for speed and time setting plus temperature
- Integrated PID temperature control
- With RS 232 interface
- Socket for use of an additional PT 1000.60 temperature probe in the working area (included)

Technical specifications:

Temperature range	5 °C **above** room temperature to +80.0 °C
Temperature constancy / Resolution	±0.1 °C / 0.1 °C
Speed range	10 to 500 rpm
Control accuracy with sensor probe	±0.5 K
Shaking amplitude (stroke)	20 mm
Time switch	1 min to 999 h or permanent run
Max. load	20 kg
Height of interior	280 mm
Outer dimensions (W x D x H)	580 x 750 x 520 mm*
Heating power	1000 W
Power supply	230 V, 50/60 Hz

*Required floor space 600 x 600 mm

Delivery without top attachment
(please order desired attachment separately).

Art. No.	Pack Qty.	€
KH89.1 *	1	6049,00

Top attachment systems for KS 4000 i control

By IKA.

① **Universal top AS 4000.1**

Attachment holder with 6 infinitely adjustable tension rollers for universal fit to all vessels. Floor space W 380 x D 410 mm.
Can hold: e.g. 2 Erlenmeyer flasks 2000 ml or 9 Erlenmeyer flasks 500 ml

Product	Art. No.	Pack Qty.	€
Universal top AS 4000.1	**KH90.1** *	1	838,00

② **Clamp holder AS 4000.2**

For shaking Erlenmeyer flasks and bottles with a circular cross-section.
Doesn't come with clamps (please order separately).

Product	Art. No.	Pack Qty.	€
Clamp holder AS 4000.2	**KH91.1** *	1	698,00

Retaining clamps

Product	Art. No.	Pack Qty.	€
Retaining clamps for 25 ml flasks (max. 50)	**X185.1** *	1	22,00
Retaining clamps for 50 ml flasks (max. 48)	**X186.1** *	1	22,00
Retaining clamps for 100 ml flasks (max. 25)	**X187.1** *	1	22,00
Retaining clamps for 250 ml flasks (max. 16)	**X188.1** *	1	43,00
Retaining clamps for 500 ml flasks (max. 12)	**X189.1** *	1	43,00
Retaining clamps for 1000 ml flasks (max. 7)	**PA26.1** *	1	43,00

③ **Top attachment for dishes AS 4000.3**

For gentle shaking of cell cultures or nutrient media in Petri dishes.
Floor space W 430 x D 430 mm.

Product	Art. No.	Pack Qty.	€
Tray top AS 4000.3	**KH92.1** *	1	183,00

* Longer delivery times possible. Please check with our Sales Department.

Incubation shaker

Incubator shakers SI-500

By Stuart. Ideal for tempering samples and at the same time shaking and mixing them.

- Circular movement
- Digital LED-display for speed, timer and temperature
- Smoked acrylic glazing
- With pull-out platform for easy removal and filling of samples
- With timer: at the end of the preset time, the shaking movement stops and the temperature is maintained
- Air circulation for constant heating of samples
- With USB-interface for recording the temperature sequence
- Suitable for loading: e.g. 12 Erlenmeyer flasks 250 ml or 9 Erlenmeyer flasks 500 ml or 6 Erlenmeyer flasks 1000 ml
- Alternatively 4 centrifuge or vial racks can be attached. Tilt angle can be adjusted by 30°. Please order reaction and centifuge tube racks separately.

Technical specifications:

Temperature range	5 °C **above** room temperature to 60 °C
Constancy of temperature / Resolution	±0.5 °C / 0.1 °C
Speed range	30 to 300 rpm
Shaking amplitude (stroke)	16 mm
Max. load	10 kg
Timer	1 sec to 9 d
Shaking area (W x D)	335 x 335 mm
Inner dimensions (W x D x H)	422 x 408 x 250 mm
Outer dimensions (W x D x H)	450 x 474 x 522 mm
Heating power	250 W
Weight	30 kg
Power supply	230 V, 50/60 Hz

Delivery incl. platform with 4 tensioning bars and USB-cable.

Art. No.	Pack Qty.	€
KA99.1 *	1	4741,00

* Longer delivery times possible. Please check with our Sales Department.

Racks made of stainless steel for SI-500

By Stuart.

Type	Art. No.	Pack Qty.	€
for 64 reaction tubes 1.5 ml	**KC00.1**	1	355,00
for 25 centrifuge tubes 15 ml	**KC01.1**	1	355,00
for 12 centrifuge tubes 50 ml	**KC02.1**	1	355,00

Incubation shaker MaxQ Digital 4000 set

By Thermo.

- Circular movement
- Digital display for speed, time and temperature on three individual displays
- Visual/audible signals alert you to temperature and speed deviate from optimal levels
- Automatic unbalanced load sensor stops the device if increased vibration is detected. An acoustic/visual alarm is issued at the same time.
- Soft start feature prevents sudden starts and stops.
- **Clamp starter kit** comprising 1 x 250 ml, 1 x 500 ml, 1 x 1000 ml and 1 x 2000 ml flask clamps

Technical specifications:

Temperature range	10 °C **above** ambient temperature up to +80 °C
Temperature accuracy / resolution	±0.1 °C / 0.1 °C
Speed control range	15 to 500 rpm
Shaking amplitude (stroke)	19 mm
Max. load	22.7 kg
Timer	0.1 min to 999.9 h or continuous operation
Inside dimensions (L x W x H)	508 x 533 x 330 mm
Outside dimensions (L x W x H)	813 x 572 x 559 mm
Heating output	1000 W
Weight	75.8 kg
Power supply	230 V, 50/60 Hz

Delivery incl. universal tray (457 x 457 mm), clamp starter kit (holding clamps for flasks from 250 to 2000 ml) and adhesion mat (210 x 210 mm).

Art. No.	Pack Qty.	€
LY29.1 *	1	6720,00

Accessories for MaxQ Digital 4000

By Thermo.

Additional holding clamps

Type	Art. No.	Pack Qty.	€
Retainer clips for microliter / deep-well plate (max. 10)	**LY30.1** *	1	26,60
Holding clamps for flasks 10 ml (max. 113)	**LY31.1** *	1	23,60
Holding clamps for flasks 25 ml (max. 64)	**LY32.1** *	1	25,10
Holding clamps for flasks 50 ml (max. 32)	**LY33.1** *	1	26,70
Holding clamps for flasks 125 ml (max. 32)	**LY34.1** *	1	25,40
Holding clamps for flasks 250 ml (max. 16)	**LY35.1** *	1	30,80
Holding clamps for flasks 300 ml (max. 16)	**LY36.1** *	1	33,40
Holding clamps for flasks 500 ml (max. 16)	**LY37.1** *	1	35,50
Holding clamps for flasks 1000 ml (max. 9)	**LY38.1** *	1	45,00
Holding clamps for flasks 2000 ml (max. 6)	**LY39.1** *	1	60,30

Test tube stand, with variable tilt angle.
Dimensions Art No LY40.1: L 248 x W 127 x H 70 mm.
Dimensions Art No LY41.1: L 248 x W 110 x H 82 mm.

Type	Art. No.	Pack Qty.	€
For 72 tubes ∅ 14 to 17 mm (max. 4)	**LY40.1** *	1	260,00
For 24 tubes ∅ 26 to 30 mm (max. 4)	**LY41.1** *	1	259,00

* Longer delivery times possible. Please check with our Sales Department.

Tilt/roller mixer RS-TR series

Simultaneous rolling and tilting movement for thorough mixing of samples, e.g. in centrifuge tubes and sample tubes. For vessels with max. ∅ 100 mm.

RS-TR 05:
with variable speed control from 0 to 70 rpm using analog rotary knob with scale.

RS-TR 10:
with speed control from 10 to 70 rpm with illuminated LCD display for setting time and speed.

Technical specifications:

Model	RS-TR 05	RS-TR 10
Number of rollers	6	
LCD display	-	Yes
Timers	-	1-1199 min or continuous operation
Speed range (rpm)	0 to 70	10 to 70
Dimensions per roller L x ∅ (mm)	280 x 30	
Dimensions W x D x H (mm)	260 x 490 x 120	
Ambient conditions	5 to 40 °C at 80 % rel. humidity	
Weight (kg)	5.1	5.5
Power supply	100-240 V, 50/60 Hz	

Type	Art. No.	Pack Qty.	€
RS-TR 05	**XK30.1**	1	424,65
RS-TR 10	**XK31.1**	1	747,15

Tilt/roller mixers SRT series

By Stuart. With simultaneous rolling and tilting movement for thorough mixing.

- With spillage tub
- Rollers are easily removable to accommodate larger vessels with max. ∅ 100 mm
- Removable side panels prevent tubes from falling out accidentally during operation

Two models with different roller numbers available:
SRT6 and SRT9: With fixed speed of 33 rpm
SRT6D and SRT9D: With variable speed control from 5 to 60 rpm, digital speed display and timer function.

Technical specifications:

Model	① SRT 6	SRT 9	SRT 6D	② SRT 9D
Number of rollers	6	9	6	9
Timer	-		1 sec to 90 min or 1 min to 9 h	
Speed	33 rpm		5 to 60 rpm	
Amplitude	16 mm			
Dimensions of each roller (L x ∅)	340 x 30 mm			
Dimensions (W x D x H)	565 x 240 x 110 mm	565 x 360 x 110 mm	565 x 240 x 110 mm	565 x 360 x 110 mm
Permissible working temp.	4 to 60 °C at 80 % rh			
Weight	5.1 kg	6.9 kg	5.1 kg	6.9 kg
Power supply	230 V, 50 Hz			

Type	Art. No.	Pack Qty.	€
SRT 6	**HA30.1**	1	945,00
SRT 9	**HA31.1**	1	1153,00
SRT 6D	**HA32.1**	1	1285,00
SRT 9D	**HA33.1**	1	1466,00

Roller series tilt/roller mixers

By IKA. Simultaneous tilt and roll movements. Rollers are easily removable to accommodate larger vessels with max. ∅ 185 mm.

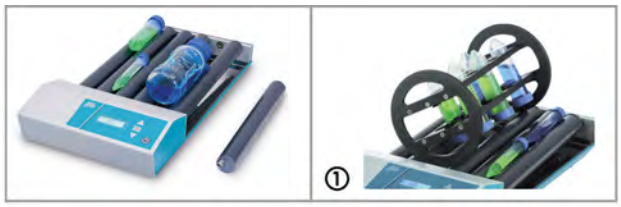
Two model versions with different numbers of rollers are available:
Roller basic: with fixed speed of 30 rpm
Roller digital: with variable speed control from 5 to 80 rpm, digital speed display and timer function.

Technical specifications:

Model	Roller 6 basic	Roller 10 basic	Roller 6 digital	Roller 10 digital
Number of rollers	6	10	6	10
LED display	-		yes	
Timers	-		1 sec to 99 h or continuous duty	
Speed range (rpm)	30		5 to 80	
Dimensions per roller L x ∅ (mm)	325 x 32			
Dimensions W x D x H (mm)	240 x 545 x 115	380 x 545 x 115	240 x 545 x 115	380 x 545 x 115
Ambient conditions	4 to 50 °C at 80 % rel. humidity			
Weight (kg)	4	6	4	6
Power supply	100-240 V, 50/60 Hz			

Delivery incl. side protection plates
(prevents the tubes from jumping out at the sides).

Type	Art. No.	Pack Qty.	€
Roller 6 basic	**XT39.1**	1	1349,00
Roller 10 basic	**XT40.1**	1	1649,00
Roller 6 digital	**XT41.1**	1	1399,00
Roller 10 digital	**XT42.1**	1	1699,00



NEW

RM 2 tilting roller mixer

By Edmund Bühler. Gentle tilting and rolling movement for complete mixing. For all standard tube sizes, bottles and other cylindrical vessels up to ∅ 80 mm. LED display for speed and operating time. Powder-coated metal housing. Removable rollers and collecting tray.

Technical specifications:

Shaking motion	Tilt/roll motion
Number of rollers	6
Timer	0 to 99 h, 59 mins or continuous operation
Speed control range	5 to 80 rpm, adjustable in 5 rpm increments
Speed display	LED
Dimensions per roller (L x ∅)	300 x 32 mm
Dimensions (W x D x H)	244 x 465 x 115 mm
Permissible ambient conditions	5 to 45 °C at 85% RH
Weight	7.3 kg
Power supply	100 to 240 V, 50/60 Hz

Delivery incl. 6 plastic rollers and collecting tray.

Art. No.	Pack Qty.	€
HYK6.1	1	2177,95

Overhead attachment for RM 2 roller mixer

Features 12 slots for Falcon® 50 ml centrifuge tubes (slot ∅ 29.5 mm) for gently rolling overhead mixing.

Art. No.	Pack Qty.	€
KAX7.1	1	269,85

Small Bottle cell culture roller mixer

By Wheaton. Suitable for bottles with ∅ 108 to 121 mm.
Both outer rollers can be moved to the inside so that bottles with ∅ 75 mm can also be accommodated. Each tier is designed to hold at least 2 bottles.

Technical specifications:

Capacity	2 positions
Can be extended with **optional** accessories up to	6 positions with 2 additional tiers
Speed range (depending on bottle ∅)	0.1 to 3.8 rpm (max. bottle ∅ 110 mm)
Max. bottle dimensions	∅ 108 to 121 mm, max. L 290 mm
Dimensions (W x D x H)	320 x 325 x 180 mm
Permissible ambient conditions	10 to 40 °C at 80 % rel. humidity
Weight	8.2 kg
Power supply	100 to 240 V, 50/60 Hz

Delivery incl. standard roller system for 2 bottles.
Please order extension kit for additional bottles separately.

Art. No.	Pack Qty.	€
EPX8.1	1	1550,15

Extension kit (tiers) for Small Bottle roller mixer

By Wheaton. For extension with max. 2 additional platforms as 2nd and 3rd tiers. Each tier must be ordered separately.

Art. No.	Pack Qty.	€
EPX9.1	1	475,15

Mini-Bottle cell culture roller mixer

By Wheaton. Specially designed for mixing and stirring small quantities in bottles. For serum bottles (from 30 ml), media bottles (100 to 125 ml) and culture tubes (38 x 200 mm). Each tier is designed to hold at least 4 bottles.

Technical specifications:

Capacity	4 positions
Can be extended with **optional** accessories up to	12 positions with 2 additional tiers
Speed range (depending on bottle diameter)	3 to 45 rpm (max. bottle ∅ 38 mm) 2 to 30 rpm (max. bottle ∅ 60 mm)
Max. bottle dimensions	∅ 38 to 60 mm, max. L 240 mm
Dimensions (W x D x H)	320 x 325 x 180 mm
Permissible ambient conditions	10 to 40 °C at 80 % rel. humidity
Weight	8 kg
Power supply	100 to 240 V, 50/60 Hz

Delivery incl. standard roller system for 4 bottles.
Please order extension kit for additional bottles separately.

Art. No.	Pack Qty.	€
EPX7.1	1	1827,50

Extension kit (tiers) for Mini-Bottle roller mixer

By Wheaton. For extension with max. 2 additional platforms as 2nd and 3rd tiers. Each tier must be ordered separately.

Art. No.	Pack Qty.	€
EYH1.1	1	625,65

Tilting mixers Speci-Mix and Vari-Mix for sample tubes

By Thermo. For gentle, tilt-mixing of samples in sample tubes

Speci-Mix: with fixed speed 18 rpm and fixed tilt angle of 48°

Vari-Mix: with variable speed control in the range 2 to 20 rpm and manual tilt angle setting from 1 to 48°

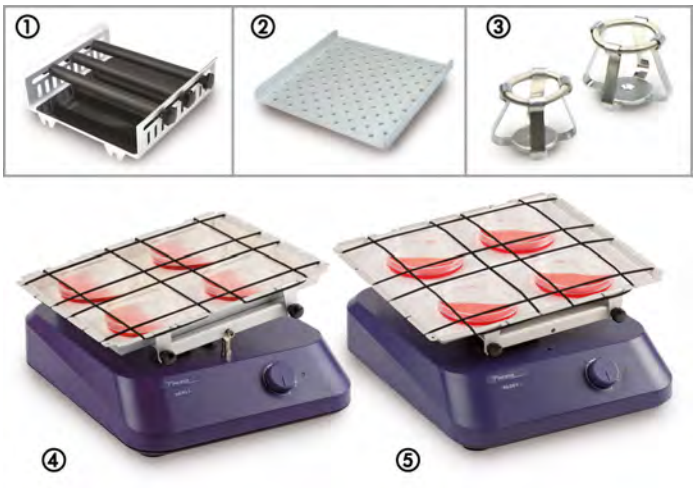
Silicone attachment can be used on both sides. A closing lip integrated on one side prevents short tubes from slipping (L<107 mm). The other side is intended for longer tubes.

Technical specifications:

Model	Speci-Mix	Vari-Mix
Type of motion	Tilt motion	
Number of sample tubes	8 (L 10-20 mm) or 3 (L 22-30 mm)	16 (L 10-20 mm) or 7 (L 22-30 mm)
Speed (rpm)	18	2-20
Tilt angle (°)	48	1 to 48
Dimensions: L x W x H (mm)	139 x 191 x 107	139 x 381 x 107
Ambient conditions	+4 to +40 °C at 80 rF	
Weight (kg)	1.4	26

Delivery incl. attachment made of silicone.

Type	Art. No.	Pack Qty.	€
Speci-Mix	**PP08.1**	1	437,00
Vari-Mix	**PP09.1**	1	700,00



Rocking and 3D-shakers RS-series

- Continuous speed adjustment
- With optional tray for Erlenmeyer flasks or with additional universal tray for adaptation to all types of vial through infinitely adjustable clamping rolls (please order desired tray separately)

Technical specifications:

Model	④ RS-RS 5	⑤ RS-DS 5
Action	Rocking motion	Wobbling motion
Speed range (rpm)	up to 80	
Tilt angle	7°	
Shaking area W x D (mm)	240 x 240	
Load capacity (kg)	3	
Permissible ambient conditions	4 to +40 °C at 80 % RH	
Dimensions W x D x H (mm)	270 x 330 x 110	
Weight (kg)	2.9	3.2
Power supply	100-240 V, 50/60 Hz	

Delivery incl. tray top with 6 fixing straps.

Type	Art. No.	Pack Qty.	€
④ RS-RS 5	**HEH4.1**	1	521,40
⑤ RS-DS 5	**HEH5.1**	1	521,40

Accessories for rockingand 3D-shakers RS-series

① **Universal tray**
Various loading options, e.g. 6 x 250 ml Erlenmeyer flasks.
Delivery incl. 3 adjustable clamping rolls.

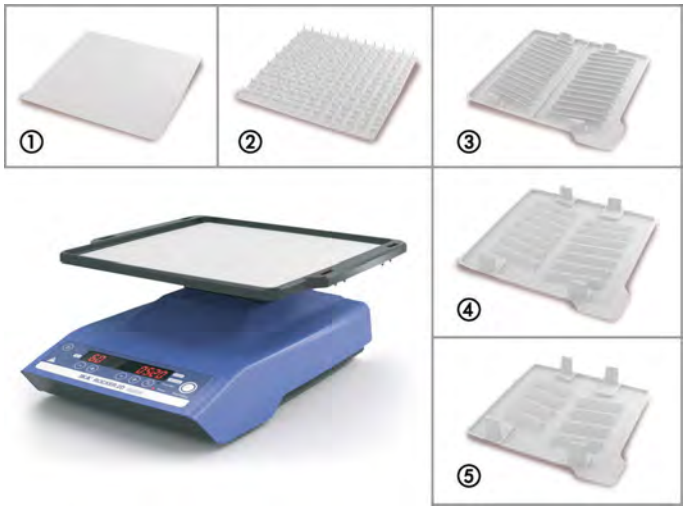
Type	Art. No.	Pack Qty.	€
Universal tray	**CAY0.1**	1	145,15

② **Spring clip tray**
For shaking Erlenmeyer flasks.
With holes for individual fastening of spring clips.
Delivery without spring clips (please order separately).

Type	Art. No.	Pack Qty.	€
Spring clip tray	**CAY1.1**	1	145,15

③ **Spring clips**

Type	Art. No.	Pack Qty.	€
Spring clips for 25 ml flasks (max. 18)	**CAY2.1**	1	28,95
Spring clips for 50 ml flasks (max. 18)	**CAY3.1**	1	31,10
Spring clips for 100 ml flasks (max. 9)	**CAY4.1**	1	31,10
Spring clips for 250 ml flasks (max. 6)	**CAY5.1**	1	40,75
Spring clips for 500 ml flasks (max. 4)	**CAY6.1**	1	43,70



Rocker 2D series gyratory shakers

By IKA. Various attachments are available for different applications.
Suitable for petri dishes, culture bottles and sample tubes.

Rocker 2D basic:
- With digital speed display
- Fixed tilt angle

Rocker 2D digital:
- With digital speed and timer display
- Manually adjustable tilt angle

Technical specifications:

Model	Rocker 2D basic	Rocker 2D digital
Type of motion	Rocking movement	
Speed display	LED	
Speed range (rpm)	5 to 80	
Timer display	-	LED
Timer	-	1 sec to 99.9 h or continuous operation
Tilt angle (°)	8	0 to 15
Shaking area W x D (mm)	240 x 240	
Load capacity (kg)	2	
Ambient conditions	4 to 50 °C at 80 % rel. humidity	
Dimensions W x D x H (mm)	280 x 330 x 150	
Weight (kg)	2.2	
Power supply	100-240 V, 50/60 Hz	

Delivery incl. basic table, ① non-slip all-purpose mat for securing culture bottles, petri dishes etc.

Type	Art. No.	Pack Qty.	€
Rocker 2D basic	**XT46.1**	1	799,00
Rocker 2D digital	**XT47.1**	1	849,00

Accessories for Rocker-series

Type	Art. No.	Pack Qty.	€
② Textured mat for test tubes	**CHH3.1**	1	25,15
③ Attachment for 28 sample tubes 5 ml (∅ 12 mm)	**XT48.1**	1	33,00
④ Attachment for 16 sample tubes 15 ml (∅ 16 mm)	**XT49.1**	1	33,00
⑤ Attachment for 10 sample tubes 50 ml (∅ 28 mm)	**XT50.1**	1	33,00

Extension table for Rocker-series

Additional platform attachable to basic table as a 2nd level.
Please order desired attachment/met separately.

Type	Art. No.	Pack Qty.	€
Extension table for Rocker series	**XT51.1**	1	60,00

Gyratory shakers ProBlot 25/25 XL

For dyeing, bleaching and washing gels, DNA-extraction, and for hybridisation.

- Gentle, linear tilting movement
- Tilt angle is fixed
- With antislip rubber mat
- With timer (0-120 min)

Model	ProBlot			
	① 25	② 25 D	25 XL	25 XLD
Platform design	Standard	with 2 platforms	Standard	with 2 platforms
Shaking surface (mm)	260 x 200		300 x 300	
Dimensions W x D x H (mm)	290 x 320 x 145		325 x 360 x 145	

Technical specifications:

Movement	Tilting movement
Speed range	10-120 rpm
Timer	0-120 min / continuous operation
Angle of inclination	7°
Distance to 2nd platform (ProBlot 25 D and ProBlot 25 XLD only)	9 cm
Load capacity	5 kg
Ambient conditions	+4 to +40 °C at 80 % rH
Weight	6 kg
Power supply	230 V, 50/60 Hz

Type	Platform design	Art. No.	Pack Qty.	€
ProBlot 25	Standard	**LX35.1** *	1	857,85
ProBlot 25 D	with 2 platforms	**LX36.1** *	1	912,70
ProBlot 25 XL	Standard	**LX37.1** *	1	951,40
ProBlot 25 XLD	with 2 platforms	**LX38.1** *	1	1048,15

* Longer delivery times possible. Please check with our Sales Department.

GyroMini™ and Enduro MiniMix™ 3D rocker shakers

General specifications of both models
- Space-saving design with small footprint
- Speed and angle of inclination are preset

① **GyroMini™ 3D rocker shaker**
For sample tubes. For gentle mixing of samples, e.g. in blood sample tubes or centrifuge tubes.

Loading options: 60 x 1.5/2.0 ml reaction vials or 16 x 15 ml centrifuge tubes or 8 x 50 ml centrifuge tubes or 20 x 7 ml standard blood sample tubes.

② **Enduro MiniMix™ 3D rocker shaker**
For sensitive gels and blots. The smaller angle of inclination prevents gels/blots from drying out and/or breaking.

Technical specifications:

Model	GyroMini™	Enduro MiniMix™
Type of motion	Orbital 3D rocking motion	
Speed range (rpm)	20	
Tilt angle (°)	20	5
Shaking area W x D (mm)	240 x 170	
Load capacity (g)	800	
Dimensions W x D x H (mm)	240 x 170 x 150	
Permissible ambient conditions	+4 to +40 °C at 80 % rel. humidity	
Weight (kg)	0.88	
Power supply	230 V, 50 Hz	

GyroMini™ 3D rocker shaker
Delivery incl. removable silicon mat.

Art. No.	Pack Qty.	€
ET51.1	1	532,15

Enduro MiniMix™ 3D rocker shaker
Delivery incl. non-slip rubber mat and 2 large blotting boxes.

Art. No.	Pack Qty.	€
NP21.1	1	456,90

Accessories for Enduro MiniMix™

Blotting box, large.
Dimensions: L 117 x W 89 mm. For 6-10 ml of solution.

Art. No.	Pack Qty.	€
NP22.1	10	109,65

Blotting box, small.
Dimensions: L 91 x W 66 mm. For 3-5 ml of solution.

Art. No.	Pack Qty.	€
NP23.1	10	102,15

Rocker 3D-series wobble shakers

By IKA. Various attachments are available for different applications. Ideal for shaking low-foaming samples, DNA extraction, colouring and decolouring.

Rocker 3D basic:
Fixed tilt angle and speed.

Rocker 3D digital:
- With digital speed and timer display
- Manually adjustable tilt angle

Technical specifications:

Model	Rocker 3D basic	Rocker 3D digital
Type of motion	Wobble motion	
Speed display	-	LED
Speed range (rpm)	30	5 to 80
Timer display	-	LED
Timer	-	1 sec to 99.9 h or continuous operation
Tilt angle (°)	8	0 to 15
Shaking area W x D (mm)	240 x 240	
Load capacity (kg)	2	
Ambient conditions	4 to 50 °C at 80 % rel. humidity	
Dimensions W x D x H (mm)	280 x 330 x 165	280 x 330 x 185
Weight (kg)	2.2	
Power supply	100-240 V, 50/60 Hz	

Delivery incl. basic table, ① non-slip all-purpose mat for securing culture bottles, petri dishes etc.

Type	Art. No.	Pack Qty.	€
Rocker 3D basic	**XT52.1**	1	849,00
Rocker 3D digital	**XT53.1**	1	899,00

Accessories for Rocker-series

Type	Art. No.	Pack Qty.	€
② Textured mat for test tubes	**CHH3.1**	1	25,15
③ Attachment for 28 sample tubes 5 ml (Ø 12 mm)	**XT48.1**	1	33,00
④ Attachment for 16 sample tubes 15 ml (Ø 16 mm)	**XT49.1**	1	33,00
⑤ Attachment for 10 sample tubes 50 ml (Ø 28 mm)	**XT50.1**	1	33,00

Extension table for Rocker-series

Additional platform attachable to basic table as a 2nd level. Please order desired attachment/met separately.

Type	Art. No.	Pack Qty.	€
Extension table for Rocker series	**XT51.1**	1	60,00

3D rocker shakers GyroTwister™

With orbital 3D rocking motion. For DNA extraction, staining and destaining of gels and for cultivation/aeration applications.

- Continuous speed adjustment
- Model with fixed or adjustable tilt angle

Technical specifications:

Model	Standard	Vario
Type of motion	Orbital 3D rocking motion	
Speed range	3-60 rpm	
Timer	20 to 120 min or continuous operation	
Tilt angle	7° (fixed)	Manual adjustable from 3 to 10°
Shaking surface area, platform type M (L x W)	300 x 300 mm	
Load capacity	5 kg	
Dimensions (W x D x H)	330 x 352 x 210 mm	
Permissible ambient conditions	+4 to +70 °C at 80 % rel. humidity	
Weight	6.6 kg	
Power supply	230 V, 50 Hz	

Delivery incl. platform type M (L 300 x W 300 mm) with integrated anti-slip mat and dimpled mat for test tubes.

Type	Art. No.	Pack Qty.	€
Standard	**YC55.1**	1	1193,25
Vario	**YC56.1**	1	1408,25

Platforms for GyroTwister™

Delivery incl. anti-slip mat.

Platform type L
Dimensions: L 400 x W 400 mm.

Type	Art. No.	Pack Qty.	€
Platform type L	**YC57.1**	1	177,40

Platform type XL
Dimensions: L 500 x W 500 mm.

Type	Art. No.	Pack Qty.	€
Platform type XL	**YC58.1**	1	199,20

① 3D gyratory shakers SSM3 and SSL3

By Stuart. **With circulating 3D-seesaw movement.** Ideal for DNA-extraction, staining and bleaching gels, and for particularly low foaming.

General information for both models
- Gentle seesaw movement
- Digital LED-display for speed and timer
- Can alternatively be extended to 3 levels with 2 additional platforms (see diagram; please order separately)

① **Model SSM3**
- Mini-platform for minimal sampling
- Shaking surface (W x D) 235 x 235 mm
- Space efficient design

③ **Model SSL3**
- Large platform for holding numerous samples
- Shaking surface (W x D) 335 x 335 mm

Technical specifications:

Model	SSM3	SSL3
Motion	Circular 3D-seesaw movement	
rpm range	5 to 70 rpm	
Time switch	0 to 999 min or continuous run	
Angle of inclination	Manually adjustable from 3 to 12°	
Shaking surface (W x D)	235 x 235 mm	335 x 335 mm
Weight capacity	3 kg	10 kg
Dimensions (W x D x H)	240 x 300 x 165 mm	360 x 420 x 170 mm
Ambient temperature	+4 to +40 °C at 80 % rh	
Weight	5 kg	10 kg
Power supply	230 V, 50/60 Hz	

Delivery incl. 1 platform with integrated anti-slip mat.

Type	Art. No.	Pack Qty.	€
SSM3	**AT53.1** *	1	918,00
SSL3	**EP82.1** *	1	1245,00

② Platform for 3D gyratory shaker SSM3 and SSL3

By Stuart.
With two further platforms as 2nd and 3rd levels.
Quick to assemble, no tools required.
Delivery incl. 8 retaining bars.

For model	Art. No.	Pack Qty.	€
SSM3	**AT54.1** *	1	236,00
SSL3	**EP83.1** *	1	308,00

* Longer delivery times possible. Please check with our Sales Department.

NEW

TL 2 3D laboratory rocking shaker

By Edmund Bühler. Powder-coated metal housing. With slow three-dimensional movement for even, gentle mixing. For homogeneous mixing in culture bottles and petri dishes or flasks. Ideal e.g. for breeding cell cultures and DNA extractions. LED display for setting the speed and operating time.

Technical specifications:

Shaking motion	Orbital 3D rocking motion
Speed control range	1 to 22 rpm
Speed display	LED
Timer	0 to 99 h, 59 mins or continuous operation
Tilt angle	8° fix
Shaking area (W x D)	220 x 220 mm
Max. load	2 kg
Dimensions (W x D x H)	250 x 415 x 118 mm
Permissible ambient conditions	5 to 45 °C at 85% RH
Weight	9.1 kg
Power supply	100 to 240 V, 50/60 Hz

Delivery incl. basic unit, including vibration plate with rubber anti-slip mat.

Art. No.	Pack Qty.	€
HYK4.1	1	1781,30

Accessories: Expansion tray for TL 2 3D laboratory rocking shaker

By Edmund Bühler.
Can be expanded with an additional platform as a second level.
Height: 80 mm.
Delivery incl. rubber anti-slip mat.

Art. No.	Pack Qty.	€
HYK5.1	1	125,80

Tube-Revolver test tube rotator

By Thermo. For mixing samples in test tubes.
- With LED speed display
- Turntable can be positioned at any angle (exception: turntable for 50 ml centrifuge tubes can only be positioned horizontally or vertically)
- Turntable are easy to replace
- Overhead mixing function with activable agitation mode (additional shaking every 40° during every second rotation cycle)
- Max. 4 turntables can be attached at once (exception: only 1 turntable can be attached for 50 ml centrifuge tubes)

Technical specifications:

Speed:	10 to 40 rpm
Dimensions (W x D x H)	225 x 154 x 195 mm
Permissible operating temperature	4 to 60 °C at 80 % rel. humidity
Weight	1,2 kg
Power supply	100-240 V, 50/60 Hz

Delivery incl. 2 turntables for 7 centrifuge tubes 15 ml, 2 turntables for 7 blood collection tubes 5/7 ml, 2 turntables for 15 reaction vials 1.5/2.0 ml, 2 turntables for 21 reaction vials 0.5/0.8 ml and 1 turntable for 6 centrifuge tubes 50 ml.

Art. No.	Pack Qty.	€
ATX1.1	1	367,00

Turntables for Tube-revolver

By Thermo.

For	Art. No.	Pack Qty.	€
7 centrifuge tubes 15 ml (∅ 16-17 mm)	**ATX2.1**	2	9,20
7 blood collection tubes 5/7 ml (∅ 12-13 mm)	**ATX3.1**	2	9,20
15 reaction vials 1.5/2.0 ml (∅ 10-11 mm)	**ATX4.1**	2	9,20
21 reaction vials 0.5/0.8 ml (∅ 7.5-8.5 mm)	**ATX5.1**	2	9,20
6 reaction vials 50 ml (∅ 28-29 mm)	**ATX6.1**	1	13,85

Rotator Revolver Mixer for reaction vials and sample tubes

For a variety of mixing tasks in microbiology, biochemistry and histochemistry.

- Sample containers can be positioned horizontally and vertically, as well as in any intermediate position
- Both halves of the particular rotary module can be arranged separately
- With fixed speed of 20 rpm
- Gentle horizontal mixing for applications such as hybridisation (rolling mixing motion); or vertical positioned tubes for overhead mixing of blood sample tubes for example
- Rotary module halves can be fixed without tools

Technical specifications:

Speed	20 rpm
Dimensions (W x D x H)	239 x 127 x 225 mm
Permissible operating temperature	4 to 65 °C at 80 % rel. humidity
Weight	2.0 kg
Mains connection	230 V, 50/60 Hz

Delivery incl. rotary module for 36 reaction vials 1.5/2.0 ml.
Please order any required additional rotary modules separately.

Art. No.	Pack Qty.	€
PP49.1	1	438,60

Rotary plate for rotator Revolver Mixer

For	Art. No.	Pack Qty.	€
10 centrifuge tubes 15 ml and 16 blood sample tubes 5/7 ml	**PP50.1**	1	56,90
6 centrifuge tubes 50 ml	**PP51.1**	1	56,25

RS-RR 5 overhead rotator

With soft rotating overhead mixing function for reaction vials and other test tubes / centrifuge vials.

- Analog variable speed adjustment
- Adjustable screw feet

Technical specifications:

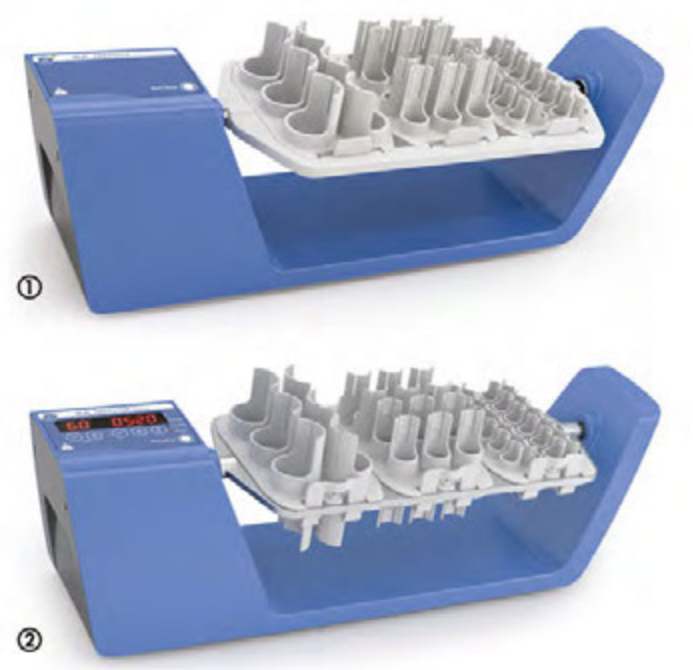
Speed range	0 to 80 rpm
Max. load 1.5/2.0 ml reaction vials 15 ml centrifuge vials 50 ml centrifuge vials	 34 pcs. 22 pcs. 16 pcs.
Dimensions (W x D x H)	530 x 150 x 190 mm
Weight	1.7 kg
Power supply	100-240 V, 50/60 Hz

Delivery incl. 36 clips for reaction vials 1.5/2.0 ml and 12 clips for centrifuge tubes 15/50 ml.

Art. No.	Pack Qty.	€
CHA4.1	1	499,90

Fastening clips for RS-RR 5 overhead rotator

For	Art. No.	Pack Qty.	€
Reaction vials 1.5/2.0 ml (∅ 11 mm)	**CHA1.1**	12	24,65
Centrifuge vials 15 ml (∅ 17 mm)	**CHA2.1**	12	24,65
Centrifuge vials 50 ml (∅ 29 mm)	**CHA3.1**	12	24,65



Trayster overhead mixer for reaction vials and test tubes

By IKA. For a wide range of mixing applications in molecular biology.
For mixing samples in reaction vials, test tubes and blood sample tubes.
Suitable for separating and mixing powdery and liquid samples.
With soft rotating overhead mixing function.

Trayster basic: With fixed speed
Trayster digital: With infinitely variable speed adjustment and timer function

Technical specifications:

Model	① Trayster basic	② Trayster digital
Speed display	-	LED
Speed range (rpm)	20	5-80
Timer display	-	LED
Timer	-	1 s to 99 h or continuous operation
Permissible ambient conditions	4 to +50 °C at 80 % rel. humidity	
Dimensions W x D x H (mm)	460 x 160 x 150	
Weight (kg)	1.7	
Power supply	100-240 V, 50/60 Hz	

Delivery incl. standard pullout tray for a total of 3 inserts.
Inserts are not included. Please order separately.

Type	Art. No.	Pack Qty.	€
① Trayster basic	**ANE5.1**	1	799,00
② Trayster digital	**ANE6.1**	1	849,00

Inserts for Trayster standard pullout tray

By IKA.

For	Art. No.	Pack Qty.	€
24 reaction vials 1.5/2.0 ml (Ø 11 mm)	**ANE7.1**	1	39,00
24 test tubes 5 ml (Ø 12 mm)	**ANE8.1**	1	39,00
12 centrifuge tubes 15 ml (Ø 17 mm)	**ANE9.1**	1	39,00
6 centrifuge tubes 50 ml (Ø 29 mm)	**ANH0.1**	1	39,00

RS-RD 5 rotator

For soft and gentle mixing of samples in various tubes/vials.
- Analog variable speed adjustment
- Adjustable screw feet
- Fixed 90° rotation angle

Technical specifications:

Speed range	0 to 80 rpm
Max. load 1.5/2.0 ml reaction vials 15 ml centrifuge vials 50 ml centrifuge vials	 48 pcs. 8 pcs. 8 pcs.
Dimensions (W x D x H)	220 x 300 x 310 mm
Weight	2.0 kg
Power supply	100-240 V, 50/60 Hz

Delivery incl. 36 clips for reaction vials 1.5/2.0 ml and 12 clips for centrifuge tubes 15/50 ml.

Art. No.	Pack Qty.	€
CHA0.1	1	499,90

Fastening clips for RS-RD 5 rotator

For	Art. No.	Pack Qty.	€
Reaction vials 1.5/2.0 ml (Ø 11 mm)	**CHA1.1**	12	24,65
Centrifuge vials 15 ml (Ø 17 mm)	**CHA2.1**	12	24,65
Centrifuge vials 50 ml (Ø 29 mm)	**CHA3.1**	12	24,65

Overhead mixers, rotators

Loopster-series rotators

By Ika. Suitable for soft separation and mixing of powdery and liquid samples. Freely adjustable rotary angle (0 to 90°). Different attachments enable units to be used for a variety of applications.

Loopster basic: with fixed speed.

Loopster digital: with infinitely adjustable speed, digital timer function and speed display.

Technical specifications:

Model	① Loopster basic	② Loopster digital
Speed display	-	LED
Speed range	20 rpm	5 to 80 rpm
Timer display	-	LED
Timer	-	1 sec to 99 h or continuous operation
Dimensions (W x D x H)	300 x 300 x 360 mm	
Permissible ambient conditions	4 to 50 °C at 80 % rel. humidity	
Weight	3.0 kg	
Power supply	100-240 V, 50/60 Hz	

Delivery without turntables. Please order required turntables separately.

Type	Art. No.	Pack Qty.	€
Loopster basic	**ANH1.1**	1	699,00
Loopster digital	**ANH2.1**	1	749,00

Standard turntables for Loopster-series

By IKA.

For	Art. No.	Pack Qty.	€
48 reaction vials 1.5/2.0 ml (Ø 11 mm)	**ANH3.1**	1	181,00
24 test tubes 5 ml (Ø 12 mm)	**ANH4.1**	1	130,00
20 centrifuge tubes 15 ml (Ø 17 mm)	**ANH5.1**	1	130,00
12 test tubes 30 ml (Ø 25 mm)	**ANH6.1**	1	130,00
12 centrifuge tubes 50 ml (Ø 29 mm)	**ANH7.1**	1	130,00

Universal turntable for Loopster-series

By IKA.
Individually configurable. Fastening clips are required for attaching test tubes. Please order separately.

Type	Art. No.	Pack Qty.	€
Universal turntable	**ANH8.1**	1	110,00

Fastening clips for universal turntables

By IKA.

For	Art. No.	Pack Qty.	€
Reaction vials 1.5/2.0 ml (Ø 11 mm) (max. 36 clips)	**ANH9.1**	12	33,00
Test tubes 5 ml (Ø 12 mm) (max. 24 clips)	**ANK0.1**	12	33,00
Centrifuge tubes 15 ml (Ø 17 mm) (max. 12 clips)	**ANK1.1**	12	33,00
Test tubes 30 ml (Ø 25 mm) (max. 8 clips)	**ANK2.1**	12	33,00
Centrifuge tubes 50 ml (Ø 29 mm) (max. 8 clips)	**ANK3.1**	12	33,00

Rotators SB 2 and SB 3

By Stuart. Ideal for gentle mixing samples in culture tubes, blood vials or sample tubes.

- Rotary dish for different vessels available
- Angle of rotary dish is adjustable
- **Model SB 2**: with fixed speed
- **Model SB 3**: with variable speed, digital speed display and timer function

Technical specifications:

Model	SB 2	SB 3
Rpm	20 rpm	adjustable from 2-40 rpm
Speed display	none	digital
Timer function	none	1 to 999 min
Dimensions (W x D x H)	200 x 270 x 240 mm	
Max. operating temperature	4 to 60 °C at 80 % rh	
Weight	3200 g	
Power supply	230 V, 50 Hz	

Delivery incl. base unit without rotary dish.
Please order the desired rotary dishes separately.

Type	Art. No.	Pack Qty.	€
SB 2	**Y549.1**	1	449,00
SB 3	**Y550.1**	1	617,00

Rotary dishes for rotators SB 2 and SB 3

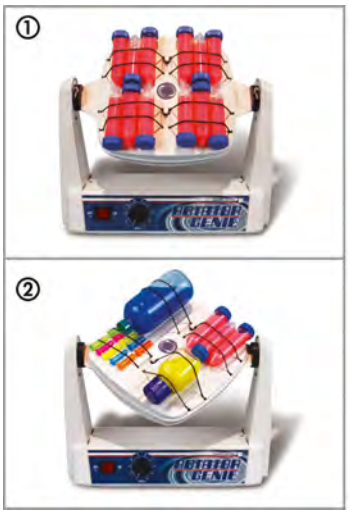
By Stuart.

For	Art. No.	Pack Qty.	€
46 tubes 1,5/2,0 ml	**Y551.1**	1	221,00
20 sample vials Ø 9-20 mm	**Y552.1**	1	233,00
12 centrifuge tubes 50 ml	**Y553.1**	1	221,00
63 culture tubes Ø 12 mm	**Y554.1**	1	315,00
63 culture tubes Ø 16 mm	**Y555.1**	1	262,00

Double mounting for 2 turntables

By Stuart. Allows the simultaneous use of 2 turntables.
Please order required turntable separately.

Art. No.	Pack Qty.	€
XK80.1	1	112,00



Rotator Genie™

By Scientific Industries. Overhead rotator for mixing specimens in reaction vials, culture tubes, test tubes etc.

- Easy, tool-free platform replacement
- The platforms can be loaded from both sides (assuming they are loaded evenly)

Standard platform

① With rubber straps for flexible attachment of different vessels and tubes with diameters of up to 85 mm. For strap length adjustment, clamps are provided at the centre of the platform.
② The standard platform attaches variably to the mixer at an angle of 90°. Various mixing actions are possible thanks to the flexible attachment system and different tube placements.

③ **Magnetic platform**

Mounts for tubes and other specimens can be attached to the magnetic plate (please order mounts separately).

Technical specifications:

rpm:	5 to 35 rpm
Dimensions of standard platform	260 x 260 mm
Dimensions of magnetic platform	292 x 292 mm
Overall dimensions (W x D x H)	400 x 175 (290 with horizontal platform) x 400 mm
Weight	5.2 kg
Mains connection	230 V, 50/60 Hz

Type	Art. No.	Pack Qty.	€
① ② Rotator Genie with standard platform and 8 straps	**PH63.1**	1	991,15
③ Rotator Genie with magnetic platform	**PH64.1**	1	1025,55

Additional platforms for Rotator Genie™

By Scientific Industries.

Type	Art. No.	Pack Qty.	€
Standard platform with 8 rubber straps	**PH65.1**	1	202,10
Magnetic platform	**PH66.1**	1	238,65

Accessories for magnetic platform

By Scientific Industries.

Type	Art. No.	Pack Qty.	€
Holder with 12 clips for tubes from 10 to 13 mm	**P519.1**	6	198,35
Holder with 6 clips for tubes from 15 to 17 mm	**P520.1**	6	198,35
Holder with 3 clips for tubes from 28 to 30 mm	**P521.1**	6	198,35
Magnetic strip for bags, 75 x 75 mm	**P522.1**	16	86,55

Multi-functional shaker Roto-Shake Genie®

By Scientific Industries. Extremely versatile shaker with tilting, revolving and shaking movements. Depending on the positioning of the vials, different mixing movements can be attained: revolving, tilting/shaking, tilting/revolving, tilting/rolling, revolving/rolling as well as a combination of these movements. The moving part consists of a double-sided, magnetic stainless steel plate, 34 x 20 cm. Easy to operate, **Change-over from rotating to tilting movement as achieved using a single hand movement.** Holders for vials with a diameter of 10 to 13 mm, 15 to 17 mm, or 28 to 30 mm or magnetic strips for holding the bags 75 x 75 mm can be placed on the magnetic plates.

Technical specifications:

Dimensions (L x W x H)	508 x 252 x 267 mm (With mounted platform: width 305 mm)
Weight	11 800 g
Speed	Tilting: infinitely variable from 10 to 70 cycles per minute. Revolving: infinitely variable from 5 to 35 rpm
Vibrating angle	±10° from the horizontal line
Ambient conditions	0 to 38 °C

Delivery incl. 1 Multi-function mixer Roto-Shake Genie®, 1 holder with 12 clips for 10 to 13 mm tubes, 1 holder with 6 clips for 15 to 17 mm tubes, 1 holder with 3 clips for 28 to 30 mm tubes, 4 magnetic strips for 2 bags 75 x 75 mm, 1 shaking platform (203 x 305 mm) with slip-resistant map for petri dishes etc.

Art. No.	Pack Qty.	€
P518.1	1	1471,70

Accessories for Roto-Shake Genie® and Enviro-Genie®

By Scientific Industries.

Holders with 12 clips for tubes-∅ 10 to 13 mm

Art. No.	Pack Qty.	€
P519.1	6	198,35

Holders with 6 clips for tubes-∅ 15 to 17 mm

Art. No.	Pack Qty.	€
P520.1	6	198,35

Holders with 3 clips for tubes-∅ 28 to 30 mm

Art. No.	Pack Qty.	€
P521.1	6	198,35

Magnetic strips for bags 75 x 75 mm

Art. No.	Pack Qty.	€
P522.1	16	86,55

24 magnetic strips for bags 75 x 75 mm and 2 trays

Art. No.	Pack Qty.	€
P523.1	1	272,55

Rotator STR4

By Stuart. Supplied with various rotary modules for different applications.

Technical specifications:

Time switch	10 to 60 min /continuous run
Rotation speed	6 to 60 rpm
Dimensions (W x D x H)	650 x 250 x 250 mm
Weight	6400 g
Current	230 V, 50 Hz

Delivery incl. basic unit without rotary module
(please order the desired rotary module separately).

Art. No.	Pack Qty.	€
X466.1 *	1	1208,00

* Longer delivery times possible. Please check with our Sales Department.

Rotary module for sample vials for rotator STR4

By Stuart. 4 different holders can be attached to the rotary module via clip mechanism.

Delivery incl. rotary module for sample vials without clip holders (please order separately).

Design	Art. No.	Pack Qty.	€
Rotary module for sample vials	**X467.1** *	1	413,00

Clip holders

Design	Art. No.	Pack Qty.	€
for 12 vials ∅ 12 mm	**X468.1** *	2	169,00
for 10 vials ∅ 16 mm	**X469.1** *	2	159,00
for 8 vials ∅ 19 mm	**X470.1** *	2	159,00
for 7 vials ∅ 24 mm	**X471.1** *	2	159,00

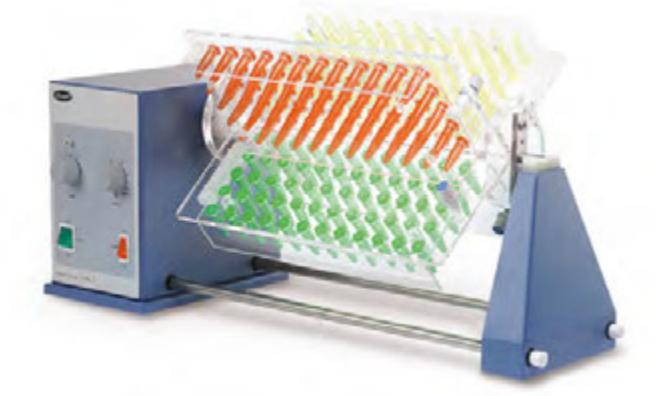
* Longer delivery times possible. Please check with our Sales Department.

Rotary module for rotator STR4

By Stuart. To attach 4 vessels (bottles, cans) with adjustable velcro straps.
- With 4 x divided acrylic glass holder
- Max. vessel dimensions: length 300 mm, ∅ 120 mm
- Max. load: 5000 g

Art. No.	Pack Qty.	€
X472.1 *	1	465,00

* Please check with our Sales Department for delivery period of these products.



Rotary module for centrifuge vials for rotator STR4

By Stuart. 4 racks for 60 each centrifuge tubes 1.5 ml.

Type	Art. No.	Pack Qty.	€
Rotary module for centrifuge tubes	**X473.1** *	1	939,00
Spare rack for 60 x 1.5 ml tubes	**X474.1** *	1	109,00

* Longer delivery times possible. Please check with our Sales Department.

Temperature-controllable multifunction mixer Enviro-Genie®

By Scientific Industries. Mixing, stirring and tempering units for 5 different applications: **cooling - incubating - rotating - tilting/shaking - stirring**

- Easy-to-read, digital display
- With large window for viewing samples
- **Change-over from rotating to tilting in one movement**
- Holders for vials and other vessels, e.g. for blood and sample vials, centrifuge tubes, tissue culture bottles, staining vessels, sample bags can be placed on the magnetic platform.
- **Temperature range adjustable from +4 to +75 °C**
- With visual and acoustic alarm for temperature and time
- Programmable timer function (up to 96 h)
- **Two magnetic stirrers are integrated in the incubator**, Reverse mode is possible. Max. stirring amount per platform: 1 litre. Platform-∅: 90 mm each.
- RS 232-interface

Technical specifications:

Speed	
Rotating	1 to 35 rpm
Tilting	2 to 70 cycles per min
Stirring	1 to 2000 rpm
Heating and cooling function	
Ideal for temperatures	+4 to +75 °C
Resolution	0.1 °C
Accuracy	±0.2 °C
Dimensions	
Outer dimensions (W x D x H)	622 x 495 x 368 mm
Inner dimensions (W x D x H)	362 x 254 x 260 mm
Others	
Max. load	4500 g
Volume	24 l
Weight	36 kg
Power supply	230 V, 50/60 Hz

Delivery incl. 1 Multi-function mixer Enviro-Genie®, 1 double-sided magnetic platform (200 x 340 mm), 1 holder with 12 clips for 10 to 13 mm tubes, 1 holder with 6 clips for 15 to 17 mm tubes, 1 holder with 3 clips for 29 to 32 mm tubes, 4 magnetic strips for 2 bags 15.3 x 15.3 cm, 1 wire rack, 1 shaking tray (203 x 305 mm).

Art. No.	Pack Qty.	€
AH71.1 *	1	7269,15

* Longer delivery times possible. Please check with our Sales Department.

Overhead mixer REAX 2

By Heidolph. Extremely versatile mixer with electronically regulated rotor speed. Can be used with two alternative holders. **Holder 1** for mixing of max. 20 test tubes ∅ 10-18 mm please order separately.

Technical specifications:

Rpm	20 to 100 rpm
Power consumption	27 W
System of protection	IP 21
Ambient temperature	0 to +40 °C at 80 % rh
Dimensions (W x D x H)	510 x 180 x 235 mm
Weight	5200 g
Power supply	230 V, 50 Hz

Delivery incl. universal holder for attaching closed vessels or test tube racks. Height continuously adjustable from 45 to 160 mm.

Art. No.	Pack Qty.	€
H827.1 *	1	1458,00

Accessories for overhead mixer REAX 2

By Heidolph.
Holder 1
For attaching max. 20 test tubes (∅ 10-18 mm).

Art. No.	Pack Qty.	€
H828.1 *	1	224,00

* Longer delivery times possible. Please check with our Sales Department.

Mixer BagRotator

By Scientific Industries. Even overhead, rotational movements for mixing substances in sample bags and blood bags etc.

- Suitable for simultaneous mixing of 40 bags each with 300 ml volume
- The rotary module (= basket) is divided into 8 compartments; each compartment can be filled with 5 bags
- The extremely gentle mixing movement prevents accidental damage to bag
- Speed remains constant even with maximum load

Technical specifications:

Fixed speed	3 rpm
Dimensions (W x D x H)	508 x 252 x 267 mm
Weight	7.7 kg
Current	230 V, 50 Hz

Art. No.	Pack Qty.	€
CH97.1 *	1	1172,85

* Longer delivery times possible. Please check with our Sales Department.

Overhead mixer REAX 20-series

By Heidolph. Enables overhead rotation of vessels of different sizes and properties. Suitable for mixing cylinders and wide neck bottles with a length of 160 to 270 mm and diameter up to 136 mm. Ideal for water, sewage water and mud analysis in accordance with DIN 36414. Infinitely adjustable speed range.

Technical specifications:

Model	REAX 20/4	REAX 20/8	REAX 20/12
Capacity	4 bottles	8 bottles	12 bottles
Speed	1 to 16 rpm		
Output (W)	280 W		
Dimensions W x H x D (mm)	490 x 465 x 520	770 x 465 x 520	1050 x 465 x 520
Perm. ambient conditions	0 to 40 °C at 80 % rh		
Weight (kg)	23	28	33
Mains supply	230 V, 50 Hz		

Delivery incl. holder for 2 l-bottles.

Product	Capacity	Art. No.	Pack Qty.	€
Overhead mixer REAX 20/4	4 bottles	**KH64.1** *	1	2756,00
Overhead mixer REAX 20/8	8 bottles	**H830.1** *	1	3111,00
Overhead mixer REAX 20/12	12 bottles	**KH65.1** *	1	3529,00

Accessories:

Attachment set for 4 x 1.0 l bottles	**KH66.1** *	1	61,00
Attachment set for 4 x 0.5 l bottles	**KH67.1** *	1	61,00

* Longer delivery times possible. Please check with our Sales Department.

▶ Homogenizing bags, see page 259

① Rotilabo®-mini-centrifuge

With openings for **6 microcentrifuge tubes** 1.5/2.0 ml. Maximum speed **6000 rpm** (equivalent to 2000 x g). **Small, handy and powerful. Start and stop** are **controlled by an extra switch**. Features transparent polycarbonate lid. Centrifuge is supplied with adapter for 0.5 ml micro-centrifuges tubes. Dimensions: H 120 x W 130 x D 150 mm. Weight: 494 g. Power supply 220 V, 50/60 Hz.

Art. No.	Pack Qty.	€
T464.1	1	252,65

② Rotilabo®-centrifuge with butterfly-rotor

Same as Art. No. **T464.1**, however suitable for PCR-strips of 2 x 8 microcentrifuge tubes at 200 µl per strip.

Art. No.	Pack Qty.	€
T465.1	1	231,15

Mini-centrifuge with microscope slide rotor

For speedy drying of microscope slides, e.g. for micro-array analysis. Suitable for all micro-array slides 25 x 76 x 1 mm. Dries micro-array substrates in less than 10 s.

- Rotor capacity: 2 microscope slides
- The liquid is retained in the microscope slide cassettes
- Cassettes can be removed for cleaning or replaced when necessary
- Max. speed 4000 tr/min (500 to 850 x g)
- Space efficient, compact unit (∅ 127 mm)

Art. No.	Pack Qty.	€
AH48.1	1	579,45

Accessories:

Spare cassettes for microscope slides	**AH49.1**	1 Pair	137,60

Microlitre centrifuges

Rotilabo®-mini-centrifuge "Uni-fuge"

- Replaceable rotor system
  (for easy insertion and removal of all rotors included in delivery)
- **Start and stop are controlled by a supplementary switch**
- Small, handy and powerful
- With transparent PC-lid

Technical specifications:

Speed max.	6000 rpm
Max. RCF	2000 x g
Dimensions (W x D x H)	130 x 150 x 120 mm
Weight	494 g
Power supply	220 V, 50/60 Hz

Delivery incl. standard rotor for centrifuge tubes 6 x 1.5/2.0 ml, adapter for 0.5 ml centrifuge tubes and a rotor for PCR®-tube strips with 2 x 8 centrifuge tubes à 200 µl per strip.

Art. No.	Pack Qty.	€
CX73.1	1	231,15

Mini G mini centrifuge

By IKA.

- Max. capacity: 8 x 1.5/2.0 ml reaction vials
- Rotor interchangeable without tools
- **Digital operating time display (adjustable from 1 to 99 min)**

Technical specifications:

Max. speed	6000 rpm
Max. RCF	2000 x g
Dimensions (W x D x H)	155 x 175 x 105 mm
Power supply	230 V, 50/60 Hz

Delivery incl. standard rotor for 8 x 1.5/2.0 ml reaction vials and a rotor for PCR® tube strips with 4 x 8 reaction vials, each 200 µl per strip and adapters for 0.5/0.4/0.2 ml reaction vials.

Art. No.	Pack Qty.	€
XT15.1	1	313,00

Rotilabo®-microlitre centrifuge Gusto™

- Max. capacity: 12 x 1.5/2.0 ml reaction vials
- Digital display of speed and running time
- Actual status display during operation
- Pulse button for short spin
- Optional display of rpm or x g
- Rotor changing without tools

Technical specifications:

Max. speed	12500 rpm adjustable in increments of 100
Min. speed	500 rpm
Max. RCF	9800 x g
Operating time	1 s to 30 min, adjustable in increments of 1 s per short cycle
Dimensions (W x H x D)	171 x 114 x 203 mm
Power supply	100-240 V, 50/60 Hz

Delivery incl. 12-place microlitre rotor with lid, PCR® tube strip rotor for 4 x 8 tube strips à 200 µl per strip and 12 adapters for 0.5 and 0.2 ml reaction vials.

Art. No.	Pack Qty.	€
XP51.1	1	708,45

Microlitre centrifuges

Microlitre centrifuge CD-2012 high speed

Features:
- Max. capacity: 12 x 1.5/2.0 ml reaction vials
- Illuminated display of speed and running time
- Optional display of rpm or x g
- Impulse button for short spinning of samples

Technical specifications:

Max. speed	15000 rpm, adjustable in increments of 100
Min. speed	500 rpm
Max. RCF	15100 x g
Operating time	30 sec to 99 min, adjustable in steps of 1 sec / continuous operation / short cycle
Dimensions (W x H x D)	260 x 250 x 140 mm
Weight	6 kg
Power supply	110-240 V, 50/60 Hz

Delivery incl. 12-position microlitre rotor with lid.

Art. No.	Pack Qty.	€
HEA7.1	1	854,65

Adapter for microlitre centrifuges CD-2012

Type	Art. No.	Pack Qty.	€
for reaction vials 0.2 ml	**HEA8.1**	24	52,70
for reaction vials 0.5 ml	**HEA9.1**	24	52,70

Microlitre centrifuge MIKRO 185

By Hettich. Sample preparation for molecular biological applications, as well as in the PCR laboratory and much more.
- Max. capacity 24 x 1.5/2.0 ml reaction vials
- Adjustment of centrifuging time, rpm or RCF by means of membrane keyboard

Technical specifications:

Max. speed	13300 rpm, adjustable in increments of 100 rpm
Min. speed	500 rpm
Maximum RCF (in rotor type 1226)	17008 x g
Operating time	1 to 99 min / continuous duty / short cycle (pulse key)
Dimensions (H x W x D)	228 x 262 x 352 mm
Weight	10 kg
Power supply	208-240 V, 50/60 Hz

Delivery without microlitre rotor. Please order separately.

Art. No.	Pack Qty.	€
ANP9.1	1	1270,65

Microlitre rotors for MIKRO 185

By Hettich.

① **24-tube microlitre rotor (45°) type 1226**
- For 24 x 1.5/2.0 ml reaction vials
- Max. speed 13300 rpm max. RCF 17008 x g

Delivery incl. lid with bioseal, phenol resistant and autoclavable.

Type	Art. No.	Pack Qty.	€
24-tube microlitre rotor type 1226	**ANT0.1**	1	341,85

12-tube microlitre rotor (45°) type 1252
- For 12 x 1.5/2.0 ml reaction vials
- Max. speed 13300 rpm max. RCF 14041 x g

Delivery incl. lid.

Type	Art. No.	Pack Qty.	€
12-tube microlitre rotor type 1252	**ANT1.1**	1	268,75

18-tube microlitre rotor (45°) for Spin Column Kits type 1213
- For Micro Spin Column Kits (micro tubes with filter cartridge) 18 x 1.5/2.0 ml
- Max. speed 13300 rpm max. RCF 15030 x g

Delivery without lid. Please order separately if required.

Type	Art. No.	Pack Qty.	€
18-tube microlitre rotor type 1213	**ANT2.1**	1	268,75
Lid type 1246 with bioseal for rotor type 1213	**ANT3.1**	1	196,75

Accessories:

Adapter sleeves for 0.2 ml reaction vials	**AA67.1** *	6	12,05
Adapter sleeves for 0.5 ml reaction vials	**Y059.1** *	6	13,95
Adapter sleeve, tapered, for 1.5 ml vials	**AA68.1** *	6	13,50

* Longer delivery times possible. Please check with our Sales Department.

Microlitre centrifuges

Heraeus® Pico® and Fresco® microlitre centrifuges

By Thermo.

General information for all models

- **Max. capacity: 24 x 1.5/2.0 ml centrifuge tubes**
- Available in the 17 000 x g- and 21 100 x g version
- Optional display of rpm or x g
- Speed can be increased in increments of 100
- Various sets available with different rotors. e.g. a two-row rotor for holding 18 x 1.5/2.0 ml- and 18 x 0.5 m centrifuge tubes

Cooling centrifuge models Fresco® 17 and Fresco® 21

- Cooled microlitre centrifuges
- With stop-period cooling

Technical specifications:

Model	Pico® 17 and Fresco® 17	Pico® 21 and Fresco® 21
Maximum speed	13 300 rpm	14 800 rpm
Minimum speed	300 min^{-1}	
Maximum RCF	17 000 x g	21 100 x g
Operating time	1 to 99 min / Continuous Run / Quick Run	
Temperature setting range	Pico® 17 / 21: Air-cooled or without cooling function	
	Fresco® 17 / 21: -9 to +40 °C in 1 °C increments	
Dimensions (H x W x D)	Pico® 17 / 21: 243 x 225 x 352 mm	
	Fresco® 17 / 21: 295 x 330 x 445 mm	
Power supply	230 V, 50/60 Hz	

Heraeus® Pico® and Fresco® packages with 1 rotor

Centrifuge incl. 24 x 1.5/2.0 ml rotor with aerosol-tight ClickSeal lid.

Type	Art. No.	Pack Qty.	€
Heraeus® Pico® 17 with 24-place rotor	**HE09.1** *	1	1802,00
Heraeus® Fresco® 17 with 24-place rotor	**HE10.1** *	1	4347,00
Heraeus® Pico® 21 with 24-place rotor	**HE11.1** *	1	2281,00
Heraeus® Fresco® 21 with 24-place rotor	**HE12.1** *	1	4860,00

Heraeus® Pico® and Fresco® packages with 2 rotors

Centrifuge **incl.** 24 x 1.5/2.0 ml rotor with aerosol-tight ClickSeal lid and two-row 18 x 0.5 ml and 18 x 1.5/2.0 ml rotor with screw lid.

Type	Art. No.	Pack Qty.	€
Heraeus® Pico® 21 with 24- and 36-place rotor	**HE13.1** *	1	2689,00
Heraeus® Fresco® 21 with 24- and 36-place rotor	**HE14.1** *	1	5419,00

Accessories:

10-place microliter rotor for 5 ml reaction tubes with aerosol-tight ClickSeal lid	**HAA9.1** *	1	514,00

Reducing sleeves for Pico® and Fresco®

By Thermo.

Type	Art. No.	Pack Qty.	€
Reducing sleeves for 0.5 ml centrifuge tubes	**X118.1** *	24	169,00
Reducing sleeves for 0.4 ml/0.25 ml centrifuge tubes	**X119.1** *	24	170,00
Reducing sleeves for 0.2 ml centrifuge tubes	**X121.1** *	24	169,00

Accessories:

10-place microliter rotor for 5 ml reaction tubes with aerosol-tight ClickSeal lid	**HAA9.1** *	1	514,00

* Longer delivery times possible. Please check with our Sales Department.

Microlitre centrifuges MIKRO 200/200 R

By Hettich.

Standard features for both models:

- **Max capacity: 24 x 1.5/2.0 ml centrifuge tubes**
- Motor-driven lid lock
- Parameter input via keypad
- Actual value display during run
- Impulse button for quick-run pre-centrifuging
- "Open lid" button
- RCF button
- Safety: lid catch, emergency unlock, motor overheating protection and automatic unbalance switch-off

Cooling Centrifuge Mikro 200 R

- Infinitely adjustable from -10 to +40 °C in 1 °C increments
- Pre-cooling function (in 10 to 15 min to +4 °C)
- Stand-by cooling maintains desired temperature
- Cooling automatically switches off when lid is open or after a pre-set time

Technical specifications:

Model	MIKRO 200 classic	MIKRO 200 R cooled
Maximum rpm speed	14 000 rpm, adjustable in 100 increments	
Minimum rpm speed	500 rpm	
Maximum RCF	18 626 x g	
Operation time	1 to 99 min / continuous run / short run	
Temperature range	-	**-10 °C to +40 °C**
Min. Temperature at max. speed	-	+4 °C
Dimensions (W x H x D)	275 x 260 x 347 mm	281 x 260 x 547 mm
Weight	11.5 kg	28.5 kg
Power supply	220-240 V, 50/60 Hz	

Delivery without rotor. Please order separately.

Type	Art. No.	Pack Qty.	€
MIKRO 200 classic	**AA69.1** *	1	1856,55
MIKRO 200 R cooled	**AA70.1** *	1	4530,05

Accessories for MIKRO 200/200 R centrifuges

By Hettich.

Angle rotor for max 24 centrifuge tubes 1.5 / 2.0 ml

50° angle, with aerosol-tight lid, autoclavable.

Type	Art. No.	Pack Qty.	€
Angle rotor for 24 x 1.5/2.0 ml	**AA71.1** *	1	324,65

Reducing bushes

Type	Art. No.	Pack Qty.	€
Adapter sleeves for 0.5 ml reaction vials	**Y059.1** *	6	13,95
Adapter sleeves for 0.2 ml reaction vials	**AA67.1** *	6	12,05

Reducing bush for conical 1.5 ml centrifuge tubes

Positive reduction, recommended for high-speed centrifuging.

Type	Art. No.	Pack Qty.	€
Adapter sleeve, tapered, for 1.5 ml vials	**AA68.1** *	6	13,50

* Longer delivery times possible. Please check with our Sales Department.

Microlitre centrifuges

Table centrifuges Mikro 220 / 220 R

By Hettich.

General specifications for both models

- 9 braking and starting ramps plus unbraked run-out possible
- Memory capacity for 10 programs
- Automatic rotor recognition
- Optional display of rpm or x g upon entry of rotor radius
- Window in lid
- Metal housing
- Safety features: Emergency unlocking device, motor overheating protection, unbalance switch-off

Cooling centrifuge Mikro 220 R cooled

- Infinitely variable from -20 to +40 °C in 1 °C-increments
- Precooling function

Technical specifications:

Model	Mikro 220 classic	Mikro 220 R cooled
Max. speed (in microlitre rotor)	18 000 rpm, adjustable to increments of 10	
Min. speed	500 rpm	
Max. RCF (in microlitre rotor)	31 514 x g	
Min. RCF	24 x g	
Operation time	1 to 99 min, continuous run, impulse key	
Temperature range	-	-20 to +40 °C
Dimensions (W x D x H)	330 x 420 x 313 mm	330 x 650 x 313 mm
Weight	21 kg	42 kg
Power supply	220-240 V, 50/60 Hz	

Delivery without rotor (please order separately).

Type	Art. No.	Pack Qty.	€
Mikro 220 classic	**LE07.1** *	1	2828,35
Mikro 220 R cooled	**LE08.1** *	1	5121,30

* Longer delivery times possible. Please check with our Sales Department.

Rotors and accessories for Mikro 220 / 220 R

By Hettich.

Model	① 1195-A	② 1189-A	③ 1160	④ 1016
Max. capacity	24 x 1.5/2.0 ml	30 x 1.5/2.0 ml	6 PCR-Strips	3 x 50 ml
Max. speed	18 000 rpm	14 000 rpm	14 000 rpm	6000 rpm
Max. RCF	31 514 x g	21 255 x g	18 845 x g	3783 x g

*Rotor suitable only for Micro 220 R (Art.-No. LE08.1).

① 24-place microlitre rotor model 1195-A

- Max. capacity 24 x 1.5/2.0 m centrifuge tubes
- High performance: max. 18 000 rpm, max. RCF 31514 x g

Delivery incl. lid.

Type	Art. No.	Pack Qty.	€
24-place microlitre rotor Model 1195-A	**LE09.1** *	1	447,20
Adapter sleeves for 0.5 ml reaction vials	**Y059.1** *	6	13,95
Adapter sleeves for 0.2 ml reaction vials	**AA67.1** *	6	12,05

② 30-place microlitre rotor for centrifuge tubes model 1189-A

- Max. capacity 30 x 1.5/2.0 ml centrifuge tubes
- High performance: max. 14 000 rpm, max. RCF 21255 x g

Delivery incl. lid.

Type	Art. No.	Pack Qty.	€
30-place microlitre rotor Model 1189-A	**LE10.1** *	1	560,10
Adapter sleeves for 0.5 ml reaction vials	**Y059.1** *	6	13,95
Adapter sleeves for 0.2 ml reaction vials	**AA67.1** *	6	12,05

③ 6-place angle rotor for PCR-strips type 1016

- **Rotor only suitable for Mikro 220 R (Art. No. LE08.1)**
- Max. capacity 3 x 50 ml
- Max. speed 6000 rpm, max. RCF 3783 x g

Delivery without adapter for vials, please order separately.
Adapters are required to operate.

Type	Art. No.	Pack Qty.	€
6-place angle rotor for vials Type 1016	**LE13.1** *	1	576,20

Adapters for angle rotor type 1016

Nominal volume of vial	15 ml	15 ml type Falcon®	50 ml type Falcon®
Number of containers per rotor	6	6	3
Adapters required per rotor	6	6	3
Max. tube length	100 mm	120 mm	115 mm
Max. tube ∅	17 mm	17 mm	29 mm
Shape of bottom	round	conical	conical

Type	Art. No.	Pack Qty.	€
Adapter for 15 ml standard test tubes	**LE14.1** *	1	35,50
Adapter for 15 ml tubes of type Falcon®	**LE15.1** *	1	35,50
Adapter for 50 ml tubes of type Falcon®	**LE16.1** *	1	35,50

* Longer delivery times possible. Please check with our Sales Department.

Compact PCR plate centrifuge C1000

For 2 PCR plates in 96-well format.
- Suitable for skirted, non-skirted or semi-skirted plates (with/without half frame)
- To prevent soiling inside the rotor, only PCR plates that have been hot-laminated or sealed with film should be used
- PCR plates are inserted vertically into the rotor
- Fast centrifugation of droplets or condensate

Technical specifications:

Max. speed	2500 rpm
Max. RZB	500 x g
Max. capacity	2 PCR plates
Dimensions (W x D x H)	190 x 210 x 183 mm
Weight	1.5 kg
Voltage	230 V, 50/60 Hz

Art. No.	Pack Qty.	€
PP33.1	1	686,95

Adapter for strips and small PCR plates

The adapter's dimensions are identical to those of a standard 96 well PCR plate. Suitable for 0.2 ml PCR tubes, 8 ml PCR reaction vials, 12 ml PCR reaction vials, 24 well PCR plates and 48 well PCR plates.

Art. No.	Pack Qty.	€
TA20.1	2	61,10

Haematocrit centrifuge 200

By Hettich. For determining the percentage by volume of erythrocytes in blood. Haematocrit determination for diagnostic purposes and drug testing.
- Adjustment of time and speed
- Remaining runtime and rotational speed are shown on the display
- Safety: lid locking and holding, imbalance switch-off

Technical specifications:

Max. speed	13000 rpm, adjustable in increments of 100 rpm
Min. speed	500 rpm
Max. RCF	16060 x g
Operating time	1 to 99 min / continuous duty / short cycle (pulse key)
Dimensions (H x W x D)	228 x 262 x 352 mm
Weight	10 kg
Power supply	208-240 V, 50/60 Hz

Delivery without haematocrit rotor. Please order separately.

Art. No.	Pack Qty.	€
ANX2.1	1	1785,60

Rotor for haematocrit centrifuge 200

By Hettich.
24-tube haematocrit rotor
- For 24 standard capillary tubes
- Each capillary has its own chamber and is cushioned by holding trays at the outer rim
- Max. speed 13000 rpm max. RCF 16060 x g

Delivery incl. lid with integrated evaluation disc.

Art. No.	Pack Qty.	€
ANX3.1	1	152,65

Manual centrifuge

By Hettich. With 4-place oscillating rotors for 15 ml centrifuge tubes.
- With clamp device (max. span width approx. 40 mm) for attaching the centrifuge to lab desktops, etc.
- Dimensions: W 140 x D 175 x H 285 mm
- Weight approx. 0.9 kg

Technical specifications:

Max. capacity	4 x 15 ml
Speed max.	3000 rpm
Max. RCF	1076 x g
Max. tube length	125 mm
Max. tube ∅	17 mm

Delivery without oscillating rotor, please order separately.

Type	Art. No.	Pack Qty.	€
Manual centrifuge, without rotor	**EE90.1**	1	146,20
Accessories:			
4-place oscillating rotor	**EE91.1**	1	132,25

Rotilabo®-centrifuge tubes

Made of highly transparent **PP**. Lid made of PE. **Sterile** or non-sterile. With printed, black graduation. Certified free of nucleases, endotoxins and metals (<1 ppm). Not cytotoxic. Temperature stability: from -80 to +122 °C.

Without vertical lip, with white labelling area, centrifugable (fixed angle rotor) max. 17 000 x g (15 ml-vials) resp. 20 000 x g (50 ml-vials).

Volume (ml)	Design	∅ x H (mm)	Packaging	Art. No.	Pack Qty.	€
15	non-sterile	17 x 120	50 in a bag	**N458.1**	500	116,10
15	**sterile**	17 x 120	50 in a bag	**N459.1**	500	126,85
15	non-sterile	17 x 120	25 in a rack	**N460.1**	500	144,05
15	**sterile**	17 x 120	25 in a rack	**N461.1**	500	155,90
50	non-sterile	29 x 115	50 in a bag	**N462.1**	500	137,60
50	**sterile**	29 x 115	50 in a bag	**N463.1**	500	151,60
50	non-sterile	29 x 115	25 in a rack	**N464.1**	500	163,40
50	**sterile**	29 x 115	25 in a rack	**N465.1**	500	167,70

With vertical lip, with white labelling area, centrifugable up to 10 000 x g

Volume (ml)	Design	∅ x H (mm)	Packaging	Art. No.	Pack Qty.	€
50	non-sterile	29 x 117	50 in a bag	**X063.1**	500	164,50
50	**sterile**	29 x 117	50 in a bag	**X064.1**	500	192,45

Multi Tube racks

Made of **POM**. 4 flexible slots for variable use, fits tube ∅ 12 to 30 mm. Interconnectable. Dimensions: L 181 x W 56 x H 76 mm. Autoclavable.

Colour	Art. No.	Pack Qty.	€
blue/green	**AXH9.1**	2	13,45
blue/yellow	**AXK0.1**	2	13,45
blue	**AXK1.1**	2	13,45
green	**AXK2.1**	2	13,45
yellow	**AXK3.1**	2	13,45
white	**AXK4.1**	2	13,45
pink	**AXK5.1**	2	13,45

CD-0412 small benchtop centrifuge

With 12-slot angle rotor (45°) for centrifuging blood sample vessels, urine test tubes and centrifuge tubes (Falcon type).

- Illuminated display
- Centrifugation time, in rpm or x g
- The timer starts once the selected speed is reached
- Safety: Cover lock, speed monitoring system and protection against overheating

For use of the following types of vessel:
- 12 x 15 ml standard test tubes (∅ 17 x L 100 mm)
- 6 x 15 ml Falcon centrifuge tubes (∅ 17 x L 120 mm)
- 12 x 2.7-4.3 ml blood vials (∅ 13 x L 75 mm)
- 12 x 4.5-4.9 ml blood vials (∅ 11 x L 92 mm, ∅ 13 x L 90 mm)
- 12 x 7.5-10 ml blood vials (∅ 15/16 x L 92 mm)
- 12 x 9-10 ml blood vials (∅ 16 x L 92 mm)
- 12 x 9.5-10 ml urine test tubes (∅ 15 x L 100 mm)

Technical specifications:

Maximum speed	4500 rpm, adjustable in increments of 100 rpm
Minimum speed	300 rpm
Maximum RCF	2490 x g
Operating time	30 s to 99 min/continuous run function/short cycle (pulse key)
Dimensions (W x D x H)	140 x 255 x 245 mm
Weight	6.7 kg
Power supply	100-240 V, 50/60 Hz

Delivery incl. 12-slot angle rotor, adapter set (socket-∅ inner 16 mm, H 80 mm) and spacers (H 21 mm).

Art. No.	Pack Qty.	€
EEE2.1	1	747,15

EBA 200 and 200 S small centrifuge

By Hettich. For centrifugation of blood and urine samples, clarification of water and soil samples, etc.

General specifications of both models:
- Lid can be opened at the touch of a button
- Housing and lid made of impact resistant plastic, metal lid inner
- Overheating protection
- **With 8-tube angle rotor**

For use of the following types of vessel:
- 8 x 15 ml standard test tubes (∅ 17 x L 100 mm)
- 4 x 15 ml centrifuge tubes of type Falcon (∅ 17 x L 120 mm)
- 4 x 8 ml urine test tubes (∅ 16 x L 125 mm)
- 8 x 7.5-10 ml blood collection tubes (∅ 15/16 x L 92 mm)
- 8 x 4.5-4.9 ml blood collection tubes (∅ 11 x L 92 mm, ∅ 13 x L 90 mm)
- 8 x 10 ml blood collection tubes (∅ 15 x L 102 mm)

Technical specifications:

Model	**EBA 200**	**EBA 200 S**
Max. speed	6000 rpm, adjustable in increments of 100 rpm	8000 rpm, adjustable in increments of 100 rpm
Min. speed	500 rpm	
Max. RCF	3461 x g	6153 x g
Operating time	1 to 99 min / continuous duty / short cycle (pulse key)	
Dimensions (H x W x D)	228 x 262 x 352 mm	
Weight	8 kg	10 kg
Power supply	208-240 V, 50/60 Hz	

Delivery incl. 8-tube angle rotor for max. capacity 8 x 15 ml.

Type	Art. No.	Pack Qty.	€
EBA 200	**ANT4.1**	1	1113,70
EBA 200 S	**ANT5.1**	1	2067,25
Accessories:			
Adapter type 1054-A for 5/6 ml vials (∅ 12 x L 75/82 mm)	**ANT6.1**	1	20,40

Small centrifuge EBA 270

By Hettich. **With 6-slot oscillating rotor** for centrifuging blood sample vessels, urine test tubes and standard centrifuge tubes.

- Variable speed and cycle time
- Display of parameters during centrifugation
- "Open lid" key for one-touch opening
- Safety: lid lock, emergency lid lock release, imbalance switch-off and metal lid
- Stainless steel centrifuging chamber

For use of the following types of vessel:

- 15 ml standard test tubes (∅ 17 x L 100 mm)
- 5/6 ml standard test tubes (∅ 12 x L 75/82 mm)
- 2.6-2.9 ml blood sample vessels (∅ 13 x L 65 mm), 2.7-3 ml (∅ 11 x L 66 mm)
- 4-5.5 ml blood sample vessels (∅ 15 x L 75 mm), 4.5-5 ml (∅ 11 x L 92 mm), 4.9 ml (∅ 13 x L 90 mm), 7.5-8.5 ml (∅ 15 x L 92 mm), 9-10 ml (∅ 16 x L 92 mm), 10 ml (∅ 15 x L 102 mm)
- 1.6-5 ml urine test tubes (∅ 13 x L 75 mm), 4.5-7 ml (∅ 13 x L 100 mm), 4-7 ml (∅ 16 x L 75 mm), 8.5-10 ml (∅ 16 x L 100 mm)

Technical specifications:

Max. speed	4000 rpm, adjustable in increments of 100 rpm
Min. speed	500 rpm
Max. RCF	2254 x g
Operating time	1 to 99 min 59 sec / continuous or intermittent duty
Dimensions (W x D x H)	326 x 389 x 239 mm
Weight	13 kg
Mains connection	208-240 V, 50/60 Hz

Delivery incl. 6-slot oscillating rotor (90), 6 sleeves with hole ∅ 17.5 x L 80 mm and 6 sleeves with hole-∅ 17.5 x L 50 mm.

Art. No.	Pack Qty.	€
PH35.1	1	1198,65

Medifuge small benchtop centrifuge with 2-in-1 hybrid rotor

By Thermo. With eight-slot hybrid rotor for centrifuging blood sample vessels, urine test tubes and standard centrifuge tubes. Depending on whether fixed-angle buckets (45°) or swing-out buckets (90°) are used in the rotor, various types of centrifugation are possible. Mixed bucket configurations (fixed-angle and swing-out buckets) are also possible.

- Centrifugation time, variably adjustable in rpm or x g
- Memory for four programs with one-touch button
- Three braking profiles – standard, soft and brake off

For using the following vessel types:

Fixed-angle buckets

- 8 x 15 ml centrifuge tubes, Falcon type (∅ 17 x L 120 mm)
- 8 x 15 ml standard test tubes (∅ 17 x L 100 mm)
- 8 x 6/12/15 ml glass tubes (∅ 12/16 x L 100/125 mm)
- 8 x 1.2-4.3 ml blood vials (∅ 8-13 x L 66/75 mm)
- 8 x 4.5-4.9 ml blood vials (∅ 11 x L 92 mm/∅ 13 x L 90 mm)
- 8 x 7.5-10 ml blood vials (∅ 15/16 x L 92 mm)
- 8 x 9-10 ml blood vials (∅ 16 x L 92 mm)
- 8 x 9.5-10 ml urine test tubes (∅ 15 x L 100 mm)

Swing-out buckets

- 8 x 15 ml standard test tubes (∅ 17 x L 100 mm)
- 8 x 6/12/15 ml glass tubes (∅ 12/16 x L 100 mm)
- 8 x 1.2-4.3 ml blood vials (∅ 8-13 x L 66/75 mm)
- 8 x 4.5-4.9 ml blood vials (∅ 11 x L 92 mm, ∅ 13 x L 90 mm)
- 8 x 7.5-10 ml blood vials (∅ 15/16 x L 92 mm)
- 8 x 9-10 ml blood vials (∅ 16 x L 92 mm)
- 8 x 9.5-10 ml urine test tubes (∅ 15 x L 100 mm)

Technical specifications:

Maximum speed	4900 rpm, adjustable in increments of 100 rpm
Minimum speed	300 rpm
Maximum RCF	Fixed-angle bucket: 3114 x g Swing-out bucket: 3490 x g
Operating time	1-99 min/continuous run function/short cycle (pulse key)
Dimensions (W x D x H)	241 x 325 x 450 mm
Power requirement	130 W
Weight	15.5 kg
Power supply	220-230 V, 50/60 Hz

Delivery incl. DualSpin™-rotor with fixed-angle and swing-out bucket set (each with eight fixed-angle and swing-out buckets) and adapter set for various vessels.

Art. No.	Pack Qty.	€
EEE1.1	1	1145,00

Benchtop centrifuge Frontier FC 5706

By Ohaus. For sample preparation and sedimentation of cells, yeasts, bacteria, etc.

- Optional display of rpm or x g
- Backlit LCD display
- Depending on the rotor, suitable for max. 6 x 50 ml centrifuge tubes of type Falcon® or 12 x 15 ml standard tubes
- Lid with locking system
- Unbalance sensor

Technical specifications:

Max. speed	6000 rpm, adjustable in increments of 50 rpm
Min. speed	200 rpm
Max. RZB (in angle rotor)	4427 x g
Operating time	10 secs to 99 h, 99 min, 99 secs or continuous operation
Dimensions (W x D x H)	291 x 392 x 266 mm
Weight	10.5 kg
Power supply	230 V, 50/60 Hz

Delivery without rotor (please order separately).

Art. No.	Pack Qty.	€
HNP6.1	1	1180,00

Accessories for benchtop centrifuge Frontier FC 5706

① **12-fold angle rotor (32°), type 1520 for 15 ml tubes**
For 12 standard tubes, 15 ml with round base (∅ 17 x L 100 mm, max. RZB 4427 x g) or with optional adapter for reaction vials.

Type	Art. No.	Pack Qty.	€
12-fold angle rotor, type 1520	**HNP7.1**	1	271,00

Adapter for 12-tube angle rotor type 1520

Vessel nominal volume (ml)	7	5	1.5/2.0
Required number of adapters per rotor	12	12	12
Max. vessel length (mm)	100	65 or 75	42
Max. vessel ∅ (mm)	13	13	11
Max. RCF	4265 x g	3621 x g	3058 x g

Type	Art. No.	Pack Qty.	€
Adapter for 7 ml vessels	**HNP8.1**	2	40,00
Adapter for 5 ml reaction vials	**HNP9.1**	2	35,00
Adapter for 1.5/2.0 ml reaction vials	**HNT0.1**	6	65,00

Accessories for benchtop centrifuge Frontier FC 5706

② **6-fold angle rotor (40°), type 5015 for 50 ml tubes**
For 6 centrifuge tubes, 50 ml, type Falcon® (∅ 30 x L 115 mm, max. RZB 4427 x g) or with optional adapter for 15 ml centrifuge tubes, type Falcon®.

Type	Art. No.	Pack Qty.	€
6-fold angle rotor, type 5015	**HNT1.1**	1	480,00

Adapter for 6-tube angle rotor type 5015

Vessel nominal volume (ml)	30	15	15, Type Falcon®
Required number of adapters per rotor	6	6	6
Max. vessel length (mm)	95 or 100	100 or 105	120
Max. vessel ∅ (mm)	25	17	17
Bottom shape	Round	Round	Conical
Max. RCF	4306 x g	4225 x g	4185 x g

Type	Art. No.	Pack Qty.	€
Adapter for 30-ml vessels	**HNT2.1**	2	82,10
Adapter for 15 ml standard test tubes	**HNT3.1**	2	82,10
Adapter for 15 ml tubes of type Falcon®	**HNT4.1**	2	57,00

Benchtop centrifuge Rotofix 32 A

By Hettich. For sample preparation in research and industrial laboratories.

Design:

- Display of actual status during run
- Window in lid
- Automatic rotor recognition
- Optional display of rpmor x g
- Metal casing and lid are covered with a blow/scratchproof coating
- Safety: lid locking device and tumbler, unbalance switch-off, emergency unlocking device

Technical specifications:

Max. speed (in angular rotor)	6000 rpm
Min. speed	500 rpm
Max. RCF (in angular rotor)	4146 x g
Setting range	in steps of 100
Operation time	1 to 99 min / continuous operation / button for short run
Dimensions (W x D x H)	366 x 430 x 257 mm
Weight	25 kg

Delivery without rotor, please order separately.

Type	Art. No.	Pack Qty.	€
Table centrifuge Rotofix 32 A	**EC34.1** *	1	1932,85

Accessories for Rotofix 32 A

By Hettich.

① **12-place fixed angle rotor type 1613 for 15 ml vials**
For 12 standard 15 ml vials with round base (∅ 17 x L 100 mm) or 6 centrifuge tubes 15 ml (∅ 17 x L 120 mm) with conical base.
Max. speed 6000 rpm, max. RCF 4146 x g.

Type	Art. No.	Pack Qty.	€
12-place angular rotor Type 1613	**EC35.1** *	1	312,85

② **8-place swinging bucket rotor type 1617 (45°) for 15/50 ml centrifuge tubes**
For 50 ml centrifuge tubes with conical base (∅ 29 x L 115 mm).
An additional adapter is required for 15 ml centrifuge tubes (∅ 17 x L 120 mm), please order separately.
Max. speed 4000 rpm, max. RCF 2469 x g.

Type	Art. No.	Pack Qty.	€
8-place oscillating rotor Type 1617	**EC36.1** *	1	612,75
Adapter for centrifuge tubes 15 ml	**EC37.1** *	1	22,05

③ **4-place swinging bucket rotor type 1624 (90°) for tube beaker**
For attaching 4 tube beakers. Max. speed 4000 rpm, max. RCF 2308 x g.
Please order tube beakers separately.

Type	Art. No.	Pack Qty.	€
4-place oscillating rotor Type 1624	**EC38.1** *	1	346,15

Tube beaker for standard 15 ml tubes
For centrifuging standard 15 ml tubes (∅ 17 x L 100 mm) with round base.
Number of tubes: 4 tubes per beaker, 16 tubes per rotor.
4 tube beakers are required when working with swinging bucket rotor Type 1624.

Type	Art. No.	Pack Qty.	€
Tube beaker for rotor Type 1624	**EC39.1** *	1	35,50

* Longer delivery times possible. Please check with our Sales Department.

EBA 280 small centrifuge

By Hettich. Centrifugation of water and soil samples as well as sedimentation of cells, yeasts, bacteria, etc.

- Programmable control system with 10 memory slots
- Adjustment of centrifuging time, rpm or RCF
- Input of start and stop times in increments from 1 to 9
- Safety: lid locking and holding, emergency lid lock release

Technical specifications:

Max. speed	6000 rpm, adjustable in increments of 100 rpm
Min. speed	500 rpm
Maximum RCF (in rotor type 1226)	3703 x g
Operating time	1 to 99 min / continuous duty / short cycle (pulse key)
Dimensions (H x W x D)	242 x 326 x 389 mm
Weight	11 kg
Power supply	200-240 V, 50/60 Hz

Delivery without rotor. Please order separately.

Art. No.	Pack Qty.	€
ANT7.1	1	2268,25

Rotor and accessories for EBA 280

By Hettich.

6-tube angle rotor (35°) type 1137

- Max. capacity 6 x 50 ml
- Max. speed 6000 rpm max. RCF 3703 x g
- Rotor is suitable for 6 x 50 ml standard test tubes (∅ 34 x L 100 mm) without adapter
- If an adapter is required for standard, Falcon® or Oak-Ridge-tubes, please order separately

Type	Art. No.	Pack Qty.	€
6-tube angle rotor (35°) type 1137	**ANT8.1**	1	557,95

Adapter for 6-tube angle rotor type 1137

Nominal capacity of vessel	7 ml	15 ml	25 ml	15 ml type Falcon®
Number of vessels per rotor	18	6		
Required number of adapters per rotor	6	6		
Max. vessel length (mm)	100	100	100	120
Max. vessel ∅ (mm)	12	17	24	17
Bottom shape	round	round	round	conical

Nominal capacity of vessel	50 ml type Falcon®	30 ml type Oak-Ridge	50 ml type Oak-Ridge
Number of vessels per rotor	3	6	
Required number of adapters per rotor	3	6	
Max. vessel length (mm)	115	95	107
Max. vessel ∅ (mm)	29	26	29
Bottom shape	conical	round	round

Type	Art. No.	Pack Qty.	€
Adapter for 7 ml standard test tubes	**ANT9.1**	1	37,20
Adapter for 15 ml standard test tubes	**LE14.1** *	1	35,50
Adapter for 25 ml standard test tubes and for 30 ml tubes of type Oak-Ridge	**ANX0.1**	1	37,20
Adapter for 15 ml tubes of type Falcon®	**LE15.1** *	1	35,50
Adapter for 50 ml tubes of type Falcon®	**LE16.1** *	1	35,50
Adapter for 50 ml tubes of type Oak-Ridge	**ANX1.1**	1	37,20

* Longer delivery times possible. Please check with our Sales Department.

Benchtop centrifuges Universal 320 / 320 R

By Hettich.

General specifications for both models

- Short accelerating and breaking times
- It is possible to select between 9 breaking and accelerating intervals or a brakeless run-out
- Memory capacity for 10 programs
- Automatic rotor recognition
- Optional display of rpm or x g upon entry of rotor radius
- Simple rotor change
- Window in lid
- Metal housing
- Security: emergency unlocking device, motor overheating protections, unbalance switch-off

Cooling centrifuge Universal 320 R cooled

- Infinitely variable from -20 to +40 °C in 1 °C-increments
- Precooling function

Technical specifications:

Model	Universal 320 classic	Universal 320 R cooled
Max. speed (in microlitre rotor)	15 000 rpm, adjustable to steps of 10	
Min. speed	500 rpm	
Max. RCF (in microlitre rotor)	21 382 x g	
Min. RCF	24 x g	
Operation time	1 to 99 min, continuous run, impulse key	
Temperature range	-	-20 to +40 °C
Dimensions (W x D x H)	395 x 520 x 346 mm	401 x 695 x 346 mm
Weight	29 kg	52 kg
Power supply	220-240 V, 50/60 Hz	

Delivery without rotor (please order separately).

Type	Art. No.	Pack Qty.	€
Universal 320 classic	**EC40.1** *	1	3096,00
Universal 320 R cooled	**EC41.1** *	1	5866,30

* Longer delivery times possible. Please check with our Sales Department.

▶ More rotors and adapters are available upon request!

Rotors and accessories for Universal 320 / 320 R

By Hettich.

Type	① 1552	② 1617	③ 1460/1453	④ 1494
Max. capacity	24 x 1.5/2.0 ml	8 x 50 ml	8 MT-plates	4 x 50 ml
Speed max.	15 000 rpm	5000 rpm	4000 rpm	5000 rpm
Max. RCF	24 900 x g	3875 x g	2218 x g	4165 x g

① **Microlitre rotor type 1552**

- Max. capacity 24 x 1.5/2.0 ml
- High performance: max. 15 000 rpm, max. RCF 24 900 x g

Type	Art. No.	Pack Qty.	€
Microlitre rotor Type 1552	**EC42.1** *	1	693,40

② **8-place oscillating rotor type 1617 (45°) for centrifuge tubes 15/50 ml**

For 8 conical 50 ml centrifuge tubes (∅ 29 x L 115 mm). An additional adapter will be required for centrifuge tubes 15 ml (∅ 17 x L 120 mm), (please order separately).
Max. speed 5000 rpm, max. RCF 3875 x g.

Type	Art. No.	Pack Qty.	€
8-place oscillating rotor type 1617	**EC36.1** *	1	612,75
Adapter for centrifuge tubes 15 ml	**EC37.1** *	1	22,05

③ **2-place oscillating rotor for microtiter plates type 1460/1453**

- Incl. 2 hangers for 8 microtiter plates (L 128 x W 86 x H 15 mm)
- Max. speed 4000 rpm, max. RCF 2218 x g

Type	Art. No.	Pack Qty.	€
2-place oscillating rotor type 1460/1453	**EC43.1** *	1	1164,25

④ **4-place oscillating rotor type 1494 (90°) for vials**

- Max. capacity 4 x 50 ml
- Max. speed 5000 rpm, max. RCF 4165 x g

Delivery without insertion beaker and adapter for vials (please order separately). 4 insertion beakers and the designated adapter are required to operate.

Type	Art. No.	Pack Qty.	€
4-place oscillating rotor type 1494	**EC44.1** *	1	509,55
Insertion beaker type 1427 for rotor type 1494	**EC45.1** *	1	180,60

Adapter for insertion beaker

Nominal volume of vial	15 ml	15 ml type Falcon®	50 ml type Falcon®
Max. vials per adapter	6	1	1
Number of containers per rotor	24	4	4
Max. tube length	100 mm	120 mm	115 mm
Max. tube ∅	17 mm	17 mm	29 mm
Base shape	round	conical	conical

Type	Art. No.	Pack Qty.	€
Adapter for 15 ml-tubes	**EE32.1** *	1	61,30
Adapter for 15 ml-vials type Falcon®	**EC46.1** *	1	79,55
Adapter for 50 ml-vials type Falcon®	**EC47.1** *	1	125,80

* Longer delivery times possible. Please check with our Sales Department.

Benchtop centrifuges Heraeus Megafuge 8-series

By Thermo.

General specifications of both models:

- 2 profiles configurable for fast or gentle acceleration and deceleration times
- Optional display of revolutions in rpm or x g
- Safe rotor-changing at the touch of a button (without additional tools) for quick changeover between various applications and easy cleaning
- 3 program memory with one-touch key, with naming option
- Direct, brushless induction motor
- Illuminated display
- Text messages in various languages: German, English, French, Spanish, Russian, Italian and Dutch
- **Annual inspection acc. to BGR 500 recommended**

Megafuge 8R cooling centrifuge

- Infinitely adjustable from -10 to +40 °C in increments of 1 °C
- Precool function

Technical specifications:

Model	Megafuge 8	Megafuge 8R
Max. speed (in microlitre rotor)	14 000 rpm adjustable in increments of 100	
Min. speed (rpm)	300	
Max. RCF (in microlitre rotor)	21 693 x g	
Min. RCF	10 x g	
Max. runtime	9 h 99 min / continuous operation / Quick Run	
Temperature adjustment range (°C)	-	-10 to +40
Dimensions W x D x H (mm)	370 x 480 x 310	460 x 670 x 320
Weight (kg)	35	71
Power supply	230 V, 50/60 Hz	

Delivery without rotor (please order separately).

Type	Art. No.	Pack Qty.	€
Megafuge 8	**NN26.1** *	1	2229,00
Megafuge 8R	**APT4.1** *	1	5255,00

* Longer delivery times possible. Please check with our Sales Department.

Rotors and accessories for Megafuge 8

Technical specifications:

Type	① TX-150	② MicroClick	③ M-10	④ HIGHConic III
Max. capacity (ml)	8 x 50	30 x 1.5/2.0	4 MT plates	6 x 50
Max. speed (rpm)	4500	14 000	4400	8700
max. RCF (x g)	3260	21 693	2576	10 155

① **Oscillating rotor TX-150 (90°) - cell culture kit**
For centrifuging 15 ml or 50 ml vials of the type Falcon®.

- Max. capacity 8 x 50 ml
- Max. speed 4500 rpm max. RCF 3260 g

Delivery incl. 4 oval beakers suitable for 8 50 ml vials of the type Falcon® (no adapter required) and 8 adapters for 15 ml vials of the type Falcon®.

Type	Art. No.	Pack Qty.	€
Oscillating rotor TX-150, cell culture kit	**NN27.1** *	1	2133,00

② **30-place microlitre rotor MicroClick (45°)** for 30 x 1.5/2 ml reaction vials

- Max. capacity 30 x 1.5 / 2.0 ml
- Max. speed 14 000 rpm max. RCF 21 693 x g

Delivery incl. aerosol-tight lid.

Type	Art. No.	Pack Qty.	€
MicroClick microlitre rotor	**NN28.1** *	1	1079,00
Adapter sleeves for 0.5 ml reaction vials	**NN29.1** *	30	215,00
Adapter sleeves for 0.2 ml reaction vials	**NN30.1** *	30	215,00

③ **Microtitration plate rotor M-10**

- For 4 standard microtiter plates or 2 midi deepwell plates
- Max. speed 4400 rpm max. RCF 2576 x g
- **An M-10 rotor and two open carriers are required for operation (please order both products separately)**

Type	Art. No.	Pack Qty.	€
Microtitration plate rotor M-10	**NN31.1** *	1	1197,00
Open carrier	**NN32.1** *	2	671,00

④ **Fixed angle rotor HIGHConic III (45°)**

- Max. capacity 6 x 50 ml
- Max. speed 8700 rpm max. RCF 10 155 x g
- Rotor is suitable for 50 ml vials of the type Falcon® **without adapter**

Delivery incl. aerosol-tight screw cap.

Type	Art. No.	Pack Qty.	€
Fixed angle rotor HIGHConic III	**NN33.1** *	1	1799,00

Adapter for fixed angle rotor HIGHConic III

Nominal capacity of vessel	15 ml type Falcon®	16 ml tubes	1.5/2.0 ml reaction vials
Number of vessels per rotor	6		12
Required number of adapters per rotor	6		
Max. vessel length (mm)	123		11
Max. vessel ∅ (mm)	17	18	40
Bottom shape	Conical	Round	Conical

Type	Art. No.	Pack Qty.	€
Adapter for 15 ml type Falcon® vessels	**NN34.1** *	2	207,00
Adapter for 16 ml round bottom tubes	**NN35.1** *	2	129,00
Adapter for 1.5/2.0 ml reaction vials	**NN36.1** *	2	129,00

* Longer delivery times possible. Please check with our Sales Department.

Benchtop centrifuges Megafuge 16/16R

By Thermo.

General specifications of both models:

- 6 program presets with speed buttons
- Multilingual display of programming steps, run conditions, alarms and servicing information
- Selection of 9 acceleration profiles and 10 braking profiles
- Optional display of revolutions in rpm or x g
- **Easy tool-less** fitting and changing of rotors with a single push of a button
- **Electronic** imbalance detection
- Motor-operated lid lock
- **Annual inspection acc. to BGR 500 recommended**

Megafuge 16R cooling centrifuge

- Infinitely adjustable from -10 to +40 °C in increments of 1 °C
- Precool function

Technical specifications:

Model	Megafuge 16	Megafuge 16R
Max. speed (in microlitre rotor)	15200 rpm adjustable in increments of 100	
Min. speed	300 rpm	
Max. RCF (in microlitre rotor)	25830 x g	
Min. RCF	17 x g	
Max. runtime	1 min to 9 h, 99 min / continuous operation / Quick-Run	
Temperature adjustment range	-	-10 to +40 °C
Dimensions H x W x D (mm)	360 x 440 x 605	360 x 623 x 605
Weight (kg)	57.5	91.5
Power supply	230 V, 50/60 Hz	

Delivery without rotor (please order separately).

Type	Art. No.	Pack Qty.	€
Megafuge 16	**XP77.1** *	1	3613,00
Megafuge 16 R	**XP78.1** *	1	6036,00

* Longer delivery times possible. Please check with our Sales Department.

Rotors and accessories for Megafuge 16/16R

By Thermo.

Type	① TX-400 (90°)	② Micro 30 x 2	③ M-20
Max. capacity (ml)	4 x 400	30 x 1.5/2.0	6 MT plates
Max. speed (rpm)	5000	15200	4000
Max. RCF	4696 x g	25830 x g	2272 x g

① **Oscillating rotor TX-400 (90°)**

- Max. capacity 4 x 400 ml
- Max. speed 5000 rpm max. RCF 4696 x g
- **Delivery without** round cup, lid and adapter for tubes (please order separately). 4 round cups and 4 adapters are required for operation.

Type	Art. No.	Pack Qty.	€
Oscillating rotor TX-400	**XP79.1** *	1	1399,00
Round cup for TX-400	**XP80.1** *	4	1253,00
ClickSeal lid for round cups	**XP81.1** *	4	347,00

Adapter for oscillating rotor TX-400

Nominal capacity of vessel	15 ml type Falcon®	50 ml type Falcon®	25 ml universal tubes	250 ml type Nalgene® Oak Ridge bottle
Number of vessels per rotor	36	16	12	4
Required number of adapters per rotor	4			
Max. vessel length (mm)	121	116	110	135
Max. vessel ∅ (mm)	17	29.5	25	62
Bottom shape	Conical		Round	

Type	Art. No.	Pack Qty.	€
Adapter for 15 ml type Falcon® vessels	**XP82.1** *	4	352,00
Adapter for 50 ml type Falcon® vessels	**XP83.1** *	4	352,00
Adapter for 25 ml universal tubes	**XP84.1** *	4	372,00
Adapter for 250 ml Oak Ridge bottle	**XP85.1** *	4	353,00

Accessories for Megafuge 16/16R

By Thermo.

② **30-place angle rotor for 30 x 1.5/2.0 ml Micro reaction vials**

- **Aerosol tight**
- Max. capacity 30 x 1.5/2.0 ml
- High performance: max. 15200 rpm max. RCF 25830 x g
- **Delivery incl.** aerosol-tight lid

Type	Art. No.	Pack Qty.	€
Microlitre rotor type 30 x 2	**XP86.1** *	1	1049,00
Reducing sleeves for 0.5 ml centrifuge tubes	**X118.1** *	24	169,00
Reducing sleeves for 0.2 ml centrifuge tubes	**X121.1** *	24	169,00

③ **Microtitration plate rotor M-20**

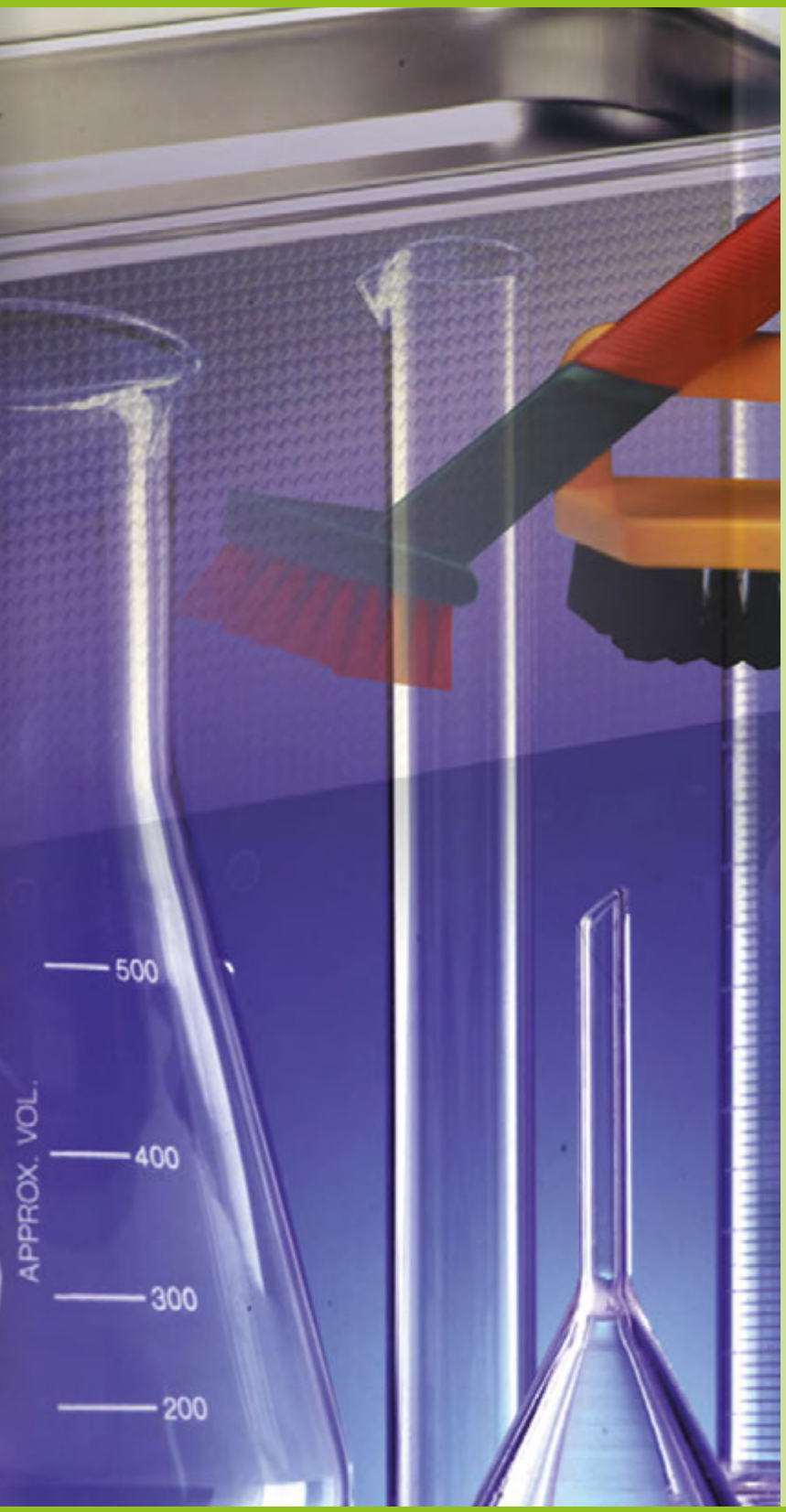
- For 2 x 3 standard microtitration plates or 2 x 1 deepwell plates
- Max. speed 4000 rpm max. RCF 2272 x g
- Max. H 65 mm
- **Delivery incl.** 2 supports and 2 adapters, but without lid (if a lid is required, an additional support set with lid must be ordered separately).

Type	Art. No.	Pack Qty.	€
Microtitration plate rotor M-20	**XP89.1** *	1	1534,00

Aerosol tight support set with lid for microtitration plate rotor M-20
Microtitration plates max. H 45 mm.

Type	Art. No.	Pack Qty.	€
Aerosol-tight support set	**XP90.1** *	2	868,00

* Longer delivery times possible. Please check with our Sales Department.



Cleaning, Care & Aids

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Ultrasonic baths

Mini ultrasonic cleaning unit

For cleaning spectacles, instruments and other small parts.
Plastic housing with oscillating tray made of stainless steel 1.4301.

- Timer (1, 3, 5, 7 or 9 min selectable)
- Operating frequency approx. 42 kHz

Technical specifications:

Capacity	0.5 l
Outer dimensions (L x W x H)	193 x 120 x 123 mm
Inner dimensions of tank (L x W x H)	160 x 90 x 50 mm
Inner dimensions of perforated basket (L x W x H)	140 x 70 x 40 mm
Ultrasonic output	40 W
Power supply	220-240 V, 50/60 Hz

Delivery incl. cover and basket made of plastic.

Art. No.	Pack Qty.	€
EXH1.1	1	58,60

Mini ultrasonic cleaning unit

For cleaning small parts.
Vibration tank and housing made of stainless steel 1.4301.
Power supply 220-240 V, 50/60 Hz.

- Timer 1-60 min or continuous operation
- Operating frequency approx. 40 kHz

Technical specifications:

Capacity	0.7 l
Outer dimensions (L x W x H)	175 x 110 x 175 mm
Inner dimensions of tank (L x W x H)	150 x 85 x 65 mm
Inner dimensions of perforated basket (L x W x H)	145 x 80 x 55 mm
Ultrasonic output	60 W

Delivery incl. cover and perforated basket made of stainless steel.

Art. No.	Pack Qty.	€
CLL4.1	1	141,90

Mini ultrasonic cleaning unit with heater

For cleaning small parts.
Vibration tank and housing made of stainless steel 1.4301.
Power supply 220-240 V, 50/60 Hz.

- Timer 1-15 min or continuous operation
- Heating is adjustable up to approx. 80 °C
- Operating frequency approx. 45 kHz

Technical specifications:

Capacity	0.8 l
Outer dimensions (L x W x H)	200 x 110 x 160 mm
Inner dimensions of tank (L x W x H)	180 x 90 x 50 mm
Inner dimensions of perforated basket (L x W x H)	178 x 85 x 40 mm
Ultrasonic output	60 W
Heating capacity	120 W

Delivery incl. cover and perforated basket made of stainless steel.

Art. No.	Pack Qty.	€
CLL5.1	1	188,15

Ultrasonic baths

Ultrasonic cleaning units H-series

Compact universal cleaning units for cleaning laboratory utensils, allowing faster dissolution and degassing of fluids.
Vibration tank and housing made of stainless steel 1.4301.
Mains connection 220-240 V, 50/60 Hz.

Features:
- Timer 1-60 min or continuous operation
- Heating is adjustable up to approx. 80 °C
- Operating frequency approx. 45 kHz
- Models H 30 to H 120 with outlet

Technical specifications:

Model	Capacity (l)	Inner dimensions of tank L x W x H (mm)	Outer dimensions L x W x H (mm)	Heating output (W)	Ultrasonic output (W)
H 22	1.65	240 x 140 x 65	300 x 170 x 225	150	120
H 30	2.6	240 x 140 x 100	300 x 165 x 225	180	180
H 40	3.55	300 x 150 x 100	330 x 175 x 225	200	240
H 60	5.3	300 x 150 x 150	330 x 175 x 290	250	240
H 120	9	500 x 135 x 150	600 x 165 x 355	350	300

Delivery incl. cover and perforated basket made of stainless steel.

Model	Volume (l)	Inner dimensions of perforated basket L x W x H (mm)	Art. No.	Pack Qty.	€
H 22	1,65	220 x 120 x 50	**CPK5.1**	1	310,70
H 30	2,6	220 x 120 x 60	**CPK6.1**	1	439,70
H 40	3,55	280 x 140 x 85	**CPK7.1**	1	533,20
H 60	5,3	285 x 140 x 135	**CPK8.1** *	1	643,95
H 120	9	480 x 120 x 135	**CPK9.1** *	1	978,25

* Longer delivery times possible. Please check with our Sales Department.

Digital ultrasonic cleaning units, D-series

High-performance universal cleaning units with digital display for cleaning laboratory utensils, allowing faster dissolution and degassing of fluids.
Vibration tank and housing made of stainless steel 1.4301.
Mains connection 220-240 V, 50/60 Hz.

Features:
- Timer 1-30 min or continuous operation
- Heating is adjustable up to approx. 80 °C
- Power control 50/100 %
- Sweep technology
- Degas function
- Operating frequency approx. 40 kHz
- Models D 30 to D 280 with outlet

Technical specifications:

Model	Capacity (l)	Inner dimensions of tank L x W x H (mm)	Outer dimensions L x W x H (mm)	Heating output (W)	Ultrasonic output (W)
D 20 Q	1.55	150 x 140 x 100	175 x 165 x 225	60	80
D30	2.6	240 x 140 x 100	265 x 165 x 225	120	160
D40	3.55	300 x 150 x 100	330 x 175 x 225	120	160
D60	5.3	300 x 150 x 150	330 x 175 x 290	120	240
D130	13.0	300 x 240 x 200	330 x 270 x 355	200	400
D280	28.0	500 x 300 x 200	530 x 330 x 360	300	640

Delivery incl. cover and perforated basket made of stainless steel.

Model	Volume (l)	Inner dimensions of perforated basket L x W x H (mm)	Art. No.	Pack Qty.	€
D 20 Q	1,55	125 x 120 x 60	**CPL0.1**	1	327,90
D 30	2,6	220 x 120 x 85	**CPL1.1**	1	585,90
D 40	3,55	280 x 140 x 85	**CPL2.1**	1	751,45
D 60	5,3	280 x 135 x 135	**CPL3.1** *	1	848,20
D 130	13,0	280 x 225 x 180	**CPL5.1** *	1	1682,40
D 280	28,0	480 x 290 x 190	**CPL6.1** *	1	2080,15

* Longer delivery times possible. Please check with our Sales Department.

Ultrasonic baths

Ultrasonic compact baths

By Bandelin.

- Power supply 230 V, 50/60 Hz
- Robust stainless steel shell
- Unit frequency 35 kHz
- Protected against drips and splashes
- For intensive and gentle cleaning of glassware, metal parts, electronic components, instruments etc.
- For degassing liquids
- For accelerating slurry processes
- For manufacturing emulsions

① SONOREX SUPER ultrasonic compact baths

- Timer 1 to 15 min or continuous run
- Type "H"-units with heating 30-80 °C, can be set in 5°-increments (except Type RK 31 H: Heating cannot be adjusted but is permanently set at 65 °C)

② SONOREX DIGITEC ultrasonic compact baths

- Membrane keypad with clear symbols
- Timer 1 to 30 min or continuous run
- "H"-units with heating 20 to 80 °C, adjustable in 5°-increments
- Safety switch-off after 12 h
- LED-display for temperature and heating phase
- Warning-LED for excess temperature
- Degas - function can be activated

① SONOREX SUPER ultrasonic compact baths

Delivery without perforated basket and lid (optional) (please order separately).

Type	Volume (l)	Tubs-inner dimensions L x W x H (mm)	Unit-outer dimensions L x W x H (mm)	Maximum output (W)	HF-effective output (W)	Drainage - ball stop-cock	Art. No.	Pack Qty.	€
RK 31	0,9	190 x 85 x 60	205 x 100 x 155	240	30	without	**P390.1** *	1	320,35
RK 31 H	0,9	190 x 85 x 60	205 x 100 x 155	240	30	without	**P391.1** *	1	376,25
RK 52	1,8	150 x 140 x 100	175 x 165 x 225	240	60	without	**P392.1** *	1	559,00
RK 52 H	1,8	150 x 140 x 100	175 x 165 x 225	240	60	without	**P393.1** *	1	713,80
RK 100 H	3,0	240 x 140 x 100	260 x 160 x 250	320	80	without	**P394.1** *	1	752,50
RK 102 H	3,0	240 x 140 x 100	260 x 160 x 250	480	120	G ¼″	**P395.1** *	1	1072,85
RK 103 H	4,0	240 x 140 x 150	260 x 160 x 310	640	160	G ¼″	**P396.1** *	1	1095,45
RK 255 H	5,5	300 x 150 x 150	325 x 175 x 305	640	160	G ¼″	**P397.1** *	1	1233,05
RK 106	5,6	∅ 240 x 130	∅ 265 x 270	480	120	G ¼″	**P398.1** *	1	951,40
RK 156	6,0	500 x 140 x 100	530 x 165 x 245	480	120	G ¼″	**P399.1** *	1	1122,30
RK 156 BH	9,0	500 x 140 x 150	530 x 165 x 300	860	215	G ¼″	**P400.1** *	1	1510,40
RK 510	9,7	300 x 240 x 150	325 x 265 x 305	640	160	G ½″	**P401.1** *	1	1122,30
RK 510 H	9,7	300 x 240 x 150	325 x 265 x 305	640	160	G ½″	**P402.1** *	1	1383,55
RK 514 H	13,5	325 x 300 x 150	355 x 325 x 305	860	215	G ½″	**P403.1** *	1	1892,00
RK 514 BH	18,7	325 x 300 x 200	355 x 325 x 385	860	215	G ½″	**P404.1** *	1	1953,30
RK 1028 H	28	500 x 300 x 200	535 x 325 x 400	1200	300	G ½″	**P405.1** *	1	2549,90

② SONOREX DIGITEC ultrasonic compact baths

Delivery without perforated basket and lid (optional) (please order separately).

Type	Volume (l)	Tubs-inner dimensions L x W x H (mm)	Unit-outer dimensions L x W x H (mm)	Maximum output (W)	HF-effective output (W)	Drainage - ball stop-cock	Art. No.	Pack Qty.	€
DT 31	0,9	190 × 85 × 60	205 × 100 × 170	240	30	without	**HE28.1** *	1	392,40
DT 31 H	0,9	190 × 85 × 60	205 × 100 × 170	240	30	without	**HE29.1** *	1	448,30
DT 52	1,8	150 × 140 × 100	175 × 165 × 230	240	60	without	**HE30.1** *	1	564,40
DT 52 H	1,8	150 × 140 × 100	175 × 165 × 230	240	60	without	**HE31.1** *	1	719,20
DT 100	3	240 × 140 × 100	260 × 160 × 250	320	80	without	**HE32.1** *	1	629,95
DT 100 H	3	240 × 140 × 100	260 × 160 × 250	320	80	without	**HE33.1** *	1	757,90
DT 102 H	3	240 × 140 × 100	260 × 160 × 250	480	120	G ¼″	**HE34.1** *	1	1084,70
DT 103 H	4	240 × 140 × 150	260 × 160 × 310	640	160	G ¼″	**HE35.1** *	1	1106,20
DT 106	5,6	∅ 240 x 130	∅ 265 × 270	480	120	G ¼″	**HE36.1** *	1	963,20
DT 156	6	500 × 140 × 100	530 × 165 × 245	640	160	G ¼″	**HE37.1** *	1	1133,05
DT 156 BH	9	500 × 140 × 150	530 × 165 × 300	860	215	G ¼″	**HE38.1** *	1	1526,50
DT 255	5,5	300 × 150 × 150	325 × 175 × 295	640	160	G ¼″	**HE39.1** *	1	1023,40
DT 255 H	5,5	300 × 150 × 150	325 × 175 × 295	640	160	G ¼″	**HE40.1** *	1	1244,85
DT 510	9,7	300 × 240 × 150	325 × 265 × 305	640	160	G ½″	**HE41.1** *	1	1133,05
DT 510 H	9,7	300 × 240 × 150	325 × 265 × 305	640	160	G ½″	**HE42.1** *	1	1394,30
DT 514	13,5	325 × 300 × 150	355 × 325 × 305	860	215	G ½″	**HE43.1** *	1	1625,40
DT 514 H	13,5	325 × 300 × 150	355 × 325 × 305	860	215	G ½″	**HE44.1** *	1	1902,75
DT 514 BH	18,7	325 × 300 × 200	355 × 325 × 385	860	215	G ½″	**HE45.1** *	1	1964,05
DT 1028	28	500 × 300 × 200	535 × 325 × 400	1200	300	G ½″	**HE46.1** *	1	2212,35
DT 1028 H	28	500 × 300 × 200	535 × 325 × 400	1200	300	G ½″	**HE47.1** *	1	2561,75

* Longer delivery times possible. Please check with our Sales Department.

Lids for ultrasonic baths SONOREX

By Bandelin. Made of stainless steel.

For model	Art. No.	Pack Qty.	€
RK/DT 31, RK/DT 31 H	**P406.1**	1	20,45
RK/DT 52, RK/DT 52 H	**P407.1**	1	37,65
DT 100, RK/DT 100 H, RK/DT102 H, RK/DT 103 H	**P408.1**	1	37,65
DT 255, RK/DT 255 H	**P411.1**	1	47,30
RK/DT 106	**P412.1**	1	60,20
RK/DT 156, RK/DT 156 BH	**P413.1**	1	65,60
RK/DT 510, RK/DT 510 H	**P415.1**	1	55,90
RK/DT 514, RK/DT 514 H, RK/DT 514 BH	**P416.1**	1	64,50
DT 1028, RK/DT 1028 H	**P418.1**	1	74,20

Insertion baskets for ultrasonic baths SONOREX

By Bandelin. Made of stainless steel. Measurements without holder.

For model	Inner dimensions: L x W x H (mm)	Art. No.	Pack Qty.	€
RK/DT 31, RK/DT 31 H	170 x 65 x 50	**P419.1**	1	37,65
RK/DT 52, RK/DT 52 H	120 x 110 x 40	**P420.1**	1	50,55
DT 100, RK/DT 100 H, RK/DT102 H	200 x 110 x 40	**P421.1**	1	59,15
RK/DT 103 H	200 x 110 x 40	**P423.1**	1	64,50
DT 255, RK/DT 255 H	260 x 110 x 40	**P424.1**	1	70,95
RK/DT 106	∅ 215 x 50	**P425.1**	1	112,90
RK/DT 156	460 x 100 x 50	**P426.1**	1	192,45
RK/DT 156 BH	460 x 100 x 50	**P427.1**	1	194,60
RK/DT 510, RK/DT 510 H	250 x 195 x 50	**P428.1**	1	170,95
DT 514, RK/DT 514 H	275 x 245 x 50	**P429.1**	1	189,20
RK/DT 514 BH	275 x 245 x 50	**P430.1**	1	191,35
DT 1028, RK/DT 1028 H	455 x 245 x 50	**P431.1**	1	247,25

SONOREX PR 140 D/DH ultrasonic pipette cleaner

By Bandelin. Ultrasonic pipette cleaner to gently clean volumetric glass or plastic devices up to a length of 755 mm.

- Short cleaning times
- Timer (1, 2, 3, 4, 5, 10, 15, 30 min or continuous run)
- Particularly robust thanks to the V4A stainless steel tray (1.4571)
- Drop handles for easier transportation
- Ball valve means that it can be emptied quickly and easily
- Model PR 140 DH with optional heating (can be adjusted from 20-80 °C) to increase the cleaning effect, e.g. in the case of grease residue and stubborn soiling

Technical specifications:

Model	**PR 140 D**	**PR 140 DH**
Capacity	Min. 9 to max. 18 l	
Inner dimensions (L x W x H)	150 x 150 x 895 mm (useful depth 850 mm)	
Outer dimensions (L x W x H)	330 x 330 x 1003 mm	
Operating frequency	35 kHz	
Peak ultrasonic output	860 W	
HF power	200 W_{eff}	
Heating output	-	700 W
Weight	19.5 kg	19.7 kg
Power supply	230 V, 50/60 Hz	

Number of pipettes to be cleaned in the pipette basket:
9 mm ∅ - approx. 90 pcs; 10.7 mm ∅ - approx. 55 pcs;
14 mm ∅ - approx. 35 pcs; 20.0 mm ∅ - approx. 15 pcs;
29 mm ∅ - approx. 10 pcs.

Delivery incl. stainless steel lid and PE pipette basket (inner dimensions: ∅ x H 120 x 275 mm).

Type	Art. No.	Pack Qty.	€
Model PR 140 D	**ECX9.1** *	1	3155,15
Model PR 140 DH	**ECY0.1** *	1	3499,15

* Longer delivery times possible. Please check with our Sales Department.

▶ Compact Ultrasonic Processors see p. 1067

Ultrasonic baths

Ultrasonic units, Elmasonic S series

By Elma. For intensive cleaning of laboratory instruments made of glass, plastic and metal. Suitable for degassing HPLC-solvents and beverage samples containing carbon dioxide.

- Operating frequency 37 kHz
- Housing made of stainless steel
- **Sweep-Function:** continuous frequency change for fast and consistent cleaning
- **Degas-Function:** for degassing cleaning solutions and liquids
- Timer 0-30 min and continuous run, safety switch- off after 12 h
- Quick run function on the S 30 and later models
- Some models have a heating component which can run dry, and is infinitely adjustable from 30-80 °C („H“ devices)
- **Autostart-function:** Ultrasonic cleaning begins when the preselected cleaning temperature has been reached
- LED displays for ultrasound function and heating („H“ devices only)

Delivery without perforated basket and lid (optional) (please order separately).

Model	Volume (l)	Tubs-inner dimensions L x W x H (mm)	Unit-outer dimensions L x W x H (mm)	Effektive ultrasonic power (W)	Maximum ultrasonic power (W)	Heating output (W)	Art. No.	Pack Qty.	€
S 10 (with lid)	0,8	190 x 85 x 60	206 x 116 x 178	30	240	-	**CC84.1** *	1	301,00
S 10H (with lid)	0,8	190 x 85 x 60	206 x 116 x 178	30	240	60	**CC85.1** *	1	365,50
S 15	1,75	151 x 137 x 100	175 x 180 x 212	35	280	-	**CC86.1** *	1	537,50
S 15H	1,75	151 x 137 x 100	175 x 180 x 212	35	280	60	**CC87.1** *	1	634,25
S 30	2,75	240 x 137 x 100	300 x 179 x 214	80	320	-	**CC88.1** *	1	607,40
S 30H	2,75	240 x 137 x 100	300 x 179 x 214	80	320	200	**CC89.1** *	1	671,90
S 40	4,25	240 x 137 x 150	300 x 179 x 264	140	560	-	**CC90.1** *	1	870,75
S 40H	4,25	240 x 137 x 150	300 x 179 x 264	140	560	200	**CC91.1** *	1	1005,15
S 60	5,75	300 x 151 x 150	365 x 186 x 264	150	600	-	**CC92.1** *	1	1005,15
S 60H	5,75	300 x 151 x 150	365 x 186 x 264	150	600	400	**CC93.1** *	1	1182,50
S 70	6,9	505 x 137 x 100	564 x 179 x 214	150	600	-	**CC94.1** *	1	1161,00
S 70H	6,9	505 x 137 x 100	564 x 179 x 214	150	600	600	**CC95.1** *	1	1263,15
S 80	9,4	505 x 137 x 150	564 x 179 x 264	150	600	-	**CC96.1** *	1	1263,15
S 80H	9,4	505 x 137 x 150	564 x 179 x 264	150	600	600	**CC97.1** *	1	1462,00
S 180	18	327 x 300 x 200	390 x 340 x 321	200	800	-	**CC98.1** *	1	1720,00
S 180H	18	327 x 300 x 200	390 x 340 x 321	200	800	800	**CC99.1** *	1	1983,40

* Longer delivery times possible. Please check with our Sales Department.

Plastic lids

By Elma. For ultrasonic baths Elmasonic S. Noise inhibiting. Can be used as a drainage tray.

For model	Art. No.	Pack Qty.	€
S 15 / S 15H	**CE01.1** *	1	19,90
S 30 / S 30H; S 40 / S 40H	**CE02.1** *	1	22,60
S 60 / S 60H	**CE03.1** *	1	27,95
S 70 / S 70H; S 80 / S 80H	**CE04.1** *	1	36,55
S 180 / S 180H	**CE05.1** *	1	38,70

* Longer delivery times possible. Please check with our Sales Department.

Insert baskets

By Elma. Made of electropolished stainless steel 1.4301. Handles with heat-insulated coating. For ultrasonic baths Elmasonic S.

For model	L x W (mm)	Art. No.	Pack Qty.	€
S 10 / S 10H	177 x 73	**CE06.1** *	1	38,70
S 15 / S 15H	112 x 103	**CE07.1** *	1	43,00
S 30 / S 30H	198 x 106	**CE08.1** *	1	49,45
S 40 / S 40H	190 x 105	**CE09.1** *	1	55,90
S 60 / S 60H	255 x 115	**CE10.1** *	1	69,90
S 70 / S 70H	465 x 106	**CE11.1** *	1	166,65
S 80 / S 80H	455 x 106	**CE12.1** *	1	193,50
S 180 / S 180H	280 x 250	**CE13.1** *	1	172,00

* Longer delivery times possible. Please check with our Sales Department.

▶ Special-ultrasonic cleaner Ultrasonol® see p. 1134

Plastic insert tubs

By Elma.

For model	Inner L x W x H (mm)	Art. No.	Pack Qty.	€
S 15, S 15H	95 x 95 x 57	**C309.1**	1	18,85
S 30, S 30H, P 30 H, X-tra	200 x 95 x 57	**0613.1**	1	21,00
S 40, S 40H	200 x 95 x 57	**C310.1**	1	21,00

High-grade steel insert covers

By Elma. For beakers.

For model	Design	∅ boreholes (mm)	Art. No.	Pack Qty.	€
S 10, S 10H	for 2 beakers	80	**H555.1**	1	29,05
S 15, S 15H	for 1 beaker	95	**H556.1**	1	37,10
S 30, S 30H, S 40, S 40H, P 30 H	for 2 beakers	95	**H557.1**	1	46,80

Immersion baskets

By Elma. Can be used with all types of device.

① Made of **polyethylene**

Working measurement ∅ (mm)	Working measurement height (mm)	Art. No.	Pack Qty.	€
74	40	**H558.1**	1	10,25

② Made of **stainless steel**, mesh 0.8 mm.

Working measurement ∅ (mm)	Working measurement height (mm)	Art. No.	Pack Qty.	€
59	60	**H559.1**	1	43,00

Elmasonic P digital ultrasonic cleaning units

By Elma.

- Stainless steel vibration tank and housing
- Digital LED display for clear indication of frequency, output, actual and nominal temperatures and timer
- 3/8″ drainage valve on back of unit (operated at the side)
- Ultrasonic frequency is switchable between 37 kHz (basic cleaning, mixing, dissolving) and 80 kHz (mild cleaning, low noise)
- Ultrasonic intensity is adjustable from 30 % (for sensitive surfaces) to 100 % in increments of 10%
- Automatic frequency switch-over for simultaneous coarse and fine cleaning
- **Sweep function** for an optimised sound field distribution
- **Pulse function** for intensification of ultrasonic cleaning power by up to 20 %
- Auto **Degas function** for quick degassing
- Temperature-controlled ultrasonic cleaning
- Dry run safe heating, adjustable from 30 to 80 °C in increments of 10°
- Automatic safety switch-off at a bath temperature of 90 °C or after more than 12 h of continuous duty

Technical specifications:

Type	Internal dimensions of tank L x W x H (mm)	External dimensions of unit L x W x H (mm)	Heating output (W)	Effective / maximum ultrasonic power (W)
P 30H	240 x 137 x 100	300 x 179 x 221	200	100 / 400
P 60H	300 x 151 x 150	365 x 186 x 271	400	150 / 600
P 70H	505 x 137 x 100	568 x 179 x 221	600	220 / 880
P 120H	300 x 240 x 200	365 x 278 x 321	800	330 / 1320
P 180H	327 x 300 x 200	390 x 340 x 321	800	330 / 1320
P 300H	505 x 300 x 200	568 x 340 x 321	1200	380 / 1520

Delivery without perforated basket and lid (optional) (please order separately).

Type	Volume (l)	Art. No.	Pack Qty.	€
P 30H	2,75	**LX70.1**	1	1042,75
P 60H	5,75	**LX71.1**	1	1435,15
P 70H	6,9	**LX72.1**	1	1515,75
P 120H	12,75	**LX73.1**	1	2166,15
P 180H	18,0	**LX74.1**	1	2381,15
P 300H	28,0	**LX75.1**	1	2762,75

Covers

By Elma. For Elmasonic P ultrasonic cleaning units.
Sonic-absorbing. Usable as a drip tray.

For model	Art. No.	Pack Qty.	€
P 30H	**CE02.1** *	1	22,60
P 60H	**CE03.1** *	1	27,95
P 70H	**CE04.1** *	1	36,55
P 120H	**LX84.1**	1	36,55
P 180H	**CE05.1** *	1	38,70
P 300H	**LX85.1**	1	45,15

Stainless steel baskets

By Elma. For Elmasonic P ultrasonic cleaning unit.
Made of stainless steel, with heat-insulating coated handles.

For model	L x W x H (mm)	Art. No.	Pack Qty.	€
P 30H	198 x 106 x 50	**CE08.1** *	1	49,45
P 60H	255 x 115 x 75	**CE10.1** *	1	69,90
P 70H	465 x 106 x 50	**CE11.1** *	1	166,65
P 120H	250 x 190 x 115	**LX86.1**	1	150,50
P 180H	280 x 250 x 115	**CE13.1** *	1	172,00
P 300H	455 x 250 x 115	**LX87.1**	1	193,50

* Longer delivery times possible. Please check with our Sales Department.

Elmasonic S 50 R

By Elma. Ultrasonic cleaning unit for cleaning test sieves, HPLC solvent degassing and sample preparation. With microprocessor-controlled ultrasound modes and special programs for routine laboratory applications and cleaning tasks.

- **Sieve cleaning function:**
  Strong cleaning pulses make for optimal sieve cleaning
- **Degas/(Autodegas) function:**
  Efficient and noise-reduced degassing of HPLC solvents and carbonate drink samples
- **Sample preparation function:**
  For routine tasks such as mixing, dissolving, dispersing and cleaning
- Short-time operation between 1 and 30 minutes or continuous duty, adjustable using rotary switch
- LED display of set cleaning time and remaining cleaning time
- Cleaning bath made of cavitation resistant stainless steel
- Can be connected to laboratory stand for noise-reduced operation
- Plastic carry handles

Technical specifications:

Outer dimensions of unit	∅ 260 x H 350 mm
Inner dimensions of bath	∅ 240 x H 130 mm
Total power consumption	150 W
Effective ultrasonic power	150 W
Max. ultrasonic power	600 W
Ultrasonic frequency	37 kHz
Max. filling capacity	5.3 l
Weight	5 kg

Delivery without accessories (please order separately).

Art. No.	Pack Qty.	€
YE61.1	1	919,15

Accessories for Elmasonic S 50 R

Cover
Made of PP, blue, sound-absorbing.

Art. No.	Pack Qty.	€
YE62.1	1	28,50

① **Cover with opening**
Made of PP, blue. Opening ∅ 97 mm. Cover with opening in combination with rubber ring suitable for 600 ml beakers (low form) and 1000 ml beakers (high form). Please order rubber ring separately.

Art. No.	Pack Qty.	€
YE63.1	1	28,50

Rubber ring

Art. No.	Pack Qty.	€
YE64.1	1	3,45

② **Sieve holder for laboratory sieves**
Made of stainless steel 1.4301.
Suitable for laboratory sieve ∅ 100 and 200 mm.

Art. No.	Pack Qty.	€
YE65.1	1	64,50

③ **Insertion basket**
Made of stainless steel. Basket inner dimensions ∅ 220 x H 70 mm. Mesh size 10 x 10 mm. Handles with heat-insulating coating.

Art. No.	Pack Qty.	€
YE66.1	1	87,10

Set of fixtures for glass flasks for HPLC degassing
Delivery incl. three finger clamp, fastening sleeve and stand rod (length 600 mm).

Art. No.	Pack Qty.	€
YE67.1	1	53,75

Noise protection boxes for ultrasonic cleaning devices

By Elma. Noise protection boxes for ultrasonic cleaning devices reduce typical cavitation noises by approx. 20 dBA and subjective noises by 75 %. Cover made of Plexiglas to identify the unit function and fill level. Integrated air extraction to remove steam from the box, manually connectible. This allows the box to be used directly at work stations in chemical laboratories, dental laboratories and workshops.

Technical specifications:

Type	Noise protection box, size M	Noise protection box, size L
For Elmasonic models	S 10, S 15, S 30, P 30, S 40, S 60, P 60	S 90, S 100, S 120, P 120, S 130, X-tra 30, X-tra 50, X-tra 70, Transsonic TI-H-5
Inner dimensions W x D x H (mm)	380 x 240 x 315	440 x 310 x 480
Outer dimensions W x D x H (mm)	465 x 415 x 360	530 x 490 x 530
Weight (kg)	12.6	15.2
Current	230 V, 50 Hz	
Power input (W)	18	

Delivery without ultrasonic cleaning unit (please order separately).

Type	Art. No.	Pack Qty.	€
Noise protection box, size M	**YP19.1**	1	623,50
Noise protection box, size L	**YP20.1**	1	666,50

Ultrasonic baths

Ultrasonic devices Elmasonic xtra TT

By Elma. Powerful ultrasonic baths with permanently integrated sweep function for uniform cleaning. Oscillating bath made of cavitation resistant stainless steel. With LED display for ultrasonic and heating function.

- Ultrasonic frequency 37 kHz
- Permanently integrated sweep function for uniform distribution of the ultrasonic power in the entire cleaning bath
- Switchable dynamics function enhances the ultrasonic peak performance and improves the cleaning effect
- Permanent operation of brief operation adjustable between 1 and 30 minutes
- Temperature selectable from 30-80 °C in steps of 5°
- Adjustable limit temperature, LED warning display if exceeded
- Auto-start function: ultrasonic starts automatically when the preselected temperature is reached
- Drain ball valve 3/8″
- Heating protected against dry running
- Automatic safety switch-off after 8 hours continuous operation or 90 °C bath temperature
- Removable power cable with rubber connector

Technical specifications:

Type	xtra TT 30 H	xtra TT 60 H	xtra TT 120 H	xtra TT 200 H
Working volume (l)	2.0	5.0	10.0	13.0
Volume max. (l)	3.0	6.5	14.0	18.0
Bath inside dimensions L x W x H (mm)	240 x 130 x 100	300 x 150 x 150	300 x 240 x 200	320 x 280 x 200
Basket inside dimensions L x W x H (mm)	196 x 112 x 49	257 x 132 x 74	262 x 222 x 114	280 x 250 x 114
Basket load max. (kg)	1.0	3.0	7.0	8.0
Effective ultrasonic power (W)	140	150	200	300
Heating output (W)	200	400	800	1200
Outer dimensions of unit L x W x H (mm)	360 x 230 x 250	420 x 250 x 300	440 x 340 x 350	420 x 390 x 330
Weight (kg)	6.0	10.0	11.0	13.0
Power supply	220-240 V, 50/60 Hz			

Supplied without lid, please order insert basket separately.

Type	Art. No.	Pack Qty.	€
xtra TT 30 H	**HHH7.1**	1	989,00
xtra TT 60 H	**HHH8.1**	1	1322,25
xtra TT 120 H	**HHH9.1**	1	1983,40
xtra TT 200 H	**HHK0.1**	1	2316,65

Accessories

By Elma. **Insert baskets**
Made of stainless steel. For ultrasonic units Elmasonic xtra TT.
Mesh size 6 x 1 mm.

for type	Basket inside dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
xtra TT 30 H	196 x 112 x 49	**HHK1.1**	1	87,10
xtra TT 60 H	257 x 132 x 74	**HHK2.1**	1	118,25
xtra TT 120 H	262 x 222 x 114	**HHK3.1**	1	145,15
xtra TT 200 H	280 x 250 x 114	**HHK4.1**	1	177,40

Ultrasonic multi-frequency baths Transsonic TI-H

By Elma.

- Frequencies (35/130 kHz) can be switched over for intensive cleaning and gentle cleaning of sensitive surfaces
- Stainless steel shell. Oscillating tub made of 1.5 mm strong special stainless steel, extremely robust and hard wearing
- Degas-function for rapid, effective degassing
- Sweep-function for optimum sound field distribution
- Outlet on back of housing, electrical control via push-button
- With heating, adjustable from 30-80 °C

Technical specifications:

Type	Capacity (l)	Tub interior L x W x H (mm)	Unit outer measurements L x W x H (mm)	Maximum ultrasonic power (W)
TI-H-5	3.7	240 x 130 x 150	340 x 265 x 370	400
TI-H-10	8.6	300 x 240 x 150	400 x 390 x 370	800
TI-H-15	12.2	300 x 240 x 200	400 x 390 x 420	800
TI-H-20	16.8	330 x 300 x 200	460 x 450 x 420	1000

Delivery without perforated basket and lid (optional) (please order separately).

Type	Art. No.	Pack Qty.	€
TI-H-5	**T712.1** *	1	2031,75
TI-H-10	**T713.1** *	1	2279,00
TI-H-15	**T714.1** *	1	2547,75
TI-H-20	**T715.1** *	1	2676,75

High-grade steel lids

By Elma. For ultrasonic multi-frequency baths.

For model	Art. No.	Pack Qty.	€
TI-H-5	**T716.1** *	1	40,85
TI-H-10	**T717.1** *	1	46,80
TI-H-15	**T718.1** *	1	46,80
TI-H-20	**T719.1** *	1	52,15

Baskets

By Elma. Made of stainless steel. For multi-frequency baths.

For model	Inner L x W x H (mm)	Art. No.	Pack Qty.	€
TI-H-5	210 x 110 x 140	**T720.1** *	1	129,00
TI-H-10	270 x 220 x 140	**T721.1** *	1	182,75
TI-H-15	270 x 220 x 185	**T722.1** *	1	182,75
TI-H-20	300 x 280 x 185	**T723.1** *	1	204,25

* Longer delivery times possible. Please check with our Sales Department.

Ultrasonol® 7 - neutral

Gentle on materials, this special cleaner assists and intensifies the ultrasonic cleaning process.

- Also suitable for sensitive objects and materials. Non-irritating and non-toxic
- Non-flammable, non-gassing, biodegradable
- Liquid concentrate pH 7

Use 2-10 % in water.

Reaction time approx. 10 min; after washing, rinse thoroughly and dry.

Warning H319

Art. No.	Pack Qty.	€
5356.1	1 l	15,80
5356.2	5 l	57,80
5356.4	20 kg	179,55

Ultrasonol® 11 - alkaline

This highly effective special cleaner assists and intensifies the ultrasonic cleaning process.

- Removes distillation residues, tars, resins, Canada balsam, adhesives, silicones, greases, oils and similar contaminants
- Non-flammable, non-gassing, biodegradable
- Liquid concentrate pH 12.9

Use 2-10 % in water.

Reaction time 1 to 10 min; after washing, rinse thoroughly and dry.

Danger H290-H314-EUH031

Art. No.	Pack Qty.	€
5354.1	1 l	14,75
5354.2	5 l	56,80

Ultrasonic cleaner EC 10

Alkalic cleaning concentrate.

Suitable for thorough ultrasonic cleaning of laboratory equipment and technical instruments, and objects made of steel, glass, plastic and ceramics. Removes blood, saliva, proteins, albumen- and bone residue as well as grease, oil, grinding and polishing paste.

Dosage: 5 % in ultrasonic and immersion baths, higher dosages can be used for heavy contamination.

Danger H290-H315-H318

Art. No.	Pack Qty.	€
CC48.1	1 l	17,20

Ultrasonic cleaner Elma clean 70

Alkalic, universal cleaning concentrate.

For thorough cleaning of laboratory equipment, tools and instruments made of glass, ceramics, alkaline-stable plastic, rubber (e.g. respiratory masks), metal and light metal. Removes oils, greases, dust, soot and other organic impurities.

Dosage: 1-5 % at 20-80 °C, in immersion bath without ultrasound 5-10 %.

Danger H315-H318

Art. No.	Pack Qty.	€
CC46.1	1 l	15,05

Ultrasonic cleaner Elma clean 75

Ammoniacal cleaning concentrate for use in the laboratory, in workshops and for cleaning jewellery.

Removes dirt particles, grease, oil, skin-, grinding-, polishing- and lapping residue. Precious metals and nonferrous metal become brighter. May attack zinc, aluminium and light metal alloys.

Dosage: 5-10 %; in immersion bath without ultrasound 15 %.

Danger H315-H318-H336-H412

Art. No.	Pack Qty.	€
CC47.1	1 l	16,70

Ultrasonic cleaner Elma clean 65

Gentle neutral cleansers with corrosion inhibitor.

For instruments and metals made of sensitive materials such as glass, plastic, rubber and metal. Removes finger prints, dust, pigments, light greases and oils.

Dosage: 2-5 % at 20-80 °C.

Danger H318

Art. No.	Pack Qty.	€
CC45.1	1 l	15,05

Ultrasonic cleaner EC 60

Acidic instruments cleaner for the laboratory and workshop.

Suitable for cleaning laboratory equipment and tools made of stainless steel, glass and plastic. Removes metal oxides and mineral dirt, e.g. lime, rust, mineral oils and greases.

Dosage: 1-10 % at 40-70 °C, in immersion bath without ultrasound >3 %.

Danger H290-H314

Art. No.	Pack Qty.	€
CC44.1	1 l	24,75

RBS® laboratory cleaning agent

Advantages at a glance:

- **No residues:** all RBS® cleaning agents wash off without leaving any traces. No residues of cleaner are visible on the cleaned article after rinsing. For consistent and error-free analytical results.
- **Safe and environmentally friendly:** RBS® cleaning solutions produce no harmful vapours or unpleasant odours under normal working conditions, and therefore are safe to use. All surfactants contained in the product are biodegradable.
- **Effective:** efficiently removes stubborn residues due to excellent emulsifying, wetting and dispersing properties. A safe alternative to hazardous bases or acid mixtures (e.g. alkaline baths, chromic-sulphuric acid).
- **Inexpensive:** RBS® cleaning agents are highly economical due to their low usage concentration.

RBS®-qualities	Manual cleaning	Immersion bath cleaning	Ultrasonic bath cleaning	Lab dishwashers	Pre-purificaton and neutralizing	Post- purification	Chlorinated substances	Not foaming	Phosphate-free	For hard water	For sensitive objects
RBS® 25	x	x	x				x				
RBS® 35	x	x	x				x			x	
RBS® 50	x	x	x	x			x	x		x	
RBS® Neutral T	x	x									x
RBS® IND 470	x	x	x						x	x	
RBS® pF T	x	x					x		x	x	
RBS® T 105	x	x	x				x			x	
RBS® T 115	x	x	x				x		x	x	
RBS® T 230		x	x							x	x
RBS® T 305	x	x								x	
RBS® A 375				x	x	x		x	x		
RBS® NA 2				x	x	x		x			
RBS® B 210 T				x				x		x	x
RBS® A 285 SOLID pF				x				x	x	x	
RBS® R 60				x		x		x			
RBS® R 60 pF				x		x		x	x		x

All RBS®-cleaners at a glance

For manually or self-actingly cleaning

Type	Type	pH	Art. No.	Pack Qty.	€
RBS® 25	liquid	basic	**AL89.1**	5 l	61,20
RBS® 35	liquid	basic	**9238.1**	1 l	16,80
RBS® 35	liquid	basic	**9238.2**	5 l	68,70
RBS® 35	liquid	basic	**9238.4**	20 kg	195,65
RBS® IND 470	liquid	basic	**TA00.1**	5 l	52,15
RBS® IND 470	liquid	basic	**TA00.2**	20 kg	156,95
RBS® Neutral T	liquid	neutrally	**0180.1**	1 l	17,00
RBS® Neutral T	liquid	neutrally	**0180.2**	5 l	64,40
RBS® pF T	liquid	basic	**9243.1**	1 l	16,35
RBS® pF T	liquid	basic	**9243.2**	5 l	68,70
RBS® pF T	liquid	basic	**9243.4**	20 kg	220,40
RBS® T 105	liquid	basic	**PY99.1**	5 l	37,85
RBS® T 115	liquid	basic	**LY18.1**	5 l	40,10
RBS® T 230	liquid	neutrally	**LY17.1**	5 l	38,20
RBS® T 305	liquid	acid	**KT39.1**	5 l	49,40

For mechanically pre- and secondary cleaning

Type	Type	pH	Art. No.	Pack Qty.	€
RBS® NA 2	liquid	acid	**AL93.1**	5 l	57,85
RBS® A 375	liquid	acid	**TK44.1**	5 l	45,05

For mechanically first cleaning

Type	Type	pH	Art. No.	Pack Qty.	€
RBS® 50	liquid	basic	**9232.1**	1 l	21,45
RBS® 50	liquid	basic	**9232.2**	5 l	96,55
RBS® 50	liquid	basic	**9232.4**	20 kg	272,00
RBS® B 210 T	liquid	basic	**KC19.1**	5 l	62,90
RBS® A 285 SOLID pF	powder	basic	**HNY8.1**	4,5 kg	50,35

For mechanically pre-cleaning

Type	Type	pH	Art. No.	Pack Qty.	€
RBS® R 60	liquid	acid	**AL94.1**	5 l	57,85
RBS® R 60 pF	liquid	acid	**AL96.1**	5 l	68,60

- Effective cleaning of laboratory glassware, plastics, porcelain, ceramics, crystal, stainless steel, etc. in laboratories (analysis, monitoring, research and development), universities, institutes, industry etc.
- Effective against grease, oils, salts, limes, proteins, radioactive contamination and other chemical and biological residues.
- Suitable for manual cleaning, dishwashers and ultrasound baths or for automatic cleaning in immersion bath

RBS laboratory cleaning agent

RBS® 25

Alkaline liquid laboratory cleaning concentrate
- **For manual cleaning**
- **For cleaning in immersion baths and ultrasonic baths**

Cleans and degreases surfaces and objects made of glass, ceramics, porcelain, synthetics, or stainless steel. Also suitable for industrial applications (processing of electronic components, wafers, lenses, etc.).

- pH value use concentration 2 %: approx. 11.9
- Density 1.094 g/ml
- Foaming
- **Ingredients:** sodium hydroxide, sodium hypochloride solution, surfactants, phosphates

Use concentration: 20 ml per litre of water. Temperatures up to approx. 50 °C accelerate the cleaning process. Items to be cleaned should remain in the immersion bath for 3 hours. Rinse thoroughly with deionised water.

Danger H290-H314-EUH031

Art. No.	Pack Qty.	€
AL89.1	5 l	61,20

RBS® 35

Alkaline liquid laboratory cleaning concentrate
- **For mechanical cleaning and normal dirt**
- **For cleaning in immersion baths and ultrasonic baths**
- **Also suitable for use with hard water**

For cleaning and degreasing all non-corrosive materials and surfaces. Also suitable for industrial cleaning and degreasing of metals, electronic components, wavers, lenses, etc. Rinses off trace-free.

- pH value use concentration 2 %: approx. 11.5
- Density 1.07 g/ml
- Slightly foaming
- **Ingredients:** sodium hydroxide, tetrapotassium diphosphate, sodium carbonate, sodium hypochlorite solution, surfactants

Use concentration: 20 ml per litre of water; increase the dosage for stubborn dirt.
Rinse thoroughly with deionised water.

Danger H290-H314-EUH031

Art. No.	Pack Qty.	€
9238.1	1 l	16,80
9238.2	5 l	68,70
9238.4	20 kg	195,65

RBS® 50

Highly alkaline liquid laboratory cleaning concentrate
- **For stubborn dirt**
- **For universal cleaning, immersion bath and ultrasonic bath cleaning, as well as for laboratory dishwashers**

For cleaning and degreasing all non-ferrous materials and surfaces. Also removes problematic substances such as radioactive residues, Canada balsam, silicones, etc. For industrial applications to treat metal parts, lenses, electronic components, etc. Rinses off trace-free.

- pH pure product: 13.5
- Density 1.244 g/ml
- Non foaming
- Also suitable for use with hard water
- **Ingredients:** tetrapotassium diphosphate, sodium hydroxide, sodium hypochlorite solution, mineral salts

Use concentration:
Manual and automatic cleaning: 10 ml per litre of water.
Cleaning in dishwashers and ultrasonic baths :
3-5 ml per litre of water. Dishwasher cleanable, particularly effective in combination with RBS NA 2 and/or RBS R 60.
Rinse thoroughly with deionised water.

Danger H290-H314

Art. No.	Pack Qty.	€
9232.1	1 l	21,45
9232.2	5 l	96,55
9232.4	20 kg	272,00

RBS® Neutral T

Neutral liquid laboratory cleaning concentrate
- **For manual or automatic cleaning**
- **In tissue culture and microbiology**

Suitable for all, particularly sensitive materials and surfaces. Non-corrosive, no damaging influence on the culture growth.

- **Chlorine-free**
- pH-neutral cleaning solution
- Density 1.072 g/ml
- Slightly foaming
- **Ingredients:** surfactants, isotridecanol, ethylene glycol monophenyl ether, phosphates
- Biodegradable

Use concentration: 4 to 6 % v/v depending on amount of dirt.
Rinse thoroughly with deionised water.

Warning H319

Art. No.	Pack Qty.	€
0180.1	1 l	17,00
0180.2	5 l	64,40

RBS laboratory cleaning agent

RBS® IND 470

Alkaline liquid laboratory cleaning concentrate for decontaminating radioactive residues (tested for ^{99}Mo, ^{192}Ir, ^{131}I). Also removes greases, silicone oils, carbonates, metal particles, dust and organic substances. Suitable for automatic or manual ultrasound cleaning of objects, containers and surfaces made of glass, stainless steel and plastic.
Halogen free (Cl; I; Br; F < 20 µg/g) and **phosphate-free** (P < 5 µg/g).

- pH pure product: 14.0
- Density at 20 °C: 1.06
- Slightly foaming
- **Ingredients:** potassium hydroxide, isotridecanol, surfactants
- Unsuitable for corrodible metals
- Also suitable for use with hard water

Use concentration: 2 % v/v for normal contamination, temperatures up to approx. 50 °C accelerate the cleaning process. Soak parts to be decontaminated in a 10 % solution at 60 °C for at least 6 h. Rinse thoroughly with deionised water.

Danger H290-H314

Art. No.	Pack Qty.	€
TA00.1	5 l	52,15
TA00.2	20 kg	156,95

RBS® pF T

Alkaline liquid laboratory cleaning concentrate
- **Phosphate-free**
- **For manual or automatic cleaning**
- **Also suitable for use with hard water**

Particularly suitable for use in analytic laboratories. Equalizes water hardness. Rinses off trace-free.

- pH value use concentration 2 %: approx. 11.8
- Density 1.072 g/ml
- Slightly foaming
- **Ingredients:** tetrasodium salt, sodium hydroxide, sodium carbonate, sodium hypochloride solution, surfactants
- Biodegradable

Use concentration: 20 ml per litre of water; increase the dosage for stubborn dirt.
Rinse thoroughly with deionised water.

Danger H290-H314

Art. No.	Pack Qty.	€
9243.1	1 l	16,35
9243.2	5 l	68,70
9243.4	20 kg	220,40

RBS® T 115

Alkaline liquid laboratory cleaning concentrate with excellent emulsifying and wetting properties. For self and manual cleaning or use in ultrasonic baths. Strongly recommended for laboratory glass, quartz, porcelains or synthetics. Removes organic and inorganic substances such as fats, proteins, distillation residues, and biological contaminants. Reduces water hardness and counteracts scaling. Is free of phosphates and is therefore suitable for use in analytical labs. Biodegradable.

- **Phosphate-free**
- pH of a 2 % cleaning solution: 11.7
- Density at 20 °C: 1.08
- Slightly foaming
- **Ingredients:** tetrasodium salt, sodium hydroxide, sodium carbonate, sodium hypochlorite solution, surfactants
- Unsuitable for corroding metals and sensitive materials
- Also suitable for use with hard water

Use concentration: 2 % v/v, higher concentrations can be used to remove stubborn dirt. Temperatures up to approx. 50 °C accelerate the cleaning process. Rinse thoroughly with deionised water.

Danger H290-H314

Art. No.	Pack Qty.	€
LY18.1	5 l	40,10

Dosing pumps for RBS® canisters

Made of **HDPE**.

Suitable for RBS® canister size	Dosing volume/stroke (ml)	Art. No.	Pack Qty.	€
5 l (DIN 55)	25	**HL77.1**	1	9,70
30 l (DIN 60)	100	**P242.1**	1	60,85

- ▶ Erlenmeyer flasks see page 16
- ▶ Measuring cylinder see page 20
- ▶ Glass beakers see page 10
- ▶ Funnels see page 167

RBS for laboratory dishwashers

RBS® T 105

Alkaline liquid laboratory cleaning concentrate. For self and manual cleaning or use in ultrasound baths. Suitable for laboratory glassware, stainless steel, porcelain and plastics. Removes organic and biological substances, such as greases, distillation residues, proteins and cell cultures. Reduces water hardness and counteracts scaling.
Rinses off easily without leaving a residue.

- pH-value cleaning solution 2 %: 11.8
  pH-value concentrate: 13.3
- Density at 20 °C: 1.12
- Foaming
- **Ingredients:** tetrapotassium diphosphate, surfactants, sodium hypochlorite solution
- Unsuitable for corrodible metals
- Also suitable for use with hard water

Use concentration: 2 % v/v, higher concentrations can be used to remove stubborn dirt. Temperatures up to approx. 50 °C accelerate the cleaning process.
Rinse thoroughly with deionised water.

Warning H319

Art. No.	Pack Qty.	€
PY99.1	5 l	37,85

RBS® T 230

Neutral liquid laboratory cleaning concentrate for cleaning sensitive materials such as volumetric glassware, aluminium, zinc, tin, PS or PC. Non-corrosive and fully biodegradable. Self-acting (no mechanical cleaning required). Also suitable for use in microbiology, as it has no harmful effect on culture growth.

- **Chlorine- and oxidant-free**
- pH-neutral cleaning solution
- Density at 20 °C: 1.07
- Non-corrosive, non-toxic and non-irritant
- Slightly foaming
- **Ingredients:** surfactants, isotridecanol, ethylene glycol monophenyl ether, phosphates
- Also suitable for use with hard water

Use concentration: 4 to 6 % v/v, i.e. 40 to 60 ml RBS® T 230 per litre of water depending on contamination. Objects should be fully immersed for cleaning.
Application time: 2 to 12 h. Temperatures up to approx. 60 °C accelerate the cleaning process. Stubborn dirt be removed by brush or rinsing prior to application. Rinse thoroughly with deionised water.

Warning H319

Art. No.	Pack Qty.	€
LY17.1	5 l	38,20

RBS® T 305

Acidic liquid laboratory cleaning concentrate for manual cleaning.
Particularly well suited to the removal of grease, oils, limescale residue, metal oxides, salts and inorganic residues from glass, ceramic, porcelain and non-corrosive stainless steel surfaces, and acid-resistant synthetics.Also for cleaning floors, workbenches and animal cages.
Apply the cleaning agent, allow it to act; if necessary, brush off and rinse thoroughly with water.

- **Free of chlorine**
- pH value use concentration: 1.5 to 1.2
- Density 1.40 g/ml
- Foaming
- **Ingredients:** phosphoric acid, isotridecanol, surfactants
- Biodegradable
- Also suitable for use with hard water

Use concentration: 2 to 5 % v/v depending on amount of dirt.

Danger H290-H314

Art. No.	Pack Qty.	€
KT39.1	5 l	49,40

RBS® A 285 SOLID pF

Powder-based, alkaline high-performance detergent for laboratory dishwashers

Suitable for laboratory glassware, stainless steel, porcelain and alkali-resistant plastics. Removes greases, oils, distillation residues and other organic and mineral substances. Rinses off trace-free.

- Free of phosphates, EDTA and NTA
- pH value use concentration 0.3 %: 11.4
- **Ingredients:** anionic and non-ionic surfactants, carbonates, silicates, sodium hydroxide
- Surfactants, biodegradable
- Also suitable for use with hard water

Use concentration: 0.1 % m/v, for high levels of contamination or high water hardness, the concentration can be increased to 3 g per litre. Temperature between 50 and 95 °C accelerate the cleaning process. Especially in combination with RBS® A 375 and/or RBS® R 60 pF. Rinse with deionized water.

Danger H315-H318-H335

Art. No.	Pack Qty.	€
HNY8.1	4,5 kg	50,35

RBS for laboratory dishwashers

RBS® A 375

Liquid, acidic pre-rinse and neutralisation agent for laboratory glassware washers
Removes lime scale deposits, hydroxides and many other residues from glass, plastic, porcelain, ceramic, crystal, stainless steel etc.

- **Free of surfactant, chlorine and phosphate**
- Rinses off easily without leaving a residue
- Also suitable for use with hard water
- Non foaming
- pH value (0.5 %): 2.6
- **Ingredients:** citric acid, lactic acid

Prewash: removes stubborn dirt and stains, increasing the effectiveness of alkaline main cleaning concentrates.
Rinsing: neutralises alkaline cleaning concentrate residues after the main cleaning cycle and protects the garment and machine from lime scale deposits.

Use concentration: 0.2 % (in the case of stubborn dirt/stains or hard water, the concentration can be increased up to 0.5 %).
Rinse with deionised water to ensure residue-free results.
Particularly effective in combination with RBS® 50.

Danger H315-H318

Art. No.	Pack Qty.	€
TK44.1	5 l	45,05

RBS® NA 2

Liquid, acidic pre-rinse and neutralisation agent for laboratory glassware washers

Prewash: removes stubborn dirt such as carbonates, hydroxides, salts and organic bases. Enhances the performance of alkaline main wash cycle detergents.
Rinsing: neutralizes alkaline detergent residues and prevent limescale deposits on the parts cleaned and in the dishwashers.

- **Free from tensides and chlorine**
- pH value use concentration: 2.2 to 1.8
- Density 1.378 g/ml
- Non-foaming
- **Ingredients:** phosphoric acid

Use concentration: 0.2 to 0.5 % v/v. Particularly effective in combination with RBS® SOLID, RBS® B 210 T or RBS® 50. Rinse with deionised water.

Danger H290-H314

Art. No.	Pack Qty.	€
AL93.1	5 l	57,85

RBS® B 210 T

Mildly alkaline cleaning concentrate for laboratory glassware washers
- **For sensitive instruments and parts in laboratories and industry**
- **High cleaning effect**

Effectively removes dust and inorganic contaminants. Also suitable for aluminium and synthetics, such as PC and PS. No defoamers or neutralising agents.

- **Free from chlorine**
- pH value in use concentration: 9.7
- Density 1.178 g/ml
- **Ingredients:** Na-EDTA, diethylene glycol, mineral salts
- Also suitable for use with hard water

Use concentration: 0.5 % v/v. Higher concentrations can be used to remove stubborn contamination. Temperatures from 40-60 °C speed up the cleaning process.
Rinse with deionised water.

Danger H318

Art. No.	Pack Qty.	€
KC19.1	5 l	62,90

RBS® R 60

Liquid, slightly acidic neutralisation agent for laboratory glassware washers

Neutralizes alkaline detergent residues and prevents limescale deposits on item cleaned and in the dishwashers. Accelerates the drying process and produces a glossy finish.

- **Free of chlorine**
- pH value use concentration: 6.3 to 3.6
- Density 1.016 g/ml
- Non-foaming
- **Ingredients:** surfactants, sodium cumolsulphonate, 2-propanol, phosphoric acid

Use concentration: 0.1 to 0.3 % v/v. Particularly effective in combination with RBS® 50 and/or RBS® SOLID. Rinse with deionised water.

Warning H226-H290-H315-H319-H412

Art. No.	Pack Qty.	€
AL94.1	5 l	57,85

RBS® R 60 pF

Liquid, slightly acidic neutralisation agent for laboratory glassware washers

Neutralizes alkaline detergent residues and prevents limescale deposits on item cleaned and in the dishwasher. Accelerates the drying process and produces a glossy finish. Free of phosphates and therefore suitable for use in analytical labs.

- **Free of phophates and chlorine**
- pH value use concentration: 6.5 to 4.4
- Density 1.015 g/ml
- Non-foaming
- **Ingredients:** surfactants, sodium cumolsulphonate, 2-propanol, citric acid, amidosulphuric acid

Use concentration: 0.1 to 0.3 % v/v. Rinse with deionised water.

Warning H226-H315-H319-H412

Art. No.	Pack Qty.	€
AL96.1	5 l	68,60

neodisher®-Grades	Manual washing/immersion bath	Laboratory glassware washers	Pre-wash	Post-wash and neutralisation	CE approved	Chlorinated ingredients	Low-foaming	Phosphates-free	For hard water	For easily breakable objects
neodisher® DuoClean		x			x			x	x	
neodisher® EM		x	x				x		x	
neodisher® anti-foaming agent S		x	x	x	x		x	x	x	x
neodisher® FA		x			x				x	
neodisher® LaboClean A8		x				x			x	
neodisher® LaboClean F		x						x		
neodisher® LaboClean FLA		x						x		
neodisher® LaboClean FM		x						x	x	
neodisher® LaboClean FT		x				x				
neodisher® LaboClean GK		x				x	x		x	
neodisher® LaboClean LA		x					x		x	
neodisher® LaboClean PLM		x					x			x
neodisher® LaboClean UW		x				x		x		x
neodisher® LM 2	x		x		x		x		x	
neodisher® LM 3	x	x	x					x		
neodisher® LM 10	x		x			x	x			
neodisher® MA		x			x		x		x	x
neodisher® N		x	x	x	x		x		x	
neodisher® PM 5	x				x				x	x
neodisher® PolyKlar		x		x		x				x
neodisher® TS		x		x		x				x
neodisher® Z		x	x	x	x		x	x	x	x

neodisher® LaboClean A8

By Dr. Weigert. **Alkaline intensive cleanser (powder)** with extraordinary cleaning power and high soil carrying capacity. **Free of tensides.**

For mechanical cleaning. Removes blood, serum, food residues, pharmaceuticals, colours, paint, gelatine and other organic residues. Contains phosphates, disodium metasilicate, sodium hydroxide, sodium carbonate and dichloroisocyanurate. Not suitable for aluminium and light metal alloys.

Danger H290-H314-H335-H411-EUH031

Art. No.	Pack Qty.	€
N330.1	1 kg	13,25
N330.2	10 kg	91,40
N330.3	25 kg	213,95

neodisher® LaboClean UW

By Dr. Weigert. **Mild, alkaline cleaning agent (powder)**, protects the material. **Free of phosphates.**

For mechanical cleaning of laboratory glassware and other utensils in water laboratories, serological institutes and in the phosphates industry. Removes anorganic and organic contamination. Contains disodium metasilicate, sodium carbonate, sodium nitrilotriacetate and sodium perborate. Reduced efficiency with hard water.

Danger H314-H335

Art. No.	Pack Qty.	€
Y222.1	10 kg	117,20

neodisher® LaboClean GK

By Dr. Weigert. **Mild, alkaline cleaning agent (powder). Free of phosphates and surfactants.**

For mechanical cleaning of synthetics and glassware for cell and tissue cultures in the area of microbiology, virology and nuclear medicine, as well as in isotope laboratories. Removes nutrient media, cell and tissue residues, radioactive contaminations, organic colour and pigment contaminations. Easy to rinse. Contains trisodium phosphates and dichloroisocyanurate.

Warning H315-H319-H335-H411-EUH031

Art. No.	Pack Qty.	€
N331.1	10 kg	120,40

neodisher® LaboClean PLM

By Dr. Weigert. **Mildly alkaline defoaming cleaner (powder)** for mechanical cleaning of laboratory glassware and laboratory utensils. Ideal for removing blood, protein, oils, ointments, cream bases and felt-tip pen markings. Contains sodium carbonate, sodium metasilicate and surfactants. **Free of chlorine and oxidants.**

Danger H314-H335

Art. No.	Pack Qty.	€
CLP2.1	10 kg	134,40

neodisher® LaboClean LA

By Dr. Weigert. **Highly alkaline intensive cleaner (powder)** with a highly emulsifying, dispersing and defoaming action for mechanical cleaning of laboratory glassware and laboratory utensils. Ideal for removing greases, oils, resins, paraffin wax and organic dyes. Contains sodium hydroxide and disodium metasilicate. **Chlorine-free.** Also suitable for use with hard water.

Danger H290-H314-H335

Art. No.	Pack Qty.	€
CLP1.1	3 kg	42,40
CLP1.2	25 kg	302,10

neodisher® LaboClean F

By Dr. Weigert. **Highly alkaline intensive cleaner (powder)** with high cleaning power for mechanical cleaning of laboratory glassware and laboratory utensils. Ideal for removing greases, oils, paraffin wax, resins, organic dyes and felt-tip pen markings. Good complexing and dispersing effect. Contains sodium hydroxide, sodium metasilicate and sodium carbonate. **Free of phosphates, chlorine and surfactants.**

Danger H290-H314-H335

Art. No.	Pack Qty.	€
CLN9.1	3 kg	42,15
CLN9.2	25 kg	305,30

neodisher® PM 5

By Dr. Weigert. **Mildly alkaline cleaner (powder)** for manual and automatic cleaning of laboratory glassware and other materials in an immersion bath. High cleaning power for blood and protein, food leftovers as well as inorganic and organic residues. Material tolerant and easily rinsed off. Contains phosphates, sodium carbonate and surfactants.

CE approved according to 93/42/EEC directive.

Warning H315-H319

Art. No.	Pack Qty.	€
CLP5.1	3 kg	85,60

neodisher® MA

By Dr. Weigert. **Mild, alkaline cleaning agent (powder)** with de-foaming properties. **Free of chlorine and oxidative additives.**

For mechanical cleaning of medical utensils, laboratory glassware and babies bottles. Removes residues of blood, protein and food.
Excellent cleaning properties and very gentle on materials.
Contains phosphates, disodium metasilicate and a nonionic tenside.
Suitable for all water hardness levels.
CE mark according to MPG.

Danger H314-H335

Art. No.	Pack Qty.	€
AA59.1	1 kg	16,05
AA59.2	10 kg	107,00

neodisher® LM 2

By Dr. Weigert. **Mildly alkaline cleaner (liquid concentrate)** for use in immersion and ultrasonic baths as well as for manual cleaning. Removes organic residues such as blood and protein from laboratory glassware, instruments and objects made of ceramic, stainless steel and plastics. Easy to rinse off and low-foaming, ideal for cleaning pipettes. Contains potassium hydroxide, surfactants and phosphates. **Chlorine-free.**

CE approved according to 93/42/EEC directive.

Warning H315-H319-EUH208

Art. No.	Pack Qty.	€
CLP3.1	10 l	153,75
CLP3.2	20 kg	248,35

neodisher® LM 3

By Dr. Weigert. **Liquid alkaline universal cleaning agent. Phosphates-free, chlorine-free and low-foaming.**

For mechanical and manual cleaning and use in immersion baths. Removes all anorganic and organic residues, blood, protein and food remains, as well as radioactive substances. Also for pre-cleaning laboratory glassware and for cleaning pipettes and viscometers. Contains potassium hydroxide and amphotere tenside. Not suitable for aluminium and light metal alloys.

Danger H290-H314-EUH208

Art. No.	Pack Qty.	€
Y223.1	1 l	18,25
Y223.2	10 l	143,00

neodisher® LM 10

By Dr. Weigert. **Alkaline cleaner with oxidising action (liquid concentrate)** for manual washing of laboratory glassware in an immersion bath. For decontamination of radioactively contaminated objects and removal of stubborn organic residues. Contains potassium hydroxide, phosphates and sodium hydroxide.
Surfactant and foam-free. Also suitable for pre-washing glassware before main wash cycle. No intermediate rinsing required.

Danger H290-H314-H412

Art. No.	Pack Qty.	€
CLP4.1	10 l	158,05

neodisher® LaboClean FM

By Dr. Weigert. **Alkaline intensive cleaner (liquid concentrate)** with a highly emulsifying and dispersing action for mechanical cleaning of laboratory glassware and laboratory utensils. Ideal for removing oils, greases, resins, paraffin wax and organic dyes. Contains sodium hydroxide and surfactants. **Free of phosphates, chlorine and oxidants.**
Also suitable for use with hard water.

Danger H290-H314

Art. No.	Pack Qty.	€
CLP0.1	5 l	62,90
CLP0.2	20 l	203,20

neodisher® LaboClean FLA

By Dr. Weigert. **Alkaline intensive cleanser (liquid)** with extraordinary cleaning power and high soil carrying capacity. **Free of tensides, chlorine, phosphor compounds and oxidants.**

For mechanical cleaning. Removes stubborn, oil-based residues and other organic dirt. Contains polycarboxylate, potassium hydroxide and sodium nitrilotriacetate. Reduced efficiency with hard water.
Not suitable for aluminium and light metal alloys.

Danger H290-H302-H314

Art. No.	Pack Qty.	€
N333.1	5 l	51,00
N333.2	10 l	94,75
N333.3	25 kg	165,55

neodisher® LaboClean FT

By Dr. Weigert. **Liquid, alkaline cleaning agent**.
Oxidizing, **free of tensides.**

Particularly effective for residue-free cleaning of pharmacy glassware, infusion flasks, glassware for cell and tissue cultures, as well as in the areas of microbiology, virology and nuclear medicine. Removes residual nutrient media, blood, protein, radioactive contamination, residues of tissue cultures and cell layers as well as other organic residues. Contains phosphates, potassium hydroxide and sodium hypochlorite. Reduced efficiency with hard water .

Danger H290-H314-H400-H411-EUH031

Art. No.	Pack Qty.	€
N334.1	12 kg	106,35
N334.3	25 kg	209,65

neodisher® FA

By Dr. Weigert. **Liquid alkaline cleaning agent - free of tensides, chlorine and oxidizing additives.**

For mechanical cleaning of medical utensils, laboratory glassware and babies bottles. Removes blood, protein and nutrient media as well as gelantine. Very good cleaning action and very gentle on materials (colour changes might occur with titanium). Contains phosphates, disodium and potassium metasilicate. **CE mark according to MPG.**

Danger H290-H314

Art. No.	Pack Qty.	€
N332.1	5 l	57,00
N332.3	25 kg	178,45

neodisher® DuoClean

By Dr. Weigert. **Highly alkaline liquid detergent. Free of phosphates, silicates and oxidizing agents.**

For mechanical cleaning of surgical instruments made of stainless steel and other alkali-resistant surfaces. High cleaning action for removing blood proteins and stubborn OP residues, even for other particularly adhesive dirt. Contains sodium hydroxide and amphotere tensides.
CE mark according to MPG.

Danger H290-H314

Art. No.	Pack Qty.	€
KP95.1	5 l	58,35
KP95.2	20 l	197,80

neodisher® N

By Dr. Weigert. **Liquid acidic neutralisation and cleaning agent. Free of tensides.**

For mechanical cleaning of laboratory glass. Ideal for neutralising carried over alkaline residue in first rinsing or for acidic pre-cleaning. Removes limescale and other acid-soluble residue. Easy to rinse. Contains phosphoric acid. **CE mark according to MPG.** Not suitable for anodised aluminium, non-ferrous metals and acid-resistant synthetics.

Danger H290-H314

Art. No.	Pack Qty.	€
N335.1	1 l	20,55
N335.2	5 l	84,85
N335.3	12 kg	130,10
N335.4	25 kg	248,35

neodisher® TS

By Dr. Weigert. **Acidic neutralising and clear rinsing agent** for mechanical cleaning in food-processing plants and in livestock stalls. Prevents scaling, improves and accelerates drying. Suitable for objects made of glass, stainless steel, aluminium and plastics such as polycarbonate and polyetherimide. Contains citric acid, phosphates and surfactants.

Warning H319

Art. No.	Pack Qty.	€
CLP7.1	1 l	13,25
CLP7.2	10 l	101,60

neodisher® PolyKlar

By Dr. Weigert. **Acidic clear rinsing agent (liquid)** for the mechanical treatment of animal cages. Ideal for polycarbonate, polysulfone, polyphenylsulfone and polyetherimide. Adjusted for acidity. Neutralises alkaline residues and prevents corrosion of polycarbonate and polysulfone during the subsequent autoclaving process. Prevents the formation of stress cracks after autoclaving. Improves and accelerates drying. **Surfactant-free.** Contains citric acid and polycarboxylates.

H412

Art. No.	Pack Qty.	€
CLP6.1	10 l	120,40

neodisher - Cleaning agent

neodisher® Z

By Dr. Weigert. **Liquid acidic neutralisation and cleaning agent. Free of tensides, phosphates and nitrogen**

For mechanical cleaning of laboratory glass. Ideal for neutralising carried over alkaline residue in first rinsing or for acidic pre-cleaning. Removes limescale and other acid-soluble residue. Especially gentle on materials. Contains citric acid. **CE mark according to MPG**.
Not suitable for anodised aluminium and non-ferrous metals.

Warning H319

Art. No.	Pack Qty.	€
N336.1	1 l	15,95
N336.2	5 l	66,55

neodisher® EM

By Dr. Weigert. Liquid, **emulsifying and dispersing additive** to intensify the cleaning power of cleaning agents during mechanical cleaning of laboratory glassware and laboratory utensils. Suitable for removing stubborn residues of solids, paraffin wax, oils and greases. With defoaming action. Contains surfactants. Also suitable for use with hard water.

Art. No.	Pack Qty.	€
CLN8.1	5 l	131,15

neodisher® anti-foaming agent S

Neutral liquid concentrate based on emulsified silicone oil, designed to hinder the formation of foam in dishwashers.
Can be used to remove foaming residues, such as surfactants, proteins and soaps including all neodisher® cleaning agents for pre-wash and main wash cycles. High effectiveness even at low temperatures.
Dispensing: depending on type and quantity of foaming impurities, add 0.05-0.1 ml/l using suitable dispensing apparatus or manually.
CE mark in accordance with directive 93/42/EEC.

Art. No.	Pack Qty.	€
YC39.1	1 l	34,35
YC39.2	10 l	313,90

Dishwasher cleaner

Intensive cleaning powder for all standard dishwashers. Suitable for objects made of glass, metal, plastic, porcelain. Even the most tenacious dirt can be removed and chalky deposits reduced. Dosage depends on water hardness: 1-2 g/litre fresh water to 8° dH, 2-3 g/litre fresh water from 9° dH.

Danger H302-H314-H335-H412-EUH206

Art. No.	Pack Qty.	€
N047.1	5 kg	21,45

Clear rinsing agent

Lime removing, flow-foam clear rinsing agent containing citric acid.
For all standard dishwashers. Also highly effective when machine is full with different ware, e.g. porcelain, plastic, metal. Dosage depends on water hardness: 0.5-0.8 ml/litre fresh water at 8° dH, 0.9-1.0 ml/litre fresh water from 9° dH.

Warning H319

Art. No.	Pack Qty.	€
N048.1	1 l	6,40

Dishwasher regenerating salt

High-purity dishwasher salt for dishwashers. Effective water softening, protects dishes and machine from scale deposits. Completely soluble.

Type	Art. No.	Pack Qty.	€
Fine grained, 0.1-1.6 mm	**N049.1**	2 kg	7,50
Coarse grained, 1.0-6.5 mm	**NH60.1**	2 kg	11,80

Korsolex® extra

Aldehyde instruments disinfectant on the basis of aldehydes and quaternary ammonium compounds. For thermolabile and -stable instruments, e.g. in endoscopy. Suitable for glass, ceramics, stainless steel, nonferrous heavy metal, aluminium, plastic, hard plastic, silicon, rubber, hard rubber, latex and procelain. **VAH- and IHO-listed**, **CE-identification** acc. to MPG.
Spectrum of activity: bactericidal, levurocidal, tuberculocidal, partially virucidal (incl. HBV, HIV, HCV) and virucidal. Also effective against germs restistant to antibiotics and Helicobacter pylori within the framework of VAH-concentrations. Economical operating concentration of 1-4 %. Can be used in high-grade steel ultrasonic baths.
Use disinfectants carefully. Always read labels and product information carefully before use.

Danger H226-H302+H332-H315-H317-H318-H334-H335-H341-H350-H410

Art. No.	Pack Qty.	€
Y863.1	2 l	n. a.
Y863.2	5 l	n. a.

Korsolex® basic

Aldehyde disinfectant for thermolabile and -stable instruments based on glutaral and (Ethylendioxy) dimethanolusing. Can be used in the dipping method and for all standard circulation methods of semi-automatic to fully automatic models in cold methods.
Also suitable for ultrasonic disinfection.
Spectrum of activity: bactericidal, levurocidal, fungicidal, tuberculocidal, mycobactericidal, sporicidal, partially virucidal (incl. HBV, HIV, HCV), virucidal. Also effective against SARS-coronavirus, germs resistant to antibiotics and Helicobacter pylori within the framework of VAH-concentrations. Concentration for use: 1 to 5 %.
VAH-, IHO- and RKI-listed, **CE-designation in accordance with MPG.**
Use disinfectants carefully. Always read labels and product information carefully before use.

Danger H302+H332-H314-H317-H334-H341-H350-H411-EUH071

Art. No.	Pack Qty.	€
AK41.1	2 l	n. a.
AK41.2	5 l	n. a.

Korsolex® med AF

Aldehyde-free instrument disinfectant based on amine. Suitable for instruments made of stainless steel, glass, ceramic, aluminium, hard rubber and rigid plastic; with corrosion inhibitors for good compatability of materials. Powerful soil-dissolving effect, high protein resilience.
Spectrum of activity: bactericidal, levurocidal, tuberculocidal, mycobactericidal, partially virucidal (incl. HBV, HIV, HCV, adeno-, polyoma-, rotavirus). **VAH- and IHO-listed**, **CE-marking** in accordance with MPG and MDD. Free from aldehyde, QAV, phenol and chlorine. Can be used in stainless steel ultrasonic baths. Economical concentration (0,25-5 %).
Use disinfectants carefully. Always read labels and product information carefully before use!

Danger H226-H302-H314-H372-H410

Art. No.	Pack Qty.	€
KY66.1	2 l	n. a.
KY66.2	5 l	n. a.

Helipur® H plus N

Alcohol and aldehyde-based formaldehyde-free instrument disinfectant. Also suitable for heat-sensitive materials and instruments, such as flexible endoscopes and anesthesiology accessories.
Spectrum of activity: bactericidal (incl. MRSA and TbB), fungicidal, limited virucidal efficacy (incl. HBV, HIV, HCV) and virucidal, adeno-, polyoma-, rota- and polivirus.
Listing: VAH, IHO and DGHM, **CE-marking in accordance with MPG**. Usable in ultrasonic baths. Exceptionally economical usage concentration (1-1.5 %) and short reaction time (15-30 min).
Use disinfectants carefully. Always read labels and product information carefully before use.

Danger H302+H332-H334-H335-H314-H317-H412

Art. No.	Pack Qty.	€
LK27.1	1 l bottle	23,60
LK27.2	5 l canister	103,75

▶ Measuring jugs and dosing pumps see p. 1150

Disinfecting agents for surfaces

Meliseptol®

Ready-to-use alcohol-based fast-acting disinfectant without additional active substances. Also suitable for hard-to-reach areas and objects. Can be applied by wiping or spraying on.
Spectrum of activity: bactericidal (incl. MRSA, TbB and mycobacteria), fungicidal, limited virucidal efficacy (incl. HBV, HIV, HCV) and effective against rotavirus, adenovirus and norovirus.
Listings: VAH, IHO and DGHM. **CE approved in accordance with German Medical Products Act**.
Short reaction time of 1 min.

Use disinfectants carefully. Always read labels and product information carefully before use.

Danger H226-H318-H336

Art. No.	Pack Qty.	€
EAA6.1	250 ml spray bottle with spray head	7,00
EAA6.2	1 l spray bottle without spray pump	12,50
EAA6.3	5 l canister	49,25

Accessories:

Spray pump for 1 l spray bottle	**LP76.1**	1	6,40

Meliseptol® Foam pure

Ready-to-use disinfecting foam based on propane-1-ol and didecyldimethyl ammonium chloride for **fast-acting disinfection of medical products and sensitive surfaces**.
Aerosol-free, also suitable for use in the food industry. Good compatibility, even with alcohol-sensitive materials such as acrylic glass, examination tables, vaginal probes and ultrasound probes.
Aldehyde, amine and fragrance free, neutral odour.
Spectrum of activity: bactericidal (including MRSA and TbB), fungicidal, limited virucidal efficacy (including HBV, HIV and HCV) and active against rota viruses, polyoma viruses, noro viruses and aviary influenza viruses.
Listing: VAH, IHO and DGHM, **CE mark according to MPG**.
Rated "very good" in dermatological tests. Short reaction time ≤5 min.

Use disinfectants carefully. Always read labels and product information carefully before use.

Danger H226-H318

Type	Art. No.	Pack Qty.	€
750-ml foam sprayer bottle	**XP56.1**	1	12,40
5 l canister	**XP56.2**	1	47,20

Meliseptol® rapid

Ready-to-use, fast-acting alcoholic spray disinfectant on an alcohol base. Aldehyde- and alkylamine-free.
Also suitable for difficult to reach surfaces and objects.
Spectrum of activity: bactericidal, (incl. MRSA and TbB), fungicidal, virucidal to a limited extent (incl. HBV, HIV, HCV) and virucidal (incl. Noro-virus).
Listing: VAH, IHO and DGHM, **CE- marking in accordance with MPG**.
Ready-to-use. Very fast acting, reaction time 1 min; 10 min. for virucidal efficacy.

Use disinfectants carefully. Always read labels and product information carefully before use!

Danger H226-H318-H336

Art. No.	Pack Qty.	€
LK31.1	250 ml spray bottle with spray head	7,10
LK31.2	1 l spray bottle without spray pump	12,70
LK31.3	5 l canister	51,50

Accessories:

Spray pump for 1 l spray bottle	**LP76.1**	1	6,40

B. Braun Wipes

Fleece wipes dispenser system for filling with disinfectant solution for cleaning and disinfection of surfaces. Absorbent and lint-free fleece wipes made of 100 % PET reliably release the active ingredients during surface disinfection.

- Practical removal of individual tear-off wipes
- Economical in use of wipes and application solution
- Reclosable lid protects against contamination and evaporation of solutions
- Tested with B. Braun surface disinfectant, e.g. Meliseptol® rapid and Foam Pure
- Ready-to-use solution can be used up to four weeks after preparation

Delivery without fleece roll (please order separately).

B. Braun Wipes

Type	Art. No.	Pack Qty.	€
2.5 l dispenser system with grey lid	**CAT1.1**	1	24,65
Fleece roll with 100 wipes, each 19 x 36 cm	**CAT2.1**	1	23,60
ECO fleece roll with 120 wipes, each 19 x 36 cm	**CAT3.1**	1	15,40

B. Braun Wipes mini ECO

Type	Art. No.	Pack Qty.	€
700 ml dispenser system with grey lid	**CAT4.1**	1	9,65
ECO fleece roll with 60 wipes, each 15 x 20 cm	**CAT5.1**	1	7,50

neoform K sprint

By Dr. Weigert. Ready-to-use fast-acting disinfectant (propane-1-ol and ethanol based) for quick disinfection of surfaces and equipment in the foods sector. Also suitable for use in refrigerated areas.
Spectrum of activity: bactericidal, fungicidal, limited virucidal efficacy and effective against norovirus. Dries without leaving any residue, no additional rinsing needed. DVG and IHO listed.

Use disinfectants with care. Always read labels and the product information carefully before use.

Danger H226-H318-H336

Art. No.	Pack Qty.	€
CLP9.1	0,75 l	16,80
CLP9.2	10 l	151,60

Mikrobac® food

Aldehyde-free surface disinfectant for the food sector with active substances benzyl-C12-C18-alkyldimethylammoniumchloride and N-(3-Aminopropyl)-N-dodecylpropan-1,3-diamin.
Mikrobac® food can be used as a disinfectant in all areas of the kitchen and food processing (also suitable for the milk and milk processing industry). Ideal for cleaning and disinfecting floors, tiles, work surfaces, transport containers, equipment used for processing treating, and for industrial dishwashers.
Spectrum of activity: bactericidal (incl. salmonellae and listeria), levuoricidal, partially virucidal (incl. HBV, HIV, HCV).
Concentration for use: 0.5 to 3.0 %. **VAH-listed.**

Use disinfectants carefully. Always read labels and product information carefully before use.

Danger H226-H302-H314-H410

Art. No.	Pack Qty.	€
AK43.2	2 l	n. a.
AK43.3	5 l	n. a.

neoform K plus

By Dr. Weigert. Disinfectant (liquid concentrate), decyldimethylammonium chloride and N-(3-aminopropyl)-N-dodecylpropan-1.3-diamine based. For combined cleaning and disinfection of surfaces and objects in the foods sector. Outstanding cleaning results and safe disinfection.
Spectrum of activity: bactericidal, yeasticidal, limited virucidal efficacy. Free of fragrance and colouring agents.

Use disinfectants with care. Always read labels and the product information carefully before use.

Danger H302-H314-H400-H411

Art. No.	Pack Qty.	€
CLP8.1	2 l	22,25
CLP8.2	10 l	89,05

Kohrsolin® extra

Surface disinfectant with aldehyde.
Active substances: (Ethylene dioxy)dimethanol, glutaral, didecyldimethyl ammonium chloride. For day-to-day preventive application and for final disinfection. The disinfectant has good cleaning power, wide spectrum of activity, and low dosage. Short reaction time (1 h).
Compatibility of material tested for: Metals: Stainless steel (V2A), aluminium, copper, brass. Plastics: PE, PP, PS, PU, PVC, silcone, rubber, latex, Macrolon®, Plexiglass®, Teflon®. No material damage is likely if used correctly.

Register: VAH, IHO, RKI list (in acc. with §18 IfSG), CE-designation in compliance with MPG.
Spectrum of activity: bactericidal, levurocidal, fungicidal, sporicidal, tuberculocidal, viricidal, partially viricidal (incl. HBV, HIV, HCV), Hepatitis A-, MNV-, Adeno-, Polyoma- and Rotavirus.
Concentration: 0.25-4 %.

Use disinfectants carefully. Always read labels and production information carefully before use.

Danger

H226-H302+H332-H314-H317-H334-H341-H350-H410-EUH071

Type	Art. No.	Pack Qty.	€
Liquid concentrate, 5 l	**KC13.1**	1	n. a.

Disinfecting agents for surfaces

Bacillol® AF

Ready-to use aldehyde and fragrance free fast-acting disinfectant based on propan-1-ol, propan-2-ol and aldehyde. Excellent wetting, fast acting and drying, leaves no visible residue.

Applications: for fast disinfection of alcohol-resistant surfaces by wiping or spraying, if fast effect and residue-free drying are required, e g.
- In sensitive areas with direct product contact (class C/D cleanrooms)
- If medical equipment and inventory falls under the Medical Products Act (to MPG)
- In hospitals and nursing homes (to BPD)
- In canteens and in the foodstuffs industry (to BPD)

Spectrum of activity: bactericidal, levurocidal, fungicidal, tuberculocidal, mycobactericidal, partially virucidal (incl. HBV, HIV, HCV), murine norovirus, adeno-, polyoma- and rota-viruses. **Listing:** VAH, DVG, IHO, RKI. **CE-mark of conformity** to MPG. Ready to use.
Reaction time: 1 min or longer.

Use disinfectants carefully. Always read labels and product information carefully before use.

Danger H226-H318-H336

Art. No.	Packaging	Pack Qty.	€
PY18.1	bottle	1 l	n. a.
PY18.2	canister	5 l	n. a.

Accessories:

Spray nozzle for 500 ml and 1 l bottles	**X827.1**	1	7,50

Bacillol® 30 foam

Ready-to-use alcohol-based fast-acting disinfectant for sensitive surfaces. Very gentle on materials, also suitable for sensitive materials such as Plexiglas®, Makrolon® and Polysulfon. User-friendly application in easy-to-use spray bottle with foam spray head for optimal wetting.

Spectrum of activity: bactericidal, yeasticidal, limited virucidal efficacy (incl. HBV, HIV, HCV), and effective against murine norovirus, polyoma virus and rotavirus.
Applications: for rapid disinfection of sensitive plastic surfaces, medical inventory and surfaces in clinics, surgeries and laboratories. Also suitable for the disinfection of displays and keyboards as well as control panels on mobile and stationary communication devices.
Listing: VAH, IHO. **CE-mark of conformity** to MPG.
Active ingredients: ethanol, propan-2-ol, propan-1-ol and n-alkyl aminopropyl glycine.

Use disinfectants carefully. Always read labels and product information carefully before use.

Warning H226-H319-H336

Art. No.	Pack Qty.	€
ANY8.1	750 ml bottle incl. foam spray head	n. a.
ANY8.2	5 l canister	n. a.

Bacillol® plus

Ready-to use spray bottle speed-disinfecting agent made with a propanol and glutaral base. Free from formaldehyde. Enables excellent wetting of even highly inaccessible surfaces and objects. Effective after 30 seconds. Fast drying without any visible residue, gentle on materials.
VAH-listed, **CE-identification** acc. to MPG.
Spectrum of activity: bactericidal, levurocidal, fungicidal, tuberculocidal, mycobactericidal, partially virucidal (incl. HBV/HIV/HCV, adeno, polyoma and rota viruses).
Ideal for wiping or spraying. Spray head for 500 ml and 1 l bottles not included in delivery, please order separately.

Use disinfectants carefully.
Always read labels and product information carefully before use.

Danger H226-H318-H336

Art. No.	Pack Qty.	€
L300.1	500 ml	n. a.
L300.2	1 l	n. a.
L300.3	5 l	n. a.

Accessories:

Spray nozzle for 500 ml and 1 l bottles	**X827.1**	1	7,50

Kohrsolin® FF

Surface disinfectant on the basis of glutaral, benzyl-C12-18-alkyl-dimethylammoniumchlorid and didecyldimethylammoniumchlroid. Formaldehyde-free. Suitable for disinfecting washable surfaces and objects by wiping them. Low concentration (0.25 to 4 %), good material compatibility and environmentally friendly. The ready-to-use solution can be dried up almost totally residue-free.
VAH- and IHO-listed, CE-identification acc. to MPG.
Spectrum of activity: bactericidal, levurocidal, fungicidal, tuberculocidal, partially virucidal (incl. HBV, HIV, HCV), virucidal, MNV, adeno-, polyoma- and rotavirus also effective against clostridium difficile spores.

Use disinfectants carefully. Always read labels and product information carefully before use.

Danger

H302+H332-H315-H317-H318-H334-H335-H400-H411

Art. No.	Pack Qty.	€
L301.1	125 bags x 40 ml	n. a.
L301.2	5 l	n. a.

Disinfecting agents for surfaces

BODE X-Wipes

All-purpose fleece wipes dispenser system for filling with all liquid Bode surface disinfectants.
Absorbent and tear resistant fleece wipes made of 100 % PET (60 g/m^2) ensure optimal release of active ingredients during disinfection.

- Colour sealing cap for easier differentiation between products in use
- Smooth surfaces and 3-part lid system protect against contamination or evaporation of the solution
- Minimal processing required before use of fleece roll in the foil bag, bag can be filled directly with application solution
- Shelf life of application solution: approx. 28 days

Applications:
disinfection of surfaces in areas where a maximum of hygiene, economy and utility is required. Suitable for pre-cleaning and disinfection of non-soakable medical instruments and endoscopes.

BODE X-Wipes 2.5 litre wipes dispenser
Delivery without wipes (please order separately).

Type	Art. No.	Pack Qty.	€
Wipes dispenser with blue lid	**CAT6.1**	1	n. a.
Wipes dispenser with red lid	**CAT7.1**	1	n. a.
Wipes dispenser with green lid	**CAT8.1**	1	n. a.

BODE X-Wipes fleece rolls
For 2.5 litre wipes dispenser, wipe size 20 x 38 cm.
Delivery incl. self-adhesive security label for labelling with product name, concentration and filling date.

Type	Art. No.	Pack Qty.	€
Fleece roll with 90 wipes	**CAT9.1**	1	n. a.
Fleece roll with 90 wipes in foil bag, incl. cutter ring	**CAX0.1**	1	n. a.

Meliseptol® Wipes sensitive

Ready-to-use, fast-acting disinfectant wipes for medical products and sensitive surfaces. Soft, non-linting fleece avoids scratching. Very good compatibility, even with alcohol-sensitive materials such as acrylic glass, Makrolon®, silicone rubber, latex and rubber as well as examination tables, vaginal probes and ultrasound probes. Aldehyde, amine, dye and fragrance free, neutral odour.
Propane-1-ol and didecyldimethylammonium chloride based impregnating fluid.
Spectrum of activity: bactericidal (including MRSA and TbB), fungicidal, limited virucidal efficacy (including HBV, HIV and HCV) and effective against rota viruses, polyoma viruses, noro viruses and aviary influenza viruses.
Listing: VAH, IHO and DGHM, **CE mark according to MPG**.
Rated "very good" in dermatological tests. Short reaction time ≤5 min.
Wipe dimensions: 152 x 200 mm.

Use disinfectants carefully. Always read labels and product information carefully before use.

Danger H318-H336

Type	Art. No.	Pack Qty.	€
Dispenser box containing 60 wipes	**XP57.1**	1	14,55
Refill pack containing 60 wipes	**XP57.2**	1	10,25

Bacillol® Tissues

Ready-to-use wipes for speedy disinfection of surfaces.
Made with a propanol base. Free from perfume and aldehydes. Suitable for all alcohol-insensitive surfaces, smaller areas, stock and instruments. Moistes and dries difficult to reach areas well and quickly without streaking. Are kind to the skin. Begin to work after only 30 seconds (in accordance to the new VAH standards).
VAH- and IHO-listed, CE-designation in compliance with MPG.
Spectrum of activity: bactericidal, levurocidal, fungicidal, tuberculocidal, mycobactericidal, partially virucidal (incl. HBV, HIV, HCV), Adenovirus, Noro-, MNV-, Polyoma- and Rotavirus.

Use disinfectants carefully. Always read labels and product information carefully before use.

Warning H226-H319

Type	Art. No.	Pack Qty.	€
Dispenser box with 100 wipes	**KC11.1**	1	n. a.
Refill pack with 100 wipes	**KC12.1**	1	n. a.

Meliseptol® HBV wipes

Ready-to-use fast-acting disinfection wipes for easy disinfection of alcohol-resistant surfaces. Alcohol-based impregnating fluid, aldehyde and alkylamine free. Packed individually for hygiene in practical dispenser box, dermatologically tested.
Spectrum of activity: bactericidal (incl. MRSA and TbB), fungicidal, limited virucidal efficacy (including HBV, HIV and HCV) and virucidal (incl. noro viruses).
Listing: VAH, IHO and DGHM, **CE mark according to MPG**. Ready to use. Very fast acting, reaction time 1 min; 10 min. for virucidal efficacy.
Dimensions tissues: 145 x 200 mm.

Use disinfectants carefully. Always read labels and product information carefully before use.

Danger H228-H318-H336

Type	Art. No.	Pack Qty.	€
Dispenser box containing 100 wipes	**XP58.1**	1	11,20
Refill pack containing 100 wipes	**XP58.2**	1	7,80

Bacillol® AF tissues

Alcohol-based, fast-acting disinfection wipes with a broad efficacy spectrum for simple disinfection of alcohol-resistant surfaces in accordance with BPD: surfaces in industrial kitchens and food processing areas and in sensitive areas where there is direct contact with products; surfaces in healthcare facilities as well as surfaces of non-invasive medical devices.
Spectrum of activity: bactericidal, yeasticidal, fungicidal, tuberculocidal, mycobactericidal, limited virucidal efficacy (incl. HBV, HIV, HCV, adeno virus, polyoma virus, rotavirus and murine norovirus).

- Supplied with **Bacillol® AF** pre-soaked, ready -to-use disinfection wipes
- Rapid and comprehensive action
- Aldehyde, colourant and fragrance free
- Practical wipe folding system allows easy and safe removal of individual tissues from the resealable flowpack packaging
- High-quality, tear resistant and absorptive PET fleece, Wipe size 180 x 200 mm
- Good wetting and rapid drying

Use disinfectants carefully. Always read labels and product information carefully before use.

Warning H226-H319

Type	Art. No.	Pack Qty.	€
Flowpack containing 80 wipes	**AHC1.1**	1	n. a.

Kohrsolin® extra tissues

Aldehyde-containing disinfection wipes with virucidal activity for daily prophylactic disinfection as well as for specific disinfection where a broader spectrum of efficacy is required.
Applications: for washable surfaces on medical devices and inventory, and in hygiene-sensitive areas in the pharmaceuticals industry, cosmetics industry and laboratories.
Spectrum of activity: bactericidal, yeasticidal, fungicidal, tuberculocidal, mycobactericidal, sporicidal (Clostridium difficile spores), limited virucidal efficacy (incl. HBV, HIV, HCV), virucidal and effective against murine norovirus, hepatitis A virus, polyoma virus and rotavirus.

- Supplied with **Kohrsolin® extra** pre-soaked, ready-to-use disinfection wipes
- Rapid and comprehensive action
- Good material compatibility
- Practical wipe folding system allows easy and safe removal of individual tissues from the resealable flowpack packaging
- High-quality, tear resistant and absorptive PET fleece, Wipe size 180 x 200 mm
- Good wetting and cleaning, leaves minimal residue

Use disinfectants carefully. Always read labels and product information carefully before use.

Danger H317-H350

Type	Art. No.	Pack Qty.	€
Flowpack containing 80 wipes	**APA0.1**	1	n. a.

Bacillol® 30 tissues

Nonaggressive disinfection wipes for rapid disinfection of sensitive surfaces in food processing areas, in sensitive areas where there is direct contact with products, surfaces in healthcare facilities as well as surfaces of medical devices and inventory. Also suitable for the disinfection of displays, keyboards and control panels on sensitive equipment.
Spectrum of activity: bactericidal, yeasticidal, limited virucidal efficacy (incl. HBV, HIV, HCV, polyoma virus, rotavirus and murine norovirus).

- Supplied with **Bacillol® 30 Foam** pre-soaked, ready-to-use disinfection wipes
- Rapid and comprehensive action
- Aldehyde, colourant and fragrance free
- Tested for material compatibility with PC, PS, Plexiglas®, latex and synthetic leather (examination tables etc.)
- Practical wipe folding system allows easy and safe removal of individual tissues from the resealable flowpack packaging
- High-quality, tear resistant and absorptive PET fleece, Wipe size 180 x 200 mm
- Good wetting and rapid drying

Use disinfectants carefully. Always read labels and product information carefully before use.

Warning H226-H319

Type	Art. No.	Pack Qty.	€
Flowpack containing 80 wipes	**ANY9.1**	1	n. a.

Kohrsolin® FF tissues

Aldehyde-containing disinfection wipes for prophylactic surface disinfection.
Applications: for washable surfaces on medical devices and inventory, and in hygiene-sensitive areas in the pharmaceuticals industry, cosmetics industry and laboratories.
Spectrum of activity: bactericidal, yeasticidal, fungicidal, limited virucidal efficacy (incl. HBV, HIV, HCV) and effective against murine norovirus, adeno virus, polyoma virus and rotavirus.

- Supplied with **Kohrsolin® FF** pre-soaked, ready-to-use disinfection wipes
- Formaldehyde-free
- Excellent material compatibility
- Practical wipe folding system allows easy and safe removal of individual tissues from the resealable flowpack packaging
- High-quality, tear resistant and absorptive PET fleece, Wipe size 180 x 200 mm
- Good wetting and cleaning, leaves very little residue

Use disinfectants carefully. Always read labels and product information carefully before use.

Type	Art. No.	Pack Qty.	€
Flowpack containing 80 wipes	**APA1.1**	1	n. a.

Disinfecting agents for surfaces

Mikrobac® tissues

Nonaggressive alcohol and aldehyde-free disinfection wipes for rapid disinfection of sensitive, alcohol-sensitive medical devices and work surfaces in clinics, surgeries, nursing homes and laboratories.
Spectrum of activity: bactericidal, yeasticidal, limited virucidal efficacy (incl. HBV, HIV, HCV) and effective against murine norovirus, adeno virus, polyoma virus and rotavirus.
Active ingredients: didecyldimethylammonium chloride and benzyl-C12-18-alkyl dimethyl ammonium chloride.

- Fast-acting
- Alcohol, aldehyde, colourant and fragrance free
- Excellent material compatibility
- Practical wipe folding system allows easy and safe removal of individual tissues from the resealable flowpack packaging
- High-quality, tear resistant and absorptive PET fleece
- Good wetting and cleansing effect

Use disinfectants carefully. Always read labels and product information carefully before use.

Mikrobac® Tissues
Wipe size 180 x 200 mm. For convenient disinfection of small surfaces, range approx. 1 m².

H412

Type	Art. No.	Pack Qty.	€
Flowpack containing 80 wipes	**APA2.1**	1	n. a.

Mikrobac® Tissues XXL
Wipe size 250 x 380 mm. For complete disinfection of large surfaces, range approx. 2 m².

H412

Type	Art. No.	Pack Qty.	€
Flowpack containing 40 wipes	**APA3.1**	1	n. a.

Flow pack wall holder

Made of stainless steel. For safe storage of Mikrobac® Tissues, Kohrsolin® FF and Kohrsolin® extra Tissues as well as Bacillol® 30 and Bacillol® AF Tissues. Easy removal of wipes with one hand avoids contamination.

Art. No.	Pack Qty.	€
APA4.1	1	51,55

Disinfection tubs

Made of PVC. High-quality disinfection tubs for safe make-up of disinfection and cleaning solutions for manual treatment of instruments.
- Basket insert enables the user to remove instruments by hand without coming into direct contact with the disinfectant and allows instruments to be drip dried before use
- Moulded handles in the tub and basket ensure safe handling
- Resistant to all BODE cleaning agents and disinfectants
- Temperature stable up to +59 °C
- 30-litre tub with drain cock

Delivery incl. lid and basket insert made of PVC.

Volume (l)	Design	L x W x H (mm)	Art. No.	Pack Qty.	€
3	White lid with slit	300 x 200 x 110	**APT0.1**	1	60,20
5	Transparent lid	550 x 200 x 120	**APT1.1**	1	81,70
10	Transparent lid	390 x 290 x 170	**APT2.1**	1	91,40
30	Transparent lid	615 x 400 x 220	**APT3.1**	1	192,45

Dosing pumps

For sample removal from BODE-carboys (Korsolex®, Kohrsolin®, Bacillol®, Dismofix® and Microbac®). For 2-litre bottles and 5-litre canisters. Alternatively with 10 ml or 20 ml dispensing volumes.

Dosing volume (ml)	Art. No.	Pack Qty.	€
10 ml	**AK03.1**	1	10,70
20 ml	**AK04.1**	1	10,70

Measuring jugs

With measuring scale, ideal for preparing ready-to-use solutions. Capacity 250 ml.

Art. No.	Pack Qty.	€
AK05.1	1	3,95

Preservatives

NEW

AKASOLV Aqua Care water bath preservative

With blue colour indicator.
For preventing the formation of algae, fungi and bacteria in water baths and thermostat circuits. If the blue coloration disappears and/or after 3 months at the latest, a new water bath solution must be prepared. Low usage concentration (0.1%): 100 ml of concentrate are sufficient for 100 l of demineralised water. Temperature of use max. 70 °C.

Use biocidal products with care. Always read the label and the product information before use.

Warning H319-H412-EUH208

Art. No.	Pack Qty.	€
KAC5.1	100 ml	17,15

AKASOLV Aqua Care CF water bath preservative

Without colour indicator.
For preventing the formation of algae, fungi and bacteria in water baths and thermostat circuits. Depending on contamination and/or after 3 months at the latest, prepare a new water bath. Low usage concentration (0.1%): 100 ml of concentrate are sufficient for 100 l of demineralised water. Temperature of use max. 70 °C.

Use biocidal products with care. Always read the label and the product information before use.

Warning H319-H412-EUH208

Art. No.	Pack Qty.	€
KAC4.1	100 ml	17,15

Micropur® water steriliser

Based on silver ions. Kills bacteria in water tanks and containers and keeps water free of germs, algae and odour.
Use biocidal products with care.
Always read the label and the product information before use.

Warning H410

Type	Art. No.	Pack Qty.	€
Standard tablets for 1 l water each	**0591.1**	100	23,65
Large tablets for 10 l water each	**0593.1**	40	27,90

Dishwashing detergent SMA 11

Extremely versatile, cleans fast and thoroughly.
High foam properties, very gentle on the skin, with citrus scent.
Usage: 50-100 ml per 10 l water.

Art. No.	Pack Qty.	€
PY16.1	1 l	3,20
PY16.2	10 l	20,40

All-purpose cleaner SMA 1

Surfactant and lemon based, with ammonium chloride. Quick and thorough cleaning of all washable surfaces and floors, removes coarse dirt and greasy films. Gentle on materials, kind to the skin, pleasant scent.

Warning H319

Art. No.	Pack Qty.	€
PY17.1	1 l	3,75
PY17.2	10 l	24,00

Neutral cleaner G530

Surfactant-based. For manual cleaning of all water-resistant materials and surfaces. High grease-dissolving power, high foam activity. Cleaned objects dry quickly and streak-free, no additional drying by hand needed. Gentle on materials, kind to the skin, pleasant scent. Suitable for use in foodstuffs processing businesses, also ideal as a dishwashing detergent. Tried and tested in car washes and industry.

Art. No.	Pack Qty.	€
PY15.1	1 l	6,40
PY15.2	10 l	45,05

Concentryl® ActiveFoam

Alkaline degreaser for the foodstuffs sector. Active foam thoroughly removes all grease and oil from stainless steel, glass and other alkaline resistant surfaces.

Danger H314

Art. No.	Pack Qty.	€
NH50.1	1 l	9,65

Citric acid

For removing lime deposits. Odourless, non-toxic, does not attack materials, biodegradable. Do not use in the food sector. For use, dilute 10-100 g citric acid in 1 litre of cold water depending on contamination.

Warning H319

Art. No.	Pack Qty.	€
1818.1	1 kg	16,05

Descaler

Ideal for removing lime deposits. Contents: Formic acid 83 %, inhibitors and colorants. Biodegradable. Do not use in the food sector.
For use dissolve about 50 ml descaler in 1 l water.

Danger H290-H302+H332-H314-EUH071

Art. No.	Pack Qty.	€
0023.1	500 ml	8,85

Stainless steel care PRO127

For the care and protection of all washable metal objects.
Removes greasy films, dust, streaks, water marks and fingerprints.
Leaves glossy, streak-free surfaces, protects against re-soiling.
Easy to use. Note: do not use on hot surfaces.

Art. No.	Pack Qty.	€
PY19.1	500 ml	17,55

Methylated spirit

Denatured ethyl alcohol.
Suitable for use as a detergent, a fuel additive and an antifreeze agent.

Danger H225-H319

Art. No.	Pack Qty.	€
AL30.1	1 l bottle	8,30
AL30.2	10 l canister	56,45
AL30.3	20 l canister	103,10

Rotisol®

Universal alcoholic solvent, extraction agent, mobile phase, and elution medium (denaturated), for dehydrating in histology, recrystallisation, etc. Mixable with water.
Ingredients:
dehydrated ethanol ~99 % · acetone ~5 % · methyl ethyl ketone ~1 % · Flp 12 °C · Kp 56-80 °C · D ~0.79 · highly flammable.

Danger H225-H319-EUH066

Art. No.	Pack Qty.	€
7917.3	1 l	19,90
7917.1	2,5 l	34,95
7917.2	25 l	193,40

Silvosol®

Removes stains of silver nitrate, film developer or iodine from surfaces and textiles. Apply undiluted by gently dabbing.

Warning H290-H351-H361d-H412

Art. No.	Pack Qty.	€
0047.1	250 ml	18,25
0047.2	1 l	38,65

Roti-Plasticlean®

Plastic cleaner with antistatic effect. Ideal for plastic casing, furniture and floors. Cleans and protects against embrittlement.

Warning H226-H319

Art. No.	Pack Qty.	€
1953.1	500 ml	21,00

Cable cleanser

For cleaning and degreasing stripped cables.
Not suitable for plastic cables.

Danger H226-H304-H315-H317-H410

Art. No.	Pack Qty.	€
5235.1	1 l	23,45

Label remover

Pure vegetable. Dab on generously, allow to act, repeat if necessary, pull off label. Wipe off remaining glue with label remover.

Danger H226-H304-H315-H317-H410

Art. No.	Pack Qty.	€
2958.1	1 l	21,40

Label remover 130

Removes self-adhesive labels quickly and effectively. Applications: casing, clothing, print cylinders, glass ceramics, non-porous materials.
Propellant: propane.

Danger H222-H229-H315-H317-H336-H410

Art. No.	Pack Qty.	€
P530.1	200 ml	9,50

Label remover SOLVENT 50 SUPER

With NSF certificate, specially for the food, animal feeds and packaging industries. Label remover with attachable dosing brush.
Propellant: CO_2.
NSF K3-certified for use in foodstuff-related industries.

Danger H222-H229-H315-H317-H319-H336-H411

Art. No.	Pack Qty.	€
KL91.1	200 ml	13,65

Multischaum 77

Universal foam cleaner.
Contains highly surface active ingredients for powerful and gentle removal of dirt from all glass, ceramic, paint, metal or plastic surfaces.
The cleansing foam is very stable and does not run off on vertical surfaces.
With antistatic effect.
Propellant: Propane/butane.

Danger H222-H229-H319

Art. No.	Pack Qty.	€
YK87.1	400 ml	n. a.

Cold cleaner

Ideal for cold cleaning and removing grease. Speedy, residue-free evaporation. Dissolves fat, oil, tar, wax, etc. Application: machine parts, electric motors, switches, relays, etc. Propellant: CO_2.

Danger H222-H229-H315-H336-H411

Art. No.	Pack Qty.	€
P529.1	400 ml	11,75

Inox Kleen stainless steel cleaning spray

Special, aqueous cleaning and care foam for stainless steel, aluminium and chrome.
Registered for use in the food industry acc. to NSF A7/C1. Removes dirt, fingerprints and water stains quickly. Leaves an even glossy finish after cleaning. A wafer-thin, water-repellent protective film gives long-lasting gloss .
Propellant: propane/butane.

Warning H229-H319

Art. No.	Pack Qty.	€
YK85.1	500 ml	14,50

NEW

Compressed air dedusting spray

This dry, oil-free compressed gas leaves no residue and is non-flammable in accordance with Directive 2008/47/EC. The compressed gas has a low global warming potential (GWP = 7). The spray can with attachable spray tube allows dust and dirt to be blown out in a targeted manner. The balanced spray system generates spraying pressure of medium strength and can therefore be used even on delicate components without any issues.

Application examples:
- Blowing out dust and dirt in electronics and precision mechanics
- For use on delicate components such as lenses and sensors in measurement technology, microscopy, photography and the optical industry

Propellant: hydrofluorolefin (HFO)

Delivery incl. spray tube for targeted application.
Warning H229

Art. No.	Pack Qty.	€
HXH3.1	200 ml	14,75
HXH3.2	400 ml	24,65

Compressed air spray 67 NF

Non-flammable compressed gas spray (compliant to 2008/47/EC), based on ecofriendly raw materials technology. Has a much lower Global Warming Potential than conventional compressed gas sprays.
Highly pure, oil free and leaves no residues.
Application: for removing dust and dirt from systems, devices and machines in precision mechanics, optics, electronics and electrical engineering.
Propellant: hydrofluoro-olefin (HFO).
Delivery incl. nozzle for targeted use.
Warning H229

Art. No.	Pack Qty.	€
TC26.1	200 ml	18,25

NEW

High pressure compressed air spray 67

With extra-strong spray jet.
This dry, oil-free compressed gas leaves no residue and is non-flammable in accordance with Directive 2008/47/EC. With low global warming potential (GWP = 7). The spray can with attachable spray tube allows dust and dirt to be blown out in a targeted manner. The extra-strong spray system generates a high spraying pressure and is therefore particularly suitable for removing stubborn dirt over large surfaces.

Application examples:
- Blowing out stubborn dust and dirt deposits in electronics and precision mechanics
- The high spraying pressure is ideal for cleaning large surfaces in control cabinets, plants and machines

Propellant: hydrofluorolefin (HFO).

Delivery incl. spray tube for targeted application.
Warning H229

Art. No.	Pack Qty.	€
HXH5.1	340 ml	28,85

NEW

Compressed air spray 360

This dry, oil-free compressed gas with low global warming potential (GWP = 7), leaves no residue and is non-flammable in accordance with Directive 2008/47/EC. This spray can with attachable tube is equipped with 360° spray technology that can be used for spraying independent of position, as well as for cleaning in any can position.

Application examples:
- Blowing out dust and dirt in electronics and precision mechanics
- Particularly suitable for angled or hard-to-reach areas

Propellant: hydrofluorolefin (HFO)

Delivery incl. spray tube for targeted application.
Warning H229

Art. No.	Pack Qty.	€
HXH4.1	200 ml	21,45

NEW

Cold spray

This highly purified, inert cooling agent is non-flammable and has a low global warming potential. Thanks to the strong cooling effect, it is ideally suited for cooling small components quickly, for performing functional tests on thermal sensors or for locating thermal faults in electronics and electrical engineering.
Propellant: hydrofluorolefin (HFO).
Warning H229

Art. No.	Pack Qty.	€
HXH2.1	200 ml	14,85

Cold spray 75 NF

Non-flammable cold spray (compliant to 2008/47/EC), based on ecofriendly raw materials technology. Has a much lower Global Warming Potential than conventional cold sprays.
High cooling effect to at least -50 °C.
Application: rapid cooling of electronic components and surfaces, testing of thermostats and thermocouples, cold shrinkage of metal parts and shock freezing of rubber, plastic or histological preparations.
Propellant: hydrofluoro-olefin (HFO).
Delivery incl. nozzle for targeted use.
Warning H229

Art. No.	Pack Qty.	€
TC27.1	200 ml	18,25

TFT screen cleaning foam

Gentle special cleaner for TFT screens and LCDs. The resistant active foam cleans without solvents such as alcohol, petroleum ether or ammonia.
Propellant: propane/butane.
Warning H229-EUH208

Art. No.	Pack Qty.	€
KL90.1	200 ml	10,70

Anti-static spray

Prevents electrostatic charging and subsequently dust. Ideal for plastics, screens, EDP-equipment, casing, telephones, floors, seat covers, polished metal parts, wooden surfaces, etc. Propellant: propane.
Danger H222-H229-H319-H336

Art. No.	Pack Qty.	€
P531.1	200 ml	7,50

Cleaning set

For environmentally friendly cleaning of telephones, faxes, computers, screens, keyboards and other plastic casing. **Includes 125 ml surface cleaner** for antistatic cleaning of appliance surfaces and plastic casing, **125 ml screen cleanser** with antistatic effect, **20 non-fluffing fleece wipes, 1 microfibre tissue, 2 telephone wipes, 1 fax wipe** for cleaning document reader and rubber transport roller and **2 small cleaning rods** and **1 spatula** for small areas and crevices.

Art. No.	Pack Qty. (set)	€
H993.1	1	16,10

Wipes

Cleanser stick

Using the adhesive power of the tip, the stick removes impurities sticking to smaller vessels such as lenses from objectives, eyepieces or cameras. The tip can be cleaned with water. Total length 12 cm.

Art. No.	Pack Qty.	€
AK15.1	1	12,70

Polytex®-wipes

100 % **PP**. Colour blue. Non-fluffing, highly absorbent, washable, tearproof and solvent-proof. Wipes at 40 x 42 cm.

Art. No.	Pack Qty.	€
EH09.2	12 x 35 wipes	75,15
EH09.3	35 wipes	7,50

TFT screen cleaning cloths

Screen cleaner Duotuch: The damp cleaning cloth provides streak-free, effective cleaning of all TFT, CRT and LCD monitors, and all notebooks and handhelds. The dry cloth guarantees gentle cleaning of the monitor surface.

Art. No.	Pack Qty.	€
KL92.1	1 folding box with 10 damp/dry cleaning cloths	5,35

All-purpose cloths

Made of viscose. All-purpose cleaning cloths for damp and wet cleaning of all water-resistant surfaces. Very absorbent, durable and resistant to cleaning agents, washable up to 95 °C. Dimensions: 35 x 40 cm. Colour: White/blue.

Art. No.	Pack Qty.	€
HCA1.1	20	16,15

Wet wipes

Wet wipes for cleaning surfaces with alcohol. Made of cellulose rayon tissue. For non-streaking and anti-static cleaning of office equipment such as keyboards, fax machines, photocopiers, telephones and other smooth surfaces. 100 wipes, 138 x 220 mm in refillable dispenser and sealed in aluminium foil. Dispenser dimensions: ∅ 85 mm, H 190 mm.

Warning: Not suitable for TFT monitors.

Warning H226-H319

Type	Art. No.	Pack Qty.	€
Dispenser	**E170.1**	1	6,40
Refill pack with 100 wipes	**E171.1**	1	5,35

Rotilabo®-dishcloths

Made of cotton. Robust, low-linting, fast-drying and adsorptive. With hanging loop. Suitable for foodstuffs.

Type	Weight per unit area (g/m^2)	L x W (cm)	Art. No.	Pack Qty.	€
① Dishtowel	210	70 x 50	**YX97.1**	1	3,15
② Glass towel	210	60 x 45	**YX98.1**	1	4,20
③ Kitchen towel	110	100 x 50	**YX99.1**	1	3,20

Microfibre cloths

Made of 80% polyester and 20% polyamide. Knitted microfibre cloths with high cleaning performance. Washable up to 95 °C.
Dimensions: 36 x 36 cm. Colour blue.

Art. No.	Pack Qty.	€
HCA2.1	5	8,35

Microfibre cloths

Made of 85% polyester and 15% polyamide. Soft, long-lasting microfibre cloths with low surface friction. High cleaning performance, dirt, grease and dust particles are lifted and held inside the cloth.
Washable up to 95 °C. Dimensions: 40 x 40 cm.

Colour	Art. No.	Pack Qty.	€
yellow	**HCA3.1**	5	33,70
green	**HCA4.1**	5	33,70
rosé	**HCA5.1**	5	33,70
blue	**HCA6.1**	5	33,70

Antistatic cloth

Made from **blended fabrics**. The highly conductive properties of the tissue safely remove electrically charged particles. The ultra-soft microfibres gently remove dust and all types of soiling from film, electronic circuit boards, CDs, monitor and scanner screens as well as plastic.
Washable at 40 °C. Dimensions: 250 x 450 mm.

Art. No.	Pack Qty.	€
AK11.1	1	14,85

NEW

KIMTECH Pure® W4 wiping cloths

By Kimberly-Clark. Made of 100% polypropylene.
White, one-ply, low-lint, soft and extremely absorbent.
Suitable for use in clean rooms of ISO classes 4 and above, as well as for dry-cleaning of critical devices and surfaces in the pharmaceutical, biotechnology, medical appliance manufacturing and food processing industries.

- Resistant to acids, bases and solvents
- Thermally bonded polypropylene fibres without adhesive or binders
- Particularly smooth-cut edges
- Double-pouch packaging

Type	Towel size L x W (mm)	Art. No.	Pack Qty.	€
7646	228 x 228	**HYL0.1**	100 cloths per pouch	20,35
7646	228 x 228	**HYL0.2**	5 pouches x 100 cloths	81,70
7605, quarter-folded	305 x 305	**HYL1.1**	100 cloths per pouch	52,00
7605, quarter-folded	305 x 305	**HYL1.2**	5 pouches x 100 cloths	220,40

KIMTECH® Pure multi-purpose tissues

By Kimberly-Clark. Made of **PP**, white, low fluff, soft and highly absorbent. Ideal for absorbing acids, bases, solvents, oils, and aqueous solutions, etc.
Suitable for application in clean rooms, ISO-class 7 and higher.
Type Extra, 38 x 35 cm, 70 µm thick.

Type	Art. No.	Pack Qty.	€
7624	**0393.3**	pack of 35 tissues in a bag	16,10
7624	**0393.4**	pack of 420 tissues in a carton	164,40

Wypall® X70

By Kimberly-Clark. 1-ply, white. Tightly spunbonded cellulose fibres. Extremely tearproof and strong when wet or dry.
Can be wrung out and reused. Solvent-stable and quick-absorbance.

Box with 152 wipes 31.7 x 42.6 cm

Type	Art. No.	Pack Qty.	€
8383	**X216.1**	1 box	58,60

Roll with 42 x 38 cm preperforated wipes

Type	Roll width (cm)	∅ (cm)	Art. No.	Pack Qty.	€
8384	42	30	**X217.1**	1 roll à 210 m	180,60

NEW

Wypall® L20 Essential disposable wiping cloths

By Kimberly-Clark. Made of LDC (100% recycled cellulose), two-ply, versatile, voluminous and absorbent. Features high tear resistance, even when wet. Pre-perforated cloths. Cloth size 35 x 38 cm, blue.

- Ideal for day-to-day cleaning tasks such as wiping up spilled water and sprayed cleaning fluid
- For removing dirt and dust, and polishing glass and smooth surfaces
- For drying and cleaning tools and hands
- Suitable for contact with foodstuffs

Type	Roll width (cm)	∅ (cm)	Art. No.	Pack Qty.	€
7356	35	39	**1A00.1**	1 roll, 380 m in length	17,75

NEW

Wypall® X90 reusable wiping cloths

By Kimberly-Clark. Made of HYDROKNIT* (cellulose fibres (68%) embedded in spunbond non-woven fabric (38% synthetic fibres)). Two-ply, blue. Extremely absorbent, tearproof and durable (when wet or dry), resistant to most solvents, low-residue, for quick cleaning. Pre-perforated cloths. Cloth size 32 x 30 cm.

- For wiping up spilled liquids such as oil or water
- For removing oil, grease, dirt and solvents from surfaces and tools
- For cleaning small parts or difficult-to-reach areas in machines
- Suitable for contact with foodstuffs

Type	Roll width (cm)	∅ (cm)	Art. No.	Pack Qty.	€
12889	30	33	**HYK9.1**	1 roll, 144 m in length	93,05

Wypall® L20

By Kimberly-Clark. Made of 100 % recycled cellulose. Special AIRFLEX® structure for higher absorption capacity. Highly absorbent, for water and oil. Tear resistant, also suitable for cleaning sensitive surfaces. Preperforated tissues, 33 x 38 cm, white.

Ply	Roll width (cm)	∅ (cm)	Art. No.	Pack Qty.	€
2	33	30	**EA31.1**	1 roll à 380 m	36,55

Wypall®-paper towels

By Kimberly-Clark. Ultra-thick paper towels made of a textile-like and ultrasoft AIRFLEX® material with extremely high tear strength even when wet. Outstanding water and oil absorbency, for fast absorption of large quantities of liquid.

Wypall® L40, single ply, white, cellulose/latex blend

Type	Towel size L x W (mm)	Art. No.	Pack Qty.	€
7471, quarter-folded	317 x 330	**NH08.1**	1 box = 18 x 56 towels	163,40
7452, perforated	315 x 340	**NH09.1**	1 roll = 750 towels	143,00

Wypall® L30 ULTRA+, 3-ply, blue, for high-performance applications

Type	Towel size L x W (mm)	Art. No.	Pack Qty.	€
7425	235 x 380	**NH10.1**	1 roll = 750 towels	59,15
7426	330 x 380	**NH11.1**	1 roll = 750 towels	77,80

Rotilabo®-wall dispenser

Made of **stainless steel**. Suitable for all Rotiprotect® glove dispensers and Rotizell®-tissues (0087.2). By lightly pressing the two metal hoops together, other dispensers of max. 7.5 cm width can be inserted.
Comes with two loops for wall attachment. Dowels and screws included.

Type	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
For one box	180 x 85 x 135	**Y383.1**	1	22,55
For three boxes	245 x 100 x 477	**AC07.1**	1	53,65

Rotizell®-tissues

2-ply, made of 100 % bleached **FFC pulp**.
Extra soft, absorbent, low fluff fibres. Tissue size 21 x 20 cm.

Art. No.	Pack Qty.	€
0087.2	1 carton (25 x 150 pieces)	44,95

Sekuroka®-folded hand towels

Made of 100 % recycled paper, soft tissue quality, highly absorbent and tough.
Suitable for folded towel dispenser CY02.1, ETY2.1 and EYY1.1.

Type	Size (mm)	Art. No.	Pack Qty. (Sheet)	€
2-ply, tissue, natural, zigzag folds	23,5 x 23	**CY03.1**	20 x 160	32,20
2-ply, tissue, green, zigzag folds	23,5 x 23	**CY04.1**	20 x 160	32,20
1-ply, crepe, natural, quire folding	25 x 33	**CY05.2**	24 x 154	36,50

KIMTECH® Science laboratory tissues

By Kimberly-Clark.

- Two-ply, white, bleached without using chlorine
- **Made of 100 % pure pulp** - therefore particularly absorbent and soft
- Suitable for application with solvents and chemicals
- Low-fluffing and especially ideal for sensitive areas
- Excellent for wiping smaller amounts of liquid and for cleaning pipettes and slides

Product	Towel size L x W (mm)	Art. No.	Pack Qty.	€
7558	200 x 205	**P502.1**	1 box à 200 tissues	7,00
7558	200 x 205	**P502.4**	15 boxes à 200 tissues	80,55
7557	200 x 210	**X213.1**	1 box à 100 tissues	4,85
7557	200 x 210	**X213.3**	24 boxes à 100 tissues	80,60

KIMTECH® Science precision tissues

By Kimberly-Clark. 1-ply, white. Made from specially treated, extremely low fluff and absorbent fibres **(100 % cellulose)**. Ideal for precise wiping during sensitive applications, e.g. cleaning electronic components and contacts, optical lenses and slides. Easy removal from dispenser box.

Product	Towel size L x W (mm)	Art. No.	Pack Qty.	€
7551	304 x 304	**AA63.1**	1 box à 196 tissues	16,45
7551	304 x 304	**AA63.2**	15 boxes à 196 tissues	181,70
7552	213 x 114	**AA64.1**	1 box à 280 tissues	7,00
7552	213 x 114	**AA64.2**	30 boxes à 280 tissues	154,80

KC Professional wipers

By Kimberly-Clark. Disposable cleaning cloths with central dispenser, suitable for rough surfaces. Preperforated cloths, 32 x 31 cm, white.

Type	Art. No.	Pack Qty. (box)	€
38667	**CLT0.1**	6 rolls à 60 tissues	192,45

Rotizell®-wipes

On large rolls.

Wypall® **X70**

Highly absorbent cellulose fibres in a spunbonded fleece of polypropylene. Absorbs liquids immediately, very high absorption capacity. Highly tear resistant and robust. Solvent-resistant, reusable. Preperforated tissues, 42 x 38 cm, white.

Ply	Roll width (cm)	∅ (cm)	Art. No.	Pack Qty.	€
1	42	30	**X217.1**	1 roll à 210 m	180,60

Wypall® **L20**

Made of 100 % recycled cellulose. Special AIRFLEX® structure for higher absorption capacity. Highly absorbent, for water and oil. Tear resistant, also suitable for cleaning sensitive surfaces. Preperforated tissues, 33 x 38 cm, white.

Ply	Roll width (cm)	∅ (cm)	Art. No.	Pack Qty.	€
2	33	30	**EA31.1**	1 roll à 380 m	36,55

XL2 1500

Made of soft cellulose. Highly absorbent and tear resistant, suitable for water and oil. Preperforated tissues, 26.5 x 38 cm, white.

Ply	Roll width (cm)	∅ (cm)	Art. No.	Pack Qty.	€
2	26,5	39	**AN56.1**	2 rolls à 570 m	79,45

XXL2 Blue

Made of cellulose. Highly absorbent and tear resistant, ideal for dust, grease and oils. Preperforated tissues, 38 x 38 cm, blue.

Ply	Roll width (cm)	∅ (cm)	Art. No.	Pack Qty.	€
2	38	29	**4695.1**	2 rolls à 380 m	85,95

XXL3 1000

Made of cellulose. Highly absorbent and tear resistant, ideal for dust, grease and oils. Preperforated tissues, 38 x 38 cm, white.

Ply	Roll width (cm)	∅ (cm)	Art. No.	Pack Qty.	€
3	38	39	**AN57.1**	1 roll à 380 m	53,55

L3 Blue

Made of cellulose. Highly absorbent and tear resistant, ideal for dust, grease and oils. Preperforated tissues, 22 x 38 cm, blue.

Ply	Roll width (cm)	∅ (cm)	Art. No.	Pack Qty.	€
3	22	39	**A972.1**	2 rolls à 380 m	77,95

Absorptive crepe tissue S

Made of recycled cellulose. Highly absorbent.
Tissue size: 24 x 38 cm, light grey.

Ply	Roll width (cm)	∅ (cm)	Art. No.	Pack Qty.	€
4	24	35	**1997.1**	2 rolls à 300 m	64,10

Rotizell®-dispenser

With cut-off bar and holder for a waste bag.
Overall dimensions: W 104 x H 48 x D 64 cm. Max. roll width 42 cm.

Art. No.	Pack Qty.	€
0273.1	1	79,45

Rotizell® waste disposal bags

Made of PE, blue. Especially tearproof and tensile.
120 litres: 700 x 1100 mm, strength 40 µm.

Art. No.	Pack Qty.	€
5382.2	25	7,50

Rotizell®-roll-off stand

Silver, with tear bar. Dimensions: W 44 x H 97 x D 38 cm.
Max. roll width 34 cm.

Art. No.	Pack Qty.	€
1798.1	1	44,65

Wall roll holder

Suitable for wipes rolls of maximum 42 cm roll width. Robust design.
With tear bar and holder for waste bags (120 l).
Overall dimensions: W 49 x H 58 x D 27 cm.

Art. No.	Pack Qty.	€
AH00.1	1	53,65

Rotizell®-wipes T

Double-ply cellulose. Lint free. 64 perforated tissues L 25 x W 26 cm on 1 roll. Inner ∅ 38 mm, for standard wall dispensers. Made of recycled paper. Unbleached.

Art. No.	Pack Qty.	€
0264.1	Cartons of 28 rolls	40,75

Rotilabo®-roll holder

With plastic foot and roll-stop device for fixing roll to tear off sheets.
Roll is elevated 2 cm above working surface, therefore always stays dry.
Rolls are easy to change.

Art. No.	Pack Qty.	€
K879.1	1	21,45

Mini single-sheet paper dispenser

- Hygienic removal of one towel at a time
- Easy to fill
- Viewing slot enables towel level to be checked
- Plastic, white
- Dimensions: W 16 x D 13.5 x H 31 cm

For wall assembly, incl. wall fittings.
Matching tissue papers (Art. No. EE85.1) please order separately.

Art. No.	Pack Qty.	€
EE84.1	1	34,30

Tissue papers

100 % cellulose, white, 2-ply. W 11 x L 18 cm. 9000 tissues, with point-to-point embossing. Suitable for mini single-sheet paper dispenser (Art. No. EE84.1).

Art. No.	Pack Qty.	€
EE85.1	36 packs à 250 towels	56,45

Wipes and backings

Rotilabo®-absorbent papers

Bench-Top Protection Paper

Highly absorbent white paper, coated on one side with water-resistant PE. Suitable as a protective working surface for lab tops or for lining cupboards and drawers. Protects surfaces against chemicals, dirt and contamination. Also suitable for analytical and isotope laboratories.

Weight: 144 g/m², absorbency approx. 250-280 g/m²

Cut	Size	Art. No.	Pack Qty.	€
Sheets	48 cm x 60 cm	**1941.1**	100	182,00
Roll	48 cm x 100 m	**1959.1**	1	268,00
Roll	60 cm x 100 m	**1006.1**	1	325,00

Weight: 125 g/m², absorbency approx. 170 g/m²

Cut	Size	Art. No.	Pack Qty.	€
Sheets	42 cm x 52 cm	**HY90.1**	100	62,50
Sheets	46 cm x 57 cm	**HY91.1**	100	67,60
Sheets	50 cm x 60 cm	**HY92.1**	100	90,70
Roll	49 cm x 50 m	**HY93.1**	1	90,50
Roll	60 cm x 50 m	**HY94.1**	1	108,60
Roll	92 cm x 50 m	**HY95.1**	1	145,15

Weight: 225 g/m², absorbency approx. 200 g/m²

Cut	Size	Art. No.	Pack Qty.	€
Sheets	46 cm x 57 cm	**HY96.1**	50	67,75
Sheets	50 cm x 60 cm	**HY97.1**	50	61,90
Roll	49 cm x 50 m	**HY98.1**	1	169,85
Roll	60 cm x 50 m	**HY99.1**	1	206,40
Roll	92 cm x 50 m	**KA00.1**	1	293,50

▶ Blotting papers see chapter electrophoresis!

Rotilabo®-Joseph-wipes

Low-linting fine grade paper for cleaning and drying. Highly absorptive. Surface weight 25 g/m².

Design	L x W (mm)	Art. No.	Pack Qty.	€
Single	150 x 150	**XP41.1**	200	6,70
Folded	350 x 500	**XP42.1**	500	53,15

Rotizell®-ply cellulose tissues

Absorbent and tear-proof. Made of recycled paper, 40 x 60 cm.

Creped, single ply, light grey

Art. No.	Pack Qty.	€
1745.1	1 x 5 kg	21,45
1745.2	3 x 5 kg	52,15

Creped, single ply, bleached bright

Art. No.	Pack Qty.	€
X859.1	1 x 5 kg	42,95
X859.2	3 x 5 kg	117,20

4-ply, horse-nail embossed, bleached bright

Art. No.	Pack Qty.	€
1746.1	1 x 5 kg	56,90

Rotilabo®-filter papers

100 % cellulose quality filter papers. High absorbency.
Standard filter paper with a smooth surface for analysis. Colour white.
Larger sizes are ideal as surface protection paper or working surface.

Type 600
Weight 64 g/m², thickness 0.15 mm. Retention 10-20 µm.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
420	520	**XP43.1**	500	65,70
500	500	**XP44.1**	500	74,40
600	600	**XP45.1**	500	107,50

Type 601
Weight 73 g/m², thickness 0.16 mm. Retention 5-13 µm.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
450	450	**XP46.1**	500	180,60
460	570	**XP47.1**	100	42,05

Type 122
Weight 73 g/m², thickness 0.17 mm. Retention 17-30 µm.

Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
520	520	**XP48.1**	500	169,85
600	600	**XP49.1**	500	199,95

NEW

Filter papers

By Macherey-Nagel. Alpha cellulose content approx. 95%.
Format 58 x 58 cm.

Type MN 713, medium filtration speed
General purpose technical filter paper.
Weight 70/m², filtration time 20 s.

Thickness (mm)	Art. No.	Pack Qty.	€
0,15	**HPL1.1**	100	76,90

Type MN 615, medium filtration speed
Quality standard paper for numerous applications.
Weight 70 g/m², filtration time 22 s, ash content 0.1 %,
retention range 4-12 µm.

Thickness (mm)	Art. No.	Pack Qty.	€
0,16	**HPL2.1**	100	127,00

Type MN 617, fast filtration speed
Quality filter paper for fast filtration of coarse deposits.
Weight 85 g/m², filtration time 9 s, ash content 0.1 %,
retention range 7-12 µm.

Thickness (mm)	Art. No.	Pack Qty.	€
0,2	**HPL3.1**	100	187,00

Type MN 640 w, fast filtration speed, ash-less
Quantitative filter paper for fast filtration of coarse deposits.
weight 85 g/m², filtration time 9 s, ash content <0.01 %,
retention range 7-12 µm.

Thickness (mm)	Art. No.	Pack Qty.	€
0,2	**HPL4.1**	100	473,00

Type MN 640 m, medium filtration speed, ash-less
Quantitative standard paper for numerous applications.
Weight 85 g/m², filtration time 27 s, ash content <0.01 %,
retention range 4-12 µm.

Thickness (mm)	Art. No.	Pack Qty.	€
0,2	**HPL5.1**	100	473,00

Type MN 640 d, slow filtration speed, ash-less
Quantitative filter paper for fine and very fine deposits.
Weight 85 g/m², filtration time 140 s, ash content <0.01 %,
retention range 2-4 µm.

Thickness (mm)	Art. No.	Pack Qty.	€
0,17	**HPL6.1**	100	473,00

Sponge wipes

Made of approx. 70% cellulose and approx. 30% cotton.
Universal, environmentally-friendly wet-wipe cloth for efficient cleaning.
Absorbent, soft and low-lint, washable up to 90 °C. Dimensions: 20 x 18 cm.

Colour	Art. No.	Pack Qty.	€
blue	**HCA8.1**	10	8,15
yellow	**HCA9.1**	10	8,15
red	**HCC0.1**	10	8,15

Fleece dishcloths

Made of 80% cotton/viscose and 20% synthetic fibres.
For wet and dry cleaning. Tear-proof, soft and absorbent.
Washable up to 60 °C. Dimensions: 35 x 35 cm.

Art. No.	Pack Qty.	€
HCC1.1	25	13,95

Cotton wool

Made of 100 % cotton, perforated. For filtering and cleaning.

Type	Art. No.	Pack Qty.	€
perforated	**0571.1**	1,1 kg (14 x 80 g)	24,65
not perforated	**PE40.1**	700 g (7 x 100 g)	13,95

Dish washing brushes and sponges

Scrub sponges

With abrasive layer for removal of stubborn dirt on sensitive surfaces.
Washable up to 40 °C. Dimensions: L 95 x W 70 x H 45 mm.

Art. No.	Pack Qty.	€
HCA7.1	6	4,05

Rotilabo®-dish washing brushes set

Made of breakproof plastic, with nylon bristles.
Length 28 cm, weight approx. 50 g.
Delivery incl. 12 dish washing brushes: 6 round brushes,
6 elongated brushes, the latter with tough scratching bristles at tip.

Art. No.	Pack Qty. (assortment)	€
0667.1	1	32,20

Scrub sponges Scotch-Brite™ Universal

By 3M. For gentle cleaning of sensitive surfaces, such as glass, ceramic, porcelain and chrome. Highly absorbent and non-abrasive.
Two sides: cleaning fleece/sponge. Dimensions: L 90 x W 70 x H 40 mm.

Art. No.	Pack Qty.	€
TT83.1	3 packs of 2	10,70

Rotilabo® cleaning brushes

Especially for cleaning laboratory glass and plastic containers. Made of soft, scratch-resistant PE foam. Does not absorb liquids and is considerably more hard-wearing than standard brush materials.

Pliable for vessels with narrow necks

Type	∅ Head (mm)	Length (mm)	Art. No.	Pack Qty.	€
①	20	410	**Y111.1**	1	13,90

Round head for tall vessels

Type	∅ Head (mm)	Length (mm)	Art. No.	Pack Qty.	€
②	55	425	**EEH7.1**	1	13,90
③	70	480	**Y109.1**	1	13,05

Round head for medium-size vessels

Type	∅ Head (mm)	Length (mm)	Art. No.	Pack Qty.	€
④	55	340	**EEH8.1**	1	13,35

Round head for small vessels

Type	∅ Head (mm)	Length (mm)	Art. No.	Pack Qty.	€
⑤	50	230	**EEH9.1**	1	12,15
⑥	60	250	**Y110.1**	1	12,80

Special brush with bristles for cleaning test tubes and particularly narrow vessels. Flexible to adapt to the shape of the vessel.

Type	∅ Head (mm)	Length (mm)	Art. No.	Pack Qty.	€
⑦	20	220	**Y112.1**	1	8,55

Scouring spiral pads

By 3M. Made of stainless high-grade steel. For removal of stubborn dirt.

Art. No.	Pack Qty.	€
EE55.1	4 packs with 3 pads	10,25

Rotilabo®-cleaning brushes

Made of natural bristles/wool head or all-wool. Galvanised twist-in wire.

Brush ∅ x L (mm)	Total length (mm)	Design	Art. No.	Pack Qty.	€
5 x 85	280	Natural bristles/wool head	**XK58.1**	5	12,45
8 x 85	280	Natural bristles/wool head	**XK59.1**	5	11,85
10 x 60	230	Natural bristles/wool head	**XK60.1**	5	11,75
12 x 85	280	Natural bristles/wool head	**XK61.1**	5	11,80
15 x 85	280	Natural bristles/wool head	**XK62.1**	5	11,65
20 x 105	270	Natural bristles/wool head	**XK63.1**	5	12,15
30 x 115	270	Natural bristles/wool head	**XK64.1**	5	18,20
35 x 100	330	Wool	**XK65.1**	1	8,10
40 x 130	520	Natural bristles/wool head	**XK66.1**	1	6,40
50 x 150	320	Natural bristles/wool head	**XK67.1**	1	5,35
55 x 140	390	Wool	**XK68.1**	1	8,30
60 x 145	520	Natural bristles/wool head	**XK69.1**	1	6,90

Rotilabo®-cleaning brushes

Made of **Nylon**. Overall length 300 mm.

Brush ∅ x L (mm)	Twist-in wire	Art. No.	Pack Qty.	€
2 x 60	Chrome nickel	**XK71.1**	5	15,60
3 x 100	Chrome nickel	**XK72.1**	5	12,60
4 x 100	galvanised	**XK73.1**	5	12,70
5 x 100	galvanised	**XK74.1**	5	12,70
8 x 100	galvanised	**XK75.1**	5	12,85
10 x 100	galvanised	**XK76.1**	5	12,85
20 x 100	galvanised	**XK77.1**	5	13,95
30 x 100	galvanised	**XK78.1**	5	14,95
50 x 100	galvanised	**XK79.1**	5	18,20

Rotilabo®-cleaning brush with joint

Made of natural bristles with wooden handle.

Total length (mm)	Brush length (mm)	Art. No.	Pack Qty.	€
440	50	**XK70.1**	1	20,35

Rotilabo® cleaning brushes

Bristle materials:
1: brass 0.15
2: bronze 0.15
3: natural fibres / perlon
4 to 5: horsehair
6 to 11: pig bristles
9, 10 and 11: with woollen head

Type	Total length (mm)	Brush length (mm)	Brush ∅ (mm)	Art. No.	Pack Qty.	€
1	300	100	25	**2018.1**	5	40,30
2	300	100	15	**2023.1**	5	37,65
3	500	150	80	**2017.1**	5	64,40
4	480	120	63	**1850.1**	5	35,25
5	370	85	50	**2013.1**	10	43,85
6	500	100	18	**1202.1**	10	27,10
7	500	100	12	**2003.1**	10	26,80
8	500	100	6	**2002.1**	10	26,50
9	270	115	30	**2011.1**	10	21,00
10	270	80	20	**2009.1**	10	19,20
11	280	70	15	**2019.1**	10	19,30

Rotilabo®-brushes set

Type	Design	Art. No.	Pack Qty. (assortment)	€
Set of 12	4 brushes each, type 6, 7, 8	**2006.1**	1	42,65
Set of 8	1 each of types 1, 2, 3, 4, 5, 9, 10, 11	**2027.1**	1	53,55

Rotilabo®-scrubbing brushes

Made of wood. S-shape. Bristles made of PP. L 210 x W 70 x H 35 mm.

Art. No.	Pack Qty.	€
ET48.1	5	12,30

Brushes

Rotilabo® special brushes

With bristles and PE-foam head. Ergonomically shaped, wide, flat handle for easily twisting the brush. For cleaning laboratory glass and plastic containers. Specially designed for wide-neck barrels, beakers and cylinders.

Type	∅ Head (mm)	Length (mm)	Art. No.	Pack Qty.	€
①	50	385	**EEK0.1**	1	11,80
②	50	500	**EEK1.1**	1	13,90

Rotilabo® hose brushes

With Nylon bristles, abrasion-proof and highly resistant to chemicals, heat resistant to approx. 100 °C.

Type	Total length (mm)	Brush length (mm)	Brush ∅ (mm)	Art. No.	Pack Qty.	€
h	1180	60	6	**KE69.1**	2	19,90
i	2500	150	8	**KE70.1**	2	27,50
j	1500	150	9	**KE71.1**	2	18,40
k	1500	150	16	**KE72.1**	2	18,55

Rotilabo® hose/burette brushes

With uncoloured pig bristles, durable, highly resistant to chemicals, heat resistant up to approx. 150 °C.

Type	Total length (mm)	Brush length (mm)	Brush ∅ (mm)	Art. No.	Pack Qty.	€
e	1000	150	12	**KE66.1**	5	22,50
f	1000	150	15	**KE67.1**	5	24,20
g	1000	150	30	**KE68.1**	5	25,05

Pipe cleaners

Made of cotton, with stiff wire. Tapered, ∅ 1.5-6 mm.
Length approx. 170 mm. Ideal for cleaning hard-to-reach small parts such as nozzles, drill holes, connectors, stopcocks, pipettes and hoses.

Art. No.	Pack Qty.	€
YC35.1	80	5,70

Rotilabo® pipette brushes

With uncoloured natural bristles. Durable, highly resistant to chemicals, heat resistant to approx. 150 °C.

Type	Total length (mm)	Brush length (mm)	Brush ∅ (mm)	Art. No.	Pack Qty.	€
a	400	100	5/10/5	**KE62.1**	5	22,80
b	490	190	4/20/4	**KE63.1**	5	28,50
c	450	180	12/25	**KE64.1**	5	24,35
d	160	70	10	**KE65.1**	5	12,90

Antistatic brushes

Made of natural and synthetic fibres. Conductive fibres free surfaces, (e.g. glass, plastic materials and electronic components) of electrically charged particles and dust particles.
Operative range max. 65 °C, washable.

Width (mm)	Art. No.	Pack Qty.	€
20	**AK12.1**	1	18,20
30	**AK37.1**	1	41,40
60	**AK14.1**	1	53,25

Wipers and brush and dustpan set

PROFI floor mops

By Leifheit. With convenient foot control and changeable mop heads for universal use on all floor surfaces. Aluminium handle with hanging loop and non-slip grip. Flexible, flat-folding 360-degree swivel head enables effective cleaning in a wavy line. Wiping width 420 mm.
Delivery incl. PROFI micro duo mop head.

Type	Length (mm)	Art. No.	Pack Qty.	€
Aluminium handle	140	**XP59.1**	1	50,50
Extending handle	80-135	**XP60.1**	1	51,40

Mop heads for PROFI floor mops

① **PROFI micro duo**
Duo-fibre system enables easy dirt pickup. Suitable for all floor types. Washable at 60 °C.

Art. No.	Pack Qty.	€
XP61.1	1	22,55

② **PROFI cotton plus**
Containing cotton, ideal for tiles and stone floors. Also removes coarse dirt. Washable at 60 °C.

Art. No.	Pack Qty.	€
XP62.1	1	22,55

③ **PROFI static plus**
For dry cleaning. Attracts dust and hair using static electricity. Washable at 40 °C.

Art. No.	Pack Qty.	€
XP63.1	1	22,55

PROFI Evo mop wringer

By Leifheit. Made of PP. Capacity: 8 litres. Sturdy foot-operated mop wringer allows cleaning without bending down, using force or getting hands in dirty water.
The wringer can be stowed inside the bucket to save space.
With sturdy carry handle and two built-in castors for easy transport.
Ideal for use in combination with PROFI floor mops.

Art. No.	Pack Qty.	€
XP64.1	1	85,50

Powerslide window wiper

By Leifheit. Made of ABS. For streak-free cleaning of smooth surfaces. Movable joint reduces wrist strain. Locking mechanism on handle to control wiping angle. Wiper width 280 mm.

Art. No.	Pack Qty.	€
XP65.1	1	12,80

Brush and dustpan set

By Leifheit. Made of PP. Ergonomic non-slip handle. With special bristles and flexible rubber lip for easy collection of dirt. Large dirt chamber for safe transport.

Art. No.	Pack Qty.	€
XP66.1	1	14,55

Rotilabo®-brush and dustpan set

Made of PP. Square. Dustpan with brush comb and lip.
Bristles made of polymex. L 330 x W 195 x H 90 mm.

Art. No.	Pack Qty.	€
ET50.1	1	6,40

NEW

Bagless floor vacuum cleaner

By Bosch.

- SmartSensor control: Sensor-controlled power monitoring with an LED signal for perfect cleaning results
- QuattroPower System: High-performance technology for excellent cleaning with low energy consumption
- SilenceSound System™: For especially quiet operation
- Fully automatic SelfClean system: Avoids contact with dust when cleaning the filter
- Intelligent SelfClean system: Automatic self-cleaning of the integrated filter system
- Washable HEPA hygiene filter. Suitable for allergy sufferers
- Telescopic tube with clip lock
- Electronic suction power regulation with rotary control
- Ergonomic premium handle for effortless vacuuming
- Easy to switch off and put away
- Automatic cable retraction system
- 4 swivel castors

Technical specifications:

Dimensions (W x H x D)	310 x 320 x 470 mm
Weight	6.7 kg (without suction accessories)
Power consumption	700 W
Power supply	220–240 V, 50 Hz
Sound power level	66 dB (A)
Energy efficiency class	A
Dust emission class	A
Hard floor surface cleaning class	A
Carpet flooring cleaning class	C
Dust container volume	3 l
Cable length	8 m
Operating radius	11 m
Incl. accessories	1 x switchable roller nozzle, 1 x hard floor surface nozzle, 1 x upholstery nozzle, 1 x crevice nozzle, 1 x furniture brush

Art. No.	Pack Qty.	€
KCY8.1	1	418,20

Floor vacuum cleaner GL 30 ProEnergy

By Bosch.

- QuattroPower System: High-performance technology for excellent cleaning with low energy consumption
- Very light weight and practical to handle
- Less frequent replacement of dust bags and lower follow-on costs due to large 4 l dust bag volume
- Washable high-performance hygiene filter. Exhaust air is cleaner than the room air. Suitable for allergy sufferers
- With electronic suction power regulation with rotary control, telescopic tube, filter change display, automatic cable retractions, 4 castors, park and set-aside aid

Technical specifications:

Dimensions (W x H x D)	260 x 287 x 400 mm
Weight	4.3 kg (without suction accessories)
Power requirement	650 W
Power supply	220-240 V, 50 Hz
Sound power level	75 dB (A)
Energy efficiency class	A
Dust emission class	A
Hard floor surface cleaning class	b
Carpet flooring cleaning class	c
Dust bag volume	4 l
Length of cable	7 m
Action radius	10 m
Incl. accessories	1 x switchable roller nozzle SilentClean Premium, 1 x crevice nozzle, 1 x upholstery nozzle

Art. No.	Pack Qty.	€
EXL1.1	1	224,70

Spare dust bags for floor vacuum cleaner GL 30 ProEnergy

By Bosch.
Delivery incl. 4 dust bags with seal.

Art. No.	Pack Qty.	€
EXL2.1	4	16,10

Multi-purpose vacuum cleaner NSG uClean 1432 ST

For dry and wet cleaning. Suitable for dust, coarse dirt particles and water.

Features:
- 32 l impact resistant special plastic container
- Water level detection
- Carry handle with hose reel and connector fixture
- Storage depots for accessories
- 2 swivel castors
- Parking aid

Technical specifications:

Dimensions	L 42 x B 39 x H 64 cm
Weight	9,3 kg
Container volume	Gross 32 l, dust 28 l, water 21 l
Power requirement	max. 1400 W
Vacuum	max. 259 mbar
Air flow	max. 69 l/s
Splash protection	IP 24
Length of cable	8 m
Suction hose	L 1.75 m/∅ 4.9 cm
Incl. accessories	1 suction hose (∅ 4.9 cm, 1.75 m), 2 suction pipes (length 50 cm), 1 floor nozzle (width 36 cm), 1 coarse dirt nozzle, 1 crevice nozzle (length 16 cm), 1 fleece filter bag, 1 foam filter for extracting water and 1 dust filter cartridge.

Product	Art. No.	Pack Qty.	€
Multi-purpose vacuum cleaner NSG uClean 1432 ST	**X247.1**	1	318,75
Replacement fluted filter cartridge FP 3600	**X248.1**	1	41,15
Replacement fleece filter bag FBV rd 30-35	**X249.1**	5	45,70
Replacement foam filter FSS 1200	**X250.1**	1	19,90

▶ Tubes see page 385

Wet and dry battery-operated vacuum cleaner

By Fakir. Cordless vacuum cleaner for wet and dry spills.
Capacity for dry dirt 400 ml, for liquids 250 ml. Dust container is easy to empty, washable filter. With lithium ion battery and charge indicator light. Operating time up to 23 min.

Technical specifications:

Dimensions (W x H x D)	115 x 128 x 410 mm
Weight	985 g
Power consumption	7.4 V; 2 Ah
Mains connection, charging dock	100-240 V, 50/60 Hz

Delivery incl. 1 x crevice nozzle, 1 x upholstery brush, 1 x liquids nozzle, 1 x charging dock with accessories deposit for wall mounting.

Art. No.	Pack Qty.	€
HNP5.1	1	79,45

Air pressure suction gun

For dust extraction. Has a NW 10 connection for flexible pressure tubing to fit pneumatic systems or pressure gas bottles (nitrogen, air, argon). The easy to empty dust bag made of felt can be disposed off completely if needed. Vacuum hose and vacuum nozzle are 20 cm in length when connected and can be rotated in every direction. The opening slit is 70 x 5 mm. For air pressure up to approx. 6 bar. Suction volume 700 l/min. Vacuum 40 kPa (0.4 bar). Weight approx. 700 g.

Type	Art. No.	Pack Qty.	€
Air pressure suction gun	**5776.1**	1	267,70
Spare dust bag with screw cap	**5777.1**	1	91,40

Air pressure gun made of aluminium

Electroplated, robust version. With short jet for thin stream. Working pressure up to 15 bar. Equipped with lever valve, connector for tubing with inner span 7 mm. With integrated loop for hanging.

Art. No.	Pack Qty.	€
5454.1	1	17,00

Silicone greases Rotisilon®

Rotisilon® A

Grease for glass connections and lubricant for rubber on glass.
Liquid, temperature range -48 to +150 °C.

Art. No.	Pack Qty.	€
0830.1	250 ml	17,10
0830.2	1 l	46,15

Rotisilon® B

All-purpose grease, especially suitable for stopcocks.
Vaseline-like, transparent, temperature range from -45 to +180 °C.

Art. No.	Pack Qty.	€
0836.1	250 g	27,85
0836.2	1 kg	93,45

Rotisilon® C/D

For normal vacuum (water jet pump). Paste consistency, transparent, temperature stable from -40 to +200 °C.

Art. No.	Pack Qty.	€
8537.1	100 g	24,65

KWS-grease

For vacuum, high vacuum and backflow distillation.
Silicone-free, acid- and alkali-proof. For greasing ground glass joints, can be applied at temperatures between -40 and +200 °C. Vapour pressure 10^{-5} mbar. Excellent adhesion viscosity and releasing properties.

Art. No.	Pack Qty.	€
0930.2	50 g	29,90
0930.1	100 g	52,15

Vaseline

For lubricating ground joints, desiccators, stopcocks, etc. Silicone-free, FDA-compliant. Density approx. 0.8 g/cm³, melting point approx. 52 °C.

Art. No.	Pack Qty.	€
E746.1	Tube with 100 g	4,25

KORASILON®-pastes

For use as grinding paste, sealing paste, lubricant and protective paste. Moisture repellent. Also suitable as a sealant for electrical appliances, as a lubricant paste for cooling units and as a mould release agent. Temperature resistant in the range -50 to +200 °C.

Type	Art. No.	Pack Qty.	€
low viscosity	**0855.1**	35 g	6,40
medium viscosity	**0856.1**	35 g	6,40
high viscosity	**0857.1**	35 g	6,40

KORASILON®-pastes assortment

Assortment of 2 x each tube low viscosity, medium viscosity and high viscosity.

Art. No.	Pack Qty.	€
0858.1	6 x 35 g	29,60

KORASILON® M-S 2 pastes

For use as an anti-friction, lubricating and release agent for grinding, apparatus, seals, valves, cables and wires etc. Suitable for use as an assembly aid and as a protective and sealing paste. Colourless, odourless, non-toxic, insoluble in water, resistant to salt water and hot steam. Good electrical insulation, inert to many chemicals and resistant to micro-organisms.

Compliant with BfR Recommendation XV. Silicone.
Compliant with FDA 178.3570 "Lubricants with incidental food contact".
With NSF-H1 approval.
Temperature stable from -40 to +200 °C.

Type	Art. No.	Pack Qty.	€
M-S 2-300, low viscosity	**APA5.1**	35 g	11,00
M-S 2-270, medium viscosity	**APA6.1**	35 g	11,00
M-S 2-200, high viscosity	**APA7.1**	35 g	11,00

Grinding grease, water-soluble

Transparent grinding grease, washes off with water.
Vacuum-proof up to 10^{-3} mbar. Usable from -30 to +200 °C without change in consistency. Does not resinify. Biodegradable.

Art. No.	Pack Qty.	€
E691.1	80 g	27,85

▶ Glass components, see page 147

APIEZON®-lubricants

High lubricating and gettering properties.
Extremely low steam pressures.

- Chemically inert
- Silicone free
- Non-toxic
- Temperature resistant
- 10 years shelf life

Type	Features	Melting point	Steam pressure (at +20 °C)	Temperature range	Art. No.	Pack Qty.	€
AP 100	**High vaccum;** good lubrication, resists alkali, acid and corrosive gases. Particulary good for polished ground glass joints.	+47 °C	7 x 10^{-11} torr	+10 to +30 °C	**C986.1**	50 g	150,50
AP 101	Heavy duty grease for a **wide temperature range**. Medium vacuum.	> +200 °C	<1 x 10^{-5} torr	-40 to +180 °C	**C987.1**	50 g	73,65
L	Special quality lubricant, free of additives for high vacuums. With high absorption capacity for other hydrocarbons. High resistance to radation. **Can also be used in stationary phases in gas chromatography**. Free of halogene.	+47 °C	7 x 10^{-11} torr	+10 to +30 °C	**1682.1**	50 g	147,30
M	All-purpose lubricant, similar to type L, but stiffer. Free of halogene.	+44 °C	1,7 x 10^{-9} torr	+10 to +30 °C	**1683.1**	100 g	118,25
N	High vacuum lubricant **for cryo-applications**, rubbery, tenacious. Free of halogene.	+43 °C	6 x 10^{-10} torr	-269 to +30 °C	**1684.1**	25 g	155,90
T	All-purpose lubricant. For medium vacuum. Free of halogene.	+125 °C	4,6 x 10^{-9} torr	+10 to +120 °C	**1685.1**	25 g	134,40
H	Versatile lubricant for very high temperatures. Does not melt at high temperatures over 40 °C.	> +250 °C	1,7 x 10^{-9} torr	-10 to +240 °C	**1686.1**	25 g	139,75

APIEZON®-waxes and sealing agent

APIEZON®-waxes W, W 40, W 100
Provides lasting, high-vacuum sealing, excellent gettering properties and low vapour pressure. Is resistant to acids such as hydrofluoric acid, nitric acid and acetic acid. Can be removed with hydrocarbons and chlorinated hydrocarbons.

APIEZON®-sealing kit Q
Ideal for sealing joints and for filling cracks. Especially suitable for vacuum technology when extremely low vapour pressure is not required. Waterproof.

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Type	Features	Melting point	Steam pressure (at +20 °C)	Temperature range	Art. No.	Pack Qty.	Packaging	€
W	Sealing agent for seams which can heat up during operation.	80 to 90 °C	4.5 x 10^{-9} torr	-10 to +75 °C	**AL06.1**	1 kg	Block	119,35
					AL06.2	~20 g	Stick	8,55
W 40	Sealing agent can be poured into or around a seam.	40 to 50 °C	6 x 10^{-8} torr	-10 to +35 °C	**AL07.1**	250 g	Can	145,15
W 100	The soft wax reduces the risk of cracking in response to vibration loads.	50 to 60 °C	4.5 x 10^{-9} torr	-10 to +45 °C	**AL08.1**	250 g	Can	145,15
Sealing kit Q	Versatile sealing compound for vacuum technology.	40 to 50 °C	1 x 10^{-4} torr	-10 to +30 °C	**AL09.1**	1 kg	Can	145,15

APIEZON®-high-temperature vacuum lubricant PFPE 501

Chemically inert lubricant, gliding and sealing agent based on perfluoropolyether and PTFE. Can be used between -15 and +250 °C.

- Extremely resistant to solvents and aggressive chemicals (including halogens, nitric acid, as well as gaseous and liquid oxygen)
- High load-carrying capacity, as well as excellent sliding friction thanks to film-forming, highly dense perfluoropolyether structure
- Non-flammable, not poisonous
- Versatile; protects, lubricates and seals stock, valves, gears, threads, o-rings, seals, etc.

Technical specifications:

Relative density at 25 °C	2003 g/cm^3
Steam pressure at 25 °C	1.3 x 10^{-12} torr
Four-ball test acc. to ASTM D2266 (40 kg)	0.94 mm

Art. No.	Pack Qty.	€
YT61.1	100 g	177,40

PTFE paste

Suitable for sealing fine threads and cuts. High viscosity, good lubrication properties, good electrical resistance properties. Chemically inert. Temperature stable from -30 to +300 °C.

Art. No.	Pack Qty.	€
0124.1	100 g	133,85

Limesoil

Super lubricant® for quick fit connections and stopcocks. Protects glass against seizing and metals against corrosion. Produces a non-tearing film and is resistant to aggressive substances such as methylisobutylketone, IPA, etc. No flowing, no pulling strings.
Temperature range: -40 to +185 °C. Steam pressure: 9.33 x 10^{-4} N/m^2 (7 x 10^{-6} Torr) at +20 °C and 1.33 N/m^2 (10^{-2} Torr) at +100 °C.

Art. No.	Pack Qty.	€
3067.1	50 g	57,95

Ballistol®-oil and -spray

Pure, mildly alkaline special oil with cleaning, conserving, protecting, regenerating, impregnating, lubricating and disinfecting properties. Low surface tension, wets even the smallest cracks and gaps. Does not gum or cure. Free from chlorinated hydrocarbons, environmentally friendly and biologically degradable. Also suitable for use on wood and leather. Dermatologically tested and approved for parts coming into contact with product in the foodstuffs industry.

Ballistol®-oil

Warning H226

Art. No.	Packaging	Pack Qty.	€
AA74.1	glass	50 ml	5,50
AA74.2	glass	500 ml	24,30

Ballistol®-spray

Danger H222-H229

Art. No.	Packaging	Pack Qty.	€
AA75.1	spray can	200 ml	9,65

Rotifluid®

Low-viscosity mineral oil-based lubricant for precision mechanics.

Art. No.	Pack Qty.	€
1264.1	200 ml	8,85
1266.1	1 l	20,75

▶ Laboratory glass see page 10

Sprayflon®

Multi-purpose PTFE-lubricant, gliding and separating agent with extremely low friction factor. Resistant against water, oil and aggressive substances. Anti-adhesive, dirt repellent, prevents freezing and is temperature stable to +260 °C. Free of grease and silicone. Propellant propane/butane.

Danger H222-H229

Art. No.	Pack Qty.	€
K007.1	300 ml	16,60

Paraloid™ B-72

Transparent, light-resistant thermoplastic acrylic resin for conserving samples. Also ideal for coating and sealing wood, stone, metals, and other materials. The coat is permanently stable and non-yellowing.
Compatible with cellulose, silicone, PVC, and many other plastics and metals. Resistant to water and many chemicals. Dissolves in toluene or ethyl acetate. Can be applied with brush, spray gun or in immersion bath. Hardens by air drying or heat exposure (approx. 30 mins at 150 °C)

Art. No.	Pack Qty.	€
9639.1	1 kg	63,35
9639.2	5 kg	180,10

KORASILON universal silicone spray

Solvent-free, ready-to-use release agent, lubricant and preservative with dielectric properties and a wide range of applications:

- **Lubricant:** reduces surface friction and optimises lubrication effect
- **Impregnating agent:** water and dirt repellent
- **Antifreeze:** prevents freezing and sticking of seals
- **Preservative and care product** for rubber, plastics, wood, metals etc.
- **Release agent:** allows residue-free demoulding of plastic products
- **Electrically insulating**, prevents current leakage at electrical contacts
- Heat resistant up to approx. 350 °C

Delivery incl. additional spray nozzle with extension capillary tubing.

Danger H222-H229

Art. No.	Pack Qty.	€
5432.1	400 ml	9,90

KORASILON release agent M

Silicone-based mould release agent for duromers and thermoplastic materials. With high, long-lasting release capacity. Its extremely thin spray film is easy to apply and provides improved lubricity, surface gloss and scratch resistance.
Heat resistant up to approx. 150 °C, leaves no residues on hot surfaces.

Danger H222-H229-H315-H336-H411

Art. No.	Pack Qty.	€
0895.1	400 ml	9,25

Zaponlack varnish

Fast drying, clear varnish with a nitrocellulose base. Crystal clear, for protecting copper or brass against oxidation, and for fixing paper, wood, glass, leather, etc. Apply by brushing, spraying or dipping.

Danger H225-H315-H318-H336-H412-EUH066

Art. No.	Pack Qty.	€
6804.1	500 ml	36,45

Urea-hydrogen peroxide

Easily dissolving oxidation agent. Tablet ∅ 12 mm, weight 1,0 g. H_2O_2 content 35 %, weight minimum. Active-oxygen 16.5 % / weight minimum. Use as bleaching or fixing agent in the laboratory sector.

Danger H272-H315-H318-H335

Art. No.	Pack Qty.	€
7641.1	500 tablets (= 500 g)	38,60

Instant glue CA 221

Ethyl cyanoacrylate based single-component instant glue for plastics, metals and porcelain. The adhesive bonds are to a large degree temperature and chemical resistant. Not suitable for permanent contact with water. Starts to harden in less than 1 minute and cures fully after 8-10 hours. Storage temp. +10 °C. Shelf life approx. 6 months.

Warning H315-H319-H335

Art. No.	Pack Qty.	€
0258.1	Dispenser bottle 10 ml	6,40

Thermokitt Roth 1100 °C

Heat resistant embedding medium, seals and glues metal, glass, ceramic, porcelain. Has ideal electric resistance properties, ideal insulation for heating elements. **With stands temperatures to +1100 °C**, is free of phosphate and resistant to oil, acids, and solvents.
The components of powder (component 1) and liquid (component 2) are mixed in a ratio of 2:1 by weight. Sets after 24 hours.
Kit for mixing 300 g ready to use medium.

Set contains component 1 (powder, Art. No. 2391) and component 2 (liquid, Art. No. 2392).
Contents of this kit may not be bought separately.

Danger H290-H302-H314-H372

Art. No.	Pack Qty.	€
3040.1	200 g components 1 and 100 g components 2	40,75

One components silicone rubber

For gluing, sealing, covering. High temperature stability, virtually chemical resistant. UV/ozone resistant. Polymerizes at room temperature through air humidity to a permanently elastic rubber.
Ready-to-use in tubes of 85 ml.

Scrintec® 600, oxime cross-linking
Paste-like, **transparent**. Temperature stable from -50 to +180 °C.
Spec. weight 1.02 g/cm³, shore-hardness 20 °.

Warning H317-EUH208

Type	Art. No.	Pack Qty.	€
Scrintec® 600	**E046.1**	1 tube	13,95

Scrintec® 901, acetic acid cross-linking
Liquid, **opaque red**. Temperature stable from -60 to +250 °C.
Spec. weight 1.20 g/cm³, shore-hardness 35°.

Warning H315

Type	Art. No.	Pack Qty.	€
Scrintec® 901	**2024.1**	1 tube	15,00

Autostic FC8

Single-component adhesive filler for connecting, sealing, coating or gluing ceramics, glass, quartz crystal, metal etc. **Max. usage temperature +1000 °C**, non-flammable. Ready to use, viscosity 3000 MPa. Setting occurs at room temperature or can be accelerated by heating at up to 90 °C. Depending on temperature, humidity and the properties of the material to be glued as well as the required layer thickness, setting is complete after 36-48 h.

Art. No.	Pack Qty.	€
0279.1	Tin 500 g (250 ml)	43,90

Araldit® Epoxy Systems

Suitable for joining metal, ceramic, or plastic together in any combination. Also ideal for filling gaps in these materials.

Araldit® adhesive B 1

On an epoxy base, low viscosity, transparent. For connecting metal parts and filling hollow spaces. Hardens with hardener H 2 (Percentage by weight 100:8).

Warning H315-H317-H319-H410-EUH205

Art. No.	Pack Qty.	€
2530.1	500 g	74,10

Araldit® Resin G 2

Epoxy resin, low viscosity. Suitable for casting and embedding electronic components. Curing at room temperature with hardener H 2 (percentage by weight 10:1).

Warning H315-H317-H319-H411-EUH205

Art. No.	Pack Qty.	€
2545.1	500 g	38,20

Aradur® hardener H2, liquid

Danger H302+H312-H314-H317-H412

Art. No.	Pack Qty.	€
2551.1	100 g	15,95
2551.2	500 g	55,40

Araldite® Rapid

Two component all-purpose glue, made with an epoxid-resin base. Suitable for many materials, except for PP, PE, PTFE, PVC and Acryl. Fast setting, heat resistant up to +100 °C, resistant against alcohol, water, petrol, mineral oils and similar substances. Mixing 1:1. Process of setting starts after 5 min, will support itself after another 15 mins and is fully stable after 8-10 h. Kit contains 15 ml each of component A and B.

Warning H315-H319-H317-H411-EUH205

Art. No.	Pack Qty.	€
3131.1	Two kits (= 60 ml glue)	41,40

Two component sealing resin Metaflux®

Two-component epoxy resin for quick repair of metal, porcelain, wood and stone, for sealing pipes and tanks, and for filling out irregularities and holes. Also ideal under water. Hardens within 3 hours at 20 °C.
Heat-resistant up to +200 °C, suitable for mechanical processing.
Compressive strength 7840 N/cm², tensile strength 2940 N/cm².
Mixture 1:1.

Warning H315-H319-H317-H412-EUH205

Art. No.	Pack Qty.	€
1279.1	400 g	38,25

Hot glue gun Gluematic 5000

By Steinel. Cordless hot melt applicator with extremely high melting capacity.

- Very short heating times
- Glue is heated automatically when the unit is placed onto the charger
- Electronic temperature control using state-of-the-art PTC heating technology
- Continuous operation with power cable possible
- Energy-saving standby mode
- Mechanical glue stick feeder for speedy, well-metred working
- Replaceable glue nozzles

Technical specifications:

Dimensions (L x W x H)	185 x 32 x 180 mm
Weight (without stand)	330 g
Output	Working phase approx. 120 W, warm-up phase approx. 500 W
Warm-up phase	3-5 min.
Melt temperature	210-220 °C
Delivery rate	approx. 22 g/min.

Delivery incl. charger with drip protection, short nozzle ∅ 2.0 mm, long nozzle ∅ 2.8 mm, 5 Ultra Power glue stick, power cable.

Art. No.	Pack Qty.	€
PE36.1	1	68,75

Accessories:

Glue sticks Ultra Power, 250 g, ∅ 11 mm	**PE37.2**	10	10,70
Glue sticks Transparent, 250 g, ∅ 11 mm	**PE38.2**	10	10,70
Fine nozzle ∅ 1.0 mm	**PE39.1**	1	8,30

Electro insulation tape

Made of high-gloss PVC, synthetic rubber adhesive. Heat resistant from -10 to 105 °C. Resistant to moisture, oil, diluted acids and alkalis, as well as UV radiation. Penetration resistance 40 kV/mm. Good adhesive force and high flexibility, elongation at break ≥ 160 %, tear strength 18.0 N/mm^2.
Width 19 mm, thickness 0.19 mm, roll length 20 m, weight 100 g.

Art. No.	Pack Qty.	€
1256.1	1 roll	5,75

Scotch Mount 4032 double-sided adhesive foam tape

Double-sided self adhesive, made of polyurethane. For fixing down surfaces to prevent slipping, or as a stick-on tape for pin-up boards, posters, etc. Slightly stretchable, good adhesion, and is easy to remove.
Width 25 mm, 0.8 mm thick.

Art. No.	Pack Qty.	€
1283.1	1 roll (11 m)	29,60

▶ More adhesive tapes starting on page 707

Temperature stable adhesive tapes

Self-adhesive tape. Ideal for extreme temperatures. Temperature stable from **-196 to +287 °C**. Suitable for use in the cryo sector, incubators, autoclaves, sterilizers, etc. Surface with textile finish, can be marked.

Width (mm)	Length (m)	Art. No.	Pack Qty.	€
12,7	7,6	**L034.1**	1	33,35
19,0	7,6	**L035.1**	1	37,60
25,4	7,6	**L036.1**	1	57,85

PTFE thread sealant tape

Protects, seals and secures all types of thread. Highly flexible, usable from -190 to +260 °C. Chemically inert. Tape width 12 mm, thickness 0.08 mm. Roll length 12 m.

Art. No.	Pack Qty.	€
1715.1	3 rolls (36 m)	5,35

tesaband® Premium

Fabric tape, 25 mm wide. Wear and tear resistant. Good adhesion even on rough surfaces. Can be written on. Temperature resistant up to +130 °C.

Art. No.	Pack Qty.	€
1263.2	1 roll (25 m)	24,30

PTFE flat sealing tape

Self-adhesive, for pipe connections and other surfaces.
Soft, easily adaptable, smoothes out irregularities.
Temperature range: -240 to +270 °C. Pressure range: up to 120 bar.
Vacuum leakage rate for helium: 1.3 x 10^3 mbar/sec at 20 N/m^2.
Surface pressure. Width 3.0 mm, 1.5 mm thick.

Art. No.	Pack Qty.	€
0801.1	2,5 m	41,00

▶ PTFE-spray, see page 1174

O-ring set from Loctite®

Ideal for making different sized O-ring seals. Work pack with approx. 20 g special glue, cutter, 1 m elastic bands each with ∅ 1.6; 2.4; 3.0; 5.7 and 8.4 mm and instructions. Drying time for rings approx. 10 min.

Art. No.	Pack Qty.	€
1725.1	1 set	90,00

Heat protection foil

Self-adhesive, made of 0.05 mm thick aluminium foil.
Ideal for covering windows and other smooth surfaces. 50 cm wide.
Temperature stable up to +80 °C.

Art. No.	Pack Qty.	€
0193.1	roll 5 m	23,60

Sekuroka®-velcro fastening

Easily removable, consists of loop and hook components with self-adhesive back. Fastener is closed by gently pressing hooks into the loops. Ideal for applications where a high amount of opening and closing is expected. Approx. 2.5 mm thick when closed.
Length 230 cm, width 25.4 mm.

Art. No.	Pack Qty.	€
K956.1	1	45,70

- Hotplates, see page 1019
- Temperature control baths, see page 964

Sekuroka®-snap fastening

Self-adhesive, flexible. With interlocking semi-spherical heads (62 heads/cm^2). Provides extremely secure and resilient connections to most materials with high, permanent adhesive power.
Approx. 5.8 mm thick when closed. Length 230 mm, width 25.4 mm.

Art. No.	Pack Qty.	€
0295.1	1	39,25

Gas-leak tester

Gas-leak tester Roth

Special liquid for finding smallest leaks in tubing or hollow spaces that are under gas or air pressure. Nontoxic, non-inflammable, non-corrosive. Suitable for compressed air, butane, natural gas, town gas, propane, CO_2, O_2, N_2, H_2 and ammonia. Spray possible leakage area.
Bubbles appear at site of leak.

Art. No.	Packaging	Pack Qty.	€
2686.1	Pump spray bottle	500 ml	17,15

ECO leak finder spray

For reliable location of leaks on gas pipes and compressed air systems. Produces easily visible foam bubbles at the site of leaks. Suitable for e.g. natural gas, propane, butane, acetylene, nitrogen, carbon dioxide, refrigerant and oxygen. Compatible with plastics and metals, non-corrosive. DVGW-tested in accordance with DIN EN 14291:NG-5170AS0069 and with NSF-P1 registration for food technology.

Propellant: N_2O.

Warning H229-H319

Art. No.	Pack Qty.	€
HAN3.1	500 ml	10,70

Gas leak detector testo 316-1

By Testo. Ideal for tracing leaks in pipes, flanges, screw connectors, gas pipes etc. For methane. With visual and acoustic alarm.
Sensor has extremely short reaction time.

Technical specifications:

Measuring range	0 to 10.000 ppm CH4
Alarm threshold	>200 ppm LED yellow / >10.000 ppm LED red
Battery life	>5 h
Working temperature	4 to 45 °C
Dimensions (L x W x H)	190 x 57 x 42 mm
Weight	300 g

Delivery incl. battery (9 V).

Art. No.	Pack Qty.	€
P757.1	1	215,00

Rotitherm® heating and cooling mediums

For filling water baths, cooling chests, thermostats, etc.

Technical specifications:

Rotitherm®	H 250	M 220	M 150	K + H
Density at 0 °C Density at 23 °C Density at +180 °C	1.05 g cm^{-3} 0.90 g cm^{-3}	1.00 g cm^{-3} 0.85 g cm^{-3}	1.00 g cm^{-3} 0.85 g cm^{-3}	- 1.15 g cm^{-3} 1.034 g cm^{-3}
Thermal stability	+250 °C	+220 °C	+150 °C	+170 °C
Coefficient of thermal conductivity W/ (m x K)	0.131	0.170	0.163	approx. 0.176
Combustion point	>360 °C	>360 °C	>370 °C	-
Pour point	-65 °C	<-50 °C	<-50 °C	<-39 °C
Flashpoint	>300 °C	>320 °C	>310 °C	>290 °C

Rotitherm® H 250

Silicone oil for heating baths.

Steam pressure	at +20 °C: ~ 1,33 x 10^{-4} N/m (10^{-6} Torr) at +150 °C: ~ 1,33 x 10^{-2} N/m (10^{-4} Torr)
Kinematic viscosity	at +20 °C: 200 mm^2 s^{-1} (cSt) at +100 °C: 34 mm^2 s^{-1} (cSt)

Type	Art. No.	Pack Qty.	€
Rotitherm® H 250	**1670.1**	1 l	132,15
Rotitherm® H 250	**1670.2**	10 l	1116,95

Rotitherm® M 220

Silicone oil for heating baths. Brown.

Steam pressure	at +20 °C: ~10^{-4} mbar at +150 °C: ~10^{-2} mbar
Kinematic viscosity	at +20 °C: 1000 mm^2 s^{-1} (cSt) at +100 °C: 300 mm^2 s^{-1} (cSt)

Type	Art. No.	Pack Qty.	€
Rotitherm® M 220	**0991.1**	1 l	49,35

Rotitherm® M 150

Silicone oil for heating baths.

Steam pressure	10^{-5} to 10^{-4} mbar from +25 °C to +175 °C
Kinematic viscosity	at +25 °C: 100 mm^2 s^{-1} (cSt) at +100 °C: 32 mm^2 s^{-1} (cSt)

Type	Art. No.	Pack Qty.	€
Rotitherm® M 150	**0990.1**	1 l	33,25
Rotitherm® M 150	**0990.2**	5 l	145,15

Rotitherm® K + H

Heat transfer fluid for cooling and heating baths. Due to the low pour point, Rotitherm® K+H can also be used as a coolant. Mixes with water in any ratio, non-sensitive to water hardness. Mixtures with 10-30 % proportion of water can be used up to -55 °C. Does not form build-up even when heated and can easily be removed using water.

Kinematic viscosity: concentrate	at +20 °C: 300 mm^2 s^{-1} (cSt) at +60 °C: 39 mm^2 s^{-1} (cSt) at +100 °C: 12 mm^2 s^{-1} (cSt)

Type	Art. No.	Pack Qty.	€
Rotitherm® K + H	**7143.1**	1 l	38,60
Rotitherm® K + H	**7143.2**	5 l	142,90

Rotisol®

Universal alcoholic solvent, extraction agent, mobile phase, and elution medium, for dehydrating in histology, recrystallisation, etc.
Mixable with water.
Ingredients:
dehydrated ethanol ~99 % · acetone ~5 % · methyl ethyl ketone ~1 % ·
Flp 12 °C · Kp 56-80 °C · D ~0.79 · highly flammable.

Danger H225-H319-EUH066

Art. No.	Pack Qty.	€
7917.3	1 l	19,90
7917.1	2,5 l	34,95
7917.2	25 l	193,40

Floating pellets

Made of **PP**. Protect against evaporation and fast temperature loss. Decrease hazardous vapours. Resistant to many acids, bases, solvents and mineral oils. Temperature stable up to +100 °C.

∅ (mm)	Design	Art. No.	Pack Qty.	€
20	for 0,10 m^2	**A753.1**	250	28,40
38	for 0,13 m^2	**A754.1**	100	38,85
45	for 0,20 m^2	**A755.1**	100	42,95

▶ For heating baths, see page 977
▶ Further silicon oils see chapter chemicals A-Z

Boiling pebbles

Prevent delayed boiling. Ensure uniform distillation of low-viscosity liquids.

Type A: for standard distillation. Natural stone product mainly made of quartz. Contains small amounts of iron. Granules are approx. 5-8 mm. Suitable for vacuum distillation.

Art. No.	Pack Qty.	€
1691.1	75 g = about 1000 pebbles	17,15

Type B: for analysis. Natural, alkalic alumosilicates, without ceolit. Granules are approx. 5 mm.

Art. No.	Pack Qty.	€
1692.1	80 g = about 1700 pebbles	18,85

Boiling pebbles made of PTFE

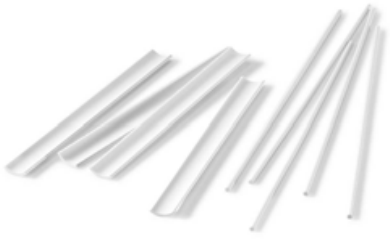
Irregularly formed granulate. Prevent uncontrolled overheating of solutions during warming up of volatile liquids. Resistant and inert against most aggressive chemicals (acids, bases, hydrocarbons).
Doesn't scratch glass and leaves no powdery deposits.
Maximum working temperature +260 °C. Granules 1 to 5 mm.

Art. No.	Pack Qty.	€
L429.1	50 g	7,50

Boiling pebbles, resistant

For preparative and analytical operations in biochemistry, biotechnology, microbiology, microanalysis, etc. Can be used in vacuumes and in high-vacuum distillation, even with minimal amounts of liquid. Do not abrade or absorb solvents, are immediately effective after every interruption. Are also suitable for strong acids, bases, aggressive solvents and oxidation agents. Can be sterilized by calcinating. Granules are approx. 3-4 mm.

Art. No.	Pack Qty.	€
H751.1	50 g = ca. 1785 pebbles	30,65



Magnesia scoops

For annealing and incineration of samples, as well as for the production of oxygen melts for the detection of chromium, manganese etc. and for bead tests. W 9 x L 100 mm.

Art. No.	Pack Qty.	€
6537.1	25	21,45

Magnesia rods

Ideal for flame analysis of sodium, etc. For borax-bead analysis of cobalt. For bead tests. ∅ 1.5 x L 140 mm.

Art. No.	Pack Qty.	€
6543.1	25	24,30

Glass beads

Reflex beads made of soda-lime glass. Specific weight approx. 2.5 g/cm^3.

Technical Specifications:
Apparent density depending on size 1.46-1.51 kg/l. Refraction index 1.5188. Chemical composition: SiO_2 72.3 %; Na_2O 13.3 %; CaO 8.9 %; MgO 4.0 %; other 1.5 %.

∅ (mm)	Art. No.	Pack Qty.	€
0,25-0,5	**A553.1**	1 kg	27,85
0,75-1,0	**A554.1**	1 kg	27,85
1,25-1,65	**A555.1**	1 kg	27,85
1,7-2,1	**A556.1**	1 kg	27,85
2,85-3,45	**A557.1**	1 kg	27,85

Glass beads

Glass beads made of high-purity soda-lime glass. Manufactured using a special process which can produce beads of extremely accurate roundness from a 4 mm size range.

- very smooth surface
- low proportion of air bubbles

Can be used as stirring and mixing beads for aerosol sprays or as a ball valve for bottle caps. Because of their high purity the beads can used as grinding and dispersing beads during wet grinding of pigments, agrochemicals, biological and other preparations.

Technical specifications: Refractive index 1.5159. Chemical composition: SiO_2 68.1 %; Na_2O 15.0 %; CaO 8.3 %; MgO 2.5 %; Al_2O_3 3.3 %; other 2.80 %. Specific weight approx. 2.5 g/cm^3.

∅ (mm)	Art. No.	Pack Qty.	€
4 ± 0.3	**HH55.1**	1 kg	27,85
5 ± 0.3	**HH56.1**	1 kg	27,85
10 ± 0.5	**HH57.1**	1 kg	27,85
15 ± 0.5	**HH58.1**	1 kg	27,85
20 ± 0.5	**HH59.1**	1 kg	64,40

Beads®

Glass Beads®

∅ (mm)	Art. No.	Pack Qty. (g)	€
0,1	**N029.1**	450	63,75
0,5	**N030.1**	450	63,75
1,0	**N031.1**	450	63,75
2,7	**N032.1**	450	63,75

Zirconia/Glass-Beads®

∅ (mm)	Art. No.	Pack Qty. (g)	€
0,1	**N033.1**	450	91,30
0,5	**N034.1**	450	91,30
1,0	**N035.1**	450	91,30
2,3	**N036.1**	450	91,30

Zirconia-Beads®

∅ (mm)	Art. No.	Pack Qty. (g)	€
0,7	**N037.1**	450	159,10
1,0	**N038.1**	450	159,10
2,0	**N039.1**	450	159,10

Stainless steel Beads®

∅ (mm)	Art. No.	Pack Qty. (g)	€
1,5	**P329.1**	45	91,40

Life Science

Electrophoresis

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Electrophoresis

PAGE Precast Gels 1185

PAGE Ready-Made Solutions
- Rotiphorese®-Gel Solutions 1188
- Rotiphorese®-Gel Solutions NF, non-fluorescent 1189
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PAGE Reagents 1191

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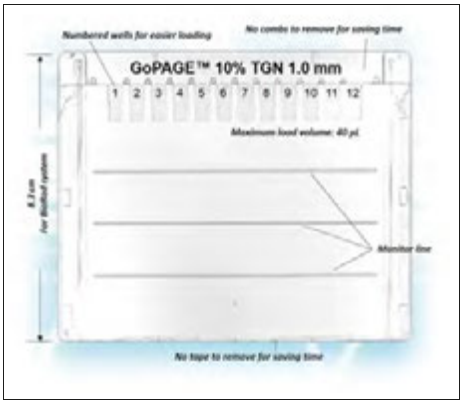
GoPAGE™ Precast Gels NEW ready-to-use

- **Particularly long shelf life** - Up to 12 months from date of manufacture when stored at 4 °C
- **Easy to use** - No comb or tape to remove
- Easy to load samples - Numbered wells; extended and fixed well separator to prevent sample carryover; loading volume up to 30 µl/wells
- **Easy to monitor** - Transparent reference lines on the gel cassette help to monitor electrophoresis
- **Good separation efficiency** - Enhanced band sharpness
- **Wide separation range** - Available as homogeneous and adjusted gradient gels for a wide range of protein separation
- **Compatibility** - Two cassette sizes suitable for most mini-gel tanks

Store at +4 °C
Transport temp.: cooled

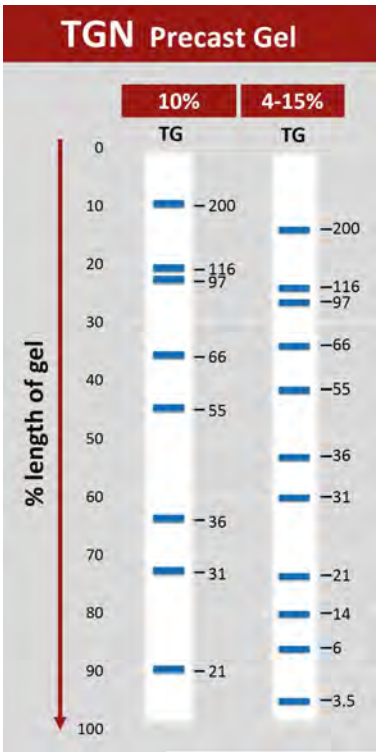


Important information on refrigerated transports

All products identified as being particularly temperature-sensitive are shipped in **special ice boxes with freezer packs or in dry ice.**
Additional costs resulting from such, **will be invoiced** (further information on request).

Please note:
In order to guarantee optimum product quality, the dispatch of refrigerated transport products will be carried out **on Mon and Tue only outside Germany!**
Slight delays in delivery are therefore possible.

PAGE Precast Gels



GoPAGE™ TGN (**T**ris-**G**lycine **N**ovel) Precast Gels are ready-to-use acrylamide gels for SDS-PAGE running in Tris-Glycine buffer system. With unique formula, GoPAGE™ TGN Precast Gels perform enhanced resolution, sharper bands, and longer shelf life as compared with conventional Laemmli Tris-HCl gels. The protein migration patterns in GoPAGE™ TGN series, however, are similar with typical Laemmli Tris-HCl gels, and thus GoPAGE™ TGN Precast Gels are compatible to traditional SDS-PAGE and subsequent analyses.

GoPAGE™ TGN Precast Gels include 4 % polyacrylamide stacking gels.

They are available gels:

- Gradient gels (4 to 15 %)
- Gels with fixed (10 %) concentrations of polyacrylamide

in 12-well format.

Two available cassette sizes, **Mini (10 x 8,3 cm)** and **Midi (10 x 10 cm)**, are compatible with most popular protein electrophoresis systems.

GoPAGE™ Precast Gels NEW

Gels are supplied shrink-wrapped in Tris/Glycin buffer (preserved).

Product	Wells	Max. Vol. / well	Buffering system	Gel strength	Gel plates (L x W)	Gel measures (L x W)	Art. No.	Pack Qty	€
GoPAGE™ 10 % TGN Mini Continuous matrix for proteins of 25 to 200 kD	12	30 µl	Tris/Glycin w/o SDS	1 mm	10 x 8,3 cm	8,3 x 6,5 cm	**2233.1**	2 gels	45,70
							2233.2	10 gels	190,20
GoPAGE™ 4-15 % TGN Mini Matrix in Gradient for proteins of 5 to 200 kD	12	30 µl	Tris/Glycin w/o SDS	1 mm	10 x 8,3 cm	8,3 x 6,5 cm	**2234.1**	2 gels	45,70
							2234.2	10 gels	190,20
GoPAGE™ 10 % TGN Midi Continuous matrix for proteins of 25 to 200 kD	12	30 µl	Tris/Glycin w/o SDS	1 mm	10 x 10 cm	8,3 x 8,1 cm	**2235.1**	2 gels	45,70
							2235.2	10 gels	190,20
GoPAGE™ 4-15 % TGN Midi Matrix in Gradient for proteins of 5 to 200 kD	12	30 µl	Tris/Glycin w/o SDS	1 mm	10 x 10 cm	8,3 x 8,1 cm	**2236.1**	2 gels	45,70
							2236.2	10 gels	190,20

For additional product data and safety information, see chapter Chemicals A-Z.

PAGE Precast Gels

Compatibility GoPAGE™

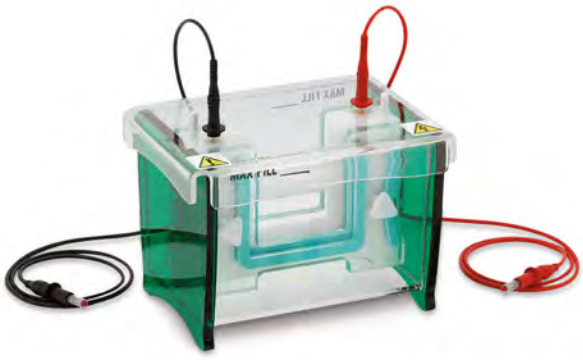
The GoPAGE™ ready-made gels **Mini (10 x 8,3 cm)** ideally fit into the chambers of the Bio-Rad® system as well as into similar small chambers of other manufacturers.

The **Midi gels (10 x 10 cm)** are well compatible with the vertical electrophoresis chambers from Roth (Art. No. Y001-Y004 and 3501-3503). Please refer to the table below for compatibility with chambers from other manufacturers.

Unit	10 x 10 cm
BioRad® Mini PROTEAN® I, II & III and Ready Gel® Cell	not comp.
CBS Scientific MGV System 10 x 8 cm unit	not comp.
CBS Scientific MGV System 11.3 x 10 cm unit	**yes**
Cleaver Scientific omniPAGE mini	**yes**
Fisher EC 120-2	**yes**
Fisher FBVE units	**yes**
Gibco BRL Mini-V8	not comp.
Hoefer Mighty Small SE 250*, 260 & 280	**yes**
Hoefer Mini VE	**yes**
Invitrogen Novex® Xcell Units (incl. MiniCell)	**yes**
Life Technologies - BioMetra® Mini V	not comp.
LONZA PAGE® Minigel Chamber	**yes**
Novex® Xcell Units (incl. MiniCell)	**yes**
peQLab Perfect Blue™ Twin S	**yes**
Scieplas TV50 and TV100	**yes**
Serva BlueVertical™ Mini Slab Gel System BV 102	**yes**
Sigma Aldrich Mini Techware 10 x 8 cm unit	not comp.
Sigma Aldrich Mini Techware 11.3 x 10 cm unit	**yes**
Thermo Scientific EC 120 mini vertical gel system	**yes**
Thermo Scientific Owl Penguin™ Modell P8DS-1	**yes**

Gels measuring 10 x 9 cm are also compatible with the Roth electrophoresis chambers. Some adapters are available to use these gels in chambers of other manufacturers.

▶ Roti®-PAGE adaptors for Biorad® PROTEAN and Invitrogen™ SureLock® units see Electrophoresis / Accessories page 1244



▶ Vertical electrophoresis units see page 1234

Rotiphorese®-Acrylamide Ready-Made Solutions

The right choice for each and every application

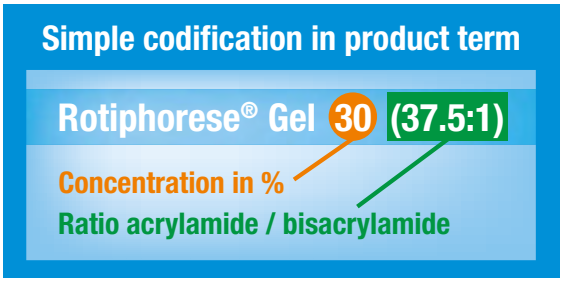
The large variety of different Rotiphorese®-solutions provides you with the right product for each and every application. Rotiphorese®-gel solution may be used both in protein and nucleic acid electrophoresis. Rotiphorese®-ready-to-use solutions for manual sequencing facilitate the preparation of sequencing gels of a constant high quality - also suitable for automatic sequencers.

Safe

Acrylamide ia a strong nerve poison which has clearly proved to be carcinogenic and to change the genetic make-up during animal testing. Acrylamide is resorbed primarily through the skin. The formation of dust when working with the solid matter is particularly critical.
A hazard which can be easily avoided by using the Rotiphorese® ready-to-use solution.

Superior quality

Rotiphorese®-Acrylamide and -Bisacrylamide solutions from ROTH have the highest purity level. They are produced from substances free from acrylic acid. Oxidation products are removed from the solution by a selective absorption process. A new formation of such and/or polymerisation of the solution is prevented by gaseous stabilisation of the solution.
In order to guarantee a high consistency of our Rotiphorese®-solutions, each batch undergoes electrophoretic testing.



Recommendation for Use of Rotiphorese® Ready-Made Gel Solutions

Analysis of	Gel solution	Art. No.
Proteins/peptides >15 kDa, DNA fragments and DNA/protein interaction	Gel 30 (37,5:1)	3029.1
	Gel 40 (37,5:1)	T802.1
Proteins/peptides <30 kDa and DNA oligonucleotides	Gel 40 (29:1)	A515.1
DNA sequences (manual sequencing)	Rotiphorese®-DNA sequencing system	A431.1
	Gel 40 (19:1)	3030.1
DNA sequences (short-run automat. sequencing)	NF solution 40 % (19:1)	A516.1
DNA sequences (long-run automat. sequencing)	NF solution 30 % (29:1)	A124.1
	NF solution 40 % (29:1)	A121.1

Ready-Made Solutions ready-to-use Acrylamide/Bisacrylamide-Mix

Rotiphorese® Gel 30 and Gel 40 are ready-to-use, gas-stabilised acrylamide solutions with different concentrations and with different ratios of acrylamide to bisacrylamide. Rotiphorese®-ready-to-use solutions can be used directly.

Rotiphorese® Gel 30 (37,5:1)

ready-to-use, gas stabilised, aqueous 30 % acrylamide and bisacrylamide stock solution at a ratio of 37,5:1
For preparation of protein gels in electrophoresis.
Storage temp.: +8 °C
Danger H302-H315-H317-H319-H340-H350-H361f-H372

3029.3	250 ml	glass	25,30 €
3029.2	500 ml	glass	39,25 €
3029.1	1 l	glass	66,55 €
Original pack 6 x 1 l			63,22/1 l

Rotiphorese® Gel 40 (19:1)

ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 19:1
Ideal for the preparation of sequencing gels and other DNA gels used for separating small DNA fragments.
Storage temp.: +8 °C
Danger H302+H332-H315-H317-H319-H340-H350-H361f-H372

3030.2	250 ml	glass	31,75 €
3030.1	1 l	glass	77,30 €
Original pack 6 x 1 l			73,44/1 l

Rotiphorese® Gel 40 (29:1)

ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 29:1
For preparation of protein- or DNA gels. Particularly ideal for the analysis of protein/DNA interactions, or peptides.
Storage temp.: +8 °C
Danger H302+H332-H315-H317-H319-H340-H350-H361f-H372

A515.2	250 ml	glass	34,30 €
A515.1	1 l	glass	82,70 €
Original pack 6 x 1 l			78,57/1 l

Rotiphorese® Gel 40 (37,5:1)

ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 37,5:1
For preparation of protein gels.
Storage temp.: +8 °C
Danger H302+H332-H315-H317-H319-H340-H350-H361f-H372

T802.2	250 ml	glass	30,65 €
T802.1	1 l	glass	74,10 €
Original pack 6 x 1 l			70,40/1 l

Acrylamide and Bisacrylamide Stock Solutions

PAGE solutions are always a mixture of acrylamide and bisacrylamide. Acrylamide forms linear polymers, whereas bisacrylamide crosslinks these linear polymers forming pores of a special size. The pore size may be altered by varying the total gel concentration (% T) and the percentage of the crosslink (% C). With the Rotiphorese® stock solutions the desired T/C rate can be produced. You need an acrylamide stock solution (Gel A or Gel A-40) and a bisacrylamide stock solution (Gel B).

For detailed instructions regarding gel preparation with Rotiphorese® Gel A, A-40 and B please see user manual and technical information brochure „PAGE Instructions“.

Rotiphorese® Gel A

30 % acrylamide solution

Storage temp.: +8 °C

Danger H302-H315-H319-H317-H340-H350-H361f-H372

Ready-to-use, stabilised 30 % acrylamide stock solution. In combination with Rotiphorese® Gel B (2 % bisacrylamide stock solution, Art. No. 3039) gels with up to 20 % total acrylamide concentration can be produced.

3037.2	250 ml	glass	21,40 €
3037.1	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l

Rotiphorese® Gel A-40

40 % acrylamide solution

Storage temp.: +8 °C

Danger H302+H332-H315-H319-H317-H340-H350-H361f-H372

Ready-to-use, stabilised 40 % acrylamide stock solution. In combination with Rotiphorese® Gel B (2 % bisacrylamide stock solution, Art. No. 3039) gels with up to 25 % total acrylamide concentration can be produced.

7748.1	250 ml	glass	28,95 €
7748.2	1 l	glass	68,70 €
Original pack 6 x 1 l			65,27/1 l

Rotiphorese® Gel B

2 % bisacrylamide solution

Storage temp.: +8 °C

Ready-to-use, stabilised 2 % bisacrylamide stock solution. In combination with Rotiphorese® Gel A (30 % acrylamide stock solution, Art. No. 3037) or Rotiphorese® Gel A-40 (40 % acrylamide stock solution, Art. No. 7748) gels with up to 25 % total acrylamide concentration can be produced

3039.2	250 ml	glass	20,35 €
3039.1	1 l	glass	47,85 €
Original pack 6 x 1 l			45,46/1 l

Please note our **Technical Information Brochure** on the Internet next to the products:

PAGE – polyacrylamide gel electrophoresis
General technical information

Rotiphorese® NF ready-to-use Ready-to-Use Solutions for Automated Sequencing

Rotiphorese® ready-to-use solutions for automated sequencing **are special fluorescence-free acrylamide/ bisacrylamide mixtures** of highest quality as required for automatic sequencing.
Made from 4x cristallised acrylamide.

Rotiphorese® NF-Acrylamide/ Bis-solution 30 % (29:1)

ready-to-use, gas stabilised, aqueous 30 % acrylamide and bisacrylamide stock solution at a ratio of 29:1, fluorescence free

Made from 4x cristallised acrylamide. Tested for automatic sequencers.
Storage temp.: +8 °C

Danger H302-H315-H317-H319-H340-H350-H361f-H372

A124.1	250 ml	glass	48,30 €
A124.2	1 l	glass	147,20 €
Original pack 6 x 1 l			139,84/1 l

Rotiphorese® NF-Acrylamide/ Bis-solution 40 % (19:1)

ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 19:1, fluorescence free

Made from 4x cristallised acrylamide. Tested for automatic sequencers.
Storage temp.: +8 °C

Danger H302+H332-H315-H317-H319-H340-H350-H361f-H372

A516.1	250 ml	glass	50,00 €

Rotiphorese® NF-Acrylamide/ Bis-solution 40 % (29:1)

ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 29:1, fluorescence free

Made from 4x cristallised acrylamide. Tested for automatic sequencers.
Storage temp.: +8 °C

Danger H302+H332-H315-H317-H319-H340-H350-H361f-H372

A121.1	250 ml	glass	40,35 €

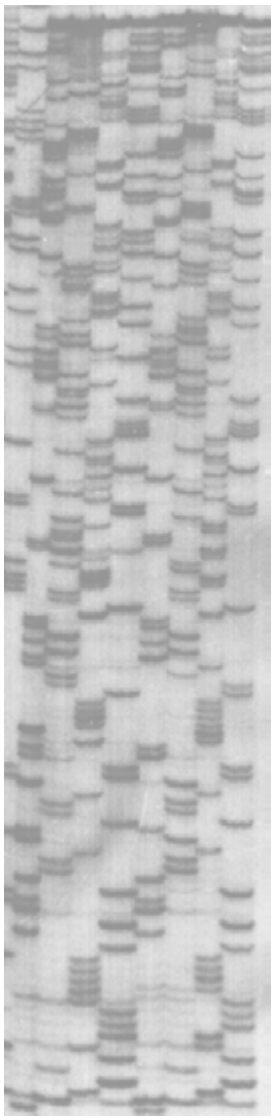
- Fluorescence free urea see page 1191
- Fluorescence free 10 x TBE buffer see page 1201

Instructions for use
can be found on the Internet next to the product description.

Fluorescence-free
NF acrylamide solutions are very well suited for application in fluorescence-labelled automated sequencing, e.g. using LI-COR or ABI slab gel sequencers.

Ready-Made Solutions for Manual Sequencing

- For preparing 4-20 % sequencing gels
- No tedious dissolving of urea
- Prevents acrylamide dusts
- Simple handling



Rotiphorese® DNA sequencing system

Set of ready-to-use solutions for preparation of DNA sequencing gels.
Storage temp.: +4-15 °C

Danger H340-H350-H372-H361f-H302-H315-H319-H317

Convenient set containing three ready-made solutions for easy and fast casting of sequencing gels. Solutions are produced in Rotiphorese® quality and are perfectly matched - providing superior, reproducible quality and high sequence resolution.
Handling is most simple: Measure and mix certain amounts of all three components, add APS and TEMED, and cast the gel.

The following components are included:
1 l Rotiphorese® sequencing gel concentrate (Art. No. 3043.1) - ready-to-use, stabilised solution of 25 % acrylamide/bisacrylamide 19:1 with 50 % urea (8,3 M).
1 l Rotiphorese® sequencing gel diluent (Art. No. 3047.1) - 50 % (g/v; 8,3 M) solution of urea in water.
250 ml Rotiphorese® sequencing gel buffer concentrate (Art. No. 3050.1) - 10x TBE with 50 % urea (8,3 M).
Detailed instructions-for-use are included in the set. One set is sufficient for 50 6 % gels (30 x 40 cm) with 40 % urea (e.g. in Roth Sequencing Electrophoresis Unit, Art. No. AE28.1).

A431.1	1 kit	glass	109,55 €

Rotiphorese® Sequencing gel concentrate

Ready-to-use solution (19:1) for the preparation of gels containing 0-20 % monomer, for electrophoresis.
Storage temp.: +4-15 °C

Danger H302-H315-H319-H317-H340-H350-H361f-H372

Ready-to-use, stabilised solution of 25 % acrylamide/bisacrylamide 19:1. For the preparation of polyacrylamide sequencing gels containing 0-20 % monomer; 23,75 % acrylamide,1,25 % methylene bisacrylamide and 50 % urea (8,3 M). Cross linking 5.
Also part of the DNA sequencing system (Art. No. A431.1).

3043.2	100 ml	glass	13,90 €
3043.1	1 l	glass	60,10 €
Original pack 6 x 1 l			57,10/1 l

Rotiphorese® Sequencing gel diluent

50 % (g/v; 8,3 M) solution of urea in water for diluting Rotiphorese® Sequencing gel concentrate.
Storage temp.: +4-15 °C
Also part of the DNA sequencing system (Art. No. A431.1).

3047.1	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l

Rotiphorese® Sequencing gel buffer concentrate

50 % (g/v; 8,3 M) solution of urea in 10x TBE (1 M Tris-borate, 20 mM EDTA buffer, pH 8,3), for electrophoresis.
Storage temp.: +4-15 °C

Warning H315-H319

Also part of the DNA sequencing system (Art. No. A431.1).

3050.1	250 ml	glass	25,30 €

Reagents for PAGE

Acrylamide, 2x cryst.

≥98 %, 2x cryst., extra pure

For gel electrophoresis

Propene amide, acrylic acid amide

C_3H_5NO

M 71,08 g/mol

Danger

H301-H312+H332-H315-H319-H317-H340-H350-H361f-H372

Standard acrylamide, inexpensive and versatile.
For all standard applications.

7871.1	500 g	plastic	50,00 €
Original pack 6 x 500 g			47,50/500 g
7871.2	1 kg	plastic	65,50 €
Original pack 6 x 1 kg			62,23/1 kg
7871.3	2,5 kg	plastic	127,95 €
7871.4	5 kg	plastic	212,35 €

Acrylamide, 4x cryst.

≥99,9 %, p.a., 4x cryst.

For gel electrophoresis.

Propene amide, acrylic acid amide

C_3H_5NO

M 71,08 g/mol

Danger

H301-H312+H332-H315-H319-H317-H340-H350-H361f-H372

Top-quality acrylamide, particularly suitable for sequencing gels and flourescence labelled applications.

7906.1	100 g	plastic	35,40 €
7906.3	250 g	plastic	76,90 €
7906.4	500 g	plastic	131,70 €
Original pack 6 x 500 g			125,12/500 g
7906.2	1 kg	plastic	240,30 €
Original pack 6 x 1 kg			228,29/1 kg

Acrylamide, BioScience

≥99,9 %, BioScience Grade, 4x cryst.

For molecular biology

Propene amide, acrylic acid amide

C_3H_5NO

M 71,08 g/mol

Danger

H301-H312+H332-H315-H319-H317-H340-H350-H361f-H372

Top-quality acrylamide for electrophoresis, especially suitable for molecular biological applications.

0189.1	100 g	plastic	42,90 €
0189.2	500 g	plastic	164,40 €
Original pack 6 x 500 g			156,18/500 g

Bisacrylamide

≥98 %, for gel electrophoresis

Bis, N,N'-Methylene bisacrylamide, MBAA

$C_7H_{10}N_2O_2$

M 154,17 g/mol

Storage temp.: +4 °C

Warning H302

7867.1	50 g	plastic	31,75 €
7867.2	100 g	plastic	50,00 €

Urea

≥99,5 %, p.a., BioScience-Grade

For molecular biology and biochemistry.

Carbamide

CH_4N_2O • M 60,06 g/mol

2317.3	500 g	plastic	31,10 €
Original pack 6 x 500 g			29,55/500 g
2317.1	1 kg	plastic	54,30 €
Original pack 6 x 1 kg			51,59/1 kg
2317.4	2,5 kg	plastic	119,90 €
2317.2	5 kg	plastic	209,65 €

Rotiphorese® NF-Urea

tested for automatic sequencers, fluorescence free

CH_4N_2O • M 60,06 g/mol

Storage temp.: +4 °C

A120.1	1 kg	plastic	66,15 €
Original pack 6 x 1 kg			62,84/1 kg

APS

≥98 %, p.a., ACS

Oxidizing agent for Cu, for separation of Mn and Cr. For electrophoresis. Polymerisation catalyst.

Ammonium persulphate, Ammonium peroxydisulphate

$(NH_4)_2S_2O_8$ • M 228,20 g/mo

Danger H334-H272-H302-H335-H315-H319-H317

Polymerisation catalyst for acrylamide/ bisacrylamide polymerisation.
Use 10 % APS solution - fill 1 g of APS with water to an end volume of 10 ml. Prepare freshly or store in aliquots at -20 °C. Freeze and thaw infrequently.

9592.3	50 g	plastic	10,25 €
9592.2	100 g	plastic	13,90 €
9592.5	500 g	plastic	28,95 €
Original pack 6 x 500 g			27,50/500 g
9592.1	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg
9592.4	2,5 kg	plastic	73,00 €

TEMED

≥99 %, p.a., for electrophoresis

N,N,N',N'-Tetramethylethylenediamine, 1,2-Bis(dimethylamino)-ethane

$C_6H_{16}N_2$ • M 116,21 g/mo

Danger H225-H302-H314-H332

Catalyst for acrylamide polymerisation; filled under argon. Working concentration, e.g. when preparing sequencing gels: 40 µl TEMED for 100 ml gel casting solution.

2367.3	25 ml	glass	19,90 €
2367.1	100 ml	glass	39,25 €
2367.2	250 ml	glass	78,40 €

TEMED

≥98,5 %, for synthesis

N,N,N',N'-Tetramethylethylenediamine, 1,2-Bis(dimethylamino)-ethane

$C_6H_{16}N_2$ • M 116,21 g/mol

Danger H225-H302-H314-H332

Catalyst for acrylamide polymerisation; filled under argon.
The solution may contain sediment. It can be filtered before use.
Lot-specific colour variation may range from slight to considerable yellow.

8142.1	100 ml	glass	27,45 €
8142.2	500 ml	glass	100,55 €
8142.3	1 l	glass	188,15 €

ready-to-use

Rotiphorese®-PAGE Matrix Buffer plus

4x concentrated SDS-PAGE matrix buffer, for electrophoresis

Ready-made buffer solution for pouring of optimized SDS-PAGE gels.

SDS-Page buffer, Gel matrix buffer

Storage temp.: +4 °C • Transport temp.: cooled

- Increases protein separation quality significantly
- Superior band dissemination from 5 kDa to 250 kDa
- Higher gel strength and longer shelf life
- Compatible with all common gel loading and running buffers
- Compatible with all common gel staining methods
- Also well suitable for 2D gels and prior to Western Blotting
- 250 ml sufficient for approx. 100 mini gels

Rotiphorese®-PAGE Matrix Buffer plus is a 4x concentrated gel matrix buffer for enhanced protein separation and significantly higher gel strenth. Rotiphorese®-PAGE Matrix Buffer plus can be used for preparation of both stacking gel and resolving gel by simply replacing the Laemmli/TRIS-, or TRICIN-, buffer system. Even gels with stacking gels of only one acrylamide concentration, show a protein separation quality comparable to that of gradient gels. Band depiction is significantly enhanced compared to standard buffer systems.
Rotiphorese®-PAGE Matrix Buffer plus also provides increased gel strength, making handling of the gels much more convenient, for instance during separation of the glass plates or during transport. Gel stability is increased, leading to longer shelf lifes of self-made gels. Gels prepared with Rotiphorese®-PAGE Matrix Buffer plus may also very well be used for 2D protein analysis or for subsequent Western Blotting onto NC or PVDF membranes.

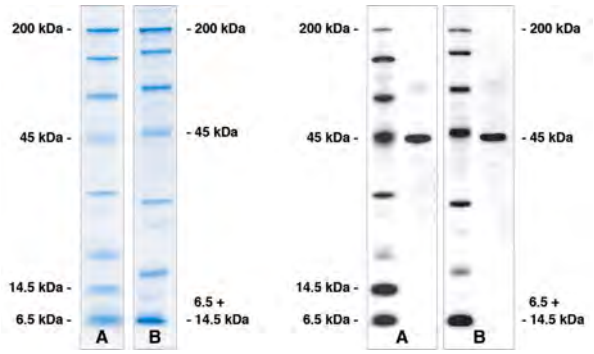


Figure 1 and 2:
Coomassie® stained gel and Western blot. HeLa extract on PVDF, detected via HRP chemoluminescence.
A: 10 % PAGE using Rotiphorese®-PAGE Matrix buffer plus,
B: 12 % PAGE using standard Tris glycine SDS buffer.

Figure 4:
Stability of a 6 % PA gel.

One bottle of 250 ml is sufficient for pouring of approx. 100 mini gels.

8996.1	250 ml	plastic	115,60 €

Roti®-Stock 20 % SDS

ready-to-use S

BioScience-Grade, ready-to-use, 0,2 µm filtered

For molecular biology and electrophoresis.

SDS 20 % ready-to-use solution

Danger H318-H315-H335

20 % stock solution sodium dodecyl sulphate. Store the solution away from light in a dry place. SDS-stock solution and other solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.
With original seal.

Composition:

20 % SDS in deionised water, 0,2 µm filtered

1057.1	1 l	glass	143,55 €
Original pack 6 x 1 l			136,37/1 l

SDS Pellets

≥99,5 %, Rotiphorese®-Grade, for electrophoresis

Anionic detergent

Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

$C_{12}H_{25}NaO_4S$

M 288,38 g/mol

Danger H302-H315-H318-H412

Ultrapure, dust-free SDS in special quality for electrophoresis.
Each batch is tested for its functionality in electrophoresis.

Guarantee analysis:

Appearance.....white rods
Assay (titration).....≥99,5 %
pH value (10 % in water).....6,5-9
Water (KF).....≤1,0 %
UV-absorption (20 % in H_2O):
410 nm.....≤0,1
Solubility (10 % in H_2O).....clear, colourless
Colour count (APHA, 10 % in H_2O).....≤10
Turbidity (10 %, water).....≤2,5 NTU
Chloride (Cl).....≤0,01 %
Lead (Pb).....≤0,0002 %

8029.1	100 g	plastic	27,45 €
8029.2	250 g	plastic	54,75 €
8029.3	500 g	plastic	94,50 €
Original pack 6 x 500 g			89,78/500 g
8029.4	1 kg	plastic	177,40 €
Original pack 6 x 1 kg			168,53/1 kg

Roti®fair 10% SDS

for 1000 ml/pouch, for biochemistry, molecular biology and electrophoresis

Anionic detergent for preparation of bioanalytical solutions.

SDS powder (pouch), Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

Danger H228-H302+H332-H315-H318-H335-H412

Exactly pre-weighed pouches for convenient and rapid preparation of SDS solution.
Prepared solution may be sterilized by filtration (0,22 µm). The solution should be stored at room temperature. SDS-stock solution and solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.
10 % SDS solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Formulation:

Prepared solution contains: 10 % SDS, pH value 3,0 ±0,05, when prepared in deionized or distilled water.

1157.1	5 pouches	box	618,15 €

Roti®fair SDS 0.5g

0,5 g/tablet, for biochemistry, molecular biology and electrophoresis

Anionic detergent for preparation of bioanalytical solutions.

SDS (tablet), Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

Danger H228-H302+H332-H315-H318-H335-H412

Exactly pre-weighed tablets for convenient and rapid preparation of SDS solution.
Roti®fair SDS 0.5g may also be used for preparation of SDS containing solutions, by adding the favoured number of SDS tablets directly during preparation of the solution.
Prepared solution may be sterilized by filtration (0,22 µm). The solution should be stored at room temperature. SDS-stock solution and solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.
10 % SDS solution is prepared by dissolution of 1 tablet in 5 ml highly pure water. Concentrations of 0,05-20 % may be prepared.

Formulation:

Prepared solution contains when prepared in deionized or distilled water: SDS in favoured concentration, dependent on the amount of water used.

1156.1	50 tablets	plastic	48,30 €

Roti®fair reagents

High-pure reagents and buffer mixes in pouches or as tablets.

▶ For a complete list, refer to the section entitled "Biochemistry"

Agaroses and Gelling Reagents

Our agarose Roti®garose is a neutral polysaccharide which is obtained in many purification steps from the cell wall of certain algae, called Rhodophyceae. Roti®garose forms very clear gels with all standard running buffers and will result in a sharp and clear separation of your biomolecules. Extremely pure agarose with very low interference binding to staining reagents. Roti®garose produces a low background and high contrast appearance after staining.

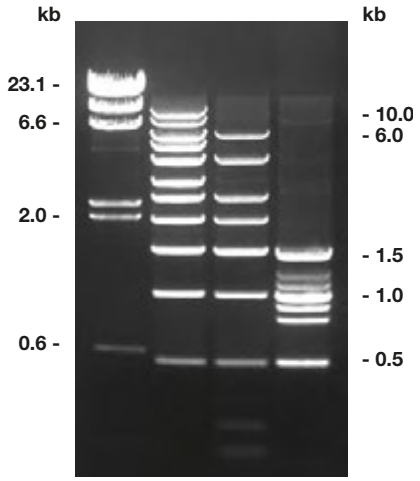
- For clear and sharp bands
- Gels with high transparency
- Low background
- Suitable for all standard running buffers and high-speed buffer systems
- Compatible with all nucleic acid staining systems
- Non-toxic in cell immobilisation assays
- Of course DNase and RNase free

Roth has the right agarose for every application:

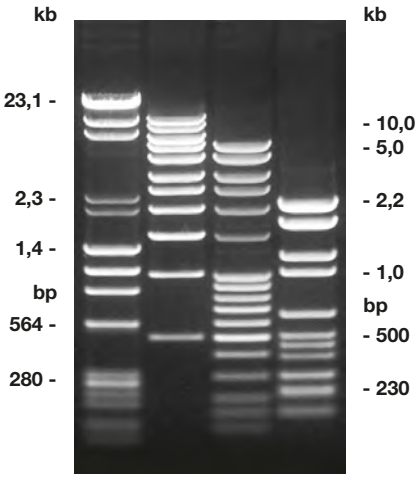
Roti®garose	Art. No.	Application
Standard	3810	Routine gels, student´s courses, general analyses (1-20 kb).
NEEO ultra quality	2267	All standard applications, qualitative and quantitative gels, screening and blotting. Range 500 bp-20 kb.
Agarose Tablets	HP67	Highly reproducible gels, or simple applications in students courses. Suitable for all standard-gels (0,5-0,25 %). For fragments ≥300 bp.
GTQ	6352	Genetic engineering quality, for DNA-elution of fragments ≥500 bp without melting the agarose*
Broad Range	T846	For the total analytical range (200 bp up to 40 kb), Pulsed-Field electrophoresis, blotting, shift assays. Ideal when only a few agaroses are to be used in the laboratory.
Pulsed-Field	3771	Separation of large fragments (up to 20 kb), Pulsed Field gel electrophoresis (PFGE)
HR PLUS	HP30	Analysis of fragments between 100 and 3000 bp
High Resolution	K297	Analysis of fragments between 50 and 1000 bp
Low Melt	6351	With low melting and gelling temperatures (MT ≤65,5 °C, GT ≤28 °C). For gel elution from melted agarose. Range 500 bp-20 kb.
LM / PCR	HP31	Genetic engineering quality with low melting and gelling temperatures (MT ≤65 °C, GT ≤35 °C). For DNA-elution of fragments <1500 bp from melted agarose.
Super LM	HP45	With extremely low melting and gelling temperatures. (MT ≤62 °C, GT ≤20 °C). For gel elution from melted agarose. Recommended for in-gel analysis, capillary electrophoresis and cell and tissue culture. For fragments ≥1000 bp.
MEEO ultra quality	2268	With medium EEO. For immune, serum and antibody electrophoresis. Range 500 bp-10 kb.
HEEO ultra quality	2269	With high EEO. For protein precipitation and countercurrent electrophoresis.
Synergel®	0184	Agarose additive for finer pore formation. Increases the separative power of the agarose. For fragments from 10 bp up.

* **Tip:** Use Kit Roti®-Prep Gel Extraction (Art. No. 8510.1)

1.2 % agarose in 1 x TAE



1.2 % agarose in 1 x TAE



Agarose Standard

RNAse-/DNAse-free

Roti®garose for DNA/RNA-electrophoresis

General agarose for routine gels, student's courses, and standard analyses (1 kb-20 kb).

- Inexpensive agarose for routine gels and standard analyses
- Good separation efficiency for nucleic acids of 1 to 20 kb length
- Easily melting, non-foaming agarose
- Low background fluorescence after ethidium bromide staining
- Very cost-effective

Figure (left to right): Roth Lambda *Hind* III Marker (Art. No. X910.1) 0,6 µg, 1 kbp DNA Ladder (Art. No. Y014.1) 0,8 µg, DNA-Marker short-run *extended* (Art. No. CL05.1) 0,4 µg, PCR-Marker DNA*score* (Art. No. T146.1) 0,5 µg.

Guarantee analysis:

Electroendosmosis (EEO).	≤0,12
Sulphate (SO_4).	≤0,15 %
Loss on drying.	≤10 %
Ash.	≤0,6 %
Gel strength (1 % gel).	≥1100 g/cm²
Gelling temperature (1,5 % gel).	36 ±2 °C
Melting temperature (1,5 % gel).	90-95 °C
DNases, RNases.	none detected

3810.1	10 g	plastic	17,10 €
3810.2	100 g	plastic	69,35 €
3810.3	500 g	plastic	274,15 €
Original pack 6 x 500 g			260,44/500 g
3810.4	1 kg	plastic	439,70 €
Original pack 6 x 1 kg			417,72/1 kg

Agarose NEEO ultra-quality

RNAse-/DNAse-free

Roti®garose low electroendosmosis (EEO = 0,05-0,13)

High-quality agarose for all general applications (500 bp-20 kb).

- Excellent separative power for nucleic acids of 500 bp to 20 kb
- High gel strength for stable gels and good handling
- Extremely low EEO allows speedy and efficient separation of nucleic acid molecules
- Fast melting, non-foaming agarose

Figure: (left to right) Roth Lambda *Hind* III / phiX *Hae* III marker (Art. No. CP49.1) 1 µg, 1 kbp DNA-ladder (Art. No. Y014.1) 0,8 µg, 100 bp-DNA-ladder *extended* (Art. No. T835.1) 0,8 µg, pBR328 Mix I (Art. No. T146.1) 0,8 µg.

Guarantee analysis:

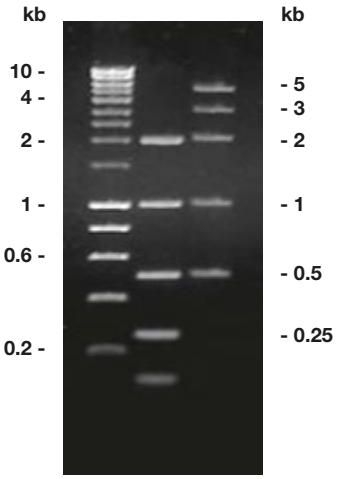
Electroendosmosis (EEO).	≤0,12
Water content.	≤8,5 %
Ash.	≤0,6 %
Sulphate (SO_4).	≤0,14 %
Gel strength (1 % gel).	≥1200 g/cm²
Gelling temperature (1,5 % gel).	36 ±2,0 °C
Melting temperature (1,5 % gel).	90-95 °C
DNases, RNases.	none detected

2267.1	10 g	plastic	19,90 €
2267.2	100 g	plastic	95,15 €
2267.5	250 g	plastic	214,50 €
2267.4	500 g	plastic	407,45 €
Original pack 6 x 500 g			387,08/500 g
2267.3	1 kg	plastic	686,95 €
Original pack 6 x 1 kg			652,60/1 kg

Please note our **Technical Information Brochure** on the Internet next to the agaroses:

Roti®garoses and gel electrophoresis.

1 % agarose in 0.5 x TBE



Agarose-Tablets

RNAse-/DNAse-free

Roti®garose 0,5 g agarose/tablet

Standard agarose with low EEO, for routine analyses (≥300 bp).

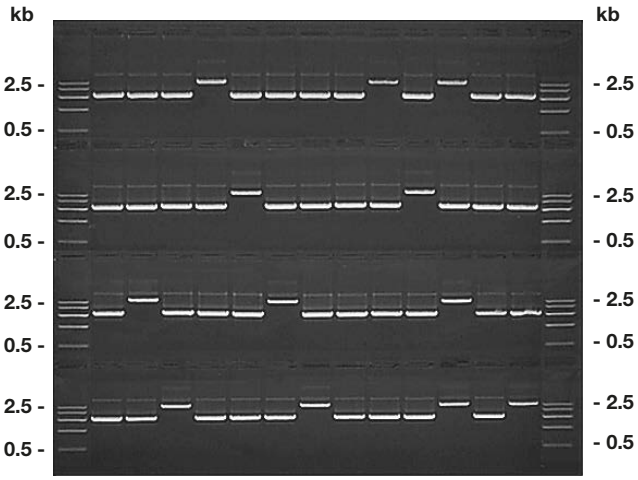
- Easy-to-use and safe tablets for constant gel strength and well reproducible gels
- Reliable agarose for routine analyses
- for detection of inserts or PCR amplificates of over 300 bps
- Agarose with high gel strength, applicable from 0,5 to 2,5 %
- Compatible with all standard running buffers and nucleic acid-staining methods

Guarantee analysis:

Electroendosmosis (EEO). 0,05-0,1
Water content. ....<10 %
Sulphate (SO_4). ....<0,2 %
Gel strength (1,5 % gel). ....≥1200 g/cm²
Gelling temperature. ....37 ±2,0 °C
Melting temperature. ....89 ±1,0 °C
DNases, RNases. ....none detected

HP67.1	10 g	plastic	24,65 €
HP67.2	50 g	plastic	78,40 €
HP67.3	100 g	plastic	142,45 €
HP67.5	300 g	plastic	392,40 €

1.5 % agarose in 1 x TAE



Agarose GTQ

RNAse-/DNAse-free

Roti®garose genetic engineering quality

Especially tested agarose for gel elution and biomolecular approaches (500 bp-20 kb).

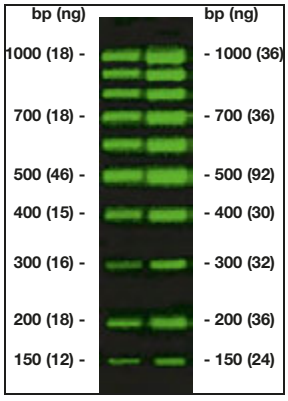
- Genetic technology quality (GTQ)
- For preparative DNA/RNA-electrophoresis of 500 bp to 20 kb
- Recommended for all molecular-biological routine methods like blotting, cloning, sequencing etc.
- No DNA binding
- No inhibition of restriction enzymes and ligases
- Particular low gel background after ethidium bromide staining

Figure: High-through put screening with very short running distance. Plasmids of 2,65 and 4,36 kb. Lanes 1 and 15: Roth DNA marker short run 1 (Art. No. 0146.1) 0,2 µg per lane.

Guarantee analysis:

Electroendosmosis (EEO). ....≤0,11
Water content. ....≤8 %
Ash. ....≤0,5 %
Sulphate (SO_4). ....≤0,1 %
Gel strength (1 % gel). ....≥1200 g/cm²
Gel strength (1,5 % gel). ....≥2300 g/cm²
Gelling temperature. ....36 ±2,0 °C
Melting temperature. ....92 ±2,0 °C
DNases, RNases. ....none detected
DNA binding. ....none detected

6352.1	10 g	plastic	26,35 €
6352.2	100 g	plastic	160,20 €
6352.4	500 g	plastic	661,15 €
Original pack 6 x 500 g			628,09/500 g

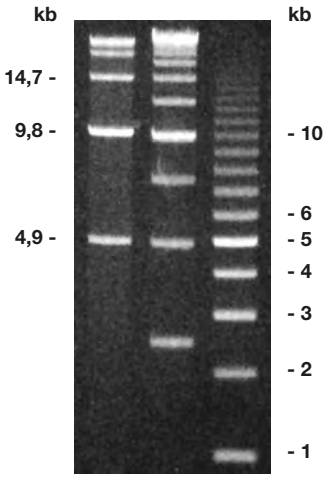


Agarose as Gelling Reagent

Chemically, agarose is a galactan which is capable of forming extremely solid gels, even at a low concentration. The pore size of the gels is determined by the concentration of the agarose used. Because there are no ionic groups in the gel, hydrophilic materials without any interaction with the gel matrix will also be separated according to their size. The high hysteresis of the agarose, that is the thermal stability after solidification, ensures that the gels remain reliably stable even during heat-producing running conditions.

▶ **Roti®-GelStain Red, Roti®-GelStain** and **Roti®-Load DNAstain** – non-toxic ready-made solutions for fluorescent staining see page 1220

0.5 % agarose in 1 x TAE



Agarose Broad Range

RNAse-/DNAse-free

Roti®garose BioScience-Grade

For gel electrophoresis, total size range (200 bp-40 kb).

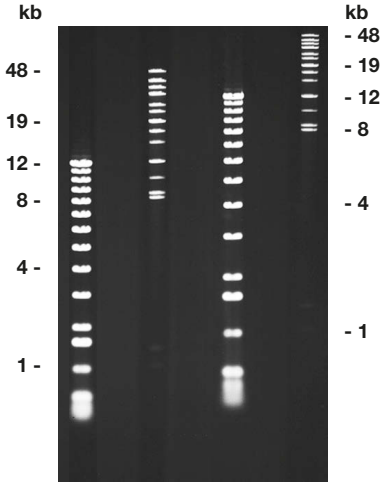
- High-molcular linear polymer of particularly high DNA mobility in electrophoresis
- The ideal choice for Pulse Field gel electrophoresis
- Excellent for resolving DNAfragments between 200 bp and 40 kb in conventional gel electrophoresis
- Low EEO allows speedy and efficient resolution of very large DNA-molecules
- Extremely high gel strength guarantees good handling even at low concentrations of 0,3 % agarose
- Also suitable for separation of particles like ribosomes, virions or chromosomes

Guarantee analysis:

Electroendosmosis (EEO).	≤0,12
Ash content.	≤0,25 %
Sulphate (SO_4).	≤0,12 %
Turbidity (1,5 % solution).	≤4 NTU
Loss on drying.	≤7 %
Gel strength (1 % gel).	≥1800 g/cm²
Gel strength (1,5 % gel).	≥3200 g/cm²
Gelling temperature.	34,5-37,5 °C
Melting temperature.	86,5-89,5 °C
DNA-separation (≥1000 bp).	complies
DNases, RNases.	none detected

T846.1	10 g	plastic	25,30 €
T846.2	100 g	plastic	131,05 €
T846.3	500 g	plastic	553,65 €
Original pack 6 x 500 g			525,97/500 g

0.3 resp. 0.5 % agarose in 1 x TAE



Agarose Pulsed-Field

RNAse-/DNAse-free

Roti®garose for Pulsed Field electrophoresis, genetic engineering quality

Special agarose for separation of large fragments (20-50 kb).

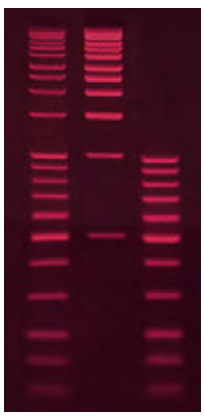
- Optimised for separation of fragments of 20 to 50 kb or for Pulsed Field Gel Electrophoresis (PFGE)
- High gel-strength agarose for tearproof gels that are easy to handle
- High DNA mobility for fast and efficient gel electrophoresis
- Low background fluorescence after ethidium bromide staining
- In general, suitable for separation of fragments larger than 1000 bp
- Tested for absence of DNAses, RNAses and DNA binding

Figure (left to right): 0,3 % Agarose Pulsed-Field, extended 1kbp Ladder (1 µg) and High Molecular Weight Marker (0,3 µg, heated for 10 mins. at 65 °C); then same markers on 0,5 % Agarose Pulsed-Field.

Guarantee analysis:

Electroendosmosis (EEO).	≤0,05
Sulphate (SO_4).	≤0,10 %
Loss on drying.	≤10 %
Gel strength (1 % gel).	≥1800 g/cm²
Gelling temperature.	36 ±1,5 °C
Melting temperature.	90-95 °C
DNases, RNases.	none detected

3771.1	10 g	plastic	30,65 €
3771.2	25 g	plastic	55,80 €
3771.3	100 g	plastic	170,95 €
3771.4	250 g	plastic	349,40 €



▶ **Ethidium bromide solutions -** as high concentrated stock solution or ready-to-use in convenient dropper bottles see page 1222

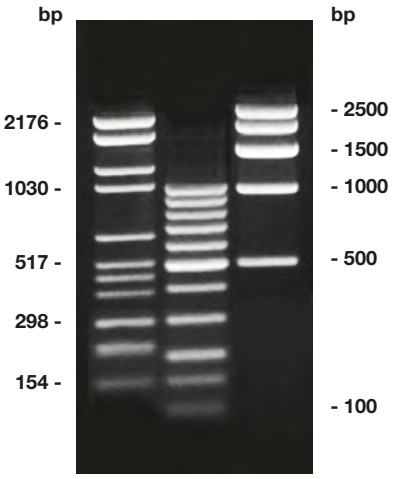
Electroendosmosis (EEO)

Osmotic liquid migration caused by electric current

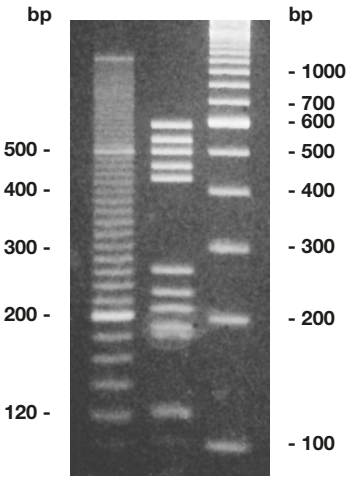
In gel matrices of agarose gels, minor impurities caused by cations (sulphate ester) are frequent. When an electric field is applied they move in the direction of the cathode, generating an electroosmotic flow (EOF) of the entire aqueous medium towards the negative pole. The migration speed of the flow depends, amongst other things, on the strength of the electric field and the frictional force generated by the gel matrix. The EOF always runs in the direction of the cathode, that is opposite to the movement of the anions separated during nucleic acid electrophoresis, and slows down their migration.

In the event of an agarose with high EEO, many cations are present, which generate a strong EOF. Furthermore, the gel strength is low, causing only weak frictional force. The strong EOF can lead to a change of behaviour during the run of the negatively-charged molecules (DNA/RNA) when using the agarose MEEO or HEEO. In extreme case anions with low self-mobility can even be diverted and transported in the direction of the cathode, causing band shifting.

1.5 % agarose in 1 x TAE



3 % agarose in 1 x TAE



Agarose HR-PLUS

RNAse-/DNAse-free

Roti®garose for analytical gels

Special agarose for use in the main analytical range (100 bp-3 kb).

- Reliable agarose for routine analyses in the range of 100 to 3000 bp
- Superior separation efficiency and high gel strength, usable in concentrations of up to 3 % agarose
- Very well suited for analysis of PCR amplificates, restriction digests and for blotting
- Low gel background
- Compatible with all standard nucleic acid-staining methods
- Separation range in 1 x TAE:
  1 % proof agarose gel: 1000-3000 bp
  1,5 % proof agarose gel: 300-2000 bp
  2,5 % proof agarose gel: 100-1000 bp

Guarantee analysis:

Electroendosmosis (EEO).	≤0,12
Water content.	≤7 %
Ash.	≤4 %
Sulphate (SO_4).	≤0,11 %
Gel strength (1,5 % gel).	≥1500 g/cm²
Gelling temperature (1,5 % gel).	~36 °C
Melting temperature (1,5 % gel).	~88 °C
Turbidity (1,5 % solution).	≤4 NTU
DNases, RNases.	none detected
DNA binding.	very low

HP30.1	10 g	plastic	46,80 €
HP30.2	100 g	plastic	289,20 €
HP30.3	500 g	plastic	1106,20 €
Original pack 6 x 500 g			1050,89/500 g

Agarose High Resolution

RNAse-/DNAse-free

Roti®garose for small fragments

Special agarose for PCR gels and small DNA fragments (50 bp-1 kb).

- High resolution of PCR-products and DNA fragments in the 50-1000 bp range
- Low gel background after staining, even for highly concentrated gels
- Can be used in concentrations of up to 5 % agarose
- Low DNA binding and low EEO for efficient separation of very small fragments
- Tip: cool the gel for 30 mins. at 4-8 °C before use for superior separation
- Separation range in 1 x TAE:
  1,8 % proof agarose gel: 500-1000 bp
  3,0 % proof agarose gel: 150-600 bp
  4,5 % proof agarose gel: 50-350 bp

Guarantee analysis:

Electroendosmosis (EEO).	≤0,12
Water content.	≤7 %
Ash.	≤0,35 %
Sulphate (SO_4).	≤0,11 %
Gel strength (1,5 % gel).	≥600 g/cm²
Gel strength (3 % gel).	≥1500 g/cm²
Gelling temperature (3 % gel).	≤35,5 °C
Melting temperature (3 % gel).	≤80 °C
Turbidity (1,5 % solution).	≤5 NTU
DNases, RNases.	none detected

K297.1	10 g	plastic	55,80 €
K297.2	100 g	plastic	360,15 €
K297.3	500 g	plastic	1558,75 €
Original pack 6 x 500 g			1480,81/500 g

Agarose MEEO ultra-quality

Roti®garose medium electroendosmosis (EEO = 0,16-0,19)

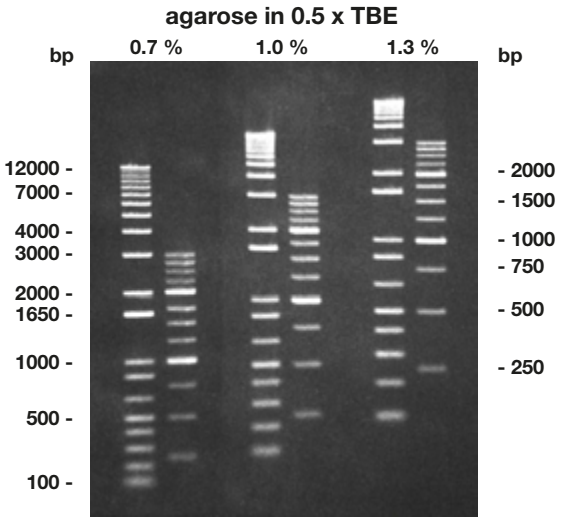
Special agarose for immuno, countercurrent, serum and antibody electrophoresis (500 bp-10 kb).

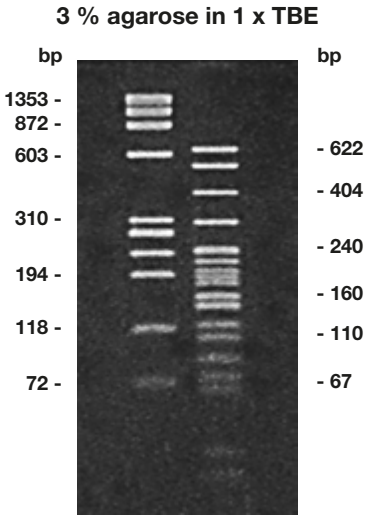
- Suitable for separation of nucleic acids between 500 bp and 10 kb
- Gels are well-to-handle and have a strong matrix, even when using thin gels of 1-2 mm

2268.1	10 g	plastic	21,20 €
2268.2	100 g	plastic	117,75 €
2268.4	500 g	plastic	489,15 €
Original pack 6 x 500 g			464,69/500 g
2268.3	1 kg	plastic	815,95 €
Original pack 6 x 1 kg			775,15/1 kg

Guarantee analysis:

Electroendosmosis (EEO).	0,16-0,19
Water content.	≤7 %
Ash.	≤0,5 %
Sulphate (SO_4).	≤0,14 %
Gel strength (1 % gel).	≥1000 g/cm²
Gel strength (1,5 % gel).	≥2200 g/cm²
Gelling temperature (1,5 % gel).	36 ±1,5 °C
Melting temperature (1,5 % gel).	88 ±1,5 °C
Turbidity (1,5 % solution).	≤4 NTU





Agarose Low Melt

RNAse-/DNAse-free

Roti®garose with low melting and gelling temperature

Particularly for gel elution and in-gel-application in a wide size range (500 bp-20kb).

Hydroxyethyl agarose

- Low melting point and low gelling temperature
- High transparency and very low self fluorescence. For particular clear gels.
- The ideal solution when nucleic acid fragments or proteins are to be recovered after electrophoretic resolution
- Suitable for enzymatic reactions in liquid agarose (in-gel-applications)
- Excellent for immobilising microorganisms and virus-plaque-assays
- Suitable for cell culture applications (animal and plant)
- Tested for stability after autoclaving

Guarantee analysis:

Electroendosmosis (EEO).	≤0,12
Water content.	≤7 %
Ash.	≤0,4 %
Sulphate (SO_4).	≤0,12 %
Gel strength (1,5 % gel).	≥500 g/cm²
Gelling temperature (1,5 % gel).	≤28 °C
Melting temperature (1,5 % gel).	≤65,5 °C
Turbidity (1,5 % solution).	≤4 NTU
DNases, RNases.	none detected

6351.1	5 g	plastic	38,60 €
6351.5	25 g	plastic	158,60 €
6351.2	100 g	plastic	553,65 €
6351.4	500 g	plastic	2213,45 €
Original pack 6 x 500 g			2102,78/500 g

Agarose LM/PCR

RNAse-/DNAse-free

Roti®garose with low melting and gelling temperature, genetic engineering quality

Particularly for gel elution of small fragments (50 bp-1500 bp).

Hydroxyethyl agarose

High resolution low melting agarose in genetic engineering quality. For optimal fragment separation, DNA recovery and cloning of PCR amplificates.

- Low melting point and low gelling temperature
- Fine resolution of fragments from 50 to 1500 bp
- Very well suited for analysis and recovery of PCR amplificates and fragments derived from restriction digests
- Also well suitable for in-gel-applications
- Low gel background, compatible with all standard nucleic acid-staining methods
- Low viscosity agarose, recommended for use in concentrations of 3 to 6 % agarose. Note: gels of 2 % agarose and lower are fragile

Guarantee analysis:

Electroendosmosis (EEO).	≤0,13
Water content.	≤7 %
Ash.	≤0,45 %
Sulphate (SO_4).	≤0,12 %
Gel strength (4 % gel).	≥800 g/cm²
Gelling temperature (4 % gel).	≤35 °C
Melting temperature (4 % gel).	≤65 °C
Turbidity (4 % solution).	≤6 NTU
DNases, RNases.	none detected
DNA binding.	none detected
In-gel-processing.	complies
Agarase digest.	complies

HP31.1	5 g	plastic	41,85 €
HP31.2	100 g	plastic	557,95 €
HP31.3	250 g	plastic	1084,70 €

Agarose HEEO ultra-quality

Roti®garose high electroendosmosis (EEO = 0,23-0,26)

Special agarose for protein separation and countercurrent electrophoresis.

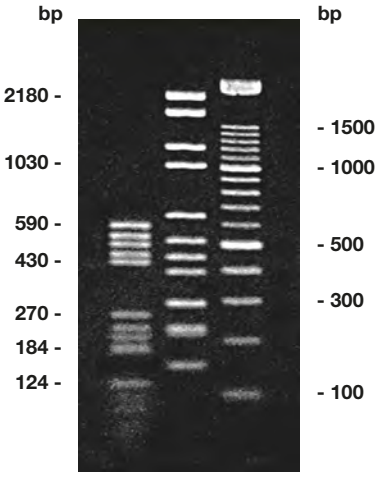
- Gels are well-to-handle and have a strong matrix, even when using thin gels of 1-2 mm
- Very clear and transparent matrix, even for thick gels

2269.1	10 g	plastic	22,50 €
2269.2	100 g	plastic	123,65 €
2269.3	1 kg	plastic	858,95 €
Original pack 6 x 1 kg			816,00/1 kg

Guarantee analysis:

Electroendosmosis (EEO).	0,23-0,26
Water content.	≤7 %
Ash.	≤1,0 %
Sulphate (SO_4).	≤0,2 %
Gel strength (1 % gel).	≥750 g/cm²
Gel strength (1,5 % gel).	≥1200 g/cm²
Gelling temperature (1,5 % gel).	36 ±1,5 °C
Melting temperature (1,5 % gel).	88 ±1,5 °C
Turbidity (1,5 % solution).	≤4 NTU

1.8 % agarose in 1 x TAE



Agarose Super LM

RNAse-/DNAse-free

Roti®garose with particularly low melting and gelling temperature

Particularly for gel elution from melted agarose, capillary electrophoresis and in-gel processing (≥1000 bp).

Hydroxyethyl agarose

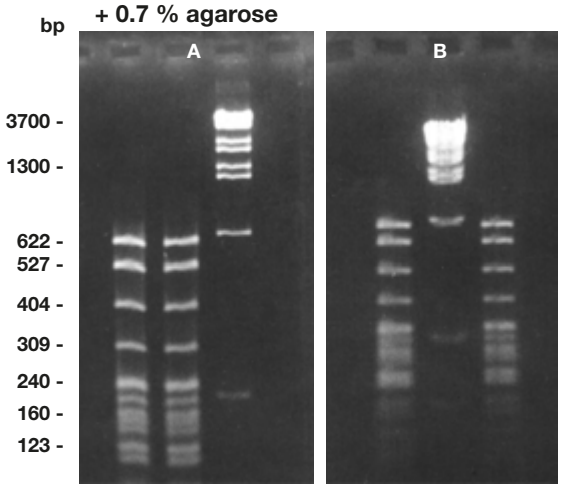
- Fine resolution of fragments over 1000 bp
- Very well suited for analysis and recovery of longer PCR amplificates or other longer fragments like vectors, rare cutter digestions etc.
- Recommended for in-gel-applications, virus plaque-assays and tissue/cell culture applications
- Low gel background, compatible with all standard nucleic acid-staining methods
- Lower gel strength than Agarose Low Melt. Recommended for use in concentrations of over 1 % agarose

Guarantee analysis:

Electroendosmosis (EEO).	≤0,12
Water content.	≤7 %
Ash.	≤0,35 %
Sulphate (SO_4).	≤0,14 %
Gel strength (1,5 % gel).	≥300 g/cm²
Gelling temperature (1,5 % gel).	≤20 °C
Melting temperature (1,5 % gel).	≤62 °C
Turbidity (1,5 % solution).	≤4 NTU
DNases, RNases.	none detected

HP45.1	5 g	plastic	40,75 €
HP45.2	100 g	plastic	568,70 €
HP45.3	250 g	plastic	1116,95 €

1.5 % Synergel™ + 0.7 % agarose **4 % agarose**



Synergel™

RNAse-/DNAse-free

≥99 %, for gel electrophoresis

Agarose additive

Storage temp.: +20 °C

- Enhances separation of nucleic acid fragments
- For extremely clear gels

Synergel™ is a synergistic gelling and sieving agent consisting of a modified polysaccharide which, when combined with agarose, forms a hydrogen bonded binary gel system. The addition of Synergel™ to agarose improves gel performance by providing superior separation and definition of DNA fragments up to 30 kb. A gel mixture containing 0,7 % agarose and 0,7 % Synergel™, e.g., will produce improved results when compared to a 2 % agarose-only gel. Synergel™ also provides greater optical clarity, which allows higher quality photodocumentation of stained gels.

Figure 1 compares separation qualities of **A:** 1,5 % Synergel™ / 0,7 % agarose and **B:** 4 % high-resolution agarose (NuSieve®). Please see also figures for pUC19 markers T149 and X901.

Standard buffer systems like phosphate, acetate or borate buffered Tris-EDTA may be used in forming the gel. RNA may also be separated in this system by using a 2,2 M formaldehyde-containing buffer. Nucleic acid may be electroeluted or transferred to membranes following standard Southern/Northern blotting protocols.

Type analysis:

Colour.	white to almost white powder
Odour.	slightly salty
pH (1 % solution).	9
DNase, RNase.	none detected

0184.2	10 g	plastic	31,10 €
0184.1	100 g	plastic	218,15 €

Please note our **Technical Information Brochure** on the Internet next to the agaroses:

Roti®garoses and gel electrophoresis.

How to Calculate Required Synergel™

1. What percentage agarose gel is currently being used?
2. The gel will inevitably contain 0.7 % agarose (the minimum agarose concentration required to ensure gel stability). Hence, subtract 0.7 % from the agarose total.
3. Divide the difference by 2. The result is the percentage of Synergel™ to be added to the 0.7 % agarose.

Example:

Convert a 1 % agarose to a 1 % Synergel™/agarose gel

a. Substract 0.7 % from the 1 % agarose: 1 % - 0.7 % = 0.3 %
b. Divide the difference by 2: 0.3 % : 2 = 0.15 %
c. 0.15 % (150 mg / 100 ml) is the amount of Synergel™ added to 0.7 % agarose (0.7 g / 100 ml) to produce the functional equivalent of a 1 % agarose gel.

Carrier Ampholytes
Roti®lyte

40 % solution in water, sterile filtered (0,2 µm)
Carrier ampholytes for isoelectric focussing (IEF).

- Reliable formation of a finely graded linear pH gradient
- Sharp band resolution due to high buffer capacity at pI
- High conductivity, no overheating of the gel
- Short staining- and destaining periods
- Compatible with all standard staining methods

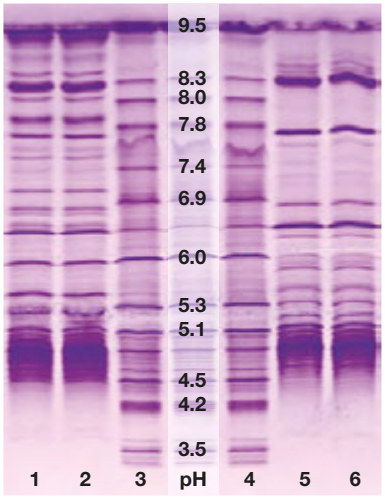


Figure:
pH range 3-10, gel thickness 350 µm
Lanes 1, 2, 5, 6: Potato extracts (10 µl)
Lanes 3, 4: Protein standard (10 µl)

Roti®lyte carrier ampholytes consist of a diverse mixture of sterile filtered hydrous polyamino-polysulfone-polycarboxylic acids. Due to the multitude of isoelectric points (pIs) present, those amphoteric molecules form a very finely graded, linear pH gradient in the electric field, hence making them particularly suitable for isoelectric focusing (IEF).
Roti®lyte carrier ampholytes excel by their high buffer capacity and conductivity, leading to excellent band definition. Even proteins differing by just 0,01 pH units may be discriminated efficiently. Due to their low molecular weight of 1000 Da in maximum, the ampholytes disperse quickly in the gel, therefore guaranteeing an even distribution of sample proteins during IEF. Since there is virtually no unspecific binding of dyes, no background staining happens, and Roti®lyte ampholytes are perfectly compatible with all standard staining methods. They are well soluble in trichloroacetic acid, and may easily be removed from the gel during subsequent fixation.

Store unopened bottles at +4 °C. Opened bottles should be aliquoted and stored at -20 °C. Avoid frequent freeze and thaw cycles. Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

Product	Concentration	Conductivity (mS/cm)	pH lower limit	pH upper limit	Art. No.	Pack qty. (ml)	€
Roti®lyte pH 3-5	40 %	0,1-0,3	3,0±0,5	5,1±0,5	**5834.1**	10	211,25
					5834.2	25	470,35
Roti®lyte pH 3-6	40 %	0,05-0,5	3,3±0,3	6,2±0,5	**5835.1**	10	201,60
					5835.2	25	448,20
Roti®lyte pH 3-7	40 %	0,2-0,7	3,3±0,3	7,0±0,5	**5839.1**	10	201,60
					5839.2	25	448,20
Roti®lyte pH 3-10	40 %	0,2-0,9	3,3±0,3	10,0±0,6	**5841.1**	10	190,20
					5841.2	25	392,40
Roti®lyte pH 4-6	40 %	0,1-0,2	4,0±0,5	6,1±0,5	**5845.1**	10	211,25
					5845.2	25	470,35
Roti®lyte pH 4-7	40 %	0,1-0,2	4,0±0,2	7,0±0,2	**5850.1**	10	200,95
					5850.2	25	448,20
Roti®lyte pH 5-6	40 %	0,05-0,5	5,3±0,3	6,2±0,5	**5851.1**	10	211,25
					5851.2	25	470,35
Roti®lyte pH 5-7	40 %	0,1-0,2	5,0±0,5	7,1±0,5	**5856.1**	10	211,25
					5856.2	25	470,35
Roti®lyte pH 5-8	40 %	0,1-0,5	5,0±0,5	8,0±0,6	**5857.1**	10	200,95
					5857.2	25	448,20
Roti®lyte pH 6-7	40 %	0,1-0,2	6,0±0,2	7,0±0,2	**5858.1**	10	211,25
					5858.2	25	470,35
Roti®lyte pH 6-8	40 %	0,15-0,55	6,2±0,4	8,0±0,5	**5860.1**	10	211,25
					5860.2	25	470,35
Roti®lyte pH 7-9	40 %	0,2-0,9	7,0±0,3	9,0±0,3	**5861.1**	10	211,25
					5861.2	25	470,35
Roti®lyte pH 8-10	40 %	0,1-0,3	7,5±0,5	9,5±0,6	**5864.1**	10	211,25
					5864.2	25	470,35

For additional product data and safety information, see chapter Chemicals A-Z.

Electrophoresis Gel Buffer Solutions

Time sparing ready-made buffers saving valuable time and significantly reducing your effort to prepare electrophoresis buffers. Each batch is manufactured from reagents of the highest purity and is subsequently filtered.

For gel electrophoresis and molecular biology. ready-to-use

Rotiphorese® 10x SDS-PAGE

10x concentrated SDS-PAGE running buffer, for electrophoresis.

Tris-glycine-SDS buffer

Solution consisting of 0,25 M Tris, 1,92 M glycine and 1 % (w/v) SDS in distilled, deionised water for protein analysis.
Acc. to Laemmli (1970), *Nature* 227:680.

3060.1	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
3060.3	2,5 l	glass	69,35 €
Original pack 4 x 2,5 l			65,88/2,5 l
3060.2	5 l	plastic	98,80 €
Original pack 2 x 5 l			93,86/5 l

Rotiphorese® 10x TBE Buffer

10-times concentrated buffer

Ideal for preparation of sequencing gels and as running buffer in electrophoresis.

Storage temp.: +20 °C

Danger H315-H319-H360FD

Containing 1,0 M Tris-Borate pH 8,3 and 20 mM EDTA in distilled, deionised water; pH 8,3. Suitable for manufacturing sequencing gels with Rotiphorese® Gel 40 and as a running buffer.
Mix before use!

3061.1	1 l	glass	28,50 €
Original pack 6 x 1 l			27,08/1 l
3061.3	2,5 l	glass	57,95 €
Original pack 4 x 2,5 l			55,05/2,5 l
3061.2	5 l	plastic	89,80 €
Original pack 2 x 5 l			85,31/5 l

Rotiphorese® NF 10 x TBE Buffer

Ready-to-use 10x TBE-buffer for preparing sequencing gels, also tested and optimised as running buffer in electrophoresis for automatic sequencers, fluorescence-free.

Storage temp.: +20 °C

Warning H315-H319

10-times concentrated buffer formulated specially for automated sequencing. 10x stock solution contains 0,89 M Tris-Borate and 22 mM EDTA in distilled, deionised water; pH 8,3. Suitable for manufacturing sequencing gels with Rotiphorese®-NF Acrylamide/Bis-solution 40 % (19:1) and as running buffer.
Mix before use!

A118.1	2,5 l	glass	100,95 €
Original pack 4 x 2,5 l			95,90/2,5 l

Concerning the Rotiphorese® buffers 10x TAE, 50x TAE and 10x TBE

During prolonged storage salt crystals may precipitate, which are easily resolubilised by gentle heating and shaking. The quality of the buffer is not affected by this procedure. Do not take out buffer solution when any precipitate is visible.

Rotiphorese® 50x TAE Buffer

Buffer concentrate for DNA electrophoresis.

Storage temp.: +20 °C

Warning H315-H319-H335

50-times concentrated running buffer, containing 2 M Tris, 1 M acetic acid and 50 mM EDTA in distilled, deionised water; pH 8,5.
Mix before use!

CL86.1	1 l	glass	60,10 €
Original pack 6 x 1 l			57,10/1 l
CL86.3	2,5 l	glass	115,60 €
Original pack 4 x 2,5 l			109,82/2,5 l
CL86.2	5 l	plastic	176,85 €
Original pack 2 x 5 l			168,01/5 l

Rotiphorese® 10x TAE Buffer

Buffer concentrate for DNA electrophoresis.

Storage temp.: +20 °C

10-times concentrated running buffer, containing 0,4 M Tris, 0,2 M acetic acid and 10 mM EDTA in distilled, deionised water; pH 8,3.
Mix before use!

T845.1	1 l	glass	30,65 €
Original pack 6 x 1 l			29,12/1 l
T845.2	5 l	plastic	71,50 €
Original pack 2 x 5 l			67,93/5 l

Rotiphorese® 10x TAE Buffer *light*

with reduced EDTA concentration

Buffer concentrate for DNA electrophoresis, ideal for DNA elution gels or in-gel-applications.

Storage temp.: +20 °C

Rotiphorese® 10x TAE-buffer *light* is particularly ideal for agarose gels in DNA-elution. Although the reduced EDTA-content lowers the contamination of the eluted DNA with EDTA and therefore prevents any interference of enzymatic activity, e.g. from ligases, isomerases or polymerases, the buffer properties still remain totally intact.
Particularly suitable for in-gel-applications when used with Rotigarose® Low Melt (Art. No. 6351).
10-times concentrated serial buffer, containing 0,4 M Tris-acetate and 1 mM EDTA in distilled, deionised water; pH 8,3.
Mix before use!

0122.1	1 l	glass	26,80 €
Original pack 6 x 1 l			25,46/1 l

Please note our **Technical Information Brochure** on the Internet next to the products:

PAGE – polyacrylamide gel electrophoresis
General technical information

Roti®fair reagents

High-pure reagents and buffer mixes in pouches or as tablets.

Roti®-fair - the new range of user-friendly reagent formulations. For simplest application, optimal quality and reproducible results. One tablet or the content of one pouch is simply dissolved in the respective amount of water - the desired solution is ready for use. Simply adapt the amount of water in order to vary the concentration, for instance for preparation of a higher concentrated stock solution.

- **Easy-to-use** - simply dissolve contents of one pouch or one tablet in water
- **Timesaving** - no need for weighing of several reagents or adjustment of pH
- **Convenient** - dry reagents for direct use spare preparation of long-term stored stock solutions
- **Reliable** - stringent quality control ensures high lot-to-lot consistency

Roti®fair SDS-PAGE

for electrophoresis

Buffer for protein electrophoresis.

SDS-PAGE powder (pouch), Tris-glycine-SDS buffer

Warning H315-H319-H335

Exactly pre-weighed pouches for convenient and rapid preparation of SDS-PAGE solution.
Running buffer for protein gel electrophoresis. Contains SDS und may therefore also used with SDS-free gels. Nach: Laemmli (1970), *Nature* 227:680.
Prepared solution may be sterilized by filtration (0,22 µm). For storage, buffer solution should be kept at room temperature.
1x SDS-PAGE solution is prepared by dissolution of 1 pouch in 1000 ml respectively 5000 ml highly pure water.

Formulation:

Prepared 1x SDS-PAGE solution contains: 25 mM Tris, 0,192 M glycine, 0,1 % SDS, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

For 1000 ml/pouch

1249.1	10 pouches	box	91,95 €

For 5000 ml/pouch

1250.1	10 pouches	box	195,15 €

Roti®fair 50x TAE

for electrophoresis

Buffer concentrate for DNA electrophoresis.

TAE powder (pouch)

Warning H315-H319-H335

Exactly pre-weighed pouches for convenient and rapid preparation of TAE solution.
Running buffer for DNA gel electrophoresis. TAE is recommended for gel analysis of large fragments and for gel elution, when high recovery rates are needed. Additionally, TAE is the buffer of choice for native or denaturing RNA gels.
Prepared solution may be sterilized by filtration (0,22 µm).
For long-term storage, buffer solution should be kept at room temperature.
50x TAE solution is prepared by dissolution of 1 pouch in 500 ml respectively 1000 ml highly pure water.

Formulation:

Prepared 50x TAE solution contains: 2 M Tris acetate, 50 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

For 500 ml/pouch

1234.1	5 pouches	box	418,20 €

For 1000 ml/pouch

1240.1	5 pouches	box	747,15 €

Roti®fair 1x TBE

for 1000 ml/pouch, for electrophoresis

Buffer for DNA electrophoresis.

TBE powder (pouch)

Danger H315-H319-H335-H360FD

Exactly pre-weighed pouches for convenient and rapid preparation of TBE solution.
Running buffer with high buffering capacity for DNA gel electrophoresis. TBE is recommended for analytical gels, high-through-put gels, small fragments, and when sharp band resolution is required. Due to the lower EDTA content, TBE is well suited for gels prior to cloning, however, recovery rate is generally lower than from TAE gels.

Formulation:

Prepared 1x TBE solution contains: 89 mM Tris-Borat, 2 mM EDTA, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

1241.1	10 pouches	box	80,10 €

Roti®fair 5x TBE

for 1000 ml/pouch, for electrophoresis

Buffer concentrate for DNA electrophoresis.

TBE powder (pouch)

Danger H315-H319-H335-H360FD

Description see Roti®fair 1 x TBE (Art No. 1241).

Formulation:

Prepared 5x TBE solution contains: 0,445 M Tris borate, 10 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

1242.1	10 pouches	box	174,70 €

Roti®fair 10x TBE

for 1000 ml/pouch, for electrophoresis

Buffer concentrate for DNA electrophoresis.

TBE powder (pouch)

Danger H315-H319-H335-H360FD

Description see Roti®fair 1 x TBE (Art No. 1241).

Formulation:

Prepared 10x TBE solution contains: 0,89 M Tris borate, 20 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

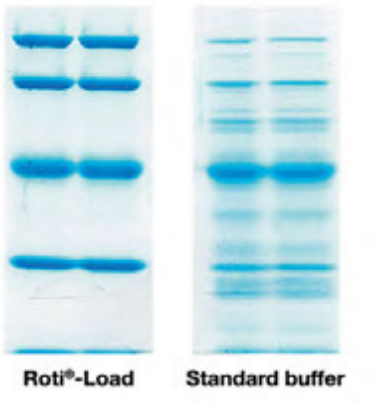
1243.1	10 pouches	box	289,75 €

Gel Loading Buffers for Proteins

ready-to-use

Roti®-Load 1 (reducing) as well as **Roti®-Load 2 and 3 (non-reducing)** represent special gel loading buffers for protein gel electrophoresis. They have been designed to protect your proteins during sample preparation and to stabilise sensitive peptide bonds. Protein degradation is efficiently prevented by those buffer systems. Roti®-Load are 4x concentrated ready-to-use solutions, which may be used directly for sample loading.

Roti®-Load 1 and 2: Modified formulation acc. to Laemmli (*Nature* 227, 1970).



Roti®-Load 1

reducing, 4x conc.

Protein gel loading buffer, modified formulation acc. to Laemmli.

Storage temp.: +15-25 °C

Danger

H302+H332-H311-H315-H317-H318-H373-H411

- Formulation acc. to Laemmli (modified)
- Stabilises peptide bands
- Prevents protein degradation
- Improves gel separation

Well tested and proven sample buffer for protein gel electrophoresis that has been modified and further developed based on the original formulation acc. to Laemmli (Nature 227, 1970).
Roti®-Load 1 prevents degradation of proteins while heating during sample preparation, additionally keeping the sample pH value constant during gel electrophoresis. Being a phosphate-buffered ready-to-use solution, Roti®-Load 1 already contains all necessary denaturing and reducing reagents, bromophenol blue as dye and glycerol as density increasing reagent.

Contains SDS (approx. 8 % w/v), β-mercapto ethanol (approx. 20 % v/v), glycerol (approx. 40 % v/v) and bromophenol blue (approx. 0,015 % w/v). Phosphate buffered.

K929.1	10 ml	glass	18,20 €
K929.2	4 x 10 ml	glass	53,25 €
K929.3	10 x 10 ml	glass	122,05 €

Roti®-Load 2

non reducing, 4x conc.

Protein gel loading buffer, modified formulation acc. to Laemmli.
For protein complexes, secondary structures, and for native gels.

Storage temp.: +20 °C

- Formulation acc. to Laemmli (modified)
- Stabilises peptide bands
- For protein complexes and secondary structures
- For native gels

Well tested and proven sample buffer for protein gel electrophoresis that has been modified and further developed based on the original formulation acc. to Laemmli (Nature 227, 1970).
For depiction of protein complexes, secondary structures, and for native gels.
Roti®-Load 2 prevents degradation of proteins while heating during sample preparation, additionally keeping the sample pH value constant during gel electrophoresis. Being a phosphate-buffered ready-to-use solution, Roti®-Load 2 already contains all necessary denaturing reagents, bromophenol blue as dye and glycerol as density increasing reagent. Roti®-Load 2 may be supplemented with 20 µl/ml DTT solution (1 M), in order to gain a loading buffer using DTT as reducing reagent rather than β-Mercaptoethanol.

Contains SDS (approx. 8 % w/v), glycerol (approx. 40 % v/v) and bromophenol blue (approx. 0,015 % w/v). Phosphate buffered.

K930.1	10 ml	glass	15,60 €

Roti®-Load 3 (LDS)

non reducing, 4x conc.

Protein gel loading buffer for ready-made gels and cooled gels.

Storage temp.: +20 °C

Warning H315-H319

- Optimised for ready-made gels
- Superior solubility at low temperatures
- Stabilises proteins in the gel

Modified, non-reducing protein sample-gel loading buffer for gels under denaturing or native conditions. During sample preparation and heating, Roti®-Load 3 (LDS) efficiently prevents degradation of your proteins, also stabilising the pH value during the run. This new gel loading buffer is based on a triethanolamine buffered ready-to-use solution, in which the standard sodium dodecylsulphate (SDS) has been replaced by lithium dodecylsulphate (LDS). At low temperatures, LDS is much better soluble than SDS. Hence, no crystallisation of LDS takes place, and protein stability as well as band resolution is significantly enhanced. Additionally, the formulation of Roti®-Load 3 (LDS) has been optimised for ready-made gels, particularly Roti®-PAGE gels, but also ready-made gels of other standard suppliers. For reducing conditions, Roti®-Load 3 (LDS) may be supplemented with 20 µl/ml DTT solution (1 M) or with β-mercaptoethanol.

Contains LDS (approx. 4 % w/v), glycerol (approx. 40 % v/v) and Ficoll 400 (approx. 4 % w/v), plus phenol red (approx. 0,025 % w/v) and Coomassie® G250 (approx. 0,025 % w/v). Triethanolamine buffered.

3359.1	10 ml	glass	21,00 €

Selecting a suitable Roti®-Load gel loading buffer for proteins

Roti®-Load 1 is suitable **for all PAGE standard gels**. It has denaturing and reducing properties.

Roti®-Load 2 is suitable **for protein complexes, secondary structures and native gels**. It has denaturing properties, but it does not have reducing properties. It is possible to enrich the buffer solution with reducing agents such as ß-Mercaptoethanol or DTT.

Roti®-Load 3 is suitable **for native gels, precast gels and cooled gels**. The buffer solution contains LDS. Unlike SDS, LDS does not crystallise out at low temperatures. In addition, the buffer solution is optimally adapted for precast gels. Roti®-Load 3 has denaturing properties, but does not have reducing properties. It is possible to enrich the buffer solution with reducing agents such as ß-Mercaptoethanol or DTT.

Glycerine is the standard reagent for increasing the density of samples.

SDS (sodium dodecyl sulphate), LDS (lithium dodecyl sulphate) are anionic surfactants. They form a negatively charged mantle around the protein molecules, which results in a denaturing effect. This process is reversible. Irreversible denaturation only occurs if the samples are boiled. Negative charging allows the molecules to be separated during electrophoresis.

ß-mercaptoethanol, DTT (dithiothreitol) are reducing agents which split disulphide bridges in protein molecules. Increased unfolding of the molecule occurs. This process is reversible.

Gel Loading Buffers for Nucleic Acids

ready-to-use

The ROTH gel loading buffers are special buffers for nucleic acid electrophoresis. Each batch is tested for its functionality in electrophoresis. The gel loading buffers are ready-to-use solutions, which may be used directly.

Roti®-Load DNA buffer solutions contain Tris, sodium acetate and EDTA, with additional tracking dyes. For increasing the density when loading the gel, they are available in three different variations - with glycerol, ficoll and saccharose.

Roti®-Load RNA buffer solution contains formamide, MOPS, sodium acetate, EDTA and formaldehyde and bromophenol blue, and has been adjusted to pH 7,0. Due to the included ethidium bromide, the DNA is stained already during gel loading.

Roti®-Load DNAstain is a new generation of gel loading buffers providing fluorescent and non-toxic staining of DNA even during gel loading (see also next page).

Product	Use	Concentration	Dye	Incl. DNA stain	Figure	Art. No.	Pack Qty	€
Roti®-Load DNA (with glycerol)	Standard applications, routine gels	6x	BP, XC	-	①	**X904.1**	5 x 1,8 ml	39,70
Roti®-Load DNA 1x (with glycerol)	Standard applications, pelleted DNA	1x	BP, XC	-	①	**0100.1**	5 x 1,0 ml	35,40
Roti®-Load DNA (with ficoll)	Small amounts of DNA, especially sharp bands	6x	BP, XC	-	①	**X905.1**	5 x 1,8 ml	43,55
Roti®-Load DNA (with saccharose)	Big sample volumes, big fragments	6x	BP	-	②	**T847.1**	5 x 1,0 ml	64,40
Roti®-Load DNA short-run (with glycerol)	Short separation distances, fast gels	6x	BP	-	②	**0095.1**	5 x 1,8 ml	42,90
Roti®-Load DNA short-run 1x (with glycerol)	Short separation distances, fast gels, pelleted DNA	1x	BP	-	②	**0099.1**	5 x 1,0 ml	35,40
Roti®-Load DNA small (with glycerol)	Small or very big fragments	6x	XC	-	③	**HP03.1**	5 x 1,8 ml	45,70
Roti®-Load DNA orange 1 (with glycerol)	Very short separation distances, small fragments, high concentrated or High Resolution agarose	6x	OG	-	⑥	**HP04.1**	5 x 1,8 ml	51,10
Roti®-Load DNA-orange 2 (with glycerol)	Mixture of small and big fragments	6x	XC, OG	-	⑤	**HP05.1**	5 x 1,8 ml	51,10
Roti®-Load DNA-tricolor (with glycerol)	Broad size range, high flexibility	6x	BP, XC, OG	-	④	**HP06.1**	5 x 1,8 ml	51,10
Roti®-Load RNA	Separation of RNA fragments	1,3x	BP, EB	-	②	**T848.1**	2 x 0,5 ml	62,25
Roti®-Load DNAstain 1	Simultaneous gel staining, bigger fragments	6x	BP, XC, EG	yes	①	**5783.1**	1,0 ml	37,55
Roti®-Load DNAstain 1	Simultaneous gel staining, bigger fragments	6x	BP, XC, EG	yes	①	**5783.2**	5 x 1,0 ml	114,95
Roti®-Load DNAstain 2	Simultaneous gel staining, medium fragments	6x	XC, OG, EG	yes	⑤	**5784.1**	1,0 ml	37,55
Roti®-Load DNAstain 2	Simultaneous gel staining, medium fragments	6x	XC, OG, EG	yes	⑤	**5784.2**	5 x 1,0 ml	114,95
Roti®-Load DNAstain 3	Simultaneous gel staining, small fragments	6x	OG, EG	yes	⑥	**6472.1**	1 ml	37,55
Roti®-Load DNAstain 3	Simultaneous gel staining, small fragments	6x	OG, EG	yes	⑥	**6472.2**	5 x 1,0 ml	114,95

BP = Bromphenol blue XC = Xylene cyanole OG = Orange G EG=EvaGreen® EB = Ethidium bromide

Storage temp.: -20 °C
Safety instructions see chapter Chemicals A-Z

Selecting a suitable Roti®-Load gel loading buffer for Nucleic Acids

Care should be taken to ensure that the dyes contained in the gel stop before smallest relevant DNA bands. This ensures that the buffer can be stopped in time. However, the selected dyes may overlay the bands shown. In this case, select a loading buffer that does not contain any unwanted dyes.

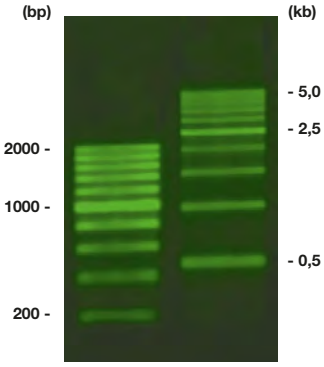
Bromophenol blue and xylene cyanol can be used as colour markers in all **standard gels**. If a relevant band is overlaid by one of these colour markers, choose a gel loading buffer containing Orange G. If **small fragments** are to be assayed, the gel loading buffer should contain Orange G in order to mark the run. If relevant bands are overlaid, however, a choice can be made between bromophenol blue or xylene cyanol depending on the size of the bands. A loading buffer without xylene cyanol is usually used for assaying **large fragments**.

Glycerine is the standard reagent for increasing the density of samples.

Ficoll® 400 produces particularly well-defined bands.

Sucrose provides the greatest increase in density.

Gel Loading Buffers



For UV- and blue light

Roti®-Load DNAstain

ready-to-use | DNAse-free

6x conc. gel loading buffer, ready-to-use, DNAse-free

DNA-gel loading buffer with fluorescent DNA-dye EvaGreen®.
Storage temp.: -20 °C • Transport temp.: room temp.

- Alternative for ethidium bromide, non-toxic, non-mutagen
- Nearly as sensitive as ethidium bromide, up to 1,5 ng/mm² nucleic acid
- For use with common broad-band ethidium bromide photo filters
- Excitation possible via UV light (320 nm) and blue light (~470 nm)
- Compatible with all usual down-stream applications

New, versatile reagent for gel loading and simultaneous staining of double stranded nucleic acid in agarose- and polyacrylamide gels.
Roti®-Load DNAstain detects up to 0,2 ng per band, and is, therefore, as sensitive as ethidium bromide. Due to its most simple application as gel loading buffer it reduces the time needed for gel analysis significantly.
This innovative reagent contains the intercalating dye EvaGreen®, which has been developed specifically for DNA analysis. DNA integrity is not influenced by EvaGreen®; hence, gel eluted DNA may directly be applied to standard down-stream applications, like, e.g., ligation, PCR, transformation, transfection etc. without interfering effects. Due to the low membrane permeability of the dye, Roti®-Load DNAstain is non mutagenic, non toxic, and environment friendly.
Roti®-Load DNAstain can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, nucleic acid-bound Roti®-Load DNAstain emits a brightly coloured green fluorescence (525 nm) that may be documented by all usual broadband ethidium bromide- or SYBR® Green foto filters.

The **figure** depicts 50 ng DNA per band, or 75 ng (1000 bp and 2,5 kb), respectively. Each lane has been loaded and concurrently stained using 1 µl Roti®-Load DNAstain.

Excitation maximum (bound to DNA): approx. 320 nm and 470-500 nm
Emission maximum (bound to DNA): 525 nm
1 ml is sufficient for running and staining of approx. 500 lanes.

Roti®-Load DNAstain 1

Roti®-Load DNAstain 1 contains: Tris, EDTA, bromophenol blue, xylencyanol, EvaGreen®.
Recommended for staining of dsDNA- and dsRNA-fragments of over 500 bp.

5783.1	1,0 ml	plastic	37,55 €
5783.2	5 x 1,0 ml	plastic	114,95 €

Roti®-Load DNAstain 2

Roti®-Load DNAstain 2 contains: Tris, EDTA, xylencyanol, orange G, EvaGreen®.
Emission maximum (bound to DNA): 525 nm
Recommended for staining of dsDNA- and dsRNA-fragments of 100-2000 bp.

5784.1	1,0 ml	plastic	37,55 €
5784.2	5 x 1,0 ml	plastic	114,95 €

Roti®-Load DNAstain 3

Roti®-Load DNAstain 3 contains: Tris, EDTA, orange G, EvaGreen®.
Recommended for staining of dsDNA- and dsRNA-fragments of under 500 bp.

6472.1	1 ml	plastic	37,55 €
6472.2	5 x 1,0 ml	plastic	114,95 €

Running distance in bp of xylene cyanol (XC) and bromophenol blue (BPB), with respect to agarose, gel concentration and buffer system used.

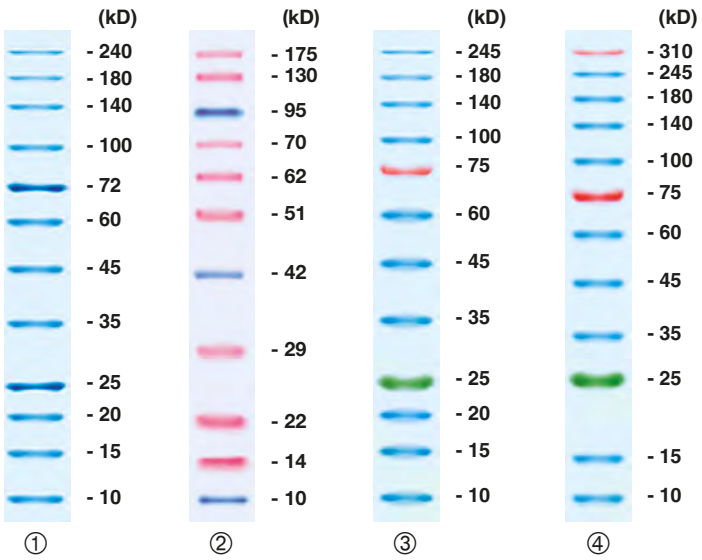
3810 Standard		0.3 %	0.5 %	1 %	1.5 %
1xTAE	XC	16 000	6 200	2 800	1 300
	BPB	1 600	500	300	150
1xTBE	XC	12 000	4 200	1 800	900
	BPB	1 300	400	200	70
2267 NEEO		0.5 %	1 %	1.5 %	2 %
1xTAE	XC	16 000	6 100	2 800	1 300
	BPB	1 650	500	300	150
1xTBE	XC	12 000	4 100	1 800	850
	BPB	1 350	400	200	70
HP67 Agarose Tablets		0.5 %	1 %	1.5 %	2 %
1xTAE	XC	15 000	5 000	2 600	1 500
	BPB	1 800	650	400	200
1xTBE	XC	11 000	4 000	1 800	800
	BPB	1 100	350	150	60
6352 GTQ		0.5 %	1 %	1.5 %	2 %
1xTAE	XC	15 000	5 000	2 600	1 500
	BPB	1 800	650	400	200
1xTBE	XC	11 000	4 000	1 800	800
	BPB	1 100	350	150	60
T846 Broad Range		0.3 %	0.7 %	1.2 %	1.7 %
1xTAE	XC	30 000	11 200	3 900	1 700
	BPB	4 000	1 200	520	300
1xTBE	XC	18 000	10 000	4 500	1 800
	BPB	2 200	950	450	200
3771 Pulsed-Field		1 %	2 %	3 %	4 %
1xTAE	XC	24 800	13 000	6 100	2 600
	BPB	3 550	2 050	760	400
1xTBE	XC	19 400	10 000	4 000	1 900
	BPB	2 550	1 500	500	250
HP30 HR PLUS		1 %	2 %	3 %	4 %
1xTAE	XC	2 500	1 000	400	200
	BPB	250	150	100	60
1xTBE	XC	1 500	600	200	120
	BPB	100	60	50	<50
K297 High Resolution		2 %	3 %	4 %	5 %
1xTAE	XC	600	300	160	100
	BPB	100	80	40	25
1xTBE	XC	400	150	80	50
	BPB	<50	<50	<20	<20
6351 Low Melt		1 %	1.5 %	2 %	2.5 %
1xTAE	XC	2 800	1 350	720	410
	BPB	425	225	120	75
1xTBE	XC	1 600	800	400	200
	BPB	200	80	40	20
HP31 LM / PCR		2 %	3 %	4 %	5 %
1xTAE	XC	600	300	120	60
	BPB	100	80	40	20
1xTBE	XC	400	150	60	40
	BPB	50	40	20	10-20
HP45 Super LM		1 %	1.5 %	2 %	2.5 %
1xTAE	XC	2 800	1 350	720	410
	BPB	425	225	120	75
1xTBE	XC	1 600	800	400	200
	BPB	200	80	40	20

Protein Markers Roti®-Mark

Perfect separation behaviour in the gel. Protein markers from Roth are acylated and pre-reduced, for optimal running behaviour in the gel. For each batch, intensity of bands is optimised and electrophoretically tested. All protein markers are offered as ready-to-use solutions which may be applied directly to the gel.

Protein Markers, prestained

Marker	ALL BLUE	BI-PINK	TRICOLOR	TRICOLOR XTRA
Art. No.	2242 (fig. 1)	8269 (fig. 2)	8271 (fig. 3)	2244 (fig. 4)
Size Range (kD)	10 - 240	10 - 175	10 - 245	10 - 310
Number of Fragments	12	11	12	12
Reinforced band at (kD)	25, 72	-	-	-
Quantitation	not recomm.	not recommended	not recommended	not recommended
Staining	blue prestained	pink prestained	blue prestained	blue prestained
Additional reference bands	-	10 kD, 40 kD, 90 kD blue	25 kD green, 75 kD red	25 kD green, 75 and 310 kD red
Detection in Western-Blot	no detection	no detection	no detection	no detection
Number of Lanes in minigel	200 / ml	200 / ml	200 / ml	200 / ml
Delivery	ready-to-use	ready-to-use	ready-to-use	ready-to-use



Roti®-Mark ALL BLUE ① NEW ready-to-use

Protein marker, prestained
Size range: 10-240 kD
Number of protein bands: 12
Number of lanes/ml: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

Roti®-Mark ALL BLUE consists of 12 blue prestained proteins from 10 to 240 kD. For better orientation in the gel the 25 kD and the 72 kD fragment are enhanced in their mass. Roti®-Mark ALL BLUE is an ideal size marker for controlling the gel run during SDS-PAGE and for reliable evaluation of transfer efficiency during Western Blot. The ready-to-use marker is dissolved in Tris-glycine buffer for direct application to the gel.
Please note: Reliable size determination of proteins cannot be performed using prestained markers.

2242.1	250 µl	plastic	91,30 €
2242.2	2 x 250 µl	plastic	166,10 €

Please note: Reliable size determination of proteins cannot be performed using prestained markers. For this, we recommend the use of our unstained marker Roti®-Mark 10-150 PLUS (Art. No. X879) with one prestained protein.

Roti®-Mark BI-PINK ② ready-to-use

Protein marker, prestained
Size range: 10-175 kD
Number of protein bands: 11
Number of lanes/ml: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

Protein marker including bicolour-prestained proteins of 10 up to 175 kD. In order to visualise separation during the gel run and for better orientation in the gel, three proteins of approx. 10, 40 and 90 kD have been prestained in blue in addition to the pink coloured bands. All proteins excel by having a very even running behaviour and form distinct bands. The marker is designed as ready-to-use solution for direct application to the gel.
Fig.: 15 % SDS-PAGE (Tris)

8269.1	500 µl	plastic	170,95 €

Roti®-Mark TRICOLOR ③ ready-to-use

Protein marker, prestained
Size range: 10-245 kD
Number of protein bands: 12
Number of lanes/ml: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

Protein marker including tricolour-prestained proteins of 10 up to 245 kD. In order to visualise separation during the gel run and for better orientation in the gel, two proteins of approx. 25 and 75 kD have been prestained in green and red, respectively, in addition to the blue coloured bands. All proteins excel by having a very even running behaviour and form distinct bands. The marker is designed as ready-to-use solution for direct application to the gel.
Fig.: 4-20 % gradient SDS-PAGE (Tris)

8271.1	2 x 250 µl	plastic	170,95 €

Roti®-Mark TRICOLOR XTRA ④ NEW ready-to-use

Protein marker, prestained
Size range: 10-310 kD
Number of protein bands: 12
Number of lanes/ml: approx. 200 (mini gels)

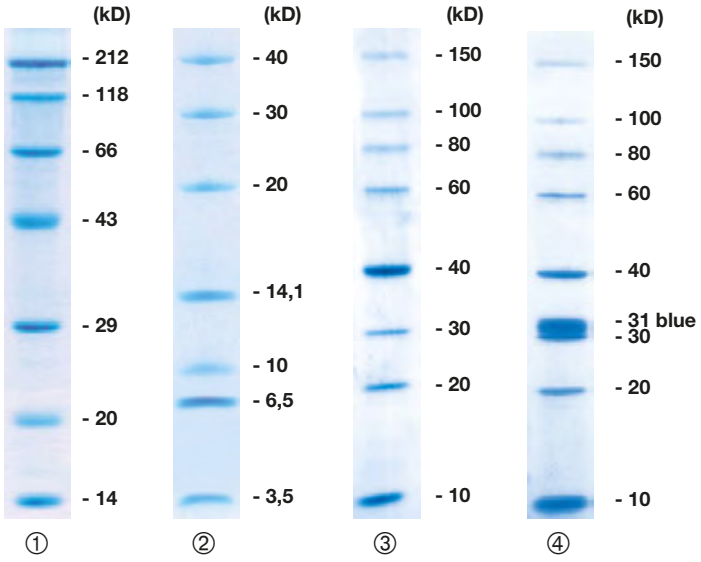
Storage temp.: -20 °C • Transport temp.: room temp.

Roti®-Mark TRICOLOR XTRA is a tricolour-prestained marker covering an extra range of molecular weights from 10 to 310 kD. In order to visualise separation during the gel run and for better orientation in the gel, there is, besides the blue coloured proteins, one protein prestained in green (25 kD) and two proteins in red (75 and 310 kD). All bands excel by having a very even running behaviour and a good differentiation. Roti®-Mark TRICOLOR XTRA is an ideal size marker for controlling the gel run during SDS-PAGE and for reliable evaluation of transfer efficiency during Western Blot. The ready-to-use marker is dissolved in Tris-glycine buffer for direct application to the gel.

2244.1	250 µl	plastic	103,10 €
2244.2	2 x 250 µl	plastic	191,25 €

Protein Markers, unstained

Marker	STANDARD	PETIT	10-150	10-150 PLUS	WESTERN
Art. No.	T851 (fig. 1)	9299 (fig. 2)	T850 (fig. 3)	X879 (fig. 4)	0948 (fig. 5)
Size Range (kD)	14 - 212	3,5 - 40	10 - 150	10 - 150	10 - 120
Number of Fragments	7	7	8	9	8
Reinforced band at (kD)	43	-	40	40	20
Quantitation	recommended	recommended	recommended	recommended	recommended
Staining	unstained	unstained	unstained	1 blue prestained band (30 kD)	unstained
Detection in Western-Blot	no detection	no detection	detection by anti-His possible	detection by anti-His possible	detection by conjugate 0949
Number of Lanes in minigel	200 / ml	200 / ml	200 / ml	200 / ml	200 / ml
Delivery	ready-to-use	ready-to-use	ready-to-use	ready-to-use	ready-to-use



Roti®-Mark STANDARD ① ready-to-use

Protein marker, not prestained
Size range: 14-212 kD
Number of protein bands: 7
Number of lanes/ml: approx. 200 (mini gels)
Storage temp.: -20 °C • Transport temp.: room temp.

Warning H319

Roti®-Mark STANDARD is an ideal protein-size marker for routine applications. Proteins are solubilised in nonreducing buffer acc. to Laemmli.
Fig.: 12 % SDS-PAGE (Tris)

T851.3	200 µl	plastic	35,40 €
T851.1	1 ml	plastic	100,55 €
T851.2	4 x 1 ml	plastic	353,70 €

Roti®-Mark PETIT ② ready-to-use

Protein marker, not prestained
Size range: 3,5-40 kD
Number of protein bands: 7
Number of lanes/ml: approx. 200 (mini gels)
Storage temp.: -20 °C • Transport temp.: room temp.

Roti®-Mark PETIT is a finely graded protein marker for small size range. It consists of four genetically engineered proteins with defined, regular molecular weight and, in addition, of three native proteins for better visualization of the small size range. The marker is dissolved in non-reducing Laemmli buffer and can be used directly.
Roti®-Mark PETIT is an ideal addition to Roti®-Mark 10-150 (Art.-No. T850).
Fig.: 16,5 % SDS-PAGE (Tris-Tricine)

9299.1	100 µl	plastic	64,40 €
9299.2	500 µl	plastic	188,15 €

Roti®-Mark 10-150 ③ ready-to-use

Protein marker, not prestained
Size range: 10-150 kD
Number of protein bands: 8
Number of lanes/ml: approx. 200 (mini gels)
Storage temp.: -20 °C • Transport temp.: room temp.

Warning H319

Roti®-Mark 10-150 consists of a set of genetically engineered proteins with defined, regular molecular weight. The proteins are not glycosylated and therefore display homogeneous electrophoretic behaviour. An enhanced 40 kD band provides easy orientation in the gel.
Roti®-Mark 10-150 has been assembled from a set of **His-tagged, recombinant proteins** that may be detected during Western-Blot analysis using anti-His antibodies.
Fig.: 4-20 % gradient SDS-PAGE (Tris)

T850.1	500 µl	plastic	121,40 €
T850.2	100 µl	plastic	53,65 €

Roti®-Mark 10-150 PLUS ④ ready-to-use

Protein marker with additional prestained protein
Size range: 10-150 kD
Number of protein bands: 9
Number of lanes/ml: approx. 200 (mini gels)
Storage temp.: -20 °C • Transport temp.: room temp.

Warning H319

Reliable size determination as well as control of running behaviour and transfer.
This marker represents an advanced version of marker Roti®-Mark 10-150 and is supplemented with an additional prestained carbo anhydrase (approx. 31 kD). Roti®-Mark 10-150 PLUS consists of a set of genetically engineered proteins with defined, regular molecular weight. The proteins are not glycosylated and therefore display homogeneous electrophoretic behaviour. Whilst in prestained markers the apparent molecular size in the gel may differ from the actual size of the proteins, Roti®-Mark 10-150 PLUS exhibits a strictly size-dependent running behaviour. The additional prestained protein enables easy control of the run as well as of the subsequent transfer. Therefore, this marker adds the benefits of prestained protein markers to a reliable determination of the molecular weight of separated proteins. The enhanced 40 kD-band allows easy orientation in the gel.
Roti®-Mark 10-150 PLUS has been assembled from a set of **His-tagged, recombinant proteins** that may be detected during Western-Blot analysis using anti-His antibodies.
Fig.: 4-20 % gradient SDS-PAGE (Tris)

X879.1	500 µl	plastic	149,45 €
X879.2	100 µl	plastic	60,10 €

▶ Protein marker for Western blotting see chapter Biochemistry - Western and ELISA!

Instructions for use
can be found on the Internet next to the product description.

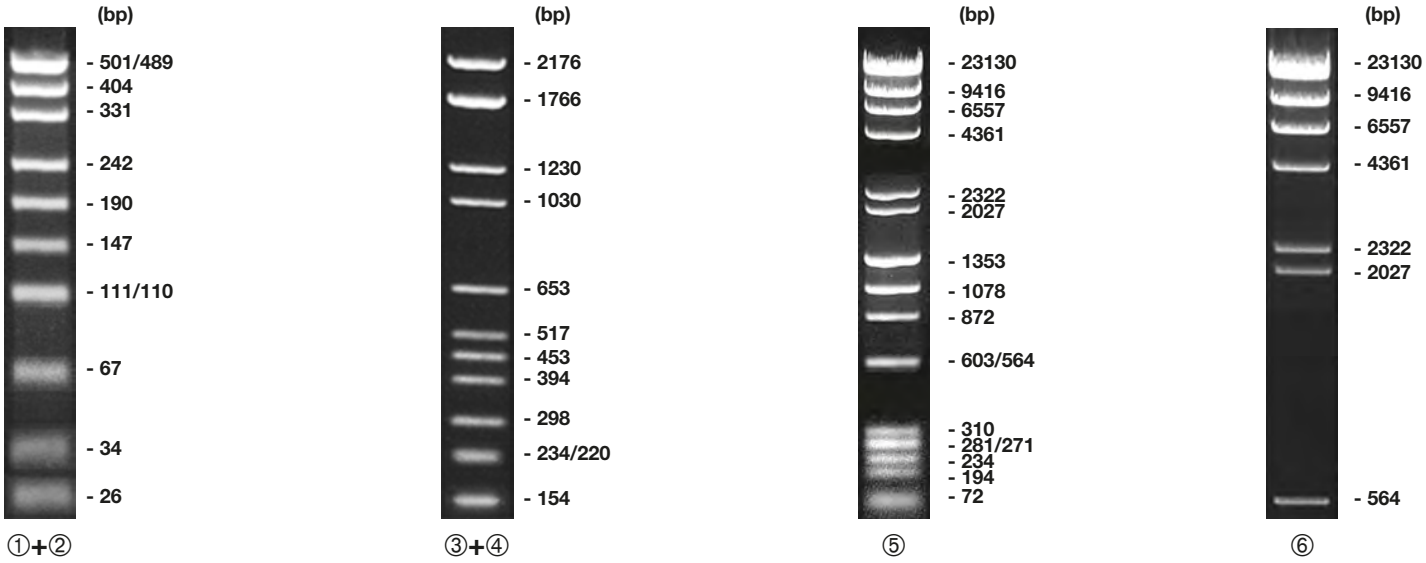
DNA Markers

Roth offers a multifaceted marker range including DNA markers for each application required. Our DNA-markers produce sharp, clear bands. Terminally, the unregular markers carry sticky *Eco*RI sites and, therefore, end-labelling methods can be applied easily.

Unevenly Distributed DNA Markers

These markers are recommended for DNA quantitation in the gel.
DNA amounts of all bands are depicted in the included instructions-for-use.

Marker	pUC19-Marker ready-to-use	pUC19/MspI	pBR328-Marker ready-to-use	pBR328 Mix I	Lambda Hind III / phiX Hae III Marker	Lambda Hind III Marker
Art. No.	X901 (fig. 1)	T149 (fig. 2)	X902 (fig. 3)	T146 (fig. 4)	CP49 (fig. 5)	X910 (fig. 6)
Size range (bp)	26 - 501	26 - 501	154 - 2176	154 - 2176	72 - 23130	125 - 23130
Number of fragments	10	10	11	11	17	8
Reinforced band at (bp)	-	-	-	-	-	-
Quantitation	recommended	recommended	recommended	recommended	recommended	recommended
Number of lanes in minigel	200 / ml	200 / 100 µg	200 / ml	200 / 100 µg	200 / 100 µg	200 / 100 µg
Delivery	ready-to-use	lyophilised	ready-to-use	lyophilised	lyophilised	lyophilised



pUC19-Marker ready-to-use ① ready-to-use

DNA marker ready-to-use
Size range: 26-501 bp
Number of fragments: 10
Number of lanes per ml: approx. 200 (mini gels)
Storage temp.: -20 °C • Transport temp.: room temp.

The marker was manufactured using pUC19-DNA and restriction endonuclease *Msp* I.
Made from natural plasmids: fragment sizes can be validated!
DNA-ladder for analysis of small DNA fragments. The concentration of the individual fragments is equimolar so that rough quantification of the analysed DNA is possible.
The ready-to-use pUC19-marker has already been dissolved in 1x concentrated gel loading buffer Roti®-Load DNA (with glycerol, Art. No. 0100.1) and can be used directly. It has a concentration of 0,1 µg DNA/µl marker-solution.
Fig.: 1 % agarose (NEEO, Art. No. 2267) + 2 % Synergel™ (Art. No. 0184)

X901.1	500 µl (50 µg)	plastic	61,20 €
X901.2	4 x 500 µl (4 x 50 µg)	plastic	218,15 €

pUC19/Msp I ②

DNA marker + gel loading buffer
Size range: 26-501 bp
Number of fragments: 10
Number of lanes per 100 µg: approx. 200 (mini gels)
Storage temp.: -20 °C • Transport temp.: room temp.

The marker was manufactured by using pUC19-DNA and restriction endonuclease *Msp* I.
Made from natural plasmids: fragment sizes can be validated!
DNA-ladder for analysis of small DNA fragments. The concentration of the individual fragments is equimolar so that rough quantification of the analysed DNA is possible.
Fig.: 1 % agarose (NEEO, Art. No. 2267) + 1 % Synergel™ (Art. No. 0184)
The DNA marker is supplied in lyophilised form. Sample buffer for dissolving the lyophilised DNA-fragments is included.

T149.1	50 µg + gel loading buffer	plastic	77,30 €
T149.2	4 x 50 µg + gel loading buffer	plastic	263,40 €

pBR328-Marker ready-to-use ③ ready-to-use

DNA marker ready-to-use
Size range: 154-2176 bp
Number of fragments: 11
Number of lanes per ml: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

The marker was manufactured by mixing fragments obtained by restriction digest of pBR328 using the endonucleases *Hinf* I and *Bgl* I.
Made from natural plasmids: fragment sizes can be validated!
DNA-ladder for analysis of small DNA fragments. The concentration of the individual fragments is equimolar so that rough quantitation of the analysed DNA is possible.
The ready-to-use pBR328-marker has been dissolved in 1x concentrated gel loading buffer Roti®-Load DNA (with glycerol) and can be used directly. It has a concentration of 0,1 µg DNA/µl marker-solution.
Fig.: 1,5 % agarose (NEEO, Art. No. 2267)

X902.1	500 µl (50 µg)	plastic	65,50 €
X902.2	4 x 500 µl (4 x 50 µg)	plastic	246,20 €

pBR328 Mix I ④

DNA marker + gel loading buffer
Size range: 154-2176 bp
Number of fragments: 11
Number of lanes per 100 µg: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

The marker was manufactured by mixing fragments obtained by restriction digest of pBR328 using the endonucleases *Hinf* I and *Bgl* I.
Made from natural plasmids: fragment sizes can be validated!
DNA-ladder for analysis of small DNA fragments. The concentration of the individual fragments is equimolar so that rough quantitation of the analysed DNA is possible.
Fig.: 1,5 % agarose (NEEO, Art. No. 2267)
The DNA marker is supplied in lyophilised form. Sample buffer for dissolving the lyophilised DNA-fragments is included.

T146.1	50 µg + gel loading buffer	plastic	76,90 €

Lambda Hind III / phiX Hae III Marker ⑤

DNA marker + gel loading buffer
Size range: 72-23130 bp
Number of fragments: 17
Number of lanes per 100 µg: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

Versatile marker for depiction of all standard DNA fragment lengths.
By mixing high molecular weight Lambda (*Hind* III) fragments with short-sequence phiX-174 (*Hae* III) fragments a marker was designed which covers a broad range from 200 bp up to 20 kb. Most fragments are distributed in an equimolar way, additionally allowing rough DNA quantification in the gel. Due to this equimolarity, however, the smallest bands of 125 bp, 118 bp and 72 bp can not be detected efficiently in standard gels. Optimal results are obtained with a running distance of approx. 10 cm.
The marker was manufactured by restricting unmethylated DNA with the restriction endonucleases *Hind* III and *Hae* III. Depending on the application, the lyophilised marker can be resolubilised directly in the sterile-filtered 1x-gel loading buffer Roti®-Load DNA (with glycerol) (Art. No. 0100.1) or in TE-buffer.
Fig.: 1 % agarose (NEEO, Art. No. 2267).

CP49.1	50 µg + gel loading buffer	plastic	141,80 €

Lambda Hind III Marker ⑥

DNA marker + gel loading buffer
Size range: 125-23130 bp
Number of fragments: 8
Number of lanes per 100 µg: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

The marker was manufactured by using unmethylated Lambda-DNA and restriction endonuclease *Hind* III.
Classical standard for analysis of middle-range DNA fragments. Since the marker is produced by restriction digest of Lambda-DNA, fragments are mostly distributed in an equimolar way (with the exception of the 4361 bp fragment), additionally allowing rough quantification of the DNA analysed. Depending on the application, the lyophilised marker can be resolubilized directly in the sterile-filtered 1x-gel loading buffer Roti®-Load DNA (with glycerol) (Art. No. 0100.1) or in TE-buffer.
Fig.: 1 % agarose (NEEO, Art. No. 2267)

X910.1	100 µg + gel loading buffer	plastic	61,20 €

▶ DNA-quantitation standards QSK
see page 1283

Tips for estimating the amount of DNA in agarose gels

- Please make sure to quantitatively dissolve the comparative DNA (e.g. the marker) in buffer, in order to obtain the full DNA-concentration.
- Allow the gel to run far enough so that the bands have adequate space, the DNA can then disperse in the bands and stain well.
- Stain the gel thoroughly - we recommend staining after the gel run. Staining the DNA by adding ethidium bromide to the agarose will not achieve an even distribution in the gel and is frequently not quantitative.
- Apply several lanes of comparative-DNA with different quantities so that various bands can be compared. A calibration curve may also be plotted to determine the exact concentration.
- For comparison it is best to use bands of similar size to your DNA (maximum ±50 % of the fragment length).
- Ethidium bromide is integrated much more effectively between the base pair stacks in linear DNA than in cyclic DNA. Therefore, please make sure that the conformation of the DNA whose concentration you wish to estimate is identical to that of the comparative DNA. In the event of cyclic DNA, i.e. isolated plasmids, cyclic DNA should also be used, e.g. plasmid-DNA pUC19 (Art. No. X911.1) or pBR322 (Art. No. X912.1). If you are using a DNA-marker as a comparative DNA and wish to measure cyclic DNA, you should initially linearize an aliquot of the DNA through restriction digestion and apply the preparation to the gel.
- In the event of a Lambda/*Hind* III marker: Do not use the 4.4 kb band of the marker for concentration analysis, as it is often not quantitatively present but coupled to the large fragment via the cos-site. Should you require the 4.4 kb band, please take care to heat the marker prior to applying (5 minutes at 65 °C).
- Only use the large marker fragments of a Lambda marker for concentration estimation when your fragments are in the same size range. Many visual systems do not depict the staining of the large bands proportionally to the DNA-amount.

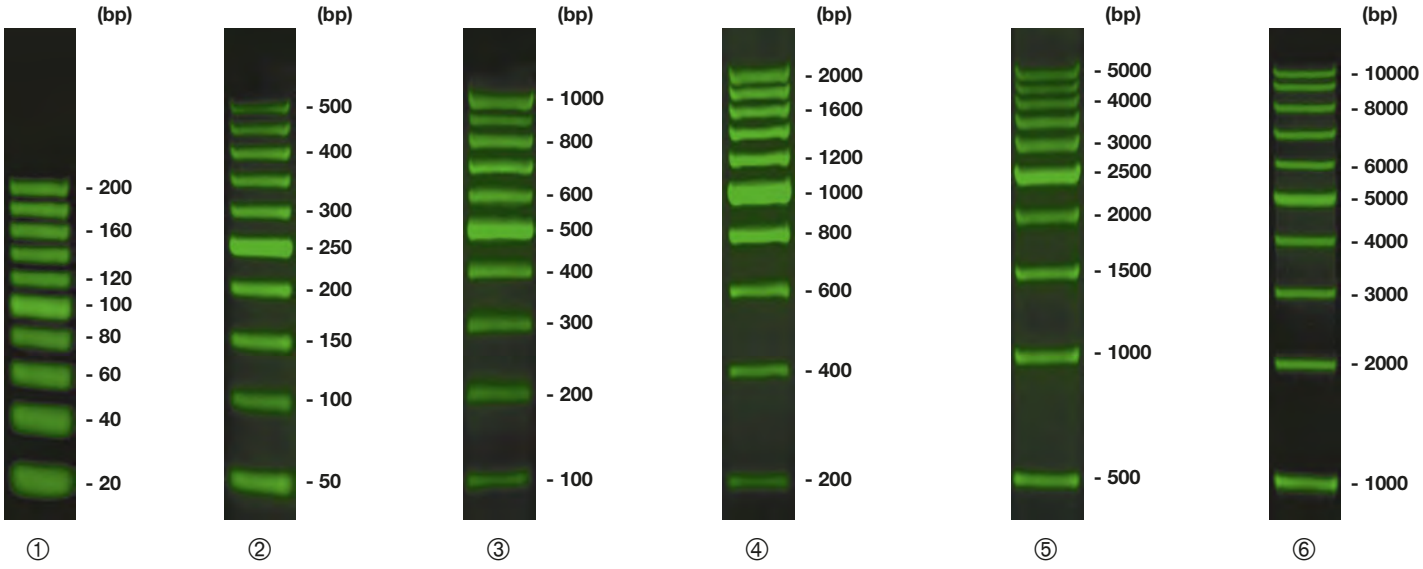
The DNA-markers are supplied ready-to-use or in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included. We use Roti®-Load DNA with glycerol (Art. No. 0100.1) as gel loading buffer. The dissolved markers are ready-to-use and can be applied to gels immediately.

Tips for use of DNA length markers

- Storage: Store marker in small aliquots at -20 °C. One aliquot can be stored at +4 °C for permanent use.
- Application amount: Apply more marker when markers with higher band numbers are used. Applied amount can be reduced, however, for short separation distances. Application on polyacrylic amide gels may be reduced to ⅛ to ½ of the marker amount used for agarose gels.
- Fast running gels: Roth markers are established with respect to high separation efficiency even when applying high voltages. Be sure, however, to use sufficient and fresh gel running buffer made with water of good quality.
- "Falsely" running bands: Under extreme conditions, (e.g. high voltages, short running distances, salt content in the probes >150 mM) implausible results may occur, which are often caused by partial strand separation of the DNA. For amendments we recommend: a) Supplementation of the marker with restriction enzyme buffer in order to increase the salt content, b) use lower separation voltages, c) make sure to efficiently remove evolving heat, e.g. by cooling the gel prior to or during the run.

Evenly Distributed DNA Markers with Fluorescent Stain

Marker	20 bp-DNA-Fluoro-Ladder	50 bp-DNA-Fluoro-Ladder	100 bp-DNA-Fluoro-Ladder	200 bp-DNA-Fluoro-Ladder	500 bp-DNA-Fluoro-Ladder	1 kbp DNA-Fluoro-Ladder
Art. No.	8262 (fig. 1)	8263 (fig. 2)	8264 (fig. 3)	8265 (fig. 4)	8266 (fig. 5)	8267 (fig. 6)
Size range (bp)	20 - 200	50 - 500	100 - 1000	200 - 2000	500 - 5000	1000 - 10000
Number of fragments	10	10	10	10	10	10
Reinforced band at (bp)	100	250	500	1000	2500	5000
Färbung	fluorescent/green	fluorescent/green	fluorescent/green	fluorescent/green	fluorescent/green	fluorescent/green
Quantitation	possible	possible	possible	possible	possible	possible
Number of lanes in minigel	200 / ml	200 / ml	200 / ml	200 / ml	200 / ml	200 / ml
Delivery	ready-to-use	ready-to-use	ready-to-use	ready-to-use	ready-to-use	ready-to-use



20 bp-DNA-Fluoro-Ladder ① ready-to-use

DNA-Marker ready-to-use, prestained with DNA fluorescent dye
Size range: 20-200 bp
Number of fragments: 10
Number of lanes per ml: approx. 200 (Minigel)

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of very small DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 100 bp fragment has been enhanced for easy analysis of the gel. Orange G was included as tracking dye. The bands of the marker are prestained with the fluorescent dye EvaGreen®, which has been developed specifically for DNA analysis. Due to the low membrane permeability of the dye, the marker is non mutagenic, non-toxic, and environment friendly. It can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, the nucleic acid-bound dye emits a brightly coloured green fluorescence that may be documented by all usual broadband ethidium bromide filters or SYBR® Green foto filters.
Excitation maximum (bound to DNA): approx. 320 nm and 470-500 nm
Emission maximum (bound to DNA): 525 nm
The 20 bp-DNA-Fluoro-Ladder is an ideal addition to the with EvaGreen® prestained gel loading buffer Roti®-Load DNAstain 3 (Art. No. 6472).

8262.1	500 µl (50 µg)	138,70 €

50 bp-DNA-Fluoro-Ladder ② ready-to-use

DNA-Marker ready-to-use, prestained with DNA fluorescent dye
Size range: 50-500 bp
Number of fragments: 10
Number of lanes per ml: approx. 200 (Minigel)

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of small DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 250 bp fragment has been enhanced for easy analysis of the gel. Orange G was included as tracking dye.
The bands of the marker are prestained with the fluorescent dye EvaGreen®, which has been developed specifically for DNA analysis. Due to the low membrane permeability of the dye, the marker is non mutagenic, non-toxic, and environment friendly. It can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, the nucleic acid-bound dye emits a brightly coloured green fluorescence that may be documented by all usual broadband ethidium bromide filters or SYBR® Green foto filters.
Excitation maximum (bound to DNA): approx. 320 nm and 470-500 nm
Emission maximum (bound to DNA): 525 nm
The 50 bp-DNA-Fluoro-Ladder is an ideal addition to the with EvaGreen® prestained gel loading buffer Roti®-Load DNAstain 3 (Art. No. 6472).

8263.1	500 µl (50 µg)	121,40 €

100 bp-DNA-Fluoro-Ladder ③ ready-to-use

DNA-Marker ready-to-use, prestained with DNA fluorescent dye
Size range: 100-1000 bp
Number of fragments: 10
Number of lanes per ml: approx. 200 (Minigel)

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of small DNA fragments. Delivered in ready-to-use format for direct application to gels. The 500 bp fragment has been enhanced for easy analysis of the gel. Orange G and xylene cyanole were included as tracking dyes.
The bands of the marker are prestained with the fluorescent dye EvaGreen®, which has been developed specifically for DNA analysis. Due to the low membrane permeability of the dye, the marker is non mutagenic, non-toxic, and environment friendly.
It can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, the nucleic acid-bound dye emits a brightly coloured green fluorescence that may be documented by all usual broadband ethidium bromide filters or SYBR® Green foto filters.
Excitation maximum (bound to DNA): approx. 320 nm and 470-500 nm
Emission maximum (bound to DNA): 525 nm
The 100 bp-DNA-Fluoro-Ladder is an ideal addition to the with EvaGreen® prestained gel loading buffer Roti®-Load DNAstain 2 (Art. No. 5784).

8264.1	500 µl (50 µg)	111,30 €

200 bp-DNA-Fluoro-Ladder ④ ready-to-use

DNA-Marker ready-to-use, prestained with DNA fluorescent dye
Size range: 200-2000 bp
Number of fragments: 10
Number of lanes per ml: approx. 200 (Minigel)

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 1000 bp fragment has been enhanced for easy analysis of the gel. Bromophenol blue and xylene cyanole were included as tracking dyes.
The bands of the marker are prestained with the fluorescent dye EvaGreen®, which has been developed specifically for DNA analysis. Due to the low membrane permeability of the dye, the marker is non mutagenic, non-toxic, and environment friendly. It can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, the nucleic acid-bound dye emits a brightly coloured green fluorescence that may be documented by all usual broadband ethidium bromide filters or SYBR® Green foto filters.
Excitation maximum (bound to DNA): approx. 320 nm and 470-500 nm
Emission maximum (bound to DNA): 525 nm
The 200 bp-DNA-Fluoro-Ladder is an ideal addition to the with EvaGreen® prestained gel loading buffer Roti®-Load DNAstain 1 (Art. No. 5783).

8265.1	500 µl (50 µg)	99,90 €

500 bp-DNA-Fluoro-Ladder ⑤ ready-to-use

DNA-Marker ready-to-use, prestained with DNA fluorescent dye
Size range: 500-5000 bp
Number of fragments: 10
Number of lanes per ml: approx. 200 (Minigel)

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 2500 bp fragment has been enhanced for easy analysis of the gel. Bromophenol blue and xylene cyanole were included as tracking dyes.
The bands of the marker are prestained with the fluorescent dye EvaGreen®, which has been developed specifically for DNA analysis. Due to the low membrane permeability of the dye, the marker is non mutagenic, non-toxic, and environment friendly. It can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, the nucleic acid-bound dye emits a brightly coloured green fluorescence that may be documented by all usual broadband ethidium bromide filters or SYBR® Green foto filters.
Excitation maximum (bound to DNA): approx. 320 nm and 470-500 nm
Emission maximum (bound to DNA): 525 nm
The 500 bp-DNA-Fluoro-Ladder is an ideal addition to the with EvaGreen® prestained gel loading buffer Roti®-Load DNAstain 1 (Art. No. 5783).

8266.1	500 µl (50 µg)	87,00 €

1 kbp-DNA-Fluoro-Ladder ⑥ ready-to-use

DNA-Marker ready-to-use, prestained with DNA fluorescent dye
Size range: 1000-10000 bp
Number of fragments: 10
Number of lanes per ml: approx. 200 (Minigel)

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of big DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 5 kb fragment has been enhanced for easy analysis of the gel. Bromophenol blue and xylene cyanole were included as tracking dyes.
The bands of the marker are prestained with the fluorescent dye EvaGreen®, which has been developed specifically for DNA analysis. Due to the low membrane permeability of the dye, the marker is non mutagenic, non-toxic, and environment friendly. It can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, the nucleic acid-bound dye emits a brightly coloured green fluorescence that may be documented by all usual broadband ethidium bromide filters or SYBR® Green foto filters.
Excitation maximum (bound to DNA): approx. 320 nm and 470-500 nm
Emission maximum (bound to DNA): 525 nm
The 1 kb-DNA-Fluoro-Ladder is an ideal addition to the with EvaGreen® prestained gel loading buffer Roti®-Load DNAstain 1 (Art. No. 5783).

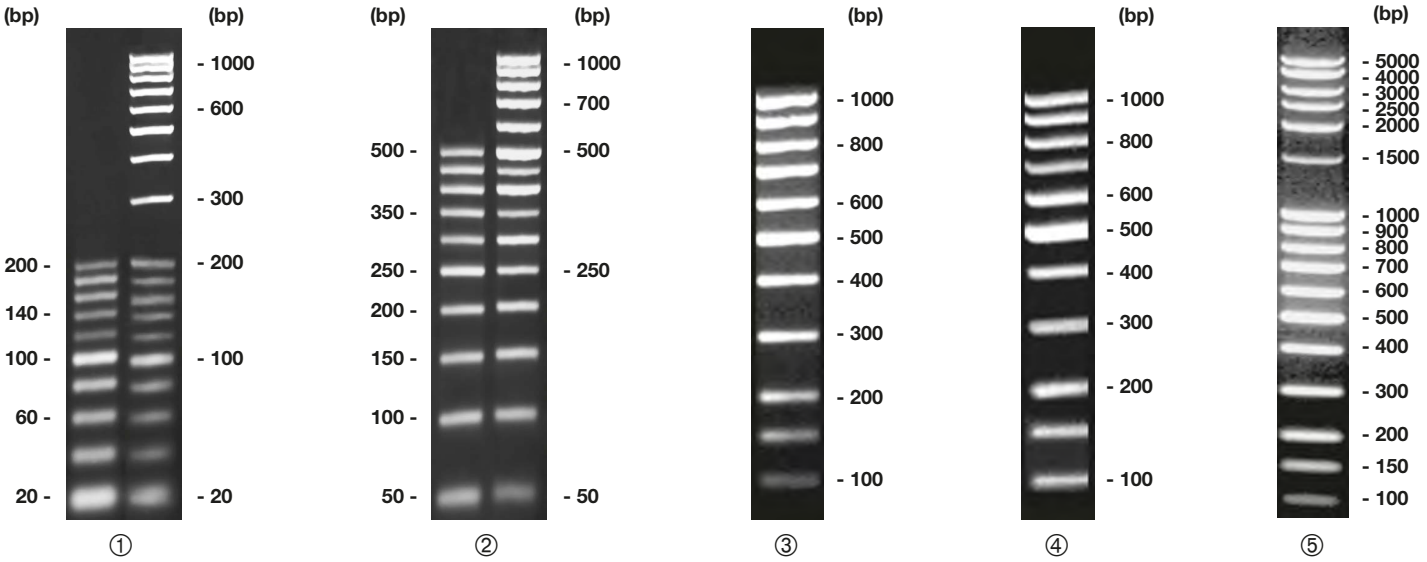
8267.1	500 µl (50 µg)	76,90 €

▶ **DNA-gel loading buffers** with fluorescent dye EvaGreen®
see page 1205

Please note: Reliable size determination of unstained DNA fragments cannot performed using prestained markers.
To make the running distances comparable it is necessary to stain the DNA fragments, too. We recommend using the gel loading buffer Roti®-Load DNAstain. The buffer contains - as well as the Fluoro ladders - the non-toxic fluorescent dye EvaGreen®, which is detectable with UV- and blue light.

Evenly Distributed DNA Markers (Unstained)

Marker	20 bp-DNA Ladder	50 bp-DNA Ladder	100 bp-DNA Ladder equimolar	100 bp-DNA Ladder equalized	100 bp-DNA Ladder extended
Art. No.	2805 (fig. 1)	2810 (fig. 2)	T834 (fig. 3)	T833 (fig. 4)	T835 (fig. 5)
Size range (bp)	20 - 200	50 - 500	100 - 1000	100 - 1000	100 - 5000
Number of fragments	10	10	11	11	17
Reinforced band at (bp)	100	250	500	500	500
Quantitation	possible	possible	recommended	possible	possible
Number of lanes in minigel	200 / ml	200 / ml	200 / 100 µg	500 / 100 µg	160 / 100 µg
Delivery	ready-to-use	ready-to-use	lyophilised	lyophilised	lyophilised



20 bp-DNA-Ladder ① ready-to-use

DNA marker ready-to-use
Size range: 20-200 bp
Number of fragments: 10
Number of lanes per ml: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of very small DNA fragments. Delivered in ready-to-use format for direct application to gels. The 100 bp fragment has been enhanced for easy analysis of the gel. All fragments are quantified, enabling quantitation of sample DNA in the gel. In order to avoid overlay of bands by bromophenol blue or xylene cyanol, Orange G was included as dye. We recommend use of this marker on the following special agaroses: High Resolution (Art. No. K297), HR-PLUS (Art. No. HP30), LM/PCR (Art. No. HP31), or an agarose with additional Synergel™ (Art. No. 0184). The 20 bp DNA-Ladder is highly compatible with the 100 bp DNA-Ladder *equimolar* (Art. No. T834). The two markers can easily be combined, resulting in a highly versatile ladder from 20 bp up to 1000 bp (right lane in figure).
Fig.: 1,4 % agarose (High Resolution, Art. No. K297) + 0,8 % Synergel™ (Art. No. 0184) in 1 x TAE.

2805.1	500 µl (50 µg)	plastic	121,40 €

50 bp-DNA-Ladder ② ready-to-use

DNA marker ready-to-use
Size range: 50-500 bp
Number of fragments: 10
Number of lanes per ml: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of small DNA fragments. Delivered in ready-to-use format for direct application to gels. The 250 bp fragment has been enhanced for easy analysis of the gel. All fragments are quantified, enabling quantitation of sample DNA in the gel. In order to avoid overlay of bands by bromophenol blue or xylene cyanol, Orange G was included as dye. We recommend use of this marker on the following special agaroses: High Resolution (Art. No. K297), HR-PLUS (Art. No. HP30), LM/PCR (Art. No. HP31), or an agarose with additional Synergel™ (Art. No. 0184). The 50 bp DNA-Ladder is highly compatible with the 100 bp DNA-Ladder *equimolar* (Art. No. T834). The two markers can easily be combined, resulting in a highly versatile ladder from 50 bp up to 1000 bp (right lane in figure).
Fig.: 1,1 % agarose (High Resolution, Art. No. K297) + 0,8 % Synergel™ (Art. No. 0184) in 1 x TAE.

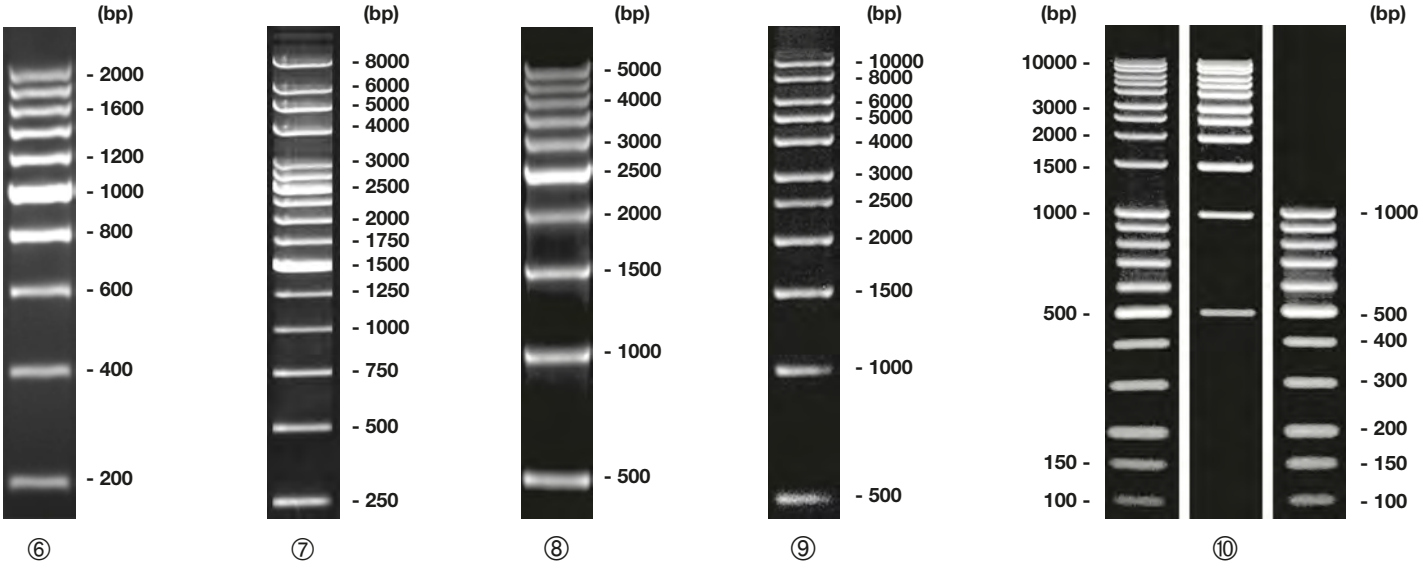
2810.1	500 µl (50 µg)	plastic	102,05 €

The DNA-markers are supplied ready-to-use or in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included. We use Roti®-Load DNA with glycerol (Art. No. 0100.1) as gel loading buffer. The dissolved markers are ready-to-use and can be applied to gels immediately.

For direct detection of the marker DNA in the gel under UV- or blue light we recommend to use lyophilized marker DNA. The marker DNA is first solubilized in sterile water or 1xTE buffer, then Roti®-Load DNAstain (6x conc.) is added. The so prepared marker may be aliquoted and stored at -20 °C.

Roti®-Load DNAstain contains a fluorecent dye which may be excited by UV- or blue light, emitting at 525 nm.

Marker	200 bp-DNA Ladder	250 bp-DNA Ladder	500 bp-DNA Ladder	1 kbp DNA Ladder	DNA Ladder combi
Art. No.	**8272 (fig. 6)**	**T918 (fig. 7)**	**8273 (fig. 8)**	**Y014 (fig. 9)**	**CL22 (fig. 10)**
Size range (bp)	200 - 2000	250 - 8000	500 - 5000	500 - 10000	100 - 10000
Number of fragments	10	16	10	11	20
Reinforced band at (bp)	1000	1500, 2500	2500	-	500
Quantitation	possible	-	possible	-	-
Number of lanes in minigel	200 / ml	200 / 100 µg	200 / ml	200 / 100 µg	200 / 140 µg
Delivery	ready-to-use	lyophilised	ready-to-use	lyophilised	lyophilised



100 bp-DNA-Ladder *equimolar* ③

DNA ladder + gel loading buffer

Size range: 100-1000 bp
Number of fragments: 11
Number of lanes per 100 µg: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

Routine marker for small fragments.

The individual bands of the marker are present in the mixture in the same molar concentration (equimolar).
Fig.: 1,8 % agarose (NEEO, Art. No. 2267)
The DNA-ladder is supplied in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included.

T834.1	50 µg + gel loading buffer	plastic	77,30 €
T834.2	4 x 50 µg + gel loading buffer	plastic	295,65 €

100 bp-DNA-Ladder *equalized* ④

DNA ladder + gel loading buffer

Size range: 100-1000 bp
Number of fragments: 11
Number of lanes per 100 µg: approx. 500 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

Ideal for analysis of fragments ≤500 bp.

The DNA-quantity per band was set in such a way that the intensity of the individual bands is comparable (equalized).
Fig.: 1,8 % agarose (NEEO, Art. No. 2267)
The DNA-ladder is supplied in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included.

T833.1	20 µg + gel loading buffer	plastic	77,30 €
T833.2	4 x 20 µg + gel loading buffer	plastic	295,65 €

100 bp-DNA-Ladder *extended* ⑤

DNA ladder + gel loading buffer

Size range: 100-5000 bp
Number of fragments: 17
Number of lanes per 100 µg: approx. 160 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

Fragment sizes 100 to 1000 bp are equimolar.
Fig.: 1,8 % agarose (NEEO, Art. No. 2267)
The DNA-ladder is supplied in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included.

T835.1	50 µg + gel loading buffer	plastic	77,30 €
T835.2	4 x 50 µg + gel loading buffer	plastic	295,65 €

200 bp-DNA-Ladder ⑥ ready-to-use

DNA marker ready-to-use

Size range: 200-2000 bp
Number of fragments: 10
Number of lanes per ml: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 1000 bp fragment has been enhanced for easy analysis of the gel. All fragments are quantified, enabling quantitation of sample DNA in the gel. Bromophenol blue and xylene cyanol are included as tracking dyes. We recommend use of this marker on the following special agaroses: HR-PLUS (Art. No. HP30), LM/PCR (Art. No. HP31), or an agarose with additional Synergel™ (Art. No. 0184). The 200 bp DNA-Ladder is highly compatible with the 20 bp DNA-Ladder (Art. No. 2805). The two markers can easily be combined, resulting in a highly versatile ladder from 20 bp up to 2000 bp .

8272.1	500 µl (50 µg)		90,20 €

250 bp-DNA-Ladder ⑦

DNA ladder + gel loading buffer

Size range: 250-8000 bp
Number of fragments: 16
Number of lanes per 100 µg: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

Universal marker for size analysis of plasmids and DNA-insertions. Two fragments of 1500 and 2500 bp have been reinforced for easy orientation in the gel. The DNA amount per band has been optimised in such a way that a small running distance and low amounts of marker are sufficient for optimum separation.
Fig.: 1,8 % agarose (NEEO, Art. No. 2267)
The ladder is supplied in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included.

T918.1	50 µg + gel loading buffer	plastic	83,35 €

500 bp-DNA-Ladder ⑧ ready-to-use

DNA marker ready-to-use

Size range: 500-5000 bp
Number of fragments: 10
Number of lanes per ml: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 2500 bp fragment has been enhanced for easy analysis of the gel. All fragments are quantified, enabling quantitation of sample DNA in the gel. Bromophenol blue and xylene cyanol are included as tracking dyes. We recommend use of this marker on the following special agaroses: GTQ (Art. No. 6352), Broad Range (Art. No. T846), or an agarose with additional Synergel™ (Art. No. 0184). The 500 bp DNA-Ladder is highly compatible with the 50 bp DNA-Ladder (Art. No. 2810). The two markers can easily be combined, resulting in a highly versatile ladder from 50 bp up to 5 kb.

8273.1	500 µl (50 µg)		71,95 €

1 kbp DNA-Ladder ⑨

DNA ladder + gel loading buffer

Size range: 500-10000 bp
Number of fragments: 11
Number of lanes per 100 µg: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

Universal marker for electrophoretic separation of fragments between 500 bp and 10 kb, optimally suited for size determination of inserts, plasmids, and restricted DNA. The mass of the larger fragments was reduced, allowing to obtain clear and distinct bands with short running distances even for the large marker fragments.
The terminal sticky *Eco*R I-restriction sites allow simple labelling of the marker fragments via end-labelling techniques.
The 1 kbp DNA-ladder is highly compatible with the 100 bp DNA-ladder (equalised: T833.1).
Fig.: 1.2 % agarose (NEEO, Art. No. 2267). Additional band at 125 bp.
The DNA-ladder is supplied in lyophilised form.
Gel loading buffer for dissolving the lyophilised DNA-fragments is included.

Y014.1	50 µg + gel loading buffer	plastic	37,55 €
Y014.2	4 x 50 µg + gel loading buffer	plastic	129,55 €

The DNA-markers are supplied ready-to-use or in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included. We use Roti®-Load DNA with glycerol (Art. No. 0100.1) as gel loading buffer. The dissolved markers are ready-to-use and can be applied to gels immediately.

Instructions for use
can be found on the Internet next to the product description.

DNA-Ladder combi ⑩

DNA marker + gel loading buffer

Size range: 100-10000 bp
Number of fragments 20
Number of lanes per 40 µg + 100 µg: approx. 200 (mini gels)

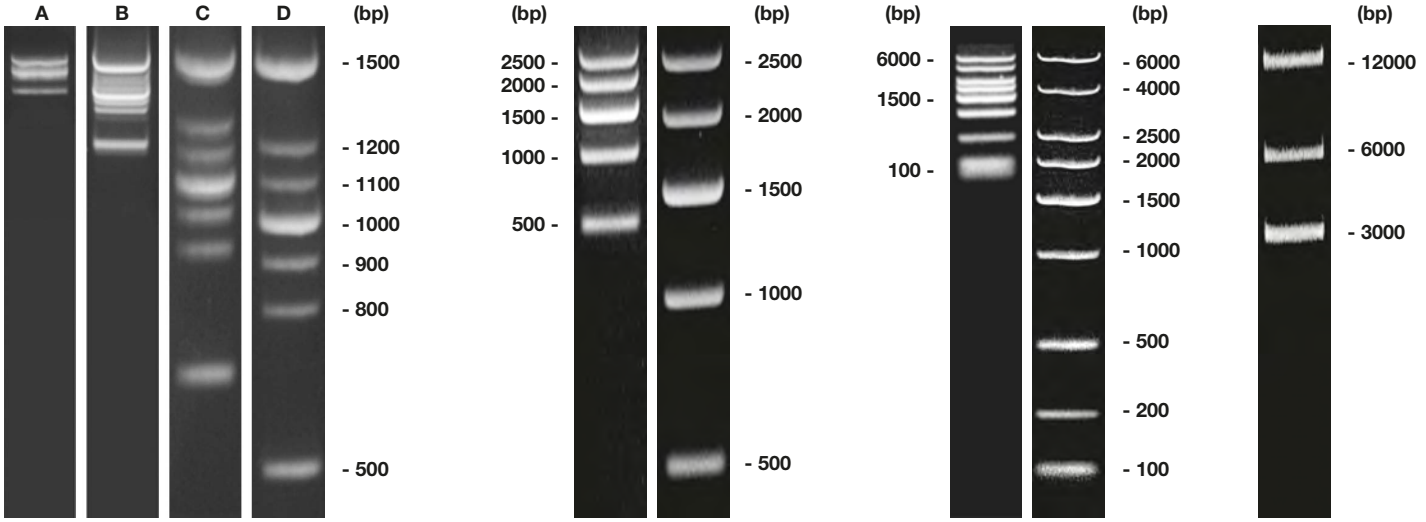
Storage temp.: -20 °C • Transport temp.: room temp.

Versatile DNA-marker combination for gels and DNA-fragments of different size. DNA-ladder combi combines the advantages of the 100 bp ladder, equalized (Art. No. T833), with the versatile 1 kbp DNA-ladder (Art. No. Y014). Subsequently we now have a marker set that completely covers both the medium size range up to 10 kb (see figure of Art. No. Y014) as well as enabling clear size analysis in the small fragment range. The two markers come in separate tubes to ensure high flexibility in the laboratory. They can, therefore, be used separately or combined. The bands below 500 bp were enhanced aligning their intensity in the gel to the large fragments. The 500 bp band was specially enhanced for easy orientation in the gel.
The **figure** shows a gel mixture of 0,9 % Agarose + 0,5 % Synergel® with (left to right): 0,4 µg 100 bp Ladder, equalized + 0,3 µg 1 kbp Ladder; 0,5 µg 1 kbp Ladder, 0,4 µg 100 bp Ladder, equalized. The DNA-ladder is supplied in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included.

CL22.1	20 µg + 50 µg + gel loading buffer	plastic	112,80 €

DNA Markers for Short Runs

Marker	PCR-Marker DNAscore	DNA-Marker short run 1	DNA-Marker short run extended	DNA-Marker ccc-Plasmid
Art. No.	T917 (fig. 1)	0146 (fig. 2)	CL05 (fig. 3)	0149 (fig. 4)
Size range (bp)	500 - 1500	500 - 2500	100 - 6000	3000 - 12000
Number of fragments	7	5	9	3
Reinforced bands at (bp)	500, 1000, 1500	1500	1500	-
Quantitation	possible	possible	possible	-
Number of lanes in minigel	200 / 100 µg	400 / 100 µg	300 / 100 µg	1000 / 100 µg
Delivery	lyophilised	lyophilised	lyophilised	lyophilised



① ② ③ ④

PCR-Marker DNA*score* ①

DNA marker + gel loading buffer
Size range: 500-1500 bp
Number of fragments: 7
Reinforced bands: 500 bp, 1000 bp, 1500 bp
Band for DNA quantitation: 1000 bp
Number of lanes per 100 µg: approx. 200 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

PCR-Marker DNAscore resolves extremely quickly and is therefore excellent for analysing PCR-fragments and for routine-analysis.
The 500 bp, 1000 bp and 1500 bp bands have been reinforced in their intensity for speedy and simple orientation.
The special 1000 bp band allows the marker to be used for quantifying in gel. Depending on the resolved segment, the marker changes its appearance (see **figure**):
A) 1,0 cm: The marker shows three bands (500 bp, 1000 bp, 1500 bp).
B) 1,5 cm: Four satellite bands flank the 1000-bp-band.
C) 3-4 cm: All bands are resolved. Efficient size analysis of fragments with a difference of 50 bp is possible.
D) 6-7 cm: The marker can also be used for quantfying after approx. 6 cm run: the 1000-bp-band corresponds to140 ng DNA (when loading 0,5 µg DNA-marker).

T917.1	50 µg + gel loading buffer	plastic	83,75 €

DNA-Marker short-run 1 ②

DNA marker + gel loading buffer
Size range: 500-2500 bp
Number of fragments: 5
Number of lanes per 100 µg: approx. 400 (mini gels)
The perfect DNA-marker for very short gel running distances and high-through-put approaches.

Storage temp.: -20 °C • Transport temp.: room temp.

Best results are already obtained at 18 mm running distance in a 1,5 % agarose gel (see figure). The fragment mass is optimised for very short runs. The 1500 bp fragment has been enhanced for easy analysis of the gel.
Fig.: 1,5 % agarose (NEEO, Art. No. 2267). Left - running distance 18 mm, Right - running distance 40 mm.

0146.1	50 µg + gel loading buffer	plastic	75,15 €

DNA-Marker short-run *extended* ③

DNA marker + gel loading buffer
Size range: 100-6000 bp
Number of fragments: 9
Number of lanes per 100 µg: approx. 300 (mini gels)

Storage temp.: -20 °C • Transport temp.: room temp.

New DNA marker, optimised for all standard applications in the lab. Due to the lesser number of fragment bands, the short-run, extended DNA-Marker separates very efficiently even on very short running distances, making it a versatile tool also for high-throughput and short-term electrophoresis. Best results are already obtained at 15 mm running distance / 7 minutes runtime in a 1,5 % agarose gel with 0,3 µg DNA loading per lane (see **figure**).
The fragment mass is optimised for very short runs and the enhanced 1 500 bp fragment provides easy orientation for analysis.
Fig.: Left - 1,5 % agarose (NEEO, Art. No. 2267), running distance 15 mm. Right - 1,2 % agarose, running distance 35 mm.

CL05.1	50 µg + gel loading buffer	plastic	87,00 €

DNA-Marker ccc-plasmid ④

DNA marker + gel loading buffer
Size range: 3000-12000 bp
Number of fragments: 3
Number of lanes per 100 µg: approx. 1000 (mini gels)
A “covalently closed circle“ DNA-marker for rapid determination of plasmid size and estimation of plasmid concentration following DNA-preparation.

Storage temp.: -20 °C • Transport temp.: room temp.

The excellent separation efficiency of the marker even on short running distances allows for the application in high-throughput approaches. Best results are already obtained at 20 mm running distance in a 1,2 % agarose gel (see figure).
Fig.: 1,2 % agarose (NEEO, Art. No. 2267), running distance 20 mm.

0149.1	10 µg + gel loading buffer	plastic	63,35 €

The DNA-ladders are supplied in lyophilised form. A short-run-optimised sample buffer for dissolving the lyophilised DNA-fragments is included (Art. No. 0099.1).
The dissolved markers are ready-to-use and can be applied to gels immediately.

Staining of Protein Gels

ROTH provides a large selection of high-quality staining kits and reagents for proteins, differing in their sensitivity and range of application.
The table below will help you to select the staining method best suitable for your particular application.

Summary Staining of Protein Gels

Product	Sensitivity	Description
Roti®-Black P	1 ng/mm²	**Silver** staining kit. Highly sensitive. Simple, fast and reproducible.
Roti®-Blue	10 ng/mm²	Coomassie®-solution for colloidal staining of proteins. **Destaining not required**. Non-fixing staining for protein gel elution possible. Proteomics-compatible.
Roti®-Blue quick	10 ng/mm²	Solution for **rapid**, highly specific **staining** of proteins. **Destaining not required.** Non-fixing staining, compatible with blotting and Proteomics.
Rotiphorese®-Blue R	50 ng/mm²	**Coomassie®** staining solution concentrate for rapid staining
Coomassie® Blue G250 (C.I. 42655)	60 ng/mm²	Dye for performing Coomassie® staining. OD_{max} = 595
Coomassie® Blue R250 (C.I. 42660)	50 ng/mm²	Dye for performing Coomassie® staining. OD_{max} = 550

Suitability of protein stainings

Product	Sensitivity	Rapid Gel Analysis	Gel Drying	Elution/ Transfer	2D-Gels	MS-Analysis
Roti®-Black P	1 ng/mm²	-	+++	-	+++	-
Roti®-Blue	10 ng/mm²	-	+++	+++	-	+++
Roti®-Blue quick	10 ng/mm²	+++	+++	++	-	++
Roti®-Blue R	50 ng/mm²	+++	+	-	-	-

+++: recommended +: suitable -: not recommended

▶ Gel staining trays and other accessories see page 1243

Instructions for use
can be found on the Internet next to the product description.

Please note our **Technical Information Brochure** on the Internet next to the products:

Coomassie® Gel Staining
Basics and mechanisms of Coomassie® dyes

Roti®-Blue quick ready-to-use

ready-to-use 1x conc. solution
Solution for rapid, sensitive staining of protein gels.
Storage temp.: +4 °C

- Particularly fast, specific staining
- First bands are visible within 3 mins.
- No background - no destaining necessary
- Very simple application without heating, methanol, or acetic acid
- Stabilised for a longer shelf life

Roti®-Blue quick provides a new, very fast staining method for proteins in polyacrylamide gels. Due to the modern formulation, the dye binds highly specifically to proteins, but not to the gel matrix, hence eliminating the need to destain the gel. First bands are clearly visible within 3 mins.!

Protein amount / band	Approximate staining duration
≥1 µg	3 mins.
≥100 ng	15 mins.
≥10 ng	60 mins.

The sensitivity of staining equals that of Roti®-Blue (Art. No. A152), so bands of 10 ng protein can be detected.
Roti®-Blue quick is, therefore, approx. 5times more sensitive than standard Coomassie® staining solutions. Roti®-Blue quick staining is also fully compatible with usual down-stream applications like, membrane transfer & Western blotting, MS analysis (incl. MALDI) and protein gel elution.

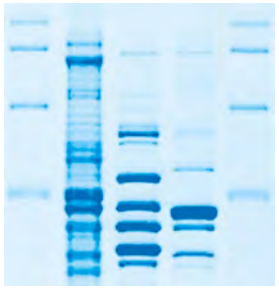


Figure:
SDS-PAGE with 3 µl Roti®-Mark Standard and samples.
Staining duration: 20 mins.

1 l solution is sufficient for approx. 40 mini gels.

4829.1	250 ml	glass	67,20 €
4829.2	1 l	glass	228,45 €
Original pack 6 x 1 l			217,03/1 l

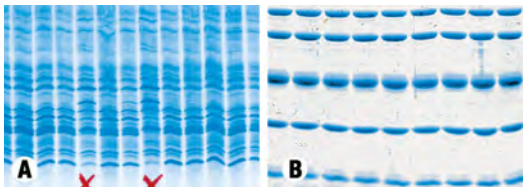
Roti®-Blue ready-to-use

5x concentrated

Colloidal Coomassie® staining solution for protein gels.
Storage temp.: +20 °C

- Most simple application
- No destaining necessary
- 5 x more sensitive than Coomassie® R250

Roti®-Blue is a colloidal Coomassie® brilliant blue G250 staining agent for proteins in polyacrylamid gels. Its colloidal features enable the staining agent to be bound to the proteins with high specificity and only minimally to the gel matrix. There is no longer any need for the extensive washing steps for background decoloring. Roti®-Blue is approximately 5 x more sensitive than standard Coomassie® staining solutions. Staining time takes 2 to 12 hours depending on the desired band intensity.
Due to the fact that proteins may be stained without fixing the gel, membrane transfer and gel elution are still possible following staining.
Particularly well suited for staining prior to MS-analyses (e.g. MALDI) and prior to gel elution.



Figures:
A: Horizontal IEF for determination of wheat-varieties.
With kind permission of R. Knoblauch, LTZ Referat 23, Karlsruhe
B: SDS-PAGE Roti®-Mark Standard.

1 l concentrate is sufficient for 50 mini gels.

A152.2	250 ml	plastic	32,15 €
A152.1	1 l	plastic	93,00 €
Original pack 6 x 1 l			88,35/1 l

Brilliant blue G 250 (C.I. 42655)

For preparing staining solution for protein analysis in gel electrophoresis.
Coomassie® blue G 250
$C_{47}H_{48}N_3O_7S_2Na$
M 854,03 g/mol
Do not use for staining of membranes following protein transfer.

9598.1	10 g	glass	30,00 €
9598.2	100 g	plastic	153,65 €

Safety data sheets
can be found on the Internet next to the product description.

Rotiphorese® Blue R ready-to-use

Brillant Blue R concentrate

For Coomassie® staining of protein gels.

Danger H225-H370-H315-H319-H311+H331+H301

Concentrate for easy preparation of Coomassie® Blue R staining solutions. Rotiphorese®-blue is ideal for staining proteins in SDS-PAGE gels. It saves any tedious weighing of staining powder and having to prepare the mixture.

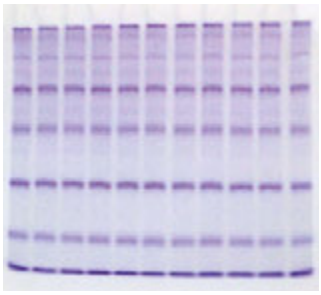


Figure:
Gel stained by Rotiphorese®-Blue R, 12 % PAA in Tris, Roti®-Mark STANDARD (Art. No. T851).
Concentrate contains Coomassie® Blue R, methanol and pure acetic acid. Rotiphorese® concentrate Blue R can be diluted with 400-600 ml deionised water to obtain the following compositions:

Dilution with water	397.5 ml	507.5 ml	602.5 ml
yields staining solution	approx. 1 l	approx. 1.1 l	approx. 1.2 l
methanol	50 %	45 %	41.5 %
pure acetic acid	10 %	9 %	8.3 %
water	39.75 %	45.78 %	50 %
Blue R	**0.25 %**	**0.22 %**	**0.2 %**

Dilution can be carried out in the supplied bottle.
The solution should be filtered before use.

600 ml concentrate are sufficient for approx. 12 mini gels.

3074.1	600 ml	glass	32,15 €

Brilliant blue R 250 (C.I. 42660)

For preparing staining solution for protein analysis in gel electrophoresis.
Coomassie® Brillant Blue R 250
$C_{45}H_{44}N_3NaO_7S_2$
M 825,99 g/mol
Only conditionally use for staining of membranes after protein transfer.

3862.1	10 g	glass	24,20 €
3862.2	100 g	glass	96,65 €

▶ White light-light boxes see page 801

Roti®-Black P

silver staining kit for proteins

Danger H272-H301+H311+H331-H314-H317-H341-H350-H370-H410

- Sensitive silver staining
- Transparent gel
- Reliable results

Roti®-Black is a kit for speedy, reproducible silver staining of proteins in free and foil-supported gels.
High sensitivity in combination with very low background enables detection of proteins from 1 ng/mm² on. 1 kit is adequate for staining 10 gels. Staining can be performed in unsupported gels without methanol. Included is an easy-to-follow instruction manual which will guarantee reliable results.

This Kit contains sodium thiosulphate (Art. No. L534), silver nitrate (Art. No. L535), empty test tubes (Art. No. L536), formaldehyde (Art. No. L537), and sodium carbonate (Art. No. L538).
Contents of this Kit may not be bought separately. Shipped without racket.

L533.1	for 10 gels of 10 ml vol. each	78,40 €
L533.2	for 10 gels of 40 ml vol. each	94,50 €

Silver nitrate

≥99,9 %, for staining of proteins, Proteicolor®

$AgNO_3$

M 169,88 g/mol

Danger H272-H314-H400-H410

Proteicolor® is a special quality silver nitrate for reproducible staining of proteins and 1,2 Diol-groups, of glycoproteins and polysaccharides in polyacrylamide and agarose gels. Staining with Proteicolor® can also be used for highly sensitive identification of RNA and DNA.

6207.1	50 g	plastic	137,10 €

Silver staining of proteins and DNA-gels

Roti®-Black silver staining kits have been optimized to provide you with the most sensitive staining possible. Adding **thiosulfate** during the sensibilization and generation process reduces the background and increases contrast (acc. to Blum *et al.*, (1987) *Electrophoresis* 8:93-9). **Formaldehyde** should preferably be fresh when applied and it reduces the silver ions (Ag^+) to so-called silver seed crystals.

We recommend to:

- Wash the gels carefully after each step otherwise there may be side reactions in the form of stains, spots, increased background or secondary bands.
- Fix the gels carefully. Inadequate fixation impairs band formation and increases the background. Fresh and high-quality fixatives should be used and adapted to the volume and duration of gel strength.

Staining of DNA Gels

Nucleic acid dyes for agarose and acrylamide gels, for laboratories and practical applications. We offer you high-quality stains with high sensitivity (silver stains), standard stains (ethidium bromide) in user-friendly dropper bottles, and non-toxic fluorescent dyes for blue or UV light.
The following table provides an overview of the various stains and their respective sensitivity levels.

Summary Staining of Nucleic Acid in Gels

Product	Sensitivity	Description	Excitation
Roti®-Black N	<0.1 ng/mm²	**Silver** staining of DNA polyacrylic amide gels	White light
Roti®-Black NSeq	<0.1 ng/mm²	**Silver** staining of DNA sequencing gels	White light
Ethidium bromide solution	1.5 ng/mm²	Standard **fluorescent** staining	254-330 nm, 500 nm UV- and blue light
EvaGreen® fluorescent dye	1.5 ng/mm²	Non-toxic, green **fluorescent** staining	320 nm, 470-500 nm UV- and blue light
Roti®-GelStain	1.5 ng/mm²	Non-toxic, green **fluorescent** staining	290-320 nm UV-light
Roti®-GelStain Red	1.5 ng/mm²	Non-toxic, red **fluorescent** staining	310 nm, 540 nm UV- and blue light
Roti®-Load DNAstain gel loading buffer	1.5 ng/mm²	Non-toxic, green **fluorescent** staining Dye: EvaGreen®	320 nm, 470-500 nm UV- and blue light
Roti®-Methylene blue staining concentrate	10 ng/mm²	Reversible, non-toxic **blue** staining	White light

Colorimetric Staining of Nucleic Acids in Gels

Roti®-Black N

silver staining kit for DNA-polyacrylamide gels

Danger H272-H301+H311+H331-H314-H317-H341-H350-H370-H410

- Ultra-sensitive
- Easy-to-follow guide
- Transparent gel

Roti®-Black N is a kit for ultra-sensitive and reproducible staining of DNA in polyacrylamide gels.
Detection limit for DNA is <0.1 ng/mm². Roti®-Black N is, therefore, an excellent alternative to using radioactivity or bioluminescent systems.
Roti®-Black N results in an intensive staining of nucleic acids, yet the gel matrix remains highly transparent. The enclosed instruction manual is easy to follow and guarantees reliable results.
This Kit contains silver nitrate (Art. No. N770), formaldehyde (Art. No. N771), sodium thiosulphate (Art. No. N772), sodium carbonate (Art. No. N774), and stop solution (Art. No. N773).
Contents of this Kit may not be bought separately. Shipped without racket.

N769.1	for 10 gels of max. 10 ml gel volume	97,75 €
N769.2	for 10 gels of max. 40 ml gel volume	170,95 €

Roti®-Black NSeq

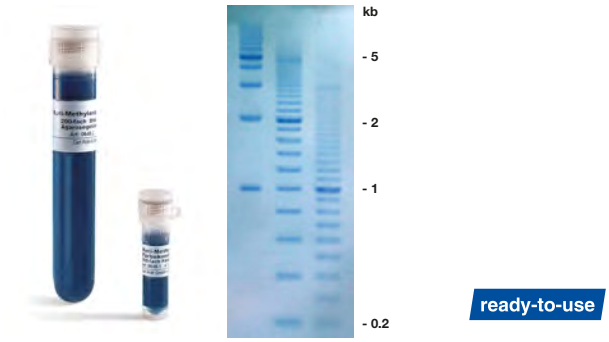
silver staining kit for sequencing gels

Danger H272-H301+H311+H331-H314-H317-H341-H350-H370-H410

Roti®-Black NSeq is a kit for ultra-sensitive and reproducible staining of DNA in denaturing and non-denaturing gels.
Detection limit <0.1 ng/mm².
Roti®-Black NSeq is the ideal choice for detecting minute DNA amounts in sequencing gels (Microsatellite-DNA or SSLP – simple sequence length polymorphisms). The enclosed instruction manual is easy to follow and guarantees reliable results. The gels are stained on the glass plate.

This Kit contains silver nitrate (Art. No. P082), formaldehyde (Art. No. P083), sodium thiosulphate (Art. No. P084), sodium carbonate (Art. No. P085), and stop solution (Art. No. P086).
Contents of this Kit may not be bought separately. Shipped without racket.

P081.1	for 10 gels of max. 48 ml gel volume	139,25 €



ready-to-use

Roti®-Methylene blue staining concentrate

For reversible staining of DNA in agarose gels, 200x concentrate.
Storage temp.: +4 °C

Warning H226-H319

- Highly reversible alternative to ethidium bromide
- High sensivity (in minimum 10 ng/band)
- No transilluminator required
- Solution can be used repeatedly
- Sufficient for more than 50 mini gels

The staining solution was specially developed for sensitive staining of DNA in agarose gels. Sensitivity reaches up to 10 ng per DNA-band. Staining can be conducted in a simple staining bowl, a transilluminator is not required. The diluted staining solution can be used several times.
Roti®-Methylene blue staining concentrate binds to the negativly charged DNA backbone by salt bridges formed through quaternary ammonia complexes. The staining is very easy to remove by washing or replacement by salts.

Applications: DNA agarose gels, DNA polyacrylic amide gels, reversible staining of Southern- and Northern-blots.
12 ml Roti®-methylene blue staining concentrate is sufficient for more than 50 mini gels.

0648.1	3 ml	plastic	38,20 €
0648.2	12 ml	plastic	113,85 €

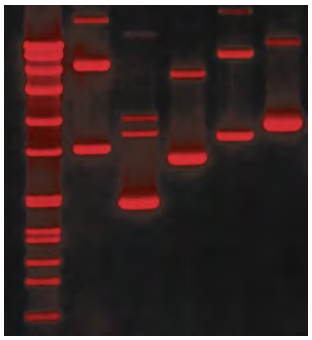
Non-Toxic Fluorescent Staining of Nucleic Acids in Gels

Non-toxic and non-carcinogenic dyes for fluorescent staining of nucleic acids in agarose gels. Highly sensitive and applied just like ethidium bromide.

The **Roti®-GelStain** dyes are used as additives to the gel solution and the running buffer, partly also post-run staining is possible.

Eva Green® is added directly to the loading buffer. Ready-made loading buffers with Eva Green® are the **Roti®-Load DNAstain** solutions.

All dyes can be excited by UV light, additionally, Eva Green® and Roti®-GelStain Red can be excited by blue light. Resulting signals may be detected by ethidium bromide broadband photo filters.



For UV- and blue light

Roti®-GelStain Red

ready-to-use | DNAse-free

for electrophoresis

Red fluorescent staining reagent for non-toxic staining of nucleic acids in agarose gels and polyacrylamide gels.

Alternative for ethidium bromide, Ethidium bromide substitute

Storage temp.: +4 °C

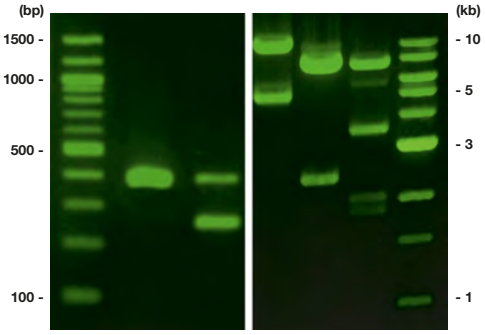
- Alternative to ethidium bromide, non-toxic, non-mutagen
- Detection of > 0.3 ng nucleic acid per band
- Usuable with the same filters as ethidium bromide
- Excitation via UV light (310 nm) and blue light (540 nm)
- Compatible with all usual down-stream applications

Roti®-GelStain Red is a new designed red fluorescent dye that can be used like ethidium bromide for staining in gel (addition to gel solution). Due to the low membrane permeability of the dye Roti®-GelStain Red is non-mutagenic and non-toxic. It is suitable for staining of dsDNA, ssDNA and RNA. Bound to nucleic acid it emits a brightly red fluorescence that can be documented by all usual ethidium bromide foto filters. Roti®-GelStain Red is compatible with all usual down-stream applications.
Excitation maximum (bound to DNA): approx.310 nm and 540 nm
Emission maximum (bound to DNA): 630 nm

Type analysis:

Appearance. ..... red, transparent liquid, no precipitation
Staining of DNA in agarose gels. ..... complies
Staining of DNA in PA gels. ..... complies

0984.1	1 ml	plastic	100,95 €
0984.2	1 x 5 ml	plastic	450,45 €



For UV-light

Roti®-GelStain

ready-to-use

Fluorescent staining, ready-to-use, for electrophoresis

For non-toxic fluorescent staining of nucleic acids in agarose gels. Green fluorescence.

Storage temp.: +4 °C

Roti®-GelStain is a new, versatile staining reagent for detection of all nucleic acids in agarose gels.

- Alternative for ethidium bromide, non-toxic, non-mutagen
- Nearly as sensitive as ethidium bromide, up to 1,5 ng/mm² nucleic acid
- For use with common broad-band ethidium bromide photo filters
- Compatible with all usual down-stream applications

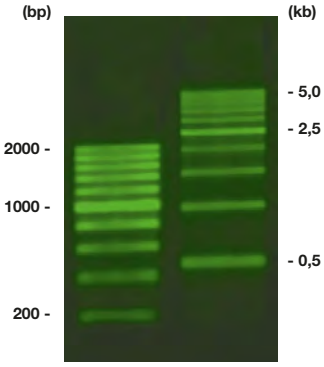
The dye may be used exactly in the same way as ethidium bromide - for staining in-gel, staining through running buffer, or post-run staining -, and may replace this toxic and potentially mutagen reagent completely. Roti®-GelStain detects up to 1,5 ng/mm² nucleic acid, which is approx. 0,2 ng per band, and is, therefore, nearly as sensitive as ethidium bromide.
When bound to nucleic acids in agarose gels, Roti®-GelStain emits a brightly green fluorescence that may be documented by all usual broad-band ethidium bromide or SYBR® Green foto filters. Roti®-GelStain is compatible with all standard down-stream applications and has been successfully tested for use with gel extraction, ligation, transformation and transfection.

The **figure** depicts amplicons of a mouse genotyping (left), and restriction digested DNA (right), respectively, separated in 2,5 and 1 % agarose Roti®garose NEEO with Roti®-GelStain (5 µl / 100 ml agarose). Pictures were taken using standard ethidium bromide photo filters.With kind permission of Prof. R. Slany, Dept. of Genetics, Friedrich Alexander University, Erlangen.

Excitation maximum (bound to DNA): 290-320 nm
Emission maximum (bound to DNA): 515 nm
Suitable for staining of dsDNA, ssDNA and RNA.

1 ml is sufficient for staining of approx. 600 minigels (with 30 ml agarose each).

3865.1	1 ml	plastic	95,60 €
3865.2	5 x 1 ml	plastic	429,50 €



For UV- and blue light

Roti®-Load DNAstain

ready-to-use | DNAse-free

6x conc. gel loading buffer, ready-to-use, DNAse-free

DNA-gel loading buffer with fluorescent DNA-dye EvaGreen®.
Storage temp.: -20 °C • Transport temp.: room temp.

- Alternative for ethidium bromide, non-toxic, non-mutagen
- Nearly as sensitive as ethidium bromide, up to 1,5 ng/mm² nucleic acid
- For use with common broad-band ethidium bromide photo filters
- Excitation possible via UV light (320 nm) and blue light (~470 nm)
- Compatible with all usual down-stream applications

New, versatile reagent for gel loading and simultaneous staining of double stranded nucleic acid in agarose- and polyacrylamide gels.
Roti®-Load DNAstain detects up to 0,2 ng per band, and is, therefore, as sensitive as ethidium bromide. Due to its most simple application as gel loading buffer it reduces the time needed for gel analysis significantly.
This innovative reagent contains the dye EvaGreen®, which has been developed specifically for DNA analysis. DNA integrity is not in fluenced by EvaGreen®; hence, gel eluted DNA may directly be applied to standard down-stream applications, like, e.g., ligation, PCR, transformation, transfection etc. without interfering effects. Due to the low membrane permeability of the dye, Roti®-Load DNAstain is non mutagenic, non toxic, and environment friendly.
Roti®-Load DNAstain can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, nucleic acid-bound Roti®-Load DNAstain emits a brightly coloured green fluorescence (525 nm) that may be documented by all usual broadband ethidium bromide- or SYBR® Green foto filters.

The **figure** depicts 50 ng DNA per band, or 75 ng (1000 bp and 2,5 kb), respectively. Each lane has been loaded and concurrently stained using 1 µl Roti®-Load DNAstain.

Excitation maximum (bound to DNA): approx. 320 nm and 470-500 nm
Emission maximum (bound to DNA): 525 nm
1 ml is sufficient for running and staining of approx. 500 lanes.

Roti®-Load DNAstain 1

Roti®-Load DNAstain 1 contains: Tris, EDTA, bromophenol blue, xylencyanol, EvaGreen®.
Recommended for staining of dsDNA- and dsRNA-fragments of over 500 bp.

5783.1	1,0 ml	plastic	37,55 €
5783.2	5 x 1,0 ml	plastic	114,95 €

Roti®-Load DNAstain 2

Roti®-Load DNAstain 2 contains: Tris, EDTA, xylencyanol, orange G, EvaGreen®.
Recommended for staining of dsDNA- and dsRNA-fragments of 100-2000 bp.

5784.1	1,0 ml	plastic	37,55 €
5784.2	5 x 1,0 ml	plastic	114,95 €

Roti®-Load DNAstain 3

Roti®-Load DNAstain 3 contains: Tris, EDTA, orange G, EvaGreen®.
Recommended for staining of dsDNA- and dsRNA-fragments of under 500 bp.

6472.1	1 ml	plastic	37,55 €
6472.2	5 x 1,0 ml	plastic	114,95 €

For UV- and blue light

Eva Green® Fluorescent Dye

for electrophoresis, 100x concentrated

For fluorescent staining of nucleic acids in agarose- and polyacrylamide gels.
Storage temp.: -20 °C • Transport temp.: room temp.

- Direct addition to DNA sample
- For excitation with UV light and blue light
- Non-toxic alternative for ethidium bromide

EvaGreen® is a staining reagent for detection of double stranded nucleic acid in agarose- and polyacrylamide gels. The dye is added directly to the DNA/Loading buffer mixture and then loaded onto the gel. EvaGreen® bounds to nucleic acids emitting a brightly coloured fluorescence.
The sensitivity reaches up to 0,2 ng per band.
EvaGreen® is an intercalating fluorescent dye, but due to its low membrane permeability it is non mutagenic, non-toxic, and environment friendly.
EvaGreen® has been developed specifically for gentle DNA analysis. DNA integrity is not influenced; hence, gel eluted DNA may directly be applied to standard down-stream applications, like, e.g., ligations, PCR, transformation, transfection etc. without interfering effects.
EvaGreen® can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Roti®-PROfessional runVIEW, Art. No. 4849.1). The gels may be documented by all usual broadband ethidium bromide- or SYBR® Green foto filters.
Excitation maximum (bound to DNA): approx. 320 nm and 470-500 nm
Emission maximum (bound to DNA): 525 nm
500 µl is sufficient for running and staining of approx. 500 lanes.

8905.1	500 µl	plastic	90,85 €

Please note our **Technical Information Brochure** on the Internet next to the products:

Roti®-Load-DNAstain / EvaGreen®
Data on mutagenicity and environmental safety

Please note our **Technical Information Brochure** on the Internet next to the products:

Gel staining of nucleic acids
Background and mechanisms of the various stains

Ethidium bromide is a strong mutagenic and toxic substance. For your own safety, always wear gloves and respiratory protection to prevent contamination when working with this substance. After use, dispose of solutions correctly. They may not be discarded into the environment.

The following procedure is recommended (acc. to INSERM, Dossier prevention, Number 2, 2nd Ed., September 88):

1. Collect and dispose of as hazardous waste.
2. Break down EtBr with potassium permanganate and HCl (P. Quillardet, M. Hofnung, *Trends Genet.* 4,89 [1988]).
3. Break down EtBr with hypophosphoric acid and sodium nitrite (Lunn and Sansone; *Analyt. Biochem.* 162, 453-458 [1987]).
4. Absorption of EtBr with Amberlite® XAD-16 (Lunn and Sansone) or with activated carbon (Bensaude, O. Method, *Trends Genet.* 4, 89-90 [1988]) from the solution.

We recommend disposure by **Sekuroka® Decon-Bags** (Art. No. T856)

Ethidium bromide

For UV- and blue light

In spite of newly developed fluorescent staining reagents ethidium bromide remains the standard staining technic for nucleic acid in electrophoresis. Ethidium bromide is a carcinogenic substance which shouldn't come in contact with skin.
In order to minimise this danger we offer ready-to-use ethidium bromide solution in dropper bottles for easy handling and maximum safety.

Excitation maxima (unbound):
210 nm, 285 nm, 470 nm
Excitation maxima (bound to DNA):
330 nm, 500 nm
Excitation possible via DNA at 254 nm
Emission maximum: 605 nm

Sekuroka® Decon-Bags

Absorber bags for removing ethidium bromide from liquids.

Sekuroka® Decon-Bags are a simple method for removal of ethidium bromide from solutions. The bags contain a special type of activated carbon which absorbs ethidium bromide effectively and safely. One bag can absorb 2.5 mg ethidium bromide. Efficiency is >99 %. The application is extremely simple: Place the absorber bag in the ethidium bromide solution, incubate for 24 hours under stirring and dispose of the bag as hazardous waste in accordance with local regulations.
Bag size: 6 x 2.5 cm.
Also suitable for absorption of propidium iodide, PicoGreen® and SYBR® Green!

T856.2	10 Bags	31,10 €
T856.1	50 Bags	131,70 €
T856.3	250 Bags	557,95 €

- ▶ Gel Documentation System see page 1248
- ▶ Transilluminators, UV-hand-held lamps and UV-hand-held magnifiers see chapter Labware - Optical Instruments and Lamps!

Ethidium bromide solution 0,025 % in dropper bottle

aqueous solution (250 µg/ml)

For staining of DNA or RNA in agarose gels during electrophoresis.

In spite of newly developed fluorescent staining reagents ethidium bromide remains the standard staining technic for nucleic acid in electrophoresis. Ethidium bromide is a carcinogenic substance which shouldn't come in contact with skin.
In order to minimise this danger we offer ready-to-use ethidium bromide solution in dropper bottles for easy handling and maximum safety.

Application:
Two drops will suffice for staining a 50 ml agarose gel.
Add directly to melted agarose.

Please store in the dark!

HP47.1	15 ml	plastic	30,65 €
HP47.2	5 x 15 ml	plastic	107,40 €

Ethidium bromide solution 0,5 % in dropper bottle

aqueous solution (5 mg/ml)

For counterstaining of nuclei in histology and cytology.
For staining of DNA/RNA after electrophoresis.

Warning H332

Application:
In order to prepare a staining solution add 5 drops of ethidium bromide solution to 500 ml water, buffer, or electrophoresis running buffer, respectively. Nuclei / nucleic acids are stained red.

Please store in the dark!

HP46.1	15 ml	plastic	30,65 €
HP46.2	5 x 15 ml	plastic	107,40 €

Ethidium bromide solution 1 %

1 % solution in water (10 mg/ml)

Homidium bromide, 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide

Warning H332-H341

Stock solution for fluorescent detection of nucleic acids.
Detection limit: 1.5 ng/mm^2.
Excitation maxima (unbound): 210 nm, 285 nm, 470 nm
Excitation maximum (bound to DNA): 330 nm, 500 nm
Excitation possible via DNA at 254 nm
Emission maximum: 605 nm.
Please store in the dark!

2218.1	10 ml	glass	11,00 €
2218.4	15 ml	dropp. bottle	31,10 €
2218.2	30 ml	glass	23,15 €
2218.3	100 ml	glass	55,80 €

Ethidium bromide

≥98 %

For DNA-staining.

Homidium bromide, 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide

$C_{21}H_{20}BrN_3$
M 394,33 g/mol
Storage temp.: +20 °C

Danger H330-H341-H302

Fluorescent dye with specific DNA binding capacity. Intercalates between base pair stacks of dsDNA, causing weaker staining of ssDNA or RNA. For staining of DNA/RNA in gels and for counterstaining of nuclei in histological and cytological analyses. Store in the dark!
Excitation maximum: 518 nm
Emission maximum: 605 nm

7870.1	1 g	glass	23,55 €
7870.2	5 g	glass	94,10 €

Horizontal Electrophoresis: Systems & Modules

A large range of different electrophoresis chambers for agarose or acrylamide gel electrophoresis is available.

- Corrosion-free, gold-plated contacts. Conducting cables are linked directly to the safety lid, current flow is automatically stopped by opening the lid.
- The safety lid can only be closed in one direction, a mix-up of orientation is excluded
- The platinum electrodes are protected by a special construction
- Our entire range of electrophoresis chambers is CE-certified
- For all chambers a wide range of accessories is available, such as combs, spacers and gel casting trays
- All gel casting trays are **UV-transparent**

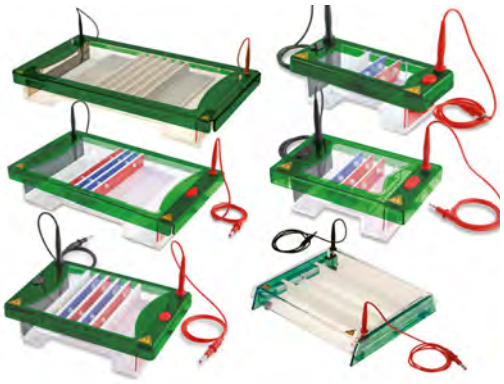
Depending on the model, the gels can be cast directly in the chamber or on a special gel casting tray. The different combs can be adjusted in height and are available in three or four colour-coded thicknesses.

Overview of Horizontal Electrophoresis Units acc. to Gel Size

Gel Size	Suitable for	Unit	Art. No.
6 x 7.5 cm	Agarose	MINI	N562.1
7 x 7 cm	Agarose	PROfessional I	2788.1
8 x 10 cm	Agarose	MINIeasy	N817.1
10 x 10 cm	Agarose	PROfessional II	2799.1
10 x 11.5 cm	Agarose	MIDI 1	N576.1
15 x 15 cm	Agarose	PROfessional III	2850.1
15 x 15 cm	Agarose	PROfessional runVIEW	4849.1
15 x 15 cm	Agarose	MIDI PLUS	HP70.1
15 x 7 to 15 x 20 cm	Agarose	VARIA 1	AE17.1
15 x 20 cm	Agarose	PROfessional III Stretch 20	9940.1
15 x 25 cm	Agarose	PROfessional III Stretch 25	9941.1
20 x 20 cm	Agarose	PROfessional IV	2941.1
20 x 20 cm	Agarose	MIDI 2	N596.1
20 x 20 cm	Agarose	MIDI 2 cooled	N618.1
24 x 20 cm	Acetate	PROfessional Acetate	3099.1
25 x 25 cm	Agarose, IEP, Membrane	MULTI (flat bed)	CP51.1
25 x 30 cm	Agarose	MAXI	N610.1
25 x 30 cm	Agarose	MAXI cooled	N619.1
26 x 32 cm	Agarose	PROfessional V	3000.1

Maximum voltage for horizontal gels: 10 V/cm gel length **TIP**

Rotiphorese®-PROfessional - Product Line for Lab Bench and Student´s Courses

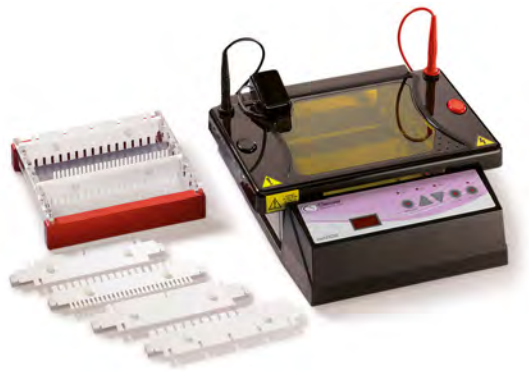


- Made of robust acrylic glass
- High-grade quality
- Injection moulded without bonding
- Absolutely leak proof
- Extremely easy to operate
- Wide range of accessories
- Easily replaceable electrodes
- Excellent value for money
- UV-transparent gel trays

TIP

- **PROfessional runVIEW real-time Electrophoresis**

PROfessional runVIEW
Real-time Electrophoresis under Blue Light



Rotiphorese® Unit PROfessional runVIEW

Gel size (w x l): 15 x 15 cm
Dimensions gel unit (w x l x h): 26.5 x 17.5 x 9 cm
Number of samples: max. 210 samples (using 6 comb slots)
Buffer volume: 500 ml

- **All-in-one system for real-time electrophoresis:** unit, power supply and illuminator combined
- Watch your bands migrate through the gel in blue light - without mutagen or retina damaging effects
- Recommended for use with Roti®-Load DNAStain (green), compatible with ethidium bromide (red) and SYBR® Green (green)
- First choice for rapid gel analysis, gel elution and all control gels
- The unit Rotiphorese® PROfessional III (Art. No. 2850.1) may be customised by the runView Base station (Art. No. 4850.1)

Innovative, new all-in-one system for electrophoresis - with integrated Power Supply and illuminator. Stained DNA is made visible during the run by excitation with blue light of 470 nm wave length and a special lid with integrated emission filter for green fluorescence. Another special lid with an intergrated ethidium bromide filter is available as accessory (Art. No 8549.1). DNA stained during the run by Roti®-Load DNAStain (green), ethidium bromide (red), or SYBR® Green (green), can be watched in real-time without having damaging effects caused by short wave lengths.

Unit under blue light, without lid

Unit under blue light, with green-filtering lid

Delivery incl. Rotiphorese® PROfessional runVIEW Base (base station with integrated blue light and power supply), horizontal gel unit Rotiphorese® PROfessional III, special lid for blue light with integrated spectral emission filter (green filter) and electrophoresis power leads (4 mm plugs), 1 UV-transparent gel casting tray (15 x 15 cm) with gel casting gates, and eight double sided combs: 2x 4-sample / 16-sample (1 mm); 4x 20- / 28-sample (1 mm, multichannel compatible); 1x 4- / 16-sample (3 mm); 1x 20- / 28-sample (3 mm, multichannel compatible).

Art. No.	Pack Qty	€
4849.1	1 unit	1717,85

Rotiphorese® PROfessional runVIEW Base

Base station for real-time electrophoresis.
- Combination of power supply and blue light illuminator
- Special lid for detection of green fluorescent dyes
- Optimal supplement to electrophoresis unit Rotiphorese® PROfessional III

A special lid for red fluorescent dyes is also available (Art. No. 8549.1).

Delivery incl. power supply with blue light illuminator, power cord, special lid with integrated spectral emission filter for green fluorescence, **suitable for electrophoresis unit PROfessional III** (Art. No. 2850.1).

Art. No.	Pack Qty	€
4850.1	1 unit	1460,95

Rotiphorese® PROfessional runVIEW Base MINI

Base station for real-time electrophoresis.
- Blue light illuminator, adaptable-size
- Special lid for detection of green fluorescent dyes
- Optimal supplement to electrophoresis units Rotiphorese® PROfessional I and II

Convenient power supplies are EV1450 (Art. No. CP56.1) or Roth MINI (Art. No. 2907.1).

Technical data base station MINI:

Wave length (excitation)	470 nm (blue)
Ambient temperature	15-40 °C
Rated voltage	100-240 V

Delivery incl. blue light illuminator (adjustable to 2 different sizes), power cord, special lid with integrated spectral emission filter for green fluorescence.

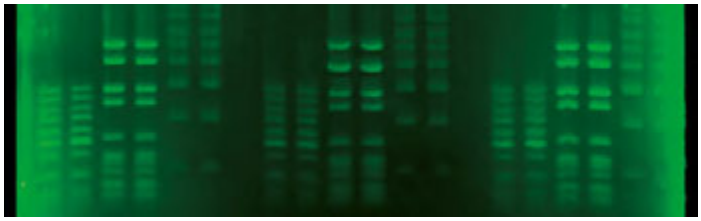
For electrophoresis unit Rotiphorese® PROfessional I

Art. No.	Pack Qty	€
9958.1	1 unit	819,15

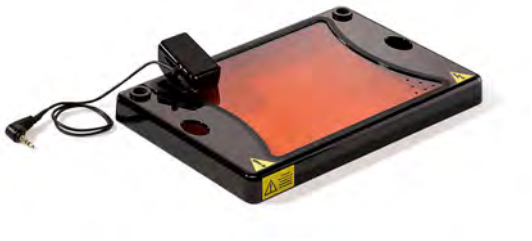
For electrophoresis unit Rotiphorese® PROfessional II

Art. No.	Pack Qty	€
9961.1	1 unit	826,70

▶ For technical data see product description on the Internet!



Typical PROfessional runVIEW gel: Marker DNA with Roti®-Load DNAstain under blue light (green filter lid). Picture taken during the run. 100 bp Ladder, pBR328 Mix I and 1 kbp Ladder (1.2 µg each) in 1 % agarose / 0.5x TBE.



Rotiphorese® PROfessional runVIEW lid

Special lid for real-time electrophoresis with the runVIEW system.

The lid has a built-in fan and an integrated spectral emission filter for blue light (orange for red fluorescence). Together with the runVIEW system it makes stained DNA visible during the run. For detailed information see Rotiphorese® PROfessional runVIEW base device, Art. No. 4850.1.

Marker DNA with Roti®-Load DNAstain under blue light **(red filter lid)**. Picture taken during the run. pBR328 Mix I and kbp Ladder (1.2 µg each) in 1 % agarose / 0.5x TBE.

Type	Filter type	Colour filter insert	Use	Art. No.	Pack Qty	€
for unit PROfessional III	red filter	orange	red fluorescence	**8549.1**	1 unit	149,45

▶ Suitable gel documentation system see page 1247

Colour	Comb thickness
black	0,75 mm
white	1,0 mm
red	1,5 mm
blue	2,0 mm

PROfessional Standard Units

Rotiphorese® Unit PROfessional I

Gel size (w x l): 7 x 7 cm
Unit dimensions (w x l x h): 21 x 9 x 9 cm
Number of samples: max. 32 samples (using 2 comb slots)
Buffer volume: 225 ml

- First choice for rapid single-bench analyses
- Seven different combs available in four thicknesses, including preparative combs with broad wells
- Gel trays with 7 and 10 cm length available
- Compatible with multi-channel pipettors (see table)
- For real-time electrophoresis upgradeable with Rotiphorese® PROfessional runVIEW Base MINI (Art. No. 9958.1)

Delivery incl. horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (7 x 7 cm) with gel casting gates, and two combs (1 mm, 8 teeth).

Art. No.	Pack Qty	€
2788.1	1 unit	401,00

PROfessional I accessories

Type	Art. No.	Pack Qty	€
PROfessional I Gel casting tray 7 x 7 cm	**2784.1**	1 tray	50,00
PROfessional I Gel casting tray 7 x 10 cm	**2785.1**	1 tray	58,95
PROfessional I Gel casting dams	**2765.1**	1 pair	46,00
PROfessional I Positive electrode	**2767.1**	1 electr.	78,15
PROfessional I Negative electrode	**2769.1**	1 electr.	78,15

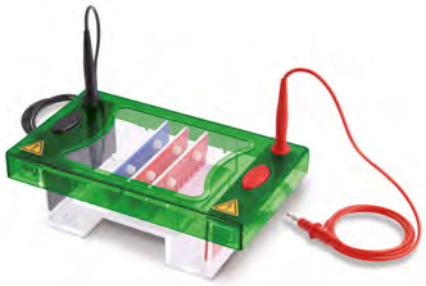
PROfessional I combs

Sample volume for a 5 mm thick gel							
	1 + 1**	2 + 2**	4 + 2**	8	10	12*	16
0.75 mm	152 µl	68 µl	36 µl	19 µl	14 µl	10 µl	7 µl
1.0 mm	203 µl	90 µl	48 µl	25 µl	18 µl	14 µl	10 µl
1.5 mm	304 µl	135 µl	72 µl	37 µl	27 µl	20 µl	15 µl
2.0 mm	405 µl	180 µl	96 µl	50 µl	36 µl	27 µl	20 µl

*Compatible with multi-channel pipettors

**Comb with especially broad wells + narrow marker well (for preparative gels)

Wells	1 + 1	2 + 2	4 + 2	8	10	12	16
Thickness	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.
0,75 mm	**2737.1**	**2738.1**	**2739.1**	**2740.1**	**2741.1**	**2742.1**	**2743.1**
1,0 mm	**2744.1**	**2745.1**	**2746.1**	**2747.1**	**2748.1**	**2749.1**	**2750.1**
1,5 mm	**2751.1**	**2752.1**	**2753.1**	**2754.1**	**2755.1**	**2756.1**	**2757.1**
2,0 mm	**2758.1**	**2759.1**	**2760.1**	**2761.1**	**2762.1**	**2763.1**	**2764.1**
Pack Qty.	1	1	1	1	1	1	1
€	31,50	31,50	31,50	31,50	31,50	31,50	31,50



Rotiphorese® Unit PROfessional II

Gel size (w x l): 10 x 10 cm
Unit dimensions (w x l x h): 22 x 12.5 x 9 cm
Number of samples: max. 80 samples (using 4 comb slots)
Buffer volume: 300 ml

- First choice for all rapid routine analyses
- Seven different combs available in four thicknesses, including preparative combs with broad wells
- Gel trays with 7 and 10 cm length available
- Compatible with multi-channel pipettors (see table)
- For real-time electrophoresis upgradeable with Rotiphorese® PROfessional runVIEW Base MINI (Art. No. 9961.1)

Delivery incl. horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (10 x 10 cm) with gel casting gates, and two combs (1 mm, 16 teeth).

Art. No.	Pack Qty	€
2799.1	1 unit	412,80

PROfessional II accessories

Type	Art. No.	Pack Qty	€
PROfessional II Gel casting tray 10 x 7 cm	**3147.1**	1 tray	60,90
PROfessional II Gel casting tray 10 x 10 cm	**3148.1**	1 tray	60,90
PROfessional II Gel casting dams	**3146.1**	1 pair	59,15
PROfessional II Positive electrode	**3141.1**	1 electr.	81,35
PROfessional II Negative electrode	**3142.1**	1 electr.	81,35

PROfessional II combs

Sample volume for a 5 mm thick gel							
	2 + 2**	4 + 2**	8	10*	12	16	20*
0.75 mm	118 µl	57 µl	30 µl	20 µl	17 µl	12 µl	10 µl
1.0 mm	158 µl	77 µl	41 µl	27 µl	23 µl	16 µl	14 µl
1.5 mm	236 µl	115 µl	61 µl	41 µl	34 µl	24 µl	20 µl
2.0 mm	315 µl	153 µl	81 µl	54 µl	45 µl	32 µl	27 µl

*Compatible with multi-channel pipettors

**Comb with especially broad wells + narrow marker well (for preparative gels)

Wells	2 + 2	4 + 2	8	10	12	16	20
Thickness	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.
0,75 mm	**3150.1**	**3151.1**	**3157.1**	**3158.1**	**3161.1**	**3177.1**	**3178.1**
1,0 mm	**3181.1**	**3188.1**	**3202.1**	**3203.1**	**3204.1**	**3206.1**	**3208.1**
1,5 mm	**3212.1**	**3213.1**	**3219.1**	**3220.1**	**3222.1**	**3227.1**	**3229.1**
2,0 mm	**3230.1**	**3233.1**	**3234.1**	**3238.1**	**3239.1**	**3244.1**	**3245.1**
Pack Qty.	1	1	1	1	1	1	1
€	35,80	35,80	35,80	35,80	35,80	35,80	35,80

Maximum sample size depends on the height of the gel.
Rule of thumb (all values in mm): Max. sample per well = Broadth of teeth x comb thickness x (gel height - 3)

TIP

Rotiphorese® Unit PROfessional III

Gel size (w x l): 15 x 15 cm
Unit dimensions (w x l x h): 26.5 x 17.5 x 9 cm
Number of samples: max. 210 samples (using 6 comb slots)
Buffer volume: 500 ml

- First choice for all standard analyses
- For high flexibility in application: Gel trays with 7, 10 and 15 cm length available
- Seven different combs available in four thicknesses, including preparative combs with broad wells
- Compatible with multi-channel pipettors (see table)
- For real-time electrophoresis upgradeable with Rotiphorese® PROfessional runVIEW Base (Art. No. 4850.1)

Delivery incl. horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (15 x 15 cm) with gel casting gates, and two combs (1 mm, 20 teeth).

Art. No.	Pack Qty	€
2850.1	1 unit	454,75

PROfessional III accessories

Type	Art. No.	Pack Qty	€
PROfessional III Gel casting tray 15 x 7 cm	**3250.1**	1 tray	71,95
PROfessional III Gel casting tray 15 x 10 cm	**3251.1**	1 tray	71,95
PROfessional III Gel casting tray 15 x 15 cm	**3252.1**	1 tray	73,00
PROfessional III Stretch Gel casting tray 15 x 20 cm	**9940.1**	1 tray	96,75
PROfessional III Stretch Gel casting tray 15 x 25 cm	**9941.1**	1 tray	96,75
PROfessional III Gel casting dams	**3262.1**	1 pair	58,45
PROfessional III Positive electrode	**3247.1**	1 electr.	97,30
PROfessional III Negative electrode	**3248.1**	1 electr.	97,30

PROfessional III combs

Sample volume for a 5 mm thick gel							
	4 + 2**	10	12	16*	20	28*	35
0.75 mm	91 µl	34 µl	30 µl	20 µl	16 µl	8 µl	7 µl
1.0 mm	122 µl	45 µl	41 µl	27 µl	21 µl	11 µl	10 µl
1.5 mm	182 µl	68 µl	61 µl	41 µl	32 µl	17 µl	15 µl
2.0 mm	243 µl	90 µl	81 µl	54 µl	43 µl	32 µl	20 µl

*Compatible with multi-channel pipettors

**Comb with especially broad wells + narrow marker well (for preparative gels)

Wells	4 + 2	10	12	16	20	28	35
Thickness	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.
0,75 mm	**3263.1**	**3266.1**	**3269.1**	**3270.1**	**3276.1**	**3281.1**	**3283.1**
1,0 mm	**3302.1**	**3308.1**	**3309.1**	**3312.1**	**3317.1**	**3332.1**	**3334.1**
1,5 mm	**3339.1**	**3347.1**	**3350.1**	**3365.1**	**3368.1**	**3370.1**	**3372.1**
2,0 mm	**3373.1**	**3374.1**	**3378.1**	**3379.1**	**3381.1**	**3382.1**	**3384.1**
Pack Qty.	1	1	1	1	1	1	1
€	43,45	43,45	43,45	43,45	43,45	43,45	43,45

Rotiphorese® Unit PROfessional III Stretch 20

Gel size (w x l): 15 x 20 cm
Unit dimensions (w x l x h): 17,5 x 41 x 9 cm
Number of samples: max. 280 samples (using 8 comb slots)
Buffer volume: 1000 ml

- First choice for all standard analyses
- For high flexibility in application: Gel trays with 7, 10, 15, 20 and 25 cm length available
- Seven different combs available in four thicknesses, including preparative combs with broad wells
- Compatible with multi-channel pipettors (see table)
- For gel trays, combs and further accessories see Rotiphorese® unit PROfessional III (Art. No. 2850).

Delivery incl. horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (15 x 20 cm) with gel casting gates, and 4 combs (1 mm, 28 teeth).

Art. No.	Pack Qty	€
9938.1	1 unit	600,95

Rotiphorese® Unit PROfessional III Stretch 25

Gel size (w x l): 15 x 25 cm
Unit dimensions (w x l x h): 17,5 x 41 x 9 cm
Number of samples: max. 350 samples (using 10 comb slots)
Buffer volume: 1000 ml

- First choice for all standard analyses
- For high flexibility in application: Gel trays with 7, 10, 15, 20 and 25 cm length available
- Seven different combs available in four thicknesses, including preparative combs with broad wells
- Compatible with multi-channel pipettors (see table)
- For gel trays, combs and further accessories see Rotiphorese® unit PROfessional III (Art. No. 2850).

Delivery incl. horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (15 x 25 cm) with gel casting gates, and 4 combs (1 mm, 28 teeth).

Art. No.	Pack Qty	€
9939.1	1 unit	611,70

Rotiphorese® Unit PROfessional IV

Gel size (w x l): 20 x 20 cm
Unit dimensions (w x l x h): 39.5 x 23 x 9 cm
Number of samples: max. 500 samples (using 10 comb slots)
Buffer volume: 1200 ml

- For large gels or higher sample numbers
- For high flexibility in application: Gel trays with 10, 20 and 25 cm length available
- Eight different combs available in four thicknesses, including preparative combs with broad wells
- With practical and easy-to-use gel cooling, independently of water supply or temperature baths
- Compatible with multi-channel pipettors (see table)

Delivery incl. horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (20 x 20 cm) with gel casting gates, and two combs (1 mm, 20 teeth).

Art. No.	Pack Qty	€
2941.1	1 unit	751,45

PROfessional IV accessories

Type	Art. No.	Pack Qty	€
PROfessional IV Gel casting tray 20 x 10 cm	**3392.1**	1 tray	97,20
PROfessional IV Gel casting tray 20 x 20 cm	**3393.1**	1 tray	101,20
PROfessional IV Gel casting tray 20 x 25 cm	**3394.1**	1 tray	124,70
PROfessional IV Gel casting dams	**3397.1**	1 pair	63,25
PROfessional IV Cooling set	**3386.1**	1 set	129,00
PROfessional IV Positive electrode	**3390.1**	1 electr.	111,80
PROfessional IV Negative electrode	**3391.1**	1 electr.	111,80

PROfessional IV combs

Sample volume for a 5 mm thick gel								
	4 + 2**	16	20*	25	30	36*	40*	50
0.75 mm	115 µl	30 µl	20 µl	16 µl	13 µl	11 µl	8 µl	8 µl
1.0 mm	153 µl	41 µl	27 µl	21 µl	17 µl	14 µl	11 µl	10 µl
1.5 mm	230 µl	61 µl	41 µl	32 µl	26 µl	22 µl	17 µl	16 µl
2.0 mm	306 µl	81 µl	54 µl	42 µl	34 µl	29 µl	23 µl	21 µl

*Compatible with multi-channel pipettors

**Comb with especially broad wells + narrow marker well (for preparative gels)

Wells	4 + 2	16	20	25	30	36	40	50
Thick-ness	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.
0,75 mm	**3401.1**	**3409.1**	**3410.1**	**3413.1**	**3414.1**	**3416.1**	**3417.1**	**3419.1**
1,0 mm	**3422.1**	**3427.1**	**3428.1**	**3430.1**	**3431.1**	**3432.1**	**3435.1**	**3437.1**
1,5 mm	**3438.1**	**3440.1**	**3441.1**	**3442.1**	**3443.1**	**3444.1**	**3445.1**	**3446.1**
2,0 mm	**3447.1**	**3449.1**	**3450.1**	**3452.1**	**3453.1**	**3454.1**	**3456.1**	**3458.1**
Pack Qty.	1	1	1	1	1	1	1	1
€	48,70	48,70	48,70	48,70	48,70	48,70	48,70	48,70

Rotiphorese® Unit PROfessional V

Gel size (w x l): 26 x 32 cm
Unit dimensions (w x l x h): 50 x 28 x 9 cm
Number of samples: max. 672 samples (using 12 comb slots)
Buffer volume: 1400 ml

- For very long gels or high sample numbers
- For high flexibility in application:
  Gel trays with 16, 24 and 32 cm length available
- With practical and easy-to-use gel cooling, independently of water supply or temperature baths
- Compatible with multi-channel pipettors (see table)

Delivery incl. horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (26 x 32 cm), and six combs (1 mm, 28 teeth). For sealing of the tray during gel pouring we recommend to use the temperature stable Sekuroka®-adhesive tape, Art. No. L035.1

Art. No.	Pack Qty	€
3000.1	1 unit	1149,20

PROfessional V accessories

Type	Art. No.	Pack Qty	€
PROfessional V Gel casting tray 26 x 16 cm	**3019.1**	1 tray	144,05
PROfessional V Gel casting tray 26 x 24 cm	**3020.1**	1 tray	170,95
PROfessional V Gel casting tray 26 x 32 cm	**3021.1**	1 tray	170,95
PROfessional V cooling set	**3009.1**	1 set	154,80
PROfessional V Positive electrode	**3001.1**	1 electr.	132,25
PROfessional V Negative electrode	**3002.1**	1 electr.	132,25

PROfessional V combs

Sample volume for a 5 mm thick gel		
	28*	56*
0.75 mm	25 µl	10 µl
1.0 mm	34 µl	14 µl
1.5 mm	51 µl	20 µl
2.0 mm	68 µl	27 µl

*Compatible with multi-channel pipettors

Wells	28	56
Thickness	Art. No.	Art. No.
0,75 mm	**3023.1**	**3024.1**
1,0 mm	**3027.1**	**3031.1**
1,5 mm	**3038.1**	**3055.1**
2,0 mm	**3056.1**	**3058.1**
Pack Qty.	1	1
€	71,65	71,65

Maximum sample size depends on the height of the gel.
Rule of thumb (all values in mm): Max. sample per well =
Broadth of teeth x comb thickness x (gel height - 3)

TIP

Rotiphorese® Unit PROfessional Acetate

Max size of analysis (w x l): 24 x 20 cm
Unit dimensions (w x l): 30 x 30 cm

- Compact high resolution system for electrophoresis of acetate strips and membranes
- Suitable for both standard and wet cellulose acetate electrophoresis
- For high flexibility in application

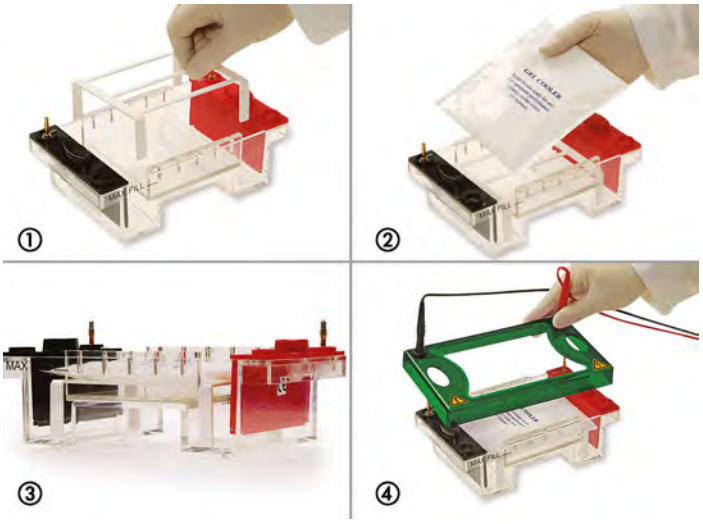
Delivery incl. horizontal gel chamber, safety lid with integral power leads (4 mm plugs), adjustable support for different lengths of membrane strips.

Art. No.	Pack Qty	€
3099.1	1 unit	650,40

PROfessional gel casting dams (example)

Convenient Gel Cooling System

Larger Rotiphorese®-PROfessional units may be cooled by a highly efficient and very easy to applicate cooling system via precooled pads.



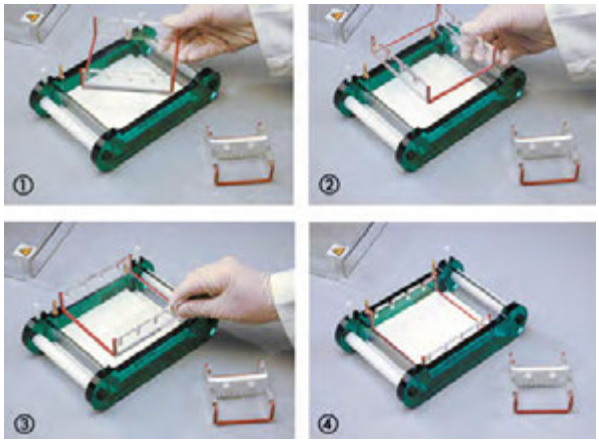
① Set cooling frame into buffer-filled chamber covering the gel
② Load gel and carefully apply precooled cool pack
③ Side view
④ Add lid and start gel run

The Classic Line - Compact Horizontal Electrophoresis Chambers

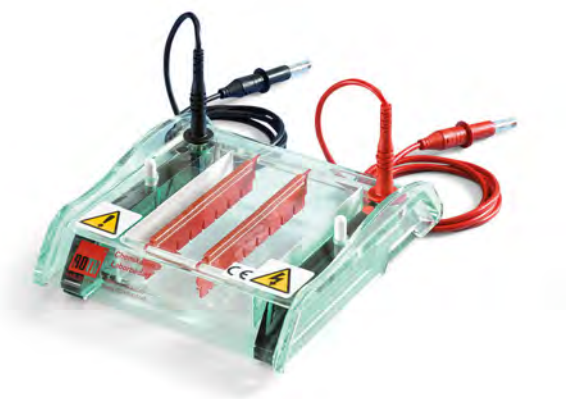
- High-grade quality
- Firmly standing
- Robust construction made of acrylic glass
- Chemically bonded contact points
- Platinum electrodes are protected by a special construction
- Wide range of accessories
- UV-transparent gel trays

Convenient in-Tank Gel Pouring

Big benefit: Several instruments of the classic line allow very convenient in-tank gel pouring - fast and definitely leak-proof.



① Remove the gel tray from the chamber. Turn the tray by 90°.
② Press the tray carefully into the chamber so that the silicone rubber forms a tight, leak-free seal with the walls of the chamber. Pour slightly precooled agarose into the tray.
③ Allow the agarose to polymerise, then lift the tray from the chamber and insert it back by positioning it in the direction of the run.
④ The gel is ready for sample loading and for electrophoresis.



MINI*easy* Electrophoresis Unit

Gel size (w x l): 8 x 10 cm
Unit dimensions (w x l x h): 13.5 x 15 x 3 cm
Number of samples: max. 32 samples (using 2 comb slots)
Buffer volume: 50 ml

- Complete gel chamber for speedy analysis
- The entire chamber can be placed on a UV-transilluminator
- Low buffer quantity needed
- Tank-gel casting (casting tray cannot be removed)

Delivery incl. horizontal gel chamber, safety lid with integral power leads (4 mm plugs), two gel casting gates and two combs (1.5 mm; 8 teeth).

Art. No.	Pack Qty	€
N817.1	1 unit	419,25

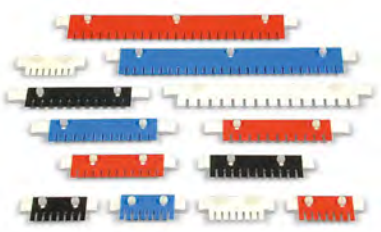
MINI*easy* Gel casting gates

Type	Art. No.	Pack Qty	€
MINI*easy* Gel casting gates	**N818.1**	1 pair	25,70

MINI*easy* Combs

No. of teeth	Broadth of teeth (mm)	Space between teeth (mm)
8	10	2
12	6	2
16	4	2

Wells	8	12	16
Thickness	Art. No.	Art. No.	Art. No.
1,0 mm	**N820.1**	**N821.1**	**N819.1**
1,5 mm	**N823.1**	**N824.1**	**N822.1**
Pack Qty.	1	1	1
€	32,05	32,05	32,05



Colour	Comb thickness
black	0,75 mm
white	1,0 mm
red	1,5 mm
blue	2,0 mm

MINI Electrophoresis Unit

Gel size (w x l): 6 x 7.5 cm
Unit dimensions (w x l x h): 13 x 24 x 6.5 cm
Number of samples: max. 32 samples (using 2 comb slots)
Buffer volume: 325 ml

- Platinum electrodes are protected from damage by a special construction
- Four different combs available in three thicknesses
- Compatible with multi-channel pipettors (combs with 12 teeth)
- Gel may be poured into the chamber

Delivery incl. horizontal gel tank, safety lid with integral power leads (4 mm plugs), removable gel casting tray, two combs (1 mm, 8 teeth).

Art. No.	Pack Qty	€
N562.1	1 unit	471,95

MINI Accessories

Type	Art. No.	Pack Qty	€
MINI Gel casting tray	**N575.1**	1 tray	85,40
Approx. 1 m silicone sealing hose	**T811.1**	1 piece	21,00

MINI Combs

No. of teeth	Broadth of teeth (mm)	Space between teeth (mm)
8	4,5	2
12*	2,5	2
16	2,2	1

*Compatibel with multi-channel pipettors

Wells	8	12	16
Thickness	Art. No.	Art. No.	Art. No.
1,0 mm	**N564.1**	**N565.1**	**N566.1**
1,5 mm	**N568.1**	**N569.1**	**N570.1**
2,0 mm	**N572.1**	**N573.1**	**N574.1**
Pack Qty.	1	1	1
€	42,95	42,95	42,95

MINI External Casting Unit

For casting max. three gels outside the chamber.
Simply insert the gel casting trays into the casting unit.
No additional sealing required.

Art. No.	Pack Qty	€
T828.1	1 unit	89,80

MIDI 1 Electrophoresis Unit

Gel size (w x l): 10 x 11.5 cm
Unit dimensions (w x l x h): 16.5 x 23 x 6.5 cm
Number of samples: max. 80 samples (using 4 comb slots)
Buffer volume: 450 ml

- Platinum electrodes are protected from damage by a special construction
- Six different combs available in three thicknesses
- Compatible with multi-channel pipettors (see table)
- Gel may be poured into the chamber

Delivery incl. horizontal gel tank, safety lid with integral power leads (4 mm plugs), removable gel casting tray, two combs (1 mm, 16 teeth).

Art. No.	Pack Qty	€
N576.1	1 unit	536,45

MIDI 1 Accessories

Type	Art. No.	Pack Qty	€
MIDI 1 Gel casting tray	**N595.1**	1 tray	96,25
Approx. 1 m silicone sealing hose	**T811.1**	1 piece	21,00

MIDI 1 Combs

No. of teeth	Broadth of teeth (mm)	Space between teeth (mm)
8	9	2,5
10*	7	2
12	5,5	2
16	3,6	2
20*	3	1,5

*Compatibel with multi-channel pipettors

Wells	8	10	12	16	20
Thickness	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.
1,0 mm	**N578.1**	**N579.1**	**N580.1**	**N581.1**	**N582.1**
1,5 mm	**N584.1**	**N585.1**	**N586.1**	**N587.1**	**N588.1**
2,0 mm	**N590.1**	**N591.1**	**N592.1**	**N593.1**	**N594.1**
Pack Qty.	1	1	1	1	1
€	45,10	45,10	45,10	45,10	45,10

MIDI 1 External Casting Unit

For casting max. three gels outside the chamber.
Simply insert the gel trays into the casting unit.
No additional sealing required.

Art. No.	Pack Qty	€
T829.1	1 unit	106,45

MIDI PLUS Electrophoresis Unit

Gel size (w x l): 15 x 15 cm
Unit dimensions (w x l x h): 21,5 x 33,5 x 7 cm
Number of samples: max. 120 samples (using 4 comb slots)
Buffer volume: 1200 ml

- Platinum electrodes are protected from damage by a special construction
- Convenient in buffer recirculation
- Eight different combs available in three thicknesses, including preparative combs with broad wells
- Compatible with multi-channel pipettors (see table)
- Gold standard for all routine gels in the lab

Delivery incl. horizontal gel chamber, safety lid with integral power leads (4 mm plugs), two connections for buffer recirculation, removable gel casting tray with gel casting gates, and two combs (1 mm, 16 teeth).

Art. No.	Pack Qty	€
HP70.1	1 unit	548,25

MIDI PLUS Accessories

Type	Art. No.	Pack Qty	€
MIDI PLUS Gel casting tray incl. gates	**HP71.1**	1 tray	198,90
MIDI PLUS Gel casting gates	**HP72.1**	1 pair	67,00
Approx. 1 m silicone sealing hose	**T811.1**	1 piece	21,00

MIDI PLUS Combs

No. of teeth	Broadth of teeth (mm)	Space between teeth (mm)
1+1**	138	2
2+1**	68	2
4+1**	33	2
10	12,8	2
16*	6,4	2
20	5,9	2
25	3,5	2
30*	2,5	2

*Compatibel with multi-channel pipettors

**Combs with extremely wide wells (for preparative gels)

Wells	1+1	2+1	4+1	10	16	20	25	30
Thick-ness	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.
1,0 mm	**HP73.1**	**HP74.1**	**HP75.1**	**HP76.1**	**HP77.1**	**HP78.1**	**HP79.1**	**HP80.1**
1,5 mm	**HP81.1**	**HP82.1**	**HP83.1**	**HP84.1**	**HP85.1**	**HP86.1**	**HP87.1**	**HP88.1**
2,0 mm	**HP89.1**	**HP90.1**	**HP91.1**	**HP92.1**	**HP93.1**	**HP94.1**	**HP95.1**	**HP96.1**
Pack Qty.	1	1	1	1	1	1	1	1
€	53,60	53,60	53,60	53,60	53,60	53,60	53,60	53,60

VARIA 1 Electrophoresis Unit

Gel size (w x l): variable, 15 x 7 to 15 x 20 cm
Unit dimensions (w x l x h): 31.5 x 19 x 7 cm
Number of samples: max. 60/90/120/180 samples (using 2/3/4/6 comb slots in a 7/10/15/20 cm long gel tray)
Buffer volume: 700 ml

- Superior flexibility in one chamber through 4 gel trays of different lengths
- Convenient in buffer recirculation
- Asymmetric electrode offset preventing accidental polarity reversal
- Colour coded combs with five different tooth sizes
- Developed by Scientists for Scientists

Delivery incl. horizontal gel tank, safety lid with integral power leads (4 mm plugs), two connections for buffer circulation, two gel casting gates, four removable gel casting trays of 7, 10, 15 and 20 cm length, respectively, two combs (1 mm, 15 teeth).

Art. No.	Pack Qty	€
AE17.1	1 unit	611,70

VARIA Accessories

Type	Art. No.	Pack Qty	€
VARIA Gel casting tray 15 x 7 cm without gates	**AE74.1**	1 tray	74,65
VARIA Gel casting tray 15 x 10 cm without gates	**AE75.1**	1 tray	92,95
VARIA Gel casting tray 15 x 15 cm without gates	**AE76.1**	1 tray	107,05
VARIA Gel casting tray 15 x 20 cm without gates	**AE77.1**	1 tray	136,55

VARIA 1 Combs

No. of teeth	Broadth of teeth (mm)	Space between teeth (mm)
10	12,8	2
16*	6,4	2
20	5,9	2
25	3,2	2
30*	2,5	2

*Compatibel with multi-channel pipettors

Wells	10	20	25	30
Thickness	Art. No.	Art. No.	Art. No.	Art. No.
1,0 mm	**0085.1**	**0089.1**	**0090.1**	**0091.1**
1,5 mm	**0085.1**	**0105.1**	**0106.1**	**-**
2,0 mm	**-**	**0128.1**	**0129.1**	**-**
Pack Qty.	1	1	1	1
€	59,70	59,70	59,70	59,70

MIDI 2 Electrophoresis Unit

Gel size (w x l): 20 x 20 cm
Unit dimensions (w x l x h): 27 x 47.5 x 8 cm
Number of samples: max. 160 samples (using 4 comb slots)
Buffer volume: 2200 ml

- Platinum electrodes are protected from damage by a special construction
- Convenient in buffer recirculation
- Four different combs available in three thicknesses
- Compatible with multi-channel pipettors (see table)
- Very robust unit, optimised for large standard gels
- Available with cooled base plate

Delivery incl. horizontal gel tank, safety lid with integral power leads (4 mm plugs), two connections for buffer recirculation, removable gel casting tray, two gel casting gates and two combs (1 mm, 16 teeth).

Type	Art. No.	Pack Qty.	€
MIDI 2 standard model	**N596.1**	1 unit	805,20
MIDI 2 with cooled base plate	**N618.1**	1 unit	994,40

MIDI 2 Accessories

Type	Art. No.	Pack Qty	€
MIDI 2 Gel casting tray incl. gates	**N609.1**	1 tray	209,65
MIDI 2 Gel casting gates	**T812.1**	1 pair	107,00
Approx. 1 m silicone sealing hose	**T811.1**	1 piece	21,00

MIDI 2 Combs

No. of teeth	Broadth of teeth (mm)	Space between teeth (mm)
16	8,5	3
20*	7	2
28	4,8	2
40*	2,75	2

*Compatibel with multi-channel pipettors

Wells	16	20	28	40
Thickness	Art. No.	Art. No.	Art. No.	Art. No.
1,0 mm	**N597.1**	**N598.1**	**N599.1**	**N600.1**
1,5 mm	**N601.1**	**N602.1**	**N603.1**	**N604.1**
2,0 mm	**N605.1**	**N606.1**	**N607.1**	**N608.1**
Pack Qty.	1	1	1	1
€	59,15	59,15	59,15	59,15

Instructions for use
can be found on the Internet next to the product description.

MAXI Electrophoresis Unit

Gel size (w x l): 25 x 30 cm
Unit dimensions (w x l x h): 33 x 56 x 9 cm
Number of samples: max. 624 samples (using 12 comb slots)
Buffer volume: 3000 ml

- Platinum electrodes are protected from damage by a special construction
- Convenient in buffer recirculation
- Two different combs available in three thicknesses
- Compatible with multi-channel pipettors (see table)
- Optimised for very high sample numbers and for long separation distance
- Available with cooled base plate

Delivery incl. horizontal gel tank, safety lid with integral power leads (4 mm plugs), two connections for buffer recirculation, removable gel casting tray, two gel casting gates and six combs (1 mm, 26 teeth).

Type	Art. No.	Pack Qty.	€
MAXI standard model	**N610.1**	1 unit	1101,90
MAXI with cooled base plate	**N619.1**	1 unit	1256,70

MAXI Accessories

Type	Art. No.	Pack Qty	€
MAXI Gel casting tray 30 cm incl. gates	**N617.1**	1 tray	246,20
MAXI Gel casting gates	**T813.1**	1 pair	108,60
Approx. 1 m silicone sealing hose	**T811.1**	1 piece	21,00

MAXI Combs

No. of teeth	Broadth of teeth (mm)	Space between teeth (mm)
26*	7	2
52*	3	1,5

*Compatible with multi-channel pipettors

Wells	26	52
Thickness	Art. No.	Art. No.
1,0 mm	**N611.1**	**N612.1**
1,5 mm	**N613.1**	**N614.1**
2,0 mm	**N615.1**	**N616.1**
Pack Qty.	1	1
€	80,65	80,65

Flat Bed Electrophoresis Unit MULTI

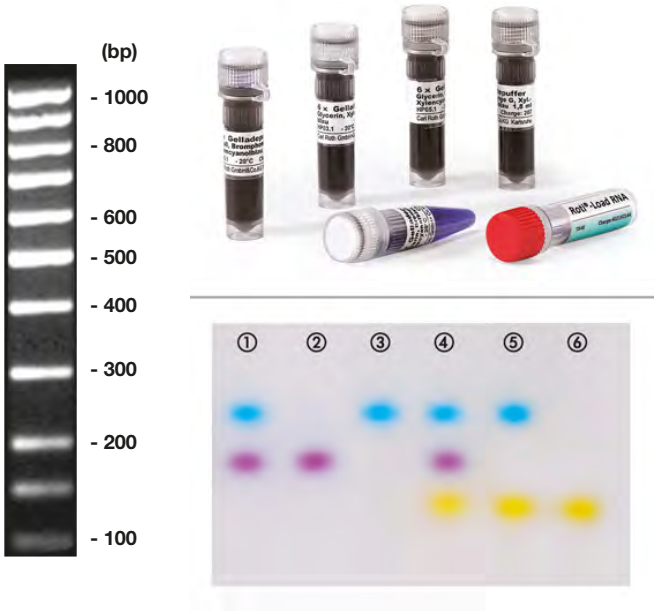
For all precast horizontal gels and for Iso Electric Focussing
Gel size (w x l): max. 25 x 25 cm
Unit dimensions (w x l x h): 46 x 41 x 11.5 cm
Number of samples: variable

- For high voltage electrophoresis up to 5000 Volt
- Variable applications using tank mounted electrodes or adjustable electrodes for wicked horizontal gels/IEF
- Including cooling unit and buffer drainage system
- Superior separation quality and robust construction

Technical data:
Length 46 cm, width tank only 34 cm, width incl. cooling connectors 43 cm, height 11.5 cm, weight 9.6 kg.
We recommend using Circulation Cooler Accel 250 (Art. No. PE51.1) and Power Supply EV 233 (Art. No. A541.1).

Delivery incl. horizontal flat bed electrophoresis chamber with buffer chambers and integral electrodes, safety lid, one removable ceramic cooling plate (27 cm width x 27 cm length), one glass electrode frame, one adjustable anode- and cathode electrode, glass electrode weight, drainage tubing (outer ∅ 12 mm), cable set (2 mm plug) and adapter pair for 4 mm socket.

Art. No.	Pack Qty	€
CP51.1	1 unit	1779,15



MULTI Accessories

Type	Art. No.	Pack Qty	€
Ceramic cooling plate 27 x 27 cm	**CP54.1**	1 plate	333,25
Glass electrode frame	**CP55.1**	1 frame	317,15
Anode electrode	**CP52.1**	1 electr.	241,90
Cathode electrode	**CP53.1**	1 electr.	241,90

▶ Agaroses, gel buffer solutions and markers for horizontal electrophoresis see page 1193

Vertical Electrophoresis Systems & Modules

- Simultaneous electrophoresis of minimum two gels
- Inner buffer volume ensures even distribution of heat in gel and prevents "smiling"
- Gel casting module enables speedy and simultaneous casting of two gels
- **Suitable for standard ready-to-use gels**

Wide field of application
- Separation of proteins, nucleic acids and peptides
- Isoelectric focussing
- Electro-transfer of proteins and nucleic acids

Safety lid with integral power leads
Orientation cannot be mixed up as the lid can only be closed if properly used. Power supply is automatically interrupted when lid is opened.

Platinum electrodes - gold-plated, corrosion-free contacts
Electrodes are made of pure platinum. They are protected by a special construction and can be replaced easily by the user.

Colour coding of spacers and combs
Regular colour coding of spacers and combs facilitates selection of the right tool during gel preparation, preventing assembly of wrong components.

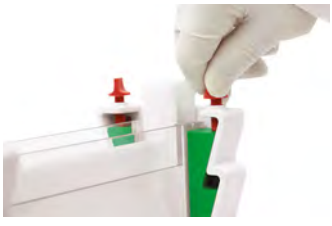
Colour	Thickness	Application
violet	0.5 mm	for ultra finely resolved bands
black	0.75 mm	for finely resolved bands
white	1.0 mm	standard
red	1.5 mm	for bigger sample volumina and gels of 2nd dimension
blue	2.0 mm	for big sample volumina and preparative gels

Rotiphorese®-PROclamp - Units with Clamping System for Vertical Electrophoresis

- Double electrophoresis unit - **for running of up to 4 gels in parallel**
- With fast-clamping technique - for rapid and easy-to-handle insertion of glass plates and gels
- MINI: Compatible with all major brands of 10 x 10 to 8 x 10 cm precast gels
- Effective buffer cooling independent of running water or chillers
- Colour coded spacers and combs in 5 thicknesses available - 0,5 up to 2 mm
- Extensive range of accessories available incl. glass plates with fixed spacers and blotting modules
- Compatible with multi-channel pipettors (combs are marked *)
- Version MINI for 10 x 10 cm gels, version MAXI for 20 x 20 cm gels

Tight and leak-proof insertion of glass plates in seconds - by modern **fast-clamping techniques:** (MINI: clamps, MAXI: waves):

① Position running module on bench surface
② Insert glass plates (incl. spacers) from above
③ Tighten clamps - Ready-to-go!



Rotiphorese® Units PROclamp MINI

Glass plates: 10 x 10 cm
Max. sample capacity per gel: 20
Buffer volume (upper / lower tank): 100 ml/300 ml
Unit dimensions (w x l x h): 19 x 13 x 15 cm

- Double electrophoresis unit - **for running of up to 4 gels in parallel**
- With fast-clamping technique - for rapid and easy-to-handle insertion of glass plates and gels
- Compatible with all major brands of 10 x 10 cm to 8 x 10 cm precast gels
- Effective buffer cooling independent of running water or chillers
- Colour coded spacers and combs in 5 thicknesses available - 0.5 up to 2 mm
- Extensive range of accessories available incl. glass plates with fixed spacers and blotting module (Art. No. 3517.1)
- Compatible with multi-channel pipettors (combs are marked *)

Delivery incl. (basic equipment):
1 vertical electrophoresis chamber incl. buffer tank, safety lid incl. cable (4 mm plugs) and 1 running module for electrophoresis of up to 4 gels in parallel, dummy plate for run of one gel only and gel cooling set. For run of 3 or 4 gels, please additionally order PROclamp MINI notched glass plates with fixed spacers (thickness 1 mm: Art. No. 3563.1) and suitable combs, e. g. Art. No. 3638.1.

Complete Set with accessories and gel casting module
Additionally included: 2 glass plates with fixed spacers (thickness 1 mm), 2 notched glass plates, 2 combs (thickness 1 mm, 12 wells), gel opener and 1 gel casting module for rapid and leak-proof gel casting.

Art. No.	Pack Qty	€
3501.1	1 unit	754,65

Set with Accessories
Additionally included: 2 glass plates with fixed spacers (thickness 1 mm), 2 notched glass plates, 2 combs (thickness 1 mm, 12 wells), gel opener.

Art. No.	Pack Qty	€
3502.1	1 unit	648,25

Set for precast gels (without further accessories)
Run of max. 2 gels in parallel possible.

Art. No.	Pack Qty	€
3503.1	1 unit	608,45

PROclamp MINI Spare Parts

Type	Art. No.	Pack Qty	€
PROclamp MINI buffer tank without lid	**3509.1**	1 tank	85,90
PROclamp MINI running module	**3504.1**	1 module	324,65
PROclamp MINI lid for buffer tank (w/o cables)	**3511.1**	1 lid	65,60
PROclamp MINI gel casting module	**3506.1**	1 module	164,50
Replacement rubber mat for gel casting module	**3507.1**	1 mat	43,65
PROclamp MINI cooling set	**3512.1**	1 set	39,75

▶ Tank-Blotting modules for PROclamp MINI see page 1251

PROclamp MINI Glass Plates

Type	Width (mm)	Length (mm)	Thickness (mm)	Art. No.	Pack Qty.	€
Standard glass plates	100	100	2	**3528.1**	1 pair	24,35
Notched glass plates	100	100	2	**3522.1**	1 pair	31,50
Dummy plate	100	100	5	**3520.1**	1 plate	18,60

PROclamp MINI Spacers

With labelled upper side

Thickness (mm)	Width (mm)	Length (mm)	Art. No.	Pack Qty.	€
0,5	12	101	**3570.1**	1 pair	18,25
0,75	12	101	**3573.1**	1 pair	18,25
1,0	12	101	**3578.1**	1 pair	18,25
1,5	12	101	**3579.1**	1 pair	18,25
2,0	12	101	**3584.1**	1 pair	18,25

PROclamp MINI Standard Glass Plates

(100 x 100 mm) with fixed spacers **suitable for**
- **PROclamp MINI**
- **MINI Vertical**

Thickness (mm)	Art. No.	Pack Qty.	€
0,5	**3531.1**	1 pair	26,65
0,75	**3537.1**	1 pair	26,65
1,0	**3542.1**	1 pair	26,65
1,5	**3547.1**	1 pair	26,65
2,0	**3548.1**	1 pair	26,65

PROclamp MINI Notched Glass Plates

(100 x 100 mm) with fixed spacers, for pouring of double-gels

Thickness (mm)	Art. No.	Pack Qty.	€
0,5	**3552.1**	1 pair	46,15
0,75	**3561.1**	1 pair	46,15
1,0	**3563.1**	1 pair	46,05
1,5	**3567.1**	1 pair	46,15
2,0	**3568.1**	1 pair	46,15

PROclamp MINI Combs

	Max. sample volume per well						
	1+1**	5	8	10*	12	16*	20
0,5 mm	325 µl	50 µl	30 µl	20 µl	18 µl	13 µl	10 µl
0,75 mm	500 µl	70 µl	40 µl	30 µl	25 µl	20 µl	15 µl
1,0 mm	650 µl	100 µl	60 µl	40 µl	35 µl	25 µl	20 µl
1,5 mm	1000 µl	140 µl	80 µl	60 µl	50 µl	40 µl	30 µl
2,0 mm	1300 µl	200 µl	120 µl	80 µl	70 µl	50 µl	40 µl

*Compatibel with multi-channel pipettors

**Comb with especially broad well + narrow marker well (for preparative gels)

Wells	1+1	5	8	10	12	16	20
Thickness	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.
0,5 mm	**3585.1**	**3587.1**	**3593.1**	**3595.1**	**3597.1**	**3598.1**	**3599.1**
0,75 mm	**3600.1**	**3605.1**	**3606.1**	**3610.1**	**3612.1**	**3614.1**	**3615.1**
1,0 mm	**3622.1**	**3623.1**	**3632.1**	**3633.1**	**3638.1**	**3640.1**	**3641.1**
1,5 mm	**3642.1**	**3644.1**	**3649.1**	**3656.1**	**3657.1**	**3658.1**	**3659.1**
2,0 mm	**3662.1**	**3664.1**	**3665.1**	**3667.1**	**3668.1**	**3672.1**	**3674.1**
Pack Qty.	1	1	1	1	1	1	1
€	31,40	31,40	31,40	31,40	31,40	31,40	31,40

▶ Compatible Gel Multicaster for pouring of 12 gels see page 1245

Rotiphorese® Unit PROclamp MINI Wide

Glass plates (w x l): 20 x 10 cm
Max. sample capacity per gel: 48
Buffer volume (upper / lower tank): 250 / 600 ml
Unit dimensions (w x l x h): 26 x 16 x 16 cm

- For vertical electrophoresis of wide mini gels (20 x 10 cm)
- Double electrophoresis unit - **for running of 4 gels in parallel**
- Up to 48 samples per gel (capacity equivalent to 2 mini gels)
- Innovative new wave-screw-clamp technology
- Effective buffer cooling independent of running water or chillers
- Extensive range of accessories available, combs of the PROclamp MAXI and spacers of the PROclamp MINI unit are compatible

Delivery incl.: 1 vertical electrophoresis unit consisting of buffer tank, safety lid incl. 2 cables (4 mm plugs), running module, gel cooling pack. For the run of 3 or 4 gels, please additionally order PROclamp MINI Wide notched glass plates with fixed spacers, thickness 1 mm (Art. No. 1427.1) and suitable combs, e.g. Art. No. 5957.1.

Additionally included: 2 standard glass plates with fixed spacers (thickness 1 mm), 2 notched glass plates, 1 dummy plate (for run of one gel only), 2 combs (thickness 1 mm, 24 wells), 4 yellow wave-clamps for electrophoresis of 3 or 4 gels (substitute green clamps), 1 gel casting module.

Art. No.	Pack Qty.	€
1395.1	1 piece	994,40

PROclamp MINI Wide Spare Parts

Type	Art. No.	Pack Qty.	€
PROclamp MINI Wide buffer tank w/o lid	**1396.1**	1 piece	413,90
PROclamp MINI Wide replacement lid w/o cable	**1400.1**	1 piece	235,45
Electrophoresis cables Rotiphorese® PROfessional	**6848.1**	1 pair	53,40
PROclamp MINI Wide running module	**1401.1**	1 piece	335,40
PROclamp MAXI gel casting module	**5792.1**	1 piece	213,95
Sealing pads for PROclamp MAXI gel casting module	**5793.1**	1 piece	65,60
PROclamp MINI Wide cooling pack	**1429.1**	1 piece	62,50

PROclamp MINI Wide Glass Plates

Type	Width (mm)	Length (mm)	Thickness (mm)	Art. No.	Pack Qty.	€
Standard glass plates	200	100	4	**1404.1**	1 pair	31,65
Notched glass plates	200	100	4	**1405.1**	1 pair	64,00
Dummy plate	200	100	10	**1421.1**	1 piece	21,15

PROclamp MINI Wide Standard Glass Plates

(200 x 100 mm) with fixed spacers

Thickness (mm)	Art. No.	Pack Qty.	€
0,75	**1422.1**	1 pair	45,60
1,0	**1423.1**	1 pair	45,60
1,5	**1424.1**	1 pair	45,60
2,0	**1425.1**	1 pair	45,60

PROclamp MINI Wide Notched Glass Plates

(200 x 100 mm) with fixed spacers, for pouring of double-gels

Thickness (mm)	Art. No.	Pack Qty.	€
0,75	**1426.1**	1 pair	71,10
1,0	**1427.1**	1 pair	71,10

PROclamp MINI Spacers

With labelled upper side

Thickness (mm)	Width (mm)	Length (mm)	Art. No.	Pack Qty.	€
0,5	12	101	**3570.1**	1 pair	18,25
0,75	12	101	**3573.1**	1 pair	18,25
1,0	12	101	**3578.1**	1 pair	18,25
1,5	12	101	**3579.1**	1 pair	18,25
2,0	12	101	**3584.1**	1 pair	18,25

PROclamp MAXI Combs

	Max. sample volume per well							
	1+1**	5	10	18*	24	30	36*	48
0,75 mm	1100 µl	160 µl	80 µl	40 µl	30 µl	25 µl	20 µl	15 µl
1,0 mm	1500 µl	200 µl	100 µl	50 µl	40 µl	35 µl	25 µl	20 µl
1,5 mm	2200 µl	320 µl	160 µl	80 µl	60 µl	50 µl	40 µl	30 µl
2,0 mm	3000 µl	400 µl	200 µl	100 µl	80 µl	70 µl	50 µl	40 µl

*Compatibel with multi-channel pipettors

**Comb with especially broad wells + narrow marker well (for preparative gels)

Wells	1+1	5	10	18	24	30	36	48
Thick-ness	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.
0,75 mm	**5925.1**	**5928.1**	**5934.1**	**5936.1**	**5940.1**	**5941.1**	**5944.1**	**5947.1**
1,0 mm	**5949.1**	**5952.1**	**5953.1**	**5955.1**	**5957.1**	**5959.1**	**5960.1**	**5961.1**
1,5 mm	**5962.1**	**5964.1**	**5967.1**	**5968.1**	**5969.1**	**5970.1**	**5971.1**	**5972.1**
2,0 mm	**5974.1**	**5977.1**	**5981.1**	**5983.1**	**5984.1**	**5999.1**	**6005.1**	**6007.1**
Pack Qty.	1	1	1	1	1	1	1	1
€	42,80	42,80	42,80	42,80	42,80	42,80	42,80	42,80

Rotiphorese® Unit PROclamp MAXI

Glass plates: 20 x 20 cm
Max. sample capacity per gel: 48
Buffer volume (upper/lower tank): 640 ml/1000 ml
Unit dimensions (w x l x h): 30 x 18 x 27 cm

- For large-format vertical gel electrophoresis (20 x 20 cm)
- Double electrophoresis unit - **for running of up to 4 gels in parallel**
- Innovative new wave-screw-clamp technology
- Detachable inner cooling coil for optional cooling
- Spacers and combs in 4 thicknesses available - 0,75 up to 2 mm
- Compatible with multi-channel pipettors (combs are marked *)
- Extensive range of accessories available incl. glass plates with fixed spacers and blotting module (5816.1)

Delivery incl.: 1 vertical electrophoresis chamber incl. buffer tank, safety lid incl. 2 cables (4 mm plugs), detachable cooling coil, and 1 running module for running of up to 4 gels in parallel. For run of 3 or 4 gels, please additionally order PROclamp MAXI notched glass plates with fixed spacers (thickness 1 mm: Art. No. 5906.1) and suitable combs, for example Art. No. 5957.1.

Accessories included: 2 standard glass plates with fixed spacers (thickness 1 mm), 2 notched glass plates, 1 dummy plate (for run of one gel only), 2 combs (thickness 1 mm, 24 wells), 4 yellow wave-clamps for electrophoresis with 3 or 4 gels (substitute green clamps), and 1 gel casting module for rapid and leak-proof gel casting.

Art. No.	Pack Qty	€
5769.1	1 unit	1364,20

PROclamp MAXI Spare Parts

Type	Art. No.	Pack Qty	€
PROclamp MAXI running module	**5786.1**	1 module	469,80
PROclamp MAXI gel casting module	**5792.1**	1 module	213,95
Sealing pads for PROclamp MAXI gel casting module	**5793.1**	1 set	65,60
PROclamp MAXI buffer tank (w/o lid and cooling coil)	**5807.1**	1 tank	541,80
PROclamp MAXI lid for buffer tank (w/o cables)	**5809.1**	1 lid	244,05
PROclamp MAXI cooling coil	**5812.1**	1 coil	148,35

▶ Tank-Blotting modules for PROclamp MAXI see page 1251

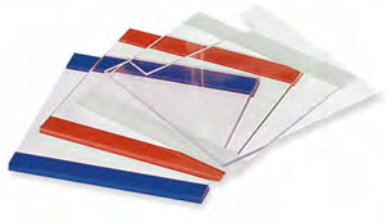
PROclamp MAXI Glass Plates

Type	Width (mm)	Length (mm)	Thickness (mm)	Art. No.	Pack Qty.	€
Standard glass plates	200	200	4	**5870.1**	1 pair	35,85
Notched glass plates	200	200	4	**5871.1**	1 pair	73,50
Dummy plate	200	200	10	**5875.1**	1 plate	26,80

PROclamp MAXI Spacers

With labelled upper side

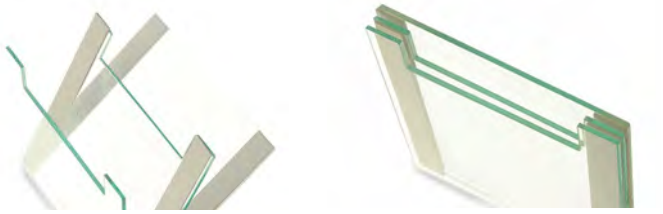
Thickness (mm)	Width (mm)	Length (mm)	Art. No.	Pack Qty.	€
0,75	19	200	**5908.1**	1 pair	26,35
1,0	19	200	**5917.1**	1 pair	26,35
1,5	19	200	**5921.1**	1 pair	26,35
2,0	19	200	**5922.1**	1 pair	26,35



PROclamp MAXI Standard Glass Plates

(200 x 200 mm) with fixed spacers

Thickness (mm)	Art. No.	Pack Qty.	€
0,75	**5877.1**	1 pair	60,75
1,0	**5878.1**	1 pair	60,75
1,5	**5893.1**	1 pair	60,75
2,0	**5897.1**	1 pair	60,75



PROclamp MAXI Notched Glass Plates

(200 x 200 mm) with fixed spacers, for pouring of double-gels

Thickness (mm)	Art. No.	Pack Qty.	€
0,75	**5904.1**	1 pair	94,55
1,0	**5906.1**	1 pair	94,55
1,5	**6011.1**	1 pair	96,75
2,0	**6020.1**	1 pair	96,75

PROclamp MAXI Combs

	Max. sample volume per well							
	1+1**	5	10	18*	24	30	36*	48
0,75 mm	1100 µl	160 µl	80 µl	40 µl	30 µl	25 µl	20 µl	15 µl
1,0 mm	1500 µl	200 µl	100 µl	50 µl	40 µl	35 µl	25 µl	20 µl
1,5 mm	2200 µl	320 µl	160 µl	80 µl	60 µl	50 µl	40 µl	30 µl
2,0 mm	3000 µl	400 µl	200 µl	100 µl	80 µl	70 µl	50 µl	40 µl

*Compatibel with multi-channel pipettors

**Comb with especially broad wells + narrow marker well (for preparative gels)

Wells	1+1	5	10	18	24	30	36	48
Thick-ness	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.
0,75 mm	**5925.1**	**5928.1**	**5934.1**	**5936.1**	**5940.1**	**5941.1**	**5944.1**	**5947.1**
1,0 mm	**5949.1**	**5952.1**	**5953.1**	**5955.1**	**5957.1**	**5959.1**	**5960.1**	**5961.1**
1,5 mm	**5962.1**	**5964.1**	**5967.1**	**5968.1**	**5969.1**	**5970.1**	**5971.1**	**5972.1**
2,0 mm	**5974.1**	**5977.1**	**5981.1**	**5983.1**	**5984.1**	**5999.1**	**6005.1**	**6007.1**
Pack Qty.	1	1	1	1	1	1	1	1
€	42,80	42,80	42,80	42,80	42,80	42,80	42,80	42,80

The Classic Line -
Compact Vertical Electrophoresis Chambers with Glass Plate Stops

- Double electrophoresis unit - **for running of up to 2 gels in parallel**
- High-grade quality and robust, made of acrylic glass
- With glass plate stops
- MINI: compatible with most 10 x 10 cm ready made gels (max. width 10,0 cm)
- Chemically bonded contact points
- Wide range of accessories
- Coolable versions with reliable water cooled system
- Version MINI for 10 x 10 cm gels, version MAXI for 20 x 20 cm gels, and 33 x 45 cm unit for sequencing gels

Modular system

Tanks are compatible with different electrophoresis modules, keeping costs and space to a minimum. The electrophoresis units are available as *standard* and as *coolable* device.

Different versions of MINI and MAXI vertical dual plate electrophoresis chambers are available.
The **full version** includes the buffer tank (*standard* or *coolable*), the running module for gel run and a gel casting module including glass plates and combs for immediate electrophoresis.

▶ GoPAGE™ ready-made gels, compatible with Roth' vertical units, see page 1185

MINI Vertical Dual Plate Electrophoresis Units

Glass plates: 10 x 10 cm
Max. sample capacity per gel: 20
Buffer volume (upper/lower tank): 100 ml/300 ml
Unit dimensions (w x l x h): 20 x 15 x 14 cm

With glass plate stops – for reliable pouring of gels and optimised results

- Double electrophoresis unit - **for running of up to 2 gels in parallel**
- High-grade quality and robust, made of acrylic glass
- With glass plate stops
- Compatible with most 10 x 10 cm to 8 x 10 cm ready made gels (max. width 10,0 cm)
- Chemically bonded contact points
- Wide range of accessories
- Coolable versions with reliable water cooled system

Delivery incl. 1 vertical electrophoresis chamber with buffer tank, lid and cables (4 mm plugs), 1 running module for simultaneous electrophoresis of two gels. The chamber is available as *standard* and as *coolable* device.
Accessories included:
2 glass plates, 2 separate spacer pairs (spacer thickness 1 mm), 2 notched glass plates, 1 dummy plate (for electrophoresis of one gel only), 2 combs (12 teeth, 1 mm thick).

Y001.1 and Y002.1: With additional gel casting module.

Standard, with buffer tank, running module, gel casting module and accessories

Art. No.	Pack Qty	€
Y001.1	1 unit	912,70

Coolable, with buffer tank, running module, gel casting module and accessories

Art. No.	Pack Qty	€
Y002.1	1 unit	1101,90

Standard, without gel casting module, with buffer tank, running module and accessories

Art. No.	Pack Qty	€
Y003.1	1 unit	686,95

Coolable, without gel casting module, with buffer tank, running module and accessories

Art. No.	Pack Qty	€
Y004.1	1 unit	912,70

MINI Vertical Spare Parts

Type	Art. No.	Pack Qty	€
MINI Buffer tank without lid	**Y005.1**	1 tank	256,95
Spare lid for MINI buffer tank	**Y009.1**	1 lid	170,95
MINI Running module	**Y007.1**	1 module	600,95
U-shaped fixing plate with seals for MINI running module	**Y010.1**	2 plates	149,45
Seals for MINI running module	**Y011.1**	2 sets	98,80
Spare screws for MINI running module	**Y012.1**	4 screws	54,85
MINI Gel casting module	**Y008.1**	1 module	267,70
Sealing pads for MINI gel casting module	**Y013.1**	1 set	21,40
Platinum spare electrode ∅ 0.2 mm, 650 mm	**T794.1**	1 electr.	127,95

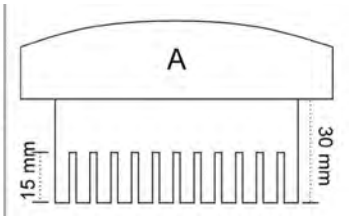
MINI Vertical Glass Plates

Type	Art. No.	Pack Qty	€
Standard glass plates (10 x 10 cm)	**0513.1**	2 plates	35,30
Notched glass plates (10 x 10 cm)	**0520.1**	2 plates	74,75
Dummy plate	**0537.1**	1 plate	24,75

MINI Vertical Spacers

Thickness (mm)	Width (mm)	Length (mm)	Art. No.	Pack Qty.	€
0,75	12	100	**N624.1**	2 spacers	27,85
1,0	12	100	**N625.1**	2 spacers	27,85
1,5	12	100	**N626.1**	2 spacers	27,85
2,0	12	100	**N627.1**	2 spacers	27,85

▶ Glass plates with fixed spacers see page 1235

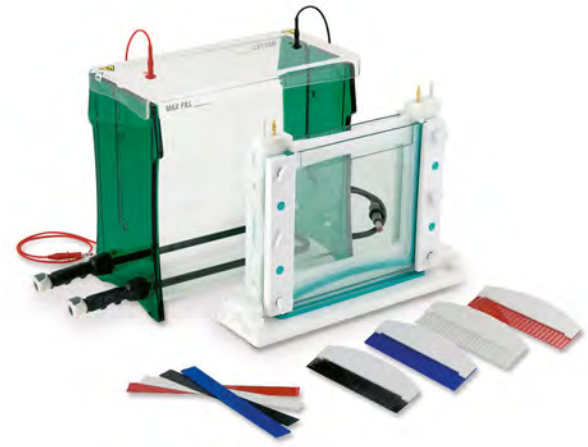


MINI Vertical Combs

No. of teeth	Broadth of teeth (mm)	Height of teeth(mm)
8*	5,5	15
10	4	15
12	4	15
16*	2,5	15
20	2	15

*Compatibel with multi-channel pipettors

Wells	8	10	12	16
Thickness	Art. No.	Art. No.	Art. No.	Art. No.
0,75 mm	**0550.1**	**N638.1**	**N639.1**	**N640.1**
1,0 mm	**0554.1**	**N643.1**	**N644.1**	**N645.1**
1,5 mm	**0555.1**	**N648.1**	**N649.1**	**N650.1**
2,0 mm	**0556.1**	**N653.1**	**N654.1**	-
Pack Qty.	1	1	1	1
€	39,70	40,25	40,25	40,25



MAXI Vertical Dual Plate Electrophoresis Units

Glass plates: 20 x 20 cm
Max. sample capacity per gel: 48
Buffer volume (upper/lower tank): 650 ml/1000 ml
Unit dimensions (w x l x h): 28,5 x 15 x 27,5 cm

With glass plate stops – for reliable pouring of gels and optimised results

- Double electrophoresis unit - **for running of up to 2 gels in parallel**
- High-grade quality and robust, made of acrylic glass
- With glass plate stops
- Chemically bonded contact points
- Wide range of accessories
- Coolable versions with reliable water cooled system

Delivery incl. 1 vertical electrophoresis chamber with buffer tank, lid and cables (4 mm plugs), 1 running module for simultaneous electrophoresis of two gels. The chamber is available as *standard* and as *coolable* device.
Accessories included: 2 glass plates, 2 separate spacer pairs (spacer thickness 1 mm), 2 notched glass plates, 1 dummy plate (for electrophoresis of one gel only), 2 combs (24 teeth, 1 mm thick).

X950.1 and X951.1: With additional gel casting module.

Standard, with buffer tank, running module, gel casting module and accessories.

Art. No.	Pack Qty	€
X950.1	1 unit	1300,75

Coolable, with buffer tank, running module, gel casting module and accessories.

Art. No.	Pack Qty	€
X951.1	1 unit	1574,90

Standard, without gel casting module, with buffer tank, accessories and running module

Art. No.	Pack Qty	€
X952.1	1 unit	1100,80

Coolable, without gel casting module, with buffer tank, accessories and running module

Art. No.	Pack Qty	€
X953.1	1 unit	1331,95

MAXI Vertical Spare Parts

Type	Art. No.	Pack Qty	€
MAXI Buffer tank without lid	**X954.1**	1 tank	456,90
MAXI Coolable buffer tank without lid	**X955.1**	1 tank	870,75
Spare lid for MAXI buffer tank	**X958.1**	1 lid	198,90
MAXI Running module	**X956.1**	1 module	783,70
Seals for MAXI running module	**X960.1**	2 sets	160,20
Spare screws for MAXI running module	**X961.1**	6 screws	23,55
MAXI Gel casting module	**X957.1**	1 module	310,70
Sealing pads for MAXI gel casting module	**X963.1**	1 set	35,40
Platinum spare electrode ∅ 0.2 mm, 650 mm	**T794.1**	1 electr.	127,95

MAXI Vertical Glass Plates

Type	Art. No.	Pack Qty	€
Plain glass plates (20 x 20.5 cm)	**0649.1**	2 plates	59,05
Notched glass plates (20 x 20.5 cm)	**0650.1**	2 plates	88,70
Dummy plate	**0651.1**	1 plate	62,90

MAXI Vertical Spacers

Thickness (mm)	Width (mm)	Length (mm)	Art. No.	Pack Qty.	€
0,75	20	200	**N632.1**	2 spacers	27,85
1,0	20	200	**N633.1**	2 spacers	31,95
1,5	20	200	**N634.1**	2 spacers	31,95
2,0	20	200	**N635.1**	2 spacers	31,95

MAXI Vertikal Glass Plates with Fixed Spacers

Thickness (mm)	Glass plate (mm)	Art. No.	Pack Qty.	€
0,75	200 x 205	**0658.1**	1 pair	61,30
1,0	200 x 205	**0659.1**	1 pair	61,30
1,5	200 x 205	**0664.1**	1 pair	61,30

MAXI Vertical Combs

No. of teeth	Broadth of teeth (mm)	Height of teeth (mm)
18*	6,5	20
24	5	20
36*	3	20
48	2,5	20

*Compatibel with multi-channel pipettors

Wells	18	24	36	48
Thickness	Art. No.	Art. No.	Art. No.	Art. No.
0,75 mm	**N673.1**	**N677.1**	**N679.1**	**N680.1**
1,0 mm	**N683.1**	**N685.1**	**N687.1**	**N688.1**
1,5 mm	**N691.1**	**N693.1**	**N695.1**	**N696.1**
Pack Qty.	1	1	1	1
€	45,10	45,10	45,10	45,10

Instructions for use
can be found on the Internet next to the product description.

Capillary Running Modules

For Isoelectric Focussing (IEF) during 2D-gel electrophoresis and for preparative capillary protein gels

Capillary length: max. 8 or 17 cm, resp.
Max. sample capacity per gel: 10

- Versatile - for 1 to 10 capillary gels in parallel
- Applicable for capillaries of 1 mm and 4 mm internal diameter
- Protected and highly resistant platinum electrodes
- Easy handling and reliable, distinct separation

Moduls for Vertical Double Electrophoresis Units of the classical line. Easy-to-use, modular system compatible with the vertical electrophoresis systems MINI (Art. No. Y001-Y004) and MAXI (Art. No. X950-X953).
Delivery incl. capillary running module. Please order glass capillaries, blanking ports, and gel extraction platform separately.

MINI Capillary Running Module, capillary length max. 8 cm

Art. No.	Pack Qty.	€
2811.1	1	600,95

MAXI Capillary Running Module, capillary length max. 17 cm

Art. No.	Pack Qty.	€
2816.1	1	934,20

Blanking Ports

Made of silicone, suitable for MINI and MAXI Capillary Running Modules.

Art. No.	Pack Qty.	€
2815.1	10	37,00

Glass Capillaries for Electrophoresis

Glass capillaries for capillary protein electrophoresis.

Type	Length (cm)	Inner ∅ (mm)	Art. No.	Pack Qty.	€
MINI	8	1	**2812.1**	10	96,55
MAXI	17	1	**2817.1**	10	102,45

Gel Extraction Platforms

Preformed platforms for safe and easy collection, cutting, and transfer of fragile capillary gels. Please order blanking ports separately.

Type	For gels of	Art. No.	Pack Qty.	€
MINI	max. 8 cm	**2814.1**	1	50,20
MAXI	max. 17 cm	**2819.1**	1	81,20

Recommended Combination for 2D-Gel Electrophoresis:

Unit	MINI (Art. No.)	MAXI (Art. No.)
Vertical electrophoresis unit	Y001.1	X950.1
Capillary running module	2811.1	2816.1
Blanking ports	2815.1	2815.1
Glass capillaries	2812.1	2817.1
Gel extraction platform	2814.1	2819.1
Power Supply EV3150	A542.1	A542.1
1 pair of spacers, 1.5 mm thick (2. dimension)	3579.1	5921.1
1+1 comb, 1.5 mm thick (2. dimension)	3642.1	5962.1

Sequencing Electrophoresis Unit

Glass plates (w x l): 33 x 45 cm
Max. sample capacity per gel: 96
Buffer volume (upper/lower tank): 500 ml/500 ml
Unit dimensions (w x l x h): 50 x 21,5 x 63 cm

- Robust construction made of acrylic glass
- Safety cover with integral connectors
- User-replaceable electrodes made of pure platinum
- Removable lower buffer tank for easy cleaning
- Optional thermostatic fan kit
- Accessories may be bought separately
- Heavy duty aluminium back plate helps disperse heat evenly
- CE certified
- For SSCP-gels, DDRT-PCR analyses, and extra long protein gels

Delivery incl. chamber with safety lid and integral power leads (2 mm plugs), one set of glass plates (1x plain, 1x notched) one pair of spacers (0,35 mm), one sharktooth comb (0,35 mm, 48 teeth).

Art. No.	Pack Qty	€
AE28.1	1	1672,70

Type	Art. No.	Pack Qty	€
Cooling and heating kit	**N705.1**	1 kit	1177,15

Glass Plates

Type	Art. No.	Pack Qty	€
Notched glass plate (33 x 45 cm)	**N706.1**	2 plates	181,70
Plain glass plate (33 x 45 cm)	**N707.1**	2 plates	103,40

Spacers

Thickness (mm)	Width (mm)	Length (mm)	Art. No.	Pack Qty.	€
0,25	20	450	**N708.1**	2 spacers	42,90
0,35	20	450	**N709.1**	2 spacers	42,90
1,0	20	450	**N710.1**	2 spacers	42,90
1,5	20	450	**AE39.1**	2 spacers	42,90

Combs

Wells	48	80
Thickness	Art. No.	Art. No.
1,0 mm	**AE31.1**	**AE35.1**
1,5 mm	**AE32.1**	**AE36.1**
Pack Qty.	1	1
€	62,60	62,60

Sharktooth Combs

Wells	48	96
Thickness	Art. No.	Art. No.
0,25 mm	**N719.1**	**N721.1**
0,35 mm	**N722.1**	**N724.1**
Pack Qty.	1	1
€	62,35	62,35

Power Supplies

CONSORT
Well-known Power Supplies in new outfit

Power Supply Series EV

Low cost power supplies for all applications

The upgraded Consort series with new design - powerful, easy to operate and low priced.

- Small and compact devices
- On screen help in 4 languages for application and for solving errors
- Automatic cross-over to show which of the 3 parameters (V, mA, W) is kept constant during the run
- Automatic recovery after power failure
- Connection of up to 4 units possible (4 mm sockets)
- Password protection
- High safety standard
- 3 years warranty

Further properties of the devices (except EV0220):

- Storing of up to 9 methods possible
- Setting of a voltage gradient (Voltage Ramp Mode)
- Timer Mode
- Data logging of electrophoresis runs (of about 100 hours)
- Firmware updates via USB interface possible
- Remote control by PC possible

Technical specifications:
Units in the small and medium performance range

Model	EV0220	EV1450	EV2310	EV2650	EV2230	EV2320
Formerly known as	-	EV245	EV231	EV265	-	-
Voltage (V) (±2 % max. V)	0-200	0-400	0-300	0-600	0-1500	0-3000
Max. intensity of current	200 mA	500 mA	1000 mA	500 mA	300 mA	150 mA
Max. output	20 W	50 W	150 W	150 W	150 W	150 W
Timer	no	0-99,59 h				
Volt-hours	no	0-99,99 kVh				
Display	grafical					
Resolution	1 V / 1 mA / 1 W					
Programs	simple mode	9 x 9 parameter settings				
Outlets (parallel socket pairs)	4 (4 mm)					
Min. load resistor	30 Ω	30 Ω	10 Ω	30 Ω	300 Ω	600 Ω
Leak recognition	yes					
Ambient temp.	0-40 °C					
Dimensions (cm)	24 x 20 x 13 cm					
Weight	3 kg		6 kg			
Current	210-250 V, 50/60 Hz, 75 W		210-250 V, 50/60 Hz, 200 W			

▶ Ready-to-use gel solutions for sequencing gels see page 1189

Power Supplies

Units in the high performance range

Model	EV3020	EV3610	EV3150	EV3330	EV3620
Formerly known as	EV202	EV261	EV215	EV233	-
Voltage (V) (±2 % max. V)	0-300	0-600	0-1200	0-3000	0-6000
Max. intensity of current	2000 mA	1000 mA	500 mA	300 mA	150 mA
Max. output	300 W	300 W	300 W	300 W	300 W
Timer	0-99,59 h				
Volt-hours	0-99,99 kVh				
Display	LCD, 2 x 16 characters				
Resolution	1 V / 1 mA / 1 W				
Programs	9 x 9 parameter settings				
Outlets (parallel socket pairs)	4 (4 mm)				
Min. load resistor	5 Ω	15 Ω	70 Ω	600 Ω	1200 Ω
Leak recognition	yes				
Ambient temp.	0-40 °C				
Dimensions (cm)	31 x 26 x 13 cm				
Weight	10 kg				
Current	210-250 V, 50/60 Hz, 360 W				

Power Supply EV0220
Small basically power supply for horizontal and vertical mini gels, suitable for teaching purposes.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
0-200	0-200	0-20	**1289.1**	1	507,40

Power Supply EV1450 (formerly EV245)
Suitable for horizontal and vertical mini gels, MINI-blots and for electro-elution.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
0-400	max. 500	max. 50	**CP56.1**	1	541,80

Power Supply EV2310 (formerly EV231)
Suitable for horizontal and vertical gels, for blotting and for mini gel applications.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
0-300	0-1000	0-150	**A545.1**	1	708,45

Power Supply EV2650 (formerly EV265)
Suitable for horizontal and vertical gels and for electro-elution. Particularly suited for electrophoresis with multiple units.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
0-600	0-500	0-150	**A544.1**	1	708,45

Power Supply EV2230
Suitable for horizontal and vertical gels and for electroelution.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
0-1500	0-300	0-150	**1294.1**	1	1063,20

Power Supply EV2320
Suitable for electroelution, for horizontal and vertical gels, optimal for runs at high speed.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
0-3000	0-150	0-150	**1298.1**	1	1063,20

Power Supply EV3020 (formerly EV202)
Suitable for tank and semi-dry blotting.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
0-300	0-2000	0-300	**A543.1**	1	995,45

Power Supply EV3610 (formerly EV261)
Versatile Power Supply, suitable for horizontal and vertical gels, for electro-elution, for minigel-blotting and for Comet Assays.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
0-600	0-1000	0-300	**2804.1**	1	995,45

Power Supply EV3150 (formerly EV215)
Optimal for isoelectric focussing and DNA-sequencing.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
0-1200	0-500	0-300	**A542.1**	1	995,45

Power Supply EV3330 (formerly EV233)
Optimal for DNA-sequencing and IEF using flat bed units.
With 4 mm male connectors. Delivery includes 2 adapter pairs:
4 mm plug / 4 mm socket (undeep); 4 mm plug / 2 mm socket.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
0-3000	0-300	0-300	**A541.1**	1	1516,85

Power Supply EV3620
For isoelectric focusing and for DNA sequencing.
Optimal for long vertical gels.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
0-6000	0-150	0-300	**1300.1**	1	1607,15

Recommendation of suitable Power Supplies

Unit	for 1-2 Units	for 3-4 Units
MINIeasy	Roth-MINI, EV0220, EV1450	Roth-MINI, EV1450, EV2310
PROfessional I		
MINI		
PROfessional II	Roth-STANDARD, EV1450, EV2310	Roth-STANDARD, EV2310, EV2650
MIDI 1		
PROfessional III	Roth-STANDARD, EV2310, EV2650	Roth-BLOT, EV2650, EV2230
MIDI PLUS		
PROfessional IV	EV2650, EV3610	Roth-BLOT, EV2650, EV3610
MIDI 2		
PROfessional V		Roth-BLOT, EV3610
MAXI		
VARIA 1		Roth-BLOT, EV2650, EV3610
PROfessional Acetat	Roth-STANDARD, EV2310	Roth-STANDARD, EV2650, EV2230
MULTI	EV3150	EV3330
PROclamp MINI	Roth-STANDARD, EV0220, EV1450, EV2310	Roth-STANDARD, EV2310, EV2650
PROclamp MINI Wide		
MINI vertikal		
PROclamp MAXI	Roth-BLOT, EV2310, EV3610	Roth-BLOT, EV2650, EV3150
MAXI vertikal		
Sequencing	EV3330, EV3620	EV3330, EV3620
IEF	EV3150, EV3330	EV3150, EV3330
MINI-Blotting	Roth-MINI, EV1450, EV2310	EV2310, EV3610
MAXI-Blotting	Roth-BLOT, EV2310, EV3610	Roth-BLOT, EV3610, EV3020
Electroelution	Roth-MINI, EV1450, EV3610, EV2230, EV2320	Roth-STANDARD, EV2650, EV3610, EV3150
COMPAC-50 Comet Assay	Roth-MINI, EV1450, EV3610, EV2230, EV2320	Roth-STANDARD, EV2650, EV3610, EV3150

When connecting several units, a higher voltage must be applied in order to attain the same intensity of current and output and, subsequently, the same separating capacity.

①

②

Roth Power Supplies

The Roth series - upgraded version and new design

Three units for all applications in electrophoresis:
Roth MINI, STANDARD and BLOT.

- Compact and easy to operate
- Constant parameters
- Timer with alarm function
- Comply to all relevant safety standards
- 1 year warranty

Models Power Pro (Roth STANDARD and BLOT):
- Up to 30 individual protocols with 1-6 steps savable
- Pre-programmed options for special applications
- Connection with up to 5 units possible

Technical specifications:

Type	① MINI	② STANDARD	② BLOT
Model	nanoPAC-300P	PowerPro300	PowerPro3AMP
Voltage (V)	10-300	5-300	5-300
Max. intensity of current	1-400 mA	1-700 mA	10-3000 mA
Max. output	60 W	150 W	300 W
Timer	1-999 mins	1-999 mins	1-999 mins
Volt-hours	49.995 kVh		
Display	LED display	2,4″ TFT	2,4″ TFT
Resolution	1 V, 1 mA	1 V, 1 mA	1 V, 10 mA, 1 W
Type of output V/mA/W	Constant V or mA with automatic crossover		
	-	During constant mode not adjusted parameters are automatically set to maximum	
Programs	Manually adjustable (Constant Mode)		
	2-step program, editable	30 programs, each with up to 6 steps editable (Program Mode)	
	2-step program, pre-assigned	Pre-assigned programs for different applications (Typical running condition Mode)	
Outlets (parallel socket pairs)	2 (4 mm)	5 (4 mm)	5 (4 mm)
Min. load resistor	5 Ω	3 Ω	0.1 Ω
Safety detections	No load Over load Over temperature	No load Over load Leakage	No load Over load Leakage
Protection	-	Over temperature	Over temperature
Automatic recovery after power failure	-	Yes	Yes
IQ/OQ protocols	-	Yes, optional	Yes, optional
Ambient temp.	4-40 °C	4-40 °C	4-40 °C
Regulatory	CE, ETL, FCC	CE, ETL	CE
Dimensions (cm)	14 x 19,1 x 8,4	21,5 x 33,5 x 10,4	21,5 x 33,5 x 10,4
Weight	1,0 kg	2,1 kg	2,1 kg
Rated voltages	100-240 V, 50-60 Hz, 2,5 A	100-240 V, 47-60 Hz, 200 W	100-240 V, 47-60 Hz, 410 W

Roth Power Supply MINI

For horizontal mini gels, rapid analyses of nucleic acids and for students courses.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
max. 300	max. 400	max. 60	**2907.1**	1	510,65

Roth Power Supply STANDARD

For standard applications, all middle sized horizontal gels (routine gels) and for vertical mini gels. Suitable for cold-room operation.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
max. 300	max. 700	max. 150	**2908.1**	1	662,20

Roth Power Supply BLOT

For large dimension horizontal gels, vertical maxi gels (e.g. 20 x 20 cm) and blotting. For high flexibility in application. Suitable for cold-room operation.

Voltage (V)	Intensity of current (mA)	Output (W)	Art. No.	Pack Qty.	€
max. 300	max. 3000	max. 300	**2909.1**	1	1236,25

Accessories

① ②

Electrophoresis Cables

Suitable for up to 1000 volt. Cable length 1 m.

Image	Model	∅ socket (mm)	∅ plug (mm)	Art. No.	Pack Qty. (pair)	€
①	Classic Line	4	4	**N843.1**	1	85,50
②	Rotiphorese® PROfessional	4	4	**6848.1**	1	53,40

Semi Dry Blotter Cables

Suitable for up to 1000 volt. Cable length 1 m. Narrow socket sheaths.

∅ socket (mm)	∅ plug (mm)	Art. No.	Pack Qty. (pair)	€
4	4	**6072.1**	1	58,45

Adapters

By using the appropriate pair of adapters, electrophoresis cables may fit to any customary power supply.

∅ socket (mm)	∅ plug (mm)	Art. No.	Pack Qty. (pair)	€
2	4	**T843.1**	1	23,15
4	2	**K294.1**	1	8,10
4	4	**K295.1**	1	5,95

Silicone Sealing Hose

for horizontal gel casting trays (Art. No. N575.1 and N595.1), ∅ 4 mm, ~1 m.

Art. No.	Pack Qty	€
T811.1	1 pieces	21,00

Platinum Spare Electrode

for vertical and horizontal electrophoresis units, ∅ 0,2 mm

Art. No.	Pack Qty.	€
T794.1	1 electr. (650 mm)	127,95
1428.1	1 electr. (500 mm)	99,35

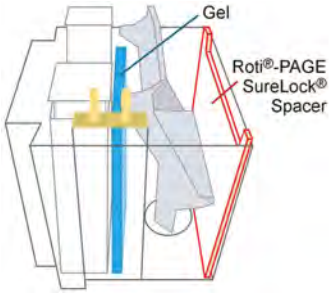
Roti®-PAGE buffer dam TIP

Special buffer dams made for electrophoresis of longer precast gels in **PROTEAN®** units made by BioRad®.
Roti®-PAGE buffer dams are approx. 1 cm longer than the original buffer dams from BioRad®, providing the full height needed for building the inner buffer reservoir even for runs of single 9x10 cm precast gels.
Suitable for BioRad® Mini PROTEAN® I, II, III, Tetra and Ready Gel® Cell.
Dimensions (WxHxD): 10.1 x 9.3 x 0.4 cm.

Art. No.	Material	Pack Qty.	€
4715.1	Acrylic glass	1	25,30

Roti®-PAGE-Spacer TIP

Spacer for insertion into **Novex® XCell SureLock®** Mini-Cell units made by Invitrogen™.
The spacer is suitable for approx. 5 mm thick precast gels. It compensates the slightly smaller thickness of the gels, enabling the simultaneous run of two 5 mm precast gels in Novex units. For this purpose, the SureLock® Spacer is simply inserted into the tank (see figure).
Size: Width 10 cm, thickness 0.2 cm, height 9 cm (notch) and 10 cm (full heigth).



Art. No.	Material	Pack Qty.	€
4731.1	Acrylic glass	1	21,00

Glass Plate Racks

ROTH MINI and MAXI glass plate racks for safe drying and storage of glass plates for vertical gel electrophoresis. Black acrylic glass.

Type	Dimensions L x W x H (cm)	for max.	Art. No.	Pack Qty.	€
Mini	27 x 8 x 9	20 glass plates (up to 2 mm thick)	**N860.1**	1	57,85
Maxi	17 x 17 x 17	10 glass plates (up to 5 mm thick)	**N861.1**	1	85,95

MINI and MIDI Gradient Mixer

For preparing polyacrylic amide gel gradients or centrifugation gradients (sucrose or caesium chloride gradients).
The mixers are manufactured from one acrylic block. They consist of two chambers, a storage area and a mixing chamber with a connecting valve. A second valve regulates the discharge from the chamber. A magnetic follower placed into the mixing chamber enables a steady and constant gradient to be produced with the magnetic stirrer. The mixers have a flat bottom and come with a rod on the back which can be attached to a holder. Connection for 4 mm FEP- tubes.

Type	Total filling volume (ml)	Art. No.	Pack Qty.	€
MINI	30	**N857.1**	1	543,95
MIDI	100	**N858.1**	1	628,90

▶ Tube Pump Sci-Q 323 for gradient mixers see page 367
▶ Rotilabo®-FEP-hoses see page 385

Levelling Table

ROTH levelling tables enable casting of horizontal gels of equal thickness, featuring easy-to-turn rotating feet on the corners. Tables also have an air bubble in the centre for precise horizontal alignment.

Table surface: 20 x 30 cm.

Art. No.	Pack Qty.	€
N854.1	1	213,95

Gel Multi Caster

Multiple gel casting system, tailored for use with Rotiphorese® PROclamp vertical electrophoresis units (10 x 10 cm gel glass plates). The number or the thickness of gels being poured is variable. After pouring the glass plates can be easily separated by the included separation sheets. With level bubble for optimal levelling of gels.

Delivery incl. gel casting chamber, 1 bottom silicone gasket for top filling, 1 level bubble, 1 clip, 12 separation sheets, 9 spacer plates with different diameters: 1 x 12 mm, 5 x 5 mm, 3 x 3 mm

Type	for max. gels	Art. No.	Pack Qty.	€
Multi Caster 12 x	12	**3118.1**	1	613,85

Gel Handler®

Flexible UV transparent sheets for supporting, manipulating and photographing gels

Made of polyolefin material. Gel Handler® sheets are slid under gels in solution for easy lifting and moving.

Properties:

- **Cuttable** - may be cut with scissors into convenient pieces
- **Chemically inert** - autoclaving and washing with diluted acids and bases is possible
- **UV-transparent** - higher transparency than UV-transparent acrylic material
- **Very flexible** - slide easily under the gel and eliminate air bubbles when placed on a transilluminator
- **Resistant** - the surface of the transilluminator is protected from scratching when excising segments of a gel with a razor or spatula

Technical specifications:

Optical density 3896.1	
254 nm emission wave length	0.14 OD
300 nm emission wave length	0.04 OD

Dimensions L x W (cm)	Thickness (mm)	Art. No.	Pack Qty.	€
21 x 28	0,13	**3896.1**	10	69,05
21 x 28	0,26	**3897.1**	5	69,05

Gel Scoops

ROTH gel scoops enable easy transport of gels in staining solutions or to a transilluminator. Even low concentrated agarose gels are protected against breaking.

ROTH gel scoops are UV-transparent.

Type	Overall length (mm)	Scoop width (mm)	Length of scooping surface (mm)	Art. No.	Pack Qty.	€
MINI	235	60	82	**N850.1**	1	68,80
MIDI 2	430	200	250	**N852.1**	1	85,90
MAXI	520	250	330	**N853.1**	1	98,40

Blot incubation trays

121 °C reusable

Compatible with Western- and Southern blotting methods

Developed for incubation of filter membranes during signal detection after Western- and Southern blotting. The incubation trays can safely be stacked, and, due to the tightly sealing lids, evaporation of solution is prevented even during long incubation periods. The size, adapted to typical membrane sheets, reduces the amount of buffer needed during incubation. In case of version MINI, the 5 trays may be used separately as well as in uniform. Stabile, autoclavable, and reusable.

Made from polypropylene.

Model	Material	Dimensions W x L (mm)	Art. No.	Pack Qty.	€
MINI	PP	16 x 115	**4810.1**	5	57,65
MIDI	PP	90 x 90	**4811.1**	5	85,50
MAXI	PP	165 x 165	**4812.1**	5	186,00

Staining chamber

By Nalgene®. Made of **PMP** for staining, fixing, and bleaching membranes, electrophoresis gels etc. With lid made of **PP**-copolymer and leakproof drain plug made of **LDPE** for problem-free draining of liquid without gel manipulation. Chamber with handles on both side for easy transport. Capacity with gel under shaking conditions: 500 to 750 ml. Temperature stable from -70 to +70 °C.

Not UV-transparent.

L x W x H (mm)	Art. No.	Pack Qty.	€
125 x 125 x 50	**H591.1**	1	34,00

FlowMesh™

Permeable support mesh for gels and filter membranes. Sturdy, versatile, and convenient. Re-usable and easily cut to size.

FlowMesh™ max be used for the following applications (e.g.):

Gel support - Place FlowMesh™ above or below a gel to protect from tearing, bending, or folding. May be used during gel staining, destaining, probing, equilibration etc.

Spacing - Use FlowMesh™ as permeable spacer for separation of gels and membranes during stacking.

Membrane stabilisation - Use on one or both sides of membranes during storage or hybridisation, while keeping the membrane fully accessible for blocking, probing and washing.

FlowMesh™ is made of polypropylene mesh approximately 0,3 mm thick with 1 mm strand spacings and approx. 70 % void volume. Between two flat sheets separated by FlowMesh™ is 2,7 ml/100 cm² void volume. Size: 27,8 cm x 21,7 cm.

Art. No.	Pack Qty.	€
2796.1	20	73,65

Gel Documentation System for runVIEW

Rotiphorese® runDOC gel documentation system

By Cleaver Scientific. Gel documentation system for the Professional runVIEW real-time electrophoresis system.
It consists of
- Darkroom hood
- Digital camera (18.0 MP)
- One filter for green and one for red fluorescence

The darkroom hood fits exactly to the runVIEW gel unit. After excitation by the blue light illuminator of the runVIEW base station the fluorescent gel bands are made visible by the filter slide integrated in the darkroom hood. Subsequently, they can be documented by the integrated camera.

Technical data camera:

Type	Canon EOS 1300 D
Effective pixels	18.0 MP
Image resolution	720 x 480 up to 5184 x 3456
Sensor	CMOS
File format	RAW, JEPG / DCF 2.0
Computer interface	USB 2.0 Hi-speed (Mini-B-jack)
Video out	NTSC / PAL

Technical data filters:

Filter type	Colour filter	Use
Green filter	yellow	EvaGreen, Roti®-Load DNAstain, green fluorescence
Red filter	orange	Roti®Gelstain Red, ethidium bromide, red fluorescence

Delivery incl. darkroom hood with integrated camera (18.0 MP), green filter for blue light, red filter for blue light.

Art. No.	Pack Qty.	€
1315.1	1	2147,85

Rotiphorese® runDOC gel documentation system accessories

By Cleaver Scientific.

Type	Art. No.	Pack Qty.	€
runDOC Green filter for blue light	**1361.1**	1	117,20
runDOC Red filter für for blue light	**1349.1**	1	117,20
Mains charger cable (optional) for runDOC camera	**1392.1**	1	55,90

Rotiphorese® PROfessional runVIEW darkroom hood

By Cleaver Scientific.
The runVIEW darkroom hood is a portable, lightweight hood designed exclusively for use with the runVIEW system. It aids viewing the samples in bright lit areas during the run and has no further functions. For complete gel documentation please order the runDOC system (Art. No. 1315.1).

The hood is placed directly over the runVIEW unit, which includes an integrated power supply and a blue light illuminator. The illuminator provides the excitation source for the DNA and the special lid of the unit makes the gel bands visible.

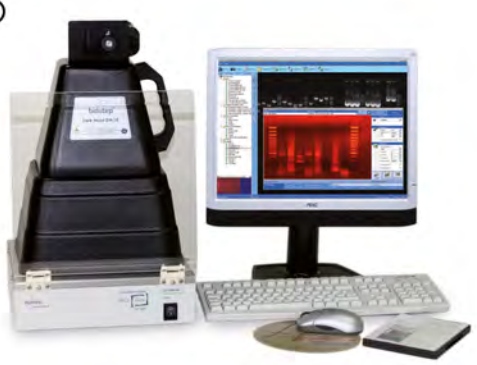
Art. No.	Pack Qty.	€
1348.1	1 piece	220,40

▶ **Rotiphorese® Unit PROfessional runVIEW**
for real-time electrophoresis under blue light see page 1224

Felix Gel Documentation Systems

By Biostep

PC-controlled imaging system, e.g. for recording DNA/RNA bands in agarose gels or protein bands in polyacrylamide gels. **Camera control using the biostep argusX1 control and documentation software**. Minimum requirements for PC: Pentium/AMD 1,8 GHz, 4 GB, Win 7/8/10, 2-3 free USB connections. There are 2 different documentation systems available (Felix 1000 and Felix 2000), which differ only in the equipment of the camera (different lens types). Both systems are suitable for a maximum sample size of 20 x 20 cm.

① 

The following components are included:
- High-resolution reflex camera
- biostep argusX1 recording software (incl. database)
- Filter (green light/red light)
- UV transilluminator
- Dark hood - 2 different types available
  ① Dark hood DH-10: attachment hood with UV protective shield, footprint (W x D): 30 x 25 cm
  ② Dark hood DH-20: stationary dark hood with sliding door, mounting on transilluminator with four tensions locks, footprint (W x D): 32,5 x 32,2 cm, dimmable white top light with LEDs, automatic UV shut-off upon opening door (no UV protective shield necessary)

②

Felix 1000 documentation system NEW

Imaging system incl. reflex camerawith manual zoom lens

Technical specifications for reflex camera
- CMOS sensor (22,3 x 14,9 mm)
- **Manual zoom lens F3.5**
- Resolution: 18 megapixels (5184 x 3456)
- Greyscale: 8-bit (256)
- Colour: 24-bit (16,7E6)
- USB 2.0 connection

Delivery incl. reflex camera, biostep argusX1 recording software, dark hood and transilluminator.
Please order thermal printer and evaluation software separately if required.

Fig.	Type	Filter type	(nm)	Dark hood	Transillu-minator	Art. No.	Pack Qty.	€
①	Felix 1010-R	red light	600	DH-10	UST-20M-8K	**1786.1**	1	3165,90
①	Felix 1010-G	green light	530	DH-10	UST-20M-8E	**1796.1**	1	3434,65
②	Felix 1020-RG	filter slides red and green light	600, 530	DH-20	UST-20M-8E	**1807.1**	1	4778,40

Felix 2000 documentation system NEW

Imaging system incl. reflex camera with fixed focal length lens

Technical specifications for reflex camera
- CMOS sensor (22,3 x 14,9 mm)
- **Fixed focal length lens F1.8 and automatic focus**
- Resolution: 18 megapixels (5184 x 3456)
- Greyscale: 8-bit (256)
- Colour: 24-bit (16,7E6)
- USB 2.0 connection

Delivery incl. reflex camera, biostep argusX1 recording software, dark hood and transilluminator.
Please order thermal printer and evaluation software separately if required.

Fig.	Type	Filter type	(nm)	Dark hood	Transillu-minator	Art. No.	Pack Qty.	€
①	Felix 2010-R	red light	600	DH-10	UST-20M-8K	**1809.1**	1	3703,40
①	Felix 2010-G	green light	530	DH-10	UST-20M-8E	**1819.1**	1	3972,15
②	Felix 2020-RG	filter slides for red and green light	600, 530	DH-20	UST-20M-8E	**1826.1**	1	5315,90

Accessories for Felix Gel Documentation Systems

Transilluminators

By Biostep.

- Homogenous illumination
- Temperature-controlled ventilation (except K-model)
- Filter lid made of stainless steel
- Dimensions W 32,5 x D 32,2 x H 10,5 cm
- Filter size 20 x 20 cm

Please order UV-protection and blue light filter shield separately.

Type	Wavelength (nm)	Tubes	Intensity	Art. No.	Pack Qty.	€
UST-20M-8K	312	6 x 8 W	-	**LL55.1**	1	822,40
UST-20M-8E	312	8 x 8 W	50-100 %	**LL56.1**	1	1073,95
UST-20M-8R	312	8 x 8 W	10-100 %	**LL57.1**	1	1284,65
USDT-20SM-8R	254/312	2 x (4 x 8) W	10-100 %	**LL59.1**	1	1342,70
USDT-20ML-8R	312/365	2 x (4 x 8) W	10-100 %	**LL61.1**	1	1342,70
BST-20G-D2R	470	LED-matrix 224	10-100 %	**LL62.1**	1	1235,20

UV-tubes

By Biostep.

- 8 watt
- Dimensions: L 300 x Ø 12 mm

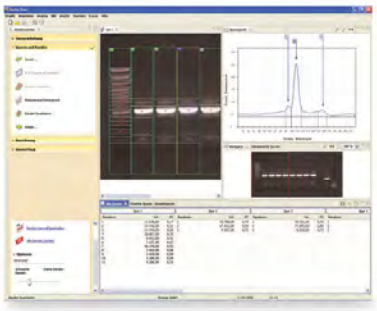
Wavelength (nm)	Art. No.	Pack Qty.	€
254	**LL70.1**	1	24,70
312	**LL71.1**	1	37,10
365	**LL72.1**	1	29,15

Protection/filter shields for transilluminators

By Biostep.

- Dimensions: W 32,5 x D 32,2 x H 2,5 cm
- 4 sides blocking edges

Product	Art. No.	Pack Qty.	€
UV-protection shield	**LY13.1**	1	78,30
Filter shield for blue light	**LL65.1**	1	84,75



Analysis software Gelix One® 210, single license

By Biostep.

- Imports bmp, png, tif, jpg images
- Reduces background noise
- Manual band detection and processing
- Molecular weight determination
- Manual standard allocation
- Exports data table
- Reporting and printing function
- For operating systems: Win XP, Win 7

Art. No.	Pack Qty.	€
LL67.1	1	507,40

NEW

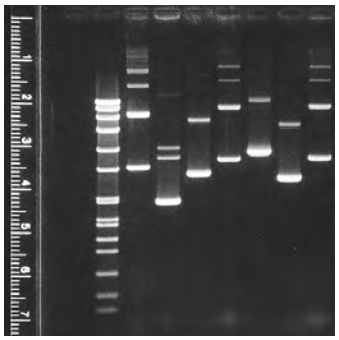
Printer for Felix systems

Thermal printer Mitsubishi P95DE

- USB port
- Thermosensitive print technology, 256 shades of grey
- Resolution 325 dpi
- Printing speed approx. 1,9 s/printout
- Standard paper: Thermal paper roll K61B, width 110 mm, approx. length 21 m
- High Glossy paper: Thermal paper roll 91HG, width 110 mm, approx. length 18 m

Type	Suitability	Art. No.	Pack Qty.	€
Thermal printer P95DE	for digital systems	**1755.1**	1	858,95
Paper K61B	for black and white prints	**LL69.1**	4	38,70
Paper K91HG		**1759.1**	4	85,70

Gel Drying



Fluorescent Rulers TIP

For documentation of DNA fragments in agarose gels. Rulers fluoresce within the same range as EtBr-DNA complexes, are clearly visible on both types of transilluminators (300 nm and 350 nm) and are therefore an excellent aid when photographing agarose gels.
Rulers are only 7 mm wide and therefore fit into one lane of the gel.
The kit contains 4 rulers:
2 x 20 cm for long gels and 2 x 10 cm for mini gels.

Art. No.	Pack Qty. (Kit)	€
K162.1	1	50,50

Gel Drying Frames

For easy drying of gels between 2 cellophane papers. Enables drying of gels without heat or vacuum. The cellophane sheets (spare packs) may also be used for drying of gels on vacuum gel dryers (60 °C). Cellophane sheets (cell glass) are uncoated. Each set contains 2 frames, 2 backs, 8 clamps and 50 cellophane sheets.

MINI gel drying frames,
size 14 x 14 cm (overall), 11,7 x 11,7 cm (cutout)

Type	Art. No.	Pack Qty.	€
MINI Set	**K420.1**	1 set	138,70
Spare clamps for frame MINI	**T826.1**	4 clamps	21,40
Spare pack of cellophane MINI	**K422.1**	50 sheets	21,45

MAXI gel drying frames,
size 24 x 24 cm (overall), 22,5 x 22,5 cm (cutout)

Type	Art. No.	Pack Qty.	€
MAXI-Set	**K421.1**	1 set	212,85
Spare clamps for frame MAXI	**T827.1**	4 clamps	24,20
Spare pack of cellophane MAXI	**K423.1**	50 sheets	31,00

Vacuum Gel Dryer

- Heatable
- For fast and even gel drying
- For drying protein and sequencing gels
- Particularly even distribution of temperature over entire drying surface
- Precise adjustment of temperature of up to 80 °C
- Digital display of temperature
- Timer for heating element and vacuum pump (1-minute increments)
- Very robust construction
- All accessories are also available individually

Technical Specifications:

Model	MIDI	MAXI
Drying surface	44 x 34 cm	49 x 41 cm
Measurements (H x W x D)	85 x 550 x 435 mm	85 x 680 x 480 mm
Weight	8 kg	13 kg
Heating element	800 W	
Vacuum timer	0-10 h	
Temperature timer	0-10 h	
Digital display	40-80 °C	
Accuracy	±2 %	
Mains connection	220-240 V, 50-60 Hz	

IMPORTANT:
In order to achieve efficient drying, the vacuum pump should achieve a flow rate of 1000-6000 l/h (equals 1-6 m^3/h). We recommend use of the Membrane Vacuum Pump (Art. No. T789.1) and the Rotilabo® vacuum silicone tube (Art. No. 9746.1).

Type	Art. No.	Pack Qty.	€
MIDI vacuum-gel dryer incl. accessories	**T781.1**	1	2413,40
MAXI vacuum-gel dryer incl. accessories	**T782.1**	1	2568,20

Vacuum Gel Dryer Accessories

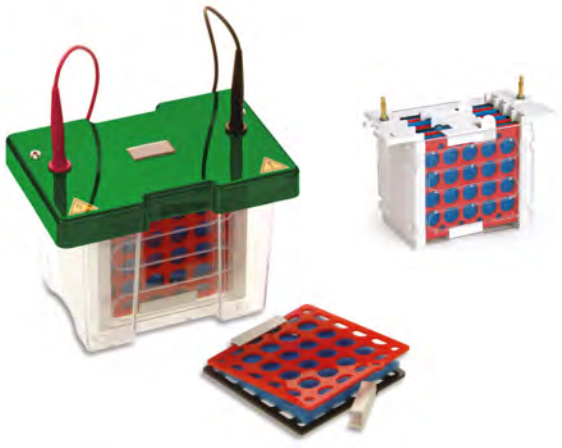
Type	Art. No.	Pack Qty	€
MIDI stainless steel screen	**T818.1**	1	188,15
MIDI Mylar-mat (PET)	**T820.1**	1	53,25
MIDI porous polyethylene mat	**T822.1**	1	145,15
MIDI silicone cover	**T824.1**	1	192,45
MAXI stainless steel screen	**T819.1**	1	256,95
MAXI Mylar-mat (PET)	**T821.1**	1	61,85
MAXI porous polyethylene mat	**T823.1**	1	192,45
MAXI silicone cover	**T825.1**	1	235,45

- ▶ Membrane Vacuum Pump (Art. No. T789.1) see page 371
- ▶ Woulff´s bottle (Art. No. H955.1) and Accessory Kit see page 40
- ▶ Vacuum silicone tube (Art. No. 9746.1) see page 387

Blotting Units

Tank Blotting

- Electro tank blotting system for blotting of up to 4 gels in parallel
- For transferring proteins and nucleic acids
- Ideal for large and temperature-sensitive proteins
- The short distance between the electrodes guarantees an evenly high current strength across the blotting area and reduces the amount of heat generated
- Hinged cassettes – for most easy handling and rapid blot set up
- Open design, rigid cassettes for maximum current transfer and even blotting contact
- Colour coded cassettes and asymmetrical lid ensure correct blot set up and blotting direction
- **Modules fit the vertical electrophoresis system Rotiphorese® PROclamp (see page 1235)**



Rotiphorese® PROclamp MINI Tank Blotting System

Maximum blotting area: 4 gels of up to 10 x 10 cm

- Can be used with all gels of 10 x 10 cm in maximum
- Compatible with the Rotiphorese® PROclamp MINI unit for vertical electrophoresis (Art. Nos. 3501.1-3503.1)

Delivery incl. 1 Rotiphorese® PROclamp MINI buffer tank, safety lid with cables and 1 PROclamp MINI blotting module for max. 4 gels, incl. 4 cassettes and 4 pairs of fibre blotting mats.

Art. No.	Pack Qty	€
3513.1	1 unit	700,90

Rotiphorese® PROclamp MAXI Tank Blotting System

Maximum Blotting area: 4 gels of up to 20 x 20 cm

- Can be used with all gels of 20 x 20 cm in maximum
- Compatible with the Rotiphorese® Unit PROclamp MAXI for vertical electrophoresis (Art. No. 5769.1)

Delivery incl. 1 Rotiphorese® PROclamp MAXI buffer tank, safety lid with cables, removable cooling coil, and 1 PROclamp MAXI blotting module for max. 4 gels, incl. 4 cassettes and 18 fibre blotting mats.

Art. No.	Pack Qty	€
5814.1	1 unit	1127,70

Rotiphorese® PROclamp MINI Tank Blotting Module

Rotiphorese® PROclamp MINI Tank Blotting Module

Blotting insert compatible with the Rotiphorese® PROclamp MINI system for vertical electrophoresis (Art. Nos. 3501.1-3503.1). Blotting module for max. 4 gels, incl. 4 cassettes and 4 pairs of fibre blotting mats.

Art. No.	Pack Qty	€
3517.1	1 unit	418,20

Rotiphorese® PROclamp MAXI Tank Blotting Module

Rotiphorese® PROclamp MAXI Tank Blotting Module

Blotting insert compatible with the Rotiphorese® PROclamp MAXI system for vertical elektrophoresis (Art. No. 5769.1). Blotting module for max. 4 gels, incl. 4 cassettes and 18 fibre blotting mats.

Art. No.	Pack Qty	€
5816.1	1 unit	602,00

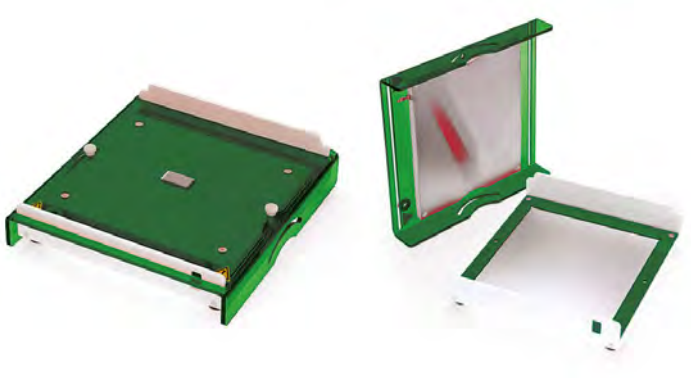
PROclamp MINI Blotting Accessories

Type	Art. No.	Pack Qty	€
PROclamp MINI compression cassette (no mats)	**3518.1**	1 unit	44,05
PROclamp MINI blotting mats	**3519.1**	8 mats	44,05

PROclamp MAXI Blotting Accessories

Type	Art. No.	Pack Qty	€
PROclamp MAXI compression cassette (no mats)	**5827.1**	1 unit	73,50
PROclamp MAXI blotting mats	**5829.1**	6 mats	73,50

Semi-Dry-Blotting



Semi Dry Blotters

For transfer of proteins and nucleic acids.

- Durable, corrosion-free electrodes
- Fast, steady transfer
- Minimum heat development
- Low buffer use

As the electrodes are made of high-grade steel (cathode, lid) and platinised titanium (anode, base), they will last indefinitely if used correctly. There is no build-up of deposits on the transfer surface, the buffers cannot penetrate into the electrodes. The extremely constant electric field over the entire transfer surface guarantees optimal results with all transfer membranes.

MINI Semi-dry-blotter, transfer surface 10 x 10 cm

Art. No.	Pack Qty.	€
T787.1	1	655,75

MAXI Semi-dry-blotter, transfer surface 20 x 20 cm

Art. No.	Pack Qty.	€
T788.1	1	1316,90

Semi Dry Blotters PROfessional

For transfer of proteins and nucleic acids.

- Fast transfer with uniform heat dispersion
- Superior blotting quality due to screw down lid and long life electrodes
- Minimum heat development and buffer use

Semi Dry Blotters PROfessional offer rapid transfer times for blotting of proteins, as well as nucleic acids, being compatible with gel thicknesses from 0,25 up to 10 mm.

Semi Dry Blotters PROfessional utilise a screw down lid, which secures the blot sandwich (optionally) and allows complete control of pressure ensuring even transfer. Uniform heat dispersion across the transfer surface ensures stable blotting parameters and no heat induced sample loss or transfer distortions. The electrodes (platinum coated anode, base, and stainless steel cathode, lid) will exhibit no corrosion when used with accurately prepared transfer buffers, and provide many years of trouble free use.

Unit dimensions (w x h x d): 16,5 x 15 x 5,5 cm (MINI)
and 26 x 26 x 7 cm (MAXI)

Semi dry blotter PROfessional MINI, transfer surface 10 x 10 cm

Art. No.	Pack Qty.	€
KK58.1	1	670,80

Semi dry blotter PROfessional MAXI, transfer surface 20 x 20 cm

Art. No.	Pack Qty.	€
KK59.1	1	1354,50

Buffers recommended for Tank blotting

Acc. to **Towbin** *et al.*, 1997: 25 mM Tris, 192 mM glycin, 20 % methanol. Optional: 0-0,1 % SDS.

Acc. to **Bjerrum und Schaefer-Nielsen**, 1986: 48 mM Tris, 39 mM glycin, 0-20 % methanol. Optional: 0-0.1 % SDS.

Acc. to **Dunn**, 1986: 10 mM $NaHCO_3$, 3 mM $NaCO_3$, 20 % methanol.

Buffers recommended for Semy Dry blotting

Discontinuous buffer system: Roti®-Blot 1 - for standard proteins or Roti®-Blot 2 - for hydrophobic proteins.

Continuous **Tris-glycin buffer** acc. to Bjerrum and Schaefer-Nielsen, 1986: 48 mM Tris, 39 mM glycin, 0-20 % methanol. Optional: 0,01-0,1 % (usually 0,0375 %) SDS.

Continuous **CAPS buffer** for blotting of basic proteins and prior to N-terminal sequencing: 0,22 % CAPS (pH 10,5-11,0), 10 % methanol.

Do not adjust pH of the buffer (exception: CAPS stock solution). Adding acid or base to the buffer will result in higher conductivity, leading to increased formation of heat as well as ions. Subsequently, this results in brown, "burnt" looking blotting paper and damage to the electrode plates.

Methanol prevents the gel from swelling during transfer (mandatory for gradient gels!) and improves the absorption of proteins to NC membranes. For transfer of native or big proteins, reduce or omit methanol.

SDS improves transfer efficiency of large proteins and protein binding to PVDF membranes, however increasing relative current, power and temperature. Don't use SDS for Semi-Dry blotting of small proteins to NC membranes. For tank blotting use 0,02 % SDS in minimum.

For **blotting of native proteins** use buffer acc to Bjerrum and Schaefer-Nielsen with 0,04 % SDS and 0-10 % methanol.

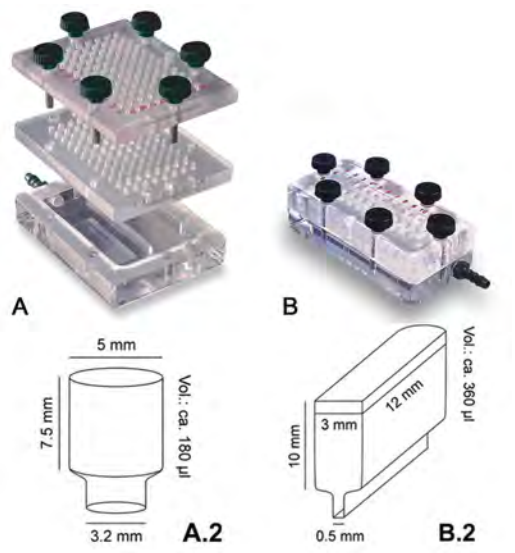
Rotilabo®-sealing roller

Frame made of **metal**, with **rubber** roller. For more effective sealing of microtest-, PCR- and Deep-Well-plates with sealing foil or sealing mats because the roller presses them on more evenly. Also usable for evenly smoothing out gel, transfer membrane and blotting-paper during blot-assembly. Roll width: 100 mm, ∅ roll: 30 mm.

Art. No.	Pack Qty.	€
HE23.1	1	39,35

Please note our **Technical Information Brochure** on the Internet next to the products:

Transfer Buffers
Tips and protocols



Dot Blotter and Slot Blotter

For rapid transfer of DNA,
RNA and immunological antibody screening methods.

- Robust acrylic construction
- Precision lapped mating surfaces prevent sample leakage
- Steady transfer
- Very simple assembly
- Alpha-numeric sample identification

A permanent filter template is provided with each manifold to simplify the cutting of filters to exact size.
A vacuum of approximately 600 mm Hg (0,8 Bar, relative pressure) is required during sample application. We recommend LABOPORT®-Membrane vacuum pump (Art. No. Y371.1) with hose stems for hose inner ∅ 8 mm (Art. No. EL44.1) and the following hoses: Rotilabo®-Vacuum-Silicone hose, inner ∅ 8 mm (Art. No. 9746.1) or Rotilabo®-Vacuum-Rubber hose, inner ∅ 8 mm (Art. No. 0680.1).

Dot-blotter (A)

Max. sample capacity: 96 per transfer
Wells per row: 12
Wells per column: 8
Volume per well: approx. 180 µl (for shape of wells, see figure A.2)

Type	Art. No.	Pack Qty.	€
Dot-Blotter	**T790.1**	1	657,90

Slot-blotter (B)

Max. sample capacity: 48 per transfer
Wells per row: 16
Wells per column: 3
Volume per well: approx. 360 µl (for shape of wells, see figure B.2)

Type	Art. No.	Pack Qty.	€
Slot-Blotter	**T791.1**	1	703,05

Instructions for use
can be found on the Internet next to the product description.

NEW

UV-Crosslinker

- Programmable microprocessor control
- UV energy monitored automatically
- Compact footprint with large interior
- Observation window - UV blocking
- Membrane keypad operation
- Clear LED display
- Safety interlocked

The UV crosslinker provides a compact unit occupying minimum bench space with a footprint of only 350 x 360 mm and a spacious interior chamber of 260 x 330 x 145 mm. As with all our products, safety is a major consideration so the door of the crosslinker is safety interlocked against opening during operation and the observation window in the door is ultraviolet blocking.

The ultraviolet energy is continuously monitored by an accurate microprocessor controlled photo feedback system which compensates for variation in output from the UV sources. In this way consistency of operation and maximum efficiency are maintained.

Applications include:
- Fixing of nucleic acids to nylon or nitrocellulose membranes
- Southern or Northern blotting, dot blotting and colony or plaque lifts
- Elimination or reduction of PCR contamination
- Nicking ethidium bromide stained DNA in agarose gels
- Creation of restriction cleavage inhibiting thymine dimers
- Screening RecA mutation
- Ultraviolet curing of polymers, adhesives and inks
- Ultraviolet sterilization

Technical specifications:

UV Source	5 x 8 W UV bulbs (365, 312 or 254 nm)
Exposure Time	0-999,9 minutes
Energy Ranges	0-99,99 J or 0-9,999 J
Inner dimensions	26 x 33 x 14,5 cm (w x d x h)
Footprint	35 x 36 x 30,5 cm (w x d x h)
Weight	10,5 kg
Controls	9 preset ultraviolet energy levels 9 preset exposure times manual UV energy level setting manual exposure setting

Product	Type	Wavelength (nm)	Art. No.	Pack Qty.	€
UV-Crosslinker Short Wave	Short Wave	254	**1782.1**	1	2999,25
UV-Crosslinker Medium Wave	Medium Wave	302	**1778.1**	1	3237,90
UV-Crosslinker Long Wave	Long Wave	365	**1777.1**	1	2999,25

▶ Please see our extensive assortment for Western-, Southern- and Northern-Blot detections in the chapter Biochemistry / Western & ELISA.

Transfer Filter Membranes

Transfer Membranes Made of Nitrocellulose

Pure nitrocellulose membranes for reliable protein standard applications

- Free of cellulose acetate
- High absorption capacity
- Very low background
- 0,2 µm or 0,45 µm pore size
- Easy to block
- For all standard detection systems

Please note: Membranes made of nitrocellulose age and should be replaced anually!

Roti®-NC

Transfer membrane for protein analyses, colony- and plaque-lifts
Binding capacity for proteins: 125-200 µg/cm²
Made of 100 % nitrocellulose

Warning H228

High-quality transfer membrane for all detection systems - extremely suitable for all protein transfer and detection methods. The membrane stands out for its particularly high mechanical stability. The pure 100 % nitrocellulose quality membrane is easy to block and allows for background-free blots with perfect bands. The pore size of 0,2 µm is suitable for proteins and peptides of all sizes. The best retention rate is achieved when blotting proteins of up to 70 kDa. Its excellent protein binding capacity not only efficiently prevents the blot from going through during transfer, but also guarantees highly sensitive detection of even low protein amounts.

Membrane thickness: 0,15 ± 0,05 mm

Pore size: 0,2 µm

Applications: Optimised for proteins of ≤70 kDa. Western- and far-western-blot, colony- and plaque-lifting of nucleic acids and proteins, immunoblots, dot-blots.

Pore size	Dimensions W x L (cm)	Art. No.	Pack Qty	€
0,2 µm	30 x 400	**9302.1**	1 roll	396,70
0,2 µm	30 x 300	**HP40.1**	1 roll	277,35
0,2 µm	20 x 300	**HP41.1**	1 roll	263,40
0,2 µm	10,2 x 13,3	**HP42.1**	10 sheets	95,70
0,2 µm	20 x 20	**HP43.1**	10 sheets	222,55
0,2 µm	∅ 9,0	**HP44.1**	50 disks	181,70

Blotting Membranes

Roti®-NC 0.45

Transfer membrane for protein analyses, Southern- und Northern-Blots

Binding capacity for proteins: ≥125 µg/cm²

Made of 100 % nitrocellulose

Warning H228

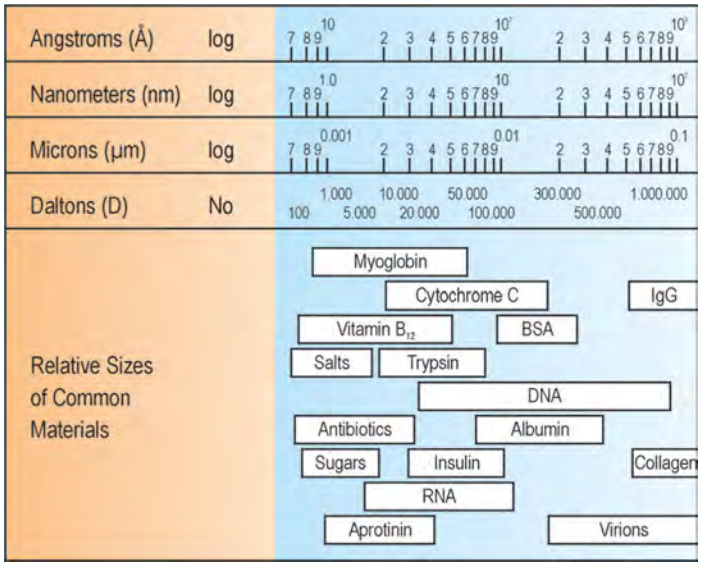
High-quality transfer membrane for all detection systems - extremely suitable for all protein transfer and detection methods. The Roti®-NC 0.45 membrane offers very good mechanical stability, standing out for its particularly smooth structure and even membrane thickness. The pure 100 % nitrocellulose quality membrane is easy to block and allows for background-free blots with perfect bands. The pore size of 0,45 µm is suitable for proteins and peptides of all sizes. The best retention rate is achieved when blotting proteins of ≥20 kDa. Having a high protein binding capacity, the membrane not only efficiently prevents protein loss during transfer, but also guarantees very sensitive detection of even low protein amounts.

Membrane thickness: 0,15 ± 0,01 mm

Pore size: 0,45 µm

Applications: Optimised for proteins ≥20 kDa. Western- and far-Western-blots, Southern- and Northern blots, colony- and plaque-lifting of nucleic acids and proteins, dot- and slot blots.

Pore size	Dimensions W x L (cm)	Art. No.	Pack Qty	€
0,45 µm	30 x 400	**9201.1**	1 roll	396,70
0,45 µm	30 x 300	**9200.1**	1 roll	299,95



Amersham™ Protran®

Transfer membrane for most nucleic acid and protein immobilising techniques

Binding capacity: 80-90 µg/cm² (0,2 µm) or 75-85 µg/cm² (0,45 µm)

Made from 100 % nitrocellulose.

Warning H228

Multiple use - ideal for most nucleic acid and protein immobilising techniques. Pure nitro-cellulose, free from cellulose acetate and triton. They have a high binding capacity and low background. The fibre-reinforced version allows extensive handling of membrane, easier cutting, repeated hybridisation and automated immobilising.

Applications: Southern, Northern, Western transfer, colony and plaque hybridisation, immunoblots, nucleic acid and protein dot-blot, slot-blot, electrophoretic transfer of proteins. (Nitrocellulose should only conditionally be used for electrophoretic transfer of nucleic acids, because of the high salt concentrations required for the transfer).

Membranes of 0,45 µm pore size allow for DNA transfer (minimum 300 bp) and protein transfer (minimum 20 kD).

Amersham™ Protran® 0.2 µm NC

Replaces Protran® BA 83 from Whatman®

Ideal for all protein and nucleic acid transfers.

Pore size 0.2 µm

Pore size	Dimensions W x L (cm)	Art. No.	Pack Qty	€
0,2 µm	20 x 20	**4684.1**	25 sheets	545,05
0,2 µm	10,2 x 13,3	**0028.1**	10 sheets	206,40
0,2 µm	30 x 400	**4685.1**	1 roll	571,90
0,2 µm	20 x 400	**0031.1**	1 roll	438,60

Amersham™ Protran® 0.45 µm NC

Replaces Protran® BA 85 from Whatman®

Ideal for all protein and nucleic acid transfers.

Pore size 0.45 µm

Pore size	Dimensions W x L (cm)	Art. No.	Pack Qty	€
0,45 µm	∅ 2,5	**4589.1**	100 disks	117,00
0,45 µm	∅ 8,2	**4592.1**	50 disks	225,00
0,45 µm	20 x 20	**4674.1**	25 sheets	547,20
0,45 µm	10,2 x 13,3	**0030.1**	10 sheets	170,95
0,45 µm	30 x 400	**4675.1**	1 roll	491,30
0,45 µm	20 x 400	**0041.1**	1 roll	414,95

Amersham™ Protran® supported 0.2 µm NC

Replaces Protran® BA-S 83 from Whatman®

Reinforced with a synthetic, inert material for improved elasticity and reaction to wetness. Suitable for protein and nucleic acid transfers which require a better resistance to wetness, such as repeated screening of the same blot.

Pore size 0.2 µm

Pore size	Dimensions W x L (cm)	Art. No.	Pack Qty	€
0,2 µm	20 x 20	**5945.1**	25 sheets	638,55
0,2 µm	30 x 400	**4756.1**	1 roll	653,60

Amersham™ Protran® supported 0.45 µm NC

Replaces Protran® BA-S 85 from Whatman®

Reinforced with a synthetic, inert material for improved elasticity and reaction to wetness. Suitable for protein and nucleic acid transfers which require a better resistance to wetness, such as repeated screening of the same blot.

Pore size 0.45 µm

Pore size	Dimensions W x L (cm)	Art. No.	Pack Qty	€
0,45 µm	20 x 20	**5930.1**	25 sheets	653,60
0,45 µm	30 x 400	**4705.1**	1 roll	550,40

Transfer Membranes Made of PVDF

For optimal results with all protein transfer techniques

- Well suited for all protein blots
- Best signal-to-noise ratio
- Very robust
- 0,2 µm or 0,45 µm pore size
- Suitable for long-term exposition
- Suitable for all detection systems
- May be used for peptide sequencing

Roti®-PVDF 0.2

PVDF membrane with 0,2 µm pore size

Binding capacity for proteins: ≥125 µg/cm²

Roti®-PVDF 0.2 is a hydrophobic, microporous polyvinylidene membrane, free from adjuvants and detergents. It has been optimised for transfer and highly sensitive detection of proteins of up to 70 kDa, but is also perfectly suited for blotting of bigger proteins. The membrane shows superior protein binding parameters and stands out for its particularly low background. It may also be used very well after repeated stripping and harsh washing processes.

This mechanically rigid transfer membrane can be easily cut to the desired gel size and it remains flexible and tear-proof even when dry.

Briefly immerse Roti®-PVDF 0.2 membrane in 100 % methanol prior to transfer until no more white areas are visible. This transfer membrane is then compatible with every blotting system.

Membrane thickness: 140 ± 20 µm

Pore size: 0,2 µm

Due to production processes, the membrane shows two different sides - one smooth and one raw. For optimally distinct bands, please use the smooth side for protein binding.

Applications: Optimised for proteins of ≤70 kDa. Western-blot, Dot-blot, lipopolysaccharide- and amino acid analysis, bindings assays, N-terminal peptide sequencing.

Detection systems: Chemoluminescence, radioactivity, colour

Pore size	Binding	Dimensions W x L (cm)	Art. No.	Pack Qty	€
0,2 µm	hydrophobic	30 x 300	**8989.1**	1 roll	349,40

Roti®-Fluoro PVDF

Premium PVDF membrane from ROTH, suitable for direct fluorescence detection

Roti®-Fluoro PVDF is a white, microporous membrane made from naturally hydrophobic polyvinylidene fluoride. The membrane is of superior protein binding capacity, making it perfectly suited for all standard and special applications in the field of protein analysis.

Roti®-Fluoro PVDF is of 0.2 µm pore size and binds proteins tenaciously via hydrophobic interactions. It enables very sensitive protein detection by keeping the background very low, resulting in a good signal-to-noise ratio with all standard detection systems. The mechanically rigid membrane is of high tensile strength and tear-proof, and does not crack or curl during handling. Therefore, signals remain clear and distinct, and are undisturbed by false-positive signals caused by membranes crinkles.

Roti®-Fluoro PVDF has been **specially optimised for direct detection via fluorescence.**

Briefly immerse Roti®-Fluoro PVDF membrane in 100 % methanol prior to transfer until no more white areas are visible. This transfer membrane is then compatible with every aqueous blot system.

Applications: Western- and Far-Western-Blot, analysis of small peptides, Immunoblot, Dot-blot, binding assays, N-terminal sequencing

Detection systems: Fluorescence, radioactivity, colour

Pore size	Binding	Dimensions W x L (cm)	Art. No.	Pack Qty	€
0,2 µm	hydrophobic	13 x 20	**2831.1**	2 sheets	33,00
0,2 µm	hydrophobic	26 x 330	**2803.1**	1 roll	335,40

Blotting Membranes

Roti®-PVDF

PVDF membrane from ROTH.

Roti®-PVDF is a hydrophobic, microporous polyvinylidene membrane. It is free from adjuvants and detergents. This membrane enables efficient transfer of proteins over a wide molecular weight range.

This mechanically rigid transfer membrane can be easily cut to the desired gel size and it remains flexible and tear-proof even when dry.

Briefly immerse Roti®-PVDF membrane in 100 % methanol prior to transfer until no more white areas are visible. This transfer membrane is then compatible with every aqueous blot system.

Membrane thickness: 125 ± 25 µm

Pore size: 0,45 µm

Applications: Optimised for proteins ≥20 kDa. Western-blot, Dot-blot, lipopolysaccharide- and amino acid analysis, binding assays, N-terminal peptide sequencing.

Detection systems: Chemoluminescence, radioactivity, colour

Not suitable for use with infrared densitometers (700 nm/800 nm).

Pore size	Binding	Dimensions W x L (cm)	Art. No.	Pack Qty	€
0,45 µm	hydrophobic	26,5 x 375	**T830.1**	1 roll	350,45

Immobilon-P

Original PVDF membrane from Millipore, for outstanding Western Blots.

The Immobilon-P membrane consists of microporous polyvinylidene fluoride (PVDF) with a high binding capacity for all biomolecules, particularly for proteins, independently of the transfer method or gel used. The efficient signal-to-noise ratio allows long exposure times and provides a high sensitivity during detection even when working with low protein amounts.

Membrane thickness: 100-145 µm

Pore size: 0,45 µm

Instructions for use: Compared to nitrocellulose the Immobilon-P membrane is much easier to handle and much better to stain, and shows superior resistance to organic solvents. Furthermore, the open pore structure provides easy access of antibodies or other peptides used for detection to bound protein, and enables efficient removal of unbound molecules, efficiently reducing the background.

Immobilon-PVDF membrane is ideal when performing immunodetection. The rapid immunodetection method additionally provides a tool to reduce the time span needed for the process by several hours. During Western Blot, the superior qualities of the PVDF membrane not only supersede a blocking step, but also reduce number and time span of washing steps considerably without compromising on specificity or sensitivity.

Applications: Western-blot, Dot- and Slot-blot, amino acid analysis, binding assays, detection of glycoproteins, N-terminal peptide sequencing.

Detection systems: Radioactivity, chemoluminescence, colour

Pore size	Binding	Dimensions W x L (cm)	Art. No.	Pack Qty	€
0,45 µm	hydrophobic	26,5 x 375	**T831.1**	1 roll	437,55

Technical Parameters of ROTH-Transfer Membranes

Membrane	Material	Characteristics	Thickness (µm)	Binding capacity (µg/cm²)	Pore size (µm)	Immobilisation
Roti®-Fluoro PVDF	Polyvinyliden fluoride	hydrophobic	125±25	300	0,2	not necessary
Roti®-PVDF 0.2	Polyvinyliden fluoride	hydrophobic	140±20	≥125	0,2	not necessary
Roti®-PVDF	Polyvinyliden fluoride	hydrophobic	125±25	ca. 200	0,45	not necessary
Immobilon P	Polyvinyliden fluoride	hydrophobic	120±25	150-300	0,45	not necessary
Roti®-Nylon 0.2	Nylon 6,6	neutral/amphoteric	150±20	500	0,2/0,45	UV, baking
Roti®-Nylon plus	Nylon 6,6	hydrophilic, positively charged	160±20	500	0,45	not necessary, UV and baking possible
Roti®-NC	Nitrocellulose	electrostatic, hydrophobic	150±50	125-200	0,2	UV, baking (max. 80 °C)
Roti®-NC 0.45	Nitrocellulose	electrostatic, hydrophobic	150±10	≥125	0,45	UV, baking (max. 80 °C)
Amersham Protran®	Nitrocellulose	electrostatic, hydrophobic	Unknown	11-72	0,2/0,45	UV, baking (max. 80 °C)
Amersham Protran® supported	Nitrocellulose	electrostatic, hydrophobic	Unknown	86-110	0,2/0,45	UV, baking (max. 80 °C)

Transfer Membranes Made of Nylon

For perfect Southern- and Northern-Blots

- Very low background
- Suitable for all staining techniques
- Superior performance in nucleic acid absorption
- Available as roll, easy-to-use pre-cut membranes and disks – the perfect size for each application

Roti®-Nylon plus

Ideal for DNA/RNA-transfers.

Roti®-Nylon plus is a cationic, einforced nylon 6.6-membrane with 0.45 µm pore size and extremely high tensile strength. The positively charged membrane surface guarantees rapid and efficient binding of DNA and RNA. May be steam sterilised.

Also available in convenient pre-cut sheets of standard gel size.

Membrane thickness: 150 ± 20 µm

Instructions for use: Nucleic acids can be cross-linked to the membrane by baking (80 °C, 15 min) or through UV exposure. No cross-linking is required for alkaline transfer as the negatively charged DNA forms a very stable complex with the positively charged Roti®-Nylon membrane.

Applications: Southern- and Northern-blot, Dot-blot, DNA fingerprinting, macro- and microarrays

Detection systems: Radioactivity, chemoluminescence, fluorescence

Pore size	Load	Dimensions W x L (cm)	Art. No.	Pack Qty	€
0,45 µm	positive	30 x 300	**K058.1**	1 roll	306,40
0,45 µm	positive	10 x 10	**HP34.1**	10 sheets	134,40
0,45 µm	positive	10 x 15	**HP35.1**	10 sheets	149,45
0,45 µm	positive	20 x 20	**HP36.1**	10 sheets	235,45
0,45 µm	positive	22,2 x 22,2	**HP37.1**	10 sheets	263,40

Roti®-Nylon 0.2

Ideal for DNA/RNA transfer, particularly for colony- and plaque-lifting, as well as for all multiple rehybridisations.

Especially recommended for Northern-blots.

Roti®-Nylon 0.2 is a neutral, enhanced Nylon membrane. Based on the material it provides a superior tensile strength and is extremely resistant against alcohol, acetone, and many other organic solvents. In a buffer pH of 6,5 Roti®-Nylon 0.2 is uncharged and by means of the surface-standing amino- and carboxy-groups has superior hydrophilic qualities. The charge of the membrane (ζ-potential) may be altered through the pH of the buffer - the membrane is positively charged at pH <6,5 and negatively charged at pH >6,5.

Membrane of particulary high DNA-binding capacity. Available as roll (pore size 0,2 µm) for high-flexible usage, and as disks (pore size 0,45 µm) for colony- and plaque-lifting. May be steam sterilised.

Membrane thickness: 150 ± 20 µm

Instructions for use: Covalent bondage of transferred nucleic acids is achieved by cross linking (baking for 15 min at 80 °C or UV-cross linking for 20 sec at 260 nm). Due to the excellent signal-to-noise ratio of the membrane, very sensitive detection (single copy-gene detection) and multiple rehybridisation is possible without loosing sensitivity.

Applications: Southern- and Northern blot, Dot blot, DNA fingerprinting, ELISA, colony- and plaque lifting, macro- and microarrays

Detection systems: Radioactivity, chemoluminescence, fluorescence

Pore size	Load	Dimensions W x L (cm)	Art. No.	Pack Qty	€
0,2 µm	neutral	30 x 300	**AE50.1**	1 roll	320,35
0,45 µm	neutral	∅ 13,2	**HP39.1**	50 disks	342,95

Size Comparison of Membrane Pores and Biomolecules

Biomolecules / Membrane Pores	Size (kD)
genomic DNA (human)	>11000000
E. coli	approx. 1500000
0.45 µm	approx. 5000
0.2 µm	approx. 2000
DNA 3 kb	approx. 1000
RNA 1 kb	approx. 300
Antibodies (IgG)	approx. 150
Proteins in the lab	approx. 10 - 300
BSA (Albumin)	69

Application of ROTH-Transfer Membranes

Biomolecules	Nylon plus	Nylon 0.2	PVDF 0.2	PVDF	Fluoro PVDF	NC	NC 0.45
DNA	+++	+	-	-	-	+	+
RNA	+	+++	-	-	-	+	+
Proteins	-	+	+++	+++	+++	+	+
Detection System							
Colour	+++	+++	+++	+++	+++	+++	+++
Radioactivity	+++	+++	+++	+++	+++	+++	+++
Chemoluminescence	+++	+++	+++	+++	-	+	+
Fluorescence	+++	+++	-	-	+++	-	-

+++: recommended +: suitable -: not

Blotting Papers

Rotilabo®-Blotting Papers

High quality paper for blotting, chromatography and filtration.
With good absorption qualities and smooth surface - for distinct bands and sample spots.

Thickness	Weight	Capillary rise (acc. to Klemm)
0,17 mm	81 g/m²	70-90 mm / 10 min
0,35 mm	192 g/m²	55-65 mm / 10 min
0,75 mm	320 g/m²	150-160 mm / 10 min
1,0 mm	400 g/m²	130-145 mm / 10 min
1,5 mm	570 g/m²	250-300 mm / 10 min

Thickness 0,17 mm

Dimensions	Art. No.	Pack Qty.	€
100 x 130 mm	**CL68.1**	100	47,45
200 x 200 mm	**CL69.1**	100	51,05
460 x 570 mm	**CL70.1**	100	205,35
580 x 600 mm	**CL71.1**	100	234,35

Thickness 0,35 mm

Conventional thickness for all general protocols. Equivalent to 3MM.

Dimensions	Art. No.	Pack Qty.	€
100 x 130 mm	**CL64.1**	100	31,55
200 x 200 mm	**CL65.1**	100	58,30
460 x 570 mm	**CL66.1**	100	230,05
580 x 600 mm	**CL67.1**	100	264,45

Thickness 0,75 mm

Paper of optimised thickness, perfectly suited for Semi Dry- and Tank-Blotting. Superior transfer efficiciency due to high liquid absorption, with being nicely flexible and to cut easy.

Dimensions	Art. No.	Pack Qty.	€
100 x 130 mm	**0942.1**	100	48,30
200 x 200 mm	**0943.1**	100	100,95
580 x 600 mm	**0945.1**	100	444,00

Thickness 1,0 mm

Dimensions	Art. No.	Pack Qty.	€
150 x 150 mm	**CL72.1**	25	22,90
200 x 200 mm	**CL73.1**	25	37,90
580 x 600 mm	**CL74.1**	25	152,50

Thickness 1,5 mm

Dimensions	Art. No.	Pack Qty.	€
580 x 600 mm	**CL75.1**	25	209,00

Gel Blotting Papers

Original Whatman®-blotting paper for wicking, blots and drying. Made from specially selected cellulose. Superior for applications in electrophoresis and chromatography.

Thickness 0,34 mm (Whatman® 3MM), flow rate 130 mm/30 min.
Also available in convenient rolls!

Dimensions	Art. No.	Pack Qty.	€
102 x 133 mm	**0043.1**	100	20,90
200 x 200 mm	**0048.1**	100	73,00
460 x 570 mm	**4926.1**	100	265,00
580 x 680 mm	**4928.1**	100	402,00
10 cm x 100 m (roll)	**CL87.1**	1	146,00
15 cm x 100 m (roll)	**CL88.1**	1	201,00
19 cm x 100 m (roll)	**CL89.1**	1	251,00

Thickness 1,5 mm (GB005) extra thick, mass per unit area: 550 g/m².
Particularly recommended for Semi-Dry-Blotting.

Dimensions	Art. No.	Pack Qty.	€
150 x 150 mm	**A125.1**	25	77,00
200 x 200 mm	**AE19.1**	25	96,00
580 x 580 mm	**A126.1**	25	386,00

Whatman® Chromatography Papers

Whatman® chromatography papers for blotting, chromatography and filtration. Made from specially selected cellulose.

Thickness 0,18 mm (Whatman® 1CHR), flow rate 130 mm/30 min.
Also available in convenient rolls!

Dimensions	Art. No.	Pack Qty.	€
100 x 300 mm	**CL37.1**	100	46,50
200 x 200 mm	**CL38.1**	100	52,80
250 x 250 mm	**CL39.1**	100	82,00
460 x 570 mm	**CL40.1**	100	175,00
580 x 680 mm	**CL41.1**	100	274,00
20 mm x 100 m (roll)	**7606.1**	1	29,50
30 mm x 100 m (roll)	**CL42.1**	1	39,50
40 mm x 100 m (roll)	**CL43.1**	1	44,50
50 mm x 100 m (roll)	**7607.1**	1	53,00
100 mm x 100 m (roll)	**CL44.1**	1	99,50
150 mm x 100 m (roll)	**7608.1**	1	126,00

Thickness 0,36 mm (Whatman® 3CHR), flow rate 130 mm/30 min.
For general applications with medium/heavy solute loadings.

Dimensions	Art. No.	Pack Qty.	€
460 x 570 mm	**7604.1**	100	349,00

Thickness 0,92 mm (Whatman® 17CHR), flow rate 190 mm/30 min.
For the heaviest solute loadings.

Dimensions	Art. No.	Pack Qty.	€
70 x 90 mm	**7600.1**	100	68,50
25 x 220 mm	**7601.1**	100	69,90
460 x 570 mm	**7602.1**	25	261,00
460 x 570 mm	**7603.1**	100	968,00

Blotting Reagents

TRIS

≥99,9 %, Blotting-Grade

For Western blotting and immunodetection

Warning H315-H319-H335

Tris of very high purity, tested for absence of heavy metals and protease. Particularly suitable for Western blotting and protein immunodetection.

0188.1	250 g	plastic	36,45 €
0188.2	500 g	plastic	62,90 €
Original pack 6 x 500 g			59,76/500 g
0188.3	1 kg	plastic	101,60 €
Original pack 6 x 1 kg			96,52/1 kg
0188.4	2,5 kg	plastic	194,05 €

Glycine

≥99 %, Blotting-Grade

For Western blotting

Glycin of very high purity, tested for absence of heavy metals, ammonia, and hydrolysable substances. Well soluble and particularly suitable for Western blotting.

0079.1	250 g	plastic	26,35 €
0079.2	500 g	plastic	48,95 €
Original pack 6 x 500 g			46,50/500 g
0079.3	1 kg	plastic	77,95 €
Original pack 6 x 1 kg			74,05/1 kg
0079.4	2,5 kg	plastic	154,70 €

SDS

≥99,5 %, Blotting-Grade

For Western- and Southern blotting

Danger H228-H302+H332-H315-H318-H335-H412

SDS of particularly high purity, tested for absence of heavy metals and for UV-absorption qualities. Particularly suitable for Western- and Southern blotting, as well as for immunodetection and assays in molecular biology.

0183.1	100 g	plastic	50,45 €
0183.2	250 g	plastic	105,90 €
0183.3	500 g	plastic	170,95 €
Original pack 6 x 500 g			162,40/500 g

Methanol

≥99,9 %, Blotting-Grade

For Western blotting

Danger H225-H301+H311+H331-H370

Methanol of very high purity, tested for absence of heavy metals, sulphates, and organic impurities. Particularly suitable for Western blotting.

0082.1	500 ml	glass	22,50 €
0082.2	1 l	glass	30,65 €
Original pack 6 x 1 l			29,12/1 l
0082.3	2,5 l	glass	62,90 €
Original pack 4 x 2,5 l			59,76/2,5 l

Roti®fair TG-Western

for electrophoresis

Buffer for protein electrophoresis and transfer.

TG buffer powder (pouch), Tris-glycine buffer

Warning H315-H319-H335

Exactly pre-weighed pouches for convenient and rapid preparation of TG-Western solution.
SDS-free running buffer for native protein gel electrophoresis. Optimum base for preparation of Western blot transfer buffer by addition of 5-20 % methanol (Blotting-Grade, Art. No. 0082).
Prepared solution may be sterilized by filtration (0,22 µm). For long-term storage, buffer solution should be kept at room temperature.
1x TG-Western solution is prepared by dissolution of 1 pouch in 1000 ml respectively 5000 ml highly pure water.

Formulation:

Prepared 1x TG-Western solution contains: 25 mM Tris, 0,192 M glycine, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

For 1000 ml/pouch

1269.1	10 pouches	box	82,70 €

For 5000 ml/pouch

1276.1	10 pouches	box	177,40 €

Roti®-Stock 20 % SDS

ready-to-use S

BioScience-Grade, ready-to-use, 0,2 µm filtered

For molecular biology and electrophoresis.

SDS 20 % ready-to-use solution

Danger H318-H315-H335

20 % stock solution sodium dodecyl sulphate. Store the solution away from light in a dry place. SDS-stock solution and other solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.
With original seal.

Composition:

20 % SDS in deionised water, 0,2 µm filtered

1057.1	1 l	glass	143,55 €
Original pack 6 x 1 l			136,37/1 l

Ponceau S (C.I. 27195)

for histology and electrophoresis

For reversible protein staining on membranes and for microscopy.

Scarlet red

Warning H315-H319-H335

Compatible with PVDF and NC membranes.
Staining of NC membranes: 0.2-2 % Ponceau S in 3 % trichloroacetic acid (Art. No. 8789.1) + 3 % sulphosalicylic acid (Art. No. 4119.1), incubate for 1-5 mins. at room temperature. Enhance contrast by incubation in water acidified by a few drops acetic acid.
Staining of PVDF membranes: 0.1-1 % Ponceau S in 10 % acetic acid (Art. No. 6755.1), incubate 1-5 mins. at room temperature. Ponceau S stained bands on PVDF only appear bright and distinct after drying (not recommended if Western blotting shall be performed).
Prior to Western blot analysis decolourise in PBS (Art. No. 1058.1) or TBS (Art. No. 1060) for 10-20 mins. at room temperature.

5938.2	10 g	glass	26,80 €
5938.1	25 g	glass	53,65 €

Roti®-Blot 1 ready-to-use

Discontinuous transfer buffer for semi dry blotting.

Storage temp.: +20 °C

Warning H315-H319

- Optimised for semi dry blotting
- Superior blotting results for peptides and proteins of every size
- Special formulation with reduced acid formation - for optimal electrode protection

Roti®-Blot has a much better transfer efficiency than a tris-glycine buffer. Roti®-Blot also enables proteins >100 kD to be transferred completely by simply extending the transfer time.
A kit consists of:
Anode buffer Roti®-Blot A, 1 l (10 x concentration) (Art. No. L510)
Cathode buffer Roti®-Blot K, 1 l (10 x concentration) (Art. No. L511)
Both solutions may be bought separately.

L509.1	1 Set	glass	103,10 €

Roti®-Blot A ready-to-use

anode buffer to Roti®-Blot 1, 10x conc.

Storage temp.: +20 °C

Warning H315-H319

L510.1	1 l	glass	62,25 €
Original pack 6 x 1 l			59,14/1 l

Roti®-Blot K ready-to-use

cathode buffer to Roti®-Blot 1, 10x conc.

Storage temp.: +20 °C

L511.1	1 l	glass	64,40 €
Original pack 6 x 1 l			61,18/1 l

Amido black 10 B (C.I. 20470)

p.a.

For irreversible staining of proteins on membranes and for quantification of proteins in detergent containing solutions.

Naphthol blue black

Compatible with PVDF and NC membranes.
Staining solution: 0.5 % amido black in 50 % methanol (Art. No. 4627.1) / 10 % acetic acid (Art. No. 3738.1). Stain for 1-5 min at room temperature. Reduce background in 50 % methanol at room temperature.

9590.1	25 g	glass	39,25 €

Roti®fair SSPE

for 200 ml/tablet, for molecular biology

Buffer solution for DNA- and RNA hybridisation.

Sodium sodium phosphate EDTA, SSPE buffer (tablets)

Exactly pre-weighed tablets for convenient and rapid preparation of phosphate buffered salt solution (SSPE).
SSPE is frequently used for Southern- and Northern hybridisations, as well as for washing steps during Microarray techniques. Roti®fair SSPE may also be used very well in imunocytochemistry and for cell suspension prior to FACS analyses.
Prepared solution may be sterilized by filtration (0,22 µm). For long-term storage, buffer solution should be kept at +4 °C.
1x SSPE solution is prepared by dissolution of 1 tablet in 200 ml highly pure water.

Formulation:

Prepared 1x SSPE solution contains: 0,15 M NaCl, 1 mM EDTA, 10 mM Na-phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1233.1	100 tablets	plastic	103,75 €

Roti®fair 20x SSC

for 1000 ml/pouch, for molecular biology

Concentrated buffer solution for Southern- and Northern transfer.

SSC buffer powder (pouch), Sodium sodium citrate

Exactly pre-weighed pouches for convenient and rapid preparation of SSC solution.
Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving. For long-term storage, buffer solution should be kept at +4 °C.
20x SSC solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Formulation:

Prepared 20x SSC solution contains: 3,0 M NaCl, 0,3 M Na-Citrat, pH-value 7,0 ±0,05, when prepared in deionized or distilled water.

1232.1	5 pouches	box	158,60 €

Roti®-Stock 20x SSC ready-to-use S

BioScience-Grade, ready-to-use, steam sterilised

For molecular biology.

SSC 20x ready-to-use solution

20fold stock solution sodium/sodiumcitrate. Undiluted or after dilution with sterile water to 10x, 6x, 1x or 0,1x SSC one receives a versatile buffer for blotting, hybridising or washing of Southern- or Dot/Slot-Blots of DNA as well as for *in situ* hybridisation. Undiluted buffer is also suitable for neutral transfer of RNA onto unloaded membranes (e.g. Roti®-Nylon 0.2, Art. No. AE50.1).
With original seal.

Composition:

3 M NaCl, 300 mM sodium citrate in deionised water, pH-value 7.0, steam sterilised

1054.1	1 l	glass	68,70 €
Original pack 6 x 1 l			65,27/1 l

Molecular Biology

DNA-/RNA Isolation

Roti®-Phenols		1263
Extraction Systems & -Kits		1264
MagSi – Magnetic Beads & Kits	NEW	1271
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PCR

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DNA Synthesis
see chapter Organic- & Bioorganic Chemicals

DNA-/RNA Isolation

Roti®-Phenol

Roti®-Phenol solutions for DNA- and RNA extraction

- Reduce exposure to toxic chemicals
- Prepared from phenol of highest purity
- Packed under argon for maximum stability
- Successfully tried and tested in many research laboratories

ready-to-use

Mechanism

Phenol and chloroform lead to denaturation of proteins which accumulate in the interphase. Isoamyl alcohol prevents foaming and very efficiently inhibits RNAses.

For distinct phase separation, Roti®-Aqua-Phenol needs a pH of ≤4.0 in the aqueous upper phase. If needed, the upper phase may be acidified by adding 1-2 drops of 1 N HCl. Draw solution from lower phase. Do not shake before use!

Roti®-Phenol

for extraction of nucleic acids

Redistilled, in TE buffer equilibrated phenol, pH 7,5-8,0.

Storage temp.: +4 °C

Danger H301+H311+H331-H314-H341-H373-H411

Phenol solutions for nucleic acid isolation must be buffered and adjusted to the correct pH-value prior to use. Roti®-Phenol is a redistilled, in TE-buffer equilibrated ready-to-use phenol. Roti®-Phenol has been successfully tried and tested for isolating nucleic acids in many research laboratories. This quality product for molecular biology replaces the time consuming preparation of phenol and subsequently any exposure to toxic vapours.
Covered with buffer and packed under argon. Store in the dark!
Draw solution from lower phase. Do not shake before use!

0038.1	100 ml	glass	26,80 €
0038.2	250 ml	glass	52,60 €
0038.3	500 ml	glass	80,10 €

Roti®-Phenol/Chloroform/Isoamyl alcohol

for extraction of nucleic acids

Redistilled, in TE-buffer equilibrated phenol, chloroform and isoamyl alcohol at a ratio of 25:24:1, pH 7,5-8,0.

Storage temp.: +4 °C

Danger H301+H331-H312-H314-H341-H351-H361d-H372-H411

Ready-to-use solution for extraction of nucleic acids. Covered with buffer and packed under argon. Store in the dark!
Draw solution from lower phase. Do not shake before use!

A156.3	100 ml	glass	37,55 €
A156.1	250 ml	glass	75,15 €
A156.2	500 ml	glass	125,25 €

Roti®-C/I

for extraction of nucleic acids

Chloroform/Isoamyl alcohol at a ratio of 24:1.

Storage temp.: +20 °C

Danger H331-H372-H351-H361d-H302-H315-H319

Mixture of chloroform and isoamyl alcohol of highest purity.
Ideal for extraction of DNA/RNA in combination with Roti®-Phenol.

X984.3	100 ml	glass	11,30 €
X984.1	250 ml	glass	17,10 €
X984.2	500 ml	glass	26,80 €

Roti®-Aqua-Phenol

for RNA extraction

Redistilled, in water saturated phenol, pH 4,5-5.

Storage temp.: +4 °C

Danger H301+H311+H331-H314-H341-H373-H411

Optimal for RNA-isolation and other procedures, requiring a low phenol pH-value. The low pH results in interphase-enrichment of the DNA, reducing DNA-contamination in the RNA-eluate.
Also ideal for self-adjustment of pH-value. If required, buffer solution (e.g. TE buffer) may be added directly into the bottle, as Roti®-Aqua-Phenol comes in the following bottle sizes:
A980.2 - 100 ml in a 250 ml bottle
A980.1 - 250 ml in a 500 ml bottle
A980.3 - 500 ml in a 1 l bottle

Packed under argon for protection. Store in the dark!
Draw solution from lower phase. Do not shake before use!

A980.2	100 ml	glass	22,05 €
A980.1	250 ml	glass	43,55 €
A980.3	500 ml	glass	65,50 €

Roti®-Aqua-P/C/I

for RNA extraction

Redistilled, in water saturated phenol, chloroform and isoamyl alcohol at a ratio of 25:24:1, pH 4,5-5.

Storage temp.: +4 °C

Danger H301+H331-H312-H314-H341-H351-H361d-H372-H411

Optimal for RNA-isolation and other procedures where a low phenol pH-value is desired. The low pH results in interphase-enrichment of the DNA, reducing DNA-contamination in the RNA-eluate.
Packed under argon for protection. Store in the dark!

X985.3	100 ml	glass	28,95 €
X985.1	250 ml	glass	51,10 €
X985.2	500 ml	glass	77,30 €

Please note our **Technical Information Brochure** on the Internet next to the products:

Phenolic DNA Isolation
Background and protocol

Safety data sheets
can be found on the Internet next to the product description.

Extraction Systems & -Kits

Roti®-Prep Plasmid MINI-XL

for molecular biology

For easy isolation of plasmids from up to 15 ml bacterial culture.

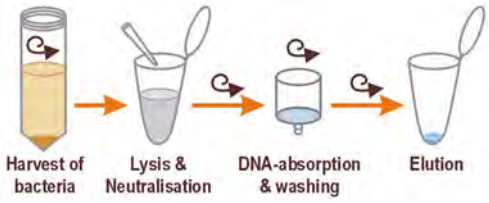
Storage temp.: +20 °C

Danger H225-H290-H302-H315-H318-H336

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Preparation from 5-15 ml bacteria culture
- Preparation within approx. 20 minutes
- Yield 60-70 µg (on average)

MIDI preps in MINI size-fomat

Roti®-Prep Plasmid MINI-XL is a further development of the classical Plasmid Mini extraction kit, which is based on an alkaline lysis and binding of the plasmid to the spin filter.
The binding capacity of the spin filter has been, compared to usual plasmid mini kits, considerably increased (approx. 80 µg plasmid DNA) and allows now a plasmid extraction from 5-15 ml bacteria culture. Since filter dimensions correspond to the usual miniprep spin filters, its application differs only slightly from other plasmid mini kits. Most significant difference is the afore done convenient lysis in a 15 ml tube.
The elution resulting in highly concentrated pure DNA in 100 µl, takes then place in a 1,5 ml tube, like in standard mini kits. Isolated DNA is free of RNA or protein contamination and can be directly applied to all standard down-stream applications like restriction digest, sequencing, *in vitro* transcription, transfection etc.



The kit contains:
Resuspension Buffer RB, Lysis Buffer LS, Neutralisation Buffer NB, Washing Buffer PA, Washing Solution PB, Elution Buffer XEB, spin columns, collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

Please order ethanol 96-99,8 % (p.a., Art. No. 9065) separately.

8546.1	10 prep.	26,35 €
8546.2	50 prep.	94,50 €
8546.3	250 prep.	353,70 €

Roti®-Prep Plasmid MINI Columns

DNA-extraction columns for the Roti®-Prep Plasmid Kit

Replacement columns and 2 ml tubes for additional DNA-extractions using the buffers of the Roti®-Prep Plasmid MINI Kit (Art. No. HP29). Detailed instructions-for-use can be found there.

Not suited for Roti®-Prep Plasmid MINI-XL (Art. No. 8546).

Art. No.	Pack Qty	€
2929.2	50	45,05

Roti®-Prep Plasmid MINI

for molecular biology

For fast and easy isolation of plasmid and cosmid DNA from recombinant bacteria.

Storage temp.: +20 °C

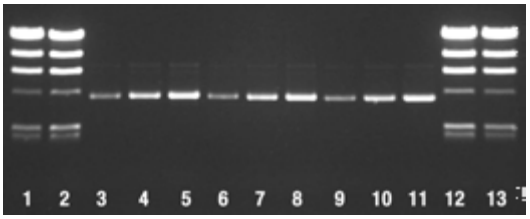
Danger H290-H302-H314

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- For all plasmids and cosmids of up to 10 kb length
- Up to 20 µg highly pure DNA, directly applicable to restriction digest, sequencing etc.
- 12 preparations in approx. 30 minutes

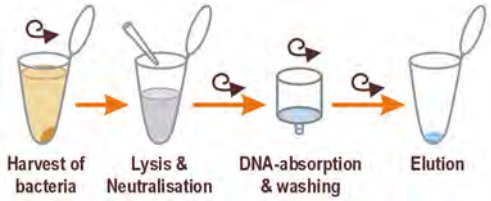
Coloured tracer for ideal DNA/membrane binding included.

Designed for the isolation of high-purity plasmid or cosmid DNA from bacteria, Roti®-Prep Plasmid MINI Kit is based on the well-known "mini-prep" method, an alkaline lysis of bacteria followed by purification of the DNA from the cell debris, RNA and genomic DNA. The kit uses the easy-to-handle spin column technique, eliminating the need for time-consuming techniques like phenol-chloroform extraction and alcohol precipitation. The highly efficient and DNA-specific silica-gel membrane DNA absorption provides reliably high amounts of DNA, independently from vectors or bacterial strains used.

Up to 20 µg DNA can be isolated from up to 10 ml bacterial culture (5 preparations per column). DNA is free of RNA or protein contamination and can be directly applied to all standard down-stream applications like restriction digest, sequencing, *in vitro* transcription, transfection etc.



The **figure** depicts DNA of a 4 kb plasmid isolated by three equivalent kits Lane 6, 7, 8: Roti®-Prep Plasmid MINI, 3 / 6 / 9 µl (1:10 dilution)



The kit contains:
RNAse A (Art. No. 3953), Lysis buffer (Art. No. 3970), Neutralisation buffer (Art. No. 3971), Washing buffer (Art. No. 3975), Elution buffer (Art. No. 3978), Column activation buffer (Art. No. 3980), Mini spin columns (10/50/250), 2 ml Collection tubes (10/50/250), detailed instructions-for-use. Excluding the columns, contents of this Kit may not be bought separately.

HP29.4	10 prep.	33,25 €
HP29.1	50 prep.	71,95 €
HP29.2	250 prep.	278,45 €

Roti®-Prep Genomic DNA MINI

for molecular biology

For isolation of genomic DNA from tissues, rodent tails, FFPE tissues, buccal swabs, cell cultures.

Storage temp.: +20 °C

Danger H225-H315-H317-H318-H334-H335-H336-H411

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Preparation in approx. 15 minutes (excluding lysis)
- Yield up to 65 µg gDNA, depending on source material

Roti®-Prep Genomic DNA MINI has been developed for the isolation of genomic DNA from various sources.
The isolation is carried out through the proven and reliable spin column technique, which is very easy to handle and needs only few steps.

In addition to the especially on proteinase K adapted lysis buffer, the filtration spin column has been optimised, permitting particularly high extraction rates. Extraction from up to 40 mg tissue, therefore, allows a yield of up to 65 µg DNA. The thereby extracted DNA is free of RNA and proteins, and can directly be stored or used for downstream applications.

Suitable source material:
- Tissue (up to 40 mg)
- Rodent tails (0,5-1 cm)
- FFPE tissue (formalin-fixed, paraffin-embedded)
- Buccal swabs
- Cell culture (up to 5x10^6 cells)

The kit contains:
Lysis Buffer LSA, Binding Buffer BSN, Proteinase K, Washing Buffer WST, Elution Buffer EB, spin columns, collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

Please order ethanol 99,8 % (p.a., Art. No. 9065), RNase A (Art. No. 7156, not for FFPE tissue), and for FFPE tissue xylole (Art. No. 4436) or octane separately.

8472.1	10 prep.	40,35 €
8472.2	50 prep.	150,00 €
8472.3	250 prep.	590,20 €

Roti®-Prep Blood Genomic DNA MINI

for molecular biology

For isolation of DNA from whole blood

Storage temp.: +20 °C

Danger H225-H317-H319-H315-H334-H335-H336-H400

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Preparation in approx. 25 minutes
- Yield up to 30 µg gDNA

Roti®-Prep Blood Genomic DNA MINI has been specially designed for the isolation of high purity genomic DNA from blood samples.
The isolation is carried out through the proven and reliable spin column technique, which is very easy to handle and needs only few steps.

The Roti®-Prep Blood Genomic DNA MINI kit has been adapted to gain high purity DNA from fresh or frozen blood (EDTA or citrate stabilised) or whole blood, respectively. In order to get optimal results, two protocols, depending on sample amount, are provided. Furthermore, the properties of the binding buffer have been optimised to reach highest binding capacity with blood samples, permitting a yield of up to 30 µg gDNA out of 400 µl blood. Utilisation is uncomplicated and fast to achieve (approx. 25 minutes, lysis included), and offers best conditions for following downstream applications.

Isolated gDNA is free of EDTA, RNA, or proteins, and may directly be applied to all standard downstream applications like, for instance, restriction digest, PCR etc.

The kit contains:
Lysis Buffer LSN, Binding Buffer BR, Proteinase K, Washing Solution WSO, Washing Buffer WSH, Elution Buffer EB, spin columns, collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

Please order ethanol 99,8 % (p.a., Art. No. 9065) and RNase A (optional, Art. No. 7156) separately.

8620.1	10 prep.	35,40 €
8620.2	50 prep.	135,35 €
8620.3	250 prep.	536,45 €

Instructions for use
can be found on the Internet next to the product description.

Roti®-Prep RNA MINI

for molecular biology

For RNA isolation from eukaryotic cells, tissues, bacteria, biopsies.

Storage temp.: +20 °C

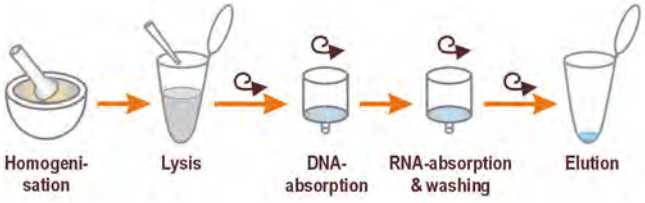
Warning H302+H312-H412-EUH032

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Use of DNase not necessary
- Preparation in approx. 15 to 40 minutes
- Yields up to 100 µg RNA, depending on source material
- Elution in 30-80 µl

Roti®-Prep RNA MINI has been developed for the isolation of total RNA from various sources.
The isolation is carried out through the proven and reliable spin column technique, which is very easy to handle and needs only few steps.

One of the critical points in RNA extraction is the presence of endogenous RNases, which can lead to high losses very early in extraction of the (in comparison to DNA) very sensitive RNA. Therefores the lysis buffer has been specially optimised to inactivate RNases, with highest efficiency, already at the early stage of the extraction.
Furthermore, in order to get a high-pure total RNA, one particularly for this purpose developed prefilter is used. This filter exclusively serves for binding and targeted removal of DNA impurities, and is discarded after use with the bound DNA. Thus, it is possible to omit application of DNase I.
Total RNA is then obtained from the DNA-free eluate through a simple "Binding-Washing-Elution" process.
In each preparation, up to 100 µg highly pure total RNA may be isolated.
One preparation takes (excluding lysis) approx. 10 mins.
Isolated RNA is free of DNA and enzyme inhibitors, and may directly be applied to RT-PCR or other downstream applications.

Suitable source material:
- Tissues (up to 20 mg)
- Eukaryotic cells (up to $5x10^6$)
- Bacteria Gram + and Gram - (up to $1x10^9$)
- Biopsies



The kit contains:
Lysis Buffer LSR, Washing Buffer WSA, Washing Solution WSL, RNase-free Water, spin filters (blue), spin columns (violet), collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

Please order ethanol 99,8 % (p.a., Art. No. 9065) and 70 % (p.a., Art. No. T868) separately.

8485.1	10 prep.	57,95 €
8485.2	50 prep.	223,50 €
8485.3	250 prep.	858,95 €

Roti®ZOL RNA

ready-to-use | RNAse-free

for molecular biology

Ready-made solution with green dye for isolation of total RNA

RNA isolation reagent

Storage temp.: +4 °C

Danger H290-H302+H312+H332-H314-H341-H373-EUH032

- Easy and very rapid two-step RNA isolation
- High recovery rates of intact, very pure total RNA
- Applicable on a broad range of tissues and cell types
- The purified RNA is ready for use in standard downstream applications such as RT-PCR

Roti®ZOL RNA is a ready-to-use, green-coloured solution for isolating total RNA from biological samples such as cells or tissue.
Roti®ZOL RNA is based on the phenolic isolation procedure known from Chomczynski and Sacchi (*Anal. Biochem.* (1987) 162:156-9). Due to the advanced and optimized formulation, Roti®ZOL RNA results in very high recovery rates of highly pure total RNA. Application is very convenient and preparation of several samples in parallel is finished in less than one hour. Additionally, the green colour significantly simplifies the separation of the RNA containing aqueous phase, the DNA containig interphase, and the protein containing phenolic phase during the process.

Typical RNA yield from $5x10^6$ cells: 30-35 µg
Typical purity of RNA prepared from $5x10^6$ cells: 2,08 (A_{260}/A_{280})

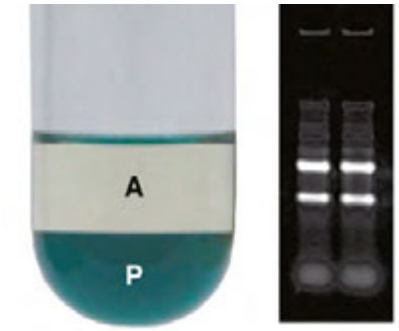


Figure 1 and 2:
Isolation of totalRNA by Roti®ZOL RNA.
Left: Tube after centrifugation.
A: Aqueous phase - RNA containig, P: Phenolic phase - protein containing. DNA accumulates in the A/P interphase.
Right: Typical gel of total RNA isolated by Roti®ZOL RNA (extracted from $5x10^6$ HL-60 cells).

1 ml Roti®ZOL RNA is used for RNA isolation from 100 mg tissue or 10^7 cells, respectively.

9319.1	100 ml	plastic	231,70 €
9319.2	200 ml	plastic	407,45 €

Roti®-Quick kit ready-to-use

for molecular biology

For RNA-isolation from cells and tissues.

Storage temp.: +4 °C

Danger

H225-H314-H301+H311-H330-H341-H351-H373-H336-H412-EUH032

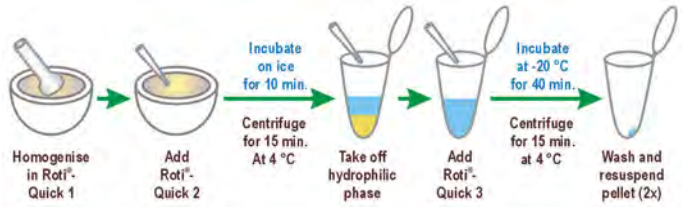
- Easy, most versatile application
- High recovery rate of intact, very pure total RNA
- Column-free two-step isolation
- Applicable on nearly any tissue type

Column-free, ultra-flexible isolation system designed for reliable isolation of total RNA from almost any tissue. The Roti®-Quick Kit is suitable for use with cell culture material, biopsies, high-fat or high-protein tissue, blood (Üçeyler *et al. Neurology* (2007) 69:42-9), solid plant material, mitochondria (Backert *et al. Plant Molecular Biology* (1997) 33:1037-50), mycoplasms (Weiner *et al. Nucleic Acids Res.* (2000) 28:4488-96) and many more. The kit can be used for both fresh tissue and frozen material.

The Roti®-Quick Kit is based on the GITC isolation method by Chomczynski and Sacchi (Chomczynski and Sacchi. (1987) *Anal. Biochem.* 162:156) and includes three optimised ready-to-use solutions that were developed by molecular biologists and have proven effective for many years.

After the tissue has been homogenised, the RNA is purified in a single step and isolated by precipitation. Each isolation takes approximately 2,5 hours, and multiple isolations can easily be performed simultaneously. The incubation and centrifuging steps take about 2 hours. Preparation as given in the instruction-for-use is optimised for RNA isolation from approx. 0,2 g of tissue or cell material. The amount of material isolated per batch may easily be up- or downscaled to larger or smaller amounts of tissue.

The isolated total RNA is highly pure and may be used directly for all common down-stream applications, such as RT-PCR, Northern blotting and reverse transcription. Detailed instructions-for-use are enclosed with each kit.



This Kit contains:
Roti®-Quick Kit 1 (Art. No. A976), Roti®-Quick Kit 2 (Art. No. A977), and Roti®-Quick Kit 3 (Art. No. A978). Contents of this Kit may not be bought separately.

The Roti®-Quick Kit is sufficient for 20 isolations from 0,2 g tissue each.

A979.1	1 kit	cardboard	91,30 €

Roti®-Prep Viral RNA/DNA MINI

for molecular biology

For isolation of viral DNA and RNA

Storage temp.: +20 °C

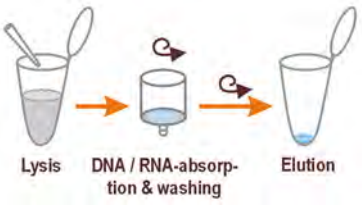
Danger H225-H315-H317-H319-H334-H335-H336-H411-EUH032

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Preparation within approx. 25 minutes
- Elution in 60 µl

Roti®-Prep Viral RNA/DNA MINI has been developed for the isolation of viral DNA and RNA from various kinds of source material.
The isolation is carried out via the proven and reliable spin column technique, which is very easy to handle and needs only few steps.

The kit enables the simultaneous extraction of viral ssDNA, dsDNA and ssRNA. The purification happens by using a carrier RNA, which engenders a higher binding of the nucleic acid (resp. its complex with the carrier RNA) on the spin filter and thus a higher recovery rate.
Furthermore, in order to achieve a maximum of nucleic acid purity for each source material, 5 specifically optimised protocols are provided.
Thus, within approx. 25 mins high-pure viral nucleic acid is eluted, free from inhibitors. This nucleic acid may directly be applied to further downstream applications, like RT-PCR, PCR, packaging etc.

Suitable source material:
- Tissues and biopsies (up to 20 mg)
- Cell culture supernatants, serum, plasma, cell-free body fluids (up to 400 µl)
- Swabs



The kit contains:
Lysis Buffer LSV, Binding Buffer BSN, Carrier CS, RNase-free Water, Proteinase K, Washing Buffer WSA, Washing Solution WSL, spin columns, collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

Please order ethanol 99,8 % (p.a., Art.-No. 9065) separately.

8547.1	50 prep.	223,50 €

Instructions for use
can be found on the Internet next to the product description.

Roti®-Prep PCR Purification

for molecular biology

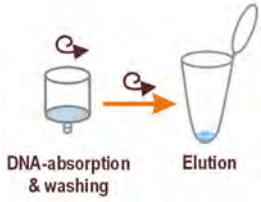
For concentration and purification of PCR products.
Storage temp.: +20 °C

Danger H225-H319-H336

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Purification in approx. 3 minutes
- For fragment length of 60 bp-30 kb
- Recovery rate up to 95 %
- Elution in 10 µl

Very fast purification and/or concentration of PCR products, between 60 bp and 30 kb length, through simple but effective spin column technique.

The high performance membrane used for the Roti®-Prep PCR Purification columns, allows purification or concentration of PCR products within approx. 3 minutes. The PCR product to be extracted (50 µl in maximum) is first mixed with binding buffer, which can be done separately or directly in the spin filter column. The nucleic acid is then eluted by centrifugation, without any additional washing step, in a minimum of 10 µl of water or buffer. Isolated DNA is free of residual nucleotides or PCR additives, and may directly be applied to all standard downstream applications like cloning or sequencing.



The kit contains:
Binding Buffer, Elution Buffer EB, spin columns, collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

8503.1	10 prep.	21,00 €
8503.2	50 prep.	78,40 €
8503.3	250 prep.	304,15 €

Instructions for use
can be found on the Internet next to the product description.

Roti®-Prep Gel Extraction

for molecular biology

For DNA extraction from agarose gels.
Storage temp.: +20 °C

Warning H290-H302+H312+H332-H315-H319-H412-EUH032

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Extraction within approx. 20 minutes
- For fragment length of 100 bp-30 kb
- Recovery rate up to 90 %

DNA extraction from agarose gels through incubation and subsequent spin column process.
The gel slice to be extracted (up to 300 mg) is first solubilised in a lysis buffer through a simple 10 minute incubation.
After that, DNA is elutied via convenient spin filter centrifugation in approx. 10 mins.
A specially developed Binding Enhancer is admixed in order to enhance binding efficiency of the DNA to the filter, and thus yield and purity of the isolated DNA.
Furthermore, the Roti®-Prep Gel Extraction kit allows, if needed, to reduce elution volume down to 10 µl in order to obtain particularly highly concentrated DNA.

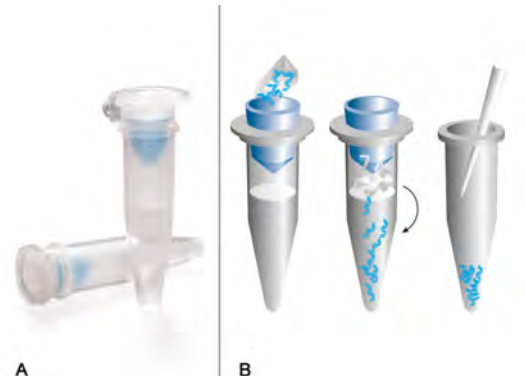
For gel runs both, TAE and TBE may be used. The kit is compatible with all standard gel loading buffers and gel staining reagents, even non-toxic ethidium bromide replacements like, for instance, Roti®-GelStain.

Isolated DNA is free of residual agarose, PCR- and ligase inhibitors, and cytotoxic reagents, and can directly be applied to all standard downstream applications like cloning, PCR, transformation and transfection.

The kit contains:
Binding Enhancer, Gel Solubizer, Washing Solution WSL, Elution Buffer EB, spin columns, collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

Please order ethanol 96-99,8 % (p.a., Art. No. 9065) separately.

8510.1	10 prep.	21,00 €
8510.2	50 prep.	78,40 €
8510.3	250 prep.	304,15 €



Ultrafree®-DA gel extraction kit

Made by MERCK MILLIPORE
for molecular biology

For easy and speedy extraction of DNA fragments from agarose or polyacryl amide gels.

- Extraction in 10 minutes
- High recovery of fully intact DNA
- Highly efficient with all gel running buffers
- Easy application - even during student courses
- Convenient handling even of large sample numbers

Recovery of functionally intact DNA in one spin-step. The agarose slice is placed directly into the pre-assembled device and centrifuged for 10 minutes (fig. B). Melting or enzymatic digestion is not required. The agarose slice is nebulised and the DNA is filtered and purified during centrifugation. The eluate may simply be stored away in the extraction tube or collected from the tube in order to apply the DNA to subsequent analyses.

Application:

Compatible with all agaroses with standard gelling temperature (not compatible with Low-Melting agarose). Suitable for fragments of 100 bp up to 10,000 bp. Ideal also for labelled DNA, e.g. after fluorescence- or radioactive labelling. Reliable recovery rates for fragments of 100 bp up to 2,000 bp. The gel extraction units may be used with all standard gel running buffers. Following elution from gels run with Rotiphorese® 10 x TAE buffer *light* (Art. No. 0122.1), the DNA may be applied **directly** to cloning or sequencing.

One extraction unit consists of a 1,5 ml standard reaction tube and a removable nebuliser/filter unit.

Compatible with all standard Mini-centrifuges.

Art. No.	Pack Qty	€
AE86.1	1 kit (50 extraction units)	143,00

▶ Tools for cutting of DNA bands like, for instance, Gel Cutting Tips see page 474

▶ Safety blades see page 332

Roti®-Elution Tubes

DNAse-/RNAse-/Protease-free

RNase-free, DNase-free and proteinase-free, free of PCR products. For gel elution and purification of DNA/RNA and proteins.

- Ultrapure
- Easy-to-handle
- Very gentle process
- Typical recovery rate of >95 %
- Suitable for elution from agarose and PAGE
- Suitable for dialysis of biomolecules
- Suitable for oligoncleotides, dsDNA, ssDNA, RNA, proteins and protein/ nucleic acid complexes
- Compatibel with all popular electrophoresis units

Easy-to-handle system for gel elution and purification of DNA/RNA and proteins in solution (electro elution).

This very gentle method guarantees the non-disruptive purification of high-molecular or genomic DNA as well as of native protein complexes and long peptides. Using membranes of low MWCO, elution of very small DNA fragments is possible, making the tubes a very useful tool for the efficient desalting of primers within 60-100 min as well as for purification of siRNA (ss or duplexes).

Roti® elution tubes are suitable for elution of ssDNA (≥20 nt), dsDNA (15 bp-100 kb), RNA of each size, proteins of each size, and of protein/ nucleic acid complexes. The tubes may be applied to elution procedures from agarose- and polyacrylamide gels, as well as to all popular electrophoresis units. Used in floating racks, they are ideal for the purification of DNA, RNA or proteins by means of dialysis.

All Roti® Elutions Tubes are free of DNase, RNase, Proteinase and PCR products. All membranes are made from regenerated cellulose and can thus be exposed to a pH range of 2-12, to a temperature of +60 °C, and also to a variety of organic solvents. Additionally, the membranes are free of sulphate and heavy metals and were treated with EDTA. Hence, macromolecules (like proteins or nucleic acids) or other biological particles may be eluted and dialysed in native conformation, and are very well suited for subsequent activity tests.

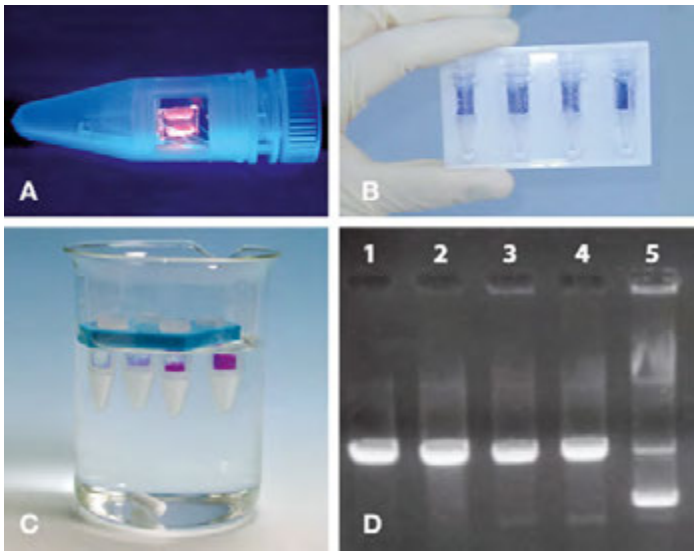
Application: Roti® elution tubes are very easy to handle, and therefore can be used in both individual tests and high-throughput applications. Thanks to the screw cap, the vials are easy to open, can easily be filled with gel slices and buffer and can be securely sealed.

The practical elution vial holder has sufficient stability for safe use in electrophoresis cell. Under current flow, the DNA/RNA/protein molecules initially migrate from the gel slice until they are halted by the dialysis membrane. By briefly reversing the polarity of the electrical field, the molecules can be separated from the membrane and pipetted out of the tube together with the buffer. By carefully selecting the tube and the amount of buffer, it is in many cases possible to achieve a high concentration directly within the elution buffer. The buffer can then easily be concentrated by using the usual methods (e.g. precipitation).

Roti® elution tubes with MWCO 1, 25 and 50 kDa are wet packed in stabilising solution (25 % ethanol, 2 mM EDTA) and should stored under refrigeration. All other elution vials are dry packed and can be stored at room temperature.

Colour code of the Roti®-Elution Tubes MEGA

Colour	MWCO	Application
Blue	3,5 kDa	Nucleic acids from 50 nt or 25 bp, proteines from 10 kDa
Red	8 kDa	Nucleic acids from 250 nt or 100 bp,proteines from 25 kDa
Green	14 kDa	Nucleic acids from 1000 nt or 500 bp,proteines from 45 kDa



Figures:
A: Roti®-Elution Tube under UV-light with a DNA containing agarose slice stained by ethidium bromide
B: Roti®-Elution Tubes MIDI positioned in Roti® Elution Tube Tray
C: Dialysis of the restriction enzyme *Pst*I in enzyme buffer/8 M urea against pure enzyme buffer
D: Detection of enzymatic activity after dialysis by digestion on plasmid DNA (1-4). Untreated control (5).

Typical applications: Purification of DNA and proteins from gels, elution of genomic DNA or total RNA, preparation of DNA fragments prior to cloning, purification of siRNA for RNAi assays, purification/desalting of oligonucleotides/primers, purification of RNA or DNA for transfection or transformation, desalting or buffer change of protein solutions.

Recommended choice of MWCO:

MWCO (kDa)	RNA/ssDNA	dsDNA	Proteins
1	20-50 nt	15-25 bp	3-15 kDa
3,5	50-250 nt	25-100 bp	10-30 kDa
8	250-1000 nt	100-500 bp	25-50 kDa
14	1-5 knt	0,5-2 kb	45-100 kDa
25	5-30 knt	2-10 kb	80-200 kDa
50	>30 knt	10-100 kb	>150 kDa

Technical specifications:

Typ	MWCO	Gel slice up to approx. (cm)	Packed	Storage temp.
MINI 8	8	0,4 x 1,0	dry	+15-25 °C
MINI 14	14	0,4 x 1,0	dry	+15-25 °C
MINI 25	25	0,4 x 1,0	wet	+4 °C
MIDI 1	1	0,5 x 1,2	wet	+4 °C
MIDI 3.5	3,5	0,5 x 1,2	dry	+15-25 °C
MIDI 8	8	0,5 x 1,2	dry	+15-25 °C
MAXI 3.5	3,5	1,0 x 2,0	dry	+15-25 °C
MAXI 8	8	1,0 x 2,0	dry	+15-25 °C
MAXI 14	14	1,0 x 2,0	dry	+15-25 °C
MAXI 25	25	1,0 x 2,0	wet	+4 °C
MAXI 50	50	1,0 x 2,0	wet	+4 °C
MEGA 3.5/10	3,5	preparative	dry	+15-25 °C
MEGA 3.5/15	3,5	preparative	dry	+15-25 °C
MEGA 3.5/20	3,5	preparative	dry	+15-25 °C
MEGA 8/10	8	preparative	dry	+15-25 °C
MEGA 8/15	8	preparative	dry	+15-25 °C
MEGA 8/20	8	preparative	dry	+15-25 °C
MEGA 14/10	14	preparative	dry	+15-25 °C
MEGA 14/15	14	preparative	dry	+15-25 °C
MEGA 14/20	14	preparative	dry	+15-25 °C

Roti®-Elution Tubes MINI

Type	Volume	Art. No.	Pack Qty	€
MINI 8	10-250 µl	**9281.1**	2 pieces	13,45
MINI 8	10-250 µl	**9281.2**	30 pieces	126,75
MINI 8	10-250 µl	**9281.3**	100 pieces	321,45
MINI 14	10-250 µl	**9283.1**	2 pieces	13,45
MINI 14	10-250 µl	**9283.2**	30 pieces	126,75
MINI 14	10-250 µl	**9283.3**	100 pieces	321,45
MINI 25*	10-250 µl	**9284.1**	1 pieces	11,30
MINI 25*	10-250 µl	**9284.2**	5 pieces	45,05

Roti®-Elution Tubes MIDI

Type	Volume	Art. No.	Pack Qty	€
MIDI 1*	50-800 µl	**9263.1**	1 pieces	13,45
MIDI 1*	50-800 µl	**9263.2**	5 pieces	56,90
MIDI 3.5	50-800 µl	**9266.1**	2 pieces	16,05
MIDI 3.5	50-800 µl	**9266.2**	30 pieces	161,25
MIDI 3.5	50-800 µl	**9266.3**	100 pieces	461,20
MIDI 8	50-800 µl	**9294.1**	2 pieces	16,05
MIDI 8	50-800 µl	**9294.2**	30 pieces	161,25
MIDI 8	50-800 µl	**9294.3**	100 pieces	461,20

Roti®-Elution Tubes MAXI

Type	Volume	Art. No.	Pack Qty	€
MAXI 3.5	0,1-3 ml	**9421.1**	2 pieces	20,35
MAXI 3.5	0,1-3 ml	**9421.2**	30 pieces	263,40
MAXI 3.5	0,1-3 ml	**9421.3**	100 pieces	719,20
MAXI 8	0,1-3 ml	**9425.1**	2 pieces	20,35
MAXI 8	0,1-3 ml	**9425.2**	30 pieces	263,40
MAXI 8	0,1-3 ml	**9425.3**	100 pieces	719,20
MAXI 14	0,1-3 ml	**9427.1**	2 pieces	20,35
MAXI 14	0,1-3 ml	**9427.2**	30 pieces	263,40
MAXI 14	0,1-3 ml	**9427.3**	100 pieces	719,20
MAXI 25*	0,1-3 ml	**9428.1**	1 pieces	19,25
MAXI 25*	0,1-3 ml	**9428.2**	5 pieces	88,05
MAXI 50*	0,1-3 ml	**9489.1**	1 pieces	19,25
MAXI 50*	0,1-3 ml	**9489.2**	5 pieces	88,05
MAXI 50*	0,1-3 ml	**9489.3**	30 pieces	364,45

Roti®-Elution Tubes MEGA

Type	Volume	Art. No.	Pack Qty	€
MEGA 3.5/10	max. 10 ml	**9371.1**	1 pieces	19,25
MEGA 3.5/10	max. 10 ml	**9371.2**	10 pieces	134,30
MEGA 3.5/15	max. 15 ml	**9380.1**	1 pieces	19,25
MEGA 3.5/15	max. 15 ml	**9380.2**	10 pieces	134,30
MEGA 3.5/20	max. 20 ml	**9381.1**	1 pieces	19,25
MEGA 3.5/20	max. 20 ml	**9381.2**	10 pieces	134,30
MEGA 8/10	max. 10 ml	**9390.1**	1 pieces	19,25
MEGA 8/10	max. 10 ml	**9390.2**	10 pieces	134,30
MEGA 8/15	max. 15 ml	**9393.1**	1 pieces	19,25
MEGA 8/15	max. 15 ml	**9393.2**	10 pieces	134,30
MEGA 8/20	max. 20 ml	**9394.1**	1 pieces	19,25
MEGA 8/20	max. 20 ml	**9394.2**	10 pieces	134,30
MEGA 14/10	max. 10 ml	**9396.1**	1 pieces	19,25
MEGA 14/10	max. 10 ml	**9396.2**	10 pieces	134,30
MEGA 14/15	max. 15 ml	**9397.1**	1 pieces	19,25
MEGA 14/15	max. 15 ml	**9397.2**	10 pieces	134,30
MEGA 14/20	max. 20 ml	**9398.1**	1 pieces	19,25
MEGA 14/20	max. 20 ml	**9398.2**	10 pieces	134,30

Roti®-Elution Tube Trays

Type	Art. No.	Pack Qty	€
Roti® Elution Tube Tray MIDI for 4 Elution Tubes MINI	**9626.1**	1 pieces	14,55
Roti® Elution Tube Tray MIDI for 4 Elution Tubes MIDI	**9627.1**	1 pieces	17,10
Roti® Elution Tube Tray MAXI for 3 Elution Tubes MAXI	**9628.1**	1 pieces	20,35

Please order the respective Roti®-Elution Tube Tray separately.
The classification below refers only to Art. Nos. marked *

Attention H226-H319

Magnetic Beads - Kits for DNA isolation NEW

MagSi-DNA Vegetal NEW

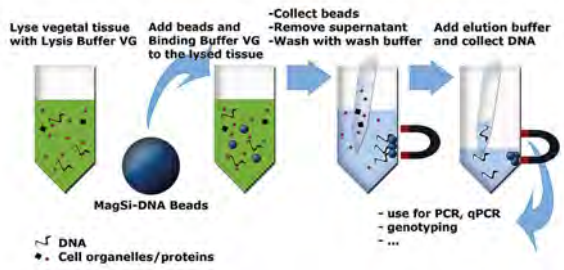
magtivio for molecular biology

Magnetic beads for nucleic acid isolation from plant tissue.
Storage temp.: +20 °C

Danger H225-H302-H319-H336

- Cost-effective - Low price per sample
- Superior lysis - Lysis Buffer VG is specially designed for lysis of vegetal tissues
- Flexible protocol - Kit components can be individually adjusted in volume
- Easy to automate - Designed for highthroughput, robotic, liquid handling processes
- Good yields and recovery - Very well suited for typical downstream applications (PCR, qPCR, NGS, Genotyping)
- Excellent DNA purity, $A_{260/280}$ = 1.7-2.0

The MagSi-DNA Vegetal kit allows for extraction of genomic DNA from plant tissue. It has a very flexible setup, as the volume of each of its components can be adjusted to facilitate your specific extraction protocol requirements. Lysis Buffer VG is designed for extremely good breakdown of the tough components in vegetal materials, allowing optimal release of the DNA to be isolated. The extraction itself is based on the binding of DNA to MagSi-VG I magnetic beads, and works in combination with the proprietary Binding Buffer VG. After a series of washing steps in which the magnetic beads (with DNA) are held by the magnet, the DNA is eventually released in an elution step.



MagSi-DNA Vegetal helps you extract DNA from seeds but also from leaves of e.g. cucumber, bell pepper, tomato, wheat, flowers, sugar beet, potato, chicory or maize.
Bigger packages available on request.

The kit contains:
Magnetic beads MagSi-VG I, Lysis Buffer VG, Binding Buffer VG, Wash Buffer I, Wash Buffer II, Elution Buffer. Contents of this Kit may not be bought separately.

1624.1	96 prep.	cardboard	260,05 €
1624.2	960 prep.	cardboard	1897,40 €

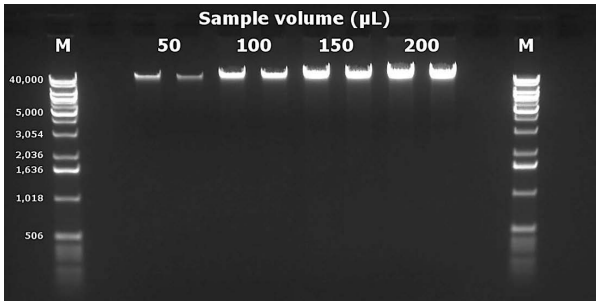


Figure 1: Gel electrophoresis of genomic DNA extracted from 50-200 µl fresh whole blood.

MagSi-gDNA blood NEW

magtivio for molecular biology

Magnetic beads for isolation of genomic DNA from whole blood.
Storage temp.: +4 °C

Danger H225-H302-H319-H336

- Suitable for whole blood, drawn in Citrate-, EDTA- or Heparin tubes
- Reproducible, high yield of DNA - 3-15 µg from 200 µl fresh or frozen whole blood
- Excellent DNA purity, $A_{260/280}$ = 1.7-2.0
- Preparation time: 20-25 mins. (after lysis)
- Suitable for many genomic applications including PCR, DNA sequencing and Southern blotting
- Simple bind-wash-elute procedure
- Protocol easily adjustable for different sample volumes
- Suitable for manual and automated use
- Safe sample handling with minimal user input
- Also suitable for isolation of DNA from saliva, serum/plasma and cultured cells

MagSi-gDNA blood kit allows fast and cost-effective extraction of genomic DNA from a wide range of sample volumes. The paramagnetic bead-based kit can be used on whole blood samples drawn in EDTA-, citrate- or heparin tubes. Due to the ready to use reagents and simple protocol the kit is easy to use and easy to automate. As a linear volume to volume ratio is used between whole blood sample and reagents, it is possible to use the kit in any situation where genomic DNA out of blood is needed.
MagSi-gDNA blood kit is easy to automate. It is compatible with many different automated liquid handling systems (e.g KingFisher™, PrimaRWS®, PIPETMAX® and JANUS®). Furthermore, it is performed with short and easy protocols and suitable for small, medium and high-throughput automation using variable volume sample input.

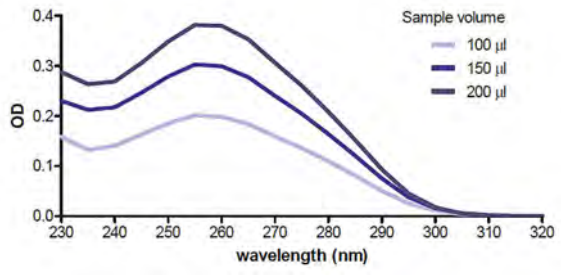


Figure 2: UV-VIS Absorbance spectrum of DNA isolated from 100, 150 and 200 µl fresh whole blood

The kit contains:
Magnetic beads MagSi-DNA 3.0 COOH, Proteinase K, Lysis Buffer, Binding Buffer, Wash Buffer I, Wash Buffer II, Elution Buffer.
Contents of this Kit may not be bought separately.

1630.1	96 prep.	cardboard	267,70 €
1630.2	960 prep.	cardboard	1983,40 €

MagSi-DNA saliva

NEW

magtivio for molecular biology

Magnetic beads for isolation of genomic DNA from saliva or buccal swabs.
Storage temp.: +4 °C

Danger H225-H302-H319-H336

- Fast and easy processing using magnetic beads
- Suitable for automated liquid handlers
- Yields high quality genomic DNA of excellent purity, $A_{260/280}$ = 1.7-2.0
- Compatible with fresh saliva samples as well as sample collection and preservation kits
- Sample collection is non-invasive, risk free, and painless
- More affordable than blood testing

The MagSi-DNA saliva kit provides a fast and simple procedure for DNA extraction from saliva. The kit is compatible with fresh saliva samples as well as saliva preserved in standard saliva sample collection kits. Genomic DNA obtained with MagSi-DNA saliva is of the highest quality and is compatible with applications like PCR, Southern Blotting, genetic typing or mutation analysis.
MagSi-DNA saliva is based on magnetic bead technology, and is suitable for extraction of DNA from human saliva or buccal swabs in research.
The kit includes magnetic beads, buffers and Proteinase K, and is easy to automate for high-throughput processing.
Saliva is rapidly becoming an attractive alternative source of DNA for genetics testing in research. Unlike blood or tissues, saliva can be collected non-invasive by individuals with little training, and without the need for expensive equipment. Saliva preserved in collection kits is stable for years at room temperature, facilitating easy transportation and storage.
Bigger packages available on request.

The kit contains:
Magnetic beads MagSi-DNA 3.0 COOH, Proteinase K, Lysis Buffer, Binding Buffer, Wash Buffer I, Wash Buffer II, Elution Buffer. Contents of this Kit may not be bought separately.

1648.1	96 prep.	cardboard	267,70 €
1648.2	960 prep.	cardboard	1983,40 €

MagSi-Wash Buffer III

NEW

magtivio for molecular biology

Solution for optimising DNA isolation using MagSi-DNA Kits.
Magnetic beads
Storage temp.: +4 °C
Additional Washing Buffer which may be used with the kits MagSi-gDNA blood-, -saliva- or -Vegetal kit. It is not included in the three kits, but may be bought separately.
Wash Buffer III eliminates the need for a drying step to remove traces of ethanol, resulting in faster protocols and DNA with higher purity.

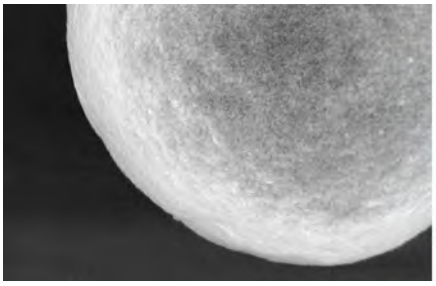
For use with MagSi-gDNA blood-, -saliva- or -Vegetal kit.

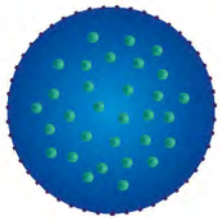
Type analysis:
pH value. 6,0-6,5

1649.1	80 ml	plastic	37,55 €
1649.2	800 ml	plastic	267,70 €

Bead solutions for DNA isolation

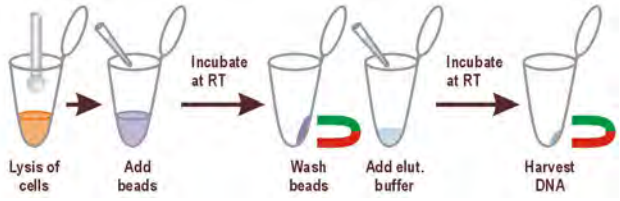
NEW





Magnetic beads can be used as solid support phase in DNA extraction and purification protocols by a simple bind/wash/elute principle. The products in this category are intended for own development of protocols and are suitable for various sample sources and buffer systems. MagSi-beads for genomic applications are available with a range of physical properties and a silica or carboxyl modified surface.

DNA yield (20 µl beads): >3 µg



MagSi-DNA trial kit

NEW

magtivio for molecular biology

Magnetic beads for nucleic acid isolation from various sources.
Storage temp.: +4 °C
A complete set of the 8 types of MagSi beads for genomic applications, offered in a single kit for trial purposes in development of new assays. Intended for nucleic acid isolation from various sources (blood, cells, bacteria etc.) for manual and automated work-flow.

The kit contains:
2 ml each of MagSi-DNA, MagSi-DNA COOH, MagSi-DNA allround, MagSi-DNA allround COOH, MagSi-DNA 600, MagSi-DNA 600 COOH, MagSi-DNA 3.0 and MagSi-DNA 3.0 COOH.

1560.1	1 kit	cardboard	183,75 €

Bead surface	Compatible Buffer Systems	Binding Mechanism	Elution	Recommended use
Silica Beads	Chaotropic buffers	Precipitation with chaotropic salts	Low salt conditions	Recommended in case chaotropic conditions can be applied.
Carboxylierte Beads	PEG-based, low pH or chaotropic buffers	Precipitation by polymers like PEG, divalent cations (e.g. Mg2+) or chaotropic salts	Low salt conditions or pH shift from acidic to alkaline conditions	Recommended if flexibility in buffer systems is necessary or if non-chaotropic conditions have to be applied. Results in **higher purity and recovery rate** under **non-chaotropic conditions.**

MagSi-DNA

magtivio 300 mg/ml, for molecular biology NEW

Magnetic beads for nucleic acid isolation from various sources.
Storage temp.: +4 °C
Magnetic silica beads of 300 nm size with optimized magnetic content and long suspension time. Ultra-fast ferromagnetic silica particles with instant magnetic separation. Intended for nucleic acid isolation from various sources (blood, cells, bacteria etc.) for manual and automated work-flow.

1540.1	2 ml	plastic	93,00 €
1540.2	10 ml	plastic	379,40 €
1540.3	100 ml	plastic	3101,40 €

MagSi-DNA 600

magtivio 20 mg/ml, for molecular biology NEW

Magnetic beads for nucleic acid isolation from various sources.
Storage temp.: +4 °C
Magnetic silica beads of 600 nm size with large surface area and optimized magnetic content for long suspension time. Intended for nucleic acid isolation from various sources (blood, cells, bacteria etc.) for manual and automated work-flow.

1542.1	2 ml	plastic	93,00 €
1542.2	10 ml	plastic	379,40 €
1542.3	100 ml	plastic	3101,40 €

MagSi-DNA allround

magtivio 20 mg/ml, for molecular biology NEW

Magnetic beads for nucleic acid isolation from various sources.
Storage temp.: +4 °C
Magnetic silica beads of 1.2 µm size with optimized magnetic content for fast separation and medium suspension time. Intended for nucleic acid isolation from various sources (blood, cells, bacteria etc.) for manual and automated work-flow.

1544.1	2 ml	plastic	93,00 €
1544.2	10 ml	plastic	379,40 €
1544.3	100 ml	plastic	3101,40 €

MagSi-DNA 3.0

magtivio 20 mg/ml, for molecular biology NEW

Magnetic beads for nucleic acid isolation from various sources.
Storage temp.: +4 °C
Magnetic silica beads of 3.0 µm size with very fast separation and shorter suspension time. Intended for nucleic acid isolation from various sources (blood, cells, bacteria etc.) for manual and automated work-flow.

1549.1	2 ml	plastic	93,00 €
1549.2	10 ml	plastic	379,40 €
1549.3	100 ml	plastic	3101,40 €

Please note our **Technical Information Brochure** on the Internet next to the products:

MagSi beads and -kits

MagSi-DNA COOH

magtivio 300 mg/ml, for molecular biology NEW

Magnetic beads for nucleic acid isolation from various sources.
Storage temp.: +4 °C
Carboxylated magnetic silica beads of 300 nm size with optimized magnetic content and long suspension time. Ultra-fast ferromagnetic silica particles with instant magnetic separation. Intended for nucleic acid isolation from various sources (blood, cells, bacteria etc.) for manual and automated work-flow. Under specific conditions, the carboxylated surface enables higher yield and purity from samples.

1552.1	2 ml	plastic	119,90 €
1552.2	10 ml	plastic	495,50 €
1552.3	100 ml	plastic	4008,70 €

MagSi-DNA 600 COOH

magtivio 20 mg/ml, for molecular biology NEW

Magnetic beads for nucleic acid isolation from various sources.
Storage temp.: +4 °C
Carboxylated magnetic silica beads of 600 nm size with large surface area and optimized magnetic content for long suspension time. Intended for nucleic acid isolation from various sources (blood, cells, bacteria etc.) for manual and automated work-flow. Under specific conditions, the carboxylated surface enables higher yield and purity from samples.

1557.1	2 ml	plastic	119,90 €
1557.2	10 ml	plastic	495,50 €
1557.3	100 ml	plastic	4008,70 €

MagSi-DNA allround COOH

magtivio 20 mg/ml, for molecular biology NEW

Magnetic beads for nucleic acid isolation from various sources.
Storage temp.: +4 °C
Carboxylated magnetic silica beads of 1.2 µm size with optimized magnetic content for fast separation and medium suspension time. Intended for nucleic acid isolation from various sources (blood, cells, bacteria etc.) for manual and automated work-flow. Under specific conditions, the carboxylated surface enables higher yield and purity from samples.

1558.1	2 ml	plastic	119,90 €
1558.2	10 ml	plastic	495,50 €
1558.3	100 ml	plastic	4008,70 €

MagSi-DNA 3.0 COOH

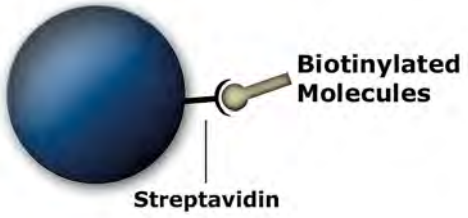
magtivio 20 mg/ml, for molecular biology NEW

Magnetic beads for nucleic acid isolation from various sources.
Storage temp.: +4 °C
Carboxylated magnetic silica beads of 3.0 µm size with very fast separation and shorter suspension time. Intended for nucleic acid isolation from various sources (blood, cells, bacteria etc.) for manual and automated work-flow. Under specific conditions, the carboxylated surface enables higher yield and purity from samples.

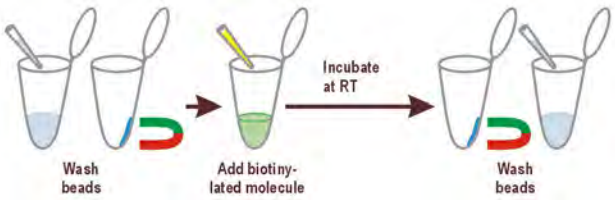
1559.1	2 ml	plastic	119,90 €
1559.2	10 ml	plastic	495,50 €
1559.3	100 ml	plastic	4008,70 €

Magnetic Beads for isolation of biotinylated nucleic acids

NEW



Various types of this product are available, with different mean size, streptavidin coating chemistry, and binding capacity.



MagSi-STA Trial kit

NEW

magtivio for protein biochemistry and molecular biology

Magnetic beads for capture or purification of biotinylated molecules.

Storage temp.: +4 °C

Magnetic silica particles with high quality streptavidin covalently attached to the bead surface. Applications include immunoassays and capture or purification of biotinylated molecules. The MagSi-STA Trial kit allows the screening of different types of streptavidin in parallel. The kit is especially useful when required specifications for magnetic beads are not known. This kit includes 1 mL of the 8 different MagSi-STA products and is intended for evaluation purposes during trial phase of developing new assays, or bead replacement in existing assays.

The kit contains:
1 ml each of MagSi-STA 600, -STA 600 BI, -STA 1.0 L, -STA 1.0, -STA 1.0 TL, -STA 1.0 TS, -STA 3.0 L, -STA 3.0 TL.

Formulation:
1 ml M each of MagSi-STA 600, -STA 600 BI, -STA 1.0 L, -STA 1.0, -STA 1.0 TL, -STA 1.0 TS, -STA 3.0 L, -STA 3.0 TL.

1566.1	1 kit	cardboard	260,05 €

MagSi-STA 1.0

NEW

magtivio 10 mg/ ml, for protein biochemistry and molecular biology

Magnetic beads for capture or purification of biotinylated molecules.

Storage temp.: +4 °C

Magnetic silica particles of 1.0 µm size with high quality streptavidin covalently attached to the bead surface. Applications include immunoassays and capture or purification of biotinylated molecules.

Type analysis:
Concentration. ..... 10±0,5 mg/ml
Mean particle sizing. ..... 0,95-1,05 µm
Bead number. ..... 6-12 x 10^9 beads/ml
Assay (Iron oxide). ..... ≥50 %
Binding capacity (biotinylated fluorescein). ..... 3,5-5 nmol/mg

1561.1	2 ml	plastic	439,70 €
1561.2	10 ml	plastic	1589,95 €

MagSi-STA 600

NEW

magtivio 10 mg/ ml, for protein biochemistry and molecular biology

Magnetic beads for capture or purification of biotinylated molecules.

Storage temp.: +4 °C

Magnetic silica particles of 600 nm size with high quality streptavidin covalently attached to the bead surface. Applications include immunoassays and capture or purification of biotinylated molecules.

Type analysis:
Concentration. ..... 10±0,5 mg/ml
Mean particle sizing. ..... 530-600 nm
Bead number. ..... 8-20 x 10^9 beads/ml
Assay (Iron oxide). ..... 35-45 %
Binding capacity (biotinylated fluorescein). ..... 3,5-5 nmol/mg

1562.1	2 ml	plastic	484,75 €
1562.2	10 ml	plastic	1757,65 €

MagSi-STA 3.0 L

NEW

magtivio 10 mg/ ml, for protein biochemistry and molecular biology

Magnetic beads for capture or purification of biotinylated molecules.

Storage temp.: +4 °C

Magnetic silica particles of 3.0 µm size with high quality streptavidin covalently attached to the bead surface. Applications include immunoassays and capture or purification of biotinylated molecules.

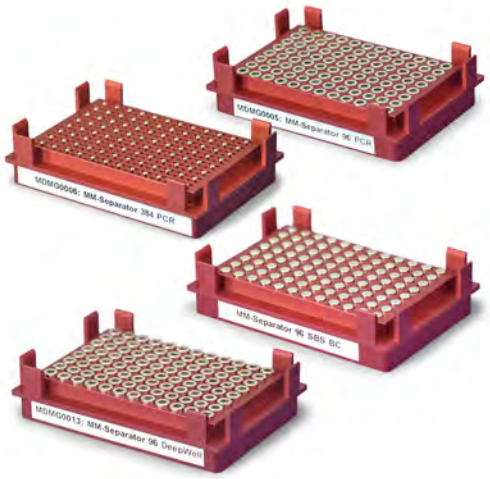
Type analysis:
Concentration. ..... 10±0,5 mg/ml
Mean particle sizing. ..... 2,4-3,6 µm
Bead number. ..... 1-3 x 10^9 beads/ml
Assay (Iron oxide). ..... ≥55 %
Binding capacity (biotinylated fluorescein). ..... 0,7-1,2 nmol/mg

1563.1	2 ml	plastic	379,40 €
1563.2	10 ml	plastic	1396,45 €

▶ Roti®garose beads for affinity chromatography of biotinylated molecules see chapter Biochemistry!

Instructions for use
can be found on the Internet next to the product description.

Separators



NEW

MM-Separators for automated processing

By magtivio. Made from **aluminum**.

These MM-Separator are designed for fast and efficient collection of magnetic beads in a variety of microplates. Its SBS footprint allows placement on standard automated liquid handling workstations. Small skirts on each side of the aluminium block ensure correct and stable placement of microplates onto the separators. Compatible with 8- or 12-channel multi-pipettes.

Recommended for:

Type 96 PCR: PCR plates, U- and V-bottom microplates

Type 384 PCR: PCR microplates only. For 384 V-bottom plates, use MM-Separator 384 DeepWell

Type 96 SBS BC: U- and V-bottom microplates

Type 96 DeepWell: DeepWell microplates

Length: 133,7 cm, Breadth: 91,5 cm, Height: 3,4 cm

Type	Max. sample number	Max. volume	Min. elution volume
96 PCR	96	300 µl	20 µl
384 PCR	384	40 µl	10 µl
96 SBS BC	96	400 µl	5 µl
96 DeepWell	96	1,2 ml	5 µl

Type	Art. No.	Pack Qty.	€
96 PCR	**2162.1**	1 pieces	1548,00
384 PCR	**2166.1**	1 pieces	2386,50
96 SBS BC	**2167.1**	1 pieces	1784,50
96 DeepWell	**2169.1**	1 pieces	1548,00

MM-Separators

NEW

By magtivio. Made from acrylic glas for optimal visual inspection needs, and from chemically resistant polyoxymethylene (POM) (versions 'P') for routine use of organic solvents.

Usage:

MM-Separators M12+12 - manual use with 1.5 and 2 mL microtubes.

MM-Separators M96 - manual use with 96 well microplates and PCR plates.

PCR Strip Adapters - manual use with 8- and 12-tube PCR strips, complementary to MM-Separators M96.

MM-Separators M12+12 enable easy separation of beads from liquids for processing low amounts of samples with working volumes from 10 µl to 2 ml. In the centre, 12 magnets allow accommodation of up to 24 centrifuge tubes.

MM-Separators M96 enable easy separation of beads from liquids for multiple sample processing with 8- or 12-channel pipettes. The separators hold 24 magnets that are placed for magnetic separation of beads in 96 wells. MM-Separators M96 allow magnetic particles to be pulled to the side of wells for optimal access to the bottom and easy supernatant removal. The product is suitable for U- and V-bottom shaped 96 well microplates and for most PCR plates, skirted or semi- and non-skirted.

The PCR Strip Adapters have to be placed onto the MM-Separators M96 and are suitable for users with smaller sample throughputs, preferring use of PCR tube strips over PCR plates. These separators are suitable for use with U- or V-shaped 96 well microplates and for 96- well PCR plates in various formats, and 8- and 12-tube PCR strips. Compatible with 8- or 12-channel multi-pipettes.

Type	Length (cm)	Breadth (cm)	Heigth (cm)	Weight (kg)	Max. sample number
M12+12 (P)	21,7	11,0	2,5	approx. 0,7	24
M96 (P)	12,8	8,6	2,5	approx. 0,4	96
PCR Strip Adapter (P)	12,8	8,6	1,0	approx. 0,1	96

Type	Figure	Art. No.	Pack Qty.	€
M12+12	1	**2138.1**	1 pieces	394,55
M12+12 P	2	**2151.1**	1 pieces	394,55
M96	3	**2141.1**	1 pieces	394,55
M96 P	4	**2154.1**	1 pieces	394,55
PCR Strip Adapter	5	**2155.1**	1 pieces	247,25
PCR Strip Adapter P	6	**2157.1**	1 pieces	247,25

FTA® Technology

Collect, transport, archive and isolate nucleic acids - all at room temperature.

FTA® Cards utilize patented Whatman FTA® Technology that simplifies the handling and processing of nucleic acids. The cards contain chemicals that lyse cells, denature proteins and protect nucleic acids from nucleases, oxidative and UV damage.

FTA® Cards rapidly inactivate organisms, including blood-borne pathogens, and prevent the growth of bacteria and other microorganisms. Capture of nucleic acid is a most simple and highly rapid process which can be performed quite easily also by untrained personal. The captured DNA is stable for years at room temperature.

Indicating FTA® Cards change colour upon sample application to facilitate handling of colourless samples. Since FTA® Cards are suitable for virtually any cell type, this is a very versatile, ready-to-use and easy-to-handle tool for storage and isolation of genomic DNA.

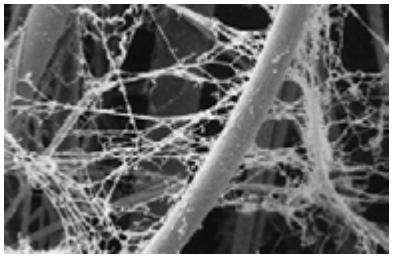


Figure:
Electron micrograph showing DNA entrapped within the FTA Matrix (magnification x 10,000).

Instructions for use
can be found on the Internet next to the product description.

FTA® Cards

Made by GE Healthcare.
Speciality cards for space- and time-saving collection, archival storage, and isolation of genomic DNA from a variety of sample material. Originally Whatman.

- Capture nucleic acid in one easy step - simply apply blood or tissue material to the card
- Captured nucleic acid is ready for downstream applications in less than 30 mins.
- Genomic DNA collected on FTA® Cards is stable for years at room temperature
- Suitable for virtually any cell type
- Indicating FTA® Cards change colour upon sample application in order to facilitate handling of colourless samples

Simply apply your sample to the FTA® Card. Liquids are pipetted or trickled, tissue samples are pressed onto the surface. Cell membranes and organelles are automatically lysed and the released nucleic acids are entrapped in the fibres of the matrix (see figure). The nucleic acids remain immobilized and are stabilized for transport, immediate processing or long-term storage. Libraries and species DNA collections can be stored simply in a folder; single DNA samples can be filed in your lab manual. FTA® Cards facilitate sample collection in remote locations and simplify sample transport, thus, you can collect samples in the field without worrying about refrigeration.
Captured nucleic acids are used for downstream experiments by simply taking a small punch from the FTA® Card, wash with FTA® Purification Reagent and rinse with TE buffer (Roti®-Stock 100 x TE Buffer, Art. No. 1052.1). DNA on the washed punch is ready for use in a variety of applications given below. Genomic DNA stored on FTA® Cards at room temperature for over 14 years (and counting) has been successfully amplified by PCR. For RNA, being more sensitive than DNA, we recommend rapid analysis after only few weeks' storage at room temperature.

FTA® Cards contain chemicals that lyse cells, denature proteins and protect nucleic acids from nucleases, oxidative and UV damage. FTA® Cards rapidly inactivate organisms, including blood borne pathogens, and prevent the growth of bacteria and other microorganisms. Each card can be used for archival storage or multiple downstream applications of 1-2 (MINI) and 1-4 (CLASSIC) independent samples.

Suitable for blood, cultivated cells, buccal cells, plant material, bacteria, microorganisms, tissue and tissue homogenisations, virions, M13 plaques and more.

Applications: Storage of genomic DNA samples and libraries, collection of nucleic acid from animal tissue or cell cultures, or from plants or microorganisms during in-field-experiments.

Downstream-Experiments: E. g. PCR, real-time PCR, SNP and STR analysis, transgenetic identification, whole genome amplification, HLA typing, and genotyping **in** forensics, molecular biology, food and agriculture testing, drug discovery, genomics, species identification, and more.

WGK 2

Type	Areas	Art. No.	Pack Qty	€
MINI	2	**CL90.1**	25	118,00
MINI with colour indicator	2	**CL91.1**	25	146,00
CLASSIC	4	**CL93.1**	25	133,00
CLASSIC with colour indicator	4	**CL94.1**	25	168,00

FTA® CloneSaver Cards

Made by GE Healthcare.
Speciality cards for space- and time-saving archival storage and isolation of Plasmid and BAC DNA. Originally Whatman.

- Capture DNA in one easy step by simply applying the samples (recombinant bacteria, glycerol stocks etc.) to the card
- Captured nucleic acid is easily accessible for downstream applications
- DNA collected on FTA® CloneSaver Cards is stable for years at room temperature
- Store up to 96 clones on each card
- Standard 96well plate format and compatible with multi-channel pipettors

Apply few µl bacterial culture, resuspended colony or glycerol stock. Cells are lysed and plasmid or BAC DNA is stabilized for long-term storage or immediate processing. Captured nucleic acids are used for downstream experiments without the need for culture regrowth and plasmid purification. Simply take a small punch from the FTA® Card and wash with TE buffer (Roti®-Stock 100x TE Buffer, Art. No. 1052.1). DNA on the washed punch is ready for elution or for direct use in PCR, transformation, amplification by rolling circle followed by sequencing, and so on.
WGK 2

Type	Art. No.	Pack Qty	€
CloneSaver	**HP11.1**	5	166,00

FTA® Purification Reagent ready-to-use

ready-to-use, for molecular biology

For purification of nucleic acids stored on FTA® Cards. Originally Whatman.
Simple and rapid purification of nucleic acids stored on FTA® Cards.
Ensures superior quality DNA for PCR or SNP analysis.
Removes heme, PCR inhibitors and other potential contaminants.
WGK 2

CL99.1	500 ml	plastic	379,00 €

Harris Uni-Core Punches

Made by GE Healthcare.
GE Healthcare's disposable Uni-Core Punch addresses your laboratory's manual punching requirements. Designed for use with Whatman FTA® Cards, FTA® Elute Cards, and EasiCollect device.

Uni-Core Punch is a disposable punch which has a polished steel tip that is case-hardened and can be sterilized. Each tip provides up to 500 punches before disposal. Uni-Core Punch is available in diameters from 1,0 to 6,0 mm for a variety of sampling needs. It is housed in a plastic handle and disposable for contamination control. Stainless steel cutting edges enable manual coring, retrieval, and controlled ejection of the FTA punch. Manual punching is preferred for laboratories with low sample volumes punching 1 to 50 samples per day.

Very easy application: By pressing the Micro tip down a tiny slice is punched from the FTA® card. This DNA containing sample is then washed and directly applied to downstream experiments.

Two cutting mats are included in the small packages (4 punches). Colour of the punches supplied may differ to that shown in the picture.

Type	Cutting Mats	Art. No.	Pack Qty	€
1,0 mm	-	**6729.1**	25 pieces	125,00
1,2 mm	2	**HP15.1**	4 pieces	56,80
1,2 mm	-	**HP15.2**	25 pieces	125,00
2,0 mm	2	**HP16.1**	4 pieces	56,80
2,0 mm	-	**HP16.2**	25 pieces	125,00
3,0 mm	2	**6798.1**	4 pieces	55,50
3,0 mm	-	**6798.2**	25 pieces	125,80
6,0 mm	2	**6799.1**	4 pieces	55,50
6,0 mm	-	**6799.2**	25 pieces	125,80

FTA® Foam Tip Applicator S

Made by GE Healthcare.
For application of saliva and buccal cells to FTA® Cards. Originally Whatman.

Sterile. Non-abrasive foam head is same size as sample area on FTA® Cards and is, therefore, best suited for application of buccal samples. The oral mucosa is grazed with the foam head, which is then pressed onto the card field. We recommend the use of FTA® Cards with colour indicator (CLASSIC Art. No. CL 91.1 and MINI Art. No. CL94.1) for buccal and saliva samples.

Art. No.	Pack Qty	€
HP14.1	100	94,50

FTA® Pouches

Made by GE Healthcare.
For transporting or storing FTA® Cards. Originally Whatman.

Seven laminated layers protect the card from exposure to gas or liquid contamination. Tamper-evident seal maintains sample security. Outer paper surface for labelling or writing.
CloneSaver pouches only: with additional resealable zip-lock closure.

Type	for FTA® Cards of Type	Art. No.	Pack Qty	€
MINI	MINI, MICRO	**CL92.1**	100	61,50
MAXI	CLASSIC	**CL95.1**	100	109,00
CloneSaver	CloneSaver	**HP12.1**	50	148,00

▶ **Thermal cyclers, nucleotides** and **DNA polymerases** for PCR see page 1294

Density Gradient Centrifugation

Caesium chloride

≥99,999 %, p.a., ultra quality

Reagent for density gradient centrifugation.
CsCl
M 168,36 g/mol

Warning H361

For isolation and purification of nucleic acids in ultra-centrifugation. This extremely pure reagent is especially ideal for isolation of DNA, which is subsequently used in hybridisation and enzyme reactions.

8627.4	10 g	plastic	23,15 €
8627.3	50 g	plastic	50,00 €
8627.1	100 g	plastic	83,35 €
8627.5	250 g	plastic	150,40 €
8627.2	1 kg	plastic	551,40 €
Original pack 6 x 1 kg			523,83/1 kg

Caesium chloride

≥99,9 %, extra pure, for biochemistry

Reagent for density gradient centrifugation.
CsCl
M 168,36 g/mol

Warning H361

Can be used for isolation and purification of nucleic acids in ultracentrifugation. Is a low cost alternative to CsCl ultra-quality, ideal for applications where extreme purity is not essential.
Highly concentrated solutions can show traces of cloudiness or opalescence as a result of 25 ppm water-insoluble ingredients.

7878.4	25 g	plastic	21,00 €
7878.1	100 g	plastic	48,30 €
7878.3	250 g	plastic	104,20 €
7878.5	500 g	plastic	188,15 €
Original pack 6 x 500 g			178,74/500 g
7878.2	1 kg	plastic	364,45 €
Original pack 6 x 1 kg			346,23/1 kg

Caesium sulphate

≥99,99 %, p.a.

Reagent for density gradient centrifugation.
Cs_2SO_4
M 361,89 g/mol

Warning H302-H361

Cesium sulphate produces a gradient which is almost twice as steep compared with cesium chloride in similar centrifugal fields.
Floating densities in cesium sulphate gradients are approx. 1.4 g/cm³ for DNA and approx. 1.6 g/cm³ for RNA.

9355.3	25 g	plastic	42,50 €
9355.1	100 g	plastic	134,30 €
9355.2	1 kg	plastic	923,45 €
Original pack 6 x 1 kg			877,28/1 kg

D(+)-Saccharose RNAse-/DNAse-free

≥99,5 %, RNase/DNase free

Reagent for density gradient centrifugation.
D-Sucrose
$C_{12}H_{22}O_{11}$
M 342,30 g/mol

Sucrose gradient centrifugation has proven very effective in structural and functional analysis of macromolecular complexes. The distribution of macromolecules in gradients can be measured by UV absorption (A_{254}).

9097.1	1 kg		plastic	37,55 €
Original pack 6 x 1 kg				35,67/1 kg
9097.2	5 kg	BIG PACK	plastic	160,20 €

Cell Isolation by Density Gradient Centrifugation

Ficoll® 400

for molecular biology and biochemistry

For density gradient centrifugation; ingredient of gel loading buffers.
Non-ionic polymer of saccharose.
M ~400 000 g/mol

CN90.1	10 g	plastic	41,40 €
CN90.2	25 g	plastic	87,00 €
CN90.3	100 g	plastic	279,40 €

Polysucrose 400

BioScience-Grade, for molecular biology and biochemistry

For density gradient centrifugation during cell separation and isolation of cell organelles.
Sucrose polymer, Sucrose-epichlorhydrin copolymer
$(C_{12}H_{22}O_{11})_n$ x $(C_3H_5ClO)_n$
M 450000 ±100000 g/mol
Storage temp.: +20 °C
May be used as direct replacement for Ficoll® in common protocols.

4668.1	10 g	plastic	28,95 €
4668.2	25 g	plastic	65,50 €
4668.3	100 g	plastic	221,35 €

Roti®-Sep 1077 human ready-to-use S

CELLPURE® sterile, for density gradient centrifugation

Polysucrose based medium for separation of lymphocytes from whole blood.
Polysucrose solution, lymphocyte separation medium. Density 1,077 g/ml.
M ~400000 g/mol
Storage temp.: +4 °C

Danger H317-H334

0642.1	100 ml	plastic	44,00 €
0642.2	500 ml	plastic	117,75 €

▶ Further information on reagents for cell isolation see chapter Cell Biology!

Enzymes

Ribonuclease A

DNAse-free | Protease-free

90 U/mg (Kunitz), BioScience-Grade, free from salt

Acc. to Hirs, extracted from bovine pancreas.

RNase A

M ~13 700 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Extracted from bovine pancreas for RNA separation, especially when isolating RNAfree DNA. The enzyme cleaves RNA and produces 3' terminal nucleoside phosphates. This quality product for molecular biology is free from salt, without proteases and is chromatographically homogeneous.
Unit definition acc. to Kunitz.
DNAse content of the RNAse powder ist below detection limit. However, we nevertheless recommend pretreatment of the ribonuclease prior to using it for DNA isolation. DNAse free RNAse ist prepared by cooking the water-solubilised ribonuclease aliquots for 15 min.
Let cool to room temperature on bench top.

Application:
Stock solution: 10 mg/ml in water (pH ≤6,0) or 0,01 M sodium acetate (pH 5,2). Do not heat RNAse prepared in sodium acetate.
Working solution: 2-10 µg/ml in 10 mM Tris (pH 7,5), 15 mM NaCl.
Note: RNAse precipitates when concentrated solutions are heated/cooked at pH ≥7,0.
Store in aliquots at -20 °C.

7156.1	100 mg	glass	75,80 €
7156.2	500 mg	glass	335,95 €
7156.3	1 g	glass	553,65 €

Ribonuclease

>70 U/mg (Kunitz), free from salt and protease

Purified by chromatography, for biochemistry.

RNase

Storage temp.: -20 °C • Transport temp.: room temp.

Extracted from bovine pancreas; free from salt, without proteases and chromatographically cleaned with specific activity of 70 U/mg (Kunitz). RNAse mixture containing approx. 70-80 % RNAse A.

Application:
Stock solution: 10 mg/ml in water
Working solution: 5-20 µg/ml in 10 mM Tris (pH 7,5), 15 mM NaCl.
DNAse free RNAse ist prepared by cooking the solubilised ribonuclease aliquots for 15 min. Let cool to room temperature on bench top and store in aliquots at -20 °C.

7164.1	100 mg	glass	31,10 €
7164.2	1 g	glass	213,95 €

Lysozyme

≥35000 FIP U/mg, BioScience-Grade, lyophilised

From chicken egg white, free from albumin.

M ~14000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H334

Salt and albumin free lyophilised powder. Quality product for molecular biology. Ideal for lysis of bacteria for preparing DNA.
1 FIP-Unit equals the amount of enzyme which reduces the absorbance by 0.001 per min. at 450 nm, 25 °C, pH 7.00 using a suspension of FIP *Micrococcus lysodeikticus* as substrate (acc. to *Pharmaceutical Enzymes* 1997).
1 FIP-Unit resembles approximately 1 Shugar-Unit.

8259.1	1 g	glass	27,85 €
8259.3	25 g	glass	321,45 €
8259.2	10 g	glass	170,95 €

▶ For further information on these enzymes see chapter Biochemistry!

Zymolyase® 20T

≥20 U/mg, for biochemistry and molecular biology

For lysis of yeast cells. Isolated from *Arthrobacter luteus*.

Lyticase, β-1,3-glucan laminaripentaohydrolase

Storage temp.: +4 °C • Transport temp.: cooled

Zymolyase® 20T, produced by a submerged culture of *Arthrobacter luteus,* has strong lytic activity against living cell walls of various strains of yeast cells. Hence, it is frequently used in order to produce protoplasts or spheroplasts.
The essential enzyme for the lytic activity of Zymolyase®20T is β-1,3-glucan laminaripentaohydrolase. It hydrolyzes linear glucose polymers with β-1,3-linkages and releases specifically laminaripentaose as the main and minimum product unit. Zymolyase® 20T is prepared by ammonium sulfate precipitatation.
One unit of lytic activity is defined as the enzyme amount causing a decrease of 30 % in absorbance at 800 nm using 6 mg Brewer's yeast as substrate in Phosphate buffer (pH 7,5) at 25 °C. Lytic activity varies depending on the particular yeast strain, the growth stage of the yeast, and cultural conditions.

Application:
Other enzymatic activities contained: β-1,3-glucanase, protease, mannanase. Trace amounts of amylase, xylanase, phosphatase.
Stability: At 30 °C 70 % of the lytic activity is lost after 3 months.
Optimum temperature and pH: at pH 7,5 - 35 °C for lysis of viable yeast cells, at pH 6,5 - 45 °C for hydrolysis of yeast glucan.
Specificity (lytic spectrum): *Ashbya, Candida, Debaryomyces, Eremothecium, Endomyces, Hansenula, Hanseniaspora, Kloeckera, Kluyveromyces, Lipomyces, Metschnikowia, Pichia, Pullularia, Torulopsis, Saccharomyces, Saccharomycopsis, Saccharomycodes, Schwanniomyces*, etc.

9324.1	100 mg	glass	79,45 €
9324.2	500 mg	glass	225,25 €
9324.3	1 g	glass	396,70 €

Zymolyase® 100T

≥100 U/mg, for biochemistry and molecular biology

For lysis of yeast cells. Isolated from *Arthrobacter luteus*.

Lyticase, β-1,3-glucan laminaripentaohydrolase

Storage temp.: +4 °C • Transport temp.: cooled

Zymolyase® 100T is prepared by ammonium sulphate precipitation, and is further purified by affinity chromatography.
For further information on product and application, see Zymolyase® 20 T.

9329.1	100 mg	glass	289,20 €
9329.2	500 mg	glass	901,95 €

Proteinase K

RNAse-/DNAse-free

lyophil., ≥30 mAnson U/mg

Isolated from fungi (*Tritirachium album)*.

Storage temp.: +4 °C

Danger H315-H319-H334-H317-H335

A non-specific protease with strong proteolytic activity for degrading proteins in biological samples. A quality product for molecular biology with a broad scope of application.

7528.1	100 mg	glass	93,45 €
7528.5	250 mg	glass	177,40 €
7528.2	500 mg	glass	317,15 €
7528.3	500 mg (in a 30 ml glass bottle) TIP		353,70 €
7528.4	1 g	glass	532,15 €
7528.6	5 g	glass	2105,95 €

Precipitation & Concentration

Glycogen DNA-free

lyophilised, from oysters

For molecular biology and biochemistry.

Glycogen type 2.
Long-chain polysaccharide made of glucose. Most frequently used in biochemistry and as 'carrier' during precipitation of nucleic acids.
Recovery of precipitated DNA is significantly enhanced by addition of 50 µg/ml glycogen; even starting from solutions with very low DNA concentrations, efficient precipitation can be performed.
Contains no nucleic acid and doesn't hinder enzymatic *down-stream* applications.
Glycogen contains a central protein and should not be applied if DNA is to be used in protein binding-assays following precipitation. In these cases we recommend to use our glycogen-free coprecipitants.
Stock solution: 5 mg/ml in distilled, sterile water
Working concentration: 50 µg/ml

Type analysis:

Appearance. ..... bright powder
Origin. ..... oysters
Solubility (0,25 %, 1 M NaCl). ..... complies
Loss on drying. ..... ≤15 %
Specific rotation $[\alpha]_D^{20}$ ..... +170° to +200°

HP51.1	1 g	glass	25,70 €
HP51.2	5 g	plastic	99,90 €
HP51.3	10 g	plastic	171,50 €
HP51.4	25 g	plastic	365,00 €

Instructions for use
can be found on the Internet next to the product description.

Tips for Application of Precipitation Salts

Precipitation Salts	Stock solution	Amount applied	Recommended for	Not recommended for
Ammonium acetate	7.5 M	1/2 volume	Removal of nucleotides or other contaminants	Kinase downstream experiments (phosphorylation)
Lithium chloride	8.0 M	1/10 volume	RNA precipitation	Very small RNA
Sodium acetate	3.0 M (pH 5.2)	1/10 volume	Routine DNA precipitation	Removal of nucleotides or other contaminants
Sodium chloride	5.0 M	1/20 volume	SDS containing solutions	Routine precipitations

Roti®-PinkDNA ready-to-use

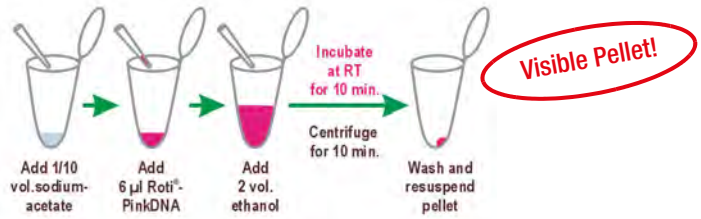
for molecular biology

Synthetic co-precipitant with dye for efficient precipitation of nucleic acids.
Storage temp.: +4 °C

- **Visible pellet due to included pink dye**
- **Recovery rates of up to 99 %**
- Simply add to ethanolic nucleic acid precipitation
- Recovered DNA is immediately applicable to all standard applications
- Ready-to-use

Stained precipitation additive for recovery of DNA from all solutions by ethanolic precipitation. Recovery rates of up to 99 % can be attained even from solutions with very weak nucleic acid concentration. The incorporated dye stains the DNA (reversibly) pink and facilitates location and lossless washing of pellets. Roti®-PinkDNA is produced synthetically and is free from nucleic acids. DNA or dsRNA precipitated with Roti®-PinkDNA is highly pure and can be used directly in all standard applications such as transformation, restriction digestion, cloning, sequencing, *in vitro* transcription etc.

Suitable for all nucleic acid fragments, cyclic, and genomic DNA. Not compatible with photometric concentration measurement at 260-280 nm.



Guarantee analysis:

Linear Polyacrylamide. ..... 5 mg/ml
DNA/RNA. ..... free
Dye. ..... complies

HP54.1	0,5 ml	plastic	42,50 €
HP54.2	1,5 ml	plastic	120,30 €
HP54.3	3 ml	plastic	213,95 €

Roti®-Spin Centrifugal Devices

For purification and concentration of biomolecules and for purification of solutions.

- Applicable for nucleic acids, proteins/peptides, other biomolecules >6 kD and very small bioparticles
- Can be used to replace standard techniques like precipitation, dialysis, gel filtration, gel purification, column chromatography, gradient centrifugation etc.
- Gentle: No shearing of DNA of up to 100 kb, proteins remain native and enzymatically active
- Applicable for purification of all labelled probes (isotope-, fluorescent-, chromogenic labelling)
- Very high recovery rates of >90 % (when using devices of appropriate MWCO)

Centrifugal devices for ultrafiltration of biomolecules. The membranes made of highly chemical-resistant polyethersulfone have been tightly sealed to prevent leakage and loss of samples. Furthermore, the membranes underwent special treatment minimising the binding of biomolecules, in order to optimise sample recovery-rates.

Roti®-Spin Centrifugal Devices can be applied to a variety of applications and can be used to replace tedious and labour-intensive methods like gel filtration, gel purification or precipitation. Application is time-saving and very simple - only few centrifugal steps are necessary to concentrate and recover your sample. During this, the sample remains untouched in the upper reservoir, and cross-contamination is efficiently prevented even when large numbers of samples are handled. Centrifugation can easily be performed in the cold room or at specially designated benches like isotope laboratories or in laminar flow hoods.

MWCO:

For convenient and successful application, centrifugal devices with membranes in 4 colour-coded molecular weight cut-offs (MWCO) are available. In order to choose the appropriate MWCO please use the following thumb-rule:
Centrifugation of proteins/peptides: MWCO ≤1/3 of sample molecule size.
Centrifugation of nucleic acids: MWCO ≤ ½ sample molecule size.

Overview for selection the right pore size

MWCO	Molec. size	DNA size
3 kD	10 - 20 kD	<50 bp
10 kD	30 - 90 kD	50 - 200 bp
30 kD	90 - 180 kD	200 bp - 1 kb
100 kD	>300 kD	>1 kb

Sample volumes:

Maximum sample volume: Roti®-Spin MINI 50-500 µl
Final concentrate volume: Roti®-Spin MINI 15-20 µl

Applications (examples):

Desalting or buffer exchange following restriction digest, PCR or such; separation of free nucleotides and polymerised DNA; removal of contaminating compounds (like DNA) from stock solutions (e.g. PCR-buffers); concentration of DNA or proteins; separation of proteins of different size; sample preparation prior to HPLC.

Roti®-Spin MINI

Type	MWCO (kD)	Colour	Art. No.	Pack Qty	€
Roti®-Spin MINI-3	3	grey	**CL12.1**	25	111,80
Roti®-Spin MINI-10	10	blue	**CL13.1**	25	111,80
Roti®-Spin MINI-30	30	red	**CL14.1**	25	111,80
Roti®-Spin MINI-100	100	clear	**CL15.1**	25	111,80

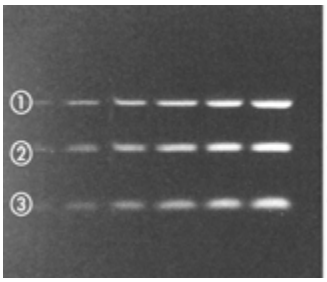
Further Reagents for Nucleic Acid Precipitation

Product	Purity	Art. No.	Pack Qty.	€
Ammonium acetate	≥97 %, p.a., ACS	**7869.2**	500 g	28,95
		7869.1	1 kg	40,75
		7869.3	2,5 kg	69,80
Ethanol	≥99,8 %, p.a.	**9065.1**	1 l	83,75
		9065.3	1 l	82,70
		9065.2	2,5 l	169,35
		9065.4	2,5 l	167,20
		9065.5	5 l	300,50
		9065.6	25 l	1048,15
Lithium chloride	≥99,5 %, p.a., ultra quality	**3739.1**	250 g	51,10
		3739.2	1 kg	147,85
Polyethylene glycol 6000	Ph.Eur.	**0158.4**	500 g	23,55
		0158.1	1 kg	35,40
		0158.2	5 kg	132,15
		0158.3	50 kg	1041,70
Polyethylene glycol 8000	Ph.Eur.	**0263.1**	500 g	23,55
		0263.2	1 kg	35,40
		0263.3	5 kg	132,15
2-Propanol	≥99,8 %, p.a., ACS, ISO	**6752.1**	1 l	25,30
		6752.3	1 l	24,20
		6752.2	2,5 l	56,90
		6752.4	2,5 l	54,75
		6752.5	5 l	84,85
		6752.6	25 l	246,75
Sodium acetate trihydrate	≥99,5 %, p.a., ACS, ISO	**6779.2**	500 g	18,85
		6779.1	1 kg	34,30
		6779.3	5 kg	107,40
		6779.5	25 kg	429,50
Sodium chloride	≥99,5 %, p.a., ACS, ISO	**3957.3**	500 g	16,05
		3957.1	1 kg	18,20
		3957.2	5 kg	66,55
		3957.4	10 kg	102,05
		3957.5	25 kg	198,90

For additional product data and safety information, see chapter Chemicals A-Z.

DNA-/RNA Analysis

DNA Quantitation



ready-to-use

(no longer available)

(no longer available)

DNA-quantifying marker

DNA-fragments of precisely defined quantity for gel-quantitation

Store at -20 °C • Transport temp.: room temp.

DNA-fragments of precisely defined concentration for easy quantifying of linear DNA of medium fragment length in agarose gels.
Also suitable for quantifying standard DNA via photometric measurement to establish light-cycler-controls.

DNA-quantifying marker QSK 500

Fragment length: 500 bp (see figure ②)
Concentration: 100 µg/ml in TE-buffer

L507.1	40 µg	plastic	193,50 €

DAPI

≥98 %, p.a.

For DNA-staining.

M 350,3 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Fluorescent dye with specific DNA-binding capacity. For detection of mycoplasms in cell culture, for quantitative DNA measurement, and for chromosome counter staining. Store in the dark! Stabile for one year when solubilised, stored at -20 °C, and protected from light
Stock solution: 1 to 10 mg/ml in sterile water

Excitation maximum: 359 nm
Emission maximum: 461 nm

6335.1	25 mg	glass	92,35 €
6335.2	100 mg	glass	260,05 €

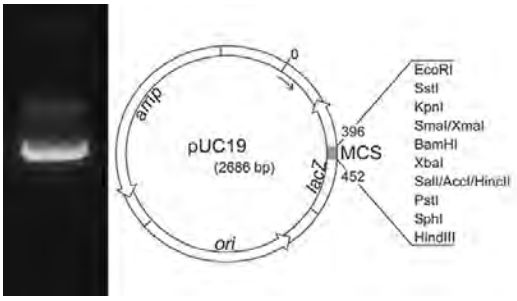
▶ Transilluminators, UV-handheld lamps and UV-handheld magnifiers see chapter Labware - Optical Instruments & Lamps!

Instructions for use
can be found on the Internet next to the product description.

Plasmid DNA

The following plasmid DNA was prepared in low nuclease host bacteria and isolated through ion exchange chromatography. It is available in super-coiled form (ccc-form >95%) and, as a high-purity DNA ($OD_{260/280}$ > 1,70), it is ideal for different applications:

- Controlling transformation efficiency
- Comparison with plasmid ccc-forms of unknown size
- Cloning DNA-fragments
- Restriction (Preparing DNA-length markers)
- Calibrating DNA-separating or DNA-preparing processes or equipment
- Blocking DNA-chips with plasmid DNA of a defined sequence



Plasmid DNA pUC19

High-purity plasmid-DNA of pUC19 (pUC19c, Acc. No. L09137) with a overall length of 2686 base pairs. Lyophilised.

Storage temp.: -20 °C • Transport temp.: room temp.

$OD_{260/280}$: >1.70
genomic DNA: <2 %
oc-form: <3 %
ccc-form: >95 %
baise pairs: 2686

pUC19 is a standard high-copy cloning vector for *E. coli* recombinants. The position of the Multi Cloning Site (MCS), which is inserted in frame into the LacZ-gene, enables a blue-white selection of insert containing plasmid DNA by α-complementation. The copy number of plasmids per cell depends on the temperature and is approx. 70-80 at 37 °C and over 200 at 42 °C.

X911.1	50 µg	plastic	51,10 €

Plasmid DNA pBR322

High-purity plasmid-DNA of pBR322 (Acc. No. V01119) with a overall lenght of 4361 base pairs. Lyophilised.

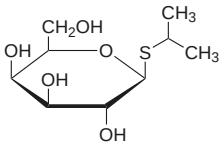
Storage temp.: -20 °C • Transport temp.: room temp.

$OD_{260/280}$: >1.70
genomic DNA: <2 %
oc-form: <3 %
ccc-form: >95 %
base pairs: 4361

The circular sequence was numbered in such a way that 0 lies in the middle of the singular *EcoR* I restriction site. The copy number of pBR322 is limited by the gene product of *rop* to 20 copies per cell. However, by adding chloroamphenicol (final concentration 170 µg/ml) to log-phase cultures and then incubating for 8 hours, the copy number can be increased considerably.

X912.1	50 µg	plastic	60,10 €

Blue-/White Selection



IPTG

≥99 %, BioScience-Grade, dioxane free, animal free

For molecular biology.

Isopropyl-β-D-thiogalactopyranoside

$C_9H_{18}O_5S$

M 238,30 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Lactose analogon. Glucose-galactose-disaccharide. *lac*-promotor is induced by IPTG via inhibition of *lac*-repressor. Recommended for induction of *lac*-regulated vectors in expression assays, for instance blue-/white selection of recombinant *E. coli*, in bench-top as well as in production scale.

Application:
Stock solution: 0,5 M (1 g / 8,4 ml) in water (sterilise through 0,2 µm filter).
Final concentration in agar plates: 0,2 mM (add after autoclaving and cooling medium).
Final concentration in induction medium: 2 mM.

2316.1	250 mg	glass	21,00 €
2316.2	1 g	glass	45,05 €
2316.3	5 g	glass	128,50 €
2316.4	25 g	plastic	429,50 €
2316.5	100 g	plastic	977,20 €

IPTG

≥99 %, for biochemistry

Isopropyl-β-D-thiogalactopyranoside

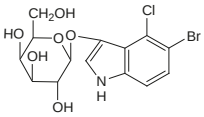
$C_9H_{18}O_5S$

M 238,30 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Standard reagent for biochemical assays. Main application as inducer of protein *in vitro* expression.

CN08.1	1 g	glass	27,45 €
CN08.2	5 g	glass	74,10 €
CN08.3	50 g	glass	521,40 €
CN08.4	100 g	glass	880,45 €



X-β-Gal

DNAse-/RNAse-/Protease-free

≥99 %, BioScience-Grade

Colorimetric substrate of β-galactosidase.
For biochemistry and molecular biology.

5-Bromo-4-chloro-3-indoxyl-β-D-galactoside

$C_{14}H_{15}BrClNO_6$

M 408,6 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Ideal for colorimetric detection of β-galactosidase activity, for instance during blue-/white selection.

Application:
Stock solution: 100 mg/ml (240 mM) in DMF, store at -20 °C in the dark.
Working solution: For blue/white selection of recombinant clones on agar plates use 0,3 µl stock solution per ml broth/agar.

2315.1	100 mg	glass	21,40 €
2315.2	500 mg	glass	61,20 €
2315.3	1 g	glass	114,50 €
2315.4	5 g	glass	385,95 €

▶ LB Media, LB Media with antibiotics
see page 1466

α-Complementation (blue-white selection)

Being a galacto pyranoside, IPTG inhibits the *lac* repressor, therefore leading to the induction the *lac* promotor. Subsequently, using the plasmid as matrix the C-terminal 146 amino acid fragment of the bacterial β-galactosidase is expressed, which functions as so called α-donor and complements the C-terminally deleted bacterial β-galactosidase. The then functional β-galactosidase restricts the galactoside X-Gal, resulting in a blue-coloured dye - therefore, these *lac*$^+$ clones are coloured dark blue. Since the C-terminal part of the α-donor is located **upstream** and the N-terminal part is located **downstream** of the multi cloning site of the plasmid, inserted DNA normally leads to frame shift or at least to major chain elongation, resulting in an unfunctional α-donor and no functional galactosidase - recombinant clones are white. The appearance of light blue clones either results form very short insertions or from the fact that in some plasmids the C-terminal fragment cloned upstream of the MCS is sufficient for α-complementation and restriction of a small amount of X-Gal.

α-Complementation - protocol

Stock solution

IPTG: 0.5 M (1 g /8.4 ml) in water, freeze sterile filtered and aliquoted

X-β-Gal: 100 mg/ml (240 mM) in DMF, store aliquoted and in the dark at -20 °C

Approach

Add 10 µl IPTG solution + 10 µl X-β-Gal solution per 25 ml autoclaved, cooled Agar and pour plates.

Alternatively, mix 10 µl IPTG and X-β-Gal solution with approx.100 µl sterile water and plate onto a hardened 9 cm agar petri dish.

Hybridisation

DNA Labelling

Roti®kits for DNA labelling

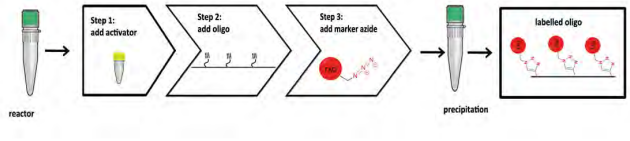
ready-to-use

For DNA labelling assays.
Transport temp.: cooled

Warning H226-H319

- Highly reliable
- Easy to perform
- Fast detection procedure (only 30 min)
- Mild conditions (no DNA denaturation required)
- Modular system due to click chemistry
- Compatible with various dyes and readouts

The ROTI®kits for DNA labelling provide an easy-to-use tool for quick labelling of oligonucleotides. For this purpose, fluorescent dyes are coupled via click reaction with uracil derivatives (mostly ethynyldeoxyuridine, EdU) which are present in the DNA. This fast and elegant approach allows for direct labelling of DNA fragments with the desired fluorescent dye. Thus, the assay is perfectly adaptable to the present facilities and to the assay situation (e.g. for double or triple detection). The protocol includes only three steps and is quick and easy to perform:



Oligonucleotides not included.

The end of the product name specifies the included fluorescent marker.

Components:

Azide. ..... 1 mg
Activator. ..... 10 µl
Reactor S..... 7 x 2,5 mg
Solvent..... 1 ml
Store at -20 °C (Azide, Activator); room temp. (Reactor S, Solvent)

Product	Marker	Art. No.	Pack Qty	€
Oligo Click M Reload	-	**7765.1**	1 kit	80,55
Oligo Click S Reload	-	**7764.1**	1 kit	64,40

For additional product data and safety information, see chapter Chemicals A-Z.

Tip:
The ending of the product name specifies the included marker:

- 488: 6-FAM-Azide
- 555: 5-TAMRA-Azide
- Biotin: Biotin Azide
- Reload: no marker included

Ready-Made Buffers & Supplements

Roti®-Hybri-Quick

ready-to-use

BioScience-Grade, ready-to-use, for molecular biology

Ready-made buffer for DNA- and RNA hybridisation.

- Suitable for prehybridisation, hybridisation and washing
- For Southern- and Northern-hybridisations
- Suitable for all membrane types

Roti®-Hybri-Quick ready-to-use solution is an all-purpose solution for DNA-hybridisation experiments.
Optimised sodiumphosphate buffer with superior signal-to-noise ratio. Compatible with all Southern- and Northern-hybridisations, all labelling and detection methods, and all types of membranes. Improved buffer formulation based on the hybridisation solution published by Church & Gilbert (*PNAS USA*, 81:1991-95).

A981.1	1 l	glass	52,15 €
Original pack 6 x 1 l			49,54/1 l
A981.2	2,5 l	glass	94,10 €
Original pack 4 x 2,5 l			89,40/2,5 l

Roti®fair 20x SSC

for 1000 ml/pouch, for molecular biology

Concentrated buffer solution for Southern- and Northern transfer.

SSC buffer powder (pouch), Sodium sodium citrate

Exactly pre-weighed pouches for convenient and rapid preparation of SSC solution.
Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving.
For long-term storage, buffer solution should be kept at +4 °C.
20x SSC solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Formulation:

Prepared 20x SSC solution contains: 3,0 M NaCl, 0,3 M Na-Citrat, pH-value 7,0 ±0,05, when prepared in deionized or distilled water.

1232.1	5 pouches	box	158,60 €

Roti®-Stock 20x SSC ready-to-use S

BioScience-Grade, ready-to-use, steam sterilised

For molecular biology.

SSC 20x ready-to-use solution

20fold stock solution sodium/sodiumcitrate. Undiluted or after dilution with sterile water to 10x, 6x, 1x or 0,1x SSC one receives a versatile buffer for blotting, hybridising or washing of Southern- or Dot/Slot-Blots of DNA as well as for *in situ* hybridisation. Undiluted buffer is also suitable for neutral transfer of RNA onto unloaded membranes (e.g. Roti®-Nylon 0.2, Art. No. AE50.1).
With original seal.

Composition:

3 M NaCl, 300 mM sodium citrate in deionised water, pH-value 7.0, steam sterilised

1054.1	1 l	glass	68,70 €
Original pack 6 x 1 l			65,27/1 l

Roti®fair SSPE

for 200 ml/tablet, for molecular biology

Buffer solution for DNA- and RNA hybridisation.

Sodium sodium phosphate EDTA, SSPE buffer (tablets)

Exactly pre-weighed tablets for convenient and rapid preparation of phosphate buffered salt solution (SSPE).
SSPE is frequently used for Southern- and Northern hybridisations, as well as for washing steps during Microarray techniques. Roti®fair SSPE may also be used very well in imunocytochemistry and for cell suspension prior to FACS analyses.
Prepared solution may be sterilized by filtration (0,22 µm). For long-term storage, buffer solution should be kept at +4 °C.
1x SSPE solution is prepared by dissolution of 1 tablet in 200 ml highly pure water.

Formulation:

Prepared 1x SSPE solution contains: 0,15 M NaCl, 1 mM EDTA, 10 mM Na-phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1233.1	100 tablets	plastic	103,75 €

Dextran sulphate 500 sodium salt

for biochemistry and molecular biology

Dextranhydrogensulphate 500 sodium salt

M ~500 000 g/mol

Dextran sulphate is a polyanion produced by esterification of dextran with chlorosulphonic acid. The standard product is based on dextran with a mean molecular weight of approx. 500.000 Dalton. Anionic dextrans such as dextran sulphate (10 % in hybridisation buffer) accelerate the hybridisation of nucleic acids by approx. 10fold.

5956.5	10 g	plastic	31,10 €
5956.3	25 g	plastic	60,10 €
5956.4	50 g	plastic	103,10 €
5956.1	100 g	plastic	196,20 €
5956.2	500 g	plastic	858,95 €
Original pack 6 x 500 g			816,00/500 g

Salmon Sperm DNA sodium salt

ex salmon testes

Deoxyribonucleic acid sodium salt, DNA from salmon sperm

Storage temp.: +4 °C

DNA from salmon sperm is used in Southern- and Northern hybridisation, in order to block unspecific probe binding prior to and during hybridisation (Sambrook, J. *et al.* (1989) *Molecular Cloning:* A Laboratory Manual, 2nd Edition).
Stock solution: 10 mg/ml in H_2O
Storage of stock solution: -20 °C in aliquots
Working concentration: 100 µg/ml

5434.1	5 g	plastic	28,50 €
5434.2	10 g	plastic	44,65 €

Spermidine

≥98 %, for biochemistry

N-(3-Aminopropyl)-1,4-butanediamine

$C_7H_{19}N_3$

M 145,25 g/mol

Storage temp.: +4 °C

Danger H314

Ingredient vital for $CaCl_2$-transfektion (70 µM), tissue homogenisation (500 µM), *in vitro* transcription (20 mM), and in hybridisation buffers (1-20 mM).

7161.2	1 g	glass	42,90 €
7161.1	2,5 g	glass	81,60 €
7161.3	5 g	glass	139,65 €

Blocking Reagents

Denhardt's solution, lyophilised powder (50x)

BioScience-Grade, for molecular biology

Blocking reagent for hybridisation and stripping.

Storage temp.: +4 °C

Denhardt's lyophilised powder contains a mixture of different blocking agents that is used for nuclear acid hybridisation (Northern and Southern Blot) as well as for stripping of hybridised membranes. By prehybridisation the filter membranes with Denhardt's solution unspecific binding of DNA to the membrane is avoided.

Application: The bottle contains powder mix for 50 ml 50x stock solution. Add 48,8 ml water to gain exactly 50 ml stock solution. Sterilise stock solution by filtration (0,2 µm) and store in aliquots of 10 ml at -20 °C .
For hybridisation use 10x Denhardt's solution with 6x SSC (Roti®-Stock 20x SSC, Art. No. 1054.1) supplemented with 100 µg/ml denatured salmon sperm DNA and 1 % SDS (Roti®-Stock 20 % SDS, Art. No. 1057.1).

HP33.1	Powder mix for 50 ml	plastic	99,90 €

Albumin Fraction V

≥98 %, powdered,
for molecular biology
Wide range of applications,
e.g. as protein standard or
blocking reagent.
BSA
M ~66 000 g/mol
Storage temp.: +4 °C
BSA made of fresh bovine plasma by fractionation (Cohn method) and subsequent crystallisation from alcohol solution at a low temperature.
Molar extinction coefficient: 44.020 · M^{-1} · cm^{-1}
(acc. to 0,667 x cm^{-1} for a 0,1 % solution).

8076.1	10 g	plastic	27,85 €
8076.2	50 g	plastic	87,00 €
8076.4	200 g	plastic	298,35 €
8076.3	500 g	plastic	654,70 €
Original pack 6 x 500 g			621,97/500 g
8076.5	1 kg	plastic	1127,70 €
Original pack 6 x 1 kg			1071,32/1 kg

Albumin Fraction V, biotin-free

≥98 %, biotin-free, for molecular biology
Excellent as blocking and stabilising reagent in all biotin/streptavidin-mediated detection systems.
BSA
M ~66 000 g/mol
Storage temp.: +4 °C
Tried and tested albumin preparation, suitable for all immunoassays, for stabilising proteins, enzymes and antibodies and as a blocking-reagent in hybridisation. Tested for its absence of biotin. Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

0163.1	10 g	plastic	34,30 €
0163.2	50 g	plastic	107,00 €
0163.4	200 g	plastic	370,90 €
0163.3	500 g	plastic	805,20 €
Original pack 6 x 500 g			764,94/500 g

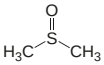
Powdered milk

blotting grade, powdered, low fat
BLOTTO reagent
Lowfat powdered milk, especially suited for use as blocking reagent in immunological assays like Western-Blot analyses or ELISA. Fine powdered for easy application.
Not suitable for biotin/streptavidine mediated detection systems. Milk contains biotin.

T145.1	250 g		plastic	14,55 €
T145.2	500 g		plastic	22,50 €
Original pack 6 x 500 g				21,38/500 g
T145.3	1 kg		plastic	36,45 €
Original pack 6 x 1 kg				34,63/1 kg
T145.5	2,5 kg		plastic	77,30 €
T145.4	5 kg	BIG PACK	plastic	142,90 €

▶ Further accessoiries for hybridisation see chapter Biochemistry/Western-Blotting and chapters labware!

General Reagents for Molecular Biology



Dimethyl sulphoxide (DMSO)

≥99,5 %, BioScience-Grade, for molecular biology
Recommended for PCR, sequencing, hybridisation and cell culture.
DMSO
C_2H_6OS
M 78,13 g/mol

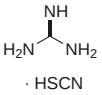
A994.1	100 ml	glass	22,50 €
A994.2	250 ml	glass	35,40 €

Formamide, deionized

RNAse-/DNAse-free

≥99,5 %, BioScience-Grade, RNAse / DNAse-free
Formic acid amide
CH_3NO
M 45,04 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.
Danger H351-H360FD-H373

P040.1	250 ml	plastic	46,80 €



Guanidine thiocyanate

≥99 %, for biochemistry
Reagent for denaturation of proteins and for isolation of DNA and RNA.
GTC, Guanidinium isothiocyanate
$C_2H_6N_4S$
M 118,16 g/mol
Warning H302+H312+H332-H412-EUH032
Highly chaotropic agent that potently destroys the three-dimensional structure of proteins, leading to denaturation. Guanidinium (iso)thiocyanate contains potent anionic as well as cationic groups, that form strong hydrogen bonds. It, therefore, can be used to break protein disulfide bonds as well as to disrupt hydrophobic interactions, and is added during RNA extraction in order to inhibit RNAse activity.

Stock solution: 4 M or 8 M in water
Storage of stock solution: +4 °C
Working concentration: 4 M in hydrous buffer system (e.g. 25 mM sodium citrate, 0,5 % SDS)
For a 4 M solution, solubilise 472,64 g in distilled water and fill to 1 l.

0017.1	100 g		plastic	30,00 €
0017.3	500 g		plastic	110,20 €
Original pack 6 x 500 g				104,69/500 g
0017.2	1 kg		plastic	177,40 €
Original pack 6 x 1 kg				168,53/1 kg
0017.5	5 kg	BIG PACK	plastic	783,70 €

Roti®fair reagents

High-pure reagents and buffer mixes in pouches or as tablets.

Roti®-fair - the new range of user-friendly reagent formulations.
For simplest application, optimal quality and reproducible results.

One tablet or the content of one pouch is simply dissolved in the respective amount of water - the desired solution is ready for use. Simply adapt the amount of water in order to vary the concentration, for instance for preparation of a higher concentrated stock solution.

- **Easy-to-use**
  Simply dissolve contents of one pouch or one tablet in water
- **Timesaving**
  No need for weighing of several reagents or adjustment of pH
- **Convenient**
  Dry reagents for direct use spare preparation of long-term stored stock solutions
- **Reliable**
  Stringent quality control ensures high lot-to-lot consistency

TIP

Product	Buffer/solution	Use	Final concentr.	pH value	Preparation scale	Art. No.	Pack Qty	€
Roti®fair 0.5M EDTA	Ethylenediamine tetraacetic acid solution	For preparation of bioanalytical solutions, anticoagulant	0,5 M	8,0 ±0,05	500 ml/pouch	**1031.1**	5 pouches	261,15
Roti®fair 1M KCl	Potassium chloride solution	For preparation of salt solutions and buffer concoctions	1 M	-	1000 ml/pouch	**1034.1**	10 pouches	175,15
Roti®fair 3M KCl	Potassium chloride solution	For preparation of salt solutions and buffer concoctions	3 M	-	1000 ml/pouch	**1035.1**	5 pouches	150,40
Roti®fair Na-Acetate 5.2	Sodium acetate solution	For isolation of nucleic acids	3 M	5,2 ±0,05	1000 ml/pouch	**1195.1**	5 pouches	293,40
Roti®fair 0.9% NaCl	Sodium chloride solution	For preparation of salt solutions and buffer concoctions	0,9 %	-	1000 ml/tablet	**1067.1**	10 tablets	50,45
						1067.2	100 tablets	121,40
Roti®fair 0.9% NaCl	Sodium chloride solution	For preparation of salt solutions and buffer concoctions	0,9 %	-	100 ml/tablet	**1053.1**	100 tablets	56,45
Roti®fair 3M NaCl	Sodium chloride solution	For preparation of salt solutions and buffer concoctions	3 M	-	1000 ml/pouch	**1071.1**	5 pouches	80,55
Roti®fair 5M NaCl	Sodium chloride solution	For preparation of salt solutions and buffer concoctions	5 M	-	1000 ml/pouch	**1079.1**	5 pouches	94,50
Roti®fair 0.02M Na-Phosphate 7.0	Sodium phosphate solution	General solution for assays in molecular biology and biochemistry	0,02 M	7,0 ±0,05	1000 ml/pouch	**1090.1**	10 pouches	91,30
Roti®fair 0.02M Na-Phosphate 7.0	Sodium phosphate solution	General solution for assays in molecular biology and biochemistry	0,02 M	7,0 ±0,05	5000 ml/pouch	**1094.1**	10 pouches	264,35
Roti®fair 1M Na-Phosphate 6.5	Sodium phosphate solution	General solution for assays in molecular biology and biochemistry	1 M	6,5 ±0,05	1000 ml/pouch	**1095.1**	10 pouches	249,95
Roti®fair 1M Na-Phosphate 7.2	Sodium phosphate solution	General solution for assays in molecular biology and biochemistry	1 M	7,2 ±0,05	1000 ml/pouch	**1097.1**	10 pouches	250,40
Roti®fair SDS 0.5g	Sodium dodecyl sulphate solution	Anionic detergent for preparation of bioanalytical solutions	variable	-	0,5 g/tablet	**1156.1**	50 tablets	48,30
Roti®fair 10% SDS	Sodium dodecyl sulphate solution	Anionic detergent for preparation of bioanalytical solutions	10 %	-	1000 ml/pouch	**1157.1**	5 pouches	618,15
Roti®fair TBS 7.6	Tris Buffered Saline	General solution for assays in molecular biology and biochemistry	1x	7,6 ±0,05	500 ml/tablet	**1244.1**	10 tablets	56,90
						1244.2	100 tablets	273,60
Roti®fair TBS 8.0	Tris Buffered Saline	General solution for assays in molecular biology and biochemistry	1x	8,0 ±0,05	1000 ml/pouch	**1245.1**	10 pouches	100,55
Roti®fair 10x TBS 8.0	Tris Buffered Saline	General solution for assays in molecular biology and biochemistry	10x	8,0 ±0,05	1000 ml/pouch	**1247.1**	10 pouches	671,90
Roti®fair TBST 7.6	Tris Buffered Saline/Tween	General solution for assays in molecular biology and biochemistry	1x	7,6 ±0,05	500 ml/tablet	**1248.1**	10 tablets	70,85
						1248.2	100 tablets	346,70
Roti®fair 10x TE	Tris EDTA buffer	Buffer solution for solubilisation and dilution of nucleic acids	10x	7,4 ±0,05	1000 ml/pouch	**1268.1**	10 pouches	221,35
Roti®fair 1M Tris 7.4	Tris solution	General solution for assays in molecular biology and biochemistry	1 M	7,4 ±0,05	1000 ml/pouch	**1251.1**	10 pouches	390,80
Roti®fair 1M Tris 8.0	Tris solution	General solution for assays in molecular biology and biochemistry	1 M	8,0 ±0,05	1000 ml/pouch	**1260.1**	10 pouches	390,80
Roti®fair 1M Tris 8.3	Tris solution	General solution for assays in molecular biology and biochemistry	1 M	8,3 ±0,05	1000 ml/pouch	**1261.1**	10 pouches	390,80

For additional product data and safety information, see chapter Chemicals A-Z.

Good's Buffer Reagents for Application in Molecular Biology

In order to compensate for the low Tris buffering capacity at pH levels below 7,5, Good and colleagues 1966 developed a new reagent group as a buffer for this range: N-substituted amino sulphonic acids[1]. Amino sulphonic acids behave like strong hybrid ions at physiological pH levels (approx. 7,0) and facilitate a large spectrum of molecular biological processes by virtue of their high buffering capacity.
The group of 'Good's buffers' also includes sulphonic acids and reagents such as bicine, tricine and AMP with higher pK_a values, thus providing buffer substances for the entire pH range between 5,5 and 11.

[1]Good *et al.* (1966) *Biochemistry* 5:467-477.

Product	Buffer Reagent	pK_a (at 25 °C)	pH Range	Purity	Art. No.	Pack Qty	€
ACES	N-(2-Acetamido)-2-aminoethanesulphonic acid	6,78	6,1-7,5	≥99 %	**9138.1**	10 g	21,40
					9138.2	100 g	160,20
AMP	2-Amino-2-methyl-1-propanol	6,69	8,7-10,4	≥90 %	**3121.1**	250 ml	37,55
AMPSO	3-N-(α,α-Dimethyl-hydroxyethyl)-amino-2-hydroxypropane sulphonic acid	9,00	8,3-9,7	≥98 %	**7159.1**	25 g	48,95
					7159.2	100 g	155,80
BES	N,N-Bis-(2-hydroxyethyl)-2-aminoethane sulphonic acid	7,09	6,4-7,8	≥99 %	**9134.1**	25 g	23,55
					9134.2	100 g	64,40
					9134.3	250 g	139,65
					9134.4	500 g	224,70
BICINE	N,N-Bis-(2-hydroxyethyl)-glycine	8,26	7,6-9,0	≥99 %	**9162.1**	50 g	39,70
					9162.2	250 g	127,95
					9162.3	500 g	182,65
CAPS	Cyclohexylamino propanesulphonic acid	10,40	9,7-11,1	≥99 %	**9168.1**	25 g	19,25
					9168.3	100 g	50,00
					9168.2	250 g	114,95
CAPSO	3-N-Cyclohexylamino-2-hydroxypropane sulphonic acid	9,60	8,9-10,3	≥98 %	**5584.3**	25 g	30,00
					5584.1	100 g	89,15
					5584.2	500 g	327,90
CHES	2-(Cyclohexylamino)-ethanesulphonic acid	9,50	8,6-10,0	≥99 %	**9166.1**	10 g	14,20
					9166.3	25 g	23,15
					9166.2	100 g	64,00
DIPSO	3-N-Bis(hydroxyethyl)-amino-2-hydroxypropane sulphonic acid	7,52	7,0-8,2	≥98 %	**7151.1**	25 g	72,60
HEPES	N-2-Hydroxyethyl piperazine-N'-2-ethane sulphonic acid, Good's buffer	7,48	6,8-8,2	≥99,5 %, BioScience-Grade	**6763.1**	100 g	36,45
					6763.2	500 g	141,40
					6763.3	1 kg	233,85
MES	2-(N-Morpholino)-ethane sulphonic acid	6,10	5,5-6,7	≥99 %	**4256.2**	100 g	64,40
					4256.5	250 g	140,75
					4256.3	500 g	267,70
					4256.4	1 kg	461,20
MOPS	3-(N-Morpholino) propane sulphonic acid	7,14	6,5-7,9	≥99,5 %	**6979.2**	250 g	76,25
					6979.4	500 g	131,70
					6979.3	1 kg	252,10
					6979.5	2,5 kg	532,15
MOPSO	3-(N-Morpholino)-2-hydroxypropane sulphonic acid	6,87	6,2-7,6	≥99 %	**7117.1**	25 g	32,15
					7117.2	100 g	97,75
					7117.3	1 kg	719,20
PIPES	Piperazine-N,N'-bis-(2-ethanesulphonic acid)	6,76	6,1-7,5	≥99 %	**9156.1**	25 g	19,90
					9156.2	100 g	56,90
					9156.3	250 g	125,25
					9156.4	500 g	212,35
POPSO	Piperazine-N,N'-bis(2-hydroxypropane sulphonic acid)	7,78	7,2-8,5	≥99 %	**6632.1**	25 g	39,70
					6632.2	100 g	124,60
TAPS	N-Tris(hydroxymethyl)-methyl-3-amino-propane sulphonic acid	8,40	7,7-9,1	≥99 %	**6982.1**	10 g	13,90
					6982.2	100 g	44,00
					6982.3	250 g	88,70
					6982.4	500 g	156,45
TAPSO	3-N-Tris(hydroxymethyl)-methylamino-2-hydroxypropanesulphonic acid	7,61	7,0-8,2	≥99 %	**6628.1**	25 g	31,10
					6628.2	100 g	89,15
TES	N-[Tris-(hydroxymethyl)-methyl]-2-aminoethane sulphonic acid	7,40	6,8-8,2	≥99 %	**9137.1**	10 g	27,45
					9137.2	100 g	142,90
					9137.3	500 g	289,20
TRICINE	N-Tris-(hydroxymethyl)-methyl-glycine	8,05	7,4-8,8	≥99 %	**6977.1**	50 g	27,85
					6977.4	250 g	109,55
					6977.2	500 g	209,65
					6977.3	1 kg	317,15
					6977.5	2,5 kg	639,65

For additional product data and safety information, see chapter Chemicals A-Z.

Tris Buffers

Tris (hydroxymethyl) aminomethane (or 'Tris' for short) was first described[1] in 1897 and then proposed as a pH-stabilising reagent for biological systems[2] in 1946. On account of its high water solubility, its very large buffering capacity and the fact that it behaves inertly in a large number of enzymatic reactions, it has been used for many years as a base reagent for standard buffers in all fields of molecular biology.

[1]Piloty *et* Ruff (1897) *Proc. Soc. Exp. Biol. Med.* 6:233-234.

[2]Gomori (1946) *Ber. Dtsch. Chem. Ges.* 30:1656-1665.

In addition to the original, alkaline Tris, the pre-buffered Tris hydrochloride (Tris-HCl) is also available today. 1 M Tris buffer can be manufactured directly with a defined pH buffering range through skilful mixing of Tris (alkaline) and Tris-HCl. The following table specifies the mixing ratio for each Tris.

Please note: the pH buffered by the Tris mixture depends heavily on the temperature. The values found is the literature always refer to a temperature of 25 °C (unless specified otherwise).

Product	Buffer Reagent	pK_a (at 25 °C)	pH Range	Purity	Art. No.	Pack Qty	€
BIS-TRIS	Bis-(2-hydroxyethyl)imino-tris-(hydroxymethyl)-methane	6,46	5,8-7,2	≥99 %	**9140.1**	50 g	53,65
					9140.2	250 g	213,95
					9140.3	500 g	357,45
BIS-TRIS-Propane	1,3-Bis[tris(hydroxymethyl)-methylamino]-propane	6,80	6,3-9,5	≥98 %	**6999.1**	25 g	60,10
					6999.2	100 g	213,95
Roti®fair 1M Tris 7.4	Tris powder (pouch)	8,06	7,5-9,0	for 1000 ml/pouch, for biochemistry and molecular biology	**1251.1**	10 pouches	390,80
Roti®fair 1M Tris 8.0	Tris powder (pouch)	8,06	7,5-9,0	for 1000 ml/pouch, for biochemistry and molecular biology	**1260.1**	10 pouches	390,80
Roti®fair 1M Tris 8.3	Tris powder (pouch)	8,06	7,5-9,0	for 1000 ml/pouch, for biochemistry and molecular biology	**1261.1**	10 pouches	390,80
TRIS	Tris(hydroxymethyl)-aminomethane	8,06	7,5-9,0	≥99,9 %, p.a.	**4855.1**	500 g	51,50
					4855.2	1 kg	92,35
					4855.5	2,5 kg	190,85
					4855.3	5 kg	381,65
					4855.4	10 kg	725,65
TRIS hydrochloride	Tris(hydroxymethyl)aminomethane hydrochloride, Tris-HCl	8,06	7,5-9,0	≥99 %, p.a.	**9090.1**	50 g	14,55
					9090.2	500 g	90,85
					9090.3	1 kg	134,40
					9090.5	2,5 kg	282,20
					9090.4	5 kg	536,45

For additional product data and safety information, see chapter Chemicals A-Z.

Please note our **Technical Information Brochure** on the Internet next to the products:

Biological Buffers

Roti®-Stock 100x TE

ready-to-use S

BioScience-Grade, ready-to-use, steam sterilised

For molecular biology.

TE 100x ready-to-use solution

Warning H315-H319

100fold stock solution Tris/EDTA. The most popular solution and storage buffer for DNA can be obtained by diluting 1:100 with sterile water. The accompanying EDTA inhibits traces of DNAses and therefore protects your valuable nucleic acids from degradation. However, many other enyzmes such as ligases will also be inhibited through the complexation of bivalent cations, therefore TE-buffer should not be used as a solution buffer for cloning.
With original seal.

Composition:

1 M Tris (pH 8,0), 100 mM EDTA (pH 8,0) in deionised water, steam sterilised

1052.1	1 l	glass	84,85 €
Original pack 6 x 1 l			80,61/1 l

Roti®fair 10x TE

for 1000 ml/pouch, for molecular biology

Concentrated buffer solution for solubilisation and dilution of nucleic acids.

TE buffer powder (pouch), Tris EDTA

Warning H315-H319-H335-H373

Exactly pre-weighed pouches for convenient and rapid preparation of TE solution.
Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving.
For long-term storage, buffer solution should be kept at +4 °C.
1x TE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Formulation:

Prepared 10x TE solution contains: 0,1 M Tris-HCl, 10 mM EDTA, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1268.1	10 pouches	box	221,35 €

Roti®-Stock 20 % SDS

BioScience-Grade, ready-to-use, 0,2 µm filtered

For molecular biology and electrophoresis.

SDS 20 % ready-to-use solution

Danger H318-H315-H335

20 % stock solution sodium dodecyl sulphate. Store the solution away from light in a dry place. SDS-stock solution and other solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.
With original seal.

Composition:

20 % SDS in deionised water, 0,2 µm filtered

1057.1	1 l	glass	143,55 €
Original pack 6 x 1 l			136,37/1 l

Water

ready-to-use | S | RNAse-/DNAse-free

BioScience Grade, nuclease-free, steam sterilised, DEPC treated water

For molecular biology.

H_2O

M 18,02 g/mol

Distilled water mixed with DEPC and steam sterilised. By DEPC Histidin residues in proteins are modified to N-carbethoxy histidin, resulting in inhibition of RNases and DNases. DEPC decomposes to CO_2 and ethanol during sterilisation.
Also available as 50 reaction tubes or as 50 glass ampoules with 1 ml each nuclease free water in a tube rack.
After autoclaving, each lot is photometrically tested for optimal purity in the wave length range relevant for nucleic acid research.

T143.1	250 ml	glass	26,80 €
T143.2	500 ml	glass	31,10 €
T143.3	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
T143.4	50 x 1 ml	plastic	94,50 €
T143.6	50 x 1 ml	glass ampoule TIP	107,40 €
T143.5	5 x 20 ml	glass	21,40 €

Further Reagents for DNA/RNA Analysis

Product	Purity	Art. No.	Pack Qty	€
DAPI	≥98 %, p.a.	**6335.1**	25 mg	92,35
		6335.2	100 mg	260,05
DEPC	≥97 %, for biochemistry and molecular biology	**K028.3**	5 ml	22,05
		K028.1	25 ml	66,55
		K028.2	100 ml	193,40
1,4-Dithioerythritol	≥99 %, p.a.	**8814.1**	5 g	65,50
		8814.3	10 g	110,20
		8814.2	25 g	243,50
1,4-Dithiothreitol	≥99 %, p.a.	**6908.1**	5 g	59,05
		6908.3	10 g	88,70
		6908.2	25 g	209,65
		6908.4	100 g	622,45
Ethidium bromide	≥98 %	**7870.1**	1 g	23,55
		7870.2	5 g	94,10
Ethidium bromide solution 0.025 %	aqueous solution (250 µg/ml)	**HP47.1**	15 ml	30,65
		HP47.2	5 x 15 ml	107,40
Ethidium bromide solution 0.5 %	aqueous solution (5 mg/ml)	**HP46.1**	15 ml	30,65
		HP46.2	5 x 15 ml	107,40
Ethidium bromide solution 1 %	1 % solution in water (10 mg/ml)	**2218.1**	10 ml	11,00
		2218.4	15 ml	31,10
		2218.2	30 ml	23,15
		2218.3	100 ml	55,80
Ethylenediamine tetraacetic acid disodium salt dihydrate	≥99 %, p.a., ACS	**8043.3**	100 g	22,05
		8043.1	250 g	35,40
		8043.2	1 kg	103,75
		8043.4	5 kg	375,20
		8043.5	25 kg	858,95
Glycerol (anhydrous)	≥99,5 %, p.a., anhydrous	**3783.3**	1 l	57,95
		3783.1	1 l	53,65
		3783.4	2,5 l	102,05
		3783.2	2,5 l	97,75
β-Mercaptoethanol	≥99 %, p.a.	**4227.3**	100 ml	14,95
		4227.1	250 ml	21,00
		4227.2	1 l	47,85
Propidiumiodide	≥95 %, p.a.	**CN74.1**	25 mg	69,80
		CN74.2	50 mg	122,05
		CN74.3	100 mg	217,70
SDS, ultra pure	≥99 %, for electrophoresis	**2326.1**	100 g	40,75
		2326.4	250 g	86,55
		2326.2	500 g	155,90
		2326.3	500 g (in 2,5 l glass bottle for prep. of a 20 % sol.)	163,30
		2326.5	1 kg	267,70
Tris-(2-carboxyethyl) phosphine-hydrochloride	≥98 %, for biochemistry	**HN95.1**	1 g	53,25
		HN95.2	5 g	171,90
Tween® 20	Ph.Eur.	**9127.1**	250 g	21,00
		9127.2	1 kg	53,65
		9127.3	2,5 kg	93,00

For additional product data and safety information, see chapter Chemicals A-Z.

Decontamination & Purification

Roti® Nucleic Acid-free ready-to-use

ready-to-use solution for removal of nucleic acid contaminations from surfaces

Warning H315-H319

Roti®-Nucleic Acid-free was specifically designed for extensive removal of nucleic acid contaminations. Being a mild reagent, Roti®-Nucleic Acid-free may be used on tables, laboratory devices, as well as on glass and plastic wares. By incubation or by wiping, laboratory benches, heating blocks, thermocyclers, pipettor shafts, reaction tubes a.s.o. can easily be cleaned. Contamination with foreign DNA or RNA, which may heavily interfere with sensitive assays like PCR, reverse transcription or sequencing, is hence efficiently eliminated.

HP69.1	500 ml	spray bottle	TIP	71,95 €
HP69.2	1 l	plastic		96,25 €
Original pack 6 x 1 l				91,44/1 l
HP69.3	2,5 l	plastic		213,95 €
Original pack 4 x 2,5 l				203,25/2,5 l

Roti® Nucleic Acid-free eXtra ready-to-use

ready-to-use

Gentle solution for removal of nucleic acid contaminations from surfaces.

Roti®-Nucleic Acid-free eXtra is a very gently and highly efficient solution that has been designed as nonhazardous alternative to our top-selling Roti®-Nucleic Acid-free.
The ready-to-use solution or spray may be used for fast elimination of all kinds of contaminating nucleic acids (e.g. gDNA, amplicons, plasmids, RNA) from surfaces without the need to handle dangerous liquids. By incubation or by wiping, laboratory benches, heating blocks, thermal cyclers, pipettor shafts, reaction tubes etc. can easily be cleaned.
Roti®-Nucleic Acid-free eXtra is suitable for use on a broad variety of materials for instance glass, ceramic, plastic, rubber, steel and precious metal, with the exception of light or non-ferrous metals. Contamination with foreign DNA or RNA, which may heavily interfere with sensitive assays like PCR, reverse transcription or sequencing, is hence efficiently eliminated.

1312.1	500 ml	plastic		68,70 €
1312.2	1 l	plastic		103,10 €
Original pack 6 x 1 l				97,95/1 l
1312.3	2,5 l	plastic		235,45 €
Original pack 4 x 2,5 l				223,68/2,5 l
1312.4	500 ml	spray bottle	TIP	71,95 €

DNA AWAY® ready-to-use

ready-to-use solution for removal of DNA-contaminations

Danger H314

Suitable for PCR-applications. DNA AWAY® enables speedy and safe removal of DNA-contaminations, e.g. to prevent false-positive PCR results. For decontamination of surfaces as well as of lab ware like pipettors, thermocyclers, and reaction tubes.

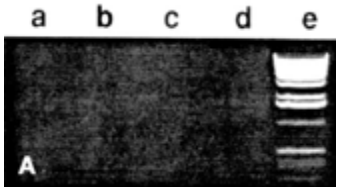


Figure A: Full removal of DNA surface contaminations after 5 minutes (1 µg dried DNA each, a-d).

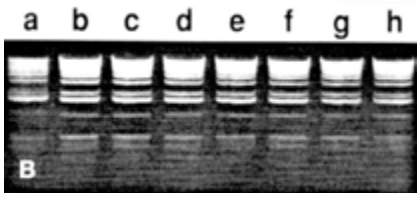


Figure B: No removal of solubilised DNA - for protection of your sample-DNA (1 µg DNA each, 5 minutes incubation).

X996.1	250 ml	plastic	42,50 €
X996.2	4 l	plastic	222,45 €

DEPC

≥97 %, for biochemistry and molecular biology

Diethyl pyrocarbonate, Pyrocarbonic acid diethyl ester, Dicarbonic acid diethyl ester.

$C_6H_{10}O_5$

M 162,14 g/mol

Storage temp.: +4 °C

Warning H302+H332-H315-H319-H335

Histidin residues in proteins are modified to N-carbethoxy histidin, resulting in inhibition of RNases and DNases. DEPC decomposes to CO_2 and ethanol during steam sterilisation.
Application: 0,1 % DEPC over night under agitation. Autoclave.

K028.3	5 ml	glass	22,05 €
K028.1	25 ml	glass	66,55 €

Instructions for use
can be found on the Internet next to the product description.

RNase AWAY® ready-to-use

ready-to-use solution for removal of RNAse-contaminations from surfaces

Danger H314

Quick and safe removal of RNases from labware made of plastic or glass, e.g. pipettes, gel chambers, glass discs, etc.
A safe alternative to DEPC. Reduces the use of carcinogenic DEPC in the laboratory considerably. RNase AWAY® does not corrode the surface and is not carcinogenic. Creates and preserves RNase-free surfaces. No mixing, baking or time-consuming waiting. RNase AWAY® is chemically stable and requires no special storing.

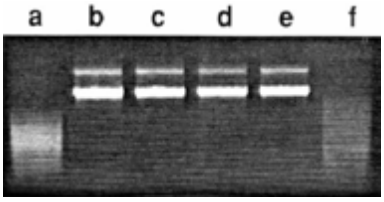


Figure: RNase-digestion of RNA (a, f), and removal of RNase by RNase AWAY® (d-e: undamaged RNA, 1µg poly(A)-RNA each).

Apply RNase AWAY® directly to surface, allow to work in, then rinse with water or dry with an RNase-free tissue cloth. For effective removing of RNases without influencing your DNA samples.

A998.1	250 ml	plastic		50,45 €
A998.4	475 ml	spray bottle	TIP	77,30 €
A998.2	1 l	plastic		104,20 €
Original pack 6 x 1 l				98,99/1 l
A998.3	4 l	plastic		193,40 €

Thermal Cyclers

licenced

Thermal Cycler ³PRIME

Compact, easy-to-handle thermal cyclers for each work bench. Made by TECHNE.

- Licensed for PCR
- New, upgraded generation
- Fast heating and cooling rates
- High temperature homogeneity
- Simple, intuitive programming
- 3,5˝ colour touch screen
- USB port
- Cost-efficient
- 4 years warranty on cyclers and blocks

New generation of reliable, inexpensive thermal cyclers specially developed for use on the individual bench, for student's courses and schools.

In order to enable very rapid heating and cooling rates at extremely low temperature variations in the block, an advanced block algorithm has been implemented, regulating the modern Peltier technology. The mono-tube blocks were specially designed to provide optimal contact between the PCR-vials and the block bore hole and are cut, with the most modern of technologies, out of high-grade material. In most ³PRIME instruments, the heated lid can be adjusted to the height of the PCR-vials, thus optimising the temperature and volume constancy in the sample. Intuitive programming and the newly designed colour touch screen with very easy handling, enable both simple as well as complex cycle protocols to be entered very easily and quickly. All thermal cycler models have 1000 program slots available. With Gradient Thermal Cycler a temperature gradient may be added freely to every temperature step of the program. Further data may be found online in our detailed product instruction manual or by calling one of our staff on the service hotline.

Purchase of this instrument conveys a limited non-transferable immunity from suit for the purchaser's own internal research and development and applied fields other than human *in vitro* diagnostics under non-real-time thermal cycler patents of Applied Biosystems LLC.

Technical Data:

Type	Personal Cycler ³PRIME	Standard Cycler ³PRIMEX	Gradient Cycler ³PRIMEG
Sample capacity	24 x 0,2 ml or 18 x 0,5 ml	48 x 0,2 ml or 30 x 0,5 ml	48 x 0,2 ml or 30 x 0,5 ml
Block temperature	4 - 100 °C		
Block uniformity at 55 °C	below ±0,3 °C		
Temperature accuracy at 55 °C	below ±0,2 °C		
Max. heating rate	3,0 °C/sec		
Max. cooling rate	2,1 °C/sec		
Peltier elements per block	2	4	4
Selectable lid temperature	35 °C - 115 °C (disengageable)		
Heated lid pressure	no	yes	4
Lid adjustable to tubes with	flat lid	flat and domed lids	flat and domed lids
Tubes	single tubes and strips		
PCR plates	no	48well plates*	48well plates*
Max. number of programs	1000		
Max. number of steps per program	10 stages with 10 steps each		
Max. repetition of cycles	99		
"Hold" time	1 sec - 4 h/59 min/59 sec		
Increment/Decrement function	yes (temperature and time)		
Ramp resolution	0,1 °C/sec		
Gradient temperature range	-	-	30 - 80 °C
Max. gradient range	-	-	14 °C
Min. gradient range	-	-	1 °C
Gradient calculator	-	-	yes
Oligonucleotide T_m calculator	yes (Nearest Neighbour method)		
Display	3,5˝ colour touch screen		
Auto-restart function	yes (disengageable)		
Data transfer	USB port		
Password protection	yes		
Warranty	4 years or 80,000 cycles		
Dimensions in cm (L x W x H)	35 x 21 x 18		
Weight (kg)	6		
Voltage	100-230 V, 50-60 Hz		
Power (W)	155		

*Heating block for 48 x 0,2 ml tubes only

Thermal Cycler ³PRIME (Personal)

With heating block	Art. No.	Pack Qty	€
For 24 x 0,2 ml tubes	**4834.1**	1	2749,85
For 18 x 0,5 ml tubes	**4835.1**	1	2749,85

Thermal Cycler ³PRIMEX (Standard)

With heating block	Art. No.	Pack Qty	€
For 48 x 0,2 ml tubes	**4837.1**	1	3574,40
For 30 x 0,5 ml tubes	**4838.1**	1	3574,40

Thermal Cycler ³PRIMEG (Gradient)

With heating block	Art. No.	Pack Qty	€
For 48 x 0,2 ml tubes	**4847.1**	1	4013,00
For 30 x 0,5 ml tubes	**4848.1**	1	4013,00

licenced

Thermal Cycler PRIME

Versatile, easy-to-handle thermal cyclers for each laboratory. Made by TECHNE.

- Licensed for PCR
- New, upgraded generation
- Fast heating and cooling rates
- High temperature homogeneity
- Simple, intuitive programming
- 5,7″ colour touch screen
- 8 Peltier elements per block
- USB port
- Cost-efficient
- 4 years warranty on cyclers and blocks

New generation of versatile, inexpensive thermal cyclers for use in the laboratory.

In order to enable very rapid heating and cooling rates at extremely low temperature variations in the block, an advanced block algorithm has been implemented, regulating the modern Peltier technology. The mono-tube blocks were specially designed to provide optimal contact between the PCR-vials and can be exchanged in a matter of seconds without the need of tools. The heated lid can be adjusted to the height of the PCR-vials, thus optimising the temperature and volume constancy in the sample. The modern, intuitive programming, and the newly designed colour touch screen with very easy handling, enable both simple as well as complex cycle protocols to be entered very easily and quickly. All thermal cycler models have 1000 program slots available. With Thermal Cycler Gradient a temperature gradient may be added freely to every temperature step of the program. Further data may be found online in our detailed product instruction manual or by calling one of our staff on the service hotline.

Purchase of this instrument conveys a limited non-transferable immunity from suit for the purchaser's own internal research and development and applied fields other than human *in vitro* diagnostics under non-real-time thermal cycler patents of Applied Biosystems LLC.

Technical Data:

Type	Standard Cycler PRIME	Gradient Cycler PRIMEG
Sample capacity	96 x 0,2 ml or 60 x 0,5 ml or 33 x 0,2 ml plus 33 x 0,5 ml	
Block temperature	4 - 100 °C	
Block uniformity at 55 °C	below ±0,3 °C	
Temperature accuracy at 55 °C	below ±0,25 °C	
Max. heating rate	3,4 °C/sec	
Max. cooling rate	1,0 °C/sec	
Peltier elements per block	8	
Selectable lid temperature	35 °C - 115 °C (disengeable)	
Heated lid pressure	yes	
Lid adjustable to tubes with	flat and domed lids	
Tubes	single tubes and strips	
PCR plates	96well and 384well plates	
Max. number of programs	1000	
Max. number of steps per program	10 stages with 10 steps each	
Max. repetition of cycles	99	
"Hold" time	1 sec - 4 h/59 min/59 sec	
Increment/Decrement function	yes (temperature and time)	
Ramp resolution	0,1 °C/sec	
Gradient temperature range	-	30 - 80 °C
Max. gradient range	-	29 °C (19 °C with 384wells)
Min. gradient range	-	1 °C
Gradient calculator	-	yes
Oligonucleotide T_m calculator	yes (Nearest Neighbour method)	
Display	5,7″ color touch screen	
Auto-restart function	yes (disengeable)	
Data transfer	USB port	
Password protection	yes	
Warranty	4 years or 80 000 cycles	
Dimensions in cm (L x W x H)	42 x 24 x 24	
Weight (kg)	9,4	
Voltage	100-230 V, 50-60 Hz	
Power (W)	425	

Thermal Cycler PRIME (Standard)

With heating block	Art. No.	Pack Qty	€
For 96 x 0,2 ml tubes and 96well plates	**4852.1**	1	3644,25
For 60 x 0,5 ml tubes	**4853.1**	1	3644,25
For 384well plates	**4854.1**	1	3644,25
Combi-block for 33 x 0,2 ml and 33 x 0,5 ml tubes	**0253.1**	1	3644,25

Thermal Cycler PRIMEG (Gradient)

With heating block	Art. No.	Pack Qty	€
For 96 x 0,2 ml tubes and 96well plates	**4863.1**	1	4186,05
For 60 x 0,5 ml tubes	**4864.1**	1	4186,05
For 384well plates	**4865.1**	1	4186,05
Combi-block for 33 x 0,2 ml and 33 x 0,5 ml tubes	**0257.1**	1	4139,85

Instructions for use
can be found on the Internet next to the product description.

Roti®-Pol DNA Polymerases

For PCR. Recombinant, heat stable DNA polymerases from the thermophilic bacteria *Thermus aquaticus* or *Pyrococcus furiosus*.

Roti®-Pol, the new series of DNA polymerases is the optimal choice for all PCR cycling protocols, as being performed in, for instance, analysis of cloning efficiency, for gene fishing, in routine screening processes, educational assays and much more. In combination with our specially designed buffers, the Roti®-Pol DNA polymerases deliver specific and reproducible PCR amplification with a wide range of PCR templates.

In addition to the **standard** Taq polymerase for PCR assays in general, the range also includes the antibody blocked **hot-start** version of the enzyme, which is recommended for particularly sequence specific approaches. This inhibited Taq polymerase is getting active only after the initial denaturation step, resulting in amplification of the target sequence without production of unwanted side products. Both Taq polymerases are available as **set of enzyme and buffer solutions** as well as premixed, 2x concentrated **master mixes**. The sets contain the DNA polymerase plus two 10x concentrated reaction buffers with $MgCl_2$, one of which has been specially designed for direct gel loading following the PCR reaction. Besides the DNA polymerase, the master mixes include dNTPs, $MgCl_2$, and all other components required for PCR except primers and template DNA, and are available in a colourless version for PCR only, plus a red ready-to-load version for subsequent direct gel electrophoresis.

With the **TaqHY** DNA polymerase we provide a modified Taq polymerase outstanding in robust performance, fast polymerisation rate and high yield of amplicons. Combining the benefits of both techniques, the **Hot-TaqHY** DNA polymerase has been designed by increasing the PCR sequence specificity of a quick and high yield modified Taq polymerase by antibody mediated inhibition.

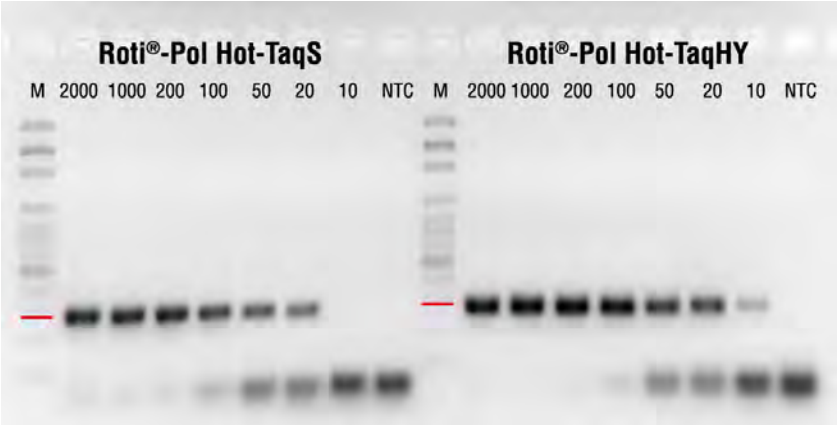
In combination with the attached specially adjusted high fidelity buffer, the **ProofRead** polymerase delivers highly sequence-true PCR amplicons and is recommended for amplification of target sequences of high GC content, or with complex secondary structures.

All **TaqUltra** DNA polymerase are being tested on absence of DNA (bacterial genomic DNA) which makes them particularly suitable for amplification of bacterial DNA. This polymerase is also available in standard version as well as the hot-start type **Hot-TaqUltra**.

Contents

Product	Polymerase	Master mix (2x)	Reaction buffer	Art.-No.
Roti®-Pol TaqS	Standard Taq polymerase	-	colourless + red (ready to load)	9223
Roti®-Pol TaqS Mix (2x)	Standard Taq polymerase	colourless	-	9239
Roti®-Pol TaqS Red-Mix (2x)	Standard Taq polymerase	red (ready to load)	-	9241
Roti®-Pol Hot-TaqS	Hot start Taq polymerase	-	colourless + red (ready to load)	9245
Roti®-Pol Hot-TaqS Mix (2x)	Hot start Taq polymerase	colourless	-	9248
Roti®-Pol Hot-TaqS Red-Mix (2x)	Hot start Taq polymerase	red (ready to load)	-	9256
Roti®-Pol TaqHY	High yield / high performance Taq polymerase	-	colourless + red (ready to load)	9345
Roti®-Pol Hot-TaqHY	High yield / high performance hot-start Taq polymerase	-	colourless + red (ready to load)	9346
Roti®-Pol ProofRead	Proof reading / high fidelity Pfu polymerase	-	ProofRead	9344
Roti®-Pol TaqUltra	DNA free, ultra pure Taq polymerase	-	-	9347
Roti®-Pol Hot-TaqUltra	DNA free, ultra pure hot start Taq polymerase	-	-	9350

Figure:
Sensitivity assay using Roti®-Pol Hot-TaqS and Hot-TaqHY, 1 U/reaction each (20 µl). 300 bp β-Actin fragment, 40 cycles. Template: 10 to 2000 pg human gDNA. Gel loading 10 µl each. M: 100 bp-DNA Ladder extended. NTC: no template control.



Roti®-Pol DNA polymerases are able to amplify PCR products up to 5 kb with genomic, viral, cDNA and plasmid DNA as template. The Taq DNA polymerases possess a 5' → 3' polymerase- as well as a 5'-flap endonuclease activity, generating amplicons with a 3'dA (adenine)-overhang which may well be used for TA-cloning purposes. In addition to the 5' → 3' polymerase activity, the Pfu DNA polymerase possesses a 3' → 5' (proof reading) exonuclease activity, rapidly substituting misincorporated bases during polymerization. These DNA fragments are blunt-ended.

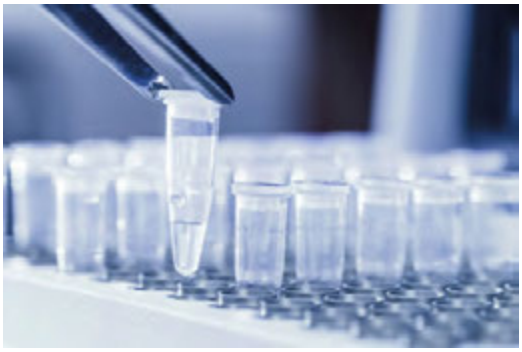
For easy handling, all solutions are filled in tubes with **colour coded lids**. The red dye for direct gel loading, included in buffers and master mixes, migrates approx. as fast as a 1 kb DNA fragment in 1 % agarose gels.

Product	Purity	Application	Amplicon Ends	Art. No.	Pack Qty.	€
Roti®-Pol TaqSRoti®-Pol TaqS	5 U/µl	Standard PCR	3'dA	**9223.1**	500 U	62,25
				9223.2	2500 U	295,65
Roti®-Pol TaqS Mix (2x)	ready-to-use, 2x conc.	Standard PCR	3'dA	**9239.1**	2,5 ml	44,00
				9239.2	12,5 ml	177,40
Roti®-Pol TaqS Red-Mix (2x)	ready-to-use, 2x conc.	Standard PCR with subsequent gel loading	3'dA	**9241.1**	2,5 ml	48,30
				9241.2	12,5 ml	192,45
Roti®-Pol Hot-TaqS	5 U/µl	Particularly sequence specific standard PCR	3'dA	**9245.1**	200 U	62,25
				9245.2	1000 U	295,65
Roti®-Pol Hot-TaqS Mix (2x)	ready-to-use, 2x conc.	Particularly sequence specific standard PCR	3'dA	**9248.1**	2,5 ml	67,20
				9248.2	12,5 ml	310,70
Roti®-Pol Hot-TaqS Red-Mix (2x)	ready-to-use, 2x conc.	Particularly sequence specific standard PCR with subsequent gel loading	3'dA	**9256.1**	2,5 ml	69,80
				9256.2	12,5 ml	321,45
Roti®-Pol TaqHY	5 U/µl	Fast PCR protocols and/or high yield, GC rich template DNA	3'dA	**9345.1**	500 U	69,80
				9345.2	2500 U	321,45
Roti®-Pol Hot-TaqHY	5 U/µl	Particularly sequence specific, fast PCR protocols and/or high yield, GC rich template DNA	3'dA	**9346.1**	200 U	69,80
				9346.2	1000 U	321,45
Roti®-Pol ProofRead	5 U/µl	High fidelity PCR with exact sequence replication	blunt	**9344.1**	200 U	80,55
				9344.2	1000 U	375,20
Roti®-Pol TaqUltra	5 U/µl, DNA-free	PCR of bacterial gDNA	3'dA	**9347.1**	200 U	146,10
				9347.2	1000 U	719,20
Roti®-Pol Hot-TaqUltra	5 U/µl, DNA-free	Particularly sequence specific PCR of bacterial gDNA	3'dA	**9350.1**	200 U	155,90
				9350.2	1000 U	740,70

For research use only. Not approved for use in clinical or *in vitro* diagnostics.

Store at -20 °C • Transport temp.: cooled

Instructions for use
can be found on the Internet next to the product description.



Nucleotides

- Available as ready-to-use set or mix, for contamination-free applications
- Purity ≥98 % (HPLC-tested)
- Tested for “long-run-PCR“ of up to 30 kb
- DNAse-, RNAse-, Protease- and Phosphatase-free
- Free of PCR inhibitors like modified bases and tetra-pyrophosphate
- Adjusted to pH 8,5 for superior stability even during larger numbers of freeze-and-thaw cycles
- Also available adjusted to pH 7,0 for special applications (see below)
- Highly efficient enzymatic fabrication*

Applicable to
PCR, light-cycling, cDNA synthesis, labelling and primer-extension, mutagenesis-assays, sequencing reactions and *in vitro* transcription.

*of dATP, dGTP, dCTP and dUTP. dTTP ist synthesized chemically.

All Roth nucleotides are manufactured from highest-quality reagents and are most thoroughly tested for quality. This testing procedure not only includes standard-PCR (fig. 1) but also ‘longrange-PCR’ of up to 30 kb, repeated quantitative light-cycling reactions (fig. 2), and tests for physical stability (fig. 3).

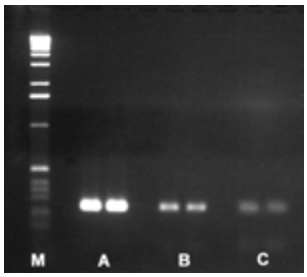


Fig. 1
Sensitivity assay I: Amplification of a 260 bp fragment of human genomic DNA with (left to right) 250 ng (A), 25 ng (B) and 2,5 ng (C) DNA as template (two replicates).

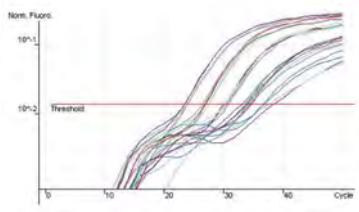


Fig. 2
Sensitivity assay II: Quantitative light-cycling-PCR on recombinant DNA with (left to right) 10 ng, 1 ng, 100 pg, 10 pg, 1 pg DNA as template (six replicates).

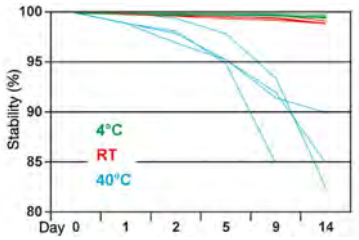


Fig. 3
Stability testing: HPLC analysis of all four dNTPs following incubation periodes of 1-14 days at different temperatures (4 °C - green; room temperature - red; 40 °C - blue). Stability of nucleotides is >99 % even after 14 days incubation at room temperature. Even after an incubation period of 9 days at 40 °C, 85 % of all nucleotide molecules are still intact.

dNTP Sets

Free of RNAses, DNAses Proteases, Phosphatases, PCR inhibitors

dNTP-Set 1
≥99 %, dATP, dTTP, dGTP, dCTP
dNTP-Set 1, composed of the nucleotide-single solutions: dATP, dTTP, dGTP, dCTP.
Concentration: 100 mM per dNTP.
Deoxynucleoside triphosphate set
Storage temp.: -20 °C • Transport temp.: cooled

K039.1	4 x 25 µmol (250 µl), 100 mM	102,05 €
K039.2	5 x 4 x 25 µmol (250 µl), 100 mM	421,95 €

dNTP-Set 1 (pH 7)
≥99 %, dATP, dTTP, dGTP, dCTP
dNTP-Set 1 (pH 7), composed of the nucleotide-single solutions: dATP, dTTP, dGTP, dCTP.
Concentration: 100 mM per dNTP, **pH 7,0 ±0,1**
Deoxynucleoside triphosphate set
Storage temp.: -20 °C • Transport temp.: cooled

0178.1	4 x 25 µmol (250 µl), 100 mM	102,05 €
0178.2	5 x 4 x 25 µmol (250 µl), 100 mM	421,95 €

dNTP-Set 2
≥99 %, dATP, dUTP, dGTP, dCTP
dNTP-Set 2, composed of the nucleotide-single solutions: dATP, dUTP, dGTP, dCTP.
Concentration: 100 mM per dNTP.
Deoxynucleoside triphosphate set
Storage temp.: -20 °C • Transport temp.: cooled

L540.1	4 x 25 µmol (250 µl), 100 mM	102,05 €
L540.2	5 x 4 x 25 µmol (250 µl), 100 mM	424,65 €

dNTP-Set 3
≥99 %, dATP, dTTP, dITP, dCTP
dNTP-Set 3, composed of the nucleotide-single solutions: dATP, dTTP, dITP, dCTP.
Concentration: 100 mM per dNTP.
Deoxynucleoside triphosphate set
Storage temp.: -20 °C • Transport temp.: cooled

P731.1	4 x 25 µmol (250 µl), 100 mM	102,05 €
P731.2	5 x 4 x 25 µmol (250 µl), 100 mM	424,65 €

Valid for all nucleotides:
Storage temp.: -20 °C
Transport temp.: cooled

dNTP Mixes ready-to-use

Roti®-Mix PCR 1

2 mM (per dNTP) dATP, dTTP, dGTP, dCTP

Roti®-Mix PCR 1, nucleotide-mixture containing dATP, dTTP, dGTP, dCTP.
Concentration: 2 mM per dNTP.
Storage temp.: -20 °C • Transport temp.: cooled

L541.1	1 ml	plastic	24,65 €
L541.2	5 x 1 ml	plastic	96,65 €

Roti®-Mix PCR 2

2 mM (per dNTP) dATP, dUTP, dGTP, dCTP

Roti®-Mix PCR 2, nucleotide-mixture containing dATP, dUTP, dGTP, dCTP.
Concentration: 2 mM per dNTP.
Storage temp.: -20 °C • Transport temp.: cooled

L542.1	1 ml	plastic	24,65 €
L542.2	5 x 1 ml	plastic	96,65 €

Roti®-Mix PCR 3

10 mM (per dNTP) dATP, dTTP, dGTP, dCTP

Roti®-Mix PCR 3, nucleotide-mixture containing dATP, dTTP, dGTP, dCTP.
Concentration: 10 mM per dNTP.
Storage temp.: -20 °C • Transport temp.: cooled

L785.1	0,2 ml	plastic	24,65 €
L785.2	5 x 0,2 ml	plastic	96,65 €
L785.3	5 x 1 ml	plastic	396,70 €

Roti®-Mix PCR 3 (pH 7)

10 mM (pro dNTP) dATP, dTTP, dGTP, dCTP

Roti®-Mix PCR 3 (pH 7), nucleotide-mixture containing dATP, dTTP, dGTP, dCTP.
Concentration: 10 mM per dNTP, **pH 7,0 ±0,1**
Storage temp.: -20 °C • Transport temp.: cooled

0179.1	0,2 ml	plastic	24,65 €
0179.2	5 x 0,2 ml	plastic	96,65 €

Roti®-Mix PCR 4

10 mM (per dNTP) dATP, dUTP, dGTP, dCTP

Roti®-Mix PCR 4, nucleotide-mixture containing dATP, dUTP,dGTP, dCTP.
Concentration: 10 mM per dNTP.
Storage temp.: -20 °C • Transport temp.: cooled

L786.1	0,2 ml	plastic	24,65 €
L786.2	5 x 0,2 ml	plastic	96,65 €

dNTP Solutions

dATP solution

≥99 %, 100 mM solution

2'-Deoxyadenosine-5'-triphosphate
$C_{10}H_{13}N_5O_{12}P_3$
M 488,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{259} = 15,4 E x mmol^{-1} x cm^{-1}

K035.1	25 µmol (250 µl)	plastic	34,30 €

dCTP solution

≥99 %, 100 mM solution

2'-Deoxycytidine-5'-triphosphate
$C_9H_{13}N_3O_{13}P_3$
M 464,13 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{272} = 9,1 E x mmol^{-1} x cm^{-1}

K038.1	25 µmol (250 µl)	plastic	34,30 €

dGTP solution

≥99 %, 100 mM solution

2'-Deoxyguanosine-5'-triphosphate
$C_{10}H_{13}N_5O_{13}P_3$
M 504,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{252} = 13,7 E x mmol^{-1} x cm^{-1}

K037.1	25 µmol (250 µl)	plastic	34,30 €

dTTP solution

≥99 %, 100 mM solution

2'-Deoxythymidine-5'-triphosphate
$C_{10}H_{14}N_2O_{14}P_3$
M 479,14 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{267} = 9,6 E x mmol^{-1} x cm^{-1}

K036.1	25 µmol (250 µl)	plastic	34,30 €

dUTP solution

≥99 %, 100 mM solution

2'-Deoxyuridine-5'-triphosphate
$C_9H_{12}N_2O_{14}P_3$
M 465,12 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{262} = 10,2 E x mmol^{-1} x cm^{-1}

L539.1	25 µmol (250 µl)	plastic	34,30 €

dITP solution

≥99 %, 100 mM solution

2'-Deoxyinosine-5'-triphosphate
$C_{10}H_{12}N_4O_{13}P_3$
M 489,14 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{249} = 12,2 E x mmol^{-1} x cm^{-1}

P732.1	25 µmol (250 µl)	plastic	34,30 €

Parameters of Nucleotide Solutions

Nucleotides	Art. No.	pH value	Solvent
dNTP-Solution	K035-K038, L539, P732	8.5 ±0.1	Water
dNTP-Set	K039, L540, P731	8.5 ±0.1	Water
dNTP-Mix	L541, L542, L785, L786	8.5 ±0.1	Water
dNTP-Set or -Mix	0178, 0179	7.0 ±0.1	Water
NTP-Solution	K045-K048	8.0 ±0.2	20 mM Tris-HCl*
NTP-Set	K049	8.0 ±0.2	20 mM Tris-HCl*
ddNTP-Solution	K040-K043	8.0 ±0.2	Water
ddNTP-Set	K044	8.0 ±0.2	Water
Labelled Nucleotides	1047, 1048, 1049	7.5 ±0,2	Water

*For highly efficient Reverse Transcription

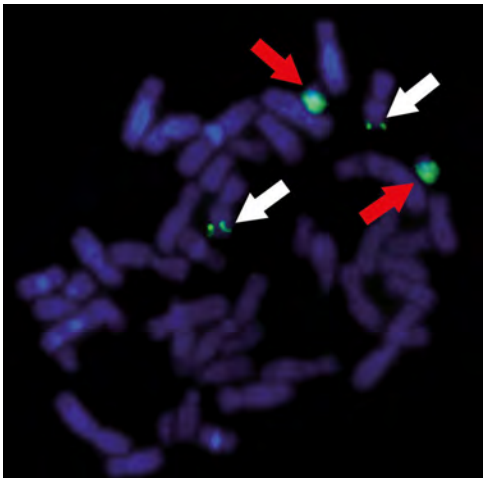


Figure:
Detection of chromosome wcp21q (whole chromosome paint, red arrows) and band 11q23 (BAC, bacterial artificial chromosome, white arrows) by FISH, labelling with fluorescein-12-dUTP.
With kind permission of PD Dr. Thomas Liehr, Institute of Human Genetics and Anthropology, Friedrich-Schiller University, Jena.

Labelled dNTPs

- Ultra pure
- Stabile
- pH 7.5
- Tested for the lack of endo- and exonucleases, ribonucleases, and phosphatases

Applications:
Non-radioactive labelling of DNA via enzymatic reactions like e.g. PCR, reverse transcription, nick-end-translation, end-labelling, or random-priming. Can be incorporated by all standard DNA-polymerases (Taq-polymerase, T4 DNA-polymerase, Klenow fragment and so on).

Biotin-11-dUTP

≥95 %, 1 mM solution

For non-radioactive, enzymatic labelling of DNA.

Biotin-aminocaproyl-[5-(3-aminoallyl)-2'-deoxyuridine-5'-triphosphate]

$C_{28}H_{42}N_6O_{17}P_3S$

M 859,65 g/mol

Storage temp.: -20 °C • Transport temp.: cooled

ε_{240} = 10.7 E x mmol^{-1} x cm^{-1}; ε_{289} = 7.1 E x mmol^{-1} x cm^{-1}; pH: 7.5 ±0.2

Biotin-11-dUTP is able to replace dTTP in growing DNA-strands and is used for efficient non-radioactive DNA-labelling. As a general rule, the labelled DNA is then detected using streptavidin-conjugates by colorimetric (e.g. streptavidin-AP) or fluorometric (e.g. fluorescein-streptavidin) assays. Biotin-11-dUTP can be used for double staining techniques in combination with rhodamine-12-dUTP or fluorescein-12-dUTP and corresponding antibodies.

1047.1	25 nmol (25 µl)	plastic	120,30 €
1047.2	50 nmol (50 µl)	plastic	202,00 €

Fluorescein-12-dUTP

≥95 %, 1 mM solution

For non-radioactive, enzymatic labelling of DNA.

Fluorescein-6-carboxyaminocaproyl-[5-(3-aminoallyl)-2'-deoxyuridine-5'-triphosphate]

$C_{39}H_{38}N_4O_{21}P_3$

M 991,66 g/mol

Storage temp.: -20 °C • Transport temp.: cooled

ε_{495} (pH 9) = 70.0 E x mmol^{-1} x cm^{-1}; pH: 7.5 ±0.2

Fluorescein-12-dUTP is able to replace dTTP in growing DNA-strands and is used for efficient non-radioactive DNA-labelling. Detection of labelled nucleic acids can be done by direct analysis of fluorescent signals (e.g. by fluorescence microscopy) or by incubation with AP-coupled anti-fluorescein antibodies.
Fluorescein-12-dUTP can also be used for double staining techniques in combination with rhodamine-12-dUTP or biotin-11-dUTP and corresponding antibodies or streptavidin-complexes, respectively.
Excitation: 494 nm
Emission: 520 nm

1048.1	25 nmol (25 µl)	plastic	185,45 €
1048.2	50 nmol (50 µl)	plastic	328,85 €

Rhodamine-12-dUTP

≥95 %, 1 mM solution

For non-radioactive, enzymatic labelling of DNA.

Rhodamine-6-carboxyaminocaproyl-[5-(3-aminoallyl)-2'-desoxyuridine-5'-triphosphate]

$C_{39}H_{41}N_6O_{19}P_3$

M 990,7 g/mol

Storage temp.: -20 °C • Transport temp.: cooled

ε_{505} (pH 7) = 8.5 E x mmol^{-1} x cm^{-1}; pH: 7.5 ±0.2

Rhodamine-12-dUTP is able to replace dTTP in growing DNA-strands and is used for efficient non-radioactive DNA-labelling. Detection of labelled nucleic acids can easily be done by direct analysis of fluorescent signals (e.g. by fluorescence microscopy).
Rhodamine-12-dUTP can also be used for double staining techniques in combination with fluorescein-12-dUTP or biotin-11-dUTP and corresponding antibodies or streptavidin-complexes, respectively.
Rhodamine Green, mixture of 5/6 isomeres
Excitation: 505 nm
Emission: 530 nm (red)

1049.1	25 nmol (25 µl)	plastic	188,70 €
1049.2	50 nmol (50 µl)	plastic	322,00 €

dNTP Lyophilisates

dATP

≥95 %, lyophilised
2'-Deoxyadenosine-5'-triphosphate tri-sodium salt
$C_{10}H_{13}N_5O_{12}P_3Na_3 \cdot 3\ H_2O$
M 611,17 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{259} = 15.4 E x mmol^{-1} x cm^{-1}

K050.1	10 mg	plastic	24,20 €
K050.2	100 mg	plastic	149,45 €

dCTP

≥95 %, lyophilised
2'-Deoxycytidine-5'-triphosphate tri-sodium salt
$C_9H_{13}N_3O_{13}P_3Na_3 \cdot 3\ H_2O$
M 587,14 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{272} = 9.1 E x mmol^{-1} x cm^{-1}

K053.1	10 mg	plastic	24,20 €
K053.2	100 mg	plastic	150,40 €

dGTP

≥95 %, lyophilised
2'-Deoxyguanosine-5'-triphosphate tri-sodium salt
$C_{10}H_{13}N_5O_{13}P_3Na_3 \cdot 3\ H_2O$
M 627,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{252} = 13.7 E x mmol^{-1} x cm^{-1}

K052.1	10 mg	plastic	24,20 €
K052.2	100 mg	plastic	150,00 €

dTTP

≥95 %, lyophilised
5'-Deoxythymidine-5'-triphosphate tri-sodium salt
$C_{10}H_{14}N_2O_{14}P_3Na_3 \cdot 3\ H_2O$
M 602,15 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{267} = 9.6 E x mmol^{-1} x cm^{-1}

K051.1	10 mg	plastic	23,55 €
K051.2	100 mg	plastic	150,40 €

Important information on refrigerated transports

All products identified as being particularly temperature-sensitive are shipped in **special ice boxes with freezer packs or in dry ice.**
Additional costs resulting from such, **will be invoiced** (further information on request).

Please note:
In order to guarantee optimum product quality, the dispatch of refrigerated transport products will be carried out **on Mon and Tue only outside Germany!**
Slight delays in delivery are therefore possible.

NTP Set

NTP-set

≥99 %, ATP, CTP, GTP, UTP
NTP-Set, consisting of the single nucleotide solutions: ATP, CTP, GTP, UTP.
Concentration: 100 mM per NTP.
Ribonucleoside triphosphate-set
Storage temp.: -20 °C • Transport temp.: cooled

K049.1	4 x 25 µmol (250 µl), 100 mM	plastic	133,20 €
K049.2	5 x 4 x 25 µmol (250 µl), 100 mM	plastic	439,70 €

NTP Solutions

ATP solution

≥99 %, 100 mM solution
Adenosine-5-triphosphate
$C_{10}H_{13}N_5O_{13}P_3$
M 504,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{259} = 15.4 E x mmol^{-1} x cm^{-1}

K045.1	25 µmol (250 µl)	plastic	42,50 €

CTP solution

≥99 %, 100 mM solution
Cytidine-5'-triphosphate
$C_9H_{13}N_3O_{14}P_3$
M 480,13 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{271} = 9.0 E x mmol^{-1} x cm^{-1}

K048.1	25 µmol (250 µl)	plastic	41,85 €

GTP solution

≥99 %, 100 mM solution
Guanosine-5'-triphosphate
$C_{10}H_{13}N_5O_{14}P_3$
M 520,15 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{253} = 13.7 E x mmol^{-1} x cm^{-1}

K047.1	25 µmol (250 µl)	plastic	42,50 €

UTP solution

≥99 %, 100 mM solution
Uridine-5'-triphosphate
$C_9H_{12}N_2O_{15}P_3$
M 481,11 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{262} = 10.0 E x mmol^{-1} x cm^{-1}

K046.1	25 µmol (250 µl)	plastic	42,50 €

NTP Lyophilisates

ATP

≥98 %, lyophilised
Adenosine-5-triphosphate di-sodium salt
$C_{10}H_{14}N_5O_{13}P_3Na_2 \cdot 3\ H_2O$
M 605,18 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{259} = 15.4 E x mmol^{-1} x cm^{-1}

K054.1	1 g	plastic	30,00 €
K054.3	10 g	plastic	119,90 €
K054.6	100 g	plastic	478,40 €

CTP

≥98 %, lyophilised
Cytidin-5'-triphosphate, di-sodium salt
$C_9H_{14}N_3O_{14}P_3Na_2 \cdot 3\ H_2O$
M 581,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{271} = 9.0 E x mmol^{-1} x cm^{-1}

K057.1	100 mg	plastic	60,10 €
K057.4	1 g	plastic	239,65 €
K057.5	10 g	plastic	955,70 €

GTP

≥90 %, lyophilised
Guanosine-5'-triphosphate di-sodium salt
$C_{10}H_{14}N_5O_{14}P_3Na_2 \cdot 3\ H_2O$
M 621,18 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{253} = 13.7 E x mmol^{-1} x cm^{-1}

K056.1	100 mg	plastic	59,70 €
K056.4	1 g	plastic	239,20 €
K056.5	10 g	plastic	955,70 €

UTP

≥90 %, lyophilised
Uridine-5'-triphosphate tri-sodium salt
$C_9H_{12}N_2O_{15}P_3Na_3 \cdot 3\ H_2O$
M 604,12 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{262} = 10.0 E x mmol^{-1} x cm^{-1}

K055.1	100 mg	plastic	59,70 €
K055.3	1 g	plastic	239,20 €

ddNTP Set

ddNTP-Set

≥98 %, ddATP, ddCTP, ddGTP, ddTTP
ddNTP-set, composed of the nucleotid-single solutions ddATP, ddCTP, ddGTP, ddTTP.
Concentration: 10 mM per ddNTP.
Dideoxynucleoside triphosphate set
Storage temp.: -20 °C • Transport temp.: cooled
pH 8.0 ±0.5

K044.1	4 x 1 µmol (100 µl), 10 mM	plastic	155,90 €

ddNTP Solutions

ddATP solution

≥98 %, 10 mM solution
2',3'-Dideoxyadenosine-5'-triphosphate
$C_{10}H_{13}N_5O_{11}P_3$
M 472,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{272} = 9.6 E x mmol^{-1} x cm^{-1}; pH 8.0 ±0.5

K040.1	1 µmol (100 µl)	plastic	47,85 €

ddCTP solution

≥98 %, 10 mM solution
2',3'-Dideoxycytidine-5'-triphosphate
$C_9H_{13}N_3O_{12}P_3$
M 448,13 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{272} = 9.6 E x mmol^{-1} x cm^{-1}; pH 8.0 ±0.5

K043.1	1 µmol (100 µl)	plastic	47,85 €

ddGTP solution

≥98 %, 10 mM solution
2',3'-Dideoxyguanosine-5'-triphosphate
$C_{10}H_{13}N_5O_{12}P_3$
M 488,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{252} = 13.7 E x mmol^{-1} x cm^{-1}; pH 8.0 ±0.5

K042.1	1 µmol (100 µl)	plastic	47,85 €

ddTTP solution

≥98 %, 10 mM solution
2',3'-Dideoxythymidine-5'-triphosphate
$C_{10}H_{14}N_2O_{13}P_3$
M 463,14 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
ε_{267} = 9.5 E x mmol^{-1} x cm^{-1}; pH 8.0 ±0.5

K041.1	1 µmol (100 µl)	plastic	47,85 €

▶ **Reagents for DNA synthesis** - see chapter Organic- and Bioorganic Chemicals!

Reagents for PCR

Mineral Oil ready-to-use

for molecular biology

For overlaying PCR and other enzymatic reactions.

H413

Light, colourless oil, particularly suitable for overlaying PCR and other enzymatic reactions such as restriction digestion, priming reactions or whole-mount *in situ* reactions incubated in warm temperatures.
Prevents fluid loss and reduces any danger of cross-contamination.

Each batch is functionally tested for its suitability in PCR.

Type analysis:

Colour.....clear, colourless
Density (25 °C).....0,818-0,880
Viscosity (40 °C).....≤33,5 cSt
Readily carbonizable substances.....complies
Solid paraffin.....complies
Suitable for PCR.....complies

HP50.1	10 ml	glass		14,55 €
HP50.4	15 ml	dropp. bottle	TIP	24,20 €
HP50.2	50 ml	plastic		28,95 €
HP50.3	250 ml	plastic		85,90 €

Water

ROTIPURAN® Low organic

High-purity water for sample preparation in organic trace analysis and for molecular biology.

H_2O

M 18,02 g/mol

Guarantee analysis:

TOC (Total Organic Carbon).....≤20 ppb
Fluorescence (as quinine).....≤100 ppt
Optical absorbance:
200 nm.....≤0,01
254 nm.....≤0,005
300 nm.....≤0,005
400 nm.....≤0,005

HN57.1	1 l	glass	69,35 €
Original pack 6 x 1 l			65,88/1 l
HN57.2	4 l	glass	113,85 €

▶ RNAse-/DNAse free water
for molecular biology see page 1291

Ready-Made Primers

- Superior purity
- Standardised quality
- Immediately available

Roth poly d(T)$_{12-18}$ Primer

HPLC-purified, lyophilised

For sequence unspecific priming during reverse transcription.
Mix of d(T) 12 to 18mers. 5 OD_{260} units.
Storage temp.: -20 °C • Transport temp.: room temp.
Delivery includes 5 x 1 OD_{260} units (31.2 µg or 7.3 nmol DNA each) poly d(T)$_{12-18}$ Primer in one vial each and 1 ml DEPC-treated water for molecular biology (DNAse-free, RNAse-free).

HP27.1	5 tubes	53,25 €

Roth Hexanucleotide Random-Primer Mix

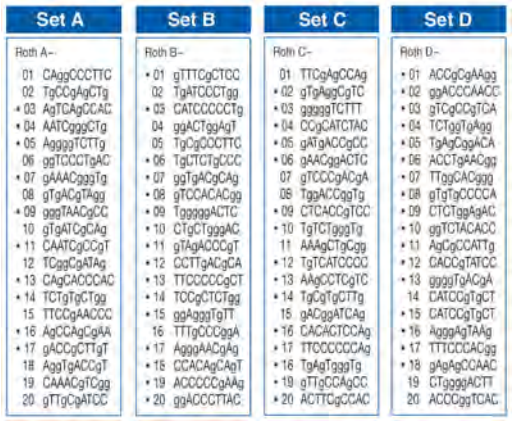
HPLC-purified, lyophilised

For random priming during probe generation or during total genome-amplification.
N_6 mix (N for A, G, C, T). 10 OD_{260} units.
Storage temp.: -20 °C • Transport temp.: room temp.
Delivery includes 10 x 1 OD_{260} units (27.4 µg or 15.3 nmol DNA each) of hexanucleotide mixture in one vial each and 1 ml DEPC-treated water for molecularbiology (DNAse-free, RNAse-free).

HP28.1	10 tubes	70,45 €

Roth Random-Primer sets for RAPD-PCR

20 x 10mer/kit. 2.0 OD_{260} units per primer, aliquoted in 2 vials each. Desalted and lyophilised.
Storage temp.: -20 °C • Transport temp.: room temp.
Primer set for rapid amplification of polymorphic DNA (RAPD)-PCR. For analysing DNA-polymorphisms or the change in genetic expression samples.
20 x 10mers with 60-80 % GC-assay.

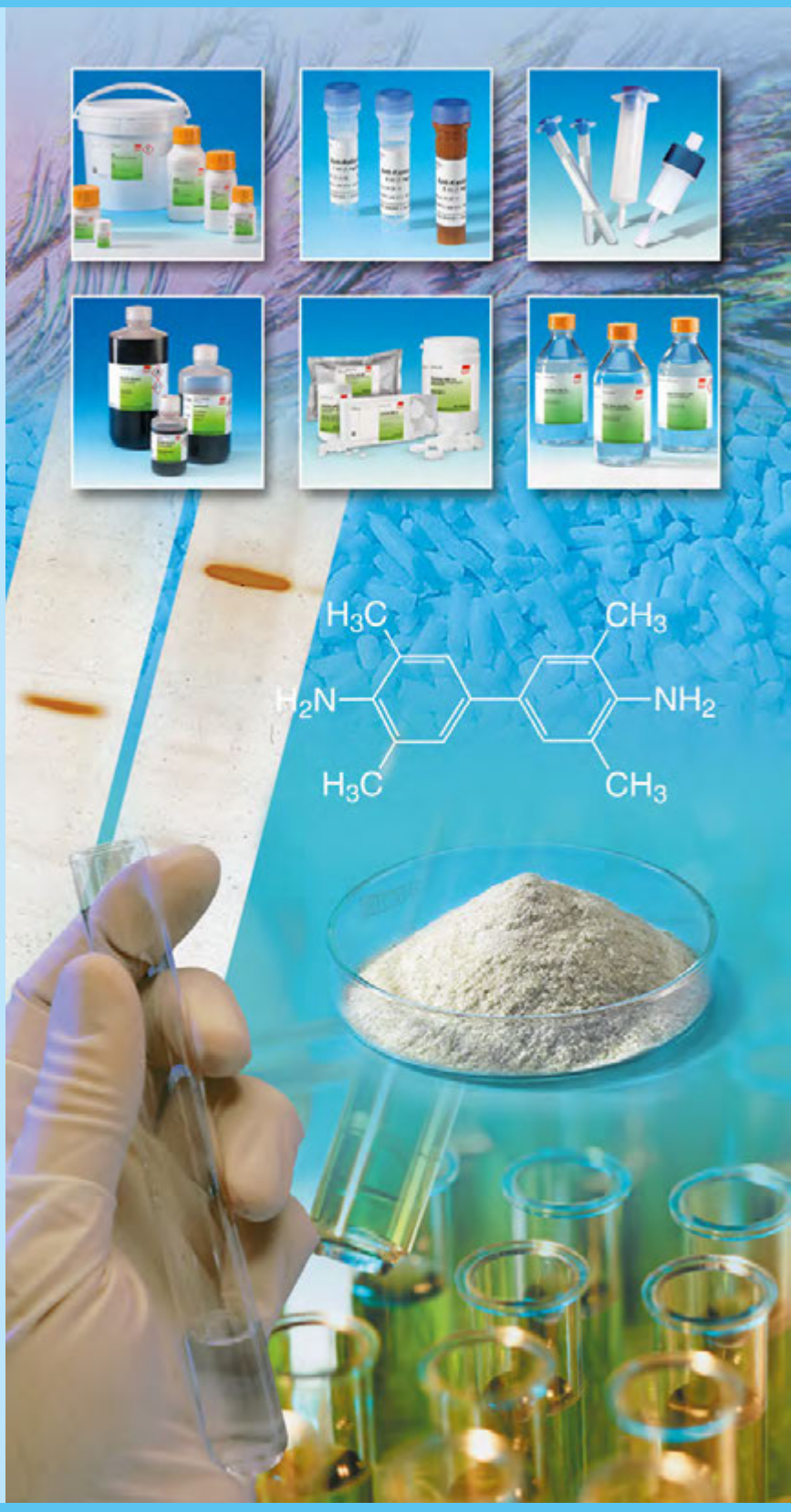


HP22.1	1 set	Set A	206,95 €
HP23.1	1 set	Set B	206,95 €
HP24.1	1 set	Set C	206,95 €
HP25.1	1 set	Set D	206,95 €

1 OD DNA is defined as the amount of DNA recieved by lyophilisation of 1 ml solution containing DNA-concentrations of 1 OD.

Biochemistry

Roti®fair (Tablets and Pouches)	TIP		1305
Biological Buffers			1307
Detergents			1310
Enzymes			1316
Coenzymes			1320
Inhibitors	Inhibitor Cocktails		1321
	Individual Inhibitors		1322
Substrates			1327
Albumins & Albumin Solutions	NEW		1334
Protein Isolation			
	Magnetic Beads	NEW	1338
	Separators	NEW	1339
	Ultra Filtration		1340
	Affinity Chromatography	NEW	1341
	Reagents		1352
Scintillation			1354
Protein Quantitation			1355
Western & ELISA			
	Western-Blot Marker		1357
	Blocking Reagents		1358
	Antibodies		1360
	Ready-Made Solutions, Pre-Mix, Tablets & Pouches	TIP	1362
	Substrates		1365
	Enhancers		1366
	Accessories		1368



Roti®fair Reagents

High-pure reagents and buffer mixes in pouches or as tablets.

Roti®fair - the new range of user-friendly reagent formulations.
For simplest application, optimal quality and reproducible results.

One tablet or the content of one pouch is simply dissolved in the respective amount of water - the desired solution is ready for use. Simply adapt the amount of water in order to vary the concentration, for instance for preparation of a higher concentrated stock solution.

- **Easy-to-use** - simply dissolve contents of one pouch or one tablet in water
- **Timesaving** - no need for weighing of several reagents or adjustment of pH
- **Convenient** - dry reagents for direct use spare preparation of long-term stored stock solutions
- **Reliable** - stringent quality control ensures high lot-to-lot consistency

Product	Buffer/solution	Use	Final conc.	pH value	Preparation scale	Art. No.	Pack Qty	€
Roti®fair BBS	Borate Buffered Saline	Coating of ELISA plates and blocking supplement	1x	8,2 ±0,05	500 ml/tablet	**1005.1**	100 tablets	265,00
Roti®fair BSC	Buffered Sodium Citrate	Buffer solution for isolation of blood cells	0,109 M / 3,2 %	-	1000 ml/pouch	**1026.1**	5 pouches	140,30
					100 ml/pouch	**1011.1**	10 pouches	91,30
Roti®fair CBB	Carbonate bicarbonate buffer	Coating of microtiter plates and tubes for immunoassays	1x	9,6 ±0,05	100 ml/tablet	**1027.1**	8 tablets	38,60
						1027.2	24 tablets	71,50
						1027.3	100 tablets	113,85
Roti®fair 0.5M EDTA	Ethylenediamine tetraacetic acid solution	For preparation of bioanalytical solutions, anticoagulant	0,5 M	8,0 ±0,05	500 ml/pouch	**1031.1**	5 pouches	261,15
Roti®fair 20% Glucose	D(+)-Glucose solution	For preparation of nutrient media	20 %	-	1000 ml/pouch	**1030.1**	5 pouches	168,70
Roti®fair Glycine 3.0	Glycine solution	For preparation of buffer solutions with acidic pH and elution buffer in affinity chromatography	0,1 M	3,0 ±0,05	1000 ml/pouch	**1032.1**	10 pouches	99,90
Roti®fair HBS	HEPES Buffered Saline	General buffer base and for calcium phosphate mediated transfection	1 M	7,4 ±0,05	500 ml/tablet	**1033.1**	12 tablets	64,40
						1033.2	100 tablets	274,05
Roti®fair 1M KCl	Potassium chloride solution	For preparation of salt solutions and buffer concoctions	1 M	-	1000 ml/pouch	**1034.1**	10 pouches	175,15
Roti®fair 3M KCl	Potassium chloride solution	For preparation of salt solutions and buffer concoctions	3 M	-	1000 ml/pouch	**1035.1**	5 pouch	150,40
Roti®fair 0.9% NaCl	Sodium chloride solution	For preparation of salt solutions and buffer concoctions	0,9 %	-	1000 ml/tablet	**1067.1**	10 tablets	50,45
						1067.2	100 tablets	121,40
					100 ml/tablet	**1053.1**	100 tablets	56,45
Roti®fair 3M NaCl	Sodium chloride solution	For preparation of salt solutions and buffer concoctions	3 M	-	1000 ml/pouch	**1071.1**	5 pouch	80,55
Roti®fair 5M NaCl	Sodium chloride solution	For preparation of salt solutions and buffer concoctions	5 M	-	1000 ml/pouch	**1079.1**	5 pouch	94,50
Roti®fair Na-Acetate 5.2	Sodium acetate solution	For isolation of nucleic acids	3 M	5,2 ±0,05	1000 ml/pouch	**1195.1**	5 pouches	293,40
Roti®fair 0.02M Na-Phosphate 7.0	Sodium phosphate solution	General solution for assays in molecular biology and biochemistry	0,02 M	7,0 ±0,05	1000 ml/pouch	**1090.1**	10 pouches	91,30
					5000 ml/pouch	**1094.1**	10 pouches	264,35
Roti®fair 1M Na-Phosphate 6.5	Sodium phosphate solution	General solution for assays in molecular biology and biochemistry	1 M	6,5 ±0,05	1000 ml/pouch	**1095.1**	10 pouches	249,95
Roti®fair 1M Na-Phosphate 7.2	Sodium phosphate solution	General solution for assays in molecular biology and biochemistry	1 M	7,2 ±0,05	1000 ml/pouch	**1097.1**	10 pouches	250,40
Roti®fair PBS 7.2	Phosphate Buffered Saline	General solution for assays in molecular biology and biochemistry	1x	7,2 ±0,05	1000 ml/tablet	**1106.1**	10 tablets	76,90
						1106.2	100 tablets	368,20
Roti®fair PBS 7.4	Phosphate Buffered Saline	General solution for assays in molecular biology and biochemistry	1x	7,4 ±0,05	10 l/pouch	**1101.1**	1 pouch	40,75
					25 l/pouch	**1102.1**	1 pouch	81,60
					50 l/pouch	**1103.1**	1 pouch	125,70
					100 l/pouch	**1104.1**	1 pouch	205,90
Roti®fair PBS 7.4	Phosphate Buffered Saline	General solution for assays in molecular biology and biochemistry	1x	7,4 ±0,05	100 ml/tablet	**1107.1**	100 tablets	58,60
					200 ml/tablet	**1108.1**	100 tablets	97,75
					500 ml/tablet	**1111.1**	12 tablets	51,50
						1111.2	100 tablets	206,95
					1000 ml/tablet	**1112.1**	10 tablets	75,80
						1112.2	100 tablets	364,45
Roti®fair 10x PBS 7.4	Phosphate Buffered Saline	General solution for assays in molecular biology and biochemistry	10x	7,4 ±0,05	1000 ml/pouch	**1105.1**	5 pouches	99,90

Roti fair Reagents

Product	Buffer/solution	Use	Final conc.	pH value	Preparation scale	Art. No.	Pack Qty	€
Roti®fair PBS potassium-free 7.4	Phosphate Buffered Saline, potassium-free	Potassium-free, general solution for assays in molecular biology and biochemistry	1x	7,4 ±0,05	1000 ml/tablet	**1113.1**	10 tablets	75,80
						1113.2	100 tablets	368,20
Roti®fair PBS potassium-free 7.4	Phosphate Buffered Saline, potassium-free, **high-phosphate**	Potassium-free, high-phosphate general solution for assays in molecular biology and biochemistry	1x	7,4 ±0,05	1000 ml/tablet	**1114.1**	100 tablets	418,20
Roti®fair PBST 7.4	Phosphate Buffered Saline/ Tween	General solution for assays in molecular biology and biochemistry	1x	7,4 ±0,05	500 ml/tablet	**1115.1**	12 tablets	65,50
						1115.2	100 tablets	266,10
					1000 ml/tablet	**1116.1**	10 tablets	85,50
						1116.2	100 tablets	411,20
Roti®fair pNPP 5mg	pNPP, p-Nitrophenyl phosphate	Substrate solution for alkaline phosphatase	1 mg/ml	-	5 mg/tablet	**1117.1**	24 tablets	95,60
						1117.2	100 tablets	138,70
Roti®fair pNPP 20mg	pNPP, p-Nitrophenyl phosphate	Substrate solution for alkaline phosphatase	1 mg/ml	-	20 mg/tablet	**1128.1**	24 tablets	100,55
						1128.2	100 tablets	362,85
Roti®fair SDS 0.5g	Sodium dodecyl sulphate solution	Anionic detergent for preparation of bioanalytical solutions	variable	-	0,5 g/tablet	**1156.1**	50 tablets	48,30
Roti®fair 10% SDS	Sodium dodecyl sulphate solution	Anionic detergent for preparation of bioanalytical solutions	10 %	-	1000 ml/pouch	**1157.1**	5 pouches	618,15
Roti®fair SDS-PAGE	Tris-glycine-SDS buffer	Buffer for protein electrophoresis	1x	8,3 ±0,05	1000 ml/pouch	**1249.1**	10 pouches	91,95
					5000 ml/pouch	**1250.1**	10 pouches	195,15
Roti®fair 20x SSC	Sodium sodium citrate buffer	Buffer solution for Southern- and Northern transfer	20x	7,0 ±0,05	1000 ml/pouch	**1232.1**	5 pouches	158,60
Roti®fair SSPE	Sodium sodium phosphate EDTA buffer	Buffer solution for DNA- and RNA hybridisation	1x	7,4 ±0,05	200 ml/tablet	**1233.1**	100 tablets	103,75
Roti®fair 50x TAE	Tris acetate EDTA buffer	Buffer solution for DNA electro-phoresis	50x	8,3 ±0,05	500 ml/pouch	**1234.1**	5 pouches	418,20
					1000 ml/pouch	**1240.1**	5 pouches	747,15
Roti®fair 1x TBE	Tris borate EDTA buffer	Buffer solution for DNA electro-phoresis	1x	8,3 ±0,15	1000 ml/pouch	**1241.1**	10 pouches	80,10
Roti®fair 5x TBE	Tris borate EDTA buffer	Buffer solution for DNA electro-phoresis	5x	8,3 ±0,05	1000 ml/pouch	**1242.1**	10 pouches	174,70
Roti®fair 10x TBE	Tris borate EDTA buffer	Buffer solution for DNA electro-phoresis	10x	8,3 ±0,05	1000 ml/pouch	**1243.1**	10 pouches	289,75
Roti®fair TBS 7.6	Tris Buffered Saline	General solution for assays in molecular biology and biochemistry	1x	7,6 ±0,05	500 ml/tablet	**1244.1**	10 tablets	56,90
						1244.2	100 tablets	273,60
Roti®fair TBS 8.0	Tris Buffered Saline	General solution for assays in molecular biology and biochemistry	1x	8,0 ±0,05	1000 ml/pouch	**1245.1**	10 pouches	100,55
Roti®fair 10x TBS 8.0	Tris Buffered Saline	General solution for assays in molecular biology and biochemistry	10x	8,0 ±0,05	1000 ml/pouch	**1247.1**	10 pouches	671,90
Roti®fair TBST 7.6	Tris Buffered Saline/Tween	General solution for assays in molecular biology and biochemistry	1x	7,6 ±0,05	500 ml/tablet	**1248.1**	10 tablets	70,85
						1248.2	100 tablets	346,70
Roti®fair 10x TE	Tris EDTA buffer	Buffer solution for solubilisation and dilution of nucleic acids	10x	7,4 ±0,05	1000 ml/pouch	**1268.1**	10 pouches	221,35
Roti®fair TG-Western	Tris-glycine buffer	Buffer for protein electrophoresis and transfer	1x	8,3 ±0,05	1000 ml/pouch	**1269.1**	10 pouches	82,70
					5000 ml/pouch	**1276.1**	10 pouches	177,40
Roti®fair 1M Tris 7.4	Tris solution	General solution for assays in molecular biology and biochemistry	1 M	7,4 ±0,05	1000 ml/pouch	**1251.1**	10 pouches	390,80
Roti®fair 1M Tris 8.0	Tris solution	General solution for assays in molecular biology and biochemistry	1 M	8,0 ±0,05	1000 ml/pouch	**1260.1**	10 pouches	390,80
Roti®fair 1M Tris 8.3	Tris solution	General solution for assays in molecular biology and biochemistry	1 M	8,3 ±0,05	1000 ml/pouch	**1261.1**	10 pouches	390,80

For additional product data and safety information, see chapter Chemicals A-Z.

Biological Buffer Reagents

PUFFERAN® - for biochemistry, bioinorganic chemistry and molecular genetics
CELLPURE® - especially for cell culture

- Very high purity
- Dissolve easily in water and aqueous media
- No penetration or dissolution of membranes
- Low UV absorption
- No or only very weak complexing with cations
- Chemically stable
- No inhibition or activation of biological or biochemical reactions
- Minimal alteration of pH-value by temperature changes

Application Range of Biological Buffer Reagents

Buffer reagents (alphabetical)	pH range	pK_a (25 °C)
ACES	6.1-7.5	6.78
ADA	6.0-7.2	6.59
AMP	8.7-10.4	6.69
AMPSO	8.3-9.7	9.00
BES	6.4-7.8	7.09
BICINE	7.6-9.0	8.26
BIS-TRIS	5.8-7.2	6.46
BIS-TRIS-Propane	6.3-9.5	6.80
Cacodylic acid	5.0-7.4	6.27
CAPS	9.7-11.1	10.40
CAPSO	8.9-10.3	9.60
Carbonate buffers	6.0-8.0	6.35
CHES	8.6-10.0	9.50
Citrate	2.2-6.5	3.13
DIPSO	7.0-8.2	7.52
Glycine	2.2-3.6	2.35
Glycyl-glycine	2.5-3.8	3.14
HEPES	6.8-8.2	7.48
HEPES, EPPS	7.6-8.6	8.00
HEPPSO	7.1-8.5	7.85
Imidazole	6.2-7.8	6.95
MES	5.5-6.7	6.10
MOPS	6.5-7.9	7.14
MOPSO	6.2-7.6	6.87
Phosphate buffers	1.7-2.9	2.15
PIPES	6.1-7.5	6.76
POPSO	7.2-8.5	7.78
Potassium acetate	3.6-5.6	4.76
Pyridine	4.9-5.9	5.23
Sodium acetate	3.6-5.6	4.76
Sodium formiate	3.0-4.5	3.75
Succinate	3.2-5.2	4.21
TAPS	7.7-9.1	8.40
TAPSO	7.0-8.2	7.61
Taurine	8.4-9.6	9.06
TES	6.8-8.2	7.40
TRICINE	7.4-8.8	8.05
Triethanolamine	7.0-8.3	7.76
TRIS	7.5-9.0	8.06

Buffer reagents (buffered pH range)	pH range	pK_a (25 °C)
Phosphate buffers	1.7-2.9	2.15
Glycine	2.2-3.6	2.35
Citrate	2.2-6.5	3.13
Glycyl-glycine	2.5-3.8	3.14
Sodium formiate	3.0-4.5	3.75
Succinate	3.2-5.2	4.21
Potassium acetate	3.6-5.6	4.76
Sodium acetate	3.6-5.6	4.76
Pyridine	4.9-5.9	5.23
Cacodylic acid	5.0-7.4	6.27
MES	5.5-6.7	6.10
BIS-TRIS	5.8-7.2	6.46
ADA	6.0-7.2	6.59
Carbonate buffers	6.0-8.0	6.35
ACES	6.1-7.5	6.78
PIPES	6.1-7.5	6.76
MOPSO	6.2-7.6	6.87
Imidazole	6.2-7.8	6.95
BIS-TRIS-Propane	6.3-9.5	6.80
BES	6.4-7.8	7.09
MOPS	6.5-7.9	7.14
HEPES	6.8-8.2	7.48
TES	6.8-8.2	7.40
DIPSO	7.0-8.2	7.52
TAPSO	7.0-8.2	7.61
Triethanolamine	7.0-8.3	7.76
HEPPSO	7.1-8.5	7.85
POPSO	7.2-8.5	7.78
TRICINE	7.4-8.8	8.05
TRIS	7.5-9.0	8.06
HEPES, EPPS	7.6-8.6	8.00
BICINE	7.6-9.0	8.26
TAPS	7.7-9.1	8.40
AMPSO	8.3-9.7	9.00
Taurine	8.4-9.6	9.06
CHES	8.6-10.0	9.50
AMP	8.7-10.4	6.69
CAPSO	8.9-10.3	9.60
CAPS	9.7-11.1	10.40

Biochemistry

A full summary of our Biological Buffer Reagents may be found on the following pages.
For safety information and additional data, see chapter Chemicals A-Z.

Biological Buffers

Product	Purity	Art. No.	Pack Qty.	Pack.	€
ACES	PUFFERAN® ≥99 %	**9138.1**	10 g	plastic	21,40
		9138.2	100 g	plastic	160,20
ADA	PUFFERAN® ≥99 %	**0250.1**	50 g	plastic	22,50
		0250.2	100 g	plastic	37,55
		0250.3	500 g	plastic	133,20
AMP	PUFFERAN® ≥90 %	**3121.1**	250 ml	glass	37,55
AMPSO	PUFFERAN® ≥98 %	**7159.1**	25 g	plastic	48,95
		7159.2	100 g	plastic	155,80
AMPSO sodium salt	PUFFERAN® ≥98 %	**7014.1**	25 g	plastic	54,30
		7014.2	100 g	plastic	173,65
BES	PUFFERAN® ≥99 %	**9134.1**	25 g	plastic	23,55
		9134.2	100 g	plastic	64,40
		9134.3	250 g	plastic	139,65
		9134.4	500 g	plastic	224,70
BICINE	PUFFERAN® ≥99 %	**9162.1**	50 g	plastic	39,70
		9162.2	250 g	plastic	127,95
		9162.3	500 g	plastic	182,65
BIS-TRIS	PUFFERAN® ≥99 %	**9140.1**	50 g	plastic	53,65
		9140.2	250 g	plastic	213,95
		9140.3	500 g	plastic	357,45
	New size	**9140.8**	1 kg	plastic	557,95
BIS-TRIS-Propane	PUFFERAN® ≥98 %	**6999.1**	25 g	plastic	60,10
		6999.2	100 g	plastic	213,95
Cacodylic acid sodium salt trihydrate	PUFFERAN® ≥98 %	**5169.3**	10 g	plastic	22,50
		5169.1	50 g	plastic	64,40
		5169.2	250 g	plastic	209,65
CAPS	PUFFERAN® ≥99 %	**9168.1**	25 g	plastic	19,25
		9168.3	100 g	plastic	50,00
		9168.2	250 g	plastic	114,95
CAPSO	PUFFERAN® ≥98 %	**5584.3**	25 g	plastic	30,00
		5584.1	100 g	plastic	89,15
		5584.2	500 g	plastic	327,90
CAPSO sodium salt	PUFFERAN® ≥95 %	**6861.1**	25 g	plastic	28,50
CHAPS	PUFFERAN®≥98 %, for biochemistry	**1479.1**	5 g	plastic	61,85
		1479.3	10 g	plastic	103,10
		1479.2	25 g	plastic	212,75
		1479.4	100 g	plastic	450,45
CHES	PUFFERAN®≥99 %	**9166.1**	10 g	plastic	14,20
		9166.3	25 g	plastic	23,15
		9166.2	100 g	plastic	64,00
Citric acid	≥99,5 %, p.a., ACS, anhydrous	**X863.1**	500 g	plastic	20,35
		X863.2	1 kg	plastic	31,10
		X863.3	2,5 kg	plastic	62,25
	BIG PACK	**X863.5**	25 kg	plastic	375,20
DIPSO	PUFFERAN®≥98 %	**7151.1**	25 g	plastic	72,60
Glycine	≥99 %, Blotting-Grade	**0079.1**	250 g	plastic	26,35
		0079.2	500 g	plastic	48,95
		0079.3	1 kg	plastic	77,95
		0079.4	2,5 kg	plastic	154,70
Glycine	PUFFERAN® ≥99 %, p.a.	**3908.1**	250 g	plastic	23,15
		3908.2	1 kg	plastic	74,75
	New size	**3908.4**	2,5 kg	plastic	137,10
		3908.3	5 kg	plastic	208,05
	New size	**3908.6**	10 kg	plastic	353,70
		3908.5	25 kg	plastic	736,40
Glycine	CELLPURE® ≥99 %	**HN07.1**	100 g	plastic	17,10
		HN07.2	500 g	plastic	48,30
		HN07.3	1 kg	plastic	86,55
Glycine	≥99 %, for biochemistry	**3187.1**	250 g	plastic	19,90
		3187.2	500 g	plastic	26,35
		3187.3	1 kg	plastic	40,35
	New size	**3187.5**	2,5 kg	plastic	85,90
		3187.4	5 kg	plastic	164,40
	New size	**3187.6**	10 kg	plastic	267,70
	New size	**3187.7**	25 kg	plastic	514,95
Glycylglycine	PUFFERAN® ≥99 %, ultra quality	**3794.1**	10 g	plastic	17,10
		3794.2	100 g	plastic	87,00
		3794.3	250 g	plastic	186,95
		3794.4	500 g	plastic	340,70

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Glycylglycine	PUFFERAN® ≥98,5 %, Buffer Grade	**HN74.1**	50 g	plastic	34,30
		HN74.2	100 g	plastic	55,40
		HN74.3	250 g	plastic	119,90
		HN74.4	500 g	plastic	214,50
HEPES	PUFFERAN® CELLPURE® ≥99,5 %	**HN77.1**	50 g	plastic	30,00
		HN77.2	100 g	plastic	42,90
		HN77.3	250 g	plastic	82,25
		HN77.4	500 g	plastic	146,75
		HN77.5	1 kg	plastic	252,65
HEPES	≥99,5 %, BioScience-Grade	**6763.1**	100 g	plastic	36,45
		6763.2	500 g	plastic	141,40
		6763.3	1 kg	plastic	233,85
HEPES	PUFFERAN® ≥99,5 %, p.a.	**9105.2**	100 g	plastic	34,30
		9105.4	500 g	plastic	139,65
		9105.3	1 kg	plastic	231,70
		9105.6	2,5 kg	plastic	461,20
		9105.5	5 kg	plastic	869,70
HEPES	PUFFERAN® ≥99,5 %, Buffer Grade	**HN78.1**	100 g	plastic	28,50
		HN78.2	500 g	plastic	96,25
		HN78.3	1 kg	plastic	174,70
		HN78.4	5 kg	plastic	762,20
HEPES sodium salt	PUFFERAN® ≥99 %	**7020.1**	25 g	plastic	34,30
		7020.2	100 g	plastic	107,40
HEPPS, EPPS	PUFFERAN® ≥98 %	**9164.1**	10 g	plastic	20,35
		9164.2	100 g	plastic	113,85
Imidazole	PUFFERAN® ≥99 %, p.a., ultra quality	**X998.1**	10 g	plastic	17,75
		X998.2	50 g	plastic	46,80
		X998.3	100 g	plastic	80,10
		X998.4	250 g	plastic	181,60
MES	PUFFERAN® ≥99 %	**4256.2**	100 g	plastic	64,40
		4256.5	250 g	plastic	140,75
		4256.3	500 g	plastic	267,70
		4256.4	1 kg	plastic	461,20
MES	≥99 %, for biochemistry	**4259.1**	50 g	plastic	33,25
		4259.2	100 g	plastic	50,45
		4259.3	250 g	plastic	89,80
		4259.4	500 g	plastic	176,85
		4259.5	1 kg	plastic	317,15
MES monohydrate	PUFFERAN® ≥99,5 %	**6066.1**	50 g	plastic	26,80
		6066.2	100 g	plastic	45,05
		6066.3	500 g	plastic	174,70
		6066.4	1 kg	plastic	299,95
MES sodium salt	PUFFERAN® ≥99 %	**6922.1**	25 g	plastic	23,15
		6922.2	100 g	plastic	85,90
MOPS	PUFFERAN® ≥99,5 %	**6979.2**	250 g	plastic	76,25
		6979.4	500 g	plastic	131,70
		6979.3	1 kg	plastic	252,10
		6979.5	2,5 kg	plastic	532,15
MOPS sodium salt	PUFFERAN® ≥99 %	**6927.1**	25 g	plastic	28,50
		6927.2	100 g	plastic	87,00
MOPSO	PUFFERAN® ≥99 %	**7117.1**	25 g	plastic	32,15
		7117.2	100 g	plastic	97,75
		7117.3	1 kg	plastic	719,20
MOPSO sodium salt	PUFFERAN® ≥98 %	**7101.1**	25 g	plastic	38,60
		7101.2	100 g	plastic	124,60
PIPES	PUFFERAN® ≥99 %	**9156.1**	25 g	plastic	19,90
		9156.2	100 g	plastic	56,90
		9156.3	250 g	plastic	125,25
		9156.4	500 g	plastic	212,35
PIPES monosodium salt	PUFFERAN® ≥97 %	**9153.1**	25 g	plastic	37,10
PIPES 1,5 Na	PUFFERAN® ≥96 %	**5583.1**	50 g	plastic	69,80
		5583.2	250 g	plastic	289,20
PIPES disodium salt	PUFFERAN® ≥99 %	**7109.2**	100 g	plastic	127,95
POPSO	PUFFERAN® ≥99 %	**6632.1**	25 g	plastic	39,70
		6632.2	100 g	plastic	124,60
POPSO 1,5 Na	PUFFERAN® ≥99 %	**6965.1**	25 g	plastic	60,10
		6965.2	100 g	plastic	184,40

Biological Buffers

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Potassium acetate	≥99 %, p.a.	**T874.1**	500 g	plastic	35,40
		T874.2	1 kg	plastic	54,75
		T874.3	2,5 kg	plastic	105,25
	BIG PACK	**T874.5**	25 kg	plastic	719,20
Potassium dihydrogen phosphate	≥99 %, p.a., ACS	**3904.2**	250 g	plastic	18,85
		3904.1	1 kg	plastic	54,75
		3904.3	5 kg	plastic	219,20
	BIG PACK	**3904.5**	25 kg	plastic	955,70
di-Potassium hydrogen phosphate	≥99 %, p.a., anhydrous	**P749.1**	500 g	plastic	28,95
		P749.2	1 kg	plastic	52,15
		P749.3	2,5 kg	plastic	105,25
	BIG PACK	**P749.5**	25 kg	plastic	848,20
Pyridine	ROTIPURAN® ≥99,5 %, p.a., ACS	**9729.3**	500 ml	glass	65,50
		9729.1	1 l	glass	121,40
		9729.2	2,5 l	glass	257,90
Roti®fair Glycine 3.0	for 1000 ml/pouch, for biochemistry	**1032.1**	10 pouches	box	99,90
Roti®fair Na-Acetate 5.2	for 1000 ml/pouch, for molecular biology	**1195.1**	5 pouches	box	293,40
Roti®fair 0.02M Na-Phosphate 7.0	for 1000 ml/pouch, for biochemistry and molecular biology	**1090.1**	10 pouches	box	91,30
Roti®fair 0.02M Na-Phosphate 7.0	for 5000 ml/pouch, for biochemistry and molecular biology	**1094.1**	10 pouches	box	264,35
Roti®fair 1M Na-Phosphate 6.5	for 1000 ml/pouch, for biochemistry and molecular biology	**1095.1**	10 pouches	box	249,95
Roti®fair 1M Na-Phosphate 7.2	for 1000 ml/pouch, for biochemistry and molecular biology	**1097.1**	10 pouches	box	250,40
Roti®fair 1M Tris 7.4	for 1000 ml/pouch, for biochemistry and molecular biology	**1251.1**	10 pouches	box	390,80
Roti®fair 1M Tris 8.0	for 1000 ml/pouch, for biochemistry and molecular biology	**1260.1**	10 pouches	box	390,80
Roti®fair 1M Tris 8.3	for 1000 ml/pouch, for biochemistry and molecular biology	**1261.1**	10 pouches	box	390,80
Sodium acetate	≥99 %, p.a., ACS, anhydrous	**6773.1**	250 g	plastic	25,70
		6773.2	1 kg	plastic	66,55
		6773.3	2,5 kg	plastic	139,25
	BIG PACK	**6773.5**	25 kg	plastic	962,15
Sodium carbonate	≥99,5 %, p.a., ACS, anhydrous	**A135.1**	500 g	plastic	20,35
		A135.2	1 kg	plastic	35,40
		A135.3	5 kg	plastic	138,70
Mono sodium citrate	≥99 %, extra pure, anhydrous	**HN13.1**	100 g	plastic	14,95
		HN13.2	500 g	plastic	38,60
		HN13.3	1 kg	plastic	59,05
Sodium dihydrogen phosphate dihydrate	≥99 %, p.a.	**T879.1**	500 g	plastic	23,55
		T879.2	1 kg	plastic	35,40
		T879.3	2,5 kg	plastic	75,15
	BIG PACK	**T879.5**	25 kg	plastic	622,45
Sodium formate	≥99 %, p.a., ACS	**4404.1**	250 g	plastic	27,45
		4404.2	500 g	plastic	47,20
		4404.3	1 kg	plastic	82,25
Sodium hydrogen carbonate	≥99,5 %, p.a., ACS, ISO	**6885.2**	500 g	plastic	16,05
		6885.1	1 kg	plastic	24,20
		6885.3	5 kg	plastic	85,90
	BIG PACK	**6885.5**	25 kg	plastic	353,70
di-Sodium hydrogen phosphate	≥99 %, p.a., ACS, anhydrous	**P030.1**	500 g	plastic	32,15
		P030.2	1 kg	plastic	52,15
		P030.3	2,5 kg	plastic	98,40
Succinic acid disodium salt hexahydrate	≥99 %, for biochemistry	**3195.1**	100 g	plastic	38,60
TAPS	PUFFERAN®≥99 %	**6982.1**	10 g	plastic	13,90
		6982.2	100 g	plastic	44,00
		6982.3	250 g	plastic	88,70
		6982.4	500 g	plastic	156,45

Product	Purity	Art. No.	Pack Qty.	Pack.	€
TAPSO	PUFFERAN®≥99 %	**6628.1**	25 g	plastic	31,10
		6628.2	100 g	plastic	89,15
TAPSO sodium salt	PUFFERAN® ≥99 %	**6974.1**	25 g	plastic	32,15
		6974.2	100 g	plastic	96,65
Taurine	≥99 %, for biochemistry	**4721.1**	100 g	plastic	19,90
		4721.2	500 g	plastic	54,30
TES	PUFFERAN® ≥99 %	**9137.1**	10 g	plastic	27,45
		9137.2	100 g	plastic	142,90
		9137.3	500 g	plastic	289,20
TRICINE	PUFFERAN® ≥99 %	**6977.1**	50 g	plastic	27,85
		6977.4	250 g	plastic	109,55
		6977.2	500 g	plastic	209,65
		6977.3	1 kg	plastic	317,15
		6977.5	2,5 kg	plastic	639,65
Triethanolamine	≥99 %, for synthesis	**6300.1**	1 l	plastic	26,35
		6300.3	2,5 l	plastic	43,55
		6300.2	10 l	tinplate	138,70
Triethanolamine hydrochloride	≥99 %, for biochemistry	**4804.1**	100 g	plastic	60,10
TRIS	PUFFERAN® ≥99,9 %, p.a.	**4855.1**	500 g	plastic	51,50
		4855.2	1 kg	plastic	92,35
		4855.5	2,5 kg	plastic	190,85
		4855.3	5 kg	plastic	381,65
		4855.4	10 kg	plastic	725,65
	New size	**4855.7**	25 kg	plastic	1494,25
TRIS	≥99,9 %, Blotting-Grade	**0188.1**	250 g	plastic	36,45
		0188.2	500 g	plastic	62,90
		0188.3	1 kg	plastic	101,60
		0188.4	2,5 kg	plastic	194,05
TRIS	CELLPURE® ≥99,9 %	**3170.1**	100 g	plastic	25,70
		3170.2	500 g	plastic	79,45
TRIS	PUFFERAN® ≥99,9 %, Ultra quality	**5429.1**	500 g	plastic	45,05
		5429.3	1 kg	plastic	83,75
		5429.5	2,5 kg	plastic	181,70
		5429.2	5 kg	plastic	342,95
	BIG PACK	**5429.4**	10 kg	plastic	654,70
TRIS	≥99 %, Ph.Eur., USP	**A411.1**	500 g	plastic	41,85
		A411.2	1 kg	plastic	74,10
		A411.3	5 kg	plastic	332,20
TRIS	PUFFERAN® ≥99,3 %, Buffer Grade	**AE15.1**	500 g	plastic	31,75
		AE15.2	1 kg	plastic	56,90
		AE15.3	5 kg	plastic	244,60
		AE15.4	10 kg	plastic	424,65
	BIG PACK	**AE15.5**	25 kg	plastic	966,45
TRIS	≥99 %, cryst.	**2449.1**	500 g	plastic	30,00
		2449.2	1 kg	plastic	51,10
		2449.3	5 kg	plastic	224,70
		2449.4	10 kg	plastic	418,20
	BIG PACK	**2449.5**	25 kg	plastic	934,20
TRIS acetate	PUFFERAN® ≥98 %	**7125.1**	25 g	plastic	31,10
		7125.2	100 g	plastic	107,40
TRIS hydrochloride	PUFFERAN® ≥99 %, p.a.	**9090.1**	50 g	plastic	14,55
		9090.2	500 g	plastic	90,85
		9090.3	1 kg	plastic	134,40
		9090.5	2,5 kg	plastic	282,20
		9090.4	5 kg	plastic	536,45
TRIS maleate	PUFFERAN® ≥98 %	**6991.1**	100 g	plastic	100,55

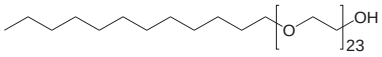
For additional product data and safety information, see chapter Chemicals A-Z.

Please note our **Technical Information Brochure** on the Internet next to the products:

Biological Buffers

Detergents

The dissolving power of detergents is utilised to deal with a number of molecular-biological and biochemical problems.
For additional data see chapter Chemicals A-Z.



Brij® 35

for biochemisty

Non-ionic detergent.

Polyoxyethylene lauryl ether, Polyethylene glycol lauryl ether

$C_{58}H_{118}O_{24}$

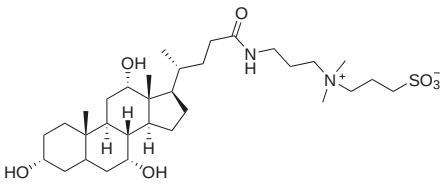
M 1198,57 g/mol

Copolymer and non-ionoic detergent with polyoxyethylen goup. Highly resistant against acids and bases. Particularly suited for emulgation of fats at high or low pH values. Also well suited for protein analysis, since Brij® 35 does neither denature nor dissociate proteins.

Application:

0.5 % solution: Solubilize 0.5 g Brij® 35 in 100 ml hot water.
Tip: In case some detergent precipitates during cooling, dilute to 150 ml (0.34 % solution) and use 1.5 vol. in the assay.

CN21.1	250 g	plastic	17,75 €
CN21.2	500 g	plastic	27,85 €
Original pack 6 x 500 g			26,46/500 g
CN21.3	1 kg	plastic	42,50 €
Original pack 6 x 1 kg			40,38/1 kg



CHAPS

PUFFERAN® ≥98 %, for biochemistry

Buffer substance, zwitterionic detergent

3-[(3-Cholamidopropyl)dimethyl ammonio]-1-propane sulphonate

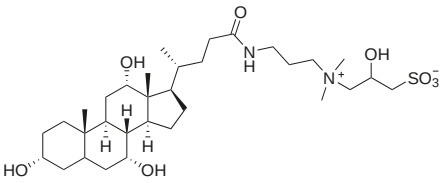
$C_{32}H_{58}N_2SO_7$

M 614,9 g/mol

Storage temp.: +4 °C

Warning H315-H319-H335

1479.1	5 g	plastic	61,85 €
1479.3	10 g	plastic	103,10 €
1479.2	25 g	plastic	212,75 €
1479.4	100 g	plastic	450,45 €



CHAPSO

PUFFERAN® ≥99 %, for biochemistry

Buffer substance, zwitterionic detergent

3-[(3-Cholamidopropyl)-dimethylamino]-2-hydroxy-1-propanesulphonate

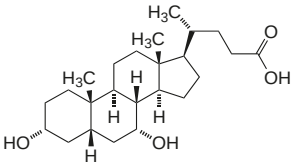
$C_{32}H_{58}N_2O_8S$

M 630,88 g/mol

Storage temp.: +4 °C

Warning H315-H319-H335

HN73.1	1 g	plastic	60,75 €
HN73.2	5 g	plastic	198,35 €
HN73.3	10 g	plastic	349,40 €



Chenodeoxycholic acid

≥98 %, for biochemistry

Anionic detergent

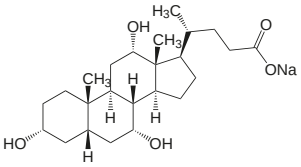
3α,7α-Dihydroxy-5β-cholanic acid

$C_{24}H_{40}O_4$

M 392,58 g/mol

Warning H361d

4128.1	5 g	glass	35,40 €
4128.2	10 g	glass	66,55 €
4128.3	25 g	glass	130,65 €



Cholic acid sodium salt

≥99 %, for biochemistry

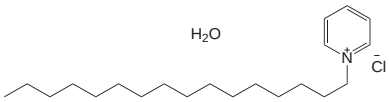
Anionic detergent

Sodium cholate

$C_{24}H_{39}NaO_5$

M 430,57 g/mol

3407.1	50 g	plastic	61,20 €



CPC

≥98 %, for biochemistry

Cationic detergent

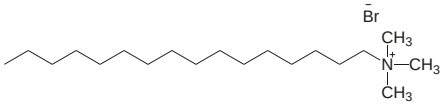
Hexadecylpyridinium chloride monohydrate, Cetylpyridinium chloride monohydrateCPC

$C_{21}H_{38}ClN \cdot H_2O$

M 358,01 g/mol

Danger H301-H330-H400-H410-H315-H319-H335

CN27.1	100 g	plastic	29,60 €
CN27.2	500 g	plastic	110,65 €
Original pack 6 x 500 g			105,12/500 g



CTAB

≥99 %, for biochemistry

Cationic detergent

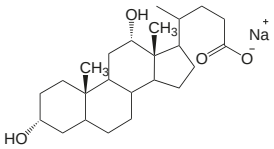
Hexadecyl-trimethylammonium bromide, Cetyltrimethylammonium bromide

$C_{19}H_{42}BrN$

M 364,46 g/mol

Danger H302-H315-H318-H335-H373-H410

9161.1	100 g	plastic	20,35 €
9161.3	500 g	plastic	69,35 €
Original pack 6 x 500 g			65,88/500 g
9161.2	1 kg	plastic	121,40 €
Original pack 6 x 1 kg			115,33/1 kg



Deoxycholic acid sodium salt (DOC)

≥98 %, for biochemistry

Anionic detergent

Sodium deoxycholate, DOC

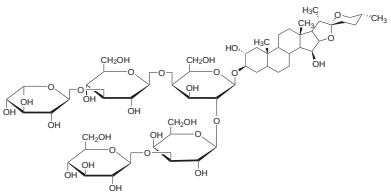
$C_{24}H_{39}NaO_4$

M 414,64 g/mol

Storage temp.: +4 °C

Warning H302-H335-H315-H319

3484.1	10 g	plastic	18,85 €
3484.2	50 g	plastic	58,60 €
3484.3	100 g	plastic	103,10 €



Digitonin

Ultra Quality

Water soluble quality, for biochemistry. Non-ionic detergent.

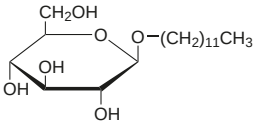
$C_{56}H_{92}O_{29}$

M 1229,32 g/mol

Danger H301+H311+H331

Steroid glycoside and non-ionic detergent with high binding capacity for cholesterol. Digitonin is used for permeabilisation of plasma membranes as well as for mild solubilisation of membrane-bound proteins.
Application: Use 10 -100 µg/ml for selective permeabilisation of plasma membranes via binding of cholesterol (Mooney, R.A. (1988). *Methods Enzymol.* 159:193-2).

HN76.3	100 mg	glass	73,65 €
HN76.1	250 mg	glass	166,65 €
HN76.2	1 g	glass	478,40 €



n-Dodecyl-β-D-glucopyranoside

for biochemistry

Non-ionic detergent.

n-Dodecyl-β-D-Glc

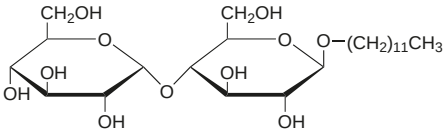
$C_{18}H_{36}O_6$

M 348,48 g/mol

Storage temp.: +4 °C

Warning H315-H319-H335

4129.1	500 mg	glass	115,60 €



Dodecyl-β-D-maltoside (DDM)

≥99 %, for biochemistry

Non-ionic detergent.

DDM, Lauryl-β-D-maltoside

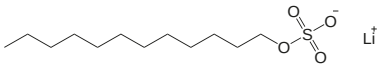
$C_{24}H_{46}O_{11}$

M 510,63 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Mainly used for isolation and solubilisation of membrane proteins. Isolated proteins frequently remain folded in native complexes with stabile conformation and high activity.

CN26.1	500 mg	glass	42,90 €
CN26.2	1 g	glass	69,35 €
CN26.3	2,5 g	glass	150,00 €
CN26.4	10 g	glass	493,45 €



Lithiumdodecyl sulphate (LDS)

≥99 %, for biochemistry

Anionic detergent

LDS, Lithium lauryl sulphate

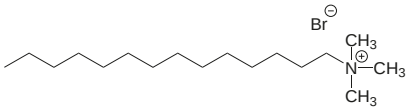
$C_{12}H_{25}LiO_4S$

M 272,33 g/mol

Danger H228-H318-H315-H335

For special applications in molecular biology, and for release of peptides from protein complexes. Compared with SDS, LDS has higher solubility and, under certain conditions, may be used to replace SDS in PAGE.

CN25.1	10 g	plastic	28,50 €
CN25.2	25 g	plastic	55,80 €
CN25.3	50 g	plastic	100,55 €



MTAB

≥96 %, extra pure

Cationic detergent

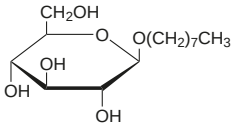
N,N,N-Trimethyl-1-tetradecanammonium bromide,Myristyltrimethyl-ammonium bromide, Tetradecyltrimethylammonium bromide

$C_{17}H_{38}BrN$

M 336,42 g/mol

Danger H315-H318-H335-H373-H400

7452.1	100 g		plastic	40,35 €
7452.2	500 g		plastic	149,45 €
Original pack 6 x 500 g				141,98/500 g
7452.3	1 kg		plastic	289,20 €
Original pack 6 x 1 kg				274,74/1 kg
7452.4	2,5 kg	BIG PACK	plastic	643,95 €



n-Octyl-β-D-glucopyranoside (OGP)

≥99 %, for biochemistry

Non-ionic detergent.

OGP, Octylglucoside

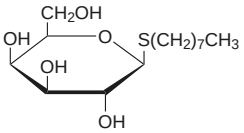
$C_{14}H_{28}O_6$

M 292,38 g/mol

Storage temp.: +4 °C

Non-ionic, non-denaturing, water-soluble detergent, mainly used for isolation of membrane proteins. Easily removable by dialysis.
No photometric absorption at 280 nm.
Recommended working solution: 30 mM
Always prepare working solutions freshly.

CN23.1	1 g	glass	27,85 €
CN23.2	5 g	glass	100,55 €
CN23.3	10 g	glass	166,55 €



n-Octyl-β-D-thiogalactopyranoside

≥98 %, for biochemistry

Non-ionic detergent.

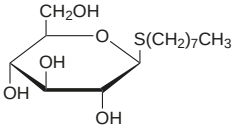
Octyl-β-D-thiogalactoside, n-Octyl-1-thio-β-D-Gal

$C_{14}H_{28}O_5S$

M 308,44 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

4133.1	500 mg	glass	53,65 €
4133.2	1 g	glass	92,35 €



n-Octyl-β-D-thioglucopyranoside

≥95 %, for biochemistry

Non-ionic detergent.

Octyl-β-D-thioglucoside, n-Octyl-1-thio-β-D-Glc

$C_{14}H_{28}O_5S$

M 308,44 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Octyl-β-D-thioglucopyranoside excels by its stability in aqueous solutions. It is also easily removed by dialysis. Hence, it is highly useful for isolation of native membrane proteins.

4139.3	500 mg	glass	36,45 €
4139.1	1 g	glass	56,90 €
4139.2	5 g	glass	209,65 €

Roti®-Stock 20 % SDS

ready-to-use S

BioScience-Grade, ready-to-use, 0,2 µm filtered

For molecular biology and electrophoresis.

SDS 20 % ready-to-use solution

Danger H318-H315-H335

20 % stock solution sodium dodecyl sulphate. Store the solution away from light in a dry place. SDS-stock solution and other solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.
With original seal.

1057.1	1 l	glass	143,55 €
Original pack 6 x 1 l			136,37/1 l

Roti®fair SDS 0.5 g

0,5 g/tablet, for biochemistry, molecular biology and electrophoresis

Anionic detergent for preparation of bioanalytical solutions.

SDS (tablet), Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

Danger H228-H302+H332-H315-H318-H335-H412

Exactly pre-weighed tablets for convenient and rapid preparation of SDS solution.
Roti®fair SDS 0.5g may also be used for preparation of SDS containing solutions, by adding the favoured number of SDS tablets directly during preparation of the solution.
Prepared solution may be sterilized by filtration (0,22 µm). The solution should be stored at room temperature. SDS-stock solution and solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.

10 % SDS solution is prepared by dissolution of 1 tablet in 5 ml highly pure water. Concentrations of 0,05-20 % may be prepared.

1156.1	50 tablets	plastic	48,30 €

Roti®fair 10 % SDS

for 1000 ml/pouch, for biochemistry, molecular biology and electrophoresis

Anionic detergent for preparation of bioanalytical solutions.

SDS powder (pouch), Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

Danger H228-H302+H332-H315-H318-H335-H412

Exactly pre-weighed pouches for convenient and rapid preparation of SDS solution.
Prepared solution may be sterilized by filtration (0,22 µm). The solution should be stored at room temperature. SDS-stock solution and solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.

10 % SDS solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

1157.1	5 pouches	box	618,15 €

SDS

≥99 %, Blotting-Grade

For Western- and Southern blotting

Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

$C_{12}H_{25}NaO_4S$

M 288,38 g/mol

Danger H228-H302+H332-H315-H318-H335-H412

SDS of particularly high purity, tested for absence of heavy metals and for UV-absorption qualities. Particularly suitable for Western- and Southern blotting, as well as for immunodetection and assays in molecular biology.

0183.1	100 g	plastic	50,45 €
0183.2	250 g	plastic	105,90 €
0183.3	500 g	plastic	170,95 €
Original pack 6 x 500 g			162,40/500 g

SDS ultra pure

≥99 %, for electrophoresis, biochemistry and molecular biology

Anionic detergent.

Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

$C_{12}H_{25}NaO_4S$

M 288,38 g/mol

Danger H228-H302+H332-H315-H318-H335-H412

2326.1	100 g	plastic		40,75 €
2326.4	250 g	plastic		86,55 €
2326.2	500 g	plastic		155,90 €
Original pack 6 x 500 g				148,11/500 g
2326.3	500 g (in 2,5 l glass bottle for prep. of a 20 % sol.)	glass	TIP	163,30 €
2326.5	1 kg	plastic		267,70 €
Original pack 6 x 1 kg				254,32/1 kg

SDS Pellets

≥99,5 %, Rotiphorese®-Grade, for electrophoresis

Anionic detergent

Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

$C_{12}H_{25}NaO_4S$

M 288,38 g/mol

Danger H302-H315-H318-H412

Ultrapure, dust-free SDS in special quality for electrophoresis.
Each batch is tested for its functionality in electrophoresis.

8029.1	100 g	plastic	27,45 €
8029.2	250 g	plastic	54,75 €
8029.3	500 g	plastic	94,50 €
Original pack 6 x 500 g			89,78/500 g
8029.4	1 kg	plastic	177,40 €
Original pack 6 x 1 kg			168,53/1 kg

SDS Pellets

≥99 %, for biochemistry

Anionic detergent.

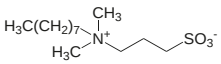
Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

$C_{12}H_{25}NaO_4S$

M 288,38 g/mol

Danger H302-H315-H318-H412

CN30.1	250 g		plastic	27,45 €
CN30.2	500 g		plastic	43,55 €
Original pack 6 x 500 g				41,37/500 g
CN30.3	1 kg		plastic	69,80 €
Original pack 6 x 1 kg				66,31/1 kg
CN30.4	2,5 kg		plastic	125,70 €
CN30.7	5 kg	New size	plastic	201,60 €



Sulfobetaine-8

≥98 %, for biochemistry

Zwitterionic detergent

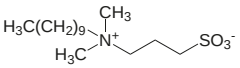
N-Octyl-N,N-dimethyl-3-ammonio-1-propane sulphonate, SB-8

$C_{13}H_{29}NO_3S$

M 279,4 g/mol

Warning H315-H319-H335

1800.1	5 g	glass	52,60 €
1800.2	25 g	glass	139,65 €



Sulfobetaine-10

≥98 %, for biochemistry

Zwitterionic detergent

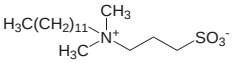
N-Decyl-N,N-dimethyl-3-ammonio-1-propane sulphonate, SB-10

$C_{15}H_{33}NO_3S$

M 307,5 g/mol

Warning H315-H319-H335

1816.1	5 g	glass	53,65 €
1816.2	25 g	glass	139,65 €



Sulfobetaine-12

≥98 %, for biochemistry

Zwitterionic detergent

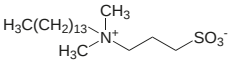
N-Dodecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate, SB-12

$C_{17}H_{37}NO_3S$

M 335,5 g/mol

Warning H315-H319-H335

1821.1	5 g	glass	22,50 €
1821.2	25 g	glass	55,80 €
1821.3	100 g	glass	190,85 €



Sulfobetaine-14

≥98 %, for biochemistry

Zwitterionic detergent

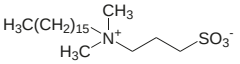
N-Tetradecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate, SB-14

$C_{19}H_{41}NO_3S$

M 363,6 g/mol

Warning H315-H319-H335

1822.1	5 g	glass	29,60 €
1822.2	25 g	glass	79,05 €
1822.3	100 g	glass	263,40 €



Sulfobetaine-16

≥98 %, for biochemistry

Zwitterionic detergent

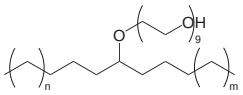
N-Hexadecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate, SB-16

$C_{21}H_{45}NO_3S$

M 391,7 g/mol

Warning H315-H319-H335

1823.1	5 g	glass	57,95 €
1823.2	25 g	glass	156,85 €



n+m=2-6

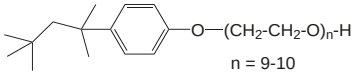
Tergitol™ 15-S-9

extra pure

Alternative to Triton® X-100, non-ionic detergent.
sec. Alcoxy polyethylene glycol, Polyethylene glycol ether, sec. Alcohol ethoxylate

Warning H302+H332-H411

9975.1	100 ml		glass	17,75 €
9975.2	500 ml		glass	38,60 €



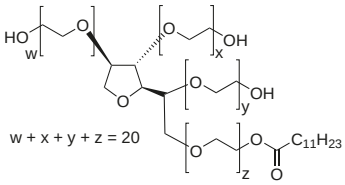
Triton® X 100

extra pure

Non-ionic detergent. For biochemistry and molecular biology.
Polyethylene glycol alkylphenyl ether
$C_{33}H_{60}O_{10}$
M 624 g/mol

Danger H302-H318

3051.3	250 ml		plastic	17,75 €
3051.4	500 ml		plastic	23,15 €
3051.2	1 l		plastic	32,15 €
Original pack 6 x 1 l				30,54/1 l
3051.1	10 l	BIG PACK	plastic	200,50 €



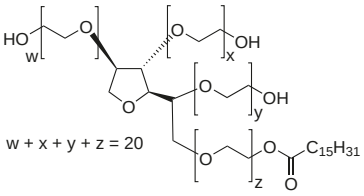
Tween® 20

Ph.Eur.

Non-ionic detergent.
Polyoxyethylene-20-sorbitan monolaurate, Polysorbate 20

9127.1	250 g		plastic	21,00 €
9127.2	1 kg		plastic	53,65 €
Original pack 6 x 1 kg				50,97/1 kg
9127.3	2,5 kg		plastic	93,00 €
9127.4	5 kg	New size	plastic	149,45 €
9127.8	10 kg	New size	plastic	278,45 €

Safety data sheets
can be found on the Internet next to the product description.

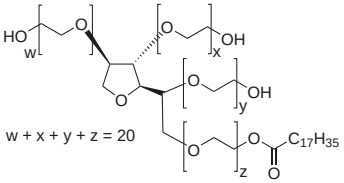


Tween® 40

Ph.Eur.

Non-ionic detergent.
Polyoxyethylene-40-sorbitan monopalmitate, Polysorbate 40

8240.1	250 g		plastic	22,50 €
8240.2	500 g		plastic	38,60 €
Original pack 6 x 500 g				36,67/500 g
8240.3	1 kg		plastic	62,25 €
Original pack 6 x 1 kg				59,14/1 kg

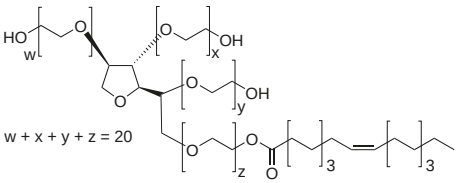


Tween® 60

Ph.Eur.

Non-ionic detergent.
Polyoxyethylene-60-sorbitan monostearate, Polysorbate 60

9694.1	250 g		plastic	22,50 €
9694.2	500 g		plastic	38,60 €
Original pack 6 x 500 g				36,67/500 g
9694.3	1 kg		plastic	62,25 €
Original pack 6 x 1 kg				59,14/1 kg



Tween® 80

Ph.Eur.

Non-ionic detergent.
Polyoxyethylene-80-sorbitan monooleate, Polysorbate 80
Tween 80 (polysorbat 80) is recommended by the European Pharmacopeia as surface-active additive for solubilisation of heavily wettable reagents (1 g/l).

9139.1	250 g		plastic	22,50 €
9139.3	500 g		plastic	39,25 €
Original pack 6 x 500 g				37,29/500 g
9139.2	1 kg		plastic	64,40 €
Original pack 6 x 1 kg				61,18/1 kg
9139.4	2,5 kg	New size	plastic	117,20 €
9139.5	5 kg	New size	plastic	181,70 €
9139.6	10 kg	New size	plastic	321,45 €

Enzymes

Alkaline phosphatase

≥2000 Glycine U/mg protein (approx. 6000 DEA U/mg protein)

From bovine intestinal mucosa. Solution in 50 % glycerol, 5 mM Tris/HCl, 5 mM $MgCl_2$ and 0,1 mM $ZnCl_2$, pH approx. 7,0.

Phosphatase, alkaline; ALP; AP

M ~120 000 g/mol

Storage temp.: +4 °C

One glycine unit (U) is defined as the amount of enzyme that catalyzes the hydrolysis of one µmole of p-nitrophenyl phosphate per min at pH 9.6 and 25 °C (glycine buffer).

6024.1	10 KU	plastic	375,20 €

β-Amylase

16-24 U/mg, lyophil.

Made from barley malt.

Storage temp.: +4 °C

Danger H334

1 Unit enzyme acc. to Zulkowsky releases 1 µmol maltose per minute at 25 °C (pH 4.8).

8717.1	100 mg	glass	53,65 €

Bromelain

~1200 GDU/g, for biochemistry

Made from stems of young pineapple *(Bromeliaceae)*.

Bromelin

Storage temp.: +4 °C

Danger H334-H335-H315-H319

Highly active thiol proteinase (non-specific cystein protease), glycoprotein. Enzyme from *Bromeliaceae*, used in biochemistry and for meat tenderising. Preferable digestion at lysin, alanin, tyrosin and glycin. Degrades hemoglobin, gluten, collagen, globulin, casein and gelatin at pH 4-9. Cream-coloured, hygroscopic powder. Bromelain is activated by cystein, bisufite salts, NaCN, Na_2S, H_2S and benzoate. The definite pH optimum depends on substrate and reaction parameters. pH stability of bromelain increases drastically after binding to the substrate.
One GDU (gelatin digestion unit) will hydrolyse 1.0 mg of amino nitrogen from gelatin in 20 minutes at pH 4.5 at 45 °C. One bromelain tyrosine unit (BTU) corresponds to 1.1 GDU. 1200 GDU/g correspond to approx. 2.4 FIP-units/mg.

Applications:
pH working range: 4.0-8.0
pH optimum: 5-6. Stabile at pH 3.0-6.5
Temperature optimum: 50-65 °C
Inhibitors: Hg^{++}, Ag^{++}, Cu^{++}, antitrypsin, estatin, iodacetate, TLCK, TPCK, and temperatures of over 70 °C
Stock solution: 10 mg/ml in H_2O
Unsoluble in organic solvents (acetone, ethanol, methanol etc.)
Working concentration: substrate dependent

5950.1	10 g	plastic	21,40 €
5950.2	100 g	plastic	96,25 €

Catalase

≥11 700 U/mg material (approx. 40 000 U/mg protein)

From bovine liver, freeze-dried

Storage temp.: -20 °C • Transport temp.: room temp.

One unit (U) is defined as the amount of enzyme that catalyzes the decomposition of one µmole of hydrogen peroxide per min at pH 7.0 and 25 °C.

6025.1	5 MU	plastic	155,35 €

Chymotrypsin

≥1000 USP-U/mg, for biochemistry

Made from bovine pancreas.

α-Chymotrypsin

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H334-H335-H315-H319

Trypsin content <1 %.

0238.1	100 mg	glass	26,80 €
0238.2	500 mg	glass	55,40 €
0238.3	1 g	glass	91,30 €

Glucose oxidase (GOD)

~360 U/mg protein (approx. 280 U/mg material)

From *Aspergillus niger*, freeze-dried.

GOx, GOD

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H334

One unit (U) is defined as the amount of enzyme that catalyzes the oxidation of one µmole of glucose per min at pH 7.0 and 25 °C.

6028.1	0,5 MU	plastic	203,20 €

β-Glucosidase

≥1000 U/mg, from almonds

ex amygdal

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H334

Yellow lyophilised powder. 1 unit β-Glucosidase causes the liberation of 1 µg glucose per minute from salicin at 35 °C.

7512.1	100 mg	glass	106,45 €
7512.2	1 g	glass	783,70 €

Glutamate dehydrogenase (GDH, GLDH)

≥10 U/mg material (approx. 40 U/mg protein)

From bovine liver, freeze-dried.

GDH, GLDH; L-Glutamic dehydrogenase

Storage temp.: -20 °C • Transport temp.: room temp.

One unit (U) is defined as the amount of enzyme that catalyzes the reduction of one µmole of 2-oxoglutarate per min at pH 7.3 and 25 °C.

6052.1	10 KU	plastic	155,80 €

Hyaluronidase

~500 U/mg, free from salt, lyophilised

ex ovine testes

M ~70000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H334

Testicular hyaluronidases with hydrolytic and transglycosidic activity. Ideal for decomposition of hyaluronic acid and chondroitin sulphate in extracellular matrix.

Application:
pH optimum 7.0-8.0
Stock solution: 1-300 mg/ml in phosphate buffer or water
Working concentration: 0.1-10 mg/ml

9978.2	250 mg	glass	59,05 €
9978.1	1 g	glass	190,30 €

Hyaluronidase

~300 U/mg, free from salt, lyophilised

ex ovine testes

M ~70000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H334

Testicular hyaluronidases with hydrolytic and transglycosidic activity. Ideal for decomposition of hyaluronic acid and chondroitin sulphate in extracellular matrix.

Application:
pH optimum 7.0-8.0
Stock solution: 1-300 mg/ml in phosphate buffer or water
Working concentration: 0.1-10 mg/ml

9980.1	250 mg	glass	34,30 €
9980.2	1 g	glass	94,50 €

Lactate dehydrogenase (LDH)

≥290 U/mg protein

From porcine heart, freeze-dried

LDH, LD, Lactic dehydrogenase

Storage temp.: -20 °C • Transport temp.: room temp.

One unit (U) is defined as the amount of enzyme that oxidizes one µmole of NADH per min at pH 7.4 and 25 °C.

6060.1	0,05 MU	plastic	128,50 €

Lipoxygenase

≥100 000 U/mg, for biochemistry

Made from soybeans. For oxidation of arachidonic acid.

Lipoxidase

M ~108 000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Lipoxygenase stereo-specifically catalyses the oxidation of arachidonic acid, initiating the formation of leukotrienes in eicosanoid metabolism. One unit will cause an increase in absorption (234 nm) of 0.001 per minute at 25 °C and pH 9 by oxidation of linoleic acid.

Application:
Well soluble in H_2O or buffer.
Recommended storage of stock solution in aliquots at -20 °C.

CN73.1	100 mg	glass	30,00 €
CN73.2	500 mg	glass	96,65 €
CN73.3	1 g	glass	149,45 €

Safety data sheets
can be found on the Internet next to the product description.

Lysozyme

≥35000 FIP U/mg, BioScience-Grade, lyophilised

From chicken egg white, free from albumin.

M ~14000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H334

Salt and albumin free lyophilised powder. Quality product for molecular biology. Ideal for lysis of bacteria for preparing DNA.
1 FIP-Unit equals the amount of enzyme which reduces the absorbance by 0.001 per min. at 450 nm, 25 °C, pH 7.00 using a suspension of FIP *Micrococcus luteus* as substrate (acc. to *Pharmaceutical Enzymes* 1997). 1 FIP-Unit resembles approximately 1 Shugar-Unit.

Application:
pH optimum: 6.0-7.0
Inhibitors: imidazole, indole, N-acetyl glucosamine
Working solution: 5-10 mg/ml (bacteria), 1-2 mg/ml (euk. cells)
Buffer: salt solution without detegents (0.1 M potassium phosphate buffer, 50 mM Tris buffer, 1x PBS etc.)
Temperature optimum: 37 °C
Isoelectric point: approx. 11
Lysozyme solution should be frozen only once.

8259.1	1 g	glass	27,85 €
8259.3	25 g	glass	321,45 €
8259.2	10 g	glass	170,95 €

Malate dehydrogenase (MDH)

≥1250 U/mg protein

From porcine heart, freeze-dried

MDH

Storage temp.: -20 °C • Transport temp.: room temp.

One unit (U) is defined as the amount of enzyme that oxidizes one µmole of NADH per min at pH 7.4 and 25 °C.

6062.1	0,05 MU	glass	146,75 €

Papain

>30 000 USP-U/mg, for biochemistry

Made from *Carica papaya.*

Storage temp.: +4 °C

Danger H334-H335-H315-H319

A non-specific endopeptidase from Papaya latex. Has a very wide substrate range and cleaves proteins more efficiently than trypsin, for example. Is capable of not only hydrolysing peptide bonds, but also acts effectively as an esterase and thiol-esterase.
30.000 USP (Casein) Units is approx. 2 FIP-Units (BAEE-Units). One USP Unit of Papain activity releases the equivalent of 1 µg tyrosine form a specified casein substrate under assay conditions specified by the USP. DTT can be used to increase the activity.

8933.1	25 g	plastic	52,15 €
8933.2	100 g	plastic	142,90 €

Pepsin

≥2000 FIP-U/g, for biochemistry

From porcine gastric mucosa. For detection of trichina in meat.
M 35000 g/mol • Storage temp.: +4 °C

Danger H334-H335-H315-H319

Acidic endopeptidase, the inactive precursor of which, pepsinogen, is produced in the stomach mucosa. Pepsin cleaves proteins preferentially at carboxylic groups of aromatic amino acids such as phenylalanine and tyrosine. Highly active pepsine is preferably used for detection of trichina in pre-digested muscle meat of animals.
1 FIP unit (≈Ph. Eur. unit) of Pepsin activity will, during incubation at 25±0.1 °C for one minute, cause decomposition of haemoglobin to an extent comparable with the colour caused by reaction of 1 micromole of tyrosine with the same dye. 2 000 FIP-Units correspond to 1: 10 000 NF-U and 1: 12 500 BP-U.

Application:
Well soluble in water, stable in aqueous solutions of pH up to 5.5, unstable above pH 6.0. Irreversible inactivated in alkaline medium. Solution is stable in temperatures of up to 60 °C, and also in higher concentrations of urea and guanidine.
pH optimum: 1-2
Isoelectric point: 1.0

KK38.1	50 g		plastic	59,05 €
KK38.2	100 g		plastic	94,50 €
KK38.3	250 g		plastic	193,00 €
KK38.4	1 kg	BIG PACK	plastic	697,70 €
Original pack 6 x 1 kg				662,82/1 kg

Pepsin

≥0,5 Ph.Eur.-U/mg, for biochemistry

Isolated from pigs stomach.
M 35000 g/mol • Storage temp.: +4 °C

Danger H334-H335-H315-H319

0.5 Ph.Eur.-U/mg correspond to approx. 500 FIP-U./g.

0230.1	25 g	glass	26,35 €
0230.2	50 g	glass	42,50 €

Peroxidase

≥250 U/mg material

From horseradish, freeze-dried
HRP, Horseradish peroxidase
Storage temp.: -20 °C • Transport temp.: room temp.

Danger H317-H334

One unit (U) is defined as the amount of enzyme that catalyzes the production of 1 mg of purpurogallin from pyrogallol in 20 seconds at pH 6.0 and 20 °C.

6055.1	0,05 g	plastic	125,70 €

Enzyme: a neoclassical, Greek artificial word ενζυμου, *énzymon*, derived from εν-, *en-* (in-) and ζυμη, *zýmé* (yeast, sourdough, archaic)
Ferments: comes from the Latin *fermentum* (ferments, sourdough)

There are six **classes** in which all enzymes are classified according to the particular reaction they catalyse:

- *Oxidoreductases* (catalyse redox reactions)
- *Transferases* (transfer functional groups among substrates)
- *Hydrolases* (cleave bonds via addition of water)
- *Lyases/Synthases* (cleave or synthesise complex products out of basic substrates without cleavage of ATP)
- *Isomerases* (transform chemical isomers)
- *Ligases/Synthetases* (cleave or synthesise complex products out of basic substrates via cleavage of ATP)

Proteinase K

RNAse-/DNAse-free

lyophil., ≥30 mAnson U/mg

Isolated from fungi (*Tritirachium album*).
Storage temp.: +4 °C

Danger H315-H319-H334-H317-H335

A non-specific protease with strong proteolytic activity for degrading proteins in biological samples. A quality product for molecular biology with a broad scope of application.

Suitable for:
- Preparing chromosomal DNA for PFGE
- Degrading nucleases during preparation of nucleic acids (includes preparation of native RNA)

Activity: (Haemoglobin, pH 7.5; 25 °C) 30 mAnson-U/mg
Foreign activity: RNase and DNase not detectable
Optimum temperature: +65 °C.
Activity at +65 °C is ca. 12 x higher than at +25 °C.
Over +65 °C, inactivation due to denaturation.
Stability: pH 4.0-12.5.
Also stable even when denaturing agents, e.g. SDS and urea are present.
Activators: Denaturating agents (SDS, urea).
Inhibitors: Inhibition with Hg^{2+}-ions, DFP, PMSF and phenol.
Not inhibited by EDTA, sulfhydryl reagents and trypsin or chymotryps ininhibitors.
Stabilisers: Ca^{2+}-ions (1-5 mM) prevent autolysis.

Application:
Reaction buffer: 50 mM Tris-HCl; pH 7.5; 5 mM $CaCl_2$; 0.5 % SDS
Stock solution: 20 mg/ml in water
Storage temperature (stock solution): -20 °C
Working solution: 50 µg/ml
Art. No. 7528.3: A stock solution with a concentration of 20 mg/ml can be prepared directly by adding 25 ml buffer or water.

7528.1	100 mg		glass	93,45 €
7528.5	250 mg		glass	177,40 €
7528.2	500 mg		glass	317,15 €
7528.3	500 mg (in a 30 ml glass bottle)	TIP		353,70 €
7528.4	1 g		glass	532,15 €
7528.6	5 g		glass	2105,95 €

Rennin

for biochemistry

Chymosin, rennase, lab
M ~31000 g/mol
Storage temp.: +4 °C

Danger H334-H335-H315-H319

8178.1	50 g	plastic	60,10 €

Safety data sheets
can be found on the Internet next to the product description.

Trypsin TSE-/BSE-free

5000 USP-U/mg

Isolated from porcine pancreas, lyophilised.

M ~24000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H334-H335-H315-H319

A pancreatic serine protease with a specificity for peptide bonds between basic amino acids arginine or lysine and another non-specific amino acid. Trypsin is frequently used to suspend cells which grow as monolayers on surfaces. Longer exposure to trypsin can damage cells, so that an inhibitor (serum or trypsin inhibitor from soya beans) should be added upon completion.
One USP Unit will cause an increase in absorption (253 nm) per minute of 0,003 at 25 °C and pH 7,6 using BAEE as substrate.
One (international) Unit (U, 255 nm, BAEE, pH 8) is approx. 90 USP U.
One TAME Unit is approx. 20 USP Units. One NF Unit is one USP Unit.
Ten „BAEE Units" are approx. 3,3 USP Units.

Application: pH optimum 7,2-8,5.

2193.1	100 mg	glass	30,00 €
2193.2	500 mg	glass	93,00 €

Trypsin

≥2500 USP-U/mg, cryst.

Isolated from porcine pancreas, lyophilised.

M ~24000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H334-H335-H315-H319

One USP Unit will cause an increase in absorption (253 nm) per minute of 0,003 at 25 °C and pH 7,6 using BAEE as substrate.
One (international) Unit (U, 255 nm, BAEE, pH 8) is approx. 90 USP U.
One TAME Unit is approx. 20 USP Units. One NF Unit is one USP Unit.
Ten „BAEE Units" are approx. 3,3 USP Units.

5455.1	100 mg	glass	25,70 €
5455.2	1 g	glass	107,40 €

Urease

≥220 Nessler U/mg material

From jack bean, freeze-dried

M ~480000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

One unit (U) is defined as the amount of enzyme that catalyzes the liberation of 1 µmole of NH_3 per min at pH 7.0 and 25 °C.

6065.1	0,25 MU	plastic	166,65 €

Urease

~1 U/mg, for biochemistry

From jack beans *Canavalia ensiformis*.

M ~480000 • Storage temp.: -20 °C • Transport temp.: room temp.

Hydrolase belonging to the Amidases. Metallo-enzyme. Urease hydrolasis urea, resulting in ammonia and carbon dioxide, or in ammonia- and carbonate ions, respectively. The molecule isolated from Jack beans is composed of 6 subunits of approx. 91 kD each with an overall size of approx. 544 kD. Nickel is the cofactor. Using high amounts of urea as substrate (200 mM), urease is applied for visualisation of the connection between reaction rate and time. Detection is carried out via measurement of conductivity, or, photometrically, via colour change of bromothymol blue. Furthermore, model system for catalytic activation of carbon dioxide in metallo-organic chemistry.
1 Unit enzyme hydrolyses 1 µmol urea per minute at 25 °C (pH 8.0).

Application:
pH optimum: 7.4.
Recommended reaction buffer system is 40 mM potassium phosphate buffer, pH 7.4. Heavy metals (e.g. lead) are inhibitory.

7537.1	5 g	plastic	134,40 €

Zymolyase® 100T

≥100 U/mg, for biochemistry and molecular biology

For lysis of yeast cells. Isolated from *Arthrobacter luteus*.

Lyticase, β-1,3-glucan laminaripentaohydrolase

Storage temp.: +4 °C • Transport temp.: cooled

Zymolyase® 100T, produced by a submerged culture of *Arthrobacter luteus*, has strong lytic activity against living cell walls of various strains of yeast cells. Hence, it is frequently used in order to produce protoplast or spheroplast.
The essential enzyme for the lytic activity of Zymolyase® 100T is β-1,3-glucan laminaripentaohydrolase. It hydrolyzes linear glucose polymers with β-1,3-linkages and releases specifically laminaripentaose as the main and minimum product unit. Zymolyase® 100T is prepared by ammonium sulphate precipitatation, and is further purified by affinity chromatography.
One unit of lytic activity is defined as the enzyme amount causing a decrease of 30 % in absorbance at 800 nm using 6 mg Brewer's yeast as substrate in Phosphate buffer (pH 7,5) at 25 °C. Lytic activity varies depending on the particular yeast strain, the growth stage of the yeast, and cultural conditions.

Application:
As stock solution, a 2 to 10 % (20 or 100 mg/ml) Zymolyase® solution may be prepared, solubilizing the enzyme in water, 10 mM sodiumphosphate buffer (pH 7,4) or 50 mM Tris-Cl (pH 7,5), respectively, according to the buffer system to be used downstream and containing 5 % glucose and 50 % glycerol each. The Zymolyase® tends to not dissolve completely. Do not heat for solubilization, but rather use the Zymolyase® as suspension. The suspension may be stored in aliquots at -20 °C. For use in the respective buffer system, dilute the stock solution to the working concentration of 2-5 mg/ml and optionally sterilize by filtration (0,2 µm).
In most cases, however, Zymolyase® is solubilized in freshly prepared working buffer (for instance rescue buffer 50 mM Tris-Cl, pH 7,5, 10 mM EDTA, 0,3 % β-Mercaptoethanol) in the required working concentration directly prior to use.
Avoid using nitrocellulose filters when sterilizing - Zymolyase® may be adsorbed to nitrocellulose membranes.

Other enzymatic activities contained: β-1,3-glucanase, protease, mannanase. Trace amounts of amylase, xylanase, phosphatase.
Stability: at 30 °C 70 % of the lytic activity is lost after 3 months.
Optimum temperature and pH: at pH 7,5 - 35 °C for lysis of viable yeast cells, at pH 6,5 - 45 °C for hydrolysis of yeast glucan
Specificity (lytic spectrum): *Ashbya, Candida, Debaryomyces, Eremothecium, Endomyces, Hansenula, Hanseniaspora, Kloeckera, Kluyveromyces, Lipomyces, Metschnikowia, Pichia, Pullularia, Torulopsis, Saccharomyces, Saccharomycopsis, Saccharomycodes, Schwanniomyces,* etc.

9329.1	100 mg	glass	289,20 €
9329.2	500 mg	glass	901,95 €

Zymolyase® 20T

≥20 U/mg, for biochemistry and molecular biology

For lysis of yeast cells. Isolated from *Arthrobacter luteus*.

Lyticase, β-1,3-glucan laminaripentaohydrolase

Storage temp.: +4 °C • Transport temp.: cooled

Zymolyase® 20T is prepared by ammonium sulfate precipitatation.

For further general information on Zymolyase® 20T see Zymolyase® 100T.

9324.1	100 mg	glass	79,45 €
9324.2	500 mg	glass	225,25 €
9324.3	1 g	glass	396,70 €

Coenzymes

Adenosin-5'-triphosphate disodium salt (ATP)

≥98 %, for biochemisty

Coenzyme of kinases.

ATP disodium salt

$C_{10}H_{14}N_5Na_2O_{13}P_3$ • M 551,10 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Discovered in 1929 by Karl Lohmann. Main molecular currency of energy in all cells and highly important regulator of energy providing processes. During hydrolysis of phospho-anhydride bonds, energy of 30.5 kJ/mol (ADP) or 45.6 kJ/Mol (AMP), respectively, is released. Ligand of purinergic receptors and intercellular signalling molecule. Additionally, ATP is coenzyme of phosphate-transferring kinases like proteine kinases A, proteine kinases C, calmodulin-dependent kinases, and substrate of adenylate cyclases, which synthesize the second-messenger molecule cAMP.

HN35.1	5 g	glass	24,20 €
HN35.2	10 g	glass	34,30 €
HN35.3	25 g	glass	64,00 €
HN35.4	100 g	glass	209,65 €

Coenzyme Q 10

≥98 %, for biochemisty

Ubiquinone 50

$C_{59}H_{90}O_4$ • M 863,37 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Ubiquinones represent a vital component in electron transport of the mitochondrial respiratory chain (hydrogen/electron and oxygen carriers). They, therefore, are almost ubiquitously distributed through the species, with the only exclusion of gram positive bacteria and cyanobacteria. Coenzyme Q functions as electron carrier between flavoproteins and cytochrome molecules of the respiratory chain.
Well soluble in organic solvents (e. g. acetone, diethyl ether, chloroform) and fats. Virtually insoluble in water.

4047.1	25 mg	glass	21,40 €
4047.2	1 g	glass	37,55 €
4047.3	5 g	glass	94,50 €
4047.4	10 g	glass	153,65 €
4047.5	25 g	glass	321,45 €

Flavine-adenine-dinucleotide disodium salt (FAD)

CELLPURE® ≥95 %

FAD disodium salt, Riboflavin-5'-adenosine diphosphate disodium salt

$C_{27}H_{31}O_{15}N_9Na_2P_2$ • M 865,55 g/mol • Storage temp.: +4 °C

Endotoxins: ≤100 E.U./g

6833.1	10 mg	glass	26,35 €
6833.2	50 mg	glass	38,60 €
6833.3	100 mg	glass	52,15 €

Flavine-adenine-dinucleotide disodium salt (FAD)

≥95 %, for biochemisty

FAD disodium salt, Riboflavin-5'-adenosine diphosphate disodium salt

$C_{27}H_{31}O_{15}N_9Na_2P_2$

M 865,55 g/mol

Storage temp.: +4 °C

5581.2	10 mg	glass	18,20 €
5581.3	25 mg	glass	23,55 €
5581.1	100 mg	glass	41,85 €
5581.4	500 mg	glass	64,40 €
5581.5	1 g	glass	96,65 €

NAD

≥97,5 %, for biochemisty

NAD free acid, β-Nicotinamide adenine dinucleotide, DPN, Coenzyme I, β-NAD.

$C_{21}H_{27}N_7O_{14}P_2$

M 663,4 g/mol

Storage temp.: +4 °C

AE11.1	1 g	glass	30,65 €
AE11.2	5 g	glass	123,10 €
AE11.3	10 g	glass	214,50 €

NADH disodium salt

≥98 %, for biochemisty

NADH-Na_2, β-Nicotinamide adenine dinucleotide disodium salt, DPNH_2-Na_2

$C_{21}H_{27}N_7O_{14}P_2Na_2$

M 709,4 g/mol

Storage temp.: +4 °C

AE12.1	1 g	glass	45,70 €
AE12.2	5 g	glass	203,20 €
AE12.3	10 g	glass	364,45 €

NADP disodium salt

≥97 %, for biochemisty

NADP-Na_2, β-Nicotinamide adenine dinucleotide phosphate disodium salt.

$C_{21}H_{26}N_7O_{17}P_3Na_2$

M 787,4 g/mol

Storage temp.: +4 °C

AE13.1	250 mg	glass	37,10 €
AE13.2	500 mg	glass	66,55 €
AE13.3	1 g	glass	124,60 €

NADPH tetrasodium salt

≥97 %, for biochemisty

NADPH-Na_4, β-Nicotinamide adenine dinucleotide phosphate tetrasodium salt.

$C_{21}H_{26}N_7O_{17}P_3Na_4$

M 833,4 g/mol

Storage temp.: +4 °C

AE14.1	100 mg	glass	83,75 €
AE14.2	250 mg	glass	181,70 €
AE14.3	500 mg	glass	331,00 €

Inhibitors

Enzyme inhibitors are molecules that bind to enzymes and decrease their activity. The classification of inhibitors, which can stem from various substance classes, results from the type of inhibition (reversible with subclasses, or irreversible) or the target molecule (e.g. serine protease inhibitors).
Generally, for inhibition of specific proteins in biochemical assays single specific inhibitors are used, while a suitable inhibitor cocktail is recommended for work on protein mixtures such as cellular or tissue extracts.
At Roth you will find both inhibitor cocktails for all common extracts, as well as the most important individual inhibitors.

Inhibitor Cocktails

Inhibitor Cocktail	Standard	BroadRange	Plus	Tissue	Bacteria	His-tag
Art. No.	**3743**	**3749**	**3751**	**3755**	**3758**	**3760**
Shipment	lyophilised (uncooled)	lyophilised (uncooled)	in 1 ml DMSO (uncooled)	lyophilised (uncooled)	lyophilised (uncooled)	in 1 ml DMSO (cooled)
Dilution/stock sol.	100 ml 1x sol.	1 ml 100x stock sol.	for 20 g tissue	1 ml 100x stock sol.	5 ml 40x stock sol.	1 ml 100x stock sol.
AEBSF	1,67 mM	50 mM	100 mM	50 mM	20 mM	100 mM
Aprotinin	-	15 µM	80 µM	15 µM	-	-
Bestatin	-	-	5 mM	-	1,7 mM	5 mM
E-64	-	100 µM	1,5 mM	100 µM	200 µM	1,5 mM
EDTA	13,44 mM	50 mM	-	-	85 mM	-
Leupeptin	2,0 µM	100 µM	2 mM	100 µM	-	0,2 mM
Pepstatin A	1,46 µM	-	1 mM	-	2 mM	-
Phosphoramidon	-	-	-	-	-	2 mM
Recommended for	Extracts without special proteases, basic sol. for own inhibitors	Broad band effects. Extracts from eukaryotic tissue	Broad band effects. Extracts from mammalian cells and tissue	Extracts from mammalian cells and tissue	Bacterial extracts	Extractions of His-tagged proteins

Please note our **Technical Information Brochure** on the Internet next to the products:

Protease Inhibitor Cocktails
Overview and recommendations for application

Inhibitor Cocktail Standard

for biochemistry

General cocktail of protease inhibitors.
Storage temp.: -20 °C • Transport temp.: room temp.

Danger H314-H332-H373

Inhibitor cocktail for inhibition of standard proteases. Inhibits serine proteases, metalloproteases, cysteine proteases, trypsin-like proteases, and aspartic proteases.
Recommended as cocktail for protease inhibition during standard extraction without presence of special proteases, or as basic solution for supplementation with own inhibitors.

Well water-soluble. The premixed powder may easily be reconstituted in 100 ml distilled water or extraction buffer to form a 1x inhibitor solution.
End concentrations in 1x solution are:
AEBSF: 1.67 mM
EDTA: 13.44 mM
Leupeptin: 2.1 µM
Pepstatin A: 1.46 µM
Storage of inhibitor solution: 4 °C max. 90 days
Do not freeze the solution!

3743.1	1 vial	plastic	128,90 €

Inhibitor Cocktail BroadRange

for biochemistry

Broad range cocktail of protease inhibitors.
Storage temp.: -20 °C • Transport temp.: room temp.

Danger H314-H332-H373

Inhibitor cocktail for inhibition of a broad range of proteases. Inhibits serine proteases, esterases, metalloproteases, cysteine proteases, and trypsin-like proteases.
Recommended as cocktail for protease inhibition during tissue extraction.
1 vial is prepared for the inhibition of proteases from 1-2 g material.

Well water-soluble. The premixed powder may easily be reconstituted in 1 ml distilled water to form a approx. 100x inhibitor stock-solution.
Concentrations in stock-solution are:
AEBSF: 50 mM
Aprotinin: 15 µM
E-64: 100 µM
EDTA: 50 mM
Leupeptin: 100 µM
Storage of aliquoted inhibitor solution: -20 °C max. 1 month

3749.1	1 vial	plastic	55,40 €

Inhibitor Cocktail Plus

ready-to-use

ready-to-use, for biochemistry

Broad range cocktail of protease inhibitors for extracts of mammalian cells or tissue.

Storage temp.: -20 °C • Transport temp.: cooled

Warning H315-H319

Inhibitor cocktail for inhibition of a broad range of proteases. Inhibits serine proteases, esterases, aminopeptidase B, leucine-aminopeptidases, cysteine proteases, trypsin-like proteases, and aspartic proteases.
Recommended as cocktail for protease inhibition particularly in extracts from mammalian cells or tissue. 1 ml is prepared for the inhibition of proteases from 20 g cells or tissue.

Provided as stock-solution in DMSO.
Concentrations per vial are:
AEBSF: 100 mM
Aprotinin: 80 µM
Bestatin: 5 mM
E-64: 1.5 mM
Leupeptin: 2 mM
Pepstatin A: 1 mM
Storage of inhibitor solution: -20 °C max. 6 months

3751.1	1 ml	plastic	89,15 €

Inhibitor Cocktail His-tag

ready-to-use

ready-to-use, for biochemistry

Broad range cocktail of protease inhibitors for extraction of His-tagged proteins.

Storage temp.: -20 °C • Transport temp.: cooled

Danger H318-H315

Inhibitor cocktail for inhibition of a broad range of proteases. Inhibits serine proteases, aminopeptidase B, leucine-aminopeptidases, cysteine proteases, aspartic proteases, and metalloendopeptidases.
Recommended as cocktail for protease inhibition particularly for extraction of His-tagged proteins from bacterial extracts. 1 ml is prepared for the inhibition of proteases in extracts from 10 g bacterial cells. Recommended dilution approx. 1:100.

Provided as stock-solution in DMSO.
Concentrations per vial are:
AEBSF: 100 mM
Bestatin: 5 mM
E-64: 1.5 mM
Pepstatin A: 0.2 mM
Phosphoamidon: 2 mM
Storage of inhibitor solution: -20 °C max. 6 months

3760.1	1 ml	plastic	97,75 €

Inhibitor Cocktail Tissue

for biochemistry

Cocktail of protease inhibitors for extracts of mammalian cells or tissue.

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H314

Inhibitor cocktail. Inhibits serine proteases, esterases, cysteine proteases, and trypsin-like proteases.
Recommended as cocktail for protease inhibition particularly in extracts from mammalian cells or tissue.

Well water-soluble and hygroscopic. The premixed powder may easily be reconstituted in 1 ml distilled water to form an inhibitor stock-solution. 1 vial is prepared for the inhibition of proteases from approx. 2 g cells or tissue. Recommended dilution is 1:100. End concentration for the respective extract has to be optimized.
Concentrations in stock-solution are:
AEBSF: 50 mM
Aprotinin: 15 µM
E-64: 100 µM
Leupeptin: 100 µM
Storage of aliquoted inhibitor solution: -20 °C max. 6 months

3755.1	1 vial	plastic	47,85 €

Inhibitor Cocktail Bacteria

for biochemistry

Broad range cocktail of protease inhibitors for extracts from bacteria.

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H314

Inhibitor cocktail for inhibition of standard proteases. Inhibits serine proteases, aminopeptidase B, leucine-aminopeptidases, metalloproteases, cysteine proteases, and aspartic proteases.
Recommended as cocktail for protease inhibition in extracts from bacteria.

Well soluble in DMSO and hygroscopic. The premixed powder (Art. No. 3947) may easily be reconstituted in 1 ml DMSO and may then be diluted with 4 ml distilled water to form a slightly opaque inhibitor stock-solution. 1 vial is prepared for the inhibition of proteases from approx. 20 g *E. coli*. Recommended dilution approx. 1:40.
Concentrations in stock-solution are:
AEBSF: 20 mM
Bestatin: 1.7 mM
E-64: 200 µM
EDTA: 85 mM
Pepstatin A: 2 mM
DMSO (1 ml) for reconstitution of the lyophilized inhibitor mix is included (Art. No. 3949).
Storage of aliquoted inhibitor solution: -20 °C max. 6 months.
Contents of this Kit may not be bought separately.

3758.1	1 set	plastic	98,80 €

Individual Inhibitors

AEBSF hydrochloride

≥98 %, for biochemistry

Inhibitor of serine proteases
4-(2-Aminoethyl)benzenesulfonyl fluoride hydrochloride
$C_8H_{10}FNO_2S \cdot HCl$
M 239,69 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H314

Serine protease inhibitor. Irreversible inhibition of trypsin, chymotrypsin, plasmin, kallikrein, thrombin by sulphurizing a functional group in the active centre of an enzyme. Due to its low toxicity, AEBSF is a good alternative to PMSF.

Application:
Easily water-soluble, resulting in an acidic pH-value. Optimal at pH 6.5, alkali-labile. Avoid pH-value 7 and do not exceed pH-value 9.
Stock solution: 5-50 mg/ml (20-200 mM) in H_2O
Storage of stock solution: at -20 °C max. 6 months
Working concentration: 0.1-5 mM

2931.1	25 mg	plastic	19,90 €
2931.2	100 mg	plastic	39,70 €
2931.3	500 mg	plastic	146,10 €

4-Aminobenzamidine dihydrochloride

≥98 %, for biochemistry

Potent inhibitor of serine proteases.

p-Aminobenzamidine dihydrochloride

$C_7H_9N_3 \cdot 2\ HCl$

M 208,09 g/mol

Storage temp.: +4 °C

Warning H315-H319-H335

Competitive inhibitor of trypsin and trypsin-like enzymes, thrombin and plasmin.

Application:
Stock solution: 100-200 mg/ml (0.5-1 M) in H_2O and alcohol
Storage of stock solution at -20 °C
Working concentration: 100-400 µg/ml (0.5-2 mM)
Aminobenzamidine is sensitive to oxidation. It is recommended to prepare fresh solutions each time for use. Stock solutions should only be stored for a short time.

CN71.1	1 g	glass	15,60 €
CN71.2	5 g	plastic	61,20 €
CN71.3	10 g	plastic	111,70 €

Antipain dihydrochloride

≥30 U/mg, for biochemistry

Inhibitor of serine/cysteine proteases and trypsin-like serine proteases.

N-(Nα-Carbonyl-Arg-Val-Arg-al)-Phe dihydrochloride

$C_{27}H_{44}N_{10}O_6 \cdot 2\ HCl$

M 677,6 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Serine/cysteine protease inhibitor and in general of proteases similar to trypsin. Antipain was isolated from streptomycin (actinomycetes). Reversible inhibition of papain (derivation of the name: anti-papain), trypsin, cathepsin A, B, D, plasmin, chymotrypsin, pepsin and calpain I. Antipain has a similar spectrum of activity to leupeptin.

Application:
Stock solution: 50 mg/ml (75 mM in H_2O, DMSO or ethanol
Storage of stock solution: at -20 °C max. 1 month
Working concentration: 10-50 µg/ml (15-75 µM)

2933.1	5 mg	plastic	55,40 €
2933.2	25 mg	plastic	198,90 €

Aprotinin

≥3,0 PEU/mg, for biochemistry

Inhibitor of serine proteases.

M 6500 g/mol

Storage temp.: +4 °C

Inhibitor for inhibition of serine proteases, lyophilized and made of beef lung. Aprotinin inhibits trypsin, chymotrypsin, plasmin and kallikrein with high activity.
Dissolves easily in water; pH-optimum: 7.0-8.0.
Specific Activity: ≥3.0 PEU/mg corresponding to ≥5400 KIU/mg
Activity: Kininogenase Inhibitor Units (KIU) = PEU x 1800
Kininogenase Inhibitor Units (KIU) correspond to Kallikrein Inhibitor Units.

Application:
Stock solution: 1.54 mM (10 mg/ml) in H_2O or buffer
Storage of stock solution: in aliquots at -20 °C
Recommended end concentration: 1.54 µM (10 µg/ml)

A162.1	10 mg	glass	38,20 €
A162.2	50 mg	glass	111,70 €
A162.3	100 mg	glass	203,20 €
A162.4	500 mg	glass	772,95 €

Bacitracin

≥60 IU/mg, Ph.Eur., for biochemistry

Peptide antibiotic and protease inhibitor.

$C_{66}H_{103}N_{17}O_{16}S$

M 1422,72 g/mol

Storage temp.: +4 °C

Inhibits cell wall biosynthesis in gram-positive bacteria and *Neisseria* by interaction with murein biosynthesis.
Also used as protease-inhibitor for inhibition of the gluthatione-insuline-transhydrogenase or some endopeptidases.

Application:
Stock solution: 100-1000 mg/ml in H_2O or ethanol
Storage of stock solution at -20 °C
Working concentration: 0.1-1 mg/ml (0.07-0.7 mM)
Bacitracin is very stable in a pH range of 4-5, but is rapidly inactivated in pH of over 5 at room temperature.
Do not use at a pH of over 8.

5655.1	5 g	glass	54,75 €
5655.2	25 g	plastic	224,70 €

Benzamidine hydrochloride monohydrate

≥98 %, for biochemistry

Inhibitor of serine proteases.

$C_7H_8N_2 \cdot HCl \cdot H_2O$

M 174,63 g/mol

Storage temp.: +4 °C

Warning H315-H319-H335

Competitive inhibitor of trypsin and trypsin-like enzymes, acrosin, thrombin and plasmin.

Application:
Stock solution: 100-150 mg/ml (0.65-1 M) in H_2O and alcohol
Storage of stock solution at -20 °C
Working concentration: 150-750 µg/ml (1-5 mM)
Benzamidine is sensitive to oxidation. It is recommended to prepare fresh solutions each time for use. Stock solutions should only be stored for a short time.

CN38.1	5 g	plastic	18,20 €
CN38.2	10 g	plastic	25,70 €
CN38.3	25 g	plastic	50,45 €

Bestatin hydrochloride

≥98 %, for biochemistry

Inhibitor of aminopeptidases

N-[(2S,3R)-3-Amino-2-hydroxy-4-phenyl-buturyl]-L-leucin hydrochloride

$C_{16}H_{24}N_2O_4 \cdot HCl$

M 344,84 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Aminopeptidase inhibitor. Competitive and specific inhibition of aminopeptidase B, leucin-aminipeptidase and triaminopeptidase.
Does not inhibit aminopeptidase A, trypsin, chymotripyin, elastase, papain, pepsin, thermolysin. Bestatin does not have an antibacterial effect and is non-fungicidal, its low toxicity making it easy to use.

Application:
Stock solution: 1-15 mM (0.35-5mg/ml) in methanol
Storage of stock solution: at -20 °C max. 1 month
Working concentration: 10-100 µM

2937.1	5 mg	plastic	78,40 €
2937.2	25 mg	plastic	279,00 €

Safety data sheets
can be found on the Internet next to the product description.

E-64

≥99 %, for biochemistry

Inhibitor of cysteine proteases.

N-[N-(L-3-trans-Carboxyoxirane-2-carbonyl)-leucyl]-agmatine,

N-(trans-Epoxysuccinyl)-L-leucine-4-guanidinobutylamide

$C_{15}H_{27}N_5O_5 \cdot 0{,}5\ H_2O$

M 357,41 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Irreversible, strong and highly selective inhibition of cysteine protease (e.g. papain, bromelain, ficin, cathepsin B, H and L, tumor-cathepsin, calpain etc.). Does not inhibit serine proteases except trypsin. Low toxicity, high cell permeability and stability against reducing reagents makes E-64 an excellent alternative to leupeptin or antipain.

Application:
Stock solution: 1 mM (360 µg/ml) in H_2O, DMSO or ethanol
Storage of stock solution: at -20 °C max. 3 months
Working concentration: 1-10 µM

2935.1	5 mg	plastic	91,30 €
2935.2	25 mg	plastic	325,20 €

EDTA disodium salt dihydrate

≥99 %, p.a., ACS

For molecular biology and biochemistry.

Ethylenediamine tetraacetic acid disodium salt dihydrate,

Titration complex III

$C_{10}H_{14}N_2Na_2O_8 \cdot 2\ H_2O$

M 372,24 g/mol

Warning H332-H373

EDTA forms chelate complexes with Mg^{2+}-ions and other bivalent metal cations. It can therefore be applied as a general inhibitor for all enzymes which require such metal cations to function (e.g. DNases and metal proteases).

Application:
Stock solution: 0.5 M in water, pH 8.5.
Recommended final concentration for enzyme inhibition 1-10 mM.
The disodium salt of EDTA only dissolves when the pH-value is around 8.0.

8043.3	100 g		plastic	22,05 €
8043.1	250 g		plastic	35,40 €
8043.2	1 kg		plastic	103,75 €
Original pack 6 x 1 kg				98,56/1 kg
8043.4	5 kg		plastic	375,20 €
8043.5	25 kg	BIG PACK	plastic	858,95 €

EGTA

≥99 %, p.a.

For molecular biology and biochemistry.

Ethylene glycol bis(β-aminoethyl)-ether) N,N,N',N' tetraacetic acid

$C_{14}H_{24}N_2O_{10}$

M 380,35 g/mol

Unspecific protease inhibitor highly similar to EDTA. Inhibition results from chelating of calcium- and magnesium ions leading to their removal from the surrounding medium. However, affinity to $calcium^{2+}$ is much higher than that to $magnesium^{2+}$. The inhibitory effect can be compensated by an excess of $calcium^{2+}$ or $magnesium^{2+}$.

pK_a calcium (pH 7): approx. 6.9

3054.1	10 g	plastic	35,40 €
3054.2	50 g	plastic	139,65 €
3054.3	100 g	plastic	241,80 €

▶ Geldanamycine see page 1481

Genistein

≥98 %, for biochemistry

Inhibitor of tyrosine specific protein kinases.

Prunetol, Genisteol, 4',5,7-Trihydroxyisoflavone

$C_{15}H_{10}O_5$

M 270,24 g/mol

Storage temp.: +4 °C

Competitive inhibitor of ATP binding to the catalytic domain of tyrosin kinases. Exceptional are the insulin receptor tyrosin kinase and the serin-/threonin specific proteases, which will not be inhibited by genistein. An additional, tyrosin kinase independent, effect of genistein is the inhibition of topoisomerases I and II.

Application:
Stock solution: 100 mg/ml (370 mM) in DMSO
Storage of stock solution: +4 °C oder -20 °C
Working concentration: 10-100 µM

0716.1	25 mg	plastic	64,40 €
0716.2	50 mg	plastic	94,10 €
0716.3	100 mg	plastic	155,80 €

The Mechanisms of Enzyme Inhibition

Depending on the binding of the inhibitor, you may find both *reversible* and *irreversible inhibition*.

In **reversible enzyme inhibition** the inhibitor doesn't bind closely to the enzyme and can be separated or displaced in succession. It lowers its activity and/or the speed constant of the reaction of the substrate to the product. It also establishes a balance between the enzyme-inhibitor complexes with or without substrate. Metabolic processes are typical examples of this, which, depending on the physiological state of the cells, either are enhanced or inhibited.

Competitive inhibitors are reagents which compete with substrate (A) for the binding site in the enzyme's active center and increase the Michaelis Menten constant of the enzyme. They are either extremely similar to the substrate (but are not converted and can be displaced again by the substrate) or even represent a second substrate and thereby competitively inhibit the conversion of substrate A.

In *non-competitive inhibition* the inhibitor does not bind in the active center but through binding, it changes the enzyme's tertiary structure to such an extent that a product can no longer be produced/set free.

Uncompetitive inhibition is a special case where the inhibitor can only interact with the enzyme-substrate complex and it changes both the MM-constant as well as the maximum reaction speed.

In *partial-competitive inhibition*, binding of the inhibitor lowers the affinity of the enzyme to the substrate without influencing the speed constants.

In **irreversible inhibition**, the inhibitor binds so closely that it can no longer be separated from the enzyme and thus the activity of the enzyme is permanently reduced or destroyed. Typical examples of this are protein-synthesis inhibitive antibiotics or "suicide substrates" which bind covalently to the active center.

β-Glycerophosphate disodium salt pentahydrate

≥97 %, for biochemistry

Phosphatase inhibitor

$C_3H_7Na_2O_6P \cdot 5\ H_2O$

M 306,12 g/mol

Simple organic phosphate donor and substrate for phosphatase.
As additive for cell culture media and lysis buffer.

Application:
Stock solution: 1 M (306 mg/ml) in H_2O, aliquot in 1 ml reaction vials after 0.2 µm filtration
Storage of stock solution: at -20 °C
Working concentration: 10-50 mM

6847.1	50 g	glass	50,00 €
6847.2	100 g	glass	91,95 €
6847.3	250 g	glass	209,65 €
6847.4	500 g	glass	396,70 €
Original pack 6 x 500 g			376,87/500 g

Geldanamycin

≥98 %, for biochemistry

HSP90 inhibitor, tyrosine kinase inhibitor. Benzoquinone ansamycin antibiotic. Binds specifically to the heat shock protein HSP90.

$C_{29}H_{40}N_2O_9$
M 560,64 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

The specific binding of geldanamycin to heat shock protein 90 (HSP90) and its ER homologue GP96 leads to inhibition of the chaperone, results in degradation of Hsp90 substrates and, subsequently, to deregulation of central cell mechanisms - cell cycle, cell proliferation, apoptosis/cell vitality. Geldanamycin arrests cells in G_2 phase, thus interfering with angiogenesis and oncogenesis. Due to its antitumor potential it may be used as antibiotic against several eucaryotic carcinogenic cell lines. Additionally, geldanamycin is used as inhibitor of tyrosin-kinase and during analysis of several other physiological regulatory mechanisms.

Application:
Stock solution: 1000x in DMSO or methanol
Storage of stock solution at -20 °C, max. 2 weeks at 4 °C
Working concentration: 1-10 µg/ml
Photo sensitive! Store protected from light.

HN71.1	1 mg	glass	69,80 €
HN71.2	5 mg	glass	171,50 €
HN71.3	10 mg	glass	247,15 €

Leupeptin hemisulphate

≥96,5 %, for biochemistry

Reversible inhibitor of serine- and cysteine proteases.

Acetyl-Leu-Leu-argininal
$C_{20}H_{38}N_6O_4 \cdot 0{,}5\ H_2SO_4$
M 475,99 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Leupeptin competitively inhibits calpain, cathepsin B, kallikrein, papain, plasmin and trypsin. Inhibition of thrombin is controversely discussed. Little or non-inhibiting for pepsin, cathepsin A and D and chymotrypsin.

Application:
Stock solution: 5 mg/ml (10 mM) in H_2O, ethanol, acetic acid and DMF.
Stock solution is stabile at +4 °C for approx. 7 days.
Recommended storage of stock solution at -20 °C (6 months).
Working concentration: 0.5-50 µg/ml (1-100 µM)
Working solutions are stabile only for few hours. Due to its aldehyde groups, leupeptin may interfere with protein detection assays (e. g. Bradford).

CN33.1	10 mg	glass	47,20 €
CN33.2	25 mg	glass	97,75 €
CN33.3	50 mg	glass	174,70 €
CN33.4	100 mg	glass	321,45 €

▶ HSP90 Inhibitor Novobiocin see page 1484

Please note our **Technical Information Brochure** on the Internet next to the products:

Protease Inhibitors
Overview and recommendations for application

Pefabloc® SC-Protease Inhibitor

≥95 %, for biochemistry

Irreversible inhibitor of serine proteases.

4-(2-Aminoethyl)-benzylsulphonyl fluoride hydrochloride
$C_8H_{10}NSO_2F \cdot HCl$
M 239,7 g/mol

Storage temp.: +4 °C

Danger H314

Broadband inhibitor for serine proteases. Reacts covalently with the serin of the active center. Alternative to PMSF and DFP with a great number of advantages to standard inhibitors:

- Extremely low toxicity (LD_{50} >2.800 mg/kg)
- Stability in neutral range
- High solubility in aqueous buffers
- Wide spectrum of specifity for serin protease
- Minimal reaction to cell growth

Application:
Stock solution 5-50 mg/ml in water; stable with neutral pH.
Working concentration: 1-5 mM.
Pefabloc® reacts with thiols. DTT and β-mercaptoethanol reduce the inhibitory effect.

®Registered trademark of Pentapharm AG, Basel.

A154.1	100 mg	glass	70,85 €
A154.2	500 mg	glass	295,65 €
A154.3	1 g	glass	521,40 €

Proteinase Inhibitor Cocktail - General Recommendation

We recommend using the following mixture as a standard cocktail for inhibiting proteases in protein solutions. Please note, however, that it may be necessary to adapt the concentration of individual inhibitors in your experiments if the inhibitory efficiency is not adequate.

Simple inhibitor cocktail for low-protease extracts

Inhibitor	Art. No.	Conc.	Amount	Inhibition of
Aprotinin	A162	1.54 µM	10 µg/ml	Serine proteases, esterases
EDTA*	8043	10 mM	3.7 mg/ml	Metalloproteases
PMSF	6367	1 mM	147 µg/ml	Serine- and cysteine proteases
Trypsin-Inhibitor	5279	-	10 µg/ml	Trypsin and trypsin-like proteases

Broadband inhibitor cocktail for tissue extracts

Inhibitor	Art. No.	Conc.	Amount	Inhibition of
AEBSF	2931	1 mM	0.25 mg/ml	Serine proteases
Aprotinin	A162	1.54 µM	10 µg/ml	Serine proteases, esterases
Bestatin	2937	50 µM	17.5 µg/ml	Amino peptidases
E-64	2935	5 µM	1.8 µg/ml	Cysteine proteases
EDTA*	8043	10 mM	3.7 mg/ml	Metalloproteases
Leupeptin	CN33	50 µM	25 µg/ml	Serine- and cysteine proteases, trypsin-like proteases
Pepstatin A	2936	1 µM	0.7 µg/ml	Acidic proteases, aspartat proteases

*EDTA-concentration can be reduced to 0.2 mM because of downstream assays.

The inhibitors may be prepared in each case as a 100x or 1000x stock solution (see individual products for further information). Aprotinin, DTT, EDTA and the trypsin inhibitor may be mixed to a ready-to-use cocktail and aliquoted frozen at -80 °C. PMSF is not water-soluble and should be added separately to the protein solution.

Pepstatin A

≥98 %, for biochemistry

Inhibitor of acidic/aspartic proteases

Iva-Val-Val-Sta-Ala-Sta

$C_{34}H_{63}N_5O_9$

M 685,91 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Inhibits acidic proteases (aspartat proteases). Isolated from streptomycin and other actinomycetes. Strong, highly selective inhibition of pepsin, renin, cathepsin D, chymosin, protease B and also of retroviral proteases. No inhibitive effect on thiolproteases, neutral proteases and serine proteases. Hardly toxic.

Application:
Stock solution: 1 mM (685 µg/ml) in DMSO or methanol
Storage of stock solution: at -20 °C max. 1 month, at +4 °C max. 1 week
Working concentration: 0.5-1 µM
It may be necessary to add 10-50 % acetic acid to completely dissolve pepstatin A.

2936.1	5 mg	plastic	31,10 €
2936.2	25 mg	plastic	91,95 €
2936.3	100 mg	plastic	289,20 €

Phenylmethyl sulphonyl fluoride (PMSF)

≥99 %, for biochemistry

Irreversible inhibitor of serine- and cysteine proteases.

α-Toluene sulphonyl fluoride, PMSF

$C_7H_7FO_2S$

M 174,2 g/mol

Danger H301-H314

General, irreversible inhibitor of serin proteases (chymotrypsin, trypsin and thrombin) and for the dystin-protease papain. Inhibiton by sulphonation of the serine localised in the enzymatic active site.
Reversible inhibitor of cysteine-proteases. K_i = 0.91 ±0.01 mM

Application:
Dissolves easily in isopropanol, ethanol and methanol. Not stable in aqueous solution.
Stock solution: 17.4 mg/ml (100 mM) in isopropanol, ethanol or methanol. For stock solutions of 200-250 mM heat shortly (approx. 30 mins) to 30 °C. Stock solutions should be stored at -20 °C. Short term storage of few weeks may be done at +4 °C in the dark.
Working concentration: 17-174 µg/ml (0.1-1 mM). Not stable in aqueous solutions (half-life value of 1 h at pH 7.5/RT).

At every stage of isolating or purifying the proteins, PMSF should be added fresh from the stock solution. PMSF is often not sufficient as the only protease inhibitor in the preparation to protect against decomposition processes, as for example high salt concentration (3.0 M) impairs the inhibitory effect of PMSF.
PMSF reacts with thiols. DTT and β-mercaptoethanol reduce the inhibitory effect.

For your convenience, Art. No. 6367.4 comes packed in a 30 ml brown glass bottle. Addition of 20 ml 2-propanol results in a 100 mM stock solution.

6367.1	5 g	plastic	31,10 €
6367.2	25 g	plastic	103,10 €
6367.3	100 g	plastic	289,20 €
6367.4	348 mg, in 30 ml glass bottle	TIP	14,55 €

Safety data sheets
can be found on the Internet next to the product description.

Radicicol

≥98 %, for biochemistry

Strong HSP90 inhibitor, macrolactone antibiotic. Binds specifically to the heat shock protein HSP90.

$C_{18}H_{17}ClO_6$

M 364,79 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H301-H315-H319-H335

The strong specific binding of radicicol to heat shock protein 90 (HSP90) leads to deregulation of its target mechanisms: cell cycle, cell proliferation, apoptosis/cell vitality. Also binds to yeast HSP90, *E.coli* HtpG and TRAP-1. Antifungal effects are probably caused by inactivation of chitin synthase in fungal cells.

Application:
Stock solution: 10 mg/ml (27 mM) in ethanol or DMSO
Storage of stock solution at -20 °C, max. 2 weeks at 4 °C
Working concentration: 5-300 µM
Photo sensitive! Store protected from light.

HN72.1	1 mg	glass	98,80 €
HN72.2	5 mg	glass	396,70 €
HN72.3	10 mg	glass	628,90 €

Trypsin inhibitor

≥10000 BAEE U/mg

Made from soybeans. High-activity inhibitor of trypsin, chymotrypsin, and other proteolytic enzymes.

Storage temp.: +4 °C

Trypsin inhibitor inhibits Trypsin with high effiency, and, to a lesser extent, chymotrypsin. Additionally, there is a light inhibiting effect on plasmin, kallikrein, thrombin and a few other proteolytic enzymes.
1 mg of lyophilisate inhibits at minimum 10.000 BAEE Units of trypsin.
Application in cell culture (stock solution 1 mg/ml): Following trypsination, add the same volume inhibitor solution as was used for trypsin. Zentrifuge cells (5 mins, 1000 rpm), and remove supernatant. Resuspend cells in medium and cultivate further.

Application:
Stock solution: 1-10 mg/ml in H_2O, PBS or other phosphate-buffers. Solutions of higher concentration may be hazy and slightly yellow-coloured.
Storage of stock solution: in aliquots at -20 °C.
Recommended end concentration: 1-100 µg/ml.
pH optimum: pH 7.6 - 8.0.

2949.1	25 mg	plastic	31,75 €
2949.2	100 mg	plastic	81,20 €
2949.3	250 mg	plastic	166,65 €
2949.4	500 mg	plastic	284,90 €
2949.5	1 g	plastic	478,40 €

Trypsin inhibitor

≥7000 BAEE U/mg, salt free

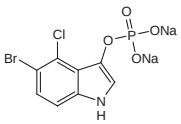
Made from soybeans. Inhibition of trypsin, chymotrypsin, plasmin, kallikrein, thrombin and other proteolytic enzymes; free from salt.

Storage temp.: -20 °C • Transport temp.: room temp.

Application:
Stock solution: 10 mg/ml in H_2O or PBS.
Storage of stock solution: in aliquots at -20 °C.
Recommended end concentration: 2-100 µg/ml.

5279.1	100 mg	glass	19,25 €
5279.4	250 mg	glass	37,55 €
5279.5	500 mg	glass	66,15 €
5279.2	1 g	glass	115,60 €
5279.3	5 g	glass	482,70 €

Substrates

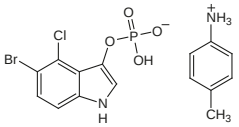


BCIP-Na_2

≥99 %

Substrate for alkaline phosphatase, in particular in immunoblot procedures.
5-Bromo-4-chloro-3-indolyl phosphate disodium salt, X-phosphate disodium salt
$C_8H_4BrClNO_4PNa_2 \cdot 1,5\ H_2O$
M 397,46 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.
In combination with NBT ideal for colorimetric detection of alkaline phosphatase activity, in particular in immunoblot procedures.
Dissolves easily in water (20 mg/ml). Bad solubility in DMF.
Protect from light and humidity.

A155.1	100 mg	glass	27,85 €
A155.2	500 mg	glass	118,15 €
A155.3	1 g	glass	203,20 €
A155.4	5 g	glass	665,45 €



BCIP-p-toluidine salt / X-Phos

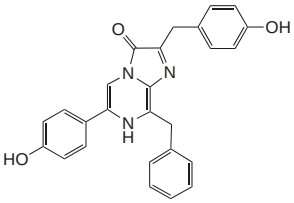
≥99 %, BioScience-Grade

Histochemical substrate for phosphatase.
5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt, X-Phos
$C_{15}H_{15}N_2O_4BrClP$
M 433,63 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.

Warning H371

In combination with NBT ideal for colorimetric detection of alkaline phosphatase activity, in immunohistochemical procedures.
By enzymatic dephosphorylation BCIP is converted to indoxyl which subsequently tautomerizes to the ketone. In basic pH values, this ketone dimerizes and, in doing so, releases H^+ ions. The dye precipitates in the direct vicinity of the phosphatase, hence staining this site in a weak blue colour. Enhencement and darkening of this colour is achieved by adding NBT (Art. No. 4421).
Dissolves easily in dimethylformamide (20 mg/ml), hardly soluble in water.
Protect from light and humidity.

6368.1	500 mg	glass	36,45 €
6368.2	1 g	glass	70,45 €
6368.3	5 g	glass	267,70 €

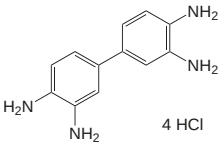


Coelenterazine

≥95 %, for biochemistry

Luciferase substrate
$C_{26}H_{21}N_3O_3$
M 423,48 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.
Substrate of the Renilla luciferase used for monitoring of the mitochondrial Calcium flux and of reportergenes. Coelenterazine is applied in bioluminescence resonance energy transfer (BRET) assays, ELISAs, HTS and in chemiluminescent detection of superoxide anion and peroxynitrite in cells or tissues.

4094.3	1 mg	glass	58,60 €
4094.4	2,5 mg	glass	110,65 €



DAB

≥98 %, p.a.

Substrate of horseradish peroxidase. For detection of endogenous peroxidase and for immunohistochemical stainings.
3,3',4,4'-Tetra-aminobiphenyl tetrahydrochloride,3,3'-Diaminobenzidine tetrahydrochloride
$C_{12}H_{14}N_4 \cdot 4\ HCl$
M 360,10 g/mol
Storage temp.: +4 °C

Warning H315-H319-H341-H351-H335

Popular substrate of peroxidases. DAB is used for biochemical and histological detection of endogenous peroxidases like catalase and cytochome oxidase. Additionally, it is the most common substrate for horseradish peroxidase (HRP) in histochemical and cytological assays. DAB is oxidised by HRP, forming a brown precipitate, which is unsoluble in aqueous and organic solvents. This precipitate can be detected in visible light and does not bleach during long-term storage.

Application:
Stock solution: 1-2 % (10-20 mg/ml) in 50 mM Tris buffer, pH 7.3
Storage of stock solution in aliquots at -20 °C
Working concentration: 0.05-0.1 % (0.5-1 mg/ml) DAB in buffer (PBS, TBS, pH 7.0-7.6) containing 0.01 % hydrogen peroxide
Always use freshly prepared working solution. For oxidation high concentrations of fresh hydrogen peroxide are needed.

CN75.1	1 g	glass	23,55 €
CN75.2	5 g	plastic	76,25 €
CN75.3	10 g	plastic	130,65 €

Roti®-DAB Kit

RNAse-/DNAse-free

for immunochemistry

Substrate kit for detection of
HRP activity on blot membranes and slides.

DAB substrate kit, HRP substrate kit

Storage temp.: +4 °C • Transport temp.: cooled

Danger H302-H341-H351-H360D-H373

DAB substrate kit for detection of peroxidase (HRP) activity on immunoblots, immunohisto- and cytochemical slides and during *in situ* hybridization.
Roti®-DAB Kit contains substrate, buffer solution and activation reagent, therefore including all three solutions necessary for HRP detection reaction. Application is very simple - all three kit solutions are diluted equally in water, and the blotting filter membrane, or the slides, are then incubated in this substrate solution. Since the solutions are delivered in drop dispensers, dosing is most convenient.
DAB is oxidized by HRP, forming a brown precipitate, which is insoluble in aqueous and organic solvents. This precipitate can be detected in visible light and does not bleach during long-term storage. Addition of the DAB Metal Enhancer (Art. No. 9204) doubles the signal strength. Slides may be permanently mounted in hydrophilic, or, after dehydration, in hydrophobic mounting medium.

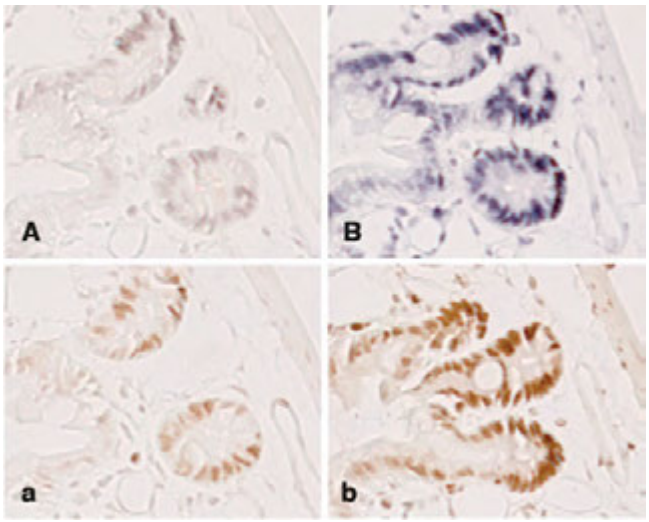


Figure 1:
Immunohistochemical staining of mouse small intestines with an anti-PCNA antibody. Minuscules: pure DAB substrate, capitals: detection supplemented by DAB enhancer (A: $NiCl_2$, B: DAB Metal Enhancer,Art. No. 9204).
A/a: Basic method using 0.6 mg/ml DAB in Tris-buffer
B/b: Detection performed with the Roti®-DAB Kit

The kit contains:
DAB solution (Art. No. 9869), DAB buffer (Art. No. 9870), and Activation reagent (Art. No. 9871) in dropper bottles. Contents of this Kit may not be bought separately.

One kit is sufficient for staining of approx. 44 minigel blot membranes or 500 slides.

Type analysis:

Application test (Blotting)	complies
RNAse	≤1 ppb
DNAse	≤1 ppm

9202.1	1 kit	cardboard	188,70 €

▶ DAB metal enhancer see page 1366

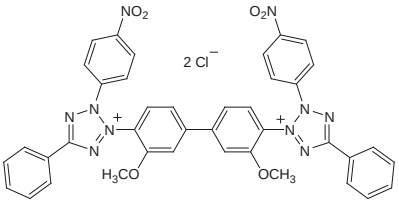
▶ Streptavidin/HRP kit see page 1366

MUG

≥99 %, p.a.

Substrate for β-glucuronidase. For detection of *E. coli*.
4-Methylumbelliferyl-β-D-glucuronide dihydrate
$C_{16}H_{16}O_9 \cdot 2\ H_2O$
M 388,33 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.
Ideal for fluorometric detection of β-glucoronidase hydrolysed by MUG to 4-methylumbelliferone. Detection occurs via long wave UV light (366 nm).

6394.1	50 mg	glass	23,55 €
6394.2	250 mg	glass	64,40 €
6394.3	1 g	glass	198,90 €



NBT

≥98 %, p.a.

Nitro-BT, Nitroblue tetrazolium chloride
$C_{40}H_{30}Cl_2N_{10}O_6$
M 817,65 g/mol
Storage temp.: +4 °C
Used in combination with BCIP-toluidine salt (X-phosphate) for detection of alkaline phosphatase activity by producing an indigo dye precipitate. Colour enhancer for staining with alkalic phosphatase. During dimerisation of ketonized X-Phos, H^+ ions are set free which reduce NBT to purple-coloured diformazan. Both dyes precipitate in the direct vicinity of the phosphatase, hence staining this site in a dark violet.
Store at +4 °C. Please also see assay protocol for use of BCIP/NBT in immunoblot procedures.

Application:
Stock solution: 0.5 g NBT in 10 ml 70 % dimethylformamide.
Protect from light and humidity.

4421.1	100 mg	glass	17,75 €
4421.2	500 mg	glass	44,65 €
4421.3	1 g	glass	84,85 €
4421.4	5 g	glass	306,40 €

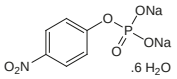
Assay protocol for use of BCIP/NBT in immunoblot procedures:

Stock solutions (All solutions are stable for at least 1 year at 4 °C):
0.5 g NBT in 10 ml 70 % dimethylformamide;
0.5 g BCIP (p-toluidine salt) in 10 ml 100 % dimethylformamide.
Incubation buffer for alkaline phosphatase:
100 mM NaCl, 5 mM $MgCl_2$,100 mM Tris (pH 9.5).

Fresh substrate solution:
66 µl NBT stock solution + 10 ml incubation buffer, mix well, add 33 µl BCIP stock solution. Use within 1 hour.

Blot development:
Approx. 10 ml substrate solution per 15 x 15 cm^2 membrane surface. Develop at room temperature until bands become visible (approx. 30 mins).

Reaction stop: Rinse with PBS/20 mM EDTA.



pNPP

≥99 %, p.a.

Substrate for alkaline phosphatase, particularly for ELISA.

p-Nitrophenyl phosphate, 4-Nitrophenyl phosphate disodium salt hexahydrate

$C_6H_4NNa_2O_6P \cdot 6\ H_2O$

M 371,12 g/mol

Storage temp.: +4 °C

Substrate of the alkaline phosphatase for use in ELISAs. Durin reaction of the substrate, a soluble, yellow product is formed that is detected photometrically at 405 nm wave length.

Application:
Working solution: 1 mg/ml in diethanolamine substrate buffer (10 mM diethanolamine, 0.5 mM $MgCl_2$, pH 9.5).
For endpoint analysis the reaction may be stopped via addition of 2-3 M NaOH.

4165.1	2,5 g		glass	16,05 €
4165.9	25 g	New size	glass	65,05 €
4165.7	100 g	New size	plastic	177,40 €

Roti®fair pNPP 5mg

5 mg/tablet, for biochemistry

For preparation of pNPP substrate solution for alkaline phosphatase.

pNPP (tablet), p-Nitrophenyl phosphate

Exactly pre-weighed tablets for convenient and rapid preparation of pNPP solution.
Prepared solution may be sterilized by filtration (0,22 µm).
The solution has to be stored at -20 °C in aliquots.
0,1 % pNPP solution (1 mg/ml) is prepared by dissolution of 1 tablet in 5 ml substrate buffer.

1117.1	24 tablets	blister	95,60 €
1117.2	100 tablets	plastic	138,70 €

Roti®fair pNPP 20mg

20 mg/tablet, for biochemistry

For preparation of pNPP substrate solution for alkaline phosphatase.

pNPP (tablet), p-Nitrophenyl phosphate

Exactly pre-weighed tablets for convenient and rapid preparation of pNPP solution.
Prepared solution may be sterilized by filtration (0,22 µm).
The solution has to be stored at -20 °C in aliquots.
0,1 % pNPP solution (1 mg/ml) is prepared by dissolution of 1 tablet in 20 ml substrate buffer.

1128.1	24 tablets	blister	100,55 €
1128.2	100 tablets	plastic	362,85 €

Roti®-Lumin ultra

ready-to-use

ready-to-use, spray

Superior chemoluminescence substrate for HRP-mediated Western-Blot detection systems.

Storage temp.: +4 °C • Transport temp.: cooled

- Very easy to use
- Spray-and-go or mix by pipetting
- Superior performance for detections in lower femtogram range
- Perfectly suited for all exposition times
- Suitable for NC membranes, optimised for PVDF membranes

Significantly enhanced Western-Blot substrate based on luminol, for chemoluminescent detection of horseradish peroxidase (HRP) on membranes. Through a special, optimised composition, a particularly high signal strength is achieved for over 30 mins. with a second increase at 10 to 15 mins. after application. Roti®-Lumin ultra is, therefore, one of the most sensitive HRP-Chemoluminescence substrate available.

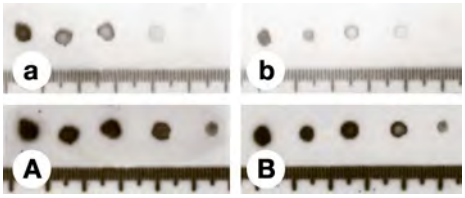


Figure:
Superior sensitivity of Roti®-Lumin ultra even with a very short exposition of 10 seconds. Detection of 2 µl each of a HRP complex in dilution series 1:1 to 1:10.
a/A: Roti®-Lumin ultra; b/B: Product of a competitor, recommended for femtogram range.
a/b: 10 sec. exposition, A/B: 5 mins. exposition.

By using pump spray bottles no time-consuming pre-mixing of solutions is required - substrate solution 1 and enhancer solution 2 are simply sprayed onto the membranes. Hereby, the spray technique guarantees a very smooth and regular distribution of the substrate on the membrane surface, hence avoiding artefacts caused by uneven distribution of pipetted substrate. The superior signal strength allows detection of proteins in single femtograms, as well as significant reduction of concentrations of expensive antibodies.

Application notes:
For a mini blot of 7 x 8 cm size 3-4 pump strokes are necessary.
- Spray the membrane with solution 1
- Afterwards spray membrane with solution 2
- Incubate approx. 1 min (wrap membrane in saran foil etc.)
- Exposition

In case passed down protocols are to be used the spray-bottles may easily be unscrewed, mixing and applying the solutions by pipetting.

A kit consists of:
20 ml (100 ml) solution 1 (Art. No. 3990) and 20 ml (100 ml) solution 2 (Art. No. 3991) in pump spray bottles. 2 x 100 ml is sufficient for approx. 10.000 cm^2 membrane (approx. 150 minigel blots).
Contents of this Kit may not be bought separately.

3734.1	1 mini kit (spray)	239,20 €
3734.2	1 kit (spray)	955,70 €

Roti®-Lumin plus ready-to-use

ready-to-use, spray

Highly efficient chemoluminescence substrate for HRP-mediated Western-Blot detection systems.

Storage temp.: +4 °C • Transport temp.: cooled

- Very easy to use
- Spray-and-go or mix by pipetting
- Optimised signal strength for detections in upper femtogram range
- Well suited for medium- and long-term exposition
- Suitable for NC membranes, optimised for PVDF membranes

Efficient Western-Blot substrate based on luminol, for chemoluminescent detection of horseradish peroxidase (HRP) on membranes. Through an optimised composition, high signal strength is achieved over a very stable plateau of over 30 mins.

By using pump spray bottles no time-consuming pre-mixing of solutions is required - substrate solution 1 and enhancer solution 2 are simply sprayed onto the membranes. Hereby, the spray technique guarantees a very smooth and regular distribution of the substrate on the membrane surface, hence avoiding artefacts caused by uneven distribution of pipetted substrate. Through the high signal strength, proteins in the upper femtogram range may be detected, while concentrations of the antibodies used may be reduced.

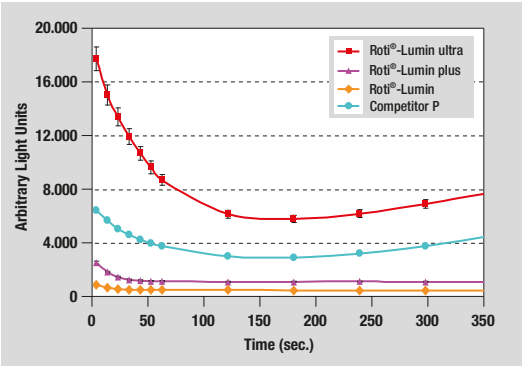


Figure:
Typical course of light emission of the Roti®-Lumins 0-5 mins. post mixing/spraying. Competitor P: Product of a competitor, recommended for femtogram range. For medium or long-term exposure we recommend use of Roti®-Lumin plus.

Application notes: see Roti®-Lumin ultra (Art. No. 3734.1).

A kit consists of:
20 ml (100 ml) solution 1 (Art. No. 3936) and 20 ml (100 ml) solution 2 (Art. No. 3937) in pump spray bottles, or of 250 ml solution 1 (Art. No. 3936) and 250 ml solution 2 (Art. No. 3937) in refill-bottles. 2 x 100 ml is sufficient for approx. 10.000 cm² membrane (approx. 150 minigel blots).
Contents of this Kit may not be bought separately.

3692.1	1 mini kit (spray)	134,95 €
3692.2	1 kit (spray)	278,45 €
3692.3	1 kit (bottles)	450,45 €

Roti®-Lumin ready-to-use

ready-to-use

Chemoluminescence substrate for peroxidase mediated detection systems.HRP substrate

Storage temp.: +4 °C

- Sensitive and reliable
- For all standard membrane types
- Low background
- No cumbersome preparation of peroxidase buffers
- Suitable for multiple stripping and reprobing

Roti®-Lumin is a kit for chemoluminescent detection of peroxidase-linked reporters (e.g. HRP-antibodies), as can be found in Western-Blot assays. In comparison to chromogen substrates, Roti®-Lumin displays increased sensitivity and reduced background reaction.

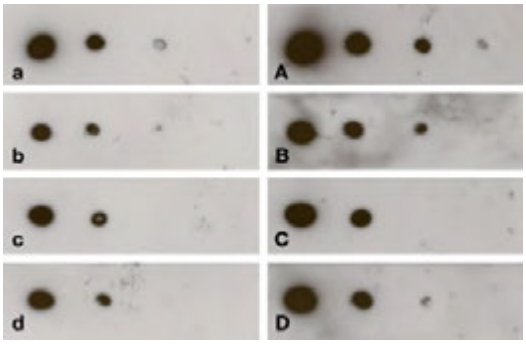


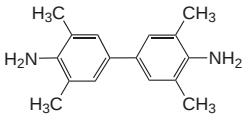
Figure:
Sensitivity of Roti®-Lumins. Detection of a polyclonal antibody (left to right 4 pg, 400 fg, 40 fg, 4 fg) on Roti®-PVDF (Art. No. T830.1). Staining in PBST via a HRP-conjugated anti-rabbit antibody (1:2000).
a/A: Roti®-Lumin ultra; b/B: Roti®-Lumin plus; c/C: Roti®-Lumin;
d/D: Product of a competitor, recommended for femtogram range.
a/b/c/d: 10 sec. exposition, A/B/C/D: 1 min. exposition.

Mechanism:
Roti®-Lumin is transformed by the HRP into an excited dianion in the presence of hydrogen peroxide. When the dianion is reversed back to its normal state, light is emitted. The light emission of Roti®-Lumin reaches its maximum within 5 minutes and remains at the maximum level for approx. 1-2 hours.

Applications notes:
Roti®-Lumin consists of two solutions, which should be mixed at a 1:1 ratio before use. It can be used with nitrocellulose, nylon and PVDF membranes. Optimal results can be achieved with Immobilon-P® or Roti®-PVDF. Can be used for Western-Blotting, ELISA, Southern- Blotting, Dot-Blotting and colony hybridisation. Membranes may be stripped from bound probes using Roti®-Free stripping buffer, and may thus undergo multiple reprobing.

A kit consists of:
120 ml (25 ml) Roti®-Lumin 1 (Art. No. P079) and 120 ml (25 ml) Roti®-Lumin 2 (Art. No. P080).
Sufficient for approx. 2400 cm² (500 cm²) membrane.
Contents of this Kit may not be bought separately.

P078.2	1 mini kit	plastic	78,40 €
P078.1	1 kit	plastic	278,45 €



TMB

≥98 %, p.a.

3,3',5,5'-Tetramethylbenzidine

$C_{16}H_{20}N_2$

M 240,35 g/mol

Storage temp.: +4 °C

Used as a highly sensitive substrate for peroxidases, particularly in ELISA procedures. Can replace carcinogenic benzidine.
Dissolves easily in acetone, chloroform and ethanol.

Application:
Working solution: 1 mg TMB in 0.1 ml dimethyl sulfoxide, add 9.9 ml 0.1 M sodium acetate (pH 6). Filter and add H_2O_2 ad 0.01 %. Always prepare freshly!
Application: approx. 50 µl per 96well, incubate for 10-30 mins. at room temperature. Add 50 µl 1 M H_2SO_4 and quantitate photometrically at 450 nm (acc. to: Bos *et. al.* (1981) *J. Immunoassay* 2:187).
Protect from light.

6350.1	1 g		glass	54,75 €
6350.2	5 g		plastic	167,20 €
6350.3	25 g	BIG PACK	plastic	768,65 €

Detection of peroxidase activity (Immunoassay):

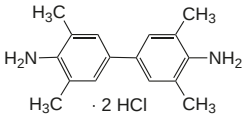
Dissolve 1 mg TMB in 0.1 ml dimethylsulfoxide (Art. No. 4720); add 9.9 ml of a 0.1 M sodium acetate solution (pH 6.0) (Powder: Art. No. 6779), filter and add H_2O_2 (Art. No. 8070) (final concentration 0.01 %).

Always prepare freshly!

Incubation 10-30 mins at room temperature (approx. 50 µl per microtitre well; finally add 50 µl 1 M H_2SO_4, Art. No. X873, per well).

Photometric quantitation at 450 nm.

Reference: Bos, E.S. *et al.*, (1981) *J. Immunoassay* 2, (3/4), 187.



TMB dihydrochloride

≥99 %, for biochemistry

Water-soluble peroxidase substrate

3,3',5,5'-Tetramethylbenzidine dihydrochloride, TMB · 2 HCl

$C_{16}H_{20}N_2 \cdot 2\ HCl$

M 313,27 g/mol

Storage temp.: +4 °C

Tetramethylbenzidine dihydrochloride is used as highly sensitive substrate for detection of horseradish peroxidase labelled probes, particularly in solution-based assays like ELISA techniques. It produces a soluble, blue-coloured end product, which can be read spectrophotometrically.
The dihydrochloride form is well water-soluble, making it a versatile tool in laborartory science.

Application:
Stock solution: 0.1 mg/ml in 50 % acetic acid or phosphate citrate buffer (50 mM NaH_2PO_4, 25 mM citric acid, pH 5.0). For solubilisation, heat to 45 °C and sonicate. Colourless.
Storage of stock sol.: At +4 °C if tightly sealed. Oxidation can be seen by colour-shift to a faint blue.
Working solution: Immediately prior to use add 2 µl / 10 ml of 30 % hydrogen peroxide. (Liem *et al.* (1979) *Anal Biochem*, 98:388-93)

4107.1	500 mg		glass	39,70 €
4107.2	1 g		glass	64,40 €

X-α-Gal

≥98 %, for biochemistry

Colorimetric substrate of α-galactosidase.

5-Bromo-4-chloro-3-indolyl-α-D-galactopyranoside

$C_{14}H_{15}BrClNO_6$

M 405,63 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Chromogenic substrate of α-galactosidase (melibiase, α-D-galactoside galactohydrolase), an enzyme that is necessary for metabolization of the disaccharide melibiose as a carbon source.
Used for selection of positive clones in yeast two-hybrid screens.

Application:
Stock solution: 2-20 mg/ml in DMF
Working concentration: 20-50 µg/ml in agar plates

HN36.1	25 mg	glass	74,75 €
HN36.2	100 mg	glass	224,70 €
HN36.3	250 mg	glass	525,70 €

X-β-Gal

DNAse-/RNAse-/Protease-free

≥99 %, BioScience-Grade

Colorimetric substrate of β-galactosidase.
For biochemistry and molecular biology.

5-Bromo-4-chloro-3-indoxyl-β-D-galactoside

$C_{14}H_{15}BrClNO_6$

M 408,6 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Ideal for colorimetric detection of β-galactosidase activity, for instance during blue-/white selection.

Application:
Stock solution: 100 mg/ml (240 mM) in DMF, store at -20 °C in the dark.
Working solution: For blue/white selection of recombinant clones on agar plates use 0,3 µl stock solution per ml broth/agar.

2315.1	100 mg	glass	21,40 €
2315.2	500 mg	glass	61,20 €
2315.3	1 g	glass	114,50 €
2315.4	5 g	glass	385,95 €

▶ IPTG see page 1284

X-Gluc

≥99 %, for microbiology

Glucuronidase substrate

5-Bromo-4-chloro-3-indolyl-β-D-glucuronide cyclohexyl ammonium salt monohydrate, X-GlcA

$C_{20}H_{26}N_2O_7ClBr \cdot H_2O$

M 539,81 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

For colorimetric detection of glucuronidase activity. During hydrolysis of X-gluc two molecules are formed, glucuronic acid and 5-bromo-4-chloro-indoxyle, which is then being oxidized to a deep-blue indigo-dye.
X-Gluc is used for detection of contaminations by *E. coli* bacteria in food, waters and feeds. In molecular genetics, it is widely used as marker for expression analysis of target genes.

0018.1	100 mg	glass	103,10 €
0018.2	500 mg	glass	385,95 €
0018.3	1 g	glass	643,95 €

Summary of Substrates

Product	Enzyme	Detection	Signalling product (example)	Art. No.	Pack Qty.	€
Acetylthiocholine iodide	Acetylcholine esterase	colour (yellow)	soluble (neurohistology)	**4001.1**	1 g	25,30
				4001.2	5 g	75,80
				4001.3	10 g	134,30
BCIP-disodium salt	Alkaline Phosphatase	colour (brown-violet)	precipitate (blotting)	**A155.1**	100 mg	27,85
				A155.2	500 mg	118,15
				A155.3	1 g	203,20
				A155.4	5 g	665,45
BCIP-p-toluidin salt, X-Phos	Alkaline Phosphatase	colour (brown)	precipitate (blotting)	**6368.1**	500 mg	36,45
				6368.2	1 g	70,45
				6368.3	5 g	267,70
2-Butyrylthiocholine iodide	Cholinesterases	colour (yellow)	soluble (activity assay)	**8452.1**	1 g	19,25
				8452.2	5 g	64,40
				8452.3	10 g	117,20
L-Carnosine	Carnosinase	fluorometry	soluble (activity assay)	**4148.1**	1 g	26,80
				4148.2	5 g	88,05
6-Chloro-3-indoxyl-β-D-galactopyranoside (Rose gal, Salmon gal)	β-D-Galactosidase	colour (salmon)	precipitate (microbiology)	**4251.1**	25 mg	33,90
				4251.2	50 mg	44,00
				4251.3	100 mg	65,50
6-Chloro-3-indoxyl-β-D-glucuronic acid CHA-salt (Rose glucuronide CHA-salt, Salmon glucuronide CHA-salt)	β-Glucuronidase	colour (salmon)	precipitate (microbiology)	**4057.1**	10 mg	31,10
				4057.2	50 mg	46,15
				4057.3	100 mg	78,40
6-Chloro-3-indoxyl-phosphate-p-toluidin salt	Alkaline Phosphatase	colour (pink)	precipitate (blotting, *in situ*, histochemistry)	**4247.1**	50 mg	47,20
				4247.2	100 mg	84,85
Chloronaphthol	Horse raddish peroxidase	colour (blue)	precipitate (blotting)	**4104.1**	5 g	29,60
				4104.2	10 g	48,95
				4104.3	25 g	94,50
			New size	**4104.7**	100 g	278,45
Coelenterazine	Luciferase	chemoluminescence	soluble (ELISA, BRET)	**4094.3**	1 mg	58,60
				4094.4	2,5 mg	110,65
Creatine phosphate disodium salt tetrahydrate	Creatine kinase	fluorometry	soluble (activity assay)	**8459.1**	1 g	19,90
				8459.2	5 g	56,90
				8459.3	10 g	91,95
Diaminobenzidine (DAB)	Horse raddish peroxidase	colour (brown)	precipitate (blotting)	**CN75.1**	1 g	23,55
				CN75.2	5 g	76,25
				CN75.3	10 g	130,65
Roti®-DAB Kit	Horse raddish peroxidase	colour (brown)	precipitate (blotting)	**9202.1**	1 kit	188,70
8-Hydroxyquinoline-β-D-glucuronic acid, sodium salt	β-D-Glucuronidase	colour (brown)	precipitate (microbiology)	**8432.1**	100 mg	49,35
				8432.2	250 mg	83,75
				8432.3	500 mg	141,80
Indoxylglucopyranoside	β-D-Glucosidase	colour (blue)	precipitate (activity assay)	**4243.1**	250 mg	57,95
				4243.2	500 mg	103,75
				4243.3	1 g	181,70
D-Luciferin (free acid)	Luciferase	fluorometry	soluble (transfection)	**CN24.1**	10 mg	55,80
				CN24.2	25 mg	113,85
				CN24.3	50 mg	203,75
D-Luciferin sodium salt	Luciferase	fluorometry	soluble (transfection)	**4096.1**	10 mg	33,25
				4096.2	25 mg	59,70
4-MU-β-D galactopyranoside	β-D-Galactosidase	fluorometry	soluble (activity assay)	**4084.1**	500 mg	31,10
				4084.2	1 g	47,85
				4084.3	5 g	188,15
4-MU-β-D galactosaminide	β-D-Galactosaminidase	fluorometry	soluble (microbiology)	**4083.1**	100 mg	42,90
				4083.2	250 mg	75,15
				4083.3	500 mg	124,60
4-MU-α-D glucopyranoside	α-D-Glucosidase	fluorometry	soluble (activity assay)	**4086.1**	100 mg	44,00
				4086.2	250 mg	84,85
4-MU-β-D glucopyranoside	β-D-Glucosidase	fluorometry	soluble (activity assay)	**4093.1**	500 mg	44,00
				4093.2	1 g	75,15
				4093.3	2,5 g	147,85
4-MU-β-D glucuronide (MUG)	β-D-Glucuronidase	fluorometry	soluble (activity assay)	**6394.1**	50 mg	23,55
				6394.2	250 mg	64,40
				6394.3	1 g	198,90
4-MUP phos (methylum belliferyl phoshate)	Phosphatases	fluorometry, UV-spectrometry	soluble (activity assay)	**4103.1**	250 mg	34,95
				4103.2	1 g	103,10
4-Nitrophenyl-α-L fucopyranoside	α-L-Fucosidase	colour (yellow)	soluble (serum analysis)	**4018.1**	100 mg	59,70
				4018.2	250 mg	117,75

Substrates

Product	Enzyme	Detection	Signalling product (example)	Art. No.	Pack Qty.	€
Nitrotetrazolium blue chloride (NBT)	Alkaline Phosphatase	colour (brown-violet)	precipitate (blotting)	**4421.1**	100 mg	17,75
				4421.2	500 mg	44,65
				4421.3	1 g	84,85
				4421.4	5 g	306,40
ONP-β-D galactopyranoside (ONPG)	β-D Galactosidase	colour (yellow)	soluble (microbiology)	**CN22.1**	5 g	32,80
				CN22.2	10 g	56,90
ONP-β-D glucopyranoside	β-D-Glucosidase	colour (yellow)	soluble (activity assay)	**4077.1**	500 mg	40,75
				4077.2	1 g	68,70
PNP-N-acetyl-β-D glucosaminide (PNAG)	β-D-Glucosaminidase	colour (yellow)	soluble (activity assay)	**4062.1**	100 mg	27,45
				4062.2	500 mg	77,30
				4062.3	1 g	147,85
PNP-α-D galactopyranoside (PNPG)	α-D-Galactosidase	colour (yellow)	soluble (membrane biochemistry)	**4063.1**	100 mg	21,00
				4063.2	500 mg	48,30
				4063.3	1 g	77,30
PNP-β-D galactopyranoside	β-D-Galactosidase	colour (yellow)	soluble (microbiology, activity assay)	**4081.1**	1 g	32,80
				4081.2	2,5 g	77,30
				4081.3	5 g	139,25
PNP-β-D galactosaminide	N-Acetyl-β-D-Galactosaminase	colour (yellow)	soluble (ELISA, activity assay)	**4058.1**	250 mg	73,00
				4058.2	500 mg	124,60
PNP-β-D glucopyranoside	β-D-Glucosidase	colour (yellow)	soluble (ELISA, activity assay)	**4082.1**	500 mg	37,55
				4082.2	1 g	64,00
				4082.3	5 g	256,95
PNP-β-D xyloside	β-D-Xylosidase	colour (yellow)	soluble (activity assay)	**4079.1**	100 mg	26,80
				4079.2	500 mg	81,60
				4079.3	1 g	146,10
pNPP	Alkaline Phosphatase	colour (yellow)	soluble (ELISA, activity assay)	**4165.1**	2,5 g	16,05
			New size	**4165.9**	25 g	65,05
			New size	**4165.7**	100 g	177,40
Roti®fair pNPP 5mg	Alkaline Phosphatase	colour (yellow)	soluble (ELISA, activity assay)	**1117.1**	24 tablets	95,60
				1117.2	100 tablets	138,70
Roti®fair pNPP 20mg	Alkaline Phosphatase	colour (yellow)	soluble (ELISA, activity assay)	**1128.1**	24 tablets	100,55
				1128.2	100 tablets	362,85
Roti®-Lumin	Horse raddish peroxidase	chemoluminescence	precipitate (blotting)	**P078.2**	1 mini kit	78,40
				P078.1	1 kit	278,45
Roti®-Lumin plus	Horse raddish peroxidase	chemoluminescence	precipitate (blotting)	**3692.1**	1 mini kit (spray)	134,95
				3692.2	1 kit (spray)	278,45
				3692.3	1 kit (bottles)	450,45
Roti®-Lumin ultra	Horse raddish peroxidase	chemoluminescence	precipitate (blotting)	**3734.1**	1 mini kit (spray)	239,20
				3734.2	1 kit (spray)	955,70
Tetramethylbenzidine (TMB)	Horse raddish peroxidase	colour (blue)	soluble (ELISA)	**6350.1**	1 g	54,75
				6350.2	5 g	167,20
				6350.3	25 g	768,65
Tetramethylbenzidine dihydrochloride (TMB)	Horse raddish peroxidase	colour (blue)	soluble (ELISA)	**4107.1**	500 mg	39,70
				4107.2	1 g	64,40
X-β-D-cellobioside	β-D-Cellobiosidase	colour (blue)	precipitate (histochemistry)	**4152.1**	50 mg	28,95
X-α-gal	α-D-Galactosidase	colour (blue)	precipitate (Yeast-Two-Hybrid)	**HN36.1**	25 mg	74,75
				HN36.2	100 mg	224,70
				HN36.3	250 mg	525,70
X-β-gal	β-D-Galactosidase	colour (blue)	precipitate (blue/white selection)	**2315.1**	100 mg	21,40
				2315.2	500 mg	61,20
				2315.3	1 g	114,50
				2315.4	5 g	385,95
X-β-D-glucosaminide	N-Acetyl-β-D-Glucosaminidase	colour (blue)	precipitate (histochemistry)	**4149.1**	25 mg	22,05
				4149.2	100 mg	44,00
X-α-D-glucoside (X-glc)	α-D-Glucosidase	colour (blue)	precipitate (microbiology)	**8434.1**	100 mg	81,60
				8434.2	250 mg	171,50
				8434.3	500 mg	319,85
X-β-D-glucoside (X-glu)	β-D-Glucosidase	colour (blue)	precipitate (microbiology)	**4041.1**	50 mg	39,70
				4041.2	100 mg	66,55
X-β-D-glucuronic acid (X-gluc)	β-D Glucuronidase	colour (blue)	precipitate (detection of living cells)	**0018.1**	100 mg	103,10
				0018.2	500 mg	385,95
				0018.3	1 g	643,95

For additional product data and safety information, see chapter Chemicals A-Z.

Albumins / BSA (Bovine Serum Albumin)

BSA are proteins yielded from blood, which function as binding and transport proteins in blood circulation. Depending on the preparation process, the albumins contain different quality and quantities of metabolic products, enzymes, peptides, fatty acids, vitamines, etc. and are suitable for different applications.

TSE-/BSE-free

Albumin Fraction V

≥98 %, powdered, for molecular biology

Wide range of applications, e.g. as protein standard or blocking reagent.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

BSA made of fresh bovine plasma by fractionation (Cohn method) and subsequent crystallisation from alcohol solution at a low temperature.

8076.1	10 g	plastic	27,85 €
8076.2	50 g	plastic	87,00 €
8076.4	200 g	plastic	298,35 €
8076.3	500 g	plastic	654,70 €
Original pack 6 x 500 g			621,97/500 g
8076.5	1 kg	plastic	1127,70 €
Original pack 6 x 1 kg			1071,32/1 kg

Molar extinction coefficient: 44.020 · M^{-1} · cm^{-1}
(acc. to 0.667 x cm^{-1} for a 0.1 % solution).

▶ Detailed specifications see chapter Chemicals A-Z!

Albumin Fraction V, US-Origin

≥98 %, powdered, for molecular biology and biochemistry

Suitable as blocking or stabilising reagent in all general assays. Recommended if BSA with US-Origin is required.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Highly pure albumin of Cohn's Fraction, prepared from blood of cattle certified for US-origin. Albumin Fraction V, US-Origin may well be used for all standard assays where blocking with BSA is necessary, as well as for stabilisation of antibodies or enzymes. Many lots show exceedingly low content of protease and IgGs. BSA, US-Origin is particularly recommended if the use of albumin with certified US-Origin is dictated by process regulations. Available in large bulk format on request.
BSA made of fresh bovine plasma by fractionation (Cohn method) and subsequent crystallisation from alcohol solution at a low temperature.

Origin ..... **USA**

3854.1	10 g	plastic	31,10 €
3854.2	50 g	plastic	94,10 €
3854.3	200 g	plastic	321,45 €
3854.4	500 g	plastic	693,40 €
Original pack 6 x 500 g			658,73/500 g
3854.5	1 kg	plastic	1159,95 €
Original pack 6 x 1 kg			1101,95/1 kg

Albumin Fraction V, protease-free

Protease-free

≥98 %, protease-free, for molecular biology

For all sensitive enzymatic assays.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Excellent in sensitive immuno assays, as a stabilising reagent for proteins, enzymes and antibodies and also suitable as a blocking reagent in hybridisation techniques.
BSA produced from fresh beef plasma by fractionating in acc. with Cohn and subsequent crystallisation at low temperatures from the alcoholic solution.

Protease (hemoglobine hydrolysis) ..... **none detected**

T844.1	10 g	plastic	55,80 €
T844.2	50 g	plastic	127,95 €
T844.4	200 g	plastic	418,20 €
T844.3	500 g	plastic	865,40 €
Original pack 6 x 500 g			822,13/500 g

Albumins (BSA)

Albumin Fraction V, pH 5,2

>97 %, powdered, for protein analysis

Non-neutralized albumin. Suitable as protein standard or hapten carrier, recommmended for use in ELISA and Western-Blotting.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Albumin Fraction V, pH 5.2 is basically suitable for all applications using albumin of Cohn-fraction V, e.g. for stabilisation of enzymes and antibodies, or as hapten carrier in immunoassays. The pH value of albumin pH 5.2 is close to its pI and the protein is only weakly charged. It is, therefore, particularly recommended for use in ELISA and Western blotting, since it may help in further reducing background signals.
Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcoholic solution.

pH value (10 % solution). ..... 5,2 ±0,4

2834.1	10 g	plastic	40,75 €
2834.2	50 g	plastic	130,65 €
2834.3	200 g	plastic	407,45 €
2834.4	500 g	plastic	826,70 €
Original pack 6 x 500 g			785,37/500 g

Albumin Fraction V, biotin-free

≥98 %, biotin-free, for molecular biology

Excellent as blocking and stabilising reagent in all biotin/streptavidin-mediated detection systems.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Tried and tested albumin preparation, suitable for all immunoassays, for stabilising proteins, enzymes and antibodies and as a blocking-reagent in hybridisation. Tested for its absence of biotin. Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

Biotin. ..... none detected

0163.1	10 g	plastic	34,30 €
0163.2	50 g	plastic	107,00 €
0163.4	200 g	plastic	370,90 €
0163.3	500 g	plastic	805,20 €
Original pack 6 x 500 g			764,94/500 g

Albumin Fraction V, fatty acid-free

≥98 %, fatty acid-free, for molecular biology

Excellent when working with membrane-associated proteins.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Suitable for all immunoassays, for stabilising proteins, enzymes and antibodies and as a blocking-reagent during hybridisation. Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

Total fatty acids. ..... <0,01 %

0052.1	1 g	glass	18,85 €
0052.2	10 g	plastic	98,40 €
0052.3	50 g	plastic	385,95 €

Albumin, fatty acid-free, US-Origin

≥98 %, fatty acid-free, for molecular biology

Suitable as blocking or stabilising reagent in all fatty acid-sensitive assays. Recommended if BSA with US-Origin is required.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Highly pure albumin, prepared from blood of cattle certified for US-origin. Albumin, fatty acid-free, US-Origin, may well be used for blocking of all assays regarding membrane proteins, or other approaches aiming for fatty acid-associated proteins. It is also well suited for stabilisation of antibodies, enzymes or fatty acids. Albumin, fatty acid-free, US-Origin, shows exceedingly low content of endotoxins and IgGs, making it a useful reagent for cell biology also.
BSA, fatty acid-free, US-Origin is particularly recommended if the use of albumin with certified US-Origin is dictated by process regulations. Available in large bulk format on request.
For purification of Albumin, fatty acid-free, US-Origin, an extensive heat-shock/diafiltration method is used, which has been shown to bring more highly purified products than the standard process acc. to Cohn. The process is taking place in a closed system.

Origin. ..... USA
IgG (COBAS). ..... none detected
Endotoxin content. ..... ≤5 E.U./mg
Total fatty acids. ..... <0,01 %

9638.1	1 g	plastic	19,25 €
9638.2	10 g	plastic	99,90 €
9638.3	50 g	plastic	385,95 €
9638.4	100 g	plastic	607,40 €

Albumin, IgG free

DNAse-/RNAse-/Protease-free

>98 %, IgG-free, for biochemistry and molecular biology

Recommended as blocking and stabilising reagent in all antibody-mediated detection systems.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Albumin, highly purified and tested for presence of immunoglobulins (IgGs), proteases, RNAse, and DNAse. Albumin, IgG-free is particularly recommended for use as stabilising reagent in antibody solutions, and as blocking reagent in all assays using detection systems via antibodies. Also very well suited for stabilising of hot-start-PCRs mediated by antibodies, or as blocking reagent in antibody-detected hybridisations.

For purification of Albumin, IgG-free, an extensive heat-shock/diafiltration method is used, which has been shown to bring more highly purified products than the standard process acc. to Cohn. The process is taking place in a closed system.

IgG (HPLC). ..... none detected
Protease. ..... none detected
DNAse. ..... none detected
RNAse. ..... none detected

3737.1	10 g	plastic	56,90 €
3737.2	50 g	plastic	155,90 €
3737.3	200 g	plastic	471,95 €
3737.4	500 g	plastic	962,15 €
Original pack 6 x 500 g			914,04/500 g

Albumins (BSA)

Albumin Fraction V, endotoxin-tested

CELLPURE® >98 %, low endotoxin

With low endotoxin content. Recommended for culturing of cell lines.
BSA
M ~66 000 g/mol
Storage temp.: +4 °C
Albumin Fraction V, low endotoxin is recommended for use during culturing of eukaryotic cells.
Bovine serum albumin is basically suitable for stabilisation of all enzymes and antibodies, as well as for blocking of hybridisations and immunoassays.
Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

Endotoxin content..... <15 E.U./mg

CP84.1	10 g	plastic	35,40 €
CP84.2	50 g	plastic	110,65 €
CP84.3	500 g	plastic	858,95 €
Original pack 6 x 500 g			816,00/500 g

Albumin Fraction V, very low endotoxin

CELLPURE® >98 %, very low endotoxin

With extremely low endotoxin content. Recommended for the culture of primary cells and cell lines, as well as for sensitive cell culture assays.
BSA
M ~66 000 g/mol
Storage temp.: +4 °C
Albumin Fraction V, very low endotoxin is particularly recommended for use during culturing of eukaryotic cells and in cell culture assays. This albumin of superior quality is thoroughly tested for its very low endotoxin content, therefore providing trouble-free cell culture assays and reliable results even when handling primary cells or stem cells.
Bovine serum albumin is basically suitable for stabilisation of all enzymes and antibodies, as well as for blocking of hybridisations and immunoassays.
Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

Endotoxin content..... <2.0 E.U./mg

CP77.1	10 g	plastic	142,90 €
CP77.2	50 g	plastic	547,20 €

Lactalbumin

for microbiology

Storage temp.: +20 °C
Lactalbumin is produced by enzymatic hydrolysis of milk whey. It consists of peptides, amino acids and carbohydrates, simple and complex.
It is used in media for culturing of bacterial cells (e.g. *lactobacilli*), for tissue culture, production of vaccines and in fermentation procedures.

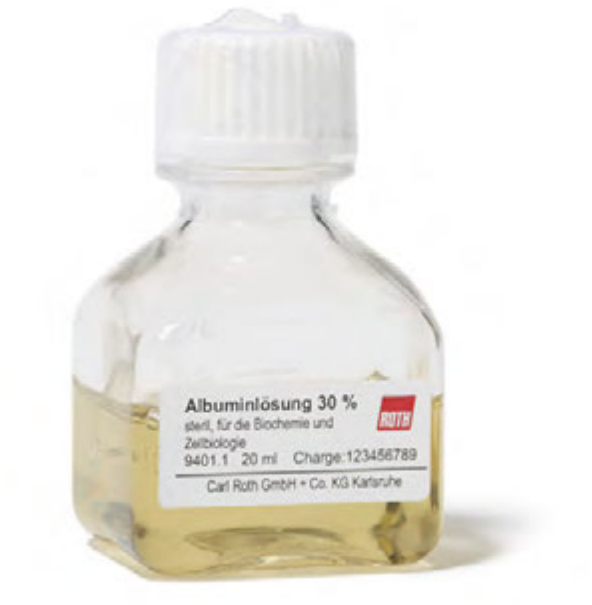
7597.1	250 g	plastic	75,15 €
7597.2	500 g	plastic	134,95 €
Original pack 6 x 500 g			128,20/500 g

Biochemistry

Recommended Application of Albumins

Albumin	Art. No.	Recommended Application
Fraction V	8076	Stabilisation of proteins and blocking reagent in protein biochemical detection systems. Basically suitable for all assays unless specific requirements apply (see below-listed albumins).
Albumin solution 20 %	9400	Wide range of applications, e.g. as protein standard or blocking reagent. NEW
Albumin solution 30 %	9401	Wide range of applications, e.g. as protein standard or blocking reagent. NEW
Fraction V, US-Origin	3854	Stabilisation of proteins and blocking reagent in all standard biochemical detection systems. Recommended if albumin with certified origin USA has to be used.
Albumin solution 30 %, with azide, US-Origin	9414	Suitable as blocking or stabilising reagent in all general assays. Recommended if BSA with US-Origin is required. NEW
Fraction V, pH 5.2	2834	Stabilisation of proteins and blocking reagent. Particularly recommended for Western-Blotting and ELISAs.
Fraction V, protease-free	T844	Stabilisation of proteins and blocking reagent in sensitive enzymatic detection systems, activity tests or protein/protein-interaction assays. Also recommended for stabilisation of antibodies.
Fraction V, biotin-free	0163	Stabilisation of proteins and blocking reagent in all biotin / streptavidin-mediated detection systems (membrane-bound- or coating-plate-assays, as well as soluble assays).
Fraction V, fatty acid-free	0052	Stabilisation of proteins and blocking reagent in detection systems. Particularly recommended for experiments on metabolism proteins, membrane-associated proteins and cell surface proteins.
Albumin, fatty acid-free, US-Origin	9638	Stabilisation of proteins and blocking reagent, particularly for experiments on metabolism proteins, membrane-associated proteins and cell surface proteins. Also well suited for cell biology and all antibody-mediated detection systems. Recommended if albumin with certified origin USA has to be used.
Albumin, IgG-free	3737	Stabilisation of antibodies. Blocking reagent in all antibody-mediated detection systems and Radio-Immuno Assays (RIAs). Reduces false-positive signals.
Fraction V, endotoxin-tested	CP84	Cell culture, standard cell lineages, cell sorting, short-term assays.
Fraction V, very low endotoxin	CP77	Cell culture. Superior quality and purity, suitable for sensitive cells like primary cells, stem cells, cloning and 3D-cultures. Also recommended for cell stressing assays like transfections, in vitro infections, or cell fusion.
Lactalbumin	7597	Cell culture, fermentation procedures, tissue culture.

Albumin / BSA Solutions



Albumin solution 30 %

NEW ready-to-use S

30 %, sterile, for biochemistry and cell biology

Albumin fraction V. Wide range of applications, e.g. as protein standard or blocking reagent.

BSA solution

Storage temp.: +4 °C • Transport temp.: cooled

This albumin is made of fresh bovine plasma, using an extensive heat-shock/diafiltration method.

Guarantee analysis:

Appearance	off-white to amber
Assay (HPLC)	>98 %
Calcium (Ca)	≤0,025 mg/ml
Iron (Fe)	≤0,5 µg/ml
pH (10 % solution)	7 ±0,3
Conductivity	≤3,000 µS
Sterility	complies

9401.1	20 ml	plastic	15,05 €
9401.2	100 ml	plastic	60,20 €
9401.3	500 ml	plastic	241,90 €

Albumin solution 20 %

NEW ready-to-use S

20 %, sterile, for biochemistry and cell biology

Albumin fraction V. Wide range of applications, e.g. as protein standard or blocking reagent.

BSA solution

Storage temp.: +4 °C • Transport temp.: cooled

This albumin is made of fresh bovine plasma, using an extensive heat-shock/diafiltration method.

Guarantee analysis:

Appearance	off-white to amber
Assay (HPLC)	>98 %
Calcium (Ca)	≤0,025 mg/ml
Iron (Fe)	≤0,5 µg/ml
pH (10 % solution)	7 ±0,3
Conductivity	≤3,000 µS
Sterility	complies

9400.1	20 ml	plastic	10,75 €
9400.2	100 ml	plastic	43,00 €
9400.3	500 ml	plastic	177,40 €

Albumin solution 30 %, with azide, US-Origin

NEW ready-to-use S

30 %, sterile, with azide, US-Origin, for biochemistry

Suitable as blocking or stabilising reagent in all general assays. Recommended if BSA with US-Origin is required.

BSA solution

Storage temp.: +4 °C • Transport temp.: cooled

This albumin is made of fresh bovine plasma, using an extensive heat-shock/diafiltration method.

Guarantee analysis:

Appearance	off-white to amber
Assay (HPLC)	>98 %
Calcium (Ca)	≤0,05 mg/ml
Iron (Fe)	≤0,5 µg/ml
pH (3 % solution)	7 ±0,3
Azids	≥0,1 %

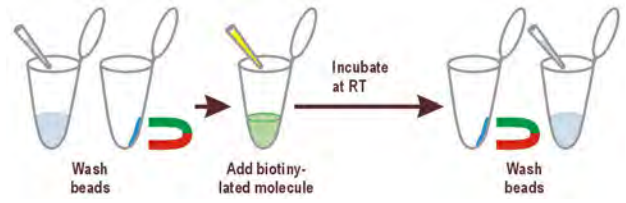
9414.1	100 ml	plastic	98,90 €
9414.2	500 ml	plastic	344,00 €

Protein Isolation

Magnetic beads for Isolation of Biotinylated Proteins

NEW

Various types of this product are available, with different mean size, streptavidin coating chemistry, and binding capacity.



MagSi-STA Trial kit

NEW

magtivio for protein biochemistry and molecular biology

Magnetic beads for capture or purification of biotinylated molecules.

Storage temp.: +4 °C

Magnetic silica particles with high quality streptavidin covalently attached to the bead surface. Applications include immunoassays and capture or purification of biotinylated molecules. The MagSi-STA Trial kit allows the screening of different types of streptavidin in parallel. The kit is especially useful when required specifications for magnetic beads are not known. This kit includes 1 mL of the 8 different MagSi-STA products and is intended for evaluation purposes during trial phase of developing new assays, or bead replacement in existing assays.

Various types of this product are available, with different mean size, streptavidin coating chemistry, and binding capacity.

Formulation:

1 ml M each of MagSi-STA 600, -STA 600 BI, -STA 1.0 L, -STA 1.0, -STA 1.0 TL, -STA 1.0 TS, -STA 3.0 L, -STA 3.0 TL.

1566.1	1 kit	cardboard	260,05 €

MagSi-STA 1.0

NEW

magtivio 10 mg/ ml, for protein biochemistry and molecular biology

Magnetic beads for capture or purification of biotinylated molecules.

Storage temp.: +4 °C

Magnetic silica particles of 1.0 µm size with high quality streptavidin covalently attached to the bead surface. Applications include immunoassays and capture or purification of biotinylated molecules.

Type analysis:

Concentration. ..... 10±0,5 mg/ml
Mean particle sizing. ..... 0,95-1,05 µm
Bead number. ..... 6-12 x 10^9 beads/ml
Assay (Iron oxide). ..... ≥50 %
Binding capacity (biotinylated fluorescein). ..... 3,5-5 nmol/mg

1561.1	2 ml	plastic	439,70 €
1561.2	10 ml	plastic	1589,95 €

MagSi-STA 600

NEW

magtivio 10 mg/ ml, for protein biochemistry and molecular biology

Magnetic beads for capture or purification of biotinylated molecules.

Storage temp.: +4 °C

Magnetic silica particles of 600 nm size with high quality streptavidin covalently attached to the bead surface. Applications include immunoassays and capture or purification of biotinylated molecules.

Type analysis:

Concentration. ..... 10±0,5 mg/ml
Mean particle sizing. ..... 530-600 nm
Bead number. ..... 8-20 x 10^9 beads/ml
Assay (Iron oxide). ..... 35-45 %
Binding capacity (biotinylated fluorescein). ..... 3,5-5 nmol/mg

1562.1	2 ml	plastic	484,75 €
1562.2	10 ml	plastic	1757,65 €

MagSi-STA 3.0 L

NEW

magtivio 10 mg/ ml, for protein biochemistry and molecular biology

Magnetic beads for capture or purification of biotinylated molecules.

Storage temp.: +4 °C

Magnetic silica particles of 3.0 µm size with high quality streptavidin covalently attached to the bead surface. Applications include immunoassays and capture or purification of biotinylated molecules.

Type analysis:

Concentration. ..... 10±0,5 mg/ml
Mean particle sizing. ..... 2,4-3,6 µm
Bead number. ..... 1-3 x 10^9 beads/ml
Assay (Iron oxide). ..... ≥55 %
Binding capacity (biotinylated fluorescein). ..... 0,7-1,2 nmol/mg

1563.1	2 ml	plastic	379,40 €
1563.2	10 ml	plastic	1396,45 €

Instructions for use

can be found on the Internet next to the product description.

Magnetic Bead Kits for individual applications

- Paramagnetic beads and surface coating reagents for custom functionalization
- Efficient and delicate coupling for many sensitive targets
- Binding only takes a few minutes
- Produces non-covalent binding that is strong even under extreme conditions
- Maximum binding interaction with large biomolecules
- Functionalized beads can be stored ready-to-use in various aqueous buffers

MagSi-Direct includes easy-to-use MagSi beads and coating solutions enabling the immobilization of your specific biological molecule to a magnetic support. With MagSi-Direct you can turn ANY molecule that interacts with a specific partner into a powerful new biomagnetic reagent. Just magnetize your molecule to unleash the power of magnetic bead technology in your research or project.
The coating of MagSi-Direct acts as a nanoglue, using non-specific electron donation from electron-rich groups of the target biomolecule including -COOH, -CONH-, -NH2, -NHR-, -NR2, -OH, -SH, -X. As a result, MagSi-Direct allows coupling of a wide variety of medium-large biological molecules, ranging from proteins such as antibodies, cell receptor proteins, lectins, peptide aptamers and enzymes to non-protein molecules. MagSi-Direct can be used in many applications, for instance in cell therapy research, in flow cytometry, in protein chemistry.
Bigger packages available on request.

MagSi-Direct 1.0 NEW

magtivio for protein biochemistry and molecular biology
Magnetic beads for covalent coupling of chosen ligands.
Storage temp.: +4 °C
Kit with magnetic silica beads of 1 µm size for covalent coupling of chosen ligands. With a mean bead diameter of 1.0 µm, MagSi-Direct 1.0 is especially suitable for immunoassays and capture reactions in volumes ≤1000 µl.

The kit contains:
Ready-to-use MagSi-Direct 1.0 beads, 10X Immobilization Buffer and Blocking Buffer. Contents of this Kit may not be bought separately.

1615.1	1 kit (2 ml beads)	cardboard	465,40 €
1615.2	1 kit (10 ml beads)	cardboard	1794,20 €

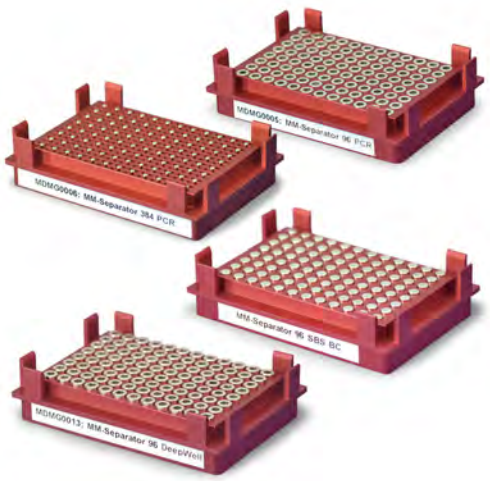
MagSi-Direct 3.0 NEW

magtivio for protein biochemistry and molecular biology
Magnetic beads for covalent coupling of chosen ligands.
Storage temp.: +4 °C
Kit with magnetic silica beads of 3 µm size for covalent coupling of chosen ligands. With a mean bead diameter of 3.0 µm, MagSi-Direct 3.0 is especially suitable for cell capture applications and capture reactions in high volumes or viscous samples.

The kit contains:
Ready-to-use MagSi-Direct 3.0 beads, 10X Immobilization Buffer and Blocking Buffer. Contents of this Kit may not be bought separately.

1620.1	1 kit (2 ml beads)	cardboard	465,40 €
1620.2	1 kit (10 ml beads)	cardboard	1794,20 €

Separators



NEW

MM-Separators for automated processing

By magtivio. Made from **aluminum**.
These MM-Separator are designed for fast and efficient collection of magnetic beads in a variety of microplates. Its SBS footprint allows placement on standard automated liquid handling workstations. Small skirts on each side of the aluminium block ensure correct and stable placement of microplates onto the separators. Compatible with 8- or 12-channel multi-pipettes.

Recommended for:
Type 96 PCR: PCR plates, U- and V-bottom microplates
Type 384 PCR: PCR microplates only. For 384 V-bottom plates, use MM-Separator 384 DeepWell
Type 96 SBS BC: U- and V-bottom microplates
Type 96 DeepWell: DeepWell microplates

Length: 133,7 cm, Breadth: 91,5 cm, Height: 3,4 cm

Type	Max. sample number	Max. volume	Min. elution volume
96 PCR	96	300 µl	20 µl
384 PCR	384	40 µl	10 µl
96 SBS BC	96	400 µl	5 µl
96 DeepWell	96	1,2 ml	5 µl

Type	Art. No.	Pack Qty.	€
96 PCR	**2162.1**	1 pieces	1548,00
384 PCR	**2166.1**	1 pieces	2386,50
96 SBS BC	**2167.1**	1 pieces	1784,50
96 DeepWell	**2169.1**	1 pieces	1548,00

MM-Separators

NEW

By magtivio. Made from acrylic glas for optimal visual inspection needs, and from chemically resistant polyoxymethylene (POM) (versions 'P') for routine use of organic solvents.

magtivio's MM-Separators are intended for magnetic separation of MagSi beads from liquid samples for isolation and purification of nucleic acids and proteins, immunoprecipitation, immunoassays (ELISA), cell sorting, and purification of biomolecules. MM-Separators are designed for optimal magnetic bead separation in terms of speed and bead pellet positioning, as well as stability and user-friendliness.

Usage:

MM-Separators M12+12 - manual use with 1.5 and 2 mL microtubes.

MM-Separators M96 - manual use with 96 well microplates and PCR plates.

MM-Separators M12+12 enable easy separation of beads from liquids for processing low amounts of samples with working volumes from 10 µl to 2 ml. In the centre, 12 magnets allow accommodation of up to 24 centrifuge tubes.

MM-Separators M96 enable easy separation of beads from liquids for multiple sample processing with 8- or 12-channel pipettes. The separators hold 24 magnets that are placed for magnetic separation of beads in 96 wells. MM-Separators M96 allow magnetic particles to be pulled to the side of wells for optimal access to the bottom and easy supernatant removal. The product is suitable for U- and V-bottom shaped 96 well microplates and for most PCR plates, skirted or semi- and non-skirted.

Type	Length (cm)	Breadth (cm)	Heigth (cm)	Weight (kg)	Max. sample number
M12+12 (P)	21,7	11,0	2,5	approx. 0,7	24
M96 (P)	12,8	8,6	2,5	approx. 0,4	96

Type	Figure	Art. No.	Pack Qty.	€
M12+12	1	**2138.1**	1 pieces	394,55
M12+12 P	2	**2151.1**	1 pieces	394,55
M96	3	**2141.1**	1 pieces	394,55
M96 P	4	**2154.1**	1 pieces	394,55

Ultra filtration

Roti®-Spin Centrifugal Devices

For purification and concentration of biomolecules and for purification of solutions.

- Applicable for nucleic acids, proteins/peptides, other biomolecules >6 kD and very small bioparticles
- Can be used to replace standard techniques like precipitation, dialysis, gel filtration, gel purification, column chromatography, gradient centrifugation etc.
- Gentle: No shearing of DNA of up to 100 kb, proteins remain native and enzymatically active
- Applicable for purification of all labelled probes (isotope-, fluorescent-, chromogenic labelling)
- Very high recovery rates of >90 % (when using devices of appropriate MWCO)

Centrifugal devices for ultrafiltration of biomolecules. The membranes made of highly chemical-resistant polyethersulfone have been tightly sealed to prevent leakage and loss of samples. Furthermore, the membranes underwent special treatment minimising the binding of biomolecules, in order to optimise sample recovery rates.

Roti®-Spin Centrifugal Devices can be applied to a variety of applications and can be used to replace tedious and labour-intensive methods like gel filtration, gel purification or precipitation. Application is time-saving and very simple - only few centrifugal steps are necessary to concentrate and recover your sample. During this, the sample remains untouched in the upper reservoir, and cross-contamination is efficiently prevented even when large numbers of samples are handled. Centrifugation can easily be performed in the cold room or at specially designated benches like isotope laboratories or in laminar flow hoods.

MWCO:

For convenient and successful application, centrifugal devices with membranes in 4 colour-coded molecular weight cut-offs (MWCO) are available. In order to choose the appropriate MWCO please use the following thumb-rule:
Centrifugation of proteins/peptides:
MWCO ≤1/3 of sample molecule size.
Centrifugation of nucleic acids:
MWCO ≤ ½ sample molecule size.

Overview for selecting the right pore size

MWCO	Molec. size	DNA size
3 kD	10 - 20 kD	<50 bp
10 kD	30 - 90 kD	50 - 200 bp
30 kD	90 - 180 kD	200 bp - 1 kb
100 kD	>300 kD	>1 kb

Sample volumes:

Maximum sample volume: Roti®-Spin MINI 50-500 µl
Final concentrate volume: Roti®-Spin MINI 15-20 µl

Applications (examples):

Desalting or buffer exchange following restriction digest, PCR or such; separation of free nucleotides and polymerised DNA; removal of contaminating compounds (like DNA) from stock solutions (e.g. PCR-buffers); concentration of DNA or proteins; separation of proteins of different size; sample preparation prior to HPLC.

Roti®-Spin MINI

Type	MWCO (kD)	Colour	Art. No.	Pack Qty.	€
Roti®-Spin MINI-3	3	grey	**CL12.1**	25	111,80
Roti®-Spin MINI-10	10	blue	**CL13.1**	25	111,80
Roti®-Spin MINI-30	30	red	**CL14.1**	25	111,80
Roti®-Spin MINI-100	100	clear	**CL15.1**	25	111,80

Affinity Chromatography

Roti®garose Beads and Columns for Isolation of His-tag Proteins

Ion charged agarose beads for low pressure affinity chromatography. IMAC matrix.

Immobilized metal ion affinity chromatography (IMAC) still is the most widely used method to obtain high yield of very pure proteins with reasonable effort. Roti®garose His Beads offer the perfect solution for your specific application of low flow column chromatography or protein isolation in batch mode.
The matrix of Roti®garose His Beads consists of crosslinked and beaded 6 % agarose, IDA- or NTA- conjugated and charged with divalent ions. Roti®garose His beads result in eluates with considerably low metal contamination.
Roti®garose Beads may repeatedly be regenerated, making them very cost-effective.
The matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT).

- Simple and rapid one-step purification of His-tagged proteins from total lysates
- High recovery rate of very pure proteins
- Superior binding capacity
- Easy elution and regeneration
- Very low ion leaching
- Compatible with denaturing and reducing reagents

Nickel chelates recognize two exposed histidine tags with good specificity and very high affinity, making the Ni^{2+} charged matrix the first choice for all **standard applications**. Roti®garose His/Ni beads give **very high yields of pure proteins** with considerably low metal contamination.

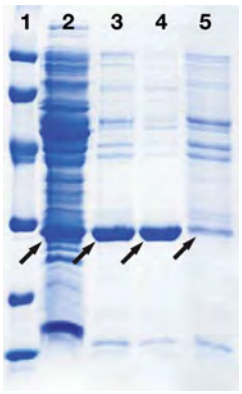


Figure: SDS-PAGE of 6xHis-fuculose aldolase, 28 kDa (arrows). Very high yield of well purified proteins.
1: Marker, 2: Protein raw extract, 3,4: 6xHis target protein purified with Roti®garose His/Ni Beads or Column, respectively, 5: 6xHis target protein purified by competitor product.

Cobalt chelates recognize two exposed, vicinal histidins with superior specificity and good affinity, resulting in acceptable to **good recovery rates, yielding proteins of superior purity**. This matrix is, therefore, the perfect choice if extremely pure proteins are required, or if hard-to-separate proteins shall be isolated.

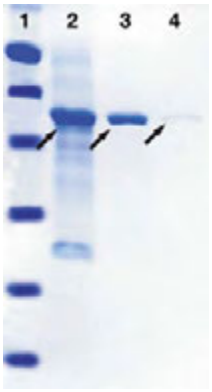


Figure: SDS-PAGE of highly expressed 6xHis-glutaryl acylase, 58 kDa (arrows). Good yield of extremely pure proteins.
1: Marker, 2: Protein raw extract, 3: 6xHis target protein purified with Roti®garose His/Co Beads, 4: 6xHis target protein purified by competitor product.

Instructions for use
can be found on the Internet next to the product description.

Nickel Charged IMAC Beads and Columns – IDA Linker

Roti®garose-His/Ni HPCartridges ready-to-use

for biochemistry

For isolation of His-tagged proteins by high pressure affinity chromatography.

Affinity chromatography colums/nickel charged, IMAC columns

Storage temp.: +4 °C

Danger H225

Prepacked cartridges with Nickel charged IDA-agarose bead matrix for medium pressure affinity chromatography (MPLC).
Optimal for automated liquid chromatography, or if proteins shall be isolated under pressure.
Suitable for ÄKTA™FPLC™ and for sample application via peristaltic pump or syringe.

- Very fast and simple purification of His-tagged proteins from total lysates
- Superior recovery rate of pure His-tagged proteins
- Binding capacity (purified 6xHis protein) of 110 mg per ml matrix
- Recommended flow rate 5 ml/min.
- Recommended pressure 5 bar [0,5 MPa] (70 psi)
- Standard ports (10-32)
- Very versatile. Applicable with ÄKTA™FPLC™, pump and syringe.
- Easy elution and regeneration
- Very low Nickel leaching
- Compatible with denaturing and reducing reagents
- For medium pressure flow chromatography

Roti®garose His/Ni HPCartridges are prepacked and may be used directly. The Matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT). Slurry in 20 % ethanol.
Column material made from polypropylene and polyethylene (frit).
Matrix volume 5 ml, whole volume 10 ml.
For approx. 500 mg His labelled protein.

Type analysis:

Particle size.	20-50 µm
Beads (cross-linked agarose).	6 %
Ligand.	IDA
Metal ion.	nickel
Binding capacity (DHAK-6xHis).	110 mg/ml
Stabilizer.	20 % ethanol

1318.1	1x5 ml	190,85 €
1318.2	5x5 ml	805,20 €

Roti®garose-His/Ni Columns ready-to-use

for biochemistry

For isolation of His-tagged proteins by affinity chromatography.

Affinity chromatography colums/nickel charged, IMAC columns

Storage temp.: +4 °C

Danger H225

Prepacked columns with Nickel charged IDA-agarose bead matrix for low pressure affinity chromatography.
Suitable for all general applications, or if proteins of very small amount shall be isolated without loss.

Matrix volume 1 or 5 ml, whole volume 12 or 35 ml, respectively.
For approx. 100 and 500 mg His labelled protein.

- Fast and simple purification of His-tagged proteins from total lysates
- Superior recovery rate of pure His-tagged proteins
- Binding capacity (purified 6xHis protein) of 117 mg per ml matrix
- Easy elution and regeneration
- Very low Nickel leaching
- Compatible with denaturing and reducing reagents
- **For gravity flow chromatography**

Roti®garose His/Ni Columns are prepacked and may be used directly. The Matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT). Slurry in 20 % ethanol.
Column material made from polypropylene and polyethylene (frit).
May be autoclaved at 121 °C for 30 mins.

Type analysis:

Particle size.	50-150 µm
Beads (cross-linked agarose).	6 %
Ligand.	IDA
Metal ion.	nickel
Binding capacity (DHAK-6xHis).	117 mg/ml
Activating agent.	Epichlorohydrin
Stabilizer.	20 % ethanol

1314.1	8x1 ml	246,20 €
1314.2	5x5 ml	639,65 €

Roti®garose-His/Ni HPBeads plus NEW

for biochemistry

For isolation of His-tagged proteins by fast or large scale affinity chromatography under presence of EDTA or DTT.

Agarose beads "high pressure" for affinity chromatography, IMAC matrix/nickel charged, Column matrix for protein isolation

Storage temp.: +4 °C

Warning H226-H319

Nickel charged agarose beads for affinity chromatography under presence of EDTA or DTT. The matrix of choice for applications under low or medium pressure, and applicable for every required sample and/or matrix volume. 50 % bead slurry in 20 % ethanol.
In Roti®garose His/Ni HPBeads plus, the advantages of the highly efficient Nickel-His binding have been combined with a bead technology allowing a very rapid flow rate. The **specially developed polychelating ligand** forms highly stabile nickel chelates, which are able to isolate His-tagged proteins even from solutions containing 20 mM EDTA or DTT - reliably and without undesired nickel stripping.
Suitable for MPLC and FPLC, or if His-tag proteins shall be isolated either in particularly short time or in big amounts from reducing solutions.

- Rapid one-step purification of very pure His-tagged proteins from total lysates
- High binding capacity for 6xHis-tagged protein
- Reliably elution and regeneration
- Minimized Nickel leaching
- Compatible with 20 mM EDTA and DTT
- For batch mode, gravity flow, MPLC und FPLC
- **Recommended for all matrix volumes**

Roti®garose His/Ni HPBeads plus may not be regenerated.
The matrix is very stabile and may generally be used with buffers including the following reagents: ≤20 mM EDTA, ≤20 mM DTT, ≤8 M urea, ≤6 M guanidinium hydrochloride, ≤100 % methanol, ≤100 % ethanol, ≤30 % acetonitrile, pH range 4-9. May be autoclaved at 121 °C for 30 mins.
Suitable for LPLC, FPLC and MPLC and big matrix volumes.

Type analysis:

Particle size.	50-150 µm
Beads (cross-linked agarose).	6 %
Ligand.	Polychelator
Metal ion.	nickel
Binding capacity (gel) (GFPuv-6xHis).	≥80 mg/ml
Ethanol.	20 %

0806.1	25 ml	plastic	580,50 €
0806.2	100 ml	plastic	1988,75 €

Roti®garose-His/Ni Beads

for biochemistry

For isolation of His-tagged proteins by affinity chromatography.

Agarose beads for affinity chromatography, IMAC matrix/nickel charged

Storage temp.: +4 °C

Warning H226-H319-EUH208

Nickel charged IDA-agarose beads for low pressure affinity chromatography. Slurry in 20 % ethanol.
Suitable **for all general applications**, or if proteins of very small amount shall be isolated without loss.

- One-Step purification of His-tagged proteins from total lysates
- Superior recovery rate of pure His-tagged proteins
- Binding capacity (purified 6xHis protein) of 117 mg per ml matrix
- Easy elution and regeneration
- Very low Nickel leaching
- Compatible with denaturing and reducing reagents
- For batch mode and gravity flow column chromatography

The Matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT).
May be autoclaved at 121 °C for 30 mins.

Type analysis:

Particle size.	50-150 µm
Beads (cross-linked agarose).	6 %
Ligand.	IDA
Metal ion.	nickel
Binding capacity (DHAK-6xHis).	117 mg/ml
Activating agent.	Epichlorohydrin
Stabilizer.	20 % ethanol

1308.1	25 ml	plastic	284,90 €
1308.2	100 ml	plastic	772,95 €

Roti®garose-His/Ni HPBeads NEW

for biochemistry

For isolation of His-tagged proteins by fast or large scale affinity chromatography.

Agarose beads "high pressure" for affinity chromatography, IMAC matrix/nickel charged, Column matrix for protein isolation

Storage temp.: +4 °C

Warning H226-H319-EUH208

Nickel charged IDA-agarose beads for affinity chromatography under medium pressure, with high flow rate or with big sample-/matrix volume. 50 % bead slurry in 20 % ethanol.
In Roti®garose His/Ni HPBeads, the advantages of the highly efficient Nickel-His binding have been combined with a bead technology allowing a very rapid flow rate. Suitable for MPLC and FPLC, or if His-tag proteins shall be isolated either in **particularly short time or in big amounts**.

- Rapid one-step purification of very pure His-tagged proteins from total lysates
- Very high binding capacity for 6xHis-tagged protein
- Easy elution and regeneration
- Very low Nickel leaching
- Compatible with denaturing reagents
- **For batch mode, gravity flow, MPLC und FPLC**
- **Recommended for big matrix volumes**

Additionally, Roti®garose His/Ni HPBeads may repeatedly be regenerated, making them very cost-effective.
The Matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT). May be autoclaved at 121 °C for 30 mins.
Suitable for LPLC, FPLC and MPLC and big matrix volumes.

Type analysis:

Particle size.	50-150 µm
Beads (cross-linked agarose).	6 %
Ligand.	IDA
Metal ion.	nickel
Binding capacity (gel) (DHAK-6xHis).	~20 µmol/ml
Size exclusion limit (Da).	~$4x10^6$
Ethanol.	20 %

0835.1	25 ml	plastic	295,65 €
0835.2	100 ml	plastic	795,50 €

Nickel Charged IMAC Beads and Columns – NTA Linker

NEW ready-to-use

Roti®garose-His/Ni NTA-Cartridges

for biochemistry

For isolation of His-tagged proteins by high pressure affinity chromatography under reducing conditions.

Affinity chromatography colums/nickel charged, IMAC columns

Storage temp.: +4 °C

Warning H226-H319

Prepacked cartridges with Nickel charged NTA-agarose bead matrix for medium pressure affinity chromatography (MPLC) under reducing conditions. Prepacked matrix, stabilised with 15 % ethanol.
Optimal for automated liquid chromatography, or if proteins shall be isolated under pressure. **Suitable for ÄKTA™ FPLC™** and for sample application via peristaltic pump or syringe.
The matrix of choice if His-tagged proteins shall be isolated from reducing buffer solutions without loss.

- Very fast and simple purification of His-tagged proteins from total lysates
- Superior recovery rate of pure His-tagged proteins
- High binding capacity for 6xHis-tagged protein
- Recommended flow rate 5 ml/min.
- Standard ports (10-32)
- Very versatile. Applicable with ÄKTA™ FPLC™, pump and syringe
- Reliable elution and regeneration
- Minimized Nickel leaching
- Compatible with denaturing and reducing reagents
- For medium pressure flow chromatography

Immobilized metal ion affinity chromatography (IMAC) under medium pressure is the prefect method to obtain high yield of very pure proteins in minimum time. Roti®garose His/Ni NTA-Cartridges offer the perfect solution for fast and simple isolation of His-tagged proteins from total lysates in reducing buffer solutions.
Roti®garose His/Ni NTA-Cartridges may be regenerated, making them very cost-effective.
The Matrix is stable in all commonly used reagents including denaturing reagents (like 8 M urea, 6 M guanidinium hydrochloride) and (dependent on the respective buffer) reducing substances (for instance ≤30 mM glutathion, ≤10 mM DTT, ≤10 mM DTE, ≤20 mM ß-mercaptoethanol and ≤0,3 % SDS.
Column material made from polypropylene and polyethylene (frit).
For MPLC, FPLC, ÄKTA™ and peristaltic pump.

Type analysis:

Column volume..... 5 ml
Particle size. .....50-150 µm
Beads (cross-linked agarose).....6 %
Ligand.....NTA
Metal ion. .....nickel
Binding capacity/cartridge (GFPuv-6xHis).....250 mg
Stabilised with 15 % ethanol

0804.1	1 x 5 ml	plastic	193,50 €
0804.2	5 x 5 ml	plastic	774,00 €

Roti®garose-His/Ni NTA-Beads NEW

for biochemistry

For isolation of His-tagged proteins by affinity chromatography under reducing conditions.

Agarose beads for affinity chromatography, IMAC matrix/nickel charged, Column matrix for protein isolation

Storage temp.: +4 °C

Warning H226-H319-EUH208

Nickel charged NTA-agarose beads for affinity chromatography under reducing conditions. 50 % bead slurry in 15 % ethanol.
The matrix of choice if His-tagged proteins of very small amount shall be isolated from reducing buffer solutions without loss.

- Rapid one-step purification of very pure His-tagged proteins from total lysates
- High binding capacity for 6xHis-tagged protein
- Reliably elution and regeneration
- Minimized Nickel leaching
- Compatible with denaturing and reducing reagents
- **For batch mode and gravity flow**

Roti®garose His/Ni NTA-Beads may be regenerated, making them very cost-effective. The Matrix is stable in all commonly used reagents including denaturing reagents (like 8 M urea, 6 M guanidinium hydrochloride) and (dependent on the respective buffer) reducing substances (for instance ≤30 mM glutathion, ≤10 mM DTT, ≤10 mM DTE, ≤20 mM ß-mercaptoethanol und ≤0,3 % SDS). May be autoclaved at 121 °C for 30 mins.

Type analysis:

Particle size. .....50-150 µm
Beads (cross-linked agarose).....6 %
Ligand.....NTA
Metal ion. .....nickel
Binding capacity (gel) (GFPuv-6xHis)..... ≥50 mg/ml
Ethanol. .....15 %

0807.1	25 ml	plastic	370,90 €
0807.2	100 ml	plastic	1204,00 €

Roti®garose-His/Ni NTA-HPBeads NEW

for biochemistry

For isolation of His-tagged proteins by fast or large scale affinity chromatography under reducing conditions.

Agarose beads "high pressure" for affinity chromatography, IMAC matrix/nickel charged, Column matrix for protein isolation

Storage temp.: +4 °C

Warning H226-H319

Nickel charged NTA-agarose beads for affinity chromatography under reducing conditions. The matrix of choice for applications under medium pressure, with high flow rate or with big sample-/matrix volume.
50 % bead slurry in 20 % ethanol.
In Roti®garose His/Ni NTA-HPBeads, the advantages of the highly efficient Nickel-His binding have been combined with a bead technology allowing a very rapid flow rate. **Suitable for MPLC and FPLC**, or if His-tag proteins shall be isolated either in particularly short time or in big amounts from reducing solutions.

Further advantages:

- For batch mode, gravity flow, MPLC und FPLC
- **Recommended for big matrix volumes**

Roti®garose His/Ni NTA-HPBeads may be regenerated, making them very cost-effective. The Matrix is stable in all commonly used reagents including denaturing reagents (like 8 M urea, 6 M guanidinium hydrochloride) and (dependent on the respective buffer) reducing substances (for instance ≤30 mM Glutathion, ≤10 mM DTT, ≤10 mM DTE, ≤20 mM ß-Mercaptoethanol and ≤0,3 % SDS). May be autoclaved at 121 °C for 30 mins.

Type analysis:

Particle size. .....50-150 µm
Beads (cross-linked agarose).....6 %
Ligand.....NTA
Metal ion. .....nickel
Binding capacity (gel) (GFPuv-6xHis)..... ≥60 mg/ml
Ethanol. .....20 %

0805.1	25 ml	plastic	473,00 €
0805.2	100 ml	plastic	1505,00 €

Cobalt Charged IMAC Beads and Columns – IDA Linker

Roti®garose-His/Co Columns ready-to-use

for biochemistry

For isolation of His-tagged proteins by affinity chromatography.
Affinity chromatography colums/cobalt charged, IMAC columns
Storage temp.: +4 °C

Danger H225

Prepacked columns with Cobalt charged IDA-agarose bead matrix for low pressure affinity chromatography.
Perfect choice if extremely pure proteins are required, or if hard-to-separate proteins shall be isolated.

Matrix volume 1 or 5 ml, whole volume 12 or 35 ml, respectively.
For approx. 120 and 600 mg His labelled protein.

- Fast and simple purification of His-tagged proteins from total lysates
- Good recovery rate of extremely pure His-tagged proteins
- Binding capacity (purified 6xHis protein) of 135 mg per ml matrix
- Easy elution and regeneration
- Very low Cobalt leaching
- Compatible with denaturing and reducing reagents
- **For gravity flow chromatography**

Roti®garose His/Co Columns are prepacked and may be used directly.
The Matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT). Column material made from polypropylene and polyethylene (frit). Slurry in 20 % ethanol.
May be autoclaved at 121 °C for 30 mins.

Type analysis:

Particle size.	50-150 µm
Beads (cross-linked agarose).	6 %
Ligand.	IDA
Metal ion.	cobalt
Binding capacity (DHAK-6xHis).	135 mg/ml
Activating agent.	Epichlorohydrin
Stabilizer.	20 % ethanol

1267.1	8x1 ml		246,20 €
1267.2	5x5 ml		639,65 €

Roti®garose-His/Co Beads

for biochemistry

For isolation of His-tagged proteins by affinity chromatography.
Agarose beads for affinity chromatography, IMAC matrix/cobalt charged
Storage temp.: +4 °C

Danger H226-H319-H350-EUH208

Cobalt charged IDA-agarose beads for low pressure affinity chromatography. Slurry in 20 % ethanol. Perfect choice if **extremely pure proteins** are required, or if hard-to-separate proteins shall be isolated.

- One-Step purification of His-tagged proteins from total lysates
- Good recovery rate of extremely pure His-tagged proteins
- Binding capacity (purified 6xHis protein) of 135 mg per ml matrix
- Easy elution and regeneration
- Very low Cobalt leaching
- Compatible with denaturing and reducing reagents
- **For batch mode and gravity flow column chromatogrphy**

The Matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT). May be autoclaved at 121 °C for 30 mins.

Type analysis:

Particle size.	50-150 µm
Beads (cross-linked agarose).	6 %
Ligand.	IDA
Metal ion.	cobalt
Binding capacity (DHAK-6xHis).	135 mg/ml
Activating agent.	Epichlorohydrin
Stabilizer.	20 % ethanol

1235.1	25 ml	plastic	284,90 €
1235.2	100 ml	plastic	772,95 €

Roti®garose-His/Co HPBeads NEW

for biochemistry

For isolation of His-tagged proteins by fast or large scale affinity chromatography.
Agarose beads "high pressure" for affinity chromatography,
IMAC matrix/cobalt charged, Column matrix for protein isolation
Storage temp.: +4 °C

Danger H226-H319-H350-EUH208

Cobalt charged IDA-agarose beads for affinity chromatography under medium pressure, with high flow rate or with big sample-/matrix volume. 50 % bead slurry in 20 % ethanol.
In Roti®garose His/Co HPBeads, the advantages of the highly specific Cobalt-His binding have been combined with a bead technology allowing a very rapid flow rate. Suitable for MPLC and FPLC, or if superiorly pure His-tag proteins shall be isolated either in **particularly short time or in big amounts.**

- Rapid one-step purification of superiorly pure His-tagged proteins from total lysates
- High binding capacity and excellent specificity for 6xHis-tagged protein
- Easy elution and regeneration
- Very low Cobalt leaching
- Compatible with denaturing reagents
- **For batch mode, gravity flow, MPLC und FPLC**
- **Recommended for big matrix volumes**

Additionally, Roti®garose His/Co HPBeads may repeatedly be regenerated, making them very cost-effective.
The Matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT). May be autoclaved at 121 °C for 30 mins.
Suitable for LPLC, FPLC and MPLC and big matrix volumes.

Type analysis:

Particle size.	50-150 µm
Beads (cross-linked agarose).	6 %
Ligand.	IDA
Metal ion.	cobalt
Binding capacity (gel) (DHAK-6xHis).	~20 µmol/ml
Size exclusion limit (Da).	~4x10^6
Ethanol.	20 %

0838.1	25 ml	plastic	295,65 €
0838.2	100 ml	plastic	795,50 €

Uncharged IMAC Beads

Roti®garose-His uncharged HPBeads NEW

for biochemistry

For isolation of His-tagged proteins by fast or large scale affinity chromatography.

Agarose beads "high pressure" for affinity chromatography, IMAC matrix/uncharged, Column matrix for protein isolation

Storage temp.: +4 °C

Warning H226-H319

Uncharged IDA-agarose beads for affinity chromatography under medium pressure, with high flow rate or with big sample-/matrix volume.
50 % bead slurry in 20 % ethanol.
In Roti®garose His uncharged HPBeads, the advantages of the efficient metal ion/His binding have been combined with a bead technology allowing a very rapid flow rate. Suitable for MPLC and FPLC, or if His-tag proteins shall be isolated either in particularly short time or in big amounts. In one step, the beads can be loaded safely and rapidly with all standard bivalent metal cations (Ni^{2+}, Co^{2+}, Zn^{2+}, Cu^{2+}).

- Rapid one-step purification of His-tagged proteins from total lysates
- High binding capacity for standard me^{2+} ions under rapid one-step loading
- Easy elution and regeneration
- Very low metal leaching
- Compatible with denaturing reagents
- For batch mode, gravity flow, MPLC und FPLC
- Recommended for big matrix volumes

Immobilized metal ion affinity chromatography (IMAC) still is the most widely used method to obtain high yield of very pure proteins with reasonable effort. Roti®garose His uncharged HPBeads offer the perfect solution for your specific application under medium pressure (MPLC, FPLC), if rapid flow rates are desired or if big samples volumes have to be purified.
The matrix of Roti®garose His uncharged HPBeads consists of crosslinked and beaded 6 % agarose, IDA-conjugated. Roti®garose His uncharged HPBeads result in eluates with considerably low metal contamination.
The tridentate IDA cross-linker provides easy elution with low amounts of imidazole. Additionally, Roti®garose His uncharged HPBeads may repeatedly be regenerated, making them very cost-effective.
The Matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT). May be autoclaved at 121 °C for 30 mins.
Suitable for LPLC, FPLC and MPLC and big matrix volumes.

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 6 %
Ligand. ..... IDA
Metal ion. ..... uncharged
Binding capacity (gel) (DHAK-6xHis). ..... ~20 µmol/ml
Size exclusion limit (Da). ..... ~4x10^6
Ethanol. ..... 20 %

0839.1	25 ml	plastic	295,65 €
0839.2	100 ml	plastic	795,50 €

Empty cartridges FPLC NEW

Empty cartridges for protein isolation by FPLC.

Chemically stable in all commonly used reagents. The FPLC cartridges combine the easy handling of a small column with a robust construction allowing application of higher pressures. The cartridges are simply and reproducibly to pack, offer 4 sizes in identical design and may be stored very easily. Compatible with common chromatography instruments like ÄKTA™FPLC™.

Max. pressure: 200 psi / 14 bar / 1,38 MPa

Pore size: 10 µm

Column material: Polypropylene, Material column frit: Polyethylene.

Delivery includes empty cartridges, 3 frits each and 2 end plugs each.

Standard connections are usually supplied with the common FPLC instruments.

Technical specifications:

Type	Vol. (ml packed column matrix)*	Cartridges (no.)	Frits (no.)	End caps (no.)	Ø (mm)	Height (mm)
FPLC-8	8	3	9	6	12	70
FPLC-30	30	2	6	4	21	87
FPLC-45	45	2	6	4	21	137
FPLC-80	80	1	3	2	26	144

* The actual filling volume depends on the respective resin used, varying by approx. ±10 %.

Type	Art. No.	Pack Qty.	€
FPLC-8	**0860.1**	3	83,85
FPLC-30	**0862.1**	2	83,85
FPLC-45	**0866.1**	2	83,85
FPLC-80	**0868.1**	1	77,40

Roti®garose Beads and Columns for Isolation of GST-tag Proteins

NEW ready-to-use

Roti®garose-Glu/GST Cartridges

for biochemistry

For isolation of GST-tagged proteins by high pressure affinity chromatography.
Affinity chromatography columns with glutathione-agarose,
Column for protein isolation, GST agarose beads
Storage temp.: +4 °C

Warning H226-H319

Glutathione coupled agarose beads for medium pressure affinity chromatography (MPLC). Prepacked matrix, stabilised with 20 % ethanol. Optimal for isolation of glutathione-S-transferase (GST) or GST fusion proteins via automated liquid chromatography, or if proteins shall be isolated under pressure. Suitable for ÄKTA™FPLC™ and for sample application via peristaltic pump or syringe.

- Easy isolation of GST-tagged proteins from total lysates
- Rapid, mild and highly specific purification
- Suitable for isolation of GST-peptides and protein complexes of all sizes
- High binding capacity
- Easy elution and regeneration
- Recommended flow rate 0,5-5 ml/min.
- Standard ports (10-32)
- For medium pressure flow chromatography
- Very versatile. Applicable with ÄKTA™FPLC™, pump and syringe.

Efficient and highly specific isolation of GST-tagged proteins via affinity chromatography is based on the affinity of the glutathion-S-transferase to it's substrate glutathione. Merely no unspecific binding of proteins without GST-tag takes place, even during purification from raw extracts, while the biological activity of the purified proteins is preserved by chromatography conditions.
Roti®garose Glu/GST Cartridges offer the perfect solution for your specific application of chromatography under medium pressure (MPLC, FPLC). Roti®garose Glu/GST Cartridges are prepacked and may be used directly. The matrix of Roti®garose Glu/GST Cartridges consists of beaded 4 % agarose without crosslinking, coupled with glutathione. Elution is carried out via a mild Tris/glutathione buffer, enabling even recovery of native protein complexes. Roti®garose Glu/GST Cartridges may be regenerated, making them very cost-effective.
Column material made from polypropylene and polyethylene (frit).
For MPLC, FPLC, ÄKTA™ and peristaltic pump.

Type analysis:

Column volume..... 5 ml
Particle size. .....50-150 µm
Beads (un-cross-linked agarose).....4 %
Ligand.....Glutathione
Binding capacity/cartridge (GST_{rek}). .....≥50 mg
Stabilised with 15 % ethanol

0843.1	1 x 5 ml	plastic	258,00 €
0843.2	5 x 5 ml	plastic	1064,25 €

Roti®garose-Glu/GST Beads NEW

for biochemistry

For isolation of GST-tagged proteins by affinity chromatography.
Agarose beads for affinity chromatography, glutathione-agarose beads,
Column matrix for protein isolation, GST agarose beads
Storage temp.: +4 °C

Warning H226-H319

Glutathione coupled agarose beads for affinity chromatography.
75 % bead slurry in 20 % ethanol.
Recommended for isolation of glutathione-S-transferase (GST) or GST fusion proteins in batch mode or via columns. Suitable for low to medium pressure, FPLC, or if GST-tag proteins shall be isolated either in particularly short time or in big amounts.

- One-step isolation of GST-tagged proteins from total lysates
- Rapid, mild and highly specific purification
- Suitable for isolation of GST-peptides and protein complexes of all sizes
- High binding capacity
- Easy elution and regeneration
- For batch mode, gravity flow, MPLC and FPLC
- Suitable for big matrix volumes

Efficient and highly specific isolation of GST-tagged proteins via affinity chromatography is based on the affinity of the glutathion-S-transferase to it's substrate glutathione. Merely no unspecific binding of proteins without GST-tag takes place, even during purification from raw extracts, while the biological activity of the purified proteins is preserved by chromatography conditions.
Roti®garose Glu/GST Beads offer the perfect solution for your specific application of low flow column chromatography or protein isolation in batch mode, under medium pressure (MPLC, FPLC), if rapid flow rates are desired or if big samples volumes have to be purified.
The matrix of Roti®garose Glu/GST Beads consists of beaded 4 % agarose without crosslinking, coupled with glutathione. The matrix is easy to pack and results in very evenly packed columns. Elution is carried out via a mild Tris/glutathione buffer, enabling even recovery of native protein complexes. Roti®garose Glu/GST Beads may be regenerated, making them very cost-effective.
Slurry in 20 % ethanol.
Suitable for batch mode, LPLC, FPLC and MPLC and big matrix volumes.

Type analysis:

Particle size. .....50-150 µm
Beads (un-cross-linked agarose).....4 %
Ligand.....Glutathion
Binding capacity (gel) (GST_{rek}). .....≥8 mg/ml
Ethanol. .....20 %

0841.1	10 ml	plastic	290,25 €
0841.2	100 ml	plastic	1881,25 €

Instructions for use
can be found on the Internet next to the product description.

Roti®garose Beads for Isolation of Biotinylated or Streptavidinated Proteins

Roti®garose-Streptavidin Beads NEW

for biochemistry

For isolation of biotin-coupled molecules by affinity chromatography.
Agarose beads for affinity chromatography, Streptavidin-agarose beads,
Column matrix for protein isolation
Storage temp.: +4 °C

Warning H226-H319

Streptavidin coupled agarose beads for affinity chromatography.
50 % bead slurry in 20 % ethanol.
Recommended for isolation of biotinylated molecules in batch mode or via columns via low pressure affinity chromatography.

- **One-step isolation of biotinylated molecules from total lysates**
- Rapid, mild and highly specific purification
- Suitable for isolation of DNA, proteins and other molecules of all sizes
- High binding capacity
- High recovery rates
- For batch mode and gravity flow

Between molecules, with a value of K_a~10^{-14}/M the binding of biotin to avidin and streptavidin is the strongest non-covalent binding known in biochemistry. Efficient and highly specific isolation of biotinylated molecules via affinity chromatography is based on this particular affinity.
Streptavidin is immobilised to the beads through a spacer arm, not only minimizing streptavidin leakage during elution, but also enhancing the binding capacity by reduction of steric effects. Merely no unspecific binding of unlabelled molecules takes place, even during purification from raw extracts.
Roti®garose-Streptavidin Beads offer the perfect solution for your specific application of low flow column chromatography or isolation in batch mode.
The matrix of Roti®garose-Streptavidin Beads consists of beaded 6 % highly cross-linked agarose. The matrix is easy to pack and results in very evenly packed columns. Elution is carried out via 8 M guanidine-HCl or prior to gel loading during heating in gel loading buffer. Elution of imminobiotinylated molecules is performed by 50 mM NH_4 acetate buffer. Isolation of antigens via biotinylated antibodies can be done with 0,1 M glycin.
May be autoclaved at 121 °C for 30 mins.

Type analysis:

Particle size.	50-150 µm
Beads (cross-linked agarose).	6 %
Ligand.	Streptavidin
Binding capacity (gel) (free biotin).	≥120 nmol/ml
Ethanol.	20 %

0846.1	5 ml	plastic	413,90 €
0846.2	10 ml	plastic	704,15 €

Roti®garose-Biotin Beads NEW

for biochemistry

For isolation of avidin/streptavidin-coupled molecules by affinity chromatography.
Agarose beads for affinity chromatography, Biotin-agarose beads,
Column matrix for protein isolation
Storage temp.: +4 °C

Warning H226-H319

Biotin coupled agarose beads for affinity chromatography. 50 % bead slurry in water stabilised with 0,02 % sodium azide.
Recommended for isolation of avidin- or streptavidin labelled molecules in batch mode or via columns via low pressure affinity chromatography.

- **One-step isolation of avidin/streptavidin-tagged molecules from total lysates**
- Rapid, mild and highly specific purification
- Suitable for isolation of DNA, proteins and other molecules of all sizes
- High binding capacity
- High recovery rates
- For batch mode and gravity flow

Between molecules, with a value of K_a~10^{-14}/M the binding of avidin and streptavidin to biotin is the strongest non-covalent binding known in biochemistry. Efficient and highly specific isolation of avidin/streptavidin-tagged molecules via affinity chromatography is based on this particular affinity.
Biotin is immobilised to the beads through a spacer arm and covalent carboxy/amide linkage, not only minimizing biotin leakage during elution, but also enhancing the binding capacity by reduction of steric effects. Merely no unspecific binding of unlabelled molecules takes place, even during purification from raw extracts.
Roti®garose-Biotin Beads offer the perfect solution for your specific application of low flow column chromatography or isolation in batch mode.
The matrix of Roti®garose-Biotin Beads consists of beaded 4 % cross-linked agarose. The matrix is easy to pack and results in very evenly packed columns. Elution is carried out via 8 M guanidine-HCl or prior to gel loading during heating in gel loading buffer.
Slurry in water stabilised with 0,02 % sodium azide.
May be autoclaved at 121 °C for 30 mins.

Type analysis:

Particle size.	50-150 µm
Beads (cross-linked agarose).	4 %
Ligand.	Biotin
Binding capacity (gel) (Avidin).	≥30 mg/ml
Sodium azide.	0,02 %

0844.1	5 ml	plastic	424,65 €
0844.2	10 ml	plastic	752,50 €

Protein A and G Coated Agarose Beads for Antibody Purification

For rapid and simple purification of antibodies with reasonable effort, affinity chromatography still is the first choice in most cases. Roti®garose Protein A and G Beads offer the perfect solution for isolation of your specific antibodies, either in low flow column chromatography or in batch mode.
The matrix of Roti®garose Beads consists of cross-linked and beaded 4 % agarose, coated and covalently coupled with protein A from *Staphylococcus aureus* or protein G from *Streptococcus*. The recombinant protein A has high affinity for IgG from a variety of different mammalian species, also binding some populations of IgA and IgM. *rec*Protein A shares IgG binding properties with natural protein A of *S. aureus* Cowan strain I.
The recombinant protein G binds IgG3 with high affinity.
Most immunoglobulins may be eluted in 100 mM glycin or citric acid buffer (pH 3,0).

- One-Step purification of immunoglobulins from cell lysates and biological solutions
- Binding capacity (human IgG) of approx. 25 mg per ml matrix
- Superior affinity for IgG from various mammalian species
- High yield of very pure immunoglobulins
- Covalent binding of protein A or G in high ligand density
- For batch mode and gravity flow

Type analysis:

Particle size	50-150 µm
Beads (cross-linked agarose)	4 %
Chemical bonding	covalent
Binding capacity (humane IgG)	approx. 25 mg/ml
Stabilizer	20 % ethanol

Roti®garose-Protein A Beads

for biochemistry

For purification of immunoglobulins by affinity chromatography.
Agarose beads for affinity chromatography, IMAC matrix/Protein A conjugated
Storage temp.: +4 °C

Warning H226-H319

Protein A coated agarose beads for low pressure affinity chromatography. High-performance affinity resin for antibody purification.
Slurry in 20 % ethanol.

1278.1	5 ml	plastic	590,20 €
1278.2	25 ml	plastic	1998,45 €

Instructions for use
can be found on the Internet next to the product description.

Roti®garose-Protein A MINI columns ready-to-use

for biochemistry

For purification of immunoglobulins by affinity chromatography.
Affinity chromatography columns/protein A conjugated
Storage temp.: +4 °C

Danger H225

Prepacked columns with Protein A coated agarose beads for low pressure affinity chromatography. High-performance affinity resin for antibody purification.
Matrix volume 100 µl, whole volume 1 ml. For approx. 2,5 mg IgG.
Slurry in 20 % ethanol.

4065.1	5x100 µl		317,15 €

▶ MIDI and MAXI columns see page 1351

Roti®garose-Protein G HPBeads NEW

for biochemistry

For purification of immunoglobulins by affinity chromatography.
Agarose beads "high pressure" for affinity chromatography, Column matrix for protein isolation, Protein G conjugated agarose beads
Storage temp.: +4 °C

Warning H226-H319

Protein G coated agarose beads for affinity chromatography under medium pressure, with high flow rate or with big sample-/matrix volume. High-performance affinity resin for antibody purification.
50 % bead slurry in 20 % ethanol.
In Roti®garose-Protein G HPBeads, the advantages of the highly efficient protein G/antibody binding have been combined with a bead technology allowing a very rapid flow rate. Suitable for all small-scale applications, for MPLC and FPLC, or if antibodies shall be isolated either in short time or in big amounts.

- Rapid one-step purification of immunoglobulins from cell lysates and biological solutions
- **High binding capacity for IgG-antibodies of a variety of species**
- High yield of very pure immunoglobulins
- Easy elution and regeneration
- Covalent binding of protein G in high ligand density
- For batch mode, gravity flow, MPLC und FPLC
- Recommended for big matrix volumes

For rapid and simple purification of antibodies with reasonable effort, affinity chromatography still is the first choice in most cases. Roti®garose-Protein G HPBeads offer the perfect solution for your specific application in small-scale on the bench, under medium pressure (MPLC, FPLC), if rapid flow rates are desired or if big samples volumes have to be purified.
The matrix of Roti®garose-Protein G HPBeads consists of crosslinked and beaded 4 % agarose, coated and covalently coupled with protein G from *Streptococcus*. Binding domains specific for albumin as well as cell walls and cell membranes have been removed in the recombinant protein G, in order to ensure the maximum specific IgG binding capacity.

The recombinant protein G has high affinity for IgG from a variety of different mammalian species, unlike protein A also binding IgG3 with high affinity. Protein G is also recommended for use in isolation of rat IgGs. Other immunoglobulin populations, like for instance, IgA, IgE or IgM, are bound with particularly low affinity.
Most immunoglobulins may be eluted in 100 mM glycin or citric acid buffer (pH 3,0). Roti®garose-Protein G HPBeads may be regenerated, making them very cost-effective. May not be autoclaved.

Suitable for LPLC, FPLC and MPLC and big matrix volumes.

Type analysis:

Particle size.	50-150 µm
Beads (cross-linked agarose).	4 %
Ligand.	recombinant protein G
Chemical bonding.	covalent
Binding capacity (humane IgG).	~20 mg/ml
Ethanol.	20 %

0808.1	5 ml	plastic	612,75 €
0808.2	25 ml	plastic	1709,25 €

The recombinant protein G has high affinity for IgG from a variety of different mammalian species, unlike protein A also binding IgG3 with high affinity. Protein G is also recommended for use in isolation of rat IgGs. Other immunoglobulin populations, like for instance, IgA, IgE or IgM, are bound with particularly low affinity.

Roti®garose-Protein A/G HPBeads NEW

for biochemistry

For purification of immunoglobulins by affinity chromatography.
Agarose beads "high pressure" for affinity chromatography, Column matrix for protein isolation, Protein A/G conjugated agarose beads
Storage temp.: +4 °C

Warning H226-H319

Mixture (1:1) of protein A- and protein G coated agarose beads for affinity chromatography under medium pressure, with high flow rate or with big sample-/matrix volume. High-performance affinity resin for antibody purification. 50 % bead slurry in 20 % ethanol.
In Roti®garose-Protein A/G HPBeads, the advantages of the highly efficient protein A and G/antibody binding have been combined with a bead technology allowing a very rapid flow rate. Suitable for all small-scale applications, for MPLC and FPLC, or if antibodies shall be isolated either in short time or in big amounts.

- Rapid one-step purification of immunoglobulins from cell lysates and biological solutions
- **High binding capacity for all IgG populations in mammals**
- High yield of very pure immunoglobulins
- Easy elution and regeneration
- Covalent binding of protein A and G in high ligand density
- For batch mode, gravity flow, MPLC und FPLC
- Recommended for big matrix volumes

For rapid and simple purification of antibodies with reasonable effort, affinity chromatography still is the first choice in most cases. Roti®garose-Protein A/G HPBeads offer the perfect solution for your specific application under medium pressure (MPLC, FPLC), if rapid flow rates are desired or if big samples volumes have to be purified.
The matrix of Roti®garose-Protein A/G HPBeads consists of crosslinked and beaded 4 % agarose, coated and covalently coupled with protein A from *Staphylococcus aureus* and protein G from *Streptococcus*, respectively. *rec*Protein A shares IgG binding properties with natural protein A of *S. aureus* Cowan strain I. Binding domains specific for albumin as well as cell walls and cell membranes have been removed in the recombinant protein G, in order to ensure the maximum specific IgG binding capacity.

The recombinant protein A has high affinity for IgG from a variety of different mammalian species, also binding some populations of IgA and IgM.
The recombinant protein G has high affinity for IgG from a variety of different mammalian species, also binding IgG3 with high affinity.
Most immunoglobulins may be eluted in 100 mM glycin or citric acid buffer (pH 3,0). Roti®garose-Protein A/G HPBeads may be regenerated, making them very cost-effective. May not be autoclaved.

Suitable for LPLC, FPLC and MPLC and big matrix volumes.

Type analysis:

Particle size.	50-150 µm
Beads (cross-linked agarose).	4 %
Ligand.	recombinant protein A/G
Chemical bonding.	covalent
Binding capacity (humane IgG).	~25 mg/ml
Ethanol.	20 %

0809.1	0,5 ml	plastic	118,25 €
0809.2	1 ml	plastic	193,50 €
0809.3	2 ml	plastic	344,00 €

The recombinant protein A has high affinity for IgG from a variety of different mammalian species, also binding some populations of IgA and IgM. The recombinant protein G has high affinity for IgG from a variety of different mammalian species, also binding IgG3 with high affinity.

Roti®garose-Protein A MIDI columns

ready-to-use

for biochemistry

For purification of immunoglobulins by affinity chromatography.
Affinity chromatography columns/protein A conjugated
Storage temp.: +4 °C

Danger H225

Prepacked columns with Protein A coated agarose beads for low pressure affinity chromatography. High-performance affinity resin for antibody purification.
Matrix volume 1 ml, whole volume 12 ml. For approx. 25 mg IgG.
Slurry in 20 % ethanol.

4066.1	1x1 ml	284,90 €

Roti®garose-Protein A MAXI columns

ready-to-use

for biochemistry

For purification of immunoglobulins by affinity chromatography.
Affinity chromatography columns/protein A conjugated
Storage temp.: +4 °C

Danger H225

Prepacked columns with Protein A coated agarose beads for low pressure affinity chromatography. High-performance affinity resin for antibody purification.
Matrix volume 5 ml, whole volume 35 ml. For approx. 125 mg IgG.
Slurry in 20 % ethanol.

4070.1	1x5 ml	708,45 €

Type	Matrix volume	Total volume	Frit pore size	Binding capacity (human IgG)
MINI	100 µl	1 ml	20 µm	2,5 mg
MIDI	1 ml	12 ml	20 µm	25 mg
MAXI	5 ml	35 ml	20 µm	125 mg

Columns and Accessories

Empty columns for protein isolation

Empty columns for protein isolation by chromatography.
Chemically stabile and versatile.
Column material: Polypropylene, Material column frit: Polyethylene.
Delivery includes end caps for Columns Grav S, M and L.
Delivery includes top caps with Luer lock and screw lock plus end caps for columns Luer.

Technical specifications:

Type	Figure	Matrix volume	Total volume	Frit pore size	Chromatography by
Spin	①	100-250 µl	1,5 ml	20 µm	Centrifugation
Grav S	②	100-200 µl	1 ml	20 µm	Gravity
Grav M	③	0,5-2 ml	12 ml	20 µm	Gravity
Grav L	③	2-6 ml	35 ml	20 µm	Gravity
Luer	④	50-100 µl	0,8 ml	35 µm	Pressure

Type	Art. No.	Pack Qty.	€
Spin	**1541.1**	25	60,00
Spin	**1541.2**	100	194,60
Grav S	**1515.1**	20	102,90
Grav M	**1516.1**	50	189,20
Grav L	**1518.1**	50	231,15
Luer	**1527.1**	25	137,60

Reagents

Empty cartridges for protein isolation

Empty columns for protein isolation by pressure chromatography.

Chemically stabile and versatile. In case longer column beds are needed, 2 or 3 cartridges may be interconnected using the Luer adapter (0198.1, 10-32, male/female luer connector), resulting in a matrix of up to 10 cm. Compatible with common chromatography instruments like ÄKTA™FPLC™.

Column material: Polypropylene, Material column frit: Polyethylene.

Delivery includes empty cartridges plus end plugs. For storage of packed cartridges, column plugs (0197.1) have to be used. Please order separately.

Technical specifications:

Product	Figure	Volume*	Inner ∅	Frit pore size	Chromatography by
Empty cartridges	①	1 ml	6,2 mm	12 µm	Pressure

* The actual filling volume depends on the respective resin used, varying between approx. 1 and 1.3 ml.

Product	Image	Art. No.	Pack Qty.	€
Empty cartridges	①	**1345.1**	5	145,15
Column plugs	②	**0197.1**	10	74,75
Luer adapter	③	**0198.1**	1	24,20

Instructions for use
can be found on the Internet next to the product description.

Spectra/Gel™ Absorbent

For concentration of dialysed proteins and microparticles.

Warning H319

- Most easy to handle
- Compatible with all types of dialysis membranes and -systems (MWCO: 100 up to 300 000 D)
- Suitable for concentration of very small molecules
- Contamination of samples excluded
- Cost efficient

Easy and cost efficient concentration of proteins, microparticles and other macromolecules.

Application:
After dialysis, the dialysis tubing containing the sample is simply coated with Spectra/Gel™ Absorbent. Made of polyacrylate-polyalcohol, Spectra/Gel™ removes water and small molecules like salt ions from the sample by absorption through the membrane without affecting or contaminating the biomolecules. Grain size 100-850 µm.
The duration of the process depends on the desired final concentration, the MWCO of the dialysis membrane, and the surface to volume ratio of the tubing. E.g. concentration of 5 ml sample through a MWCO of 15 kD results in a final volume of 0.5 ml in approx. 60 min. The wet granulate may be easily wiped off and the concentrated sample be removed from the opened dialysis tubing.
One package (500 g) suffices for up to 50 applications.

0115.1	500 g	plastic	110,75 €
Original pack 6 x 500 g			105,21/500 g

Summary of Reagents for Protein Isolation and Stabilisation

Product	Purity	Art. No.	Pack Qty.	€
1,4-Dithioerythritol (DTE)	≥99 %, p.a.	**8814.1**	5 g	65,50
		8814.3	10 g	110,20
		8814.2	25 g	243,50
1,4-Dithiothreitol (DTT)	≥99 %, p.a.	**6908.1**	5 g	59,05
		6908.3	10 g	88,70
		6908.2	25 g	209,65
		6908.4	100 g	622,45
Glycerol	≥99,5 %, p.a., anhydrous	**3783.3**	1 l	57,95
		3783.1	1 l	53,65
		3783.4	2,5 l	102,05
		3783.2	2,5 l	97,75
Guanidine hydrochloride	≥99,7 %, p.a., Protein Grade	**0035.1**	100 g	57,95
		0035.2	500 g	209,10
		0035.3	1 kg	299,95
Guanidine hydrochloride solution	55 % in water (5,75 M)	**9465.1**	1 l	87,00
HEPES	≥99,5 %, p.a.	**9105.2**	100 g	34,30
		9105.4	500 g	139,65
		9105.3	1 kg	231,70
		9105.6	2,5 kg	461,20
		9105.5	5 kg	869,70
Lysozyme	≥35000 FIP U/mg, BioScience-Grade, lyophilised	**8259.1**	1 g	27,85
		8259.2	10 g	170,95
		8259.3	25 g	321,45
2-Mercaptoethanol	≥99 %, p.a.	**4227.3**	100 ml	14,95
		4227.1	250 ml	21,00
		4227.2	1 l	47,85
PIPES	≥99 %	**9156.1**	25 g	19,90
		9156.2	100 g	56,90
		9156.3	250 g	125,25
		9156.4	500 g	212,35
Roti®fair Glycine 3.0	for 1000 ml/pouch, for biochemistry	**1032.1**	10 pouches	99,90
Roti®fair PBS 7.2	for 1000 ml/tablet, for biochemistry and molecular biology	**1106.1**	10 tablets	76,90
		1106.2	100 tablets	368,20
Roti®fair PBS 7.4	for 10 l/pouch, for biochemistry and molecular biology	**1101.1**	1 pouch	40,75
Roti®fair PBS 7.4	for 100 ml/tablet, for biochemistry and molecular biology	**1107.1**	100 tablets	58,60
Roti®fair PBS 7.4	for 200 ml/tablet, for biochemistry and molecular biology	**1108.1**	100 tablets	97,75
Roti®fair PBS 7.4	for 500 ml/tablet, for biochemistry and molecular biology	**1111.1**	12 tablets	51,50
		1111.2	100 tablets	206,95
Roti®fair PBS 7.4	for 1000 ml/tablet, for biochemistry and molecular biology	**1112.1**	10 tablets	75,80
		1112.2	100 tablets	364,45
Roti®fair 10x PBS 7.4	for 1000 ml/pouch, for biochemistry and molecular biology	**1105.1**	5 pouches	99,90
Roti®fair PBS potassium-free 7.4	for 1000 ml/tablet, for biochemistry and molecular biology	**1113.1**	10 tablets	75,80
		1113.2	100 tablets	368,20
Roti®fair PBST 7.4	for 1000 ml/tablet, for biochemistry and molecular biology	**1116.1**	10 tablets	85,50
		1116.2	100 tablets	411,20
Roti®fair SDS 0.5g	0,5 g/tablet, for biochemistry, molecular biology and electrophoresis	**1156.1**	50 tablets	48,30
Roti®fair 10% SDS	for 1000 ml/pouch, for biochemistry, molecular biology and electrophoresis	**1157.1**	5 pouches	618,15
Roti®fair TBS 7.6	for 500 ml/tablet, for biochemistry and molecular biology	**1244.1**	10 tablets	56,90
		1244.2	100 tablets	273,60

Product	Purity	Art. No.	Pack Qty.	€
Roti®fair 10x TBS 8.0	for 1000 ml/pouch, for biochemistry and molecular biology	**1247.1**	10 pouches	671,90
Roti®fair 1M Tris 7.4	for 1000 ml/pouch, for biochemistry and molecular biology	**1251.1**	10 pouches	390,80
Roti®-PreMix PBS	for biochemistry and molecular biology	**0890.1**	250 g	77,30
		0890.2	1,25 kg	213,40
Roti®-PreMix PBST	for biochemistry and molecular biology	**0987.1**	250 g	77,30
		0987.2	1,25 kg	213,40
Roti®-Stock 10x PBS	BioScience-Grade, ready-to-use, filtered and steam sterilised	**1058.1**	1 l	119,90
Roti®-Stock 10x PBST	BioScience-Grade, ready-to-use, filtered and steam sterilised	**1059.1**	1 l	125,25
Roti®-Stock 10x TBS	BioScience-Grade, ready-to-use, filtered and steam sterilised	**1060.1**	1 l	126,35
Roti®-Stock 10x TBST	BioScience-Grade, ready-to-use, filtered and steam sterilised	**1061.1**	1 l	126,35
D(+)-Saccharose	≥99,5 %, p.a.	**4621.1**	1 kg	20,35
		4621.2	5 kg	86,55
		4621.5	25 kg	198,90
SDS ultra pure	≥99 %, for electrophoresis, biochemistry and molecular biology	**2326.1**	100 g	40,75
		2326.4	250 g	86,55
		2326.2	500 g	155,90
		2326.3	500 g (in 2,5 l glass bottle for prep. of a 20 % sol.)	163,30
		2326.5	1 kg	267,70
Sodium ethylmercuri-thiosalicylate	≥97 %	**6389.1**	10 g	70,85
		6389.2	50 g	267,70
Trichloroacetic acid	≥99 %, p.a.	**8789.2**	500 g	55,80
		8789.1	1 kg	95,60
Tris-(2-carboxyethyl)-phosphine hydrochloride	≥98 %, for biochemistry	**HN95.1**	1 g	53,25
		HN95.2	5 g	171,90
TRIS hydrochloride	≥99 %, p.a.	**9090.1**	50 g	14,55
		9090.2	500 g	90,85
		9090.3	1 kg	134,40
		9090.5	2,5 kg	282,20
		9090.4	5 kg	536,45
Triton® X 100	extra pure	**3051.3**	250 ml	17,75
		3051.4	500 ml	23,15
		3051.2	1 l	32,15
		3051.1	10 l	200,50
Urea	≥99,5 %, p.a.	**3941.3**	500 g	14,95
		3941.1	1 kg	26,35
		3941.2	5 kg	107,00

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Many reagents in tablets or pouches, see first pages of this chapter Biochemistry!

Scintillation Cocktail

Rotiszint® eco plus ready-to-use

LSC-universal cocktail

For hydrophilic and lipophilic samples.

Danger H318-H315-H412-H302

- Very high sample acceptance capacity
- High counting efficiency
- Low photo- and chemoluminescence
- Very good colour- and chemical quench resistance
- Environmentally safe and non-carcinogenic
- Virtually odor- and colourless
- High flash point
- No permeation through plastic vials

Multi-purpose, ready-to-use scintillation cocktail for Liquid Scintillation Counting (LSC) of β radiators (e.g. ^{3}H, ^{14}C, ^{32}P). Excellent sample acceptance capacity for all aqueous and organic samples, optimally suited for solutions with high ionic strength. Rotiszint®-eco plus may be used in general in all biological, biochemical and chemical areas, contemporary typical applications are e.g. measurement of cell culture supernatants, routine analyses, and enzymatic assays. Also well suitable for filter plates.

In Rotiszint®-eco plus, di-isopropyl naphthalene is the base reagent of primary scintillators. The cocktail is free of carcinogenic or environmentally dangerous reagents.

Rotiszint®-eco plus is perfectly suited for measurement of solutions, showing a counting efficiency of 47 % (^{3}H). Through its emulsifying character, Rotiszint®-eco plus elutes samples from filter plates, thus making it also suitable for counting of filter samples. For reliable quantitative elution we recommend addition of a sample specific elution buffer. Note: Use of alkylating elution buffers may cause chemoluminescence.

We recommend the use of Rotilabo®-dispensers (Art. No. HAC6.1-HAC9.1, HAE0.1 or HAE1.1) and telescopic suction pipe (Art. No. AA92.1).

0016.4	100 ml	glass	18,85 €
0016.3	5 l	plastic	268,25 €
Original pack 2 x 5 l			254,84/5 l

▶ Scintillation vials see page 77

▶ Dispensers see page 407

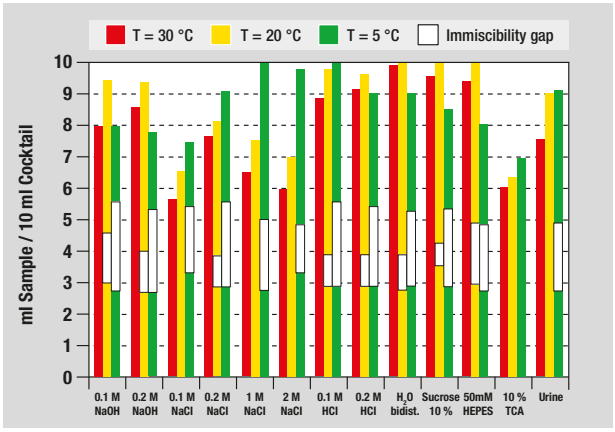


Fig.: Typical sample acceptance capacity
The immiscibility gap is characterized by two phases and may not be used for measurement. By increasing or reducing sample amount in relation to scintillation cocktail, the immiscibility gap may be avoided. Sample acceptance capacities of PBS, TBS etc. equal this of 0.1 M NaCl. Sample acceptance capacities of BSA solutions, cell culture supernatants etc. equal this of HEPES.

Application and quench of Rotiszint® eco plus

Rotiszint® eco plus: Efficiency in solution (^{3}H) 47 %, (^{14}C) 90 %

Ideal for measuring **solutions**.

Please note when measuring **filter discs**:
Rotiszint® eco plus contains emulsifying components and elutes the samples from the discs. This increases measuring efficiency, however involves the risk of nonquantitative elution, so that the measurements may not be reproduced as reliably in some cases. The rate of yield when eluting from filter discs can be increased by adding tissue solutizers, whereby the chemical and color quench are also increased. It must be determined for each individual experiment which mixture is suitable.

Advantages of Rotiszint® eco plus

Rotiszint® eco plus is based on the solvent di-isopropyl naphthaline (DIN), which due to its environmental friendliness is easy to handle, store and ship. It also fulfills all the measuring demands required of efficient scintillation cocktails.

Rotiszint® eco plus is produced without benzene, toluene, xylene and pseudocumene. The solvent has low vapour pressure, therefore there is no irritation caused by a bad odour. The solution is hardly flammable and economical in use. It is also biodegradable. Rotiszint® eco plus has high counting efficiency, excellent quench resistance, good sample stability, no chemoluminescence and no diffusion through plastic vials.

Rotiszint® eco plus comes in black 5 l plastic bottles, which can be used as storage containers. They enable easy, safe and place-saving storage.

A practical dispenser helps to remove the required amount of cocktail easily and safely. We recommend the Rotilabo®-dispenser (Art. No. Y837.1 - Y842.1). In order to completely remove all the liquid, the inner withdrawal tube may be replaced with a longer Teflon® or polyethylene tube (6 mm inner Ø), or by the telescope suction tube (Art. No. AA92.1).

Protein Quantitation

Roti®-Quant ready-to-use

5x conc.

For protein quantitation acc. to Bradford.

Storage temp.: +4 °C

Danger H226-H290-H314

- Reproducible
- Fast
- Low price

Further characteristics:

- 1 measurement per sample (OD_{595})
- Linearity of measuring results to a great extent
- Sensitivity to 2 µg
- Functional range: 2-100 µg

50 ml Roti®-Quant is sufficient for more than 200 macroassays (1 ml-cuvette) or more than 900 assays when using microtiter plates.

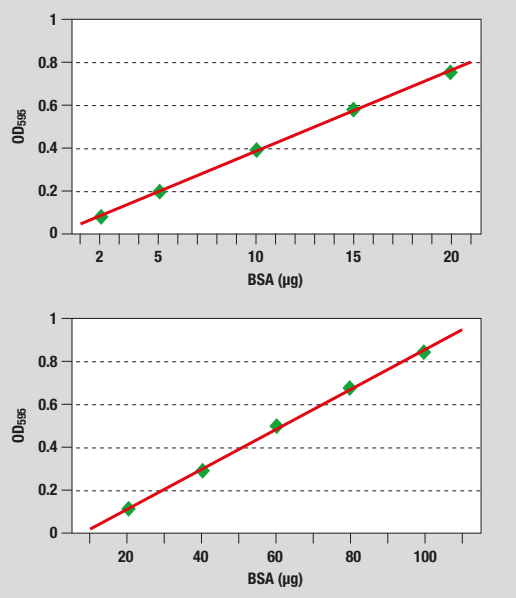


Fig.: Typical standard curve with Roti®-Quant and BSA (Art. No. 8076.1) as calibrating protein.

K015.2	50 ml	plastic	14,95 €
K015.3	200 ml	plastic	48,95 €
K015.1	500 ml	plastic	96,65 €

Roti®-Nanoquant ready-to-use

5x conc.

For protein quantitation acc. to Bradford, for extremely small protein amounts.

Storage temp.: +4 °C

Danger H226-H290-H314

- Reproducible
- Low-priced
- For very low protein amounts

Further characteristics:

- Double measurement per sample (OD_{450}/OD_{590})
- Perfect linearity of measuring results
- Sensitivity: up to 200 ng
- Broad functional range of 200 ng to 25 µg

50 ml Roti®-Nanoquant is sufficient for more than 200 macroassays (1 ml-cuvette) or more than 900 assays when using micro-titer plates.

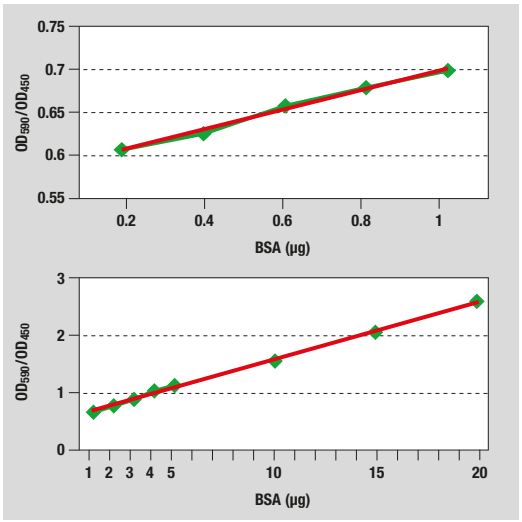
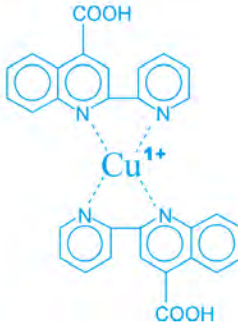


Fig.: Typical calibration line with Roti®-Nanoquant and BSA (Art. No. 8076.1) as calibrating protein.

K880.2	50 ml	plastic	15,60 €
K880.3	200 ml	plastic	46,80 €
K880.1	500 ml	plastic	93,45 €

▶ Further details and figures on these products at www.carlroth.com / Life Science / Biochemistry/ protein quantitation



Roti®-Quant universal

For protein quantitation (PCA enhanced Biuret reaction). High tolerance against detergents, salts and alcohols.

Storage temp.: +20 °C

Danger H315-H318-H411

- **Equals the well-known BCA assay**
- Very easy to handle
- Highly sensitive measurement up to 0.5 µg protein
- Linear measuring range from 0.5 to 200 µg protein
- Can be used in 1-ml-scales and in microtiter plates (can be automated)
- Measurement with standard filters (492 nm wave length) or at 503 nm wave length
- Accelerated reaction and increased sensitivity in mild heat

Colorimetric test for detecting and quantifying soluble proteins. The special reagent formula effects a high tolerance against interfering factors such as detergents, alcohol and buffer salts, thus making the kit a universal tool for measuring proteins in almost every solution.
The basic mechanism, a PCA enhanced Biuret reaction, is identical with the one used for the well known BCA protein assay. Its result, however, is a bright blue colour which may be measured with standard filters of approx. 500 nm wave length.

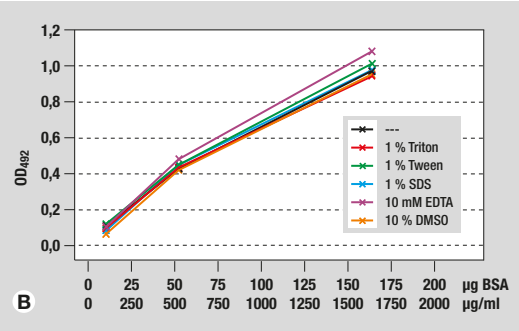


Fig. B: Independence of Roti®-Quant-universal-assay of detergents and other additives, examples. Blank-value corrected. Measurement of 100 µl each protein solution.

(With kind permission of Dr. Angelika Böttger, Zoological Institute, Ludwig-Maximilians-University Munich)

The kit contains:
500/200 ml Roti®-Quant universal reagent 1 (Art. No. 0118) and 40/16 ml Roti®-Quant universal reagent 2 (Art. No. 0119), adequate for 500/200 preparations in photometer cuvettes or 5000/2000 preparations in microtiter plates.

Contents of this Kit may not be bought separately.

0120.2	1 kit (200 assays)	89,80 €
0120.1	1 kit (500 assays)	188,15 €

Instructions for use
can be found on the Internet next to the product description.

Rotilabo®-single-use cuvettes

Made of **PS**, **PPMA** or special plastic.
- Two optical windows
- Extremely low deviation in absorbance values
- Outstanding optical transmission values
- Cavity-sorted production

Layer thickness 10 mm. Dimensions: L 12.5 x W 12.5 x H 45 mm.

Polystyrene (PS)
Range of application: 340 to 900 nm.

Type	Volume (ml)	Packaging	Art. No.	Pack Qty.	€
① Semi-micro	1,6	10 x 100	**XK20.1**	1000	74,15
② Macro	4,0	10 x 100	**XK21.1**	1000	74,15

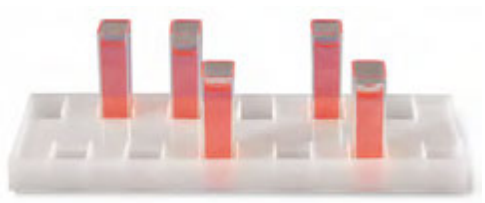
Disposable cuvettes

By Brand. Made of **PS** or **PMMA**.
- Two optical windows
- Optically perfect transparency
- Sorted according to nest numbers to minimize extinction deviation
- Recessed windows to protect against scratching
- Arrow marks direction of irradiation

Standard-layer thickness 10 mm. Dimensions: 12.5 x 12.5 x 45 mm.
Passband: PS: 340-900 nm.
Standard deviation:
- PS at 360 nm ≤0.005 extinction units.

Polystyrol (PS)

Type	Volume (ml)	Art. No.	Pack Qty.	€
Macro	2,5-4,5	**Y194.1**	100	12,15
Semi-micro	1,5-3,0	**Y195.1**	100	12,75



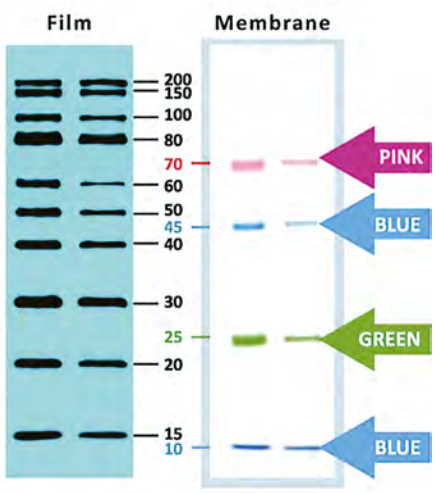
Rotilabo®-cuvette stand

Made of **PE**. For 12 cuvettes 10 mm thick. With staggered arrangement of holders. Low stand-depth for better observation of cuvette contents. Dimensions: L 170 x W 50 x H 15 mm.

Art. No.	Pack Qty.	€
9663.2	5	24,70

Western-Blot & ELISA

Western-Blot Marker

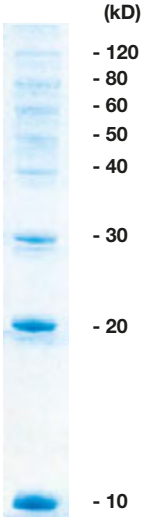


Roti®-Mark WESTERN PLUS NEW ready-to-use

Protein marker, prestained
Size range: 15-200 kD
Number of protein bands: 14
· 10 IgG binding
· 4 prestained (tricolour)
Number of lanes/ml: approx. 200 (mini gels)
Storage temp.: -20 °C • Transport temp.: room temp.

The Roti®-Mark WESTERN PLUS protein marker covers a wide range of molecular weights from 15 to 200 kD. It consists of 10 IgG binding proteins with two in their mass enhanced reference bands (30 kD and 80 kD).
For the most common type of primary antibodies are IgG type antibodies the Roti®-Mark WESTERN PLUS marker can be used in almost any situation of Western Blot. Appropriate detection methods are fluorescence, chemoluminescence, colour or other systems.
For controlling the gel run during SDS-PAGE and for reliable evaluation of transfer efficiency during Western Blot the marker additionally contains four prestained proteins: 10 kD (blue), 25 kD (green), 45 kD (blue) and 70 kD (red).
Please note: Reliable size determination of proteins cannot be performed using prestained markers.

2245.1	250 µl	plastic	195,55 €
2245.2	2 x 250 µl	plastic	370,90 €



Roti®-Mark WESTERN-Marker ready-to-use

Protein marker, not prestained
Size range: 10-120 kD
Number of protein bands: 8
Number of lanes/ml: approx. 200 (mini gels)
Storage temp.: -20 °C • Transport temp.: room temp.

Warning H319

Finely graded protein marker for medium size range. The unstained proteins enable correct size evaluation in gel. Roti®-Mark WESTERN-Marker has been assembled from a set of **His-tagged, recombinant proteins** and can be detected directly in Western-Blot using anti-His antibodies. Subsequently, staining through chemoluminescence or colour reaction is possible. Consequently you will obtain the ladder size directly on your printout, X-ray film or membrane - this rules out the possibility of any errors through inaccurate transfer of the bands. Marker proteins are solubilised in a non-reducing buffer acc. to Laemmli.
Fig.: 12 % SDS-PAGE (Tris), 10 µl marker solution.

0948.1	500 µl	plastic	199,85 €

Marker	WESTERN	WESTERN PLUS
Art. No.	0948	2245
Size Range (kD)	10 - 120	10 - 200
Number of Fragments	8	14
Reinforced band at (kD)	20	30, 80
Quantitation	recommended	not recommended
Staining	unstained	prestained
Detection in Western-Blot	detection by conjugate 0949	detection by all IgG
Number of Lanes in minigel	200 / ml	200 / ml
Delivery	ready-to-use	ready-to-use

Blocking Reagents

Albumin solution 20 %

NEW ready-to-use S

20 %, sterile, for biochemistry and cell biology

Albumin fraction V. Wide range of applications, e.g. as protein standard or blocking reagent.

BSA solution

Storage temp.: +4 °C • Transport temp.: cooled

This albumin is made of fresh bovine plasma, using an extensive heat-shock/diafiltration method.

pH (10 % solution)..... 7 ±0,3

9400.1	20 ml	plastic	10,75 €
9400.2	100 ml	plastic	43,00 €
9400.3	500 ml	plastic	177,40 €

Albumin solution 30 %

NEW ready-to-use S

30 %, sterile, for biochemistry and cell biology

Albumin fraction V. Wide range of applications, e.g. as protein standard or blocking reagent.

BSA solution

Storage temp.: +4 °C • Transport temp.: cooled

This albumin is made of fresh bovine plasma, using an extensive heat-shock/diafiltration method.

pH (10 % solution)..... 7 ±0,3

9401.1	20 ml	plastic	15,05 €
9401.2	100 ml	plastic	60,20 €
9401.3	500 ml	plastic	241,90 €

Albumin Fraction V, pH 5,2

>97 %, powdered, for protein analysis

Non-neutralized albumin. Suitable as protein standard or hapten carrier, recommmended for use in ELISA and Western-Blotting.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Albumin Fraction V, pH 5.2 is basically suitable for all applications using albumin of Cohn-fraction V, e.g. for stabilisation of enzymes and antibodies, or as hapten carrier in immunoassays. The pH value of albumin pH 5.2 is close to its pI and the protein is only weakly charged. It is, therefore, particularly recommended for use in ELISA and Western blotting, since it may help in further reducing background signals. Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcoholic solution.

pH value (10 % solution). ..... 5,2 ±0,4

2834.1	10 g	plastic	40,75 €
2834.2	50 g	plastic	130,65 €
2834.3	200 g	plastic	407,45 €
2834.4	500 g	plastic	826,70 €
Original pack 6 x 500 g			785,37/500 g

Albumin, IgG free

DNAse-/RNAse-/Protease-free

>98 %, IgG-free, for biochemistry and molecular biology

Recommended as blocking and stabilising reagent in all antibody-mediated detection systems.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Albumin, highly purified and tested for presence of immunoglobulins (IgGs), proteases, RNAse, and DNAse. Albumin, IgG-free is particularly recommended for use as stabilising reagent in antibody solutions, and as blocking reagent in all assays using detection systems via antibodies. Also very well suited for stabilising of hot-start-PCRs mediated by antibodies, or as blocking reagent in antibody-detected hybridisations.

For purification of Albumin, IgG-free, an extensive heat-shock/diafiltration method is used, which has been shown to bring more highly purified products than the standard process acc. to Cohn. The process is taking place in a closed system.

IgG (HPLC)..... none detected
Protease..... none detected
DNAse..... none detected
RNAse..... none detected

3737.1	10 g	plastic	56,90 €
3737.2	50 g	plastic	155,90 €
3737.3	200 g	plastic	471,95 €
3737.4	500 g	plastic	962,15 €
Original pack 6 x 500 g			914,04/500 g

Sodium-Casein

≥89 % lactoprotein

Casein-sodium

Blocking reagent from milk protein, suitable for Western and ELISA. High blocking efficiency based on the amount of small protein and peptide species (<10 kD). Can be used with PBS/PBST and TBS/TBST as well as all standard colorimetric and fluorescent detection systems. Not suitable for PVDF-membranes, biotin/streptavidin mediated labelling (milk contains biotin), and detection of phospho-proteins.
Tip: Prepare stock solution in 0.3 M NaOH (37 °C), titrate to pH 7.4 (HCl).

8569.2	500 g	plastic	28,50 €
Original pack 6 x 500 g			27,08/500 g
8569.1	1 kg	plastic	42,90 €
Original pack 6 x 1 kg			40,76/1 kg
8569.3	2,5 kg	plastic	95,15 €

Powdered milk

blotting grade, powdered, low fat

BLOTTO reagent

Lowfat powdered milk, especially suited for use as blocking reagent in immunological assays like Western-Blot analyses or ELISA. Fine powdered for easy application.
Not suitable for biotin/streptavidine mediated detection systems. Milk contains biotin.

T145.1	250 g	plastic	14,55 €
T145.2	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
T145.3	1 kg	plastic	36,45 €
Original pack 6 x 1 kg			34,63/1 kg
T145.5	2,5 kg	plastic	77,30 €
T145.4	5 kg BIG PACK	plastic	142,90 €

Roti®-Block ready-to-use

ready-to-use, 10x conc.

Protein free blocking solution. Contains Tween® 20.

Storage temp.: +20 °C

Suitable for

- Western- and Far Western Analysis
- Southern- and Northern-Blots
- Dot-Blots
- ELISA- and Sandwich-Assays
- Precoating of ELISA-plates (incl. drying)
- *in situ* hybridisation
- Microarray hybridisation

In order to obtain high signal intensity, nonspecific antibody binding sites must be blocked. Whilst detergents are not effective as blocking agents, the addition of proteins such as BSA may mask specific binding sites. Roti®-Block is an innovative, polymer-based blocking reagent which solves such problems. With Roti®-Block, the specific binding sites remain accessible while nonspecific reactions are suppressed, thus leading to an increase in signal intensity.

Included you will find a detailed instruction manual with protocols, e.g. for stripping PVDF-membranes from bound probes without destabilising the blocking, which enables fast rescreening of the filter.
Roti®-Block also enables the blot to be Ponceau stained even after blocking.
For detection systems using antibodies specifically directed against protein-phosphorylations we recommend to test and optimise the blocking efficiency prior to assaying your samples.

A151.1	250 ml	glass	51,10 €
A151.4	500 ml	glass	85,90 €
A151.2	1 l	glass	155,90 €
Original pack 6 x 1 l			148,11/1 l
A151.3	2,5 l	glass	289,75 €
Original pack 4 x 2,5 l			275,26/2,5 l

▶ Membrans, papers and reagents for blotting/transfer see Chapter Electrophoresis

Instructions for use
can be found on the Internet next to the product description.

Roti®-ImmunoBlock

ready-to-use, 10x conc.

Protein free blocking reagent for immunocytological assays.
Without detergent.

Storage temp.: +20 °C

Suitable for

- Immunocytological assays
- Immunohistological assays
- Paraffin- and cryosections
- *in situ* hybridisation
- Cell culture samples
- Whole mount samples

Roti®-ImmunoBlock is an innovative blocking reagent on a polymer base without detergents and proteins.

No contamination of your detection system through foreign proteins, reducing background and false-positive signals. Specific binding signals are preserved whilst non-specific interaction is impeded, increasing the signal-to-noise ratio. Ready-to-use solution for fast and easy applications.

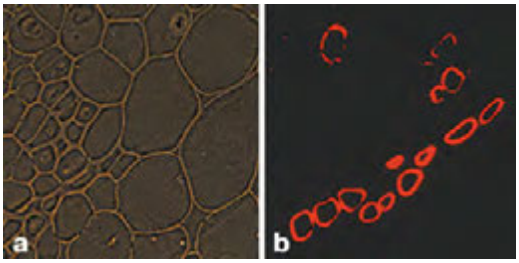


Figure:
Scilla siberica: Cross section of a conducting bundle from the leaf.
Immunofluorescent detection of a protein in sieve cells:
a: Phase contrast
b: Immunofluorescence, blocking with Roti®-ImmunoBlock

With kind permission of Dr. Deumling, MPI for Culture Research, Cologne.

T144.1	250 ml	glass	46,80 €

Roti®fair BBS

for 500 ml/tablet, for biochemistry and molecular biology

Coating of ELISA plates and blocking supplement.

Borate Buffered Saline (tablets)

Danger H360FD

Exactly pre-weighed tablets for convenient and rapid preparation of Borate Buffered Saline solution (BBS).
BBS is commonly used for coating of ELISA plates and for blocking-enhancement of Western- or Southern blot membranes.
The buffer can also be used as a sample diluent in biological studies and for various applications within biology and biochemistry in order to stabilize the pH value.
Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving.
Buffer solution has to be stored at +4 °C.

1x BBS solution is prepared by solubilization of 1 tablet in 500 ml highly pure water.

Composition:

Prepared 1x BBS solution contains: 0,15 M NaCl, 10 mM borate buffer, pH-value 8,2 ±0,05, when prepared in deionized or distilled water.

1005.1	100 tablets	plastic	265,00 €

▶ Mounting media and further immuno-histological products, see chapters Histology and Cell biology!

Antibodies

Primary Antibodies ready-to-use

Polyclonal sera and pABs for detection and isolation of labelled proteins

Raised in: Rabbit
Conjugation: None or Horse Radish Peroxidase (HRP)
Application: Immuno blotting (Western-, dot blotting), ELISA, protein isolation and -purification

Purification and specificity sera: None.
Tested for Western Blot and ELISA.
Purification and specificity pAB and Anti His-HRP: Purified from monospecific antiserum by affinity chromatography on immobilised tag/anchor sequence. Tested for Western Blot and ELISA.

Storage temperature: -20 °C
Transport temperature: cooled (freezer packs)

Primary antibody	Concentration and purification	Target	Storage buffer	Recommended dilution	Art. No.	Pack Qty.	€
Anti DYKDDDDK pAB	1 mg/ml, polyclonal, affinity purified	DYKDDDDK*-anchor sequence	1x PBS, pH 7,4	1:1000	**4665.1**	100 µl	253,20
Anti DYKDDDDK Serum	polyclonal	DYKDDDDK*-anchor sequence	x	1:1000	**4664.1**	100 µl	206,95
Anti GST pAB	1 mg/ml, polyclonal, affinity purified	GST-fusion-tag	1x PBS, pH 7,4	1:1000	**3998.1**	100 µl	253,20
Anti GST Serum	polyclonal	GST-fusion-tag	x	1:2000	**3994.1**	100 µl	206,95
Anti His pAB	1 mg/ml, polyclonal, affinity purified	His-tag**	1x PBS, pH 7,4	1:1000 - 1:10000	**3742.1**	100 µl	253,20
Anti His Serum	polyclonal	His-tag**	x	1:1000	**3735.1**	100 µl	206,95
Anti Myc pAB	1 mg/ml, polyclonal, affinity purified	Myc-anchor sequence	1x PBS, pH 7,4	1:1000	**4667.1**	100 µl	253,20
Anti Myc Serum	polyclonal	Myc-anchor sequence	x	1:1000	**4666.1**	100 µl	206,95

For additional product data and safety information, see chapter Chemicals A-Z.

* Sequence identical with FLAG® sequence by Sigma-Aldrich
** C-terminal or N-terminal

▶ Antibody Diluents see page 1366

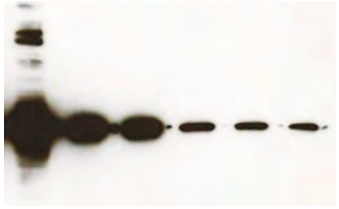


Figure: Western blotting of decreasing amounts (50 ng - 17 pg) of a bacterial extract including a 40 kDa protein. Probed by Anti His Serum (1:1.000) and Roth Anti Rabbit-HRP. Detection via chemoluminescence.

Instructions for use
can be found on the Internet next to the product description.

MultiTag-Protein ready-to-use

0,1 mg/ml, affinity purified
Recombinant protein with His-tag, GST-tag, Myc- and DYKDDDDK anchor sequence.
M 31,6 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
Labelling: His-tag, GST-tag, DYKDDDDK anchor sequence*, Myc anchor sequence
Application: Immuno blotting (Western-, dot blotting), ELISA, protein isolation
Purification and specificity: Affinity purified, recombinant protein. Tested for affinity chromatography, Western blot and ELISA.
Storage Buffer: 1x PBS, pH 7.4
Stabiliser: 0.1 % SDS
Recommended application: 100 ng / lane (Western blotting), dilution 1:100 (ELISA)

3999.1	100 µl	plastic	250,40 €

Secondary Antibodies ready-to-use

Polyclonal antibodies for detection of primary IgG in immuno assays

Concentration: 1 mg / ml
Raised in: Goat
Conjugation: Horse Radish Peroxidase (HRP), Alkaline Phosphatase (AP) or Fluorescein isothiocyanate, Isomer I (FITC)
Application: Immuno blotting (Western-, dot blotting), ELISA, immunohistochemistry and -cytology, immonofluorescence, FACS analysis

Purification and specificity: Purified from monospecific antiserum by affinity chromatography on immobilised, species specific IgG. Tested for Western Blot and ELISA.

Storage temperature: -20 °C
Transport temperature: cooled (freezer packs)

Secondary antibody	Labelling	Target	Art. No.	Pack Qty.	€
Anti Human-AP	Alkaline Phosphatase (AP)	Human IgG	**4754.1**	1 ml	196,20
Anti Human-HRP	Horse Raddish Peroxidase (HRP)	Human IgG	**4753.1**	2 ml	160,75
Anti Human-FITC	Fluorescein isothiocyanate (FITC)	Human IgG	**4755.1**	2 ml	143,55
Anti Mouse-AP	Alkaline Phosphatase (AP)	Mouse-IgG	**4760.1**	1 ml	196,20
Anti Mouse-HRP	Horse Raddish Peroxidase (HRP)	Mouse-IgG	**4759.1**	2 ml	160,75
Anti Mouse-FITC	Fluorescein isothiocyanate (FITC)	Mouse-IgG	**4761.1**	2 ml	143,55
Anti Rabbit-AP	Alkaline Phosphatase (AP)	Rabbit-IgG	**4751.1**	1 ml	196,20
Anti Rabbit-HRP	Horse Raddish Peroxidase (HRP)	Rabbit-IgG	**4750.1**	2 ml	160,75
Anti Rabbit-FITC	Fluorescein isothiocyanate (FITC)	Rabbit-IgG	**4752.1**	2 ml	143,55
Anti Rat-AP	Alkaline Phosphatase (AP)	Rat-IgG	**4763.1**	1 ml	196,20
Anti Rat-HRP	Horse Raddish Peroxidase (HRP)	Rat-IgG	**4762.1**	2 ml	160,75
Anti Rat-FITC	Fluorescein isothiocyanate (FITC)	Rat-IgG	**4764.1**	2 ml	143,55

For additional product data and safety information, see chapter Chemicals A-Z.

Storage buffer:
AP-conjugated antibodies: 1x PBS, pH 7,4 (stabilisation: 40 % glycerol, 0,8 mM $MgCl_2$, 0,8 mM $ZnCl_2$)
HRP-conjugated antibodies: 150 mM NaCl, 100 mM sodium-/potassium phosphate buffer, pH 6,5 (stabilisation: 27 % glycerol, 4,5 % BSA, 0,09 % thimerosal)
FITC-conjugated antibodies: 1x PBS, pH 7,4 (stabilisation: none)

Recommended Dilution:
AP-conjugated antibodies: 1:1000 - 1:10000 (Western), 1:1000 - 1:20000 (ELISA)
HRP-conjugated antibodies: 1:1000 - 1:10000 (Western), 1:1000 - 1:20000 (ELISA)
FITC-conjugated antibodies: 1:1000 - 1:20000 (immuno fluorescence and FACS)

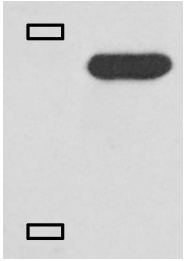


Figure: Western blotting of a HEK293 cell extrakt. Probing of Actin (42 kDa) by protein-specific primary antibody (mouse) and Anti Mouse-HRP (1:5.000). Detection via chemoluminescence.
Blank box: Protein marker in the gel.

Important information on refrigerated transports

All products identified as being particularly temperature-sensitive are shipped in **special ice boxes with freezer packs or in dry ice.**
Additional costs resulting from such, **will be invoiced** (further information on request).

Please note:
In order to guarantee optimum product quality, the dispatch of refrigerated transport products will be carried out **on Mon and Tue only outside Germany!**
Slight delays in delivery are therefore possible.

Ready-Made Solutions, Pre-Mixes, Tablets and Pouches

Roti®-PreMix PBS

for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

PBS powder, Phosphate buffered saline

1x PBS solution is prepared by dissolution of 9.55 g/l in highly pure water.

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,2, when prepared in deionized or distilled water.

0890.1	250 g	plastic	77,30 €
0890.2	1,25 kg	plastic	213,40 €

Roti®-PreMix PBST

for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 10.05 g/l in highly pure water.

Formulation:

Prepared 1x PBST solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, 0,05 % Tween® 20, pH-value 7,4 ±0,2, when prepared in deionized or distilled water.

0987.1	250 g	plastic	77,30 €
0987.2	1,25 kg	plastic	213,40 €

Roti®-Stock 10x PBS

BioScience-Grade, ready-to-use, filtered and steam sterilised

For protein biochemistry, cytology, and molecular biology.

PBS 10x ready-to-use solution

10fold stock solution phosphate buffered saline. Very versatile standard solution for detection systems in protein biochemistry, cytological stainings and molecular biological assays. Thus, 1 x PBS is used as basic solution for Western-Blot analyses, ELISAs and other enzymatic assays, for solving and dilution of proteins, for immunocytological and immunohistological assays, as well as for *in situ* hybridisations, apoptosis detection systems and staining of nuclei.
Recommended for HRP-mediated detection systems.
With original seal.

Composition:

1.37 M NaCl, 27 mM KCl, 100 mM Na_2HPO_4, 20 mM KH_2PO_4 in deionised water, pH-value 7.4, 0.2 µm filtered and steam sterilised

1058.1	1 l	glass	119,90 €
Original pack 6 x 1 l			113,91/1 l

▶ Complete range of Roti®-Stock solutions see Chapter Chemicals A-Z!

Roti®-Stock 10x PBST ready-to-use S

BioScience-Grade, ready-to-use, filtered and steam sterilised

For protein biochemistry, cytology, and molecular biology.

PBST 10x ready-to-use solution

10fold stock solution phosphate buffered saline with Tween 20. Extremely versatile standard solution for protein biochemical detection systems, cytological staining and molecular-biological assays with similar fields of application as Roti®-Stock PBS. Roti®-Stock PBST can be used directly instead of PBS when the presence of Tween 20 is required in the detection system.
Recommended for HRP-mediated detection systems.
With original seal.

Composition:

1,37 M NaCl, 27 mM KCl, 100 mM Na_2HPO_4, 20 mM KH_2PO_4, 0,5 % Tween® 20 in deionised water, pH value 7,4, 0,2 µm filtered and steam sterilised

1059.1	1 l	glass	125,25 €
Original pack 6 x 1 l			118,99/1 l

Roti®-Stock 10x TBS

BioScience-Grade, ready-to-use, filtered and steam sterilised

For protein biochemistry, cytology, and molecular biology.

TBS 10x ready-to-use solution

10fold stock solution tris buffered saline. Very versatile standard solution for detection systems in protein biochemistry, cytological stainings and molecular biological assays. Thus, 1 x TBS is used as basic solution for protein detection systems like Western-Blot analyses and Far-Western assays, for immunocytological and immunohistological assays, as well as for whole mount *in situ* hybridisations, apoptosis detection systems and staining of nuclei.
Recommended for AP-mediated detection systems.
With original seal.

Composition:

1.5 M NaCl, 30 mM KCl, 250 mM Tris in deionised water, pH value 7.4, 0.2 µm filtered and steam sterilised

1060.1	1 l	glass	126,35 €
Original pack 6 x 1 l			120,03/1 l

Roti®-Stock 10x TBST

BioScience-Grade, ready-to-use, filtered and steam sterilised

For protein biochemistry, cytology, and molecular biology.

TBST 10x ready-to-use solution

10fold stock solution tris buffered saline with Tween 20. Extremely versatile standard solution for protein biochemical detection systems, cytological staining and molecular-biological assays with similar fields of application as Roti®-Stock TBS. Roti®-Stock TBST can be used directly instead of TBS when the presence of Tween 20 is required in the detection system.
Recommended for AP-mediated detection systems.
With original seal.

Composition:

1.5 M NaCl, 30 mM KCl, 250 mM Tris, 0.5 % Tween® 20 in deionised water, pH value 7.4, 0.2 µm filtered and steam sterilised

1061.1	1 l	glass	126,35 €
Original pack 6 x 1 l			120,03/1 l

Roti®fair-PBS/PBST and -TBS/TBST

High-pure reagents and buffer mixes in pouches or as tablets.

One tablet or the content of one pouch is simply dissolved in the respective amount of water - the desired solution is ready for use. Simply adapt the amount of water in order to vary the concentration, for instance for preparation of a higher concentrated stock solution.

- **Easy-to-use** - simply dissolve contents of one pouch or one tablet in water
- **Timesaving** - no need for weighing of several reagents or adjustment of pH
- **Convenient** - dry reagents for direct use spare preparation of long-term stored stock solutions
- **Reliable** - stringent quality control ensures high lot-to-lot consistency

Product	Buffer/solution	Use	Final conc.	pH value	Preparation scale	Art. No.	Pack Qty.	€
Roti®fair PBS 7.2	Phosphate Buffered Saline	General solution for assays in molecular biology and biochemistry	1x	7,2 ±0,05	1000 ml/tablet	**1106.1**	10 tablets	76,90
						1106.2	100 tablets	368,20
Roti®fair PBS 7.4	Phosphate Buffered Saline	General solution for assays in molecular biology and biochemistry	1x	7,4 ±0,05	10 l/pouch	**1101.1**	1 pouch	40,75
					25 l/pouch	**1102.1**	1 pouch	81,60
					50 l/pouch	**1103.1**	1 pouch	125,70
					100 l/pouch	**1104.1**	1 pouch	205,90
Roti®fair PBS 7.4	Phosphate Buffered Saline	General solution for assays in molecular biology and biochemistry	1x	7,4 ±0,05	100 ml/tablet	**1107.1**	100 tablets	58,60
					200 ml/tablet	**1108.1**	100 tablets	97,75
					500 ml/tablet	**1111.1**	12 tablets	51,50
						1111.2	100 tablets	206,95
					1000 ml/tablet	**1112.1**	10 tablets	75,80
						1112.2	100 tablets	364,45
Roti®fair 10x PBS 7.4	Phosphate Buffered Saline	General solution for assays in molecular biology and biochemistry	10x	7,4 ±0,05	1000 ml/pouch	**1105.1**	5 pouches	99,90
Roti®fair PBS potassium-free 7.4	Phosphate Buffered Saline, potassium-free	Potassium-free, general solution for assays in molecular biology and biochemistry	1x	7,4 ±0,05	1000 ml/tablet	**1113.1**	10 tablets	75,80
						1113.2	100 tablets	368,20
Roti®fair PBS potassium-free 7.4	Phosphate Buffered Saline, potassium-free, **high-phosphate**	Potassium-free, high-phosphate general solution for assays in molecular biology and biochemistry	1x	7,4 ±0,05	1000 ml/tablet	**1114.1**	100 tablets	418,20
Roti®fair PBST 7.4	Phosphate Buffered Saline/ Tween	General solution for assays in molecular biology and biochemistry	1x	7,4 ±0,05	500 ml/tablet	**1115.1**	12 tablets	65,50
						1115.2	100 tablets	266,10
					1000 ml/tablet	**1116.1**	10 tablets	85,50
						1116.2	100 tablets	411,20
Roti®fair TBS 7.6	Tris Buffered Saline	General solution for assays in molecular biology and biochemistry	1x	7,6 ±0,05	500 ml/tablet	**1244.1**	10 tablets	56,90
						1244.2	100 tablets	273,60
Roti®fair TBS 8.0	Tris Buffered Saline	General solution for assays in molecular biology and biochemistry	1x	8,0 ±0,05	1000 ml/pouch	**1245.1**	10 pouches	100,55
Roti®fair 10x TBS 8.0	Tris Buffered Saline	General solution for assays in molecular biology and biochemistry	10x	8,0 ±0,05	1000 ml/pouch	**1247.1**	10 pouches	671,90
Roti®fair TBST 7.6	Tris Buffered Saline/Tween	General solution for assays in molecular biology and biochemistry	1x	7,6 ±0,05	500 ml/tablet	**1248.1**	10 tablets	70,85
						1248.2	100 tablets	346,70

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Many further Roti®fair tablets and pouches at the beginning of chapter Biochemistry!

Roti®fair BBS

for 500 ml/tablet, for biochemistry and molecular biology

Coating of ELISA plates and blocking supplement.

Borate Buffered Saline (tablets)

Danger H360FD

Exactly pre-weighed tablets for convenient and rapid preparation of Borate Buffered Saline solution (BBS).
Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving.
Buffer solution has to be stored at +4 °C.

Composition:

Prepared 1x BBS solution contains: 0,15 M NaCl, 10 mM borate buffer, pH-value 8,2 ±0,05, when prepared in deionized or distilled water.

1005.1	100 tablets	plastic	265,00 €

Roti®fair CBB

for 100 ml/tablet, for biochemistry and molecular biology

Coating of microtiter plates and tubes for immunoassays.

Carbonate bicarbonate buffer (tablets)

Warning H319

Exactly pre-weighed tablets for convenient and rapid preparation of a Carbonate bicarbonate buffer (CCB).
Due to its high efficiency to mediate protein binding to surfaces, carbonate bicarbonate buffer (CBB) is used as coating buffer on plates and tubes. CBB, therfore, is the optimum base solution to prepare microtiter plates or reaction tube prior to ELISA, RIA or EIA.
Prepared solution may be sterilized by filtration (0,22 µm). For long-term storage, buffer solution should be kept at +4 °C.

Formulation:

Prepared 1x CBB solution contains: 50 mM sodium carbonate bicarbonate buffer, pH-value 9,6 ±0,05, when prepared in deionized or distilled water.

1027.1	8 tablets	blister	38,60 €
1027.2	24 tablets	blister	71,50 €
1027.3	100 tablets	plastic	113,85 €

Roti®-Free Stripping Buffer ready-to-use

ready-to-use

Premixed buffer for stripping of Western-Blot membranes.

Storage temp.: +20 °C

Warning H317-H319-H412

- Efficient
- Well-tried formulation
- With β-mercaptoethanol
- For stripping under heating
- Low-priced

The buffer offers a simple tool for removing antibodies and chemo-luminescence staining from Western blot membranes, allowing the valuable membranes to be analysed several times. Excellent when several proteins are to be detected in the same extract, or e.g. when in addition to a specific analysis, proteins in the respective lanes have to be semi-quantified (Kaufmann *et. al.* (1987) *Anal. Biochem.* 161:89-95).
Suitable for nitrocellulose and PVDF-membranes.

0083.2	250 ml	glass	19,90 €
0083.1	1 l	glass	60,10 €
Original pack 6 x 1 l			57,10/1 l
0083.3	2,5 l	glass	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

Safety data sheets
can be found on the Internet next to the product description.

Roti®-Free Stripping Buffer 2.2 plus ready-to-use

ready-to-use

Premixed buffer for efficient stripping of Western-Blot membranes after Chemoluminescence detection, even with hard-to-remove antibodies.

Storage temp.: +20 °C

- Very effective
- Gentle
- Odour-free
- Simple application
- Also suitable for high-affinity antibodies

Stripping buffer for removal of high-affinity antibodies, as well as chemo-luminescence staining, from Western blot membranes. Due to the low pH of the buffer, the antibody conformation is altered, therefore gently removing all molecules bound to the epitopes (Legocki *et. al.* (1981) *Analyt. Biochem.* 111:385-92). Specially designed additives enhance the efficiency in removing those antibodies requiring long stripping times or high incubation temperatures with standard stripping buffer systems. Advanced formulation without β-mercapto ethanol or DTT for use at room temperature or heated. Suitable for nitrocellulose and PVDF membranes.

Applications: Following rinsing steps in PBST- or TBST buffer, the membrane is incubated in Roti®-Free Stripping-Puffer 2.2 plus for 30-60 mins. at room temperature. In case of very persistent antibodies incubation in heated buffer is allowed. After washing it again, the membrane may be blocked and probed anew. The particular time needed for complete stripping depends on the respective antibody/epitope pairing.

3337.1	250 ml	glass	48,95 €
3337.2	1 l	glass	121,40 €
Original pack 6 x 1 l			115,33/1 l

Roti®-Free Stripping Buffer 2.0 ready-to-use

ready-to-use

Premixed buffer for gentle stripping of Western-Blot membranes after Chemoluminescence detection.

Storage temp.: +20 °C

Warning H319

- Effective
- Gentle
- Odour-free
- Simple application w/o heating
- Cost-efficient

Stripping buffer for efficient removal of primary and secondary antibodies, as well as chemoluminescence staining, from Western blot membranes. Due to the low pH of the buffer, the antibody conformation is altered, therefore gently removing all molecules bound to the epitopes (Legocki *et. al.* (1981) *Analyt. Biochem.* 111:385-92). Robust formulation without β-mercapto ethanol or DTT for use at room temperature. Suitable for nitrocellulose and PVDF membranes.

Applications: Following rinsing steps in PBST- or TBST buffer, the membrane is incubated in Roti®-Free Stripping-Puffer 2.0 for 15-60 mins. at room temperature. After washing it again, the membrane may be blocked and probed anew. The particular time needed for complete stripping depends on the respective antibody/epitope pairing.

3319.1	250 ml	glass	42,50 €
3319.2	1 l	glass	110,20 €
Original pack 6 x 1 l			104,69/1 l

Substrates

Carl Roth offers you a wide range of substrates for biochemistry, cellular biology and microbiology. The key substrates for Western Blot and ELISA are summarised here.

For detailed information regarding usage, chemical details, safety instructions and further package sizes for these and many other substrates, refer to **"Substrates"** earlier in this chapter on biochemistry or to Chemicals A-Z.

▶ Enhancer see next page!

For Alkaline Phosphatase (AP)

Substrate	Application	Detection	Art. No.	Pack Qty.	€
BCIP-sodium salt	western, *in situ*, histochemistry	colour (brown-violet)	**A155.1**	100 mg	27,85
			A155.2	500 mg	118,15
			A155.3	1 g	203,20
			A155.4	5 g	665,45
BCIP-toluidine salt*	western, *in situ*, histochemistry	colour (brown)	**6368.1**	500 mg	36,45
			6368.2	1 g	70,45
			6368.3	5 g	267,70
NBT*	western, *in situ*, histochemistry	colour (brown-violet)	**4421.1**	100 mg	17,75
			4421.2	500 mg	44,65
			4421.3	1 g	84,85
			4421.4	5 g	306,40
pNPP	ELISA	colour (yellow)	**4165.1**	2,5 g	16,05
		New size	**4165.9**	25 g	65,05
		New size	**4165.7**	100 g	177,40
Roti®fair pNPP 5mg	ELISA	colour (yellow)	**1117.1**	24 tablets	95,60
			1117.2	100 tablets	138,70
Roti®fair pNPP 20mg	ELISA	colour (yellow)	**1128.1**	24 tablets	100,55
			1128.2	100 tablets	362,85
Rose-phos-toluidine salt	western, *in situ*, histochemistry	colour (pink)	**4247.1**	50 mg	47,20
			4247.2	100 mg	84,85

For additional product data and safety information, see chapter Chemicals A-Z.
***combined**

For Horse Raddish Peroxidase (HRP)

Substrate	Application	Detection	Art. No.	Pack Qty.	€
Chloronaphtol	western	colour (blue)	**4104.1**	5 g	29,60
			4104.2	10 g	48,95
			4104.3	25 g	94,50
		New size	**4104.7**	100 g	278,45
DAB	western, *in situ*, histochemistry	colour (brown)	**CN75.1**	1 g	23,55
			CN75.2	5 g	76,25
			CN75.3	10 g	130,65
Roti®-DAB Kit	western, *in situ*, histochemistry	colour (brown)	**9202.1**	1 kit	188,70
Roti®-Lumin ultra	western	chemo-luminescence	**3734.1**	1 mini kit (spray)	239,20
			3734.2	1 kit (spray)	955,70
Roti®-Lumin plus	western	chemo-luminescence	**3692.1**	1 mini kit (spray)	134,95
			3692.2	1 kit (spray)	278,45
			3692.3	1 kit (bottles)	450,45
Roti®-Lumin	western	chemo-luminescence	**P078.2**	1 mini kit	78,40
			P078.1	1 kit	278,45
TMB	ELISA	colour (blue)	**6350.1**	1 g	54,75
			6350.2	5 g	167,20
			6350.3	25 g	768,65
TMB dihydro-chloride	ELISA	colour (blue)	**4107.1**	500 mg	39,70
			4107.2	1 g	64,40

For additional product data and safety information, see chapter Chemicals A-Z.

Roti®-DAB Kit

RNAse-/DNAse-free

for immunochemistry

Substrate kit for detection of HRP activity on blot membranes and slides.
DAB substrate kit, HRP substrate kit
Storage temp.: +4 °C • Transport temp.: cooled

Danger H302-H341-H351-H360D-H373

DAB substrate kit for detection of peroxidase (HRP) activity on immunoblots, immunohisto- and cytochemical slides and during *in situ* hybridization.
Roti®-DAB Kit contains substrate, buffer solution and activation reagent, therefore including all three solutions necessary for HRP detection reaction. Application is very simple - all three kit solutions are diluted equally in water, and the blotting filter membrane, or the slides, are then incubated in this substrate solution. Since the solutions are delivered in drop dispensers, dosing is most convenient.

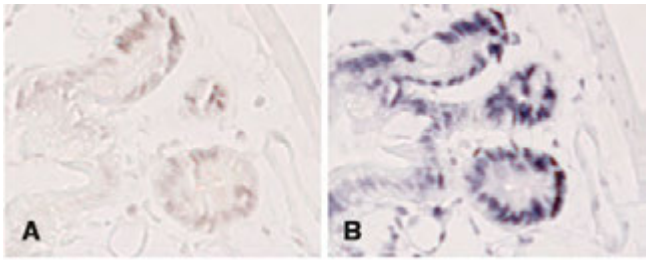


Figure 1:
Immunohistochemical staining of mouse small intestines with an anti-PCNA antibody. Minuscules: pure DAB substrate, capitals: detection supplemented by DAB enhancer (A: $NiCl_2$, B: DAB Metal Enhancer, Art. No. 9204).
A: Basic method using 0.6 mg/ml DAB in Tris-buffer
B: Detection performed with the Roti®-DAB Kit

The kit contains:
DAB solution (Art. No. 9869), DAB buffer (Art. No. 9870), and Activation reagent (Art. No. 9871) in dropper bottles. Contents of this Kit may not be bought separately.

One kit is sufficient for staining of approx. 44 minigel blot membranes or 500 slides.

9202.1	1 kit	cardboard	188,70 €

Roti®fair pNPP

for biochemistry

For preparation of pNPP substrate solution for alkaline phosphatase.
pNPP (tablet), p-Nitrophenyl phosphate
Storage temp.: -20 °C • Transport temp.: room temp.
Exactly pre-weighed tablets for convenient and rapid preparation of pNPP solution.
Prepared solution may be sterilized by filtration.
The solution has to be stored at -20 °C in aliquots.

Roti®fair pNPP 5mg

5 mg/tablet

Formulation:
Prepared solution contains 1 mg/ml pNPP, when 1 tablet is dissolved in 5 ml substrate buffer or deionized, or distilled, water.

1117.1	24 tablets	blister	95,60 €
1117.2	100 tablets	plastic	138,70 €

Roti®fair pNPP 20mg

20 mg/tablet

Formulation:
Prepared solution contains 1 mg/ml pNPP, when 1 tablet is dissolved in 20 ml substrate buffer or deionized, or distilled, water.

1128.1	24 tablets	blister	100,55 €
1128.2	100 tablets	plastic	362,85 €

Enhancers

Antibody Diluents ready-to-use

ready-to-use, for immunohistochemistry

For optimisation of immunohistochemical detection signals.

Enhancer solution

Storage temp.: +4 °C • Transport temp.: cooled

- Enhances signal strength
- Reduces background
- Very easy application
- Compatible with paraffin- and cryo sections

Due to the particularly designed formulation, antigen/antibody binding is enhanced, while reducing background signals in parallel (Grube (2004) *Arch Histol Cytol.* 67:115-34 and Buchwalow *et al.* (2011) *Sci Rep.* 1:28). Stability of the antibodies is significantly enhanced. The buffer solution is suitable for dilution of all primary and secondary antibodies, all mono- and polyclonals, as well as for all labelled as well as non-labelled antibodies.

Application is most simple: The antibodies are just diluted in the ready-to-use diluent and applied to the slides after blocking. For reduction of the amount needed and for optimised use of high-priced antibodies we recommend to use the Roti®-Liquid Barrier Marker (red, Art. No. AN92, or colourless, Art. No. AN91), in order to prepare tiny incubation chambers on top of the slides.
One bottle for 125 ml is sufficient for enhancement of approx. 125 slides.

Antibody Diluent green

Buffer solution for preparation of antibody incubation solutions.
With green dye for easy handling.

0070.1	125 ml	plastic	67,65 €
0070.2	4 x 125 ml	plastic	193,40 €

Antibody Diluent clear

Buffer solution for preparation of antibody incubation solutions and stabile antibody dilutions for storage.

0509.1	125 ml	plastic	67,65 €
0509.2	4 x 125 ml	plastic	193,40 €

Instructions for use
can be found on the Internet next to the product description.

DAB Metal Enhancer RNAse-/DNAse-free

for immunochemistry

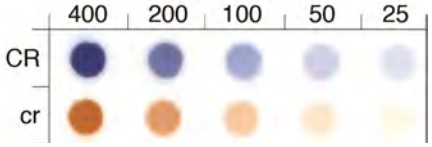
For enhancement of HRP signals
on blot membranes and slides.

Enhancer solution

Storage temp.: +20 °C

Danger H317-H334-H341-H350i-H360D-H372-H412

DAB metal enhancer is used to enhance the signal strength in peroxidase (HRP) detections and to modify the signal colour from brown to purplish gray. Applications include all immunochemical assays like immunohisto-chemistry and -cytochemistry as well as Western blotting, but DAB metal enhancer may also well be used during *in situ* hybridization.
When the DAB metal enhancer is applied, the sensitivity of DAB staining is about two times higher than with DAB alone. For application, the DAB substrate components and buffer reagents (for instance Roti®-DAB-Kit, Art. No. 9202) are simply diluted in DAB metal enhancer instead of water. The purplish gray precipitate resulting from the staining reaction can be detected in visible light and does not bleach during long-term storage. Since it is insoluble in aqueous and organic solvents, slides may be permanently mounted in hydrophilic, or, after dehydration, in hydrophobic mounting medium.



One bottle of 100 ml is sufficient for enhancement of approx. 10 minigel blots or 100 slides.

9204.1	100 ml	plastic	97,75 €

Roti®-Strept/HRP-Kit

for immunochemistry

HRP-kit for highly sensitive detection of
biotinylated molecules on slides.

HRP detection kit with biotin and streptavidine

Storage temp.: +4 °C • Transport temp.: cooled

EUH208

Roti®- Strept/HRP kit is a peroxidase kit for very sensitive detection of biotinylated molecules on slides, for instance in immunohistochemical or -cytochemical assays. Sensitivity of colour staining is hence increased to the level known from chemoluminescence.
Roti®- Strept/HRP kit contains streptavidine and a biotin-coupled peroxidase, which are combined in order to increase the sensitivity of the detection method significantly. Application is very simple - both kit solutions are diluted equally in PBS, and the slides are incubated in this substrate solution after second antibody. Since the solutions are delivered in drop dispensers, dosing is most convenient. The HRP is then stained by common substrates like DAB (Roti®-DAB kit Art. No. 9202).
Following staining, the slides may be permanently mounted in hydrophilic, or, after dehydration, in hydrophobic mounting medium.

This Kit contains:
Streptavidin solution (Art. No. 0941), biotin peroxidase solution (Art. No. 0946) and an empty bottle for mixture. Contents of this Kit may not be bought separately.

One kit is sufficient for incubation of approx. 200 slides.

9206.1	1 kit	cardboard	332,20 €

▶ DAB substrate kit see page 1365

Signal Enhancer Western/ELISA Set

for immunochemistry

For enhancement of immunochemical detection signals on blot membranes and in ELISA.

Enhancer solution

Storage temp.: +4 °C • Transport temp.: cooled

- Strong enhancement of signal strength
- Most easy application
- Compatible with
  Western and ELISA
  HRP and AP
  all common membranes
  all common substrates

The Signal Enhancer Western/ELISA enhances antigen-antibody reactions in a variety of immunoassays such as Western blotting, dot blotting and ELISA. It can significantly enhance detection of weak immunoreactive and low abundance target proteins and is well compatible with all common assay versions, membranes and ELISA plates.
Signal enhancement is dependent on several parameters such as the particular antigen/antibody pair, the particular detection enzyme, the substrate chosen and so on. In most cases, however, the signal strength is about 5 to 10fold higher than with the substrate alone. For application, the two solutions Signal Enhancer Western/ELISA-1 and -2 are simply used as buffer solutions for preparation of the primary- and secondary antibody incubation solutions. Following incubation and washing, all common detection procedures may be applied, for instance colour staining with Roti®-DAB-Kit (Art. No. 9202) or chemoluminescent staining with Roti®-Lumin plus (Art. No. 3692).

This Kit contains:
Signal Enhancer Western/ELISA-1 (Art. No. 9213) and Signal Enhancer Western/ELISA-2 (Art. No. 9214). 1 Mini-Set: 2 x 50 ml, 1 Set: 2 x 250 ml.

One set with 250 ml each is sufficient for optimization of approx. 25 minigel blots.

9211.2	1 Mini-Set	plastic	139,25 €
9211.1	1 Set	plastic	413,90 €

Signal Enhancer Western/ELISA-1

for immunochemistry

For optimisation of primary antibody binding in immunochemical assays.

Storage temp.: +4 °C • Transport temp.: cooled

The solution Signal Enhancer Western/ELISA-1 enhances reaction between antigens and their corresponding **primary** antibodies in a variety of immunoassays such as Western blotting, dot blotting and ELISA.

One bottle with 250 ml is sufficient for approx. 25 assays.

9213.1	250 ml	plastic	239,20 €

Signal Enhancer Western/ELISA-2

for immunochemistry

For optimisation of binding of primary and labelled antibodies in immunochemical assays.

Storage temp.: +4 °C • Transport temp.: cooled

The solution Signal Enhancer Western/ELISA-2 enhances binding of **secondary** antibodies in a variety of immunoassays such as Western blotting, dot blotting and ELISA. The solution is well compatible with all common assay versions, membranes and ELISA plates.

Recommended for performance of assays using one antibody only, which is labelled.

One bottle with 250 ml is sufficient for approx. 25 assays.

9214.1	250 ml	plastic	239,20 €

Roti®-Free Slide Enhancer

RNAse-/DNAse-free

10x conc., BioScience-Grade

Concentrated buffer for enhancement of detection signals in immunohistochemistry and *in situ* hybridization.

Storage temp.: +20 °C

- Very effective
- Gentle
- Odour-free
- Simple application
- Suitable for formaline- and paraffin fixed samples and cryo sections

Efficient stripping buffer for removal of antibodies, probes, and corresponding stains from immunohisto- and -cytochemical samples, as well as from *in situ* hybridizations.
Due to the particularly adjusted formulation of the Roti®-Free Slide Stripping Buffer, antigens and hybridization partners are retrieved very gently, but quantitatively, enabling the samples to be assayed repeatedly. Suitable for all common samples like formaline- and paraffin fixed tissue and cells, or cryo sections.

Applications: The slides are incubated in Roti®-Free Slide Stripping Buffer for 20-40 min at 70-95 °C. After repeated washing steps, the samples may be assayed again with antibodies or probes. The particular parameters necessary for complete stripping depend on the respective samples, fixing-, and detection systems.

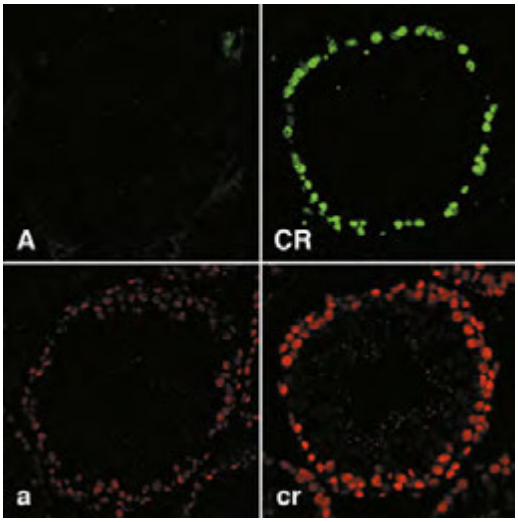


Figure 2:
Detection of proliferation by fluorescent immunohistochemical assay on tissue cryo-sections.
Capitals: Detection of integrated BrdU, minuscules: Immunohistochemical PCNA detection with red flourescence dye.
CR/cr: Detection after pretreatment with Roti®-Free Slide Enhancer.
A/a: Standard detection in 1 % triton-PBS buffer, w/o pretreatment.

With kind permission of the RIKEN Brain Science Institute (BSI), Development Research Group, Hirosawa Wako City, Saitama, Japan.

One bottle with 500 ml is sufficient for approx. 500 slides.

9330.1	500 ml	plastic	206,95 €

Please note our **Technical Information Brochure** on the Internet next to the products:

Immunostaining by HRP and AP
Protocols

Accessories

Western Incubation Trays

reusable

Compatible with all standard Western-staining methods.

Western incubation trays have been specially developed for staining Western-blots. The sizes adapted to suit typical Western-blots, reduce the required quantity of antibodies and staining reagents. The trays are compatible with all standard staining methods and can easily be stacked. The airtight lids effectively prevent the solution from evaporating even during longer incubation periods.

Type	Dimensions L x W (mm)	Typical incubation vol. (ml)	Material	Max. Temp. (°C)
MINI	91 x 66	5 - 10	PS	80
MIDI	117 x 89	10 - 20	PS	80
MIDI-XL	120 x 120	20 - 30	Acrylic glass	60
MAXI	200 x 165	30 - 60	Acrylic glass	60

Four different sizes for perfect fit to your respective blot membrane. Stabile and frequently reusable.

Type	Dimensions L x W (mm)	Art. No.	Pack Qty.	€
MINI	91 x 66	**8862.1**	10 pieces	147,30
MIDI	117 x 89	**8870.1**	10 pieces	163,40
MIDI-XL	120 x 120	**8874.1**	1 pieces	184,90
MAXI	200 x 165	**8876.1**	1 pieces	235,45

Blot incubation trays

121 °C reusable

Compatible with Western- and Southern blotting methods

Developed for incubation of filter membranes during signal detection after Western- and Southern blotting. The incubation trays can safely be stacked, and, due to the tightly sealing lids, evaporation of solution is prevented even during long incubation periods. The size, adapted to typical membrane sheets, reduces the amount of buffer needed during incubation. In case of version MINI, the 5 trays may be used separately as well as in uniform. Stabile, autoclavable, and reusable.

Made from polypropylene.

Model	Material	Dimensions W x L (mm)	Art. No.	Pack Qty.	€
MINI	PP	16 x 115	**4810.1**	5	57,65
MIDI	PP	90 x 90	**4811.1**	5	85,50
MAXI	PP	165 x 165	**4812.1**	5	186,00

▶ Transfer membranen and blotting accessories see Chapter Electrophoresis!

▶ Rotilabo®-exposition cassettes see Chapter Optical Instruments & Lamps!

Rotilabo®-liquid reservoirs

S

Sterile (individually wrapped) or unsterile. With special design for 4, 8 and 12 channel pipettors. The bevelled sides and V-shaped base enable almost total withdrawal of liquid. Sterile vessels are individually wrapped.
Sterile designs are DNAse/RNase-free and non-pyrogenic.

Volume (ml)	Material	Type	Dimensions L x W x H (mm)	Art. No.	Pack Qty.	€
55	PVC	unsterile	143 x 70 x 25	**E830.2**	100	96,25
55	PS	**sterile**	143 x 70 x 25	**E831.2**	80	175,25

Accessories for Rotilabo®-liquid reservoirs

Lid made of PET. **Sterile** (individually wrapped).

Art. No.	Pack Qty.	€
EL53.1	20	40,75

Western-blot immuno trays

reusable

Immuno trays are ideal for incubating membrane strips after blotting or for preparing incubation solutions, e.g. during Western-Blot or Immuno-Assay. Trays made of white **PP**, autoclavable. Lids made of PS, not autoclavable.

Type	Length (mm)	Width (mm)	Art. No.	Pack Qty.	€
Western-blot immuno tray for 10 cm strips	128	85	**X990.1**	10	32,10
Lid for immuno tray, 10 cm	128	85	**X991.1**	10	s28,50
Western-blot immuno tray for 17 cm strips	200	110	**X992.1**	10	32,20
Lid for immuno tray, 17 cm	200	110	**X993.1**	10	28,50

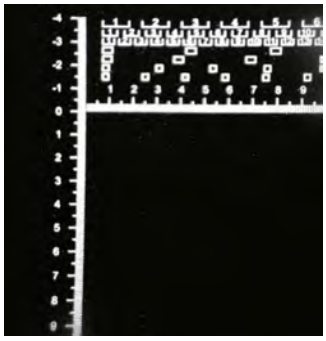
Radtape®

Phosphorescent labels for permanent labelling of autorads through exposure.

Radtape® are rectangular adhesive sheets made from phosphorescent material. The sheets may be cut easily to labels of needed size and shape and may be marked with an ordinary pen. The custom label may be peeled from its backing and affixed to membrane or gel, or directly to the cassette foil. Before exposure of an x-ray film, the label has to be activated with bright light for 10 seconds. The markings on the label appear as negative image on the autorad. Suitable for use with enhancer foils.

- No overexposure, even after long exposure times
- Sharp and clear images, cannot be smeared

Type	Dimensions L x W (cm)	Art. No.	Pack Qty.	€
Radtape®	10 x 15	**3900.1**	10	77,95



Luminous stencil

reusable

Orienting and measuring aid for detection of blot membranes.

Stencil with phosphorescent ordinate system and a pattern of different sized electrophoresis comb wells. When activated, stencils fluoresce for approx. 15 minutes. Are ideal for controlling and measuring during chemoluminescence detection of blots. Stencil can be activated by exposure to daylight or to artificial light.

Art. No.	Pack Qty.	€
X981.1	1	26,55

Autoradiography Pen

For marking of chemoluminescent or isotope labelled sheets prior to autoradiographic detection.

Danger H225-H304-H372-EUH031

Pen with phosphorous ink for easy marking of those membranes ready for exposure. The fine tip of the pen also allows individual bands and gel tracks to be marked simply and easily. The marking is activated by the light in the room prior to exposure. The ink illuminates the X-ray film during exposure and the letters are visible in black ink. The letters are easy to read even after short exposure time. In the event of long exposure, the short half-life value of 2-3 minutes effectively prevents overexposure. The writing is therefore easy to make out after virtually all exposure times. Through the replacement nibs the pen can be reused even after a number of months or after drying out.

Suitable for chemoluminescence and isotope-radiography.
Ideal for marking paper, plastic foil and dried polyacrylamide gels.

Delivery incl. 1 pen + 4 replacement nibs

CL10.1	1 piece	126,75 €

Replacement nibs for Autoradiography Pen

Type	Art. No.	Pack Qty.	€
Replacement nibs for Autoradiography Pen CL10.1	**CL11.1**	4 pieces	21,45

Cell Biology

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Roti®-CELL - Media and Solutions for Cell Culture

ready-to-use S

The new product line for your cell culture. Media and solutions of highest purity, the perfect base line for all standard cell culture applications.

- Sterile
- Ready-to-use
- CELLPURE® - with particularly low endotoxin content
- Storage at 2-8 °C
- Shipped at ambient temperature
- Expiry 12-24 months

Medium	Art. No.	Glucose g/l	Glutamine (mM)	HEPES (mM)	Sodium Pyruvate (mM)	$NaHCO_3$ (mM)	Phenol Red	Salts	Note	Page
Dulbeccos Minimum Essential Media										
Roti®-CELL DMEM High Glucose	9005.1	4,5	4	X	1	44	yes	X		1372
Roti®-CELL DMEM High Glucose	9006.1	4,5	4	X	X	44	yes	X		1372
Roti®-CELL DMEM High Glucose	9007.1	4,5	4 stab.	X	1	44	yes	X	With temperature stabile glutamine.	1372
Roti®-CELL DMEM High Glucose	9010.1	4,5	X	X	1	44	yes	X		1372
Roti®-CELL DMEM High Glucose	9011.1	4,5	X	25	1	44	yes	X		1372
Roti®-CELL DMEM High Glucose	9019.1	4,5	X	X	X	44	yes	X		1372
Roti®-CELL DMEM High Glucose	9023.1	4,5	X	X	1	44	X	X		1372
Roti®-CELL DMEM Low Glucose	9027.1	1,0	X	X	1	44	yes	X		1372
Roti®-CELL DMEM Low Glucose	9030.1	1,0	X	25	1	44	yes	X		1372
DMEM : F12										
Roti®-CELL DMEM : F12	9031.1	3,151	2,5	15	1	14,3	yes	X		1372
Iscove's Modfied Dulbecco Media										
Roti®-CELL Iscove's MDM	9033.1	4,5	4	25	1	36	yes	X	Additional Amino Acids and selene.	1372
Roti®-CELL Iscove's MDM	9035.1	4,5	X	25	1	36	yes	X	Additional Amino Acids and selene.	1372
Minimum Essential Media										
Roti®-CELL Eagle's MEM / Earle's	9044.1	1	2	X	X	26,2	yes	Earle's		1373
Roti®-CELL Eagle's MEM / Earle's	9047.1	1	X	X	X	26,2	yes	Earle's		1373
Roti®-CELL Eagle's MEM / Earle's	9048.1	1	X	25	X	26,2	yes	Earle's		1373
Roti®-CELL Eagle's MEM / Earle's	9049.1	1	X	X	1	26,2	yes	Earle's	Plus NEEA*	1373
Roti®-CELL Eagle's MEM / Hanks'	9056.1	1	X	X	X	4,2	yes	Hanks'		1373
Roti®-CELL Eagle's MEM-Alpha	9058.1	1	X	X	1	26,2	yes	Earle's	Plus cobalamine, ascorbic acid, NEAA*, lipoic acid, biotine.	1373
Roti®-CELL Eagle's MEM-Alpha	9082.1	5,5	2 stab.	X	1	26,2	yes	Earle's	Plus cobalamine, ascorbic acid, NEAA*, lipoic acid, biotine. Plus ribonucleosides and desoxyribonucleosides. With temperature stabile glutamine.	1373
RPMI Media										
Roti®-CELL RPMI 1640	9085.1	2	2	X	X	23,8	yes	X		1373
Roti®-CELL RPMI 1640	9086.1	2	2	25	X	23,8	yes	X		1373
Roti®-CELL RPMI 1640	9091.1	2	2 stab.	X	X	23,8	yes	X	With temperature stabile glutamine.	1373
Roti®-CELL RPMI 1640	9093.1	2	2 stab.	25	X	23,8	yes	X	With temperature stabile glutamine.	1373
Roti®-CELL RPMI 1640	9094.1	X	2	X	X	23,8	yes	X		1373
Roti®-CELL RPMI 1640	9099.1	2	X	X	X	23,8	yes	X		1373
Roti®-CELL RPMI 1640	9104.1	2	X	X	X	23,8	X	X		1373
Special Media										
Roti®-CELL Ham's F12	9108.1	1,8	1	X	1	14	yes	X	Mammalian & hybridoma cells, mainly CHO	1374
Roti®-CELL Leibovitz's L15	9109.1	0,9 galact.	X	X	5	14	yes	X	Cultivation w/o CO_2	1374
Roti®-CELL McCoy's 5A	9111.1	3	1,5	X	X	26,2	yes	X	Primary cells	1374
Roti®-CELL Medium 199 / Earle's	9112.1	1	0,7	25	X	26,2	yes	Earle's	Virology & vaccine production	1374
Roti®-CELL TC100	9114.1	0,6	4,1	X	X	4,16	X	X	Sf9 cells/baculovirus. Based on Grace's medium	1374
Roti®-CELL William's E	9116.1	2	X	X	0,23	262	yes	X	Primary epithelial liver cells	1374

* NEAA: Non-essential amino acids

Media with stabile glutamine may be stored at room temperature!

DMEM ready-to-use S

Roti®-CELL DMEM High Glucose

CELLPURE® ready-to-use, sterile

Medium for a wide range of mammalian cell culture applications.

Dulbecco's Modified Eagle Medium

Storage temp.: +4 °C

Dulbecco's Modified Eagle Medium is the most commonly used modification of the Basal Medium acc. to Eagle. DMEM contains higher concentration of amino acids and vitamins, and additionally iron (ferric nitrate). The formulation with high glucose content is well suited for culturing of a wide range of mammalian cell lines and primary cells.

with glutamine, with pyruvate

9005.1	500 ml	plastic	13,45 €

with glutamine, w/o pyruvate

9006.1	500 ml	plastic	13,45 €

with stable glutamine, with pyruvate

9007.1	500 ml	plastic	14,55 €

w/o glutamine, with pyruvate

9010.1	500 ml	plastic	13,45 €

w/o glutamine, with pyruvate, with HEPES

9011.1	500 ml	plastic	17,75 €

w/o glutamine, w/o pyruvate

9019.1	500 ml	plastic	13,45 €

w/o glutamine, with pyruvate, w/o phenol red

9023.1	500 ml	plastic	19,90 €

Detailed composition
can be found on the Internet next to the product description.

Roti®-CELL DMEM Low Glucose

CELLPURE® ready-to-use, sterilee

Medium for culturing of adherent mammalian cell lines.

Dulbecco's Modified Eagle Medium

Storage temp.: +4 °C

Dulbecco's Modified Eagle Medium is the most commonly used modification of the Basal Medium acc. to Eagle. DMEM contains higher concentration of amino acids and vitamins, and additionally iron (ferric nitrate). The formulation with low glucose content is well suited for culturing of a variety of mammalian adherent cell lines.

w/o glutamine, with pyruvate

9027.1	500 ml	plastic	13,45 €

w/o glutamine, with pyruvate, with HEPES

9030.1	500 ml	plastic	16,70 €

Roti®-CELL DMEM : F12

CELLPURE® ready-to-use, sterile

Medium for analysis of hormones and growth factors in cell culture.

Dulbecco's Modified Eagle Medium + Ham's F12 medium (1:1)

Storage temp.: +4 °C

Dulbecco's Modified Eagle Medium is the most commonly used modification of the Basal Medium acc. to Eagle. This mixture of DMEM High Glucose with Ham's F12 medium combines the high nutritional value of Ham's F12 medium with the high concentration of amino acids, vitamins, and glucose of DMEM.

with glutamine, with pyruvate, with HEPES

9031.1	500 ml	plastic	16,05 €

Roti®-CELL Iscove's MDM

CELLPURE® ready-to-use, sterile

Medium for a wide range of mammalian cell culture applications.

Iscove's Modified Dulbecco's Medium

Storage temp.: +4 °C

Iscove's Modified Dulbecco's Medium is based on DMEM High Glucose, containing selenium, HEPES, and, instead of iron, potassium (as potassium nitrate) besides additional amino acids and vitamins. It is well suited for culturing of a wide range of mammalian cell lines and primary cells, including B- and T lymphocytes as well as hybridoma cells.

with glutamine, with pyruvate, with HEPES

9033.1	500 ml	plastic	17,75 €

w/o glutamine, with pyruvate, with HEPES

9035.1	500 ml	plastic	17,75 €

EMEM ready-to-use S

Roti®-CELL Eagle's MEM / Earle's

CELLPURE® ready-to-use, sterile

Medium for a wide range of mammalian cell culture applications.

Minimum Essential Medium acc. to Eagle with Earle's salts

Storage temp.: +4 °C

Minimum Essential Medium is a commonly used modification of the Basal Medium acc. to Eagle, having been developed in 1959 for culturing of HeLa cells. EMEM contains high concentration of amino acids, which conform closely to the protein composition of human cells. Concentration of vitamins, and other essential nutrients, is enhanced, allowing longer cultivation periods between feedings. EMEM is well suited for culturing of a wide range of mammalian cell lines and primary cells, also including transfected cells.

with glutamine

9044.1	500 ml	plastic	14,55 €

w/o glutamine

9047.1	500 ml	plastic	13,45 €

w/o glutamine, with HEPES

9048.1	500 ml	plastic	15,60 €

w/o glutamine, with pyruvate, with NEAA

9049.1	500 ml	plastic	15,60 €

Roti®-CELL Eagle's MEM / Hanks'

CELLPURE® ready-to-use, sterile

Medium for a wide range of mammalian cell culture applications.

Minimum Essential Medium acc. to Eagle with Hanks' salts

Storage temp.: +4 °C

EMEM is well suited for culturing of a wide range of mammalian cell lines and primary cells, also including transfected cells. Due to supplementation with Hanks' salts, cell cultivation in EMEM-Hanks' does not require CO_2 enriched atmosphere.

w/o glutamine

9056.1	500 ml	plastic	16,70 €

Roti®-CELL Eagle's MEM-Alpha

CELLPURE® ready-to-use, sterile

Medium for culturing of bone marrow and amniotic cells.

Minimum Essential Medium acc. to Eagle, Alpha modification

Storage temp.: +4 °C

Alpha-Eagle's Minimum Essential Medium is based on EMEM, containing the following unique components: Vitamin B_{12}, ascorbic acid, non-essential amino acids, sodium pyruvate, lipoic acid, and D-biotin. It has been optimised for culturing of bone marrow cells and amniotic cells for chromosome analysis.

w/o glutamine, w/o nucleosides

9058.1	500 ml	plastic	15,60 €

with stable glutamine, with nucleosides

9082.1	500 ml	plastic	28,95 €

RPMI ready-to-use S

Roti®-CELL RPMI-1640

CELLPURE® ready-to-use, sterile, with glutamine

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes

RPMI cell culture medium

Storage temp.: +4 °C

RPMI-1640 has been developed for culturing of normal and neoplastic human leucocytes. It is based on a bicarbonate buffering system with modified amounts of amino acids and vitamins. RPMI-1640 Medium is very well suited for culturing of a wide range of mammalian suspension cell lines and primary lymphocytes, all leucocytes, B- and T-lymphocytes, as well as myeloma- and hybridoma cells.

with glutamine

9085.1	500 ml	plastic	13,45 €

with glutamine, with HEPES

9086.1	500 ml	plastic	14,95 €

with stable glutamine

9091.1	500 ml	plastic	14,55 €

with stable glutamine, with HEPES

9093.1	500 ml	plastic	16,70 €

with glutamine, w/o glucose

9094.1	500 ml	plastic	54,75 €

w/o glutamine

9099.1	500 ml	plastic	13,45 €

w/o glutamine, w/o phenol red

9104.1	500 ml	plastic	16,70 €

Special Media ready-to-use S

Roti®-CELL Ham's F12

CELLPURE® ready-to-use, sterile

Medium for culturing of a variety of mammalian- and hybridoma cells, especially CHO cells.

Ham's F12 cell culture medium

Storage temp.: +4 °C

Ham's F12 Medium was originally optimized for serum-free, clonal culturing of CHO cells (Chinese Hamster Ovary). Ham's F12 Medium is the medium of choice for culturing cells of rodent orgin, particularly from rabbit and rat. Additionally, it is increasingly used as general purpose medium for culturing mammalian and hybridoma cells, particularly when supplemented with sera, hormones, and transferrin.

with glutamine, with pyruvate

9108.1	500 ml	plastic	14,95 €

Roti®-CELL Leibovitz's L15

CELLPURE® ready-to-use, sterile

Medium for culture of mammalian cells without CO_2 atmosphere.

Leibovitz's cell culture medium

Storage temp.: +4 °C

Leibovitz's L15 Medium was developed for culturing of eukaryotic cells without CO_2 enriched atmosphere. Its unique components include the use of galactose instead of glucose, omittance of bicarbonate, addition of free base forms of arginine, cysteine, and histidine, as well as elevated levels of tyrosine. Leibovitz's L15 Medium is still used to grow cell lines in the absence of CO_2.

w/o glutamine, with galactose

9109.1	500 ml	plastic	24,20 €

Roti®-CELL McCoy's 5A

CELLPURE® ready-to-use, sterile

Medium for culturing of a variety of mammalian cell lines and primary cells.

McCoys 5A cell culture medium

Storage temp.: +4 °C

McCoy's 5A Medium was optimized for culturing of Walker 256 carcinoma cells. Its unique components include asparagine, amino acids (all L-isomers), and elevated levels of glucose and folic acid. Due to its richness, McCoy's 5A Medium is increasingly used as general purpose medium for primary cells and established cell lines.

with glutamine

9111.1	500 ml	plastic	22,50 €

Roti®-CELL Medium 199 / Earle's

CELLPURE® ready-to-use, sterile

Medium for cell culture in virology and vaccine production.

Medium 199 with Earle's salts

Storage temp.: +4 °C

Medium 199 was developed for nutritional studies on cultured chick embryo muscle fibroblasts. Its unique components include purines, pyrimidines, and fat soluble components. Medium 199 requires a CO_2 enriched atmosphere and is mainly used for virological studies and vaccine production.

with glutamine, with HEPES

9112.1	500 ml	plastic	19,25 €

Roti®-CELL TC100

CELLPURE® ready-to-use, sterile

Medium for culture of Sf9 cells.

TC100 cell culture medium; BML-TC/100

Storage temp.: +4 °C

TC100 is based on the Grace's Insect Medium, optimizing the expression of baculovirus grown in cultured cells derived from ovaries of the fall army worm, *Spodoptera frugiperda*.

with glutamine

9114.1	500 ml	plastic	27,45 €

Roti®-CELL William's E

CELLPURE® ready-to-use, sterile

Medium for long-term culturing of adult, primary liver epithelial cells.

William's E cell culture medium

Storage temp.: +4 °C

William's E Medium is based on the Minimal Essential Medium (MEM), containing besides pyruvate higher concentrations of glucose, amino acids and sodium bicarbonate. William's E Medium has been optimized for long-term culturing of polygonal, epithelia cells from adult liver of mammals.

w/o glutamine, with pyruvate

9116.1	500 ml	plastic	22,50 €

Cell Culture Media Additives S

Roti®-CELL Bicarbonate solution

CELLPURE® sterile, 7,5 %

For cell culture

Sodium bicarbonate solution in water

Due to it being the main physiological buffer system, sodium bicarbonate still is the most commonly used buffer in cell culture media. For media with Hanks' Salts (HBSS) add a low concentration of Roti®-CELL Bicarbonate solution (350 mg/l = 0,035 % end concentration) and incubate in closed culture vessels. For media with Earle's Salts (EBSS) add a higher concentration of Roti®-CELL Bicarbonate solution (2.200 mg/l = 0,22 % end concentration) and incubate in an open vessel, in an atmosphere supplied with 5 % CO_2 in air.

9165.1	100 ml	plastic	13,45 €

Roti®-CELL Glutamine solution

CELLPURE® sterile, 200 mM

Temperature-stable. For cell culture

Alanyl-L-glutamine solution in 145 mM NaCl

L-glutamine is an essential amino acid required for cell culture growth and is normally present in media in a concentration of 29 mg/l or 2 mM. While standard L-glutamine is temperature-sensitive and thus not stable for longer periods, the L-Glutamine form used for this Roti®-CELL Glutamine solution extends by temperature stability and may be stored at room temperature for years, making it a highly valuable tool for cell culture media. Stable L-glutamine is used in the same concentration as standard, temperature-sensitive L-glutamine.

9183.1	100 ml	plastic	17,75 €

Roti®-CELL HEPES solution

CELLPURE® sterile, 1 M

For cell culture

HEPES solution in 145 mM NaCl

Roti®-CELL HEPES solution has been designed for use in open vessels incubated under atmospheric conditions. The sodium chloride concentration of Roti®-CELL HEPES solution has been adapted to the Osmolality found in standard cell culture media formulations, in order to maintain physiological Osmolality in culture.

9157.1	100 ml	plastic	23,55 €

▶ Antibiotics for Cell Culture
see some pages below

Endotoxins..... <1,0 EU/ml.
Sterility..... complies.

Roti®-CELL MEM-AA solution NEW

CELLPURE® sterile, 50x conc., w/o glutamine

For cell culture.

Essential amino acids, solution in water

Storage temp.: +4 °C • Transport temp.: cooled

Roti®-CELL MEM-AA solution consists of a mixture of 12 essential amino acids in water. Since cells are not able to synthesize essential amino acids by themselves, those have to be externally supplemented. By enrichment of cell culture media with Roti®-CELL MEM-AA, the culture medium is supplemented with a preformulated mixture of essential amino acids perfectly suited for culturing of most eukaryotic cells. For each amino acid, dilution by 1:50 of Roti®-CELL MEM-AA solution yields the final concentration known from Eagle's Minimum Essential Medium.

0647.1	100 ml	plastic	23,15 €

Roti®-CELL MEM-NEAA solution

CELLPURE® sterile, 100x conc., 10 mM each

For cell culture

Non essential amino acids, solution in water

Storage temp.: +4 °C

Roti®-CELL MEM-NEAA solution consists of a mixture of 7 non-essential amino acids in water. Enrichment of Roti®-CELL Eagle's MEM Medium (with Earle's or Hanks' salts) with non-essential amino acids enables culturing of fastidious cells and cell lines, hereby broadening the utility of this medium. Dilution by 1:100 of Roti®-CELL MEM-NEAA solution yields a final concentration 0.1 mM of each component.

Type analysis:

L-Alanine. ..... 0,89 g/l
L-Asparagine. ..... 1,321 g/l
L-Aspartic acid..... 1,33 g/l
L-Glutamic acid..... 1,47 g/l
Glycine. ..... 0,75 g/l
L-Proline. ..... 1,15 g/l
L-Serine..... 1,05 g/l

9185.1	100 ml	plastic	17,75 €

Roti®-CELL Pyruvate solution

CELLPURE® sterile, 100 mM

For cell culture

Sodium pyruvate solution in water

Storage temp.: +4 °C

Sodium Pyruvate is a key intermediate in the ATP production within the cell and is sometimes added to cell culture media as an additional source of energy. Additional pyruvate may help cells deficient in one of the enzymes involved in glucose metabolism, and may kick-start cells in the citric acid cycle, thus supporting growth of low density cells.
Concentration in standard media is 1 mM; special media like Leibovitz's medium are supplemented with up to 5 mM pyruvate.

9182.1	100 ml	plastic	10,65 €

Roti®-CELL Water ready-to-use S

CELLPURE® sterile

For cell culture
For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9186.1	500 ml	plastic	10,25 €
9186.2	1 l	plastic	15,60 €
Original pack 6 x 1 l			14,82/1 l

Balanced Salt Solutions

Roti®-CELL Hanks' BSS ready-to-use S

CELLPURE® ready-to-use, sterile

Balanced salt solution for cell culture

Hanks' salt solution, HBSS

Roti®-CELL Hanks' BSS is a balanced salt solution to be used in a wide variety of cell- and tissue culture applications; for instance stabilizing of a physiological pH for cell maintenance in CO_2-free atmosphere, diluting cell suspensions prior to counting, washing cells prior to dissociation or passaging, and transporting cells or tissues.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

w/o Ca/Mg, w/o phenol red

9117.1	500 ml	plastic	11,75 €

w/o Ca/Mg, with phenol red

9118.1	500 ml	plastic	12,40 €

with Ca/Mg, w/o phenol red

9119.1	500 ml	plastic	11,75 €

with Ca/Mg, with phenol red

9122.1	500 ml	plastic	16,70 €

Roti®-CELL DPBS ready-to-use S

CELLPURE® ready-to-use, sterile

Balanced salt solution for cell culture

Phosphate buffered saline acc. to Dulbecco, DPBS

Roti®-CELL Dulbecco's PBS is a balanced salt solution based on PBS to be used in a wide variety of cell- and tissue culture applications; for instance stabilizing of a physiological pH in cell culture media, washing cells prior to dissociation, transfection or passaging, and maintaining cell tonicity and viability during transport of cells or tissues.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

w/o Ca/Mg

9124.1	500 ml	plastic	13,90 €
9124.2	1 l	plastic	21,00 €
Original pack 6 x 1 l			19,95/1 l

10x conc., w/o Ca/Mg

9130.1	500 ml	plastic	18,20 €
9130.2	1 l	plastic	22,50 €
Original pack 6 x 1 l			21,38/1 l

with Ca/Mg

9131.1	500 ml	plastic	13,90 €
9131.2	1 l	plastic	21,00 €
Original pack 6 x 1 l			19,95/1 l

▶ Roti®-CELL PBS solutions see page 1379

Reagents for Cell Culture
General Reagents

Albumin Fraction V, endotoxin-tested
>98 %, low endotoxin, CELLPURE®

With low endotoxin content. Recommended for culturing of cell lines.
BSA
M ~66 000 g/mol
Storage temp.: +4 °C
Albumin Fraction V, low endotoxin is recommended for use during culturing of eukaryotic cells.
Bovine serum albumin is basically suitable for stabilisation of all enzymes and antibodies, as well as for blocking of hybridisations and immunoassays.
Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.
Molar extinction coefficient: 44.020 · M^{-1} · cm^{-1}
(acc. to 0.667 x cm^{-1} for a 0.1 % solution).

Endotoxin content: <15 E.U./mg

CP84.1	10 g	plastic	35,40 €
CP84.2	50 g	plastic	110,65 €
CP84.3	500 g	plastic	858,95 €
Original pack 6 x 500 g			816,00/500 g

Albumin Fraction V, very low endotoxin
>98 %, very low endotoxin, CELLPURE®

With extremely low endotoxin content. Recommended for the culture of primary cells and cell lines, as well as for sensitive cell culture assays.
BSA
M ~66 000 g/mol
Storage temp.: +4 °C
Albumin Fraction V, very low endotoxin is particularly recommended for use during culturing of eukaryotic cells and in cell culture assays. This albumin of superior quality is thoroughly tested for its very low endotoxin content, therefore providing trouble-free cell culture assays and reliable results even when handling primary cells or stem cells.
Bovine serum albumin is basically suitable for stabilisation of all enzymes and antibodies, as well as for blocking of hybridisations and immunoassays.
Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

Endotoxin content: < 2,0 E.U./mg

CP77.1	10 g	plastic	142,90 €
CP77.2	50 g	plastic	547,20 €

Dimethyl sulphoxide (DMSO)
≥99,5 %, BioScience-Grade, for molecular biology

Recommended for PCR, sequencing, hybridisation and cell culture.
DMSO
C_2H_6OS
M 78,13 g/mol

A994.1	100 ml	glass	22,50 €
A994.2	250 ml	glass	35,40 €

Flavine-adenine-dinucleotide disodium salt (FAD)
≥95 %, CELLPURE®

FAD disodium salt, Riboflavin-5'-adenosine diphosphate disodium salt
$C_{27}H_{31}O_{15}N_9Na_2P_2$ • M 865,55 g/mol • Storage temp.: +4 °C

Endotoxine: ≤100 E.U./g

6833.1	10 mg	glass	26,35 €
6833.2	50 mg	glass	38,60 €
6833.3	100 mg	glass	52,15 €

HEPES
DNAse-/RNAse-/Protease-free

PUFFERAN® CELLPURE® ≥99,5 %

For cell culture, tissue culture and biotechnology.
N-2-Hydroxyethyl piperazine-N'-2-ethane sulphonic acid, Good's buffer
$C_8H_{18}N_2O_4S$ • M 238,31 g/mol
Extremely versatile buffer. Excellent for cell and tissue cultures and for analysis of biological systems.

Endotoxins: approx. 0.025 E.U./mg

Applications:
- Combined with bicarbonate, HEPES is an excellent medium for human lymphocytoidal cell lines
- HEPES is more effective than $NaHCO_3$ when controlling the pH value in tissue and organ culture
- HEPES-buffered media for chicken and human lung fibroblasts
- Can be used to replace a bicarbonate buffered medium containing serum with a serum-free HEPES-buffered medium for mouse fibroblasts

HN77.1	50 g	plastic	30,00 €
HN77.2	100 g	plastic	42,90 €
HN77.3	250 g	plastic	82,25 €
HN77.4	500 g	plastic	146,75 €
Original pack 6 x 500 g			139,41/500 g
HN77.5	1 kg	plastic	252,65 €
Original pack 6 x 1 kg			240,02/1 kg

Recommended Application of Albumins

Albumin	Art. No.	Recommended Application
Fraction V, endotoxin-tested	CP84	Cell culture, standard cell lineages, cell sorting, short-term assays.
Fraction V, very low endotoxin	CP77	Cell culture. Superior quality and purity, suitable for sensitive cells like primary cells, stem cells, cloning and 3D-cultures. Also recommended for cell stressing assays like transfections, *in vitro* infections, or cell fusion.
Lactalbumin	7597	Cell culture, fermentation procedures, tissue culture.

Lactalbumin
for microbiology

Storage temp.: +20 °C

Lactalbumin is produced by enzymatic hydrolysis of milk whey. It consists of peptides, amino acids and carbohydrates, simple and complex.
It is used in media for culturing of bacterial cells (e.g. *lactobacilli*), for tissue culture, production of vaccines and in fermentation procedures.

7597.1	250 g	plastic	75,15 €
7597.2	500 g	plastic	134,95 €
Original pack 6 x 500 g			128,20/500 g

Sodium chloride solution 0,9 %
CELLPURE®

Type analysis:

pH value. 4,5-7,0
Endotoxins.....≤0,5 I.U./ml

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

8607.1	500 ml	plastic	16,70 €
8607.2	1 l	plastic	27,85 €
Original pack 6 x 1 l			26,46/1 l

Roti®fair 0.9 % NaCl
for biochemistry and molecular biology

For preparation of salt solutions and buffer concoctions.

Sodium chloride (tablet)

Exactly pre-weighed tablets for convenient and rapid preparation of sodium chloride solution.
Sodium chloride solution is generally used in many routine processes in Life Science laboratories, for instance preparation of salt solutions or composing of special buffer concoctions. In order to alleviate the effort involved, preparation of salt solutions using the Roti®fair salt tablets is most convenient.
Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving.
For long-term storage, salt solution should be kept at +4 °C.
0,9 % NaCl solution is prepared by dissolution of 1 tablet in 1000 ml or 100 ml highly pure water, respectively.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

for 1000 ml/tablet

1067.1	10 tablets	blister	50,45 €
1067.2	100 tablets	plastic	121,40 €

for 100 ml/tablet

1053.1	100 tablets	plastic	56,45 €

Roti®-CELL 0.1% Gelatine solution
NEW S

sterile, 0,1 % conc., in PBS w/o Ca/Mg

From porcine skin, for cell culture, protein biochemistry and molecular biology.

Gelatine solution

Storage temp.: +4 °C • Transport temp.: cooled

Roti®-CELL 0.1% Gelatine solution may be used in a variety of applications in Life Science research in general. The following applications, however, are amongst the most popular: coating of cell culture wells in order to improve cell adhesion of various cell types, stabilizing of DNA polymerases, blocking additive in immunochemical assays, and species differentiation processes in microbiology.
Gelatine is a heterogeneous mixture of water-soluble proteins of high average molecular masses, present in collagen.

Recommended use of Roti®-CELL 0.1% Gelatine solution for cell culture coating: 100-200 µg (0,1-0,2 ml)/cm². Hence, we recommend to use the following amounts per well/plate in ml: 0,1-0,2(48well), 0,2-0,4(24well), 0,4-0,8(12well), 1-1,9(6well), 2,8-5,7(6 cm plate), 8-15,7(10 cm plate). The optimal amount depends on the cell type and specific assay parameters and has to be evaluated. Coat by incubation at 37 °C for 30 mins in minimum.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

0621.1	500 ml	plastic	31,75 €

Roti®-CELL 2% Gelatine solution
NEW S

sterile, 2 % conc., in PBS w/o Ca/Mg

From porcine skin, for cell culture, protein biochemistry and molecular biology.

Gelatine solution

Storage temp.: +4 °C • Transport temp.: cooled

Roti®-CELL 2% Gelatine solution may be used in a variety of applications in Life Science research in general. The following applications, however, are amongst the most popular: coating of cell culture wells in order to improve cell adhesion of various cell types, stabilizing of DNA polymerases, blocking additive in immunochemical assays, and species differentiation processes in microbiology.
Gelatine is a heterogeneous mixture of water-soluble proteins of high average molecular masses, present in collagen.

Recommended use of Roti®-CELL 2% Gelatine solution for cell culture coating: 100-200 µg (5-10 µl)/cm². Hence, we recommend to use the following amounts per well/plate in ml: 5-10 µl(48well), 10-20 µl(24well), 20-40 µl(12well), 42-85 µl(6well), 0,12-0,24 ml(6 cm plate), 0,31-0,63 ml(10 cm plate). The optimal amount depends on the cell type and specific assay parameters and has to be evaluated. Coat by incubation at 37 °C for 30 mins in minimum.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

0646.1	100 ml	plastic	21,00 €

Roti®-CELL 10x PBS S

CELLPURE® sterile

Balanced salt solution for cell culture

Phosphate buffered saline, PBS w/o Ca/Mg

Roti®-CELL PBS is a balanced salt solution to be used in a wide variety of cell- and tissue culture applications; for instance diluting cell suspensions prior to counting, washing cells prior to dissociation, transfection or passaging, and transporting cells or tissues.
10x ready-made solution
For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9150.1	1 l	plastic	19,25 €
Original pack 6 x 1 l			18,29/1 l

Roti®-CELL PBS ready-to-use S

CELLPURE® ready-to-use, sterile

Balanced salt solution for cell culture

Phosphate buffered saline, PBS w/o Ca/Mg

Roti®-CELL PBS is a balanced salt solution to be used in a wide variety of cell- and tissue culture applications; for instance diluting cell suspensions prior to counting, washing cells prior to dissociation, transfection or passaging, and transporting cells or tissues.
For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9143.1	500 ml	plastic	12,80 €
9143.2	1 l	plastic	15,60 €
Original pack 6 x 1 l			14,82/1 l

TRIS DNAse-/RNAse-/Protease-free

CELLPURE® ≥99,9 %

For cell culture, tissue culture and biotechnology.

Tris(hydroxymethyl)-aminomethane

$C_4H_{11}NO_3$

M 121,14 g/mol

Warning H315-H319-H335

Buffer with low endotoxin content and especially designed for life science applications.

Endotoxins: ≤0.03 E.U./mg

3170.1	100 g	plastic	25,70 €
3170.2	500 g	plastic	79,45 €
Original pack 6 x 500 g			75,48/500 g

Roti®-CELL Water ready-to-use S

CELLPURE® sterile

For cell culture

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

Endotoxins: <0,25 E.U./ml

9186.1	500 ml	plastic	10,25 €
9186.2	1 l	plastic	15,60 €
Original pack 6 x 1 l			14,82/1 l

Water ready-to-use S

hypotonic, sterile, free from pyrogen

H_2O • M 18,02 g/mol

Sterile and pyrogen-free - the best choice for preparation of reaction buffers.

Pyrogenity (endotoxins): <0.25 E.U./ml

Guarantee analysis:

Pyrogenity (LAL-Test).....complies
pH value.....4,0-7,0
Heavy metals.....≤0,1 ppm
Evaporation residue.....≤0,001 %

3255.1	1 l	plastic	9,60 €
Original pack 6 x 1 l			9,12/1 l

Endotoxins (greek ἐndo [endo]=inner, within; τοξίνη [toxin]=poison, toxic substance).

Largest subgroup of **pyrogens** (greek πψροσ [pyros]=fire; γενναν [gennan]=to produce).

The terms **endotoxin** and **pyrogen** are often used synonymously.

Lipopoly saccharides from the outer cell membrane of gram-negative bacteria or blue-green algae. The pathological effects of **endotoxins** are microbial poisoning, septicaemia and lung disease. The lipid A contained in endotoxins is toxic to eukaryotic cells since it interacts with the cell membrane and affects the transcription of many proteins (e.g. tumour necrosis factor). It is, therefore, important to use reagents that are to a large degree free of endotoxins / pyrogens in the **cell culture.**

This can be verified by older test methods such as induction of fever in rabbits, the LAL test (the haemolymph of the horseshoe crab *limulus polyphemus* coagulates in the presence of endotoxins) or by using modern and animal-friendly methods such as monocyte activation or ELISA.

1 E.U. (Endotoxin Unit) = 1 I.U. (International Unit) = 1 USP.U. (United States Pharmocopeia Unit)

1 E.U. = approx. 0,1 ng endotoxin

Antibiotics for Cell Culture

Contamination of a cell culture by bacteria or yeasts almost always results in loss of the cell lines and assays, which means that the use of antibiotics has an important role to play in addition to working in sterile conditions. Antibiotics which are predominantly used for prophylactic purposes are ampicillin, streptomycin and penicillin, while ciprofloxacin and nystatin are used for the eradication of mycoplasma and mould/yeasts.
In molecular biology, antibiotics – particularly G418, hygromycin and neomycin – were established in combination with appropriate resistance genes as selection markers for successfully transfected cells.
Reaction mechanisms of antibiotics used in cell culture mainly involve interference with membrane biosynthesis, membrane integrity or the ribosomal processes in protein biosynthesis.

Antibiotic	Purity	Endotoxin content	Art. No.	Pack Qty	€
Ampicillin sodium salt	≥91 %, CELLPURE®	≤0.15 I.E./mg	**HP62.1**	10 g	47,20
			HP62.2	50 g	175,15
Geneticin disulphate (G418)-solution	50 mg/ml, steril, CELLPURE®	<10 E.U./ml	**CP11.1**	10 ml	69,80
			CP11.2	20 ml	93,45
			CP11.3	100 ml	332,20
Geneticin disulphate (G418)-solution, sterile	50 mg/ml, BioScience-Grade, sterile	n.d.	**2039.1**	10 ml	65,05
			2039.2	20 ml	85,50
			2039.3	100 ml	321,45
Gentamycin sulphate solution	50 mg/ml, CELLPURE®, sterile	<10 E.U./ml	**HN09.1**	20 ml	99,90
			HN09.2	100 ml	321,45
Gentamycin sulphate solution, sterile	50 mg/ml, BioScience-Grade, sterile	n.d.	**2475.1**	20 ml	99,45
			2475.2	100 ml	310,70
Hygromycin B solution	50 mg/ml, , CELLPURE®, sterile	<10 E.U./ml	**CP12.1**	10 ml	117,75
			CP12.2	20 ml	203,75
Hygromycin B solution, sterile	50 mg/ml, BioScience-Grade, sterile	n.d.	**1287.1**	10 ml	103,10
			1287.2	20 ml	160,75
Pen/Strep-PreMix	CELLPURE®	≤4.2 I.U./ml	**HP10.1**	powder mix for 100 ml	63,35
Penicillin G potassium salt	≥1550 U/mg, CELLPURE®	<0.25 I.U./mg	**HP49.1**	1 g	20,35
			HP49.2	10 g	38,60
			HP49.3	25 g	76,25
Penicillin G sodium salt	≥1550 U/mg, CELLPURE®	<0.25 I.U./mg	**HP48.1**	1 g	16,70
			HP48.2	10 g	34,30
			HP48.3	25 g	68,30
Streptomycin sulphate	≥720 I.U./mg, CELLPURE®	≤0.25 I.E./mg	**HP66.1**	10 g	28,95
			HP66.2	25 g	42,50
			HP66.3	50 g	68,30
Tetracyclin hydrochloride	≥900 µg/mg, CELLPURE®	≤0.5 I.E./mg	**HP63.1**	10 g	25,30
			HP63.2	50 g	89,15
Vancomycin hydrochloride	≥900 U./mg, CELLPURE®	≤0.33 E.U./mg	**0242.1**	250 mg	34,30
			0242.2	500 mg	55,80
			0242.3	1 g	100,95
			0242.7	5 g New size	332,20

For additional product data and safety information, see chapter Chemicals A-Z.

Roti®-CELL Myco-Free ready-to-use S

CELLPURE® 50x conc., ready-to-use, sterile

For elimination of mycoplasm contamination in cell culture.
Mycoplasm eradication solution
Storage temp.: -20 °C • Transport temp.: cooled

Application: Culture media are supplemented by the Roti®-CELL Myco-Free stock solution diluted by 1:50. Mycoplasms and bacteria are reliably and efficiently eliminated.

- Simple Application
- Reliable eradication
- Effective against all mycoplasms and bacteria
- Not cytotoxic

Roti®-CELL Myco-Free is a reliable, rapidly effective reagent for eradication of contaminations by mycoplasms and other bacteria in cell culture.
The sterile solution Roti®-CELL Myco-Free is composed of a mixture of specially selected antibiotics in PBS, which are known to be highly potent, even in very low concentrations. The effect is due to a specific interaction with prokaryotic protein biosynthesis by inhibition of translation and of the transcription complex located gyrase. Eukaryotic cells are not affected.

One bottle of 100 ml is sufficient for approx. 300 applications.

9830.1	100 ml	plastic	228,45 €

▶ Detailed information on these antibiotics and their application, see page 1479

Amino Acids for Cell Culture

In addition to containing a defined amount of L-glutamine and other essential amino acids, cells in culture media require a series of other amino acids, such as additives to Iscove's Modified Dulbecco Media or nonessential amino acid mixtures to Minimum Essential Media (MEM). Only highly pure reagents tested for the absence of pyrogens/endotoxins can be used for the cell culture.
ROTH offers CELLPURE® grade amino acids with high purity and a guaranteed low endotoxin content.

Product	Purity	Art. No.	Pack Qty	€
L-Alanyl-L-glutamine	≥99 %, CELLPURE®	**6831.1**	5 g	32,15
		6831.2	10 g	45,05
		6831.3	25 g	90,20
		6831.4	100 g	306,40
L-Arginine	≥99 %, CELLPURE®	**1655.1**	25 g	10,65
		1655.2	100 g	26,80
		1655.3	500 g	87,00
L-Arginine monohydrochloride	≥98,5 %, CELLPURE®	**1689.1**	25 g	15,60
		1689.2	100 g	27,45
		1689.3	500 g	90,20
L-Asparagine monohydrate	≥99 %, CELLPURE®	**KK37.1**	50 g	27,45
		KK37.2	250 g	93,45
		KK37.3	500 g	171,90
L-Aspartic acid	≥99 %, CELLPURE®	**1690.1**	25 g	14,95
		1690.2	100 g	26,80
		1690.3	500 g	88,05
L-Cysteine	≥99 %, CELLPURE®	**1693.1**	25 g	27,45
		1693.2	100 g	67,20
		1693.3	500 g	286,95
L-Cysteine hydrochloride monohydrate	≥99 %, CELLPURE®	**1694.1**	25 g	19,25
		1694.2	100 g	43,55
		1694.3	500 g	180,10
L-Cystine	≥98,5 %, CELLPURE®	**1695.1**	25 g	27,85
		1695.2	100 g	71,95
		1695.3	500 g	299,95
L-Glutamine	≥99 %, CELLPURE®	**HN08.1**	25 g	19,90
		HN08.2	100 g	38,20
		HN08.3	500 g	131,05
L-Glutamic acid	≥99 %, CELLPURE®	**1743.1**	25 g	14,95
		1743.2	100 g	23,15
		1743.3	500 g	74,75
L-Glutathione reduced	≥99 %, CELLPURE®	**6832.2**	5 g	36,45
		6832.1	2,5 g	26,35
		6832.3	10 g	56,90
		6832.4	25 g	113,85
Glycine	≥99 %, CELLPURE®	**HN07.1**	100 g	17,10
		HN07.2	500 g	48,30
		HN07.3	1 kg	86,55
L-Histidine	≥99 %, CELLPURE®	**1696.1**	25 g	27,45
		1696.2	100 g	59,05
		1696.3	500 g	241,90
L-Histidine hydrochloride monohydrate	≥99 %, CELLPURE®	**1697.1**	25 g	23,15
		1697.2	100 g	55,40
		1697.3	500 g	222,00
L-Isoleucine	≥99 %, CELLPURE®	**1698.1**	25 g	24,20
		1698.2	100 g	59,05
		1698.3	500 g	235,45
L-Leucine	≥98 %, CELLPURE®	**1699.1**	25 g	19,90
		1699.2	100 g	44,00
		1699.3	500 g	150,00
L-Lysine hydrochloride	≥99 %, CELLPURE®	**1700.1**	25 g	16,05
		1700.2	100 g	29,60
		1700.3	500 g	98,80
L-Lysine monohydrate	≥98,5 %, CELLPURE®	**6829.1**	25 g	50,00
		6829.2	100 g	90,85
		6829.3	250 g	332,20
L-Methionine	≥99 %, CELLPURE®	**1702.1**	25 g	17,75
		1702.2	100 g	36,45
		1702.3	500 g	142,90
L-Ornithine monohydrochloride	≥99 %, CELLPURE®	**1703.1**	25 g	24,20
		1703.2	100 g	55,80
		1703.3	500 g	213,95
L-Phenylalanine	≥99 %, CELLPURE®	**1709.1**	25 g	20,35
		1709.2	100 g	45,70
		1709.3	500 g	177,40
L-Proline	≥98,5 %, CELLPURE®	**1713.1**	25 g	21,40
		1713.2	100 g	45,70
		1713.3	500 g	170,95
Roti®-CELL Glutamine solution	sterile, 200 mM, CELLPURE®	**9183.1**	100 ml	17,75
Roti®-CELL MEM-AA solution NEW	sterile, 50x conc., w/o glutamine, CELLPURE®	**0647.1**	100 ml	23,15
Roti®-CELL MEM-NEAA solution	sterile, 100x conc., 10 mM each, CELLPURE®	**9185.1**	100 ml	17,75
L-Serine	≥99 %, CELLPURE®	**1714.1**	25 g	26,35
		1714.2	100 g	63,35
		1714.3	500 g	256,95
L-Threonine	≥99 %, CELLPURE®	**1738.1**	25 g	19,90
		1738.2	100 g	40,35
		1738.3	500 g	162,90
L-Tryptophan	≥99 %, CELLPURE®	**1739.1**	25 g	30,00
		1739.2	100 g	89,15
		1739.3	500 g	364,45
L-Tyrosine	≥99 %, CELLPURE®	**1741.1**	25 g	24,20
		1741.2	100 g	63,35
		1741.3	500 g	252,65
L-Valine	≥99 %, CELLPURE®	**1742.1**	25 g	21,00
		1742.2	100 g	41,85
		1742.3	500 g	155,90

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Isotope labelled amino acids (SILAC) see page 1558

Carbohydrates for Cell Culture

Product	Purity	Endotoxin content	Art. No.	Pack Qty	€
D(+)-Galactose	≥99 %, CELLPURE®	≤10 E.U./g	**8878.1**	10 g	30,00
			8878.2	25 g	57,95
			8878.3	50 g	105,25
			8878.4	100 g	197,30
D(+)-Glucose	≥99,5 %, CELLPURE® anhydrous	≤1,25 I.U./g	**HN06.1**	250 g	13,90
			HN06.2	500 g	22,50
			HN06.3	1 kg	33,25
			HN06.4	5 kg	107,40
D(+)-Maltose monohydrate	≥97 %, CELLPURE®	≤1,0 E.U./g	**8882.1**	25 g	24,20
			8882.2	100 g	54,30
			8882.3	250 g	91,30
			8882.4	500 g	160,75
D(-)-Mannitol	≥97 %, CELLPURE®	≤2,5 E.U./g	**8883.1**	100 g	25,70
			8883.3	250 g	52,15
			8883.2	500 g	92,35
D(+)-Mannose	≥98 %, CELLPURE®	≤10 E.U./g	**8887.1**	10 g	28,95
			8887.2	25 g	56,90
			8887.3	50 g	99,90
			8887.4	100 g	181,70
Roti®-CELL Glucose solution	sterile, 100 mg/ml, CELLPURE®	getestet	**9155.1**	100 ml	28,50
D(+)-Saccharose	CELLPURE®	≤1,5 E.U./g	**8890.1**	50 g	17,75
			8890.2	100 g	26,80
			8890.3	250 g	50,00
			8890.4	500 g	93,45
D(+)-Trehalose dihydrate	≥98 %, CELLPURE®	≤2,4 E.U./g	**8897.1**	10 g	30,00
			8897.2	25 g	51,10
			8897.3	50 g	81,60
			8897.4	100 g	145,05

For additional product data and safety information, see chapter Chemicals A-Z.

Salts for Cell Culture

Product	Purity	Endotoxin content	Art. No.	Pack Qty	€
Calcium chloride dihydrate	≥99 %, CELLPURE®	≤5,0 I.U./g	**HN04.1**	250 g	16,70
			HN04.2	500 g	27,45
			HN04.3	1 kg	40,75
Magnesium acetate tetrahydrate	≥99 %, CELLPURE®	≤6,0 E.U./g	**HN11.1**	100 g	17,75
			HN11.2	500 g	47,85
			HN11.3	1 kg	79,45
Magnesium chloride hexahydrate	≥99 %, CELLPURE®	≤3,0 I.U./g	**HN03.1**	250 g	20,35
			HN03.2	500 g	30,00
			HN03.3	1 kg	46,15
			HN03.4	2,5 kg	85,90
			HN03.5	5 kg	149,45
Potassium acetate	≥99 %, CELLPURE®	≤6,0 E.U./g	**HN10.1**	250 g	25,70
			HN10.2	500 g	44,00
			HN10.3	1 kg	76,25
			HN10.4	2,5 kg	170,95
Potassium chloride	≥99 %, CELLPURE®	≤3,0 I.U./g	**HN02.1**	250 g	16,70
			HN02.2	500 g	22,05
			HN02.3	1 kg	34,95
			HN02.4	2,5 kg	65,50
		New size	**HN02.7**	25 kg	439,70
Sodium acetate trihydrate	≥99,5 %, CELLPURE®	≤3,0 I.U./g	**HN05.1**	500 g	22,50
			HN05.2	1 kg	36,45
			HN05.3	2,5 kg	69,80
Sodium chloride	≥99,8 %, CELLPURE®	≤5,0 I.U./g	**HN00.1**	500 g	19,90
			HN00.2	1 kg	26,35
			HN00.3	5 kg	88,05
tri-Sodium citrate dihydrate	≥99 %, CELLPURE®	≤6,0 E.U./g	**HN12.1**	250 g	22,50
			HN12.2	500 g	40,35
			HN12.3	1 kg	64,00
			HN12.4	2,5 kg	129,55
Sodium hydrogen carbonate	≥99,5 %, CELLPURE®	≤6,0 I.U./g	**HN01.1**	500 g	15,60
			HN01.2	1 kg	23,55
			HN01.3	5 kg	74,75
Roti®-CELL Bicarbonate solution	sterile, 7,5 %, CELLPURE®	<1,0 E.U./ml	**9165.1**	100 ml	13,45

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Extensive labware for cell culture, see “Laboratory Requirements“ in the front part of this catalogue.

Cell Passage

Roti®-CELL DPBS/EDTA S

CELLPURE® sterile, 0,02 % EDTA (Versene®), w/o Ca/Mg

Balanced salt solution with EDTA for cell culture.

EDTA solution in DPBS

EDTA, a chelator of divalent cations, is used combined with trypsin prior to passaging in order to solubilize adherent cells from the culture vessel surface into suspension. EDTA binds calcium and magnesium which aid in cell-cell adhesion, additionally allowing trypsin to more efficiently hydrolyze specific peptide bonds.
Roti®-CELL DPBS/EDTA may also be used directly without addition of trypsine for very gentle cell dissociation. Versene® is a trade-marked name of EDTA.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9135.1	100 ml	plastic	16,70 €

Roti®-CELL PBS/EDTA S

CELLPURE® sterile, 0,046 % EDTA

Balanced salt solution with EDTA for cell culture.

EDTA solution in PBS

EDTA, a chelator of divalent cations, is used combined with trypsin prior to passaging in order to solubilize adherent cells from the culture vessel surface into suspension. EDTA binds calcium and magnesium which aid in cell-cell adhesion, additionally allowing trypsin to more efficiently hydrolyze specific peptide bonds.
Roti®-CELL PBS/EDTA may also be used directly without addition of trypsine for very gentle cell dissociation.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9152.1	500 ml	plastic	12,40 €

Trypsin TSE-/BSE-free

5000 USP-U/mg, free from salt

Isolated from porcine pancreas, lyophilised.

M ~24,000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H334-H335-H315-H319

A pancreatic serine protease with a specificity for peptide bonds between basic amino acids arginine or lysine and another non-specific amino acid. Trypsin is frequently used to suspend cells which grow as monolayers on surfaces. Longer exposure to trypsin can damage cells, so that an inhibitor (serum or trypsin inhibitor from soya beans) should be added upon completion.
One USP Unit will cause an increase in absorption (253 nm) per minute of 0,003 at 25 °C and pH 7,6 using BAEE as substrate.
One (international) Unit (U, 255 nm, BAEE, pH 8) is approx. 90 USP U.
One TAME Unit is approx. 20 USP Units. One NF Unit is one USP Unit.
Ten „BAEE Units“ are approx. 3,3 USP Units.

Application: pH optimum 7,2-8,5.

2193.1	100 mg	glass	30,00 €
2193.2	500 mg	glass	93,00 €

Please note our **Technical Information Brochure** on the Internet next to the products:

Cell Passage and Use of Trypsin
Background and recommendations for cell passages plus protocol for trypsination

Trypsin

≥2500 USP-U/mg, cryst.

Isolated from porcine pancreas, lyophilised.

M ~24,000 g/mol

Storage temp.: -20 °C

Danger H334-H335-H315-H319

One USP Unit will cause an increase in absorption (253 nm) per minute of 0,003 at 25 °C and pH 7,6 using BAEE as substrate.
One (international) Unit (U, 255 nm, BAEE, pH 8) is approx. 90 USP U.
One TAME Unit is approx. 20 USP Units. One NF Unit is one USP Unit.
Ten „BAEE Units“ are approx. 3,3 USP Units.

5455.1	100 mg	glass	25,70 €
5455.2	1 g	glass	107,40 €

Trypsin inhibitor

≥10000 BAEE U/mg

Made from soybeans. High-activity inhibitor of trypsin, chymotrypsin, and other proteolytic enzymes.

Storage temp.: +4 °C

Trypsin inhibitor inhibits Trypsin with high effiency, and, to a lesser extent, chymotrypsin. Additionally, there is a light inhibiting effect on plasmin, kallikrein, thrombin and a few other proteolytic enzymes.
1 mg of lyophilisate inhibits at minimum 10.000 BAEE Units of trypsin.
Application in cell culture (stock solution 1 mg/ml): Following trypsination, add the same volume inhibitor solution as was used for trypsin. Zentrifuge cells (5 mins, 1000 rpm), and remove supernatant. Resuspend cells in medium and cultivate further.

Application:
Stock solution: 1-10 mg/ml in H_2O, PBS or other phosphate-buffers.
Solutions of higher concentration may be hazy and slightly yellow-coloured.
Storage of stock solution: in aliquots at -20 °C.
Recommended end concentration: 1-100 µg/ml.
pH optimum: pH 7.6 - 8.0.

2949.1	25 mg	plastic	31,75 €
2949.2	100 mg	plastic	81,20 €
2949.3	250 mg	plastic	166,65 €
2949.4	500 mg	plastic	284,90 €
2949.5	1 g	plastic	478,40 €

Trypsin inhibitor

salt free ≥7000 BAEE U/mg

Made from soybeans. Inhibition of trypsin, chymotrypsin, plasmin, kallikrein, thrombin and other proteolytic enzymes; free from salt.

Storage temp.: -20 °C • Transport temp.: room temp.

Application:
Stock solution: 10 mg/ml in H_2O or PBS.
Storage of stock solution: in aliquots at -20 °C.
Recommended end concentration: 2-100 µg/ml.

5279.1	100 mg		glass	19,25 €
5279.4	250 mg		glass	37,55 €
5279.5	500 mg		glass	66,15 €
5279.2	1 g		glass	115,60 €
5279.3	5 g	BIG PACK	glass	482,70 €

Cell Isolation

Ficoll® 400

for molecular biology and biochemistry

For density gradient centrifugation; ingredient of gel loading buffers.
Non-ionic polymer of saccharose.

M ~400 000 g/mol

Ficoll® 400 is a hydrophilic copolymer of saccharose and epichlorohydrin, that readily solubilises in water and aqueous solutions. It may be solubilised at concentrations of up to 50 %, and is mainly used in the following applications:
A) In hybridisation buffer acc. to Denhardt, Ficoll® 400 reduces non specific binding of labelled DNA to the filter membrane.
B) In gel loading buffer it supports DNA application to agarose gels by increasing the density of the sample.
C) In continuous or discontinuous density gradients, Ficoll® 400 is used as matrix for fractioning of cells (e.g. lymphocytes) or sub-cellular particles, also taking advantage of its ability to stabilise membrane-coupled components and the functional as well as the morphological integrity of cells.
Autoclavable at neutral pH.

CN90.1	10 g	plastic	41,40 €
CN90.2	25 g	plastic	87,00 €
CN90.3	100 g	plastic	279,40 €

Polysucrose 400

BioScience-Grade, for molecular biology and biochemistry

For density gradient centrifugation during cell separation and isolation of cell organelles.

Sucrose polymer, Sucrose-epichlorhydrin copolymer

$(C_{12}H_{22}O_{11})_n$ x $(C_3H_5ClO)_n$

M 450000 ±100000 g/mol

Storage temp.: +20 °C

Nonionic, synthetic copolymer from sucrose and epichlorohydrin. Ficoll® derivative. Solution of polysucrose 400 is used for separation of blood cells (mono nuclear cells, granulocytes, erythrocytes) via density gradient centrifugation, and for isolation of mononuclear cells from whole blood. Also well applicable for isolation of islets of Langerhans from pancreatic issue.
May be used as direct replacement for Ficoll® in common protocols.

4668.1	10 g	plastic	28,95 €
4668.2	25 g	plastic	65,50 €
4668.3	100 g	plastic	221,35 €

Roti®fair BSC

for cell biology

Buffer solution for isolation of blood cells.

BSC buffer powder (pouch), Buffered Sodium Citrate

Exactly pre-weighed pouches for convenient and rapid preparation of BSC solution.
Prepared solution may be sterilized by filtration (0,22 µm).
For long-term storage, buffer solution should be kept at +4 °C.
0,109 M BSC solution is prepared by dissolution of 1 pouch in 100 ml or 1000 ml highly pure water, respectively.

Formulation:

Prepared BSC solution contains: 0,109 M (3,2 %) buffered Na-citrate, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

for 100 ml pouch

1011.1	10 pouches	box	91,30 €

for 1000 ml pouch

1026.1	5 pouches	box	140,30 €

Roti®fair 0.5 M EDTA

for 500 ml/pouch, for applications in Life Science in general

For preparation of bioanalytical solutions, anticoagulant.

EDTA powder (pouch), Ethylenediamine tetraacetic acid

Warning H332-H373

Exactly pre-weighed pouches for convenient and rapid preparation of EDTA solution.
Prepared solution may be sterilized by filtration (0,22 µm). For long-term storage, solution may be kept at +4 °C or room temperature.
0,5 M EDTA solution is prepared by dissolution of 1 pouch in 500 ml highly pure water.

Formulation:

Prepared solution contains: 0,5 M EDTA, pH value 8,0 ±0,05, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

1031.1	5 pouches	box	261,15 €

Roti®-Sep 1077 human

ready-to-use S

CELLPURE® sterile, for density gradient centrifugation

Polysucrose based medium for separation of lymphocytes from whole blood.

Polysucrose solution, lymphocyte separation medium

M ~400000 g/mol

Storage temp.: +4 °C

Danger H317-H334

Ready-to-use and sterile. Separation medium based on polysucrose 400, for efficient isolation of lymphocytes by density gradient centrifugation. Density 1.077 g/ml. Best alternative to Ficoll®.

- Produces distinct, compact layers
- Results in high recovery rates of viable cells
- Maintains the representative ratio of B- to T lymphocytes
- May be directly applied to all protocols using Ficoll®

Roti®-Sep 1077 human excels due to the superior separation power, forming very distinct, easy to pipet, lymphocyte layers during centrifugation. The ready to use solution is very easy in handling, resulting in high cell recovery rates, while cell viability and the representative ration of B- to T lymphocytes are maintained. Osmolality as well as pH value are strictly kept in the physio-logical range.
Suitable for application with human peripheral blood. In all respective protocols originally using Ficoll® this reagent may be replaced by Roti®-Sep 1077 human without any adjustment.

The **figure** depicts two specimens prepared with heparinic blood obtained from venous puncture. Density gradient centrifugation of 6 ml diluted whole blood (dilution in PBS 1:1.5), with 3 ml of Roti®-Sep 1077 human, 10 mins., 1000 g, no break. Recommended long-term storage at approx. 4 °C. Short-term storage at ambient temperature possible. Store protected from light.

Type analysis:

Appearance of solution	clear, colourless
Density	1,077 ± 0,001 g/ml
pH value	7,15±0,35
Osmolality	315 ±25 mOsm/kg
Sterility	complies
Endotoxins	<0,5 E.U./ml
Suitability for cell cultur	complies

0642.1	100 ml	plastic	44,00 €
0642.2	500 ml	plastic	117,75 €

Instructions for use
can be found on the Internet next to the product description.

Roti®-Sep 1077 human/tube

NEW ready-to-use S

CELLPURE® sterile, for density gradient centrifugation

Polysucrose based medium for separation of lymphocytes from human whole blood. Prefilled in centrifugation tubes, 50 ml each.

Polysucrose solution, lymphocyte separation medium

M ~400000 g/mol

Storage temp.: +4 °C

Ready-to-use and sterile. Separation medium based on polysucrose 400, for efficient isolation of lymphocytes from human blood by density gradient centrifugation. Density 1,077 g/ml. Best alternative to Ficoll®.

- Optimised for isolation of lymphocytes from non-coagulated human whole blood
- Produces distinct, compact layers
- Results in high recovery rates of viable cells
- Maintains the representative ratio of B- to T lymphocytes
- May be directly applied to all protocols using Ficoll®

Roti®-Sep 1077 human/tube excels due to the superior separation power, forming very distinct, easy to pipet, lymphocyte layers during centrifugation. The ready to use solution is very easy in handling, resulting in high cell recovery rates, while cell viability and the representative ration of B- to Tlymphocytes are maintained. Osmolality as well as pH value are strictly kept in the physiological range.
Suitable for application with non-coagulated peripheral whole blood from human. In all respective protocols originally using Ficoll® this reagent may be replaced by Roti®-Sep 1077 human/tube without any adjustment.
Recommended long-term storage at approx. 4 °C. Short-term storage at ambient temperature possible. Store protected from light.
For PBMC isolation from human blood.

Type analysis:

Appearance of solution	clear, colourless
Density	1,077±0,001 g/ml
pH value	7,15±0,35
Osmolality	315±25 mOsm/kg
Endotoxins	tested
Sterility	complies

0634.1	25 x 50 ml	cardboard	397,75 €

Roti®-Sep 1077 animal

NEW ready-to-use S

CELLPURE® sterile, for density gradient centrifugation

Polysucrose based medium for separation of lymphocytes from mammalian whole blood.

Polysucrose solution, lymphocyte separation medium

M ~400000 g/mol

Storage temp.: +4 °C

Ready-to-use and sterile. Separation medium based on polysucrose 400, for efficient isolation of lymphocytes from mammalian blood by density gradient centrifugation. Density 1,077 g/ml. Best alternative to Ficoll®.

- Optimised for isolation of lymphocytes from non-coagulated mammalian whole blood
- Produces distinct, compact layers
- Results in high recovery rates of viable cells
- Maintains the representative ratio of B- to T lymphocytes
- May be directly applied to all protocols using Ficoll®

Suitable for application with non-coagulated peripheral whole blood from all mammals. In all respective protocols originally using Ficoll® this reagent may be replaced by Roti®-Sep 1077 animal without any adjustment.
Recommended long-term storage at approx. 4 °C. Short-term storage at ambient temperature possible. Store protected from light.
For PBMC isolation from mammalian blood.

Type analysis:

Appearance of solution	clear, colourless
Density	1,077±0,001 g/ml
pH value	7,1±0,5
Osmolality	265±10 mOsm/kg
Sterility	complies

0622.1	100 ml	plastic	44,65 €
0622.2	500 ml	plastic	121,50 €

Roti®-Sep 1086 mouse

NEW ready-to-use S

CELLPURE® sterile, for density gradient centrifugation

Polysucrose based medium for separation of lymphocytes from mouse whole blood.

Polysucrose solution, lymphocyte separation medium

M ~400000 g/mol

Storage temp.: +4 °C

Ready-to-use and sterile. Separation medium based on polysucrose 400, for efficient isolation of lymphocytes from murine blood by density gradient centrifugation. Density 1,086 g/ml. Best alternative to Ficoll®.

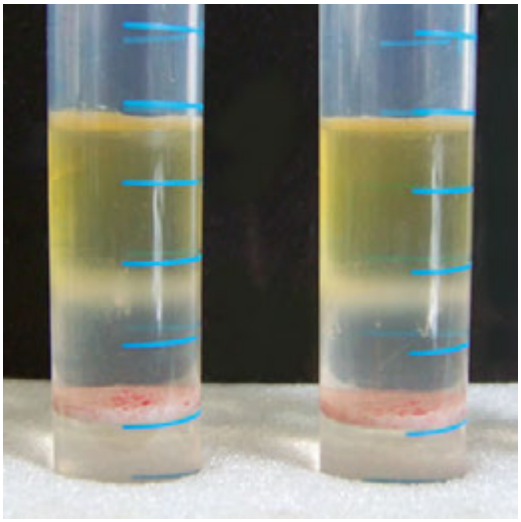
- Optimised for isolation of lymphocytes from non-coagulated mouse whole blood
- Produces distinct, compact layers
- Results in high recovery rates of viable cells
- Maintains the representative ratio of B- to T lymphocytes
- May be directly applied to all protocols using Ficoll®

Suitable for application with non-coagulated peripheral whole blood from mouse. In all respective protocols originally using Ficoll® this reagent may be replaced by Roti®-Sep 1086 mouse without any adjustment.
Recommended long-term storage at approx. 4 °C. Short-term storage at ambient temperature possible. Store protected from light.
For PBMC isolation from mouse blood.

Type analysis:

Appearance of solution	clear, colourless
Density	1,086±0,001 g/ml
pH value	7,0±0,5
Osmolality	285±15 mOsm/kg
Sterility	complies

0624.1	100 ml	plastic	46,80 €
0624.2	500 ml	plastic	137,60 €



▶ Centrifuge tubes see chapter “Laboratory Glass, Vessels, Consumables“ in the front part of this catalogue.

Transfection

DOTAP ready-to-use

for transfection, CELLPURE®

$C_{43}H_{83}NO_8S$
M 774,21 g/mol
Storage temp.: +4 °C

Puritiy, QC: Controlled by TLC, NMR, standard transfection test with HeLa-, CV-1-cells. At least 99 %.
Stability: Minimum shelf-life 6 month at +4 °C.
Culture media: Suitable for whole and serum-free media.
Formulation: Transfection reagent DOTAP is an aqueous liposome formulation of N-[1-(2,3-**Dio**leoyloxy)]-N,N,N-**t**rimethyl**a**mmonium **p**ropane methyl sulphate with a concentration of 1 mg/ml.

Successfully tested with the following cell types:
A375-C6, A549, B6.NOS, Balb/3T3, BalbSV, BHK, BNL CL.2, C2, C6, CaShi, CCRF-CEM/VLB, CHO, COS-1, COS-7, CV-1, D-17, DTM, EL-4, Fibroblasts, GSM06, H225, HEL, HeLa, Hepa 1-6, HepG2, HMEC-1, Hippocampal neurons, Huh7, I-3, I10, JEG-3, Jurkat, LH, Ltk, Lymphocytes, PBL, M17, MC57, MCF-7, MDA-MB-435, MEC-J, MH1C1, mhAT3F, mhAT3F, NG 108-15, NIH/3T3, PXF 1118, RASM, REF-1, Ret-1, ROS 17/2.8, SCC-13, SK-BR-3, Smooth muscle cells, ST33c, T2-Kb, U87, Vero, WI-38, Y1, *et al.*

Approx. 200 assays per ml in 24wells.

L787.1	0,5 ml	plastic	81,20 €
L787.2	1 ml	plastic	130,65 €
L787.3	5 x 1 ml	plastic	478,40 €

DEAE Dextran

for biochemistry

Transfection reagent
Diethylaminoethyldextran
M ~500000 g/mol

DEAE is the oldest transfection reagent known. The method of complexation of plasmid DNA with diethylaminoethyldextran has been published in 1968 by McCutchan. Positively charged DEAE binds negatively charged DNA to aggregates, which then bind to negtively charged surface structures of cell membranes. Uptake is done via endocytosis. This DEAE method needs only little amounts of DNA, while resulting in high transfection efficiency of up to 30 %. However, the cytotoxic effects caused by DEAE allow only transient transfections. The following cell lines are well transfectable: CV-1, BSC-1 and COS cells, and other stabile, insensitive cell lines.
Stock solution: 50 mg/ml in H_2O. Autoclave.
End concentration: 1 mg/ml (transfection for 30-90 min.) or 250 µg/ml (transfection for up to 8 h)

4198.1	25 g	plastic	57,95 €
4198.2	100 g	plastic	183,30 €

Roti®-Fect RNAi Kit ready-to-use

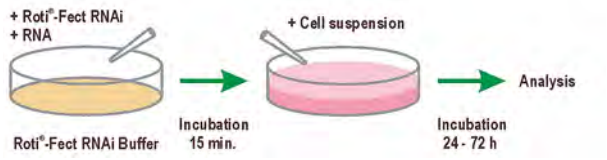
for transfection, CELLPURE®

Reagent for transfection of mammalian cells with siRNA and miRNA, for efficient gene silencing.
Storage temp.: -20 °C • Transport temp.: room temp.

- Optimised RNA release into the cytosol
- High levels of gene silencing with low RNA concentration
- Efficient knockdown after 48 hours already
- No elaborate optimisation necessary
- Very low cell toxicity
- Suitable for cell lines and primary cells
- Straightforward, efficient protocol for whole medium included

New, powerful transfection reagent for liposoma mediated siRNA and miRNA transfection of all mammalian cells in culture. Liposoma formulation and enclosed buffer were specially established and designed for core parameters of RNAi: Most efficient quantitative endocytosis plus release of nucleic acids into the cytosol, without subsequent transport to the nucleus. Roti®-Fect RNAi provides you with superior knockdown results, even using low amounts of RNA.
Hereby, the Roti®-Fect technology guarantees minimisation of toxic effects during transfection, thus making these reagents suitable for very sensitive cell lines of primary cells. The detailed instruction-for-use contains a standardised transfection protocol working via a definite RNA/liposoma ratio and providing good results starting with the very first assay - making elaborate optimisations of transfection obsolete. Evaluation of results is often possible after 48 hours, enabling two sequential assays per week.

Successfully tested with the following cell types:
Primary cells: MCS, M1
Cell lines: A549, 3T3-L1, B16F10, CHO-K1, H441, HT1080, HeLa, HeLa-KB, HepG2



The set contains:
0.2 and 1 ml, respectively, Roti®-Fect RNAi liposoma formulation (Art. No. 2911, may not be bought separately), and 0.4 and 2 ml, respectively, Roti®-Fect RNAi buffer (Art. No. 2913). Roti®-Fect RNAi buffer may be bought separately.

Approx. 250 assays per ml in 24wells. Dependend on the cell line used.

3129.1	1 mini set	plastic	107,00 €
3129.2	1 set	plastic	375,20 €

▶ Further details and figures on the Roti®-Fect transfection reagents online at www.carlroth.com / Life Science / Cell Biology / Transfection!

Roti®-Fect Plus ready-to-use

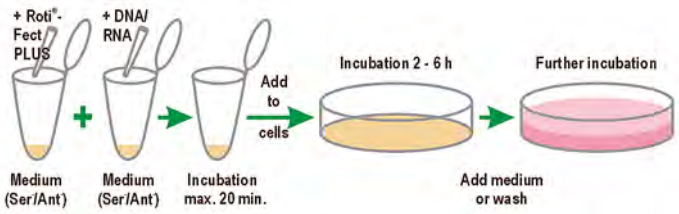
for transfection, CELLPURE®

Reagent for transfection of all eukaryotic cells in culture, particularly suited for hard-to-transfect cell lines.
Storage temp.: +4 °C

- Particularly low cell toxicity
- Superior transfection efficiency with all cell lines
- Especially recommended for hard-to-transfect cell lines
- Particularly suited for use with primary cells
- Excellent reproducibility
- No serum inhibition

Highly sophisticated transfection reagent for liposoma mediated transfection of eukaryotic cell lines and primary cells in culture. Roti®-Fect PLUS further reduces the toxic effects of transfection, making it a versatile tool for transfection of sensitive cell lines or primary cells.
Based on this, Roti®-Fect PLUS is also especially recommended for transfection prior to *in vivo* analyses (siRNA-Assays, *in vivo* life microscopy, etc.), since the transfection stress is minimized, reducing stress-dependent effects like the rate of apoptosis-induced cells. Additionally, the stability of nucleic acid/lipid complexes is diminished in comparison with Roti®-Fect, therefore improving the release of nucleic acids in the cell.
Thus, the newly established liposoma formulation of Roti®-Fect PLUS guarantees gentle and highly efficient transfections, even when hard-to-transfect or particularly sensitive cell lines are handled.

Successfully tested with the following cell types:
siRNA: 1BR3, HEK293, HeLa, LN-308, T98G. U87MG, UACC-257
Primary cells: 1BR3, 8VM, CGN, HMEC, HUVEC, PBMC, S15VM
Cell lines: 1BRneo, 143B, 293T, NSCLC, alphaTC1, B16-F10, BHK-21, C2C12, C6, CHO, CHO-K1, Colo205, COS-7, EVLC2, HaCaT, HAEC, HCT116, HEK293, HeLa, HepG2, Hep 3B, IMR32, Jurkat, Kelly, KG1, La1-5S, LN-308, M2-10B4, MDCK, MEF, MG-63, MIN6, MLEC32, mPAC, mpkCCD, N18TG2, N2a, N-Tera2, NG NIH-3T3, Panc-1, PC 12, Phi-NX, Raji, RAW264.7, RD, RF24, RGE, S2, S91, SMA-560, SK-N-BE, SW480, T98G, U-2 OS, Vero, *et al.*



Approx. 500 assays per ml in 24wells. Dependent on the cell line used.

CL21.1	0,2 ml	plastic	95,60 €
CL21.2	1 ml	plastic	353,70 €

Roti®-Fect ready-to-use

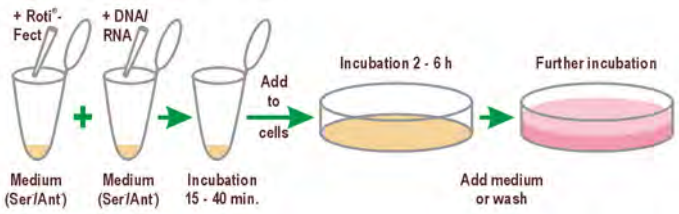
for transfection, CELLPURE®

Reagent for liposoma-mediated transfection of eukaryotic cells.
Storage temp.: +4 °C

- Highly efficient reproduction of DNA in mammal cells
- Excellent reproducibility
- High and wide operating plateau
- No inhibition through serum
- Low cell toxicity
- Successful with different cell lines
- Excellent transfection results

Roti®-Fect is a liposome formulation of a polycationic lipid in combination with a neutral colipid. Compared to monocationic lipid formulations, Roti®-Fect has a higher efficiency with lower levels being required.
Its excellent reproducibility in combination with its high level of efficiency reduced optimisation work to a minimum. Because of its low toxicity, a wide range of cell lines can be transfected efficiently. An efficient triple-cotransfection using Roti®-Fect is described in Ufartes, Schlüter, Kaulfuss and Seipp (2005) *Biospektrum* 4: 464-5.

Successfully tested with the following cell types:
siRNA: CEM, COS-7, ES-D3,HeLa, HL60, LNCaP, OVCAR3, PC3, SW620
Primary cells: pAML, pHDF, pMEF, pRHC, pSMC
Cell lines: 143B, 293-T, A-293, A-431, AM-C6SC8, BHK, BV-2, C2C12, C6, CHO, CHO-DHFR, COS-1, COS-7, CRFK, Colo-205, DU-145, ECV-304, EMC, F98 (glioma), GD25-ß1, HBL 100, HCT-116, HCT-15, HEK293, HeLa, HeLa-S3, Hep-3B, Hep-G2, HOSE, HSG, HT-22, HT-29, HUVEC, JURKAT, LLC-PK1, LS174T, LoVo, MCF-7, MDCK, MeWo, MV3, NIH-3T3, NS20Y, OK, P815, PC3, PT-11, Rcho-1, SAOS, SH-SY5Y, SK-MEL-28, SKOV-3, SM10, SW-480, THP-1, tsA201, U87 (glioma), Vero 76, *et al.*



Approx. 400 assays per ml in 24wells. Dependent on the cell line used.

P001.1	0,2 ml	plastic	73,00 €
P001.2	0,5 ml	plastic	163,30 €
P001.3	1 ml	plastic	255,75 €
P001.4	5 x 1 ml	plastic	1106,20 €

Instructions for use
can be found on the Internet next to the product description.

Roti®-Insectofect ready-to-use

for transfection, CELLPURE®

For transfection of insect cells in culture.

Storage temp.: +4 °C

- No serum inhibition
- Superior transfection efficiency
- High and wide operating plateau
- Excellent reproducibility
- Very low cell toxicity
- Quick and easy handling

Recombinant proteins at a large scale can be manufactured under simple conditions in insect cell cultures with the non-human pathogenic baculovirus system and a simple scale-up procedure. Roti®-Insectofect enables best transfection results with a wide spectrum of activity and very low toxicity.
Roti®-Insectofect consists of an aqueous solution of polycationic lipids and was specially developed for liposome-mediated transfection of insect cells. Because of its special formulation, it has a much higher efficiency than standard transfectants, such as calcium-phosphate or DEAE.

Successfully tested with the following cell types:
Ag55, Anso, As43, Bm5, Cpp512, IPLB-SF21, LD652, Mos-20, S2, SF9, SL2.

Approx. 1000 assays per ml in 24wells.

AE29.1	0,5 ml	plastic	139,25 €
AE29.2	1 ml	plastic	212,35 €

Roti®fair HBS

for 500 ml/tablet, for biochemistry and cell biology

General buffer base and for calcium phosphate mediated transfection.

HEPES Buffered Saline (tablets)

Exactly pre-weighed tablets for convenient and rapid preparation of HEPES Buffered Saline solution (HBS).
Prepared solution may be sterilized by filtration (0,22 µm).
For storage, buffer solution has to be kept at -20 °C.
1x HBS solution is prepared by dissolution of 1 tablet in 500 ml highly pure water.

Composition:
Prepared 1x HBS solution contains: 10 mM HEPES, 0,15 M NaCl, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1033.1	12 tablets	blister	64,40 €
1033.2	100 tablets	plastic	274,05 €

Cell Analysis
Vitality Assay & Cell Counting

Neutral red (C.I. 50040)

p.a.

Indicator pH 6,8-8,0

Toluylene red

Water-soluble vital staining dye.

T122.2	1 g	glass	22,05 €
T122.1	10 g	glass	55,80 €
T122.3	25 g	glass	110,65 €

LOEFFLER's methylene blue solution

for microscopy and cell counting

Methylene blue solution 0,5 %

Warning H371

LÖFFLER'S methylene blue solution is used for staining bacteria, fungi and blood parasites in blood smears, e.g. together with carbolic fuchsine solution (Art. No. A130) for Ziehl-Neelsen staining (detection of TB bacteria). Furthermore, it is used as a vital staining agent for selective staining of nuclei during counting of eukaryotic cells.

AE64.1	500 ml	glass	25,30 €
AE64.2	1 l	glass	31,75 €
Original pack 6 x 1 l			30,16/1 l
AE64.3	2,5 l	plastic	65,50 €
Original pack 4 x 2,5 l			62,23/2,5 l

Trypan blue solution 0,4 % NEW ready-to-use

for cell culture and microscopy

For detection of dead cells during vital staining.

Storage temp.: +20 °C • Transport temp.: 5-45 °C

Danger H350

As an anionic azo dye trypan blue binds to the cell proteins. Since it is not membrane-permeable, it only stains dead cells. It is commonly used in a 0,4 % aqueous solution to determine the vitality of cells. The solution is sterile-filtered and durable for a period of two years.

1680.1	100 ml	plastic	32,15 €

Trypan blue (C.I. 23850)

for microscopy and cell staining

For vital and histological staining.

Benzamine blue, Tolidin-diazo-bis-8-amino-1-naphthol-3,6-disulphonic acid tetrasodium salt

Danger H350

CN76.1	10 g	glass	24,20 €
CN76.2	25 g	glass	43,55 €
CN76.3	50 g	glass	78,40 €

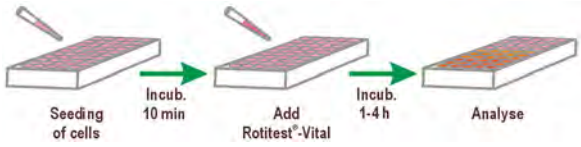
Rotitest® Vital ready-to-use S

Rotitest® Bio Analysis

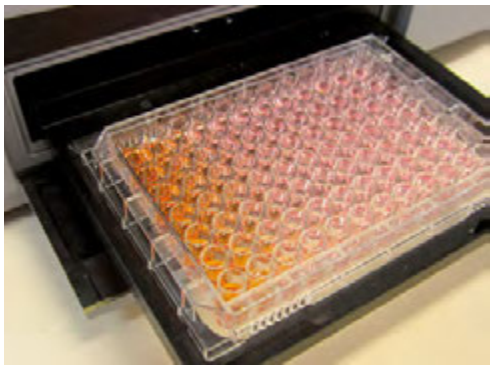
Colorimetric test solution for evaluation of cell proliferation and -viability.
Non-cytotoxic cell proliferation test solution.
Storage temp.: +4 °C

- **Perfectly supersedes MTT**
- Cells keep on being vital
- Most simple handling
- One-component-system without radioactivity
- For adherent and suspension cells
- Photometric result in 1 to 4 hours
- Strong correlation between absorbance and cell number
- Suitable for every culture media

Rapid and simple test system for non-radioactive quantitation of proliferating cells. Also well suitable for cytotoxicity assays.
In all living cells, NADH and NADPH are formed by the respiratory chain. Roti®-Test vital is based on the (colourless) WST-8, which functions as acceptor for the NADH/NADPH dehydrogenase while being reduced to (coloured) formazane during the process.
The test solution is added directly to the cultivated cells in 96wells. During incubation for few hours, a water-soluble formazan dye is produced by viable cells, and is released into the surrounding medium. The resulting orange colour is measured photometrically (approx. 450 nm). Also suitable for culture media containing phenol red.



Sensitivity of the tetrazolium salt used is higher than that known for standard reagents such as MTT, XTT, MTS, or WST-1. Results were shown to be of highly stringent correlation with [^{3}H]-thymidine incorporation assays, therefore representing viability as well as proliferation status of the cells (Tominaga *et al.*, *Anal. Commun.* 1999 (36) 47-50).



Example of use.

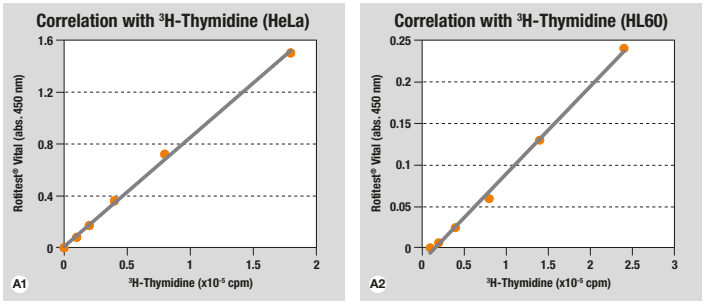


Fig. A: Correlation of cell counting results achieved with Rotitest® Vital (10 µl/well) and ^{3}H-Thymidine (37 KBq/well). HeLa (1, in DMEM) and HL60 cells (2, in MEM).

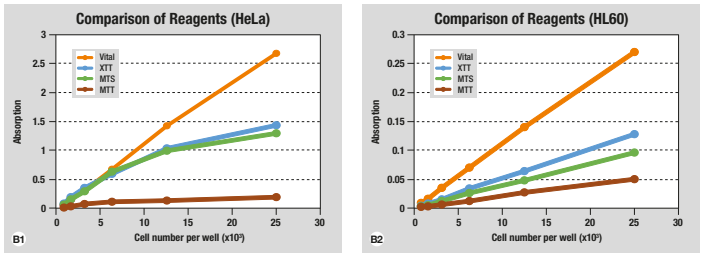


Fig. B: Comparison of cell counting results using Rotitest® Vital (10 µl/well) and other cell counting reagents. Photometrical measurement at 450 nm (Rotitest® Vital, XTT), 490 nm (MTS), and 570 nm (MTT).
HeLa (1, in DMEM) and HL60 cells (2, in MEM).

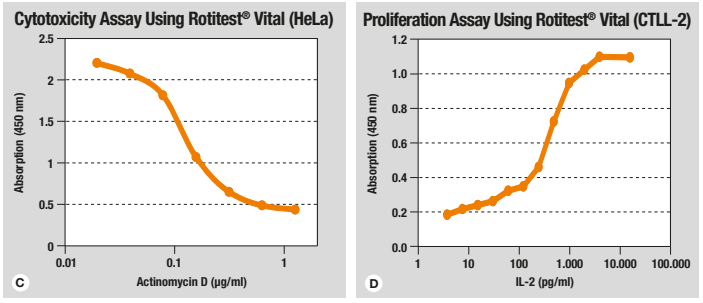


Fig. C: Measurement of cytotoxic effects of actinomycin D (exposition 24 h) on HeLa cells (in DMEM), assayed with Rotitest® Vital (10 µl/well).

Fig. D: Proliferation assay on CTLL-2 cells (in RPMI) under influence of humane IL-2 (exposition 72 h), using Rotitest® Vital (10 µl/well).

Each package contains simple-to-follow instructions-for-use.
Stabile at ambient temperature. Very stabile when being cooled.
Store at +4 °C protected from light. Do not freeze.

1 ml is sufficient for enumeration of 100 cell samples.

0069.3	1 ml	plastic	63,35 €
0069.1	5 ml	plastic	177,40 €
0069.2	4 x 5 ml	plastic	532,15 €

Instructions for use
can be found on the Internet next to the product description.

Proliferation Assays

Our ROTI®Kits for EdU mediated detection of cell proliferation provide a superior alternative to time-consuming and less sensitive bromodeoxyuridine (BrdU) assays. Similar to BrdU assays, our assays utilise a uracil derivative (in this case ethynyldeoxyuridine, EdU) which is incorporated into the replicating DNA. EdU is not detected via antibodies; instead fluorescent dyes are coupled directly via click reaction. This fast and elegant approach allows for direct labelling of replicating DNA with the desired fluorescent dye. Thus, the assay is perfectly adaptable to the present facilities and to the assay situation (e.g. for double or triple detection). Furthermore, the click reaction is highly selective and therefore prevents any unspecific labelling. The protocol includes only few steps and decreases the total amount of time.

- Highly reliable
- Easy to perform
- Fast detection procedure (only 30 min)
- Mild conditions (no DNA denaturation required)
- Modular system due to click chemistry
- Compatible with various dyes and readouts
- Compatible with multiplexing
- No cytotoxicity up to 1 mM EdU

ROTI®kits for Imaging

ready-to-use

For fast and simple detection of cell proliferation through fluorescence microscopy.

Storage temp.: see below, -20 °C/+4 °C • Transport temp.: cooled

Warning H315-H319-H400-H410

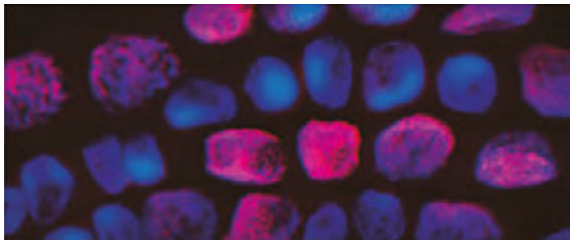


Figure: Proliferating tissue of barley meristem labelled via EdU Click-555 kit (Art. No. 7775.1). Dividing cells incorporated EdU and were labelled via click reaction with TAMRA (pink stained cells). Nuclei were counterstained with DAPI (blue). Magnification: 100x; Filterset: Sp. Aqua HC mFISH; Sp. Green HC mFISH.

The number at the end of the product name specifies the wavelength at which the included fluorescent marker is optimally excited.

For 100 Assays.

Components:

EdU. ..... 5 mg
Azide (10 mM in DMSO). ..... 130 µl
Buffer Additive. ..... 4 x 200 mg
DMSO. ..... 2 x 2 ml
Catalyst Solution. ..... 2 x 2 ml
Reaction Buffer. ..... 4 x 2 ml
Store at -20 °C (EdU, Azide, Buffer Additive); +4 °C (DMSO, Catalyst Solution, Reaction Buffer)

Product	Marker	λ (nm)	Art. No.	Pack Qty	€
EdU Click-488	6-FAM	488	**7773.1**	1 kit	375,20
EdU Click-555	5-TAMRA	555	**7775.1**	1 kit	375,20
EdU Click-594	5/6 Sulforhodamine	594	**7776.1**	1 kit	375,20
EdU Click-647	Eterneon Red	647	**7777.1**	1 kit	375,20

For additional product data and safety information, see chapter Chemicals A-Z.

ROTI®kits for Flow Cytometry

ready-to-use

Kit for detection of cell proliferation through Flow Cytometry.

Storage temp.: +4 °C • Transport temp.: cooled

H411-EUH208

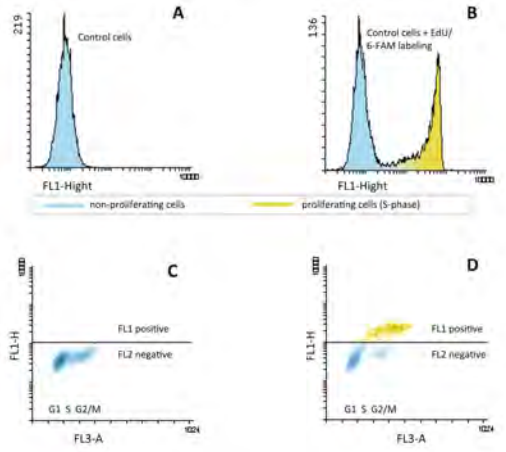


Figure: HeLa cells, treated without (A) and with (B) 10µM EdU for 2 h. Click reaction was performed using 6-FAM-Azide. A: negative control, cells without EdU incorporation. B: non-proliferating cells without EdU incorporation (blue coloured left peak) and proliferating cells (S-phase) having incorporated EdU and are labeled with 6-FAM Azide (green coloured right peak). Density blots of PI stained samples without (C) and with (D) EdU incubation and followed click reaction. The y-axis presents the FL1-Fluorescence intensity and the x-axis the content of DNA measured with FL3-area. Cell cycle phases are indicated as G1, S and G2/M phase.

The number at the end of the product name specifies the wavelength at which the included fluorescent marker is optimally excited.

For 50 assays.

Components:

EdU. ..... 10 mg
Azide (10 mM in DMSO). ..... 130 µl
DMSO. ..... 5 ml
Fixative Solution. ..... 5 ml
Saponin Reagent. ..... 50 ml
Catalyst Solution. ..... 2 ml
Buffer Additive. ..... 400 mg

Product	Marker	λ (nm)	Art. No.	Pack Qty.	€
EdU Click FC-488	6-FAM	488	**7779.1**	1 kit	385,95
EdU Click FC-555	5-TAMRA	555	**7780.1**	1 kit	385,95
EdU Click FC-594	5/6 Sulforhodamine	594	**7781.1**	1 kit	385,95
EdU Click FC-647	Eterneon Red	647	**7783.1**	1 kit	385,95

For additional product data and safety information, see chapter Chemicals A-Z.

ROTI®kits for High Troughput Screening

For fast and specific detection of cell proliferation in High Throughput Screening.

Storage temp.: see below, room temp./+4 °C • Transport temp.: cooled

Warning H315-H319-H411-EUH031

ready-to-use

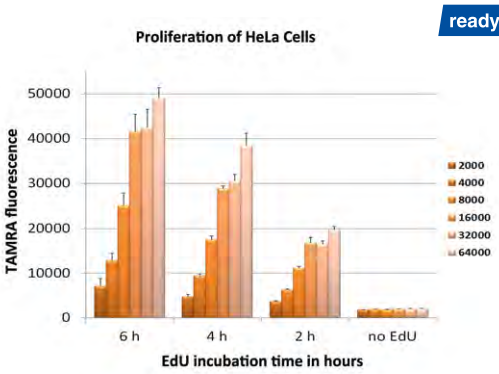


Figure: HeLa cells incubated without and with 10 µM EdU for 2, 4 or 6 h in 96 well plate. EdU incorporation was detected over time and for different cell numbers using a fluorescence plate reader.
Control: Without EdU no fluorescence was detected after 6 h incubation time.

The number at the end of the product name specifies the wavelength at which the included fluorescent marker is optimally excited.

Components:

20x EdU. ..... 2 ml
Azide (10 mM in DMSO). ..... 130 µl
Reaction Buffer. ..... 10 ml
Catalyst Solution. ..... 1 ml
Buffer Additive ..... 200 mg
Rinse Buffer. ..... 6 ml
Store at +4 °C (20x EdU, Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)

Product	Marker	λ (nm)	Application	Art. No.	Pack Qty.	€
EdU Click HTS 2-488	6-FAM	488	For 200 reactions or 2 x 96 well plates.	**7786.1**	1 kit	218,15
EdU Click HTS 4-488	6-FAM	488	For 400 reactions or 4 x 96 well plates.	**7787.1**	1 kit	332,20
EdU Click HTS 20-488	6-FAM	488	For 2000 reactions or 20 x 96 well plates.	**7788.1**	1 kit	1095,45
EdU Click HTS 2-555	5-TAMRA	555	For 200 reactions or 2 x 96 well plates.	**7789.1**	1 kit	218,15
EdU Click HTS 4-555	5-TAMRA	555	For 400 reactions or 4 x 96 well plates.	**7791.1**	1 kit	332,20
EdU Click HTS 20-555	5-TAMRA	555	For 2000 reactions or 20 x 96 well plates.	**7792.1**	1 kit	1095,45

Instructions for use
can be found on the Internet next to the product description.

Roti®fair PBS 7.4

for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

PBS (tablet), Phosphate buffered saline

Exactly pre-weighed tablets for convenient and rapid preparation of PBS solution.
Among biological buffers, PBS is the one most commonly used. Due to its isotonic and non-toxic nature, PBS is suitable for applications in cell culture as well as in biochemistry and molecular biology. PBS is frequently used for sample dilution and as base solution in immunochemical processes.
Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving.
For long-term storage, buffer solution should be kept at +4 °C.
1x PBS solution is prepared by dissolution of 1 tablet in highly pure water.

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

For 100 ml/tablet

1107.1	100 tablets	plastic	58,60 €

For 200 ml/tablet

1108.1	100 tablets	plastic	97,75 €

For 500 ml/tablet

1111.1	12 tablets	blister	51,50 €
1111.2	100 tablets	plastic	206,95 €

For 1000 ml/tablet

1112.1	10 tablets	blister	75,80 €
1112.2	100 tablets	plastic	364,45 €

Roti®fair PBS 7.2

for 1000 ml/tablet, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

PBS (tablet), Phosphate buffered saline

Exactly pre-weighed tablets for convenient and rapid preparation of PBS solution.
1x PBS solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water.

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,2 ±0,05, when prepared in deionized or distilled water.

1106.1	10 tablets	blister	76,90 €
1106.2	100 tablets	plastic	368,20 €

BrdU

5-Bromo-2'-deoxyuridine

≥99 %, for biochemistry

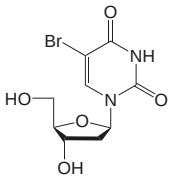
BrdU

$C_9H_{11}BrN_2O_5$

M 307,11 g/mol

Storage temp.: +4 °C

Warning H341-H351



3243.1	250 mg	glass	34,30 €

Roti®-Histofix 4 % ready-to-use

acid free (pH 7),
phosphate-buffered formaldehyde solution 4 %

Fixative for histology, stabilized with methanol.

Storage temp.: +15-25 °C

Danger H350-H341-H302-H317

For better sampling of liquid we offer suitable draincocks for the 10 l and 30 l standard canisters (Art. No. 5666.2).

P087.4	500 ml	plastic	10,25 €
P087.5	2,5 l	plastic	17,10 €
Original pack 4 x 2,5 l			16,25/2,5 l
P087.3	5 l	plastic	27,45 €
Original pack 2 x 5 l			26,08/5 l
P087.1	10 l	plastic	50,45 €
P087.2	30 l	plastic	131,70 €

Roti®fair PBST 7.4

for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

PBST (tablet), Phosphate buffered saline with Tween

Exactly pre-weighed tablets for convenient and rapid preparation of PBST solution.
Buffer solution composed of PBS with the addition of the non-ionic detergent Tween® 20. Since detergents are known to reduce non-specific protein-protein interactions, PBST is preferably used as basic solution during Western blotting, ELISA or other immunochemical assays.
Prepared solution may be sterilized by filtration (0,22 µm). For long-term storage, buffer solution should be kept at +4 °C.
1x PBST solution is prepared by dissolution of 1 tablet in 500 ml or 1000 ml highly pure water respectively.

Formulation:

Prepared 1x PBST solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, 0,05 % Tween® 20, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

for 500 ml/tablet

1115.1	12 tablets	blister	65,50 €
1115.2	100 tablets	plastic	266,10 €

for 1000 ml/tablet

1116.1	10 tablets	blister	85,50 €
1116.2	100 tablets	plastic	411,20 €

Roti®-Mount FluorCare DAPI ready-to-use

for fluorescence microscopy

Aqueous mounting medium with antifading effect.
Contains DAPI for counterstaining.

Storage temp.: +4 °C

Roti®-Mount FluorCare DAPI is an aqueous mounting medium with anti-fading effect. Additional it contains ready-to-use DAPI allowing counter-staining of nuclei and mounting at the same time. DAPI has an excitation maximum at 359 nm and an emission maximum at 461 nm.
Roti®-Mount FluorCare is also available with the dye propidiumiodide (HP21.1) and without dye (HP19.1).

Storage:
The solution should be stored at +4 °C in the dark.
Shelf life: minimum 1 year.

HP20.1	15 ml	dropp. bottle	70,45 €

Roti®-Stock 10x PBST ready-to-use S

BioScience-Grade, ready-to-use, filtered and steam sterilised

For protein biochemistry, cytology, and molecular biology.

PBST 10x ready-to-use solution

10fold stock solution phosphate buffered saline with Tween 20.
Extremely versatile standard solution for protein biochemical detection systems, cytological staining and molecular-biological assays with similar fields of application as Roti®-Stock PBS. Roti®-Stock PBST can be used directly instead of PBS when the presence of Tween 20 is required in the detection system.
With original seal.

Composition:

1,37 M NaCl, 27 mM KCl, 100 mM Na_2HPO_4, 20 mM KH_2PO_4, 0,5 % Tween® 20 in deionised water, pH value 7,4, 0,2 µm filtered and steam sterilised

1059.1	1 l	glass	125,25 €
Original pack 6 x 1 l			118,99/1 l

Apoptosis Assay

Rotitest®-Annexin V ready-to-use

Rotitest® Bio Analysis

For detection and enumeration of apoptotic cells and simultaneous differentiation from necrosis.

Annexin-FITC conjugate, Apoptosis detection Kit

Storage temp.: +4 °C

- Simple, rapid application
- For cultured and primary cells (also for yeast cells)
- Discriminating between apoptotic and necrotic cells
- Result in approx. 30 minutes

Rapid and simple detection system of apoptotic cells, with simultaneous differentiation of necrotic cells.
During the first stages of apoptosis, phosphatidylserine (PS) is translocated from the inner membran layer to the outer surface of the cell.
The Rotitest®-Annexin V Kit uses the Ca^{2+} dependent binding efficiency of Annexin V to PS in order to label cells with damaged cell membranes.
Additionally, propidium iodide is used to counter stain nuclei of cells with opened membranes, hence those which undergo necrotic degradation.
Thus, cells with yellow-green membrane staining only can be identified as apoptotic, while double stained cells (with yellow-green membranes plus orange-red nuclei) are classified as necrotic.
Analysis is performed via flow cytometry or fluorescence microscopy.
Each package contains simple-to-follow instructions-for-use.

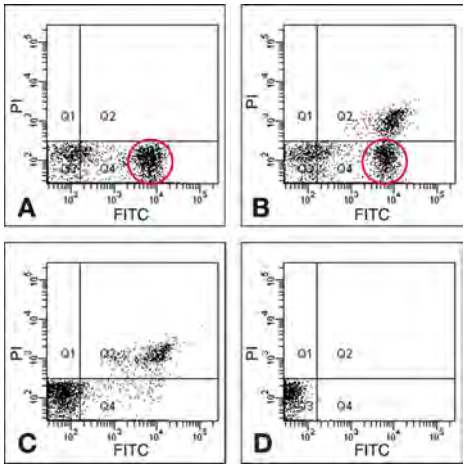


Figure 1:
Flow cytometry analysis of Jurkat cells. Assayed using 5x10^5 cells in 500 µl Annexin binding buffer, 25 µl Annexin V-FITC conjugate and 25 µl propidium iodide solution, 15 min. RT.
FITC-A: FITC staining (binding of Annexin-FITC conjugate),
PE-A: Propidium iodide staining
A,B) Cells after induction of apoptosis by Staurosporin, under pure annexin-FITC staining (A) or under annexin-FITC / PI staining (B), respectively. C,D) Uninduced control cells under annexin-FITC / PI staining (C) and without staining (D), respectively.
Due to the binding of Annexin V to PS on the outer membrane surface, apoptotic cells are Annexin-FITC positive, but PI negative (Q4, circle).
Q3 displays healthy cells (neg/neg), Q2 necrotic cells (Annexin-FITC pos and PI pos). Cells in Q1 (PI pos/ Annexin-FITC neg) are dead, non-apoptotic cells.

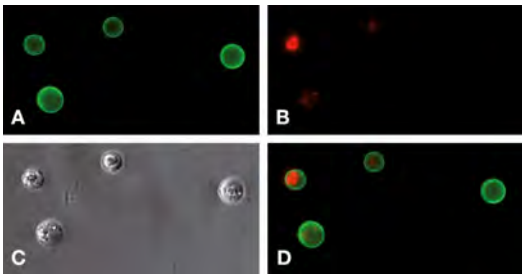


Figure 2:
Fluorescence microscopic analysis of Jurkat cells following induction of apoptosis by staurosporine. Assayed using 10^5 cells in 100 µl Annexin binding buffer, 5 µl Annexin V-FITC conjugate and 5 µl propidium iodide solution, 15 min. RT.
A) FITC fluorescence (green), B) propidium iodide fluorescence (red), C) bright field image, D) composite image. Apoptotic cells are FITC positive, PI negative. FITC pos/PI pos cells may be classified as being necrotic. Healthy cells are FITC/PI neg.

The kit contains:
Annexin V-FITC conjugate, propidium iodide solution, Annexin V binding buffer, detailed instructions-for-use.
Excluding the columns, contents of this Kit may not be bought separately.
Store at +4 °C protected from light. Do not freeze.

1 set is sufficient for analysis of 50 samples of 10^5 cells each

Type analysis:

Appearance (test solution)	colourless to yellowish
Appearance PI solution	orange to red
Dye content	complies
Appearance Binding Buffer	colourless
pH value Binding Buffer	7,3-7,5

7735.1	50 Assays		214,50 €

▶ Specially coated sample slides see page 1533

Roti®-Stock 10x PBS ready-to-use S

BioScience-Grade, ready-to-use, filtered and steam sterilised

For protein biochemistry, cytology, and molecular biology.

PBS 10x ready-to-use solution

10fold stock solution phosphate buffered saline. Very versatile standard solution for detection systems in protein biochemistry, cytological stainings and molecular biological assays. Thus, 1 x PBS is used as basic solution for Western-Blot analyses, ELISAs and other enzymatic assays, for solving and dilution of proteins, for immunocytological and immunohistological assays, as well as for *in situ* hybridisations, apoptosis detection systems and staining of nuclei.
Recommended for HRP-mediated detection systems.
With original seal.

Composition:
1.37 M NaCl, 27 mM KCl, 100 mM Na_2HPO_4, 20 mM KH_2PO_4 in deionised water, pH-value 7.4, 0.2 µm filtered and steam sterilised

1058.1	1 l	glass	119,90 €
Original pack 6 x 1 l			113,91/1 l

▶ Roti®fair PBS in tablets or pouches see page 1388

Instructions for use
can be found on the Internet next to the product description.

Fixation

Fixation is used to stabilise cell shape and intracellular structures. The existing state at a defined time is thus preserved and can be proven in later analysis assays.

In cell biology, a buffered formaldehyde solution with a 4% or 4.5% concentration is mainly used for this purpose.Formaldehyde as an aqueous solution usually occurs as a diol (OH-HCH-OH), but polymerises readily ($OH-(H_2CO)_nH$) resulting in the formation of solids, which in turn are called 'paraformaldehyde'. For the **fixation** of tissue and cells, however, the formalin must be a monomer; in order to prevent polymerisation, the solution is therefore stabilised with methanol. To further prevent oxidation into formic acid, as occurs under atmospheric oxygen, formaldehyde solution is buffered with calcium carbonate or phosphate. On our high-quality **Roti®-Histofix solutions,** you will therefore find the entry **'acid-free, phosphate-buffered, stabilised with methanol'.**

According to GHS, concentrated formaldehyde solution is rated highly as poisonous, corrosive and hazardous to health, with the result that many users search for non-hazardous alternatives. This can be remedied by the use of bottled formalin solutions such as our **Roti®-Histofix in sample containers** or the new generation of **formalin-free fixation solutions,** such as our **Roti®-Histofix ECO plus.**

Product	Purity	Application	Art. No.	Pack Qty	€
Roti®-Histofix 4 %, prefilled containers	acid free (pH 7), phosphate-buffered formaldehyde solution 4 %	Fixative for histology, prefilled in screw cap containers.Fixative for histology, prefilled in screw cap containers.	**3105.1**	100 x 10 ml (in 20 ml-container)	84,85
			3105.2	54 x 50 ml (in 100 ml-container)	57,55
Roti®-Histofix 4 %	acid free (pH 7), phosphate-buffered formaldehyde solution 4 %	Fixative for histology, stabilized with methanol.	**P087.4**	500 ml	10,25
			P087.6	1 l	12,80
			P087.5	2,5 l	17,10
			P087.3	5 l	27,45
			P087.1	10 l	50,45
			P087.2	30 l	131,70
Roti®-Histofix 4,5 %, prefilled containers	acid free (pH 7), phosphate-buffered formaldehyde solution 4,5 %	Fixative for histology, prefilled in screw cap containers. Stabilised with methanol.	**8244.1**	100 x 10 ml (in 20 ml container)	82,70
			8244.2	54 x 50 ml (in 100 ml container)	57,95
			8244.3	32 x 100 ml (in 180 ml container)	54,30
Roti®-Histofix 4,5 %	acid free (pH 7), phosphate-buffered formaldehyde solution 4,5 %	Fixative for histology, stabilized with methanol.	**2213.4**	500 ml	10,65
			2213.6	1 l	12,80
			2213.5	2,5 l	19,25
			2213.3	5 l	28,95
			2213.1	10 l	52,15
			2213.2	30 l	128,50
Roti®-Histofix 10 %	acid free (pH 7), phosphate-buffered formaldehyde solution 10 %	Fixative for histology, stabilized with methanol.	**A146.4**	500 ml	12,40
			A146.6	1 l	14,95
			A146.5	2,5 l	26,35
			A146.3	5 l	44,00
			A146.1	10 l	69,80
			A146.2	30 l	171,90
Formaldehyde solution 35 %	≥35 % DAB, for histology	Stabilized with methanol. **New size**	**4980.1**	1 l	16,70
			4980.5	2,5 l	24,20
			4980.2	5 l	38,60
			4980.4	10 l	61,85
			4980.3	30 l	122,05
Formaldehyde solution 30 %, methanol-free	30 %	Concentrated fixative for histology, methanol-free. **New size**	**4235.1**	1 l	12,80
			4235.5	2,5 l	19,25
			4235.2	5 l	31,10
			4235.3	10 l	43,55
			4235.4	30 l	102,05
Formaldehyde solution, non-acidic	≥37 %, for histology	Stabilized with methanol and calcium carbonate.	**P733.1**	1 l	18,20
			P733.2	2,5 l	33,25
			P733.3	30 l	125,25
Paraformaldehyde	extra pure, DAC	Fixative	**0335.1**	250 g	15,60
			0335.2	500 g	19,25
			0335.3	1 kg	24,65
			0335.4	5 kg	93,45

For additional product data and safety information, see chapter Chemicals A-Z.

Roti®-Histofix ECO Plus ready-to-use

Fixing agent without formalin

For fixing of histological and immunochemical specimens.
Formalin substitute.

Storage temp.: +20 °C

- Formaldehyde-free, non-toxic fixative
- Good fixation properties
- pH 4,5 -5,0
- No denaturing effect, e.g. shrinkage or crosslinking
- Adequate substitute for formaldehyde

Roti®-Histofix ECO Plus is a ready-to-use, aqueous solution on base of hexamethylene tetramine. The solution has as similar good fixation properties as formaldehyde, but is, unlike formaldehyde, classified as non-toxic. The original morphology of the tissue is preserved during the fixation process. The protein molecules are cross-linked in a reversible way, their structures are preserved. That is especially important for antigen-antibody reactions. Samples are - in contrary to other fixative media - free of artefacts such as shrinkage of tissue or irreversible protein crosslinking. The solution is therefore ideal for immunohistochemistry. All conventional staining processes can be carried out following fixation.
Roti®-Histofix ECO Plus has an indicator dye and is scented for better identification (< 1ppm).

8907.1	500 ml	plastic	15,60 €
8907.2	2,5 l	plastic	47,85 €
Original pack 4 x 2,5 l			45,46/2,5 l
8907.3	5 l	plastic	89,15 €
Original pack 2 x 5 l			84,69/5 l

▶ Drain cocks see chapter Labware - Pumps, Pipettors and Sampling.

Formaldehyde, chem. methanal (methane-aldehyde).
Derived from the Latin **formica** = ant, as formic acid occurs during oxidation of the methanal.
Formaldehyde in itself is gaseous at room temperature and is called formalin when it occurs as an aqueous solution.

According to current knowledge, **fixation** occurs through the formation of methylene bridges and bridges through Schiff bases and, since it is non-denaturing, is at least partly reversible through heating and/or alkalisation. The penetration velocity of formalin into tissue is approximately 1 mm/h.

Roti®-Free Slide Enhancer RNAse-/DNAse-free

10x conc., BioScience-Grade

Concentrated buffer for enhancement
of detection signals in immunohistochemistry and *in situ* hybridization.

Storage temp.: +20 °C

- Very effective
- Gentle
- Odour-free
- Simple application
- Suitable for formaline- and paraffin fixed samples and cryo sections

Efficient stripping buffer for removal of antibodies, probes, and corresponding stains from immunohisto- and -cytochemical samples, as well as from *in situ* hybridizations. Due to the particularly adjusted formulation of the Roti®-Free Slide Stripping Buffer, antigens and hybridization partners are retrieved very gently, but quantitatively, enabling the samples to be assayed repeatedly. Suitable for all common samples like formaline- and paraffin fixed tissue and cells, or cryo sections.

Applications: The slides are incubated in Roti®-Free Slide Stripping Buffer for 20-40 min at 70-95 °C. After repeated washing steps, the samples may be assayed again with antibodies or probes. The particular parameters necessary for complete stripping depend on the respective samples, fixing-, and detection systems.

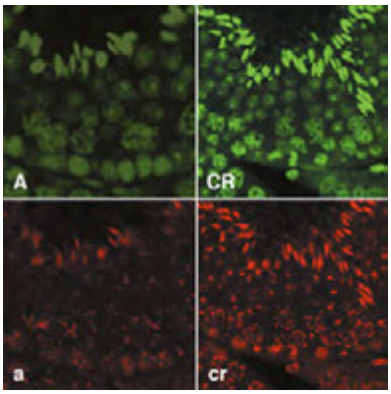


Figure 1:
Fluorescence *in situ* hybridisation (FISH) on sections of formaline fixated, paraffin embedded tissue.
Capitals: Nuclear counter staining (Cytogreen), minuscules: Telomere-DNA FISH with red flourescence dye.
CR/cr: Detection after pretreatment with Roti®-Free Slide Enhancer.
A/a: Standard detection in 1 % triton-PBS buffer, w/o pretreatment.

With kind permission of the RIKEN Brain Science Institute (BSI), Development Research Group, Hirosawa Wako City, Saitama, Japan

One bottle of 500 ml is sufficient for approx. 500 sample slides.

Type analysis:

pH value (1x sol.)	6,9-7,1
RNAse	≤2 ppb
DNAse	≤0,2 ppm

9330.1	500 ml	plastic	206,95 €

Blocking

Roti®-ImmunoBlock ready-to-use

ready-to-use, 10x conc.

Protein free blocking reagent for immunocytological assays.
Without detergent.
Storage temp.: +20 °C

Suitable for
- Immunocytological assays
- Immunohistological assays
- Paraffin- and cryosections
- *in situ* hybridisation
- Cell culture samples
- Whole mount samples

Roti®-ImmunoBlock is an innovative blocking reagent on a polymer base without detergents and proteins.

No contamination of your detection system through foreign proteins, reducing background and false-positive signals. Specific binding signals are preserved whilst non-specific interaction is impeded, increasing the signal-to-noise ratio. Ready-to-use solution for fast and easy applications.

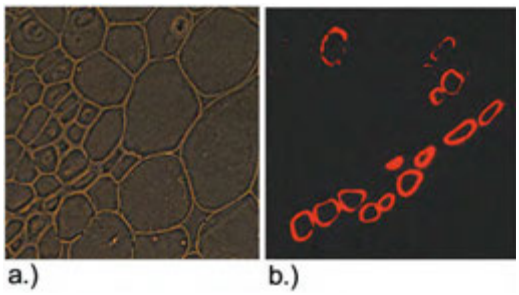


Figure:
Scilla siberica: Cross section of a conducting bundle from the leaf. Immunofluorescent detection of a protein in sieve cells:
a) Phase contrast
b) Immunofluorescence, blocking with Roti®-ImmunoBlock

With kind permission of Dr. Deumling, MPI for Culture Research, Cologne.

T144.1	250 ml	glass	46,80 €

▶ Many further products for immunochemical detection see chapter Biochemistry/Western and ELISA and Histology.

Please note our **Technical Information Brochure** on the Internet next to the products:

Immunostaining by HRP and AP
Protocols

Albumin, IgG free

>98 %, IgG-free, for biochemistry and molecular biology

Recommended as blocking and stabilisingreagent in all antibody-mediated detection systems.
BSA
M ~66 000 g/mol
Storage temp.: +4 °C

DNAse-/RNAse-/Protease-free

Albumin, highly purified and tested for presence of immunoglobulins (IgGs), proteases, RNAse, and DNAse. Albumin, IgG-free is particularly recommended for use as stabilising reagent in antibody solutions, and as blocking reagent in all assays using detection systems via antibodies. Also very well suited for stabilising of hot-start-PCRs mediated by antibodies, or as blocking reagent in antibody-detected hybridisations.

3737.1	10 g	plastic	56,90 €
3737.2	50 g	plastic	155,90 €
3737.3	200 g	plastic	471,95 €
3737.4	500 g	plastic	962,15 €
Original pack 6 x 500 g			914,04/500 g

▶ Further albumins, powdered milk etc. see chapter Biochemistry/Western and ELISA.

Substrates for Immunodetection

Carl Roth offers you a wide range of substrates for biochemistry, cellular biology and microbiology. The key substrates for cytochemical applications are summarised here.

For detailed information regarding usage, chemical details, safety instructions and further package sizes for these and many other substrates, refer to **"Substrates"** in the chapter **Biochemistry** or to Chemicals A-Z.

For Alkaline Phosphatase (AP)

Substrate	Application	Detection	Art. No.	Pack Qty	€
BCIP-sodium salt	western, *in situ*, histochemistry	colour (brown-violet)	**A155.1**	100 mg	27,85
			A155.2	500 mg	118,15
			A155.3	1 g	203,20
			A155.4	5 g	665,45
BCIP-toluidine salt*	western, *in situ*, histochemistry	colour (brown)	**6368.1**	500 mg	36,45
			6368.2	1 g	70,45
			6368.3	5 g	267,70
NBT*	western, *in situ*, histochemistry	colour (brown-violet)	**4421.1**	100 mg	17,75
			4421.2	500 mg	44,65
			4421.3	1 g	84,85
			4421.4	5 g	306,40
Rose-phos-toluidine salt	western, *in situ*, histochemistry	colour (pink)	**4247.1**	50 mg	47,20
			4247.2	100 mg	84,85

For additional product data and safety information, see chapter Chemicals A-Z.
***combined**

For Horse Raddish Peroxidase (HRP)

Substrate	Application	Detection	Art. No.	Pack Qty	€
DAB	western, *in situ*, histochemistry	colour (brown)	**CN75.1**	1 g	23,55
			CN75.2	5 g	76,25
			CN75.3	10 g	130,65
Roti®-DAB Kit	western, *in situ*, histochemistry	colour (brown)	**9202.1**	1 kit	188,70

For additional product data and safety information, see chapter Chemicals A-Z.

Reference Sample for Fluorescent Microscopy

Ideal for testing or calibration of confocal laser scanning microscopes and other fluorescent microscopes. Excellent signal output and good photo stability. Ready to use for microscopy.

ready-to-use

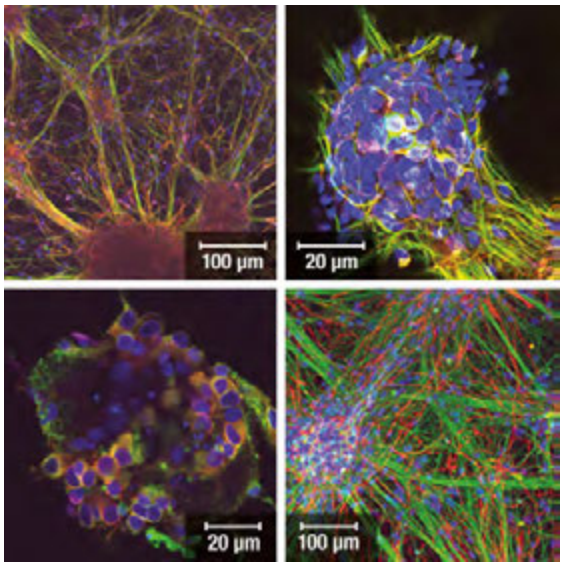
- Stained with 4 fluorochromes
- Planar and 3D cell structures
- Excellent signal output
- Good photo stability

Demoslides Fluoro-4C

Reference sample for fluorescent microscopy

Glass slide with ready-to-use cell specimen.
For fine tuning of fluorescent microscopes.
Fluorescent preparation Fluoro-4C
Storage temp.: +4 °C

Durable test preparation of neuronal cells of a murine cell culture. Contains the markers Tubulin-Cy2, Nestin-Cy3 and DCX-Cy5 and in addition DAPI-stained nuclei. The specimens show 3D-structuresin form of cell aggregates (spherules) and a network of planar cells. There is an intracellular co-localization between Tubulin-Cy2 and DCX-Cy5.



Demoslide Fluoro-4C scanned by a 20x objective lens (100 µm) and a 63x objective lens (20 µm) of a laser scanning microscope (marker: Tubulin-Cy2-green; Nestin-Cy3-red; DCX-Cy5-magenta; DAPI-blue).

3 fluorescent channels and DAPI

The specimen contains stained cell structures in three different spectra: green (Cy2), red (Cy3) and infrared (Cy5). All three channels can be illustrated isolated or superposed. DAPI staining of nuclei allows identification of single cells as well as apoptotic or mitotic nuclei (fig. C). If Cy5-signals of DCX are displayed in red co-localization with Tubulin (Cy2-green) becomes visible as yellow signal (fig. A).

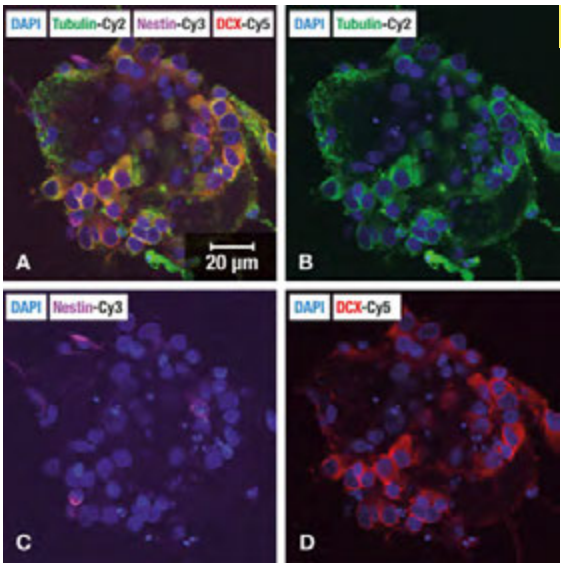


Illustration of the 3 fluorescent channels of Tubulin-Cy2 (B), Nestin-Cy3 (C) and DCX-Cy5 (D), each in combination with DAPI. Figure A shows the combination of all 3 channels. Objective lens: 63x; bar: 20µm

Packaging and Storage

Every Fluoro-4C preparation is mounted on a slide and covered with a cover slip for long-term storing. It is delivered in a preparation board. Please store the slides in the dark. Storage at room temperature is sufficient. However, for longer periods without usage we recommend usual slide boxes stored in the refrigerator. Allow the boxes to achieve room temperature before opening and removing the slides and avoid frequent temperature changes.

Avoid too long and too intensive exposure to UV light!

8987.1	1 piece	283,30 €
8987.2	2 pieces	536,45 €

Microbiology

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Media acc. to European Pharmacopoeia

Medium	Art. No.	acc. to Ph. Eur. 6.0 (2008)	acc to Ph. Eur. 6.0 (2008, Harmonized Method), 6.3 (2009), 7.0 (2011), 8.0 (2014) or 9.0 (2017)
Antibiotic Medium No. 1	CL53	*not listed in this norm*	Antibiotic Agar No. 1 (Seed Agar) *(not list. in 8.0 and 9.0)*
Baird Parker Agar (Base)	X913	Agar Medium O	*not listed in this norm*
Brilliant Green Lactose Sucrose Agar	AE43	Agar Medium L	*not listed in this norm*
Brilliant Green Tetrathionate Bile Broth	AE42	Broth Medium I	*not listed in this norm*
CASO Agar	X937	Agar Medium B	Casein Soya Bean Digest Agar
CASO Broth	X938	Broth Medium A	Casein Soya Bean Digest Broth
CASO Broth, granulated	6678	Broth Medium A	Casein Soya Bean Digest Broth
Cetrimide Agar (Base)	X918	Agar Medium N	Cetrimide Agar
Columbia Agar (Base)	X919	Medium Q	Columbia Agar
Desoxycholate Citrate Agar	AE44	Agar Medium J	*not listed in this norm*
Lactose-Broth	X921	Broth Medium D	*not listed in this norm*
Lactose Sulphite Broth (Base)	AE46	Medium R	*not listed in this norm*
MacConkey Agar	X922	Agar Medium H	MacConkey Agar
MacConkey Broth	AE47	Broth Medium G	MacConkey Broth
Mannitol Salt Agar	CL81	*not listed in this norm*	Mannitol Salt Agar
Mossel EE Broth	AE65	Enriched Broth Medium E	Enterobacteria enrichment broth-Mossel
Peptone Water, buffered	AE67	Buffered Sodium Chloride-Peptone Solution pH 7.0	Buffered Sodium Chloride-Peptone Solution pH 7.0
Potato Extract Glucose Agar	X931	*not listed in this norm*	Potato Dextrose Agar
R2A Agar	CL01	Agar Medium S	*not listed in this norm*
Rappaport Vassiliadis Broth	CL03	*not listed in this norm*	Rappaport Vassiliadis *Salmonella* Enrichment Broth
Reinforced Clostridial Medium	AE66	Medium P	Reinforced Medium for *Clostridia*
Sabouraud 2 % Glucose Broth	AE23	Sabouraud Dextrose Broth	Sabouraud Dextrose Broth
Sabouraud 4% Glucose Agar	X932	Agar Medium C	Sabouraud Dextrose Agar
Sabouraud 4% Glucose Agar (with chloroamphenicol)	AE48	Agar Medium C	*not listed in this norm*
Triple Sugar Iron Agar	AE49	Agar Medium M	*not listed in this norm*
Violet Red Bile Agar with Glucose and Lactose	AE45	Agar Medium F	*not listed in this norm*
Violet Red Bile Agar with Glucose	X939	*not listed in this norm*	Violet Red Bile Glucose Agar
XLD Agar	X941	Agar Medium K	Xylose, Lysine, Desoxycholate Agar

Standard Code Designations

Abbreviation	Broth/Agar	Art. No.
BCYE Agar	Legionella Agar	CL48
BHI	Brain Heart Infusion Broth	X916
BP	Baird Parker Agar	X913
BPLS	Brilliant Green Lactose Sucrose Agar	AE43
CASO	CASO Agar or Broth	X924, X925
CCDA	Campylobacter Agar	5756
CIN	Yersinia Selective Agar	5780
CLED	CLED Agar	2835
CN	Pseudomonas Selective Agar	CP67
CPLP	TAT Broth	3935
DG18	Dichlorane Glycerol Agar	AE26
DRBC	Dichlorane Bengal Red Agar	AE25
DRCM	Differential-Reinforced Clostridia Medium	CL78
GVCP Agar	Legionella Agar	CL48
mCP	m-CP Agar	CL55
MRS	MRS Agar or Broth	X924, X925
MYP	Mannitol Egg Yolk Polymyxin Agar	5765
PC	Plate Count Agar	X930
PCM	Plate Count Agar with milk	HP08
R2A	R2A Agar	CL01
RBC	Bengal Red Agar	AE24
RCM	Reinforced Clostridial Medium	AE66

Abbreviation	Broth/Agar	Art. No.
RVS	Rappaport Vassiliadis Broth	CL03
SMAC	Sorbitol MacConkey Agar	5778
TAT	TAT Broth	3935
TBA	Tryptone Bile Salts Agar	CP69
TBX	TBX chromogenic Agar	CL47
TSA	Trypton Soy Agar	CP70
TSB	CASO Broth	X938
TSB Agar	CASO Agar	X937
TSC	TSC Agar	CL51
VRBD, VRBG	Violet Red Bile Agar with Glucose	X939
VRB	Violet Red Bile Agar with Lactose	X940
WPCA	Yeast Extract (Water Plate Count) Agar	CP63
XLD	XLD Agar	X941
YGC	Yeast Glucose Agar	CL00
YNB	Yeast Nitrogen Base	HP26

▶ Media for water analysis see page 1403

Review of Anhydrous Nutrient Media

		Media Specialised for...													
Art. No.	Medium	Pharm. Eur.	Water	Whole Germ	Coli	Clo & Bruc & Camp	Entero	Yeast & Mould	Lacto & Bac	Pseudo & Leg & Lis	Sal & Shig	Staph & Strep	Chromo	Special	Mol Biol
X967	2x YT Agar														
X966	2x YT Broth														
6676	2x YT Broth, granulated														
CP61	Acetamide Broth (Solution A)									Pseu					
CL53	Antibiotic Medium No. 1														
CL54	Antibiotic Medium No. 23														
CL79	Azide Dextrose Broth														
X913	Baird Parker Agar (Base)											Staph			
AE24	Bengal Red Agar (with chloroamph.) (RBC)														
CP62	Bile Esculine Azide Agar														
X914	Blood Agar (Base)											Strep			
8281	Blood Agar No.2 (Base)								Bac	Lis		Strep			
X915	Brain-Heart-Infusion Agar														
X916	Brain-Heart-Infusion Broth														
CL06	Brilliant Green Bile Broth														
AE43	Brilliant Green Lactose Sucrose Agar										Sal				
AE42	Brilliant Green Tetrathionate Bile Broth										Sal				
5752	Brucella Agar					Bru									
5754	Brucella Broth					Bru									
5756	Campylobacter Agar, blood-free (Base)					Camp									
8847	Campylobacter Selective Agar (Base)					Camp									
2922	Candida chromogenic Agar														
X937	CASO Agar (Soy Broth, TSB Agar)														
1506	CASO Agar, granulated														
8848	CASO Agar with Lecithin/Polysorbate 80														
X938	CASO Broth (Soy Broth, TSB)														
6678	CASO Broth, granulated (Soy Broth, TSB)														
0139	CASO Broth vegetal (Soy Broth, TSB)														
X918	Cetrimide Agar (Base)									Pseu					
2835	CLED Agar														
2836	CLED Agar plus														
2923	Coli Fluoro Broth														
8849	Coliforms chromogenic Agar (ISO)														
CL45	Coliforms chromogenic Agar														
X919	Columbia Agar (Base)														
1507	Columbia Agar (Base), granulated														
2997	Cronobacter chromogenic Agar														
8850	D/E Neutralizing Agar														
AE44	Desoxycholate Citrate Agar										Sal, Shi				
AE25	Dichlorane Bengal Red Agar (with chloroamph.) (DRBC)														
AE26	Dichlorane Glycerol Agar (DG18) (Base)														
CL78	Differential Reinforced Clostridial Medium (DRMC)					Clo									
8295	DNase Test Agar											Staph			
8310	EC Broth														
X920	Endo Agar (Base)														
HP17	Fraser Broth (Base)									Lis					
HP18	Fraser Half Broth (Base)									Lis					
HP07	Gelatin Agar (DEV)														
CP64	King's B Medium (Base)									Pseu					
5758	Kligler Iron Agar														
X921	Lactose Broth										Sal				
CL76	Lactose Broth (DEV)														
CL77	Lactose Peptone Broth (DEV)														
AE46	Lactose Sulphite Broth (Base)					Clo									
CL80	Lauryl Sulphate Broth														
X965	LB Agar (Lennox)														

		Media Specialised for...													
Art. No.	Medium	Pharm. Eur.	Water	Whole Germ	Coli	Clo & Bruc & Camp	Entero	Yeast & Mould	Lacto & Bac	Pseudo & Leg & Lis	Sal & Shig	Staph & Strep	Chromo	Special	Mol Biol
6671	LB Agar (Lennox), granulated														
0159	LB Agar (Lennox) vegetal														
X969	LB Agar (Luria/Miller)														
6675	LB Agar (Luria/Miller), granulated														
8852	LB Agar (Lennox) / Amp100														
8853	LB Agar (Lennox) / Kana50														
8860	LB Agar (Luria/Miller) / Kana50														
8858	LB Agar (Luria/Miller) / Amp50														
8855	LB Agar (Luria/Miller) / Amp100														
8861	LB Agar (Luria/Miller) / Chloramph34														
X964	LB Broth (Lennox)														
6669	LB Broth (Lennox), granulated														
0155	LB Broth (Lennox) vegetal														
X968	LB Broth (Luria/Miller)														
6673	LB Broth (Luria/Miller), granulated														
CL48	Legionella Agar (Base)									Leg					
5759	Letheen Agar modified														
5761	Letheen Broth modified														
3008	Listeria chromogenic Agar (Base)									Lis					
8322	Lysin Iron Agar										Sal, Shi				
X922	MacConkey Agar										Shi				
1514	MacConkey Agar, granulated										Shi				
AE47	MacConkey Broth														
X923	Malt Extract Agar														
CP75	Malt Extract Broth														
CL81	Mannitol Salt Agar											Staph			
5765	Mannitol Egg Yolk Polymyxin Agar (Base)								Bac						
CP73	Marine Broth														
5766	Maximum Recovery Solution														
CL55	m-CP Agar					Clo									
3014	m-EI-chromogenic Agar (Base)														
AE65	Mossel EE Broth										Sal				
X924	MRS Agar								Lac						
HP65	MRS Agar pH 5.7								Lac						
X925	MRS Broth								Lac						
HP64	MRS Broth pH 5.7								Lac						
3026	MRSA chromogenic Agar (Base)											Staph			
X926	Mueller Hinton Agar											Staph			
X927	Mueller Hinton Broth														
8323	Mueller Kauffmann Broth (Base)										Sal				
X928	Nutrient Agar														
CL02	Nutrient Agar (DEV)														
CP66	Nutrient Agar (DEV/ISO)									Pseu					
X929	Nutrient Broth														
X974	NZCYM Broth														
X973	NZYM Broth														
HP09	Orange Serum Agar														
1520	Orange Serum Agar, granulated														
5767	Oxford Listeria Agar (Base)									Lis					
5768	Palcalm Listeria Agar (Base)									Lis					
X917	Peptone Water, buffered														
6680	Peptone Water, buffered, granulated														
AE67	Peptone Water, buffered (Ph. Eur.)														
X930	Plate Count Agar														
1521	Plate Count Agar, granulated														
HP08	Plate Count Agar with Powdered Milk														
X931	Potato Extract Glucose Agar														

		Media Specialised for...													
Art. No.	Medium	Pharm. Eur.	Water	Whole Germ	Coli	Clo & Bruc & Camp	Entero	Yeast & Mould	Lacto & Bac	Pseudo & Leg & Lis	Sal & Shig	Staph & Strep	Chromo	Special	Mol Biol
CP74	Potato Extract Glucose Broth														
3075	Pseudomonas chromogenic Agar									Pseu					
CP67	Pseudomonas Selective Agar (CN Agar) (Base)									Pseu					
CL01	R2A Agar														
1523	R2A Agar, granulated														
CL03	Rappaport Vassiliadis Broth (RVS)										Sal				
8329	Rogosa Agar								Lac						
AE66	Reinforced Clostridial Medium (RCM)					Clo									
AE22	Sabouraud 2% Glucose Agar														
AE23	Sabouraud 2% Glucose Broth														
1508	Sabouraud-2%-Glucose-Bouillon, granulated														
X932	Sabouraud 4% Glucose Agar														
X933	Sabouraud 4% Glucose Agar (with chloroamph.)														
AE48	Sabouraud 4% Glucose Agar (with chloroamph.) (Ph.Eur.)														
CL46	Salmonella chromogenic Agar										Sal				
X934	Salmonella Shigella Agar										Sal				
5771	Schaedler Agar														
5772	Schaedler Broth														
5774	Simmons Citrate Agar														
X935	Slanetz Bartley Agar											Strep			
CP68	Slanetz Bartley Medium (with tetrazolium chloride)														
AE27	SOB Broth														
5778	Sorbitol MacConkey Agar														
AE91	Standard Count Agar														
AE93	Standard Nutrient Agar I														
1524	Standard Nutrient Agar I, granulated														
AE92	Standard Nutrient Broth I														
1533	Standard Nutrient Broth I, granulated														
3935	TAT Broth (Base)														
CL47	TBX chromogenic Agar														
8333	TCBS-Agar														
X972	Terrific Broth														
0161	Terrific Broth vegetal														
HP61	Terrific Broth modified														
X936	Todd Hewitt Broth											Strep			
AE49	Triple Sugar Iron Agar (Base)										Sal				
CP69	Tryptone Bile Salts Agar (TBA)														
CP70	Tryptone Soy Agar (TSA)														
CP71	Tryptophane Broth														
CL51	TSC Agar (Base)					Clo									
CP65	TTC Chapman Agar (with sod. heptadecylsulph.) (Base)														
8337	Universal Beer Agar (Base)								Lac						
8320	Urea Agar acc. to Christensen (Base)										Sal, Shi				
3089	UTI chromogenic Agar											Staph			
X939	Violet Red Bile Agar with Glucose (VRBD)														
1525	Violet Red Bile Agar with Glucose, granulated														
AE45	Violet Red Bile Agar with Dextrose and Lactose														
X940	Violet Red Bile Agar with Lactose (VRB)														
CL04	Wort Agar (Base)														
5779	Wort Broth														
X941	XLD Agar										Sal, Shi				
CP63	Yeast Extract Agar														
CL00	Yeast Glucose Agar (with chloroamph.) (YGC)														
1526	Yeast Glucose Agar (with chloroamph.), granulated														
HP26	Yeast Nitrogen Base (without Amino Acids)														
5780	Yersinia Selective Agar (Base)														
X971	YPD Agar														
X970	YPD Broth														

Legend:

Ph. Eur.	Media acc. to European Pharmacopeia
Water	Media for drinking water analysis
Whole Germ	Detection of whole germs or unspecific microorganisms
Coli	Detection of coliforms and *E. coli*
Clo & Bruc & Camp	Detection of *Clostridia*, *Brucella* or *Campylobacter*
Entero	Detection of enterobacteria
Yeast & Mould	Detection of yeasts or moulds
Lacto & Bac	Detection of lactobacilli or bacilli
Pseudo & Leg & Lis	Detection of pseudomonads, legionells or listeriae
Sal & Shig	Detection of salmonellae or shigellae
Staph & Strep	Detection of staphylococci or streptococci
Chromo	Chromo- and fluorogenic media
Special	Media for special applications
Mol Biol	Media for applications in molecular biology

Nutrient Media for Water Analysis acc. to European Drinking Water Directives

Medium	Art. No.	Norms
Acetamide Broth (Solution A)	CP61	DEV, TWVO 2001, EN ISO 16266
Bile Esculin Azide Agar	CP62	DEV, TWVO 2001, ISO 7899-2
Brilliant Green Bile Broth	CL06	DIN 10172
Coliforms chromogenic Agar	CL45	-
Coliforms chromogenic Agar (ISO)	8849	EN ISO 9308-1
EC Broth	8310	ISO 7251
Gelatin Agar (DEV)	HP07	DEV
King's B Medium (Base)	CP64	DEV, TWVO 2001, EN ISO 16266
Lactose Broth (DEV)	CL76	DEV
Lactose Peptone Broth (DEV)	CL77	DEV
Lauryl Sulphate Broth	CL80	APHA
Legionella Agar (Base)	CL48	EN ISO 11731-2
m-CP Agar	CL55	TWVO 2001
m-EI-chromogenic Agar (Base)	3014	-
Nutrient Agar (DEV/ISO)	CP66	DEV, TWVO 2001, EN ISO 16266
Nutrient Agar (DEV)	CL02	DEV, DIN 38 411
Pseudomonas Selektive Agar (CN Agar) (Base)	CP67	DEV, TWVO 2001, EN ISO 16266
R2A-Agar	CL01	Ph. Eur.
Rappaport Vassiliadis Broth (RVS)	CL03	Ph. Eur.
Salmonella chromogenic Agar	CL46	-
Slanetz Bartley Medium (with tetrazolium chloride)	CP68	DEV, TWVO 2001, ISO 7899-2
Standard Count Agar	AE91	-
Tryptone Bile Salts Agar (TBA)	CP69	DEV, TWVO 2001, EN ISO 9308-1
Tryptone Soy Agar (TSA)	CP70	DEV, TWVO 2001, EN ISO 9308-1
Tryptophane Culture Broth	CP71	DEV, TWVO 2001, EN ISO 9308-1
TSC Agar (Base)	CL51	DEV, EN ISO 7937
TTC Chapman Agar (with sodium heptadecylsulphate) (Base)	CP65	DEV, TWVO 2001, EN ISO 9308-1
Yeast Extract Agar	CP63	DEV, TWVO 2001, EN ISO 6222

Acc. to EN ISO 16266:2008 (replaces EN ISO 12780:2002), EN ISO 6222:1999, ISO 7899-2:2000, EN ISO 9308-1:2000, EN ISO 7937:2004

Hygiene Monitoring

In recent years, the prevention of infection, environmental-, residential- and communal hygiene have become very important even in day-to-day life. Today, hygiene monitoring equipment is installed, required and, in some cases, already prescribed by law in institutions, facilities and a variety of other areas. These include hospitals, rehabilitation clinics, ambulance services, blood donor services, drinking water supply systems, public swimming baths, sports facilities, schools, public offices, companies, hotels, gastronomy and canteens, food retailing, food-producing companies and ports.

The main emphasis of hygiene monitoring is on checking the results of cleaning and decontamination processes, e.g. in-house monitoring of food production and processing, determining the hygiene status of kitchens, sports facilities and sanitary facilities, checking the contamination status of air conditioning systems for the protection of employees and customers, and raising awareness of hygiene problems during training.

Roth offers a wide range of hygiene monitoring products which are quick and easy to use even for novices.

- Easy and safe handling - also for laymen
- Simple interpretation
- Storage and transport at room temperature
- Suitable for hygiene monitoring and contamination survey wherever needed, for schooling and student's courses

Rotitest® Protein

ready-to-use

Rotitest® Bio Analysis

Protein detection system for rapid control of surfaces after the cleaning process.

Protein quick test

Storage temp.: +20 °C

Warning H226

- Most simple handling
- Result in 2 mins. maximum
- Definite interpretation through colour shift
- Well suitable for laymen

Rapid and simple test system for detection of protein contamination on surfaces. Optimal for hygiene control and testing of cleaning efficiency of table tops, sales counters, handles etc.
This Rotitest® Protein is very easy to apply: Using the integrated swab the respective surface is probed; pressing of the lid automatically drips the detection solution onto the swab head. Interpretation is simple due to the distinct colour shift from yellow-orange to dark green-blue. Results are available in 2 mins. maximum.

Each package contains simple-to-follow instructions-for-use.

Store at 15-25 °C protected from light. Do not freeze.
Suitable for testing of any surface.

Figure:
Colour shift to dark green-blue caused by presence of proteins.

4803.1	20 swabs	94,10 €

Orion Clean Card® PRO – Makes cleanliness visible

The Clean Card® PRO of amfora health care detects any soiling that contains protein or substances similar to protein, such as allergen proteins as well as surfactants from residual cleaning detergent or disinfectant agent on work surfaces, equipment and containers that look clean to the naked eye.This means cleaning practices can be quickly optimised and risks can be minimised – as outlined in the HACCP concept.

- **Fast** – results in 30 seconds
- **Straightforward** – clear analysis thanks to visible colour change
- **User-friendly** – no additional devices required
- Safety and high standard confirmed in internal tests for compliance with legal requirements of HACCP, good hygiene practice or internal QA/hygiene plans
- **Evidence from approx. 50 µg protein/100 cm²**
- Certified and proven in practice: Recommended by Bundesverband der Lebensmittelkontrolleure (German Association of Food Regulators)
- Suitable for use in many sectors, e.g. community catering, restaurants and cafés, hotels, cleaning services, food industry businesses, suppliers, haulage companies, for hygiene training courses to sensitise staff and for those working in hygiene, quality management and quality assurance, and much more.

NEW ready-to-use

Storage temp.: +20 °C • Transport temp.: room temp.

The surface is wetted and then wiped with the Clean Card® PRO. After 30 seconds, the colour of the test section is compared against the colours in the picture card provided and the result is recorded.

A green or blue colour indicates the surface is contaminated with residual protein. The higher the level of protein detected, the darker the colouration of the card. The Clean Card® PRO test record (Art. No. 0076.1) can be used to maintain a clear overview of the results.

Orion Clean Card® PRO Starter Kit

amfora health care for hygiene monitoring

For rapid detection of protein contamination on surfaces after the cleaning process.
The starter kit contains:
- 25 tests
- Small plastic spray bottle
- Picture card for analysis
- Operating instructions

The refill pack, containing 50 Clean Card® PRO tests can be ordered using the Art. No. 0072.1.

0071.1	1 kit	100,00 €

Orion Clean Card® PRO Testprotokoll

By amfora health care GmbH.

A4 pad with 50 pre-printed sheets to make test results easy to document and reproduce.
The Clean Card® PRO test protocol was developed together with German food inspectors and veterinarians and is only available in a German version.

Art. No.	Pack Qty.	€
0076.1	1	9,15

Orion Clean Card® PRO Pack

amfora health care for hygiene monitoring

For rapid detection of protein contamination on surfaces after the cleaning process.

The Clean Card® PRO Pack is a refill pack for use with the starter kit (Art. No. 0071.1). It contains:
- 50 tests
- Picture card for analysis
- Operating instructions

0072.1	1 Set	172,00 €

ATP Measurement with a System: Lumitester plus LuciPac®

Lumitester PD30

Made by Kikkoman
Easy-to-use, lightweight luminometer for ATP measurement. For reliable monitoring of liquids, dry and wet surfaces as part of hygiene control in the manufacturing sector, in the foodstuffs and animal feed sector, in patients- and health care, in gastronomy and trade, in training and in many other areas.

- Lightweight and easy-to-use
- Fast and easy handling
- Highly sensitive, precise measurement of ATP and AMP
- Ready for use after 8 seconds
- Auto-calibration
- Definition of own limit values is possible
- Data transfer via USB to computer
- Documentation and analysis software (Excel-based) included

NEW with Lumitester PD30:
- 8 language display options
- Data analysis software allows to match the testing mode to the particular measurement situation
- Stand-up soft case included as accessory

Technical specifications:

Measurement duration	10 seconds
Display	LCD
Calibration	Auto-calibration
Port	USB
Temperature range	5 to 40 °C
Measurement date	Internal date and time
Data output	RLU (Relative Light Units)
Data memory	2000 analyses
Power supply	2 x AA alkaline cells or 2 x nickel-metal hybrid batteries
Outer dimensions (W x H x L)	65 x 32 x 175 mm
Weight	235 g (excluding batteries)

Mechanism: Both ATP (adenosine triphosphate) and the more stable form AMP (adenosine monophosphate) are found in all living cells and, therefore, provide an exact and quantitative marker for the presence of bacteria, fungi or food residue. An enzyme/substrate complex in the LuciPac® Pen sampling tube reacts with both ATP *and* AMP to release bioluminescence whose intensity correlates directly with the quantity of ATP/AMP present. The Lumitester PD30 fully converts this bioluminescence into a measurement result and is, therefore, the most sensitive measuring system available today.

Thus, liquids and surfaces can be quickly and easily tested for contamination by foodstuffs and microorganisms using the Lumitester PD30 and the LuciPac® Pen sampling pen. Within approximately 30 seconds, the Lumitester PD30 can provide information on hygiene status or the efficiency of cleaning and disinfection procedures. The system is easy and safe to operate, even by non-professionals. Simply insert the sampling tube and close the unit. Then press the *Enter* button, and the measurement result will be displayed within 10 seconds.

Suitable for use with LuciPac® Pen Aqua (Art. No. NC58) for monitoring liquids and with LuciPac® Pen (Art. No. NC59) for the analysis of surfaces.

Art. No.	Pack Qty.	€
NC57.1	1	1654,45

Suitable for monitoring of circulating water in **evaporative cooling systems** by measuring ATP (**VDI 2047**).

Hygiene (greek ὑγιεινή τέχνη [hygieiné téchne] = conducive to health [art])
The word "hygiene" is a collective term applied to all measures for the prevention of infectious diseases and the spread thereof as well as for the preservation of health.
Hygiene is often used incorrectly as a synonym for cleanliness, which, however, represents only a small part of hygiene. On the contrary, hygiene is the science of applying measures for the protection of health.

Instructions for use
can be found on the Internet next to the product description.

LuciPac® Pen ready-to-use S

Kikkoman for hygiene control

For testing for the contamination of surfaces by ATP/AMP measurement using Lumitester PD20 and PD30.

Storage temp.: +4 °C

For reliable monitoring of dry and wet surfaces in the manufacturing sector, in the foodstuffs and animal feed sector, in patients- and health care, in gastronomy and trade, in training and in many other areas.

- Quick and easy sampling
- Easy and quick measurement within seconds
- Sensitive and reproducible measurement

Using the LuciPac® Pen sampling pen, surfaces can be tested easily and quickly for contamination by bacteria, fungi and food residue. Organic contamination is indicated by the presence of ATP or AMP on these surfaces. An enzyme/substrate complex in the LuciPac® Pen sampling tube reacts with ATP and AMP to produce bioluminescence whose intensity correlates directly with the amount of ATP/AMP present. The Lumitester PD20 or PD30 then determines the bioluminescence as a direct measure of original contamination.
The unit is easy to operate, even by non-professionals. Just moisten the swab and swipe it across the surface. Then put the swab back into the tube and push it down into the reaction chamber. Shake the tube until the reagents are released and measure the bioluminescence in the Lumitester PD20 or PD30.

20 LuciPac® Pens each are packed in a resealable aluminium bag.
Store in a dark place.

NC59.1	20 pieces	Aluminium bag	99,90 €
NC59.2	100 pieces	Aluminium bag	427,35 €

LuciPac® Pen Aqua ready-to-use S

Kikkoman for hygiene control

For testing for the contamination of liquids by ATP/AMP measurement using Lumitester PD20 and PD30.

Storage temp.: +4 °C

For reliable monitoring of liquids, e.g. contamination control of water and wastewater.

- Quick and easy sampling
- Exact sample volumes of 150 µl
- Easy and quick measurement within seconds
- Sensitive and reproducible measurement

Using the LuciPac® Pen Aqua sampling pen, liquids can be tested quickly and easily for organic contamination. The organic contamination of liquids, e.g. by bacteria, is indicated by the presence of ATP or AMP in these samples. An enzyme/substrate complex in the LuciPac® Pen Aqua sampling tube reacts with ATP and AMP to produce bioluminescence whose intensity correlates directly with the amount of ATP/AMP present. The Lumitester PD20 or PD30 then determines the bioluminescence as a direct measure of original contamination. The sampling comb ensures precise sampling of 150 µl with a deviation of ≤2 %. Test results are, therefore, highly reproducible and comparable.
The unit is easy to operate, even by non-professionals. Just immerse the sampling comb into the liquid. Then put the comb back into the tube and push it down into the reaction chamber. Shake the tube until the reagents are released and measure the bioluminescence in the Lumitester PD20 or PD30.
20 LuciPac® Pens Aqua each are packed in a resealable aluminium bag.
Store in a dark place.

NC58.1	20 pieces	Aluminium bag	99,90 €
NC58.2	100 pieces	Aluminium bag	427,35 €

Please note our **Technical Information Brochure** on the Internet next to the products:

Lumitester PD30
Function and use (EN)

▶ Dip- and contact agar for detection of Legionells in water see page 1413

Lumitester LED Control Swab

Made by Kikkoman
The Lumitester LED control swab, once charged, produces a stable, exactly defined and calibrate light signal that can be used check the functioning of the Lumitester PD20 or PD30. The product illustration shows the LED control swab (back) in comparison with a LuciPac® Pen sampling tube.

Immediately before checking the Lumitester, connect the LED control swab to the power supply using the supplied charging cable and charge for 30 to 60 seconds. Then disconnect the LED control swab from the power supply and insert the LuciPac® Pen sampling tube into the cleaned measuring chamber of the Lumitester. The luminous energy emission is measured by pressing the *Enter* button.

Comparing the measurement result with the printed information indicates the condition of the unit. If the nominal value of 80 to 120 % is achieved, the Lumitester is in perfect working order. If not, please contact us to have the Lumitester and control swab recalibrated.

Art. No.	Pack Qty.	€
NC60.1	1	1073,95

Monitoring of Pasteurised Milk

Rotitest® Phosphatase paper

ready-to-use

Rotitest® Bio Analysis

For detection of phosphatase in Milk.

Storage temp.: +4 °C

Test paper for efficiency monitoring of milk pasteurisation.
The test paper, impregnated with detection reagent, is cut at one end and allowed to soak by dipping it into a sample of the milk to be analysed. During incubation at 37 °C for 2 hours in maximum, a yellow colouring shows presence of Alkalic Phosphatase, hence the non-efficient pasteurisation of the milk.

Sensitivity of the phosphatase test system is 0.5 % raw milk in pasteurised milk. This test system does not provide quantitative data.
One package contains 10 single welded test papers, impregnated with detection reagent.

Type analysis:

Paper colour. ..... white
Colour shift to yellow. ..... complies
Sensitivity. ..... complies

8470.1	10 pieces	21,00 €

Swab Tests

Please note:
The Rotitest® systems provide **non-quantitative data only**, and aren't equipped to measure any contamination magnitude.

Rotitest® Listeria

ready-to-use S

Rotitest® Bio Analysis

Detection system for exclusion, or affirmation, of contamination by listeriae.

Storage temp.: +20 °C

- Most simple handling
- Definite interpretation through colour shift
- Well suitable for laymen

Simple test system for detection, or exclusion, of listeriae contamination on surfaces. Optimal for control and minimisation of the contamination risk caused by *Listeria ssp.*, particularly *L. monocytogenes*.
This Rotitest® Listeria is very easy to apply: Using the integrated swab the respective surface is probed and the swab is firmly pressed into the sterile nutrient medium. After incubation for 24-48 hours (37 °C) a distinct blackening of the medium indicates the presence of listeriae, hence the contamination of the respective surface.
Each package contains simple-to-follow instructions-for-use.
Note: This test system only allows exclusion, or affirmation, of a listeriae contamination per se. Quantitation is not possible.

Figure:
Colour shift to black caused by presence of listeria.
Store at 5-25 °C. Do not freeze.
Suitable for testing of any surface.

Type analysis:

Appearance (nutrient medium).	brown
Sterility test.	complies
Growth of bacterial test strains.	complies

4805.1 25 swabs 131,70 €

Rotitest® Coliform

ready-to-use S

Rotitest® Bio Analysis

Detection system for exclusion, or affirmation, of contamination by coliforms.

Storage temp.: +20 °C

- Most simple handling
- Definite interpretation through colour shift
- Well suitable for laymen

Simple test system for detection, or exclusion, of coliform contamination on surfaces. Optimal for hygiene monitoring and for minimisation of the contamination risk caused by coliforms in general., particularly *E. coli*.
This Rotitest® Coliform is very easy to apply: Using the integrated swab the respective surface is probed and the swab is firmly pressed into the sterile nutrient medium. After incubation for 18-24 hours (37 °C) a distinct colour shift of the medium from purple to yellow indicates the presence of coliforms, hence the contamination of the respective surface.
Each package contains simple-to-follow instructions-for-use.
Note: This test system only allows exclusion, or affirmation, of a coliform contamination per se. Quantitation is not possible.

Figure:
Colour shift to yellow-orange caused by presence of coliforms.
Gas formation hints to presence of *E. coli*.
Store at 16-26 °C. Do not freeze.
Suitable for testing of any surface.

Type analysis:

Appearance (nutrient medium).	red-brown
Sterility test.	complies
Growth of bacterial test strains.	complies

4806.1 25 swabs 131,70 €

▶ Small incubator Heratherm IMC18 see p. 997
▶ Cultura® M mini incubator see page 995

EC Blue System

For qualitative and quantitative detection of Coliforms, and *E. coli* in particular, in water.

- Fast - results in just 24 hours
- Simple - easy to handle, even by non-professionals
- Safe - easy-to-interpret colour reaction
- Sensitive - 1 cfu/100 ml detection limit
- Efficient - simultaneous analysis of coliforms and *E. coli*
- Also suitable for chlorinated and turbid water

Quick and safe process for the analysis of coliform bacteria in general, and *E. coli* specifically in water. The test is also suitable for analysis of turbid water samples and water samples containing suspended matter. Bacteria stressed by chlorinated water can generally also be verified.
The formation of a blue to blue-green colour after incubation at 35 °C indicates the presence of coliform bacteria in the water. This colour change is due to an enzymatic colour reaction of the coliform-specific galactosidase with the chromogenic substrate X-Gal.

The presence of *E. coli* can easily be detected by the occurrence of fluorescence under UV light (see EC-Blue Mini UV lamp Art. No. KK49.1). Approximately 95 % of all *E. coli* strains produce the enzyme ß-glucuronidase, which reacts with an enzyme substrate contained in EC Blue to release a fluorescent dye.

Quantification is possible using EC Blue Quant/MPN (Art. No. 0199.1).

EC Blue 100P S

NISSUI for water analysis
Pour 100 ml of the test water into a sterile container and dissolve the contents of a single-dose sachet of EC Blue 100P powder in it.
The EC Blue Comparator for 100 ml (Art. No. 0349.1) is available for the comparison of own samples with a slightly positive control.
EC Blue 100P saves space and cost thanks to its practical packaging in a blister pack. Store protected from light.
Dissolve a single-dose sachet of analysis reagent in 100 ml of test water.

0202.1	100 pieces	plastic	446,15 €

EC Blue 100 ready-to-use S

NISSUI for water analysis
Add 100 ml of the test water to one bottle of EC Blue 100 and dissolve the powdered contents in the test water.
The EC Blue Comparator for 100 ml (Art. No. 0349.1) is available for the comparison of own samples with a slightly positive control.
EC Blue 100 saves time and preliminary work because the reagent mixture is provided in sterile test bottles for direct use. Store protected from light.
Add 100 ml sample water.

0209.1	80 pieces	plastic	639,65 €

EC Blue 10 ready-to-use S

NISSUI for water analysis
Add 10 ml of the test water to one bottle of EC Blue 10 and dissolve the powdered contents in the test water.
The EC Blue Comparator for 10 ml (Art. No. 0349.2) is available for the comparison of own samples with a slightly positive control.
EC Blue 10 saves time and preliminary work because the reagent mixture is provided in sterile test bottles for direct use. Store protected from light.
Add 10 ml sample water.

7754.1	150 pieces	plastic	553,65 €

EC Blue Comparator ready-to-use

NISSUI for water analysis

1 bottle of *E. coli* positive control for EC Blue system, colour intensity "1 cfu".
Storage temp.: +4 °C

Positive control for the EC Blue System, colouration of 1 cfu (colony forming unit). The product illustration shows the comparator for 100 ml in comparison with 5 negative samples.
The presence of *E. coli* can easily be detected by the occurrence of fluorescence under UV light (see EC-Blue Mini UV lamp Art. No. KK49.1). Approximately 95 % of all *E. coli* strains produce the enzyme ß-glucuronidase. This enzyme hydrolyses the enzyme substrate MUG and thus releases a fluorescent dye that can be detected with UV light.

Store protected from light.

0349.2	10 ml	plastic	143,95 €
0349.1	100 ml	plastic	166,10 €

EC Blue Mini UV lamp

By Fujitsu
Small, handy UV lamp for quick and simple detection of *E. coli* bacteria in EC Blue assays.

Technical specifications:

Wave length	365 nm
Temperature range	0 to 40 °C
Outer dimensions (W x H x L)	52 x 21 x 160 mm
Demand	4 watt
Power supply	4 x AA alkaline cells
Weight	100 g (excluding batteries)

The presence of *E. coli* can easily be detected by the occurrence of fluorescence under UV light. Approximately 95 % of all *E. coli* strains produce the enzyme ß-glucuronidase, which reacts with an enzyme substrate contained in EC Blue to release a fluorescent dye.

Art. No.	Pack Qty.	€
KK49.1	1	134,30

EC Blue Quant/MPN

By NISSUI
For fast and easy quantification of coliform bacteria according to MPN (Most Probable Number Method), e.g. according to DIN EN ISO 9308-2:2014-06. Optimised for use with EC Blue 100 and 100P.

- Reproducible, precise results
- Detection limit 1 cfu/100 ml
- No pre-dilution required
- Test result after 24 hours
- Simultaneous quantitation of coliforms and *E. coli*
- Also suitable for chlorinated and turbid water

The unique, innovative design of the EC BlueQuant/MPN allows rapid and reliable processing of MPN tests – simple to operate and without any additional equipment, except an incubator. The method is based on the standardised MPN method that uses at least three different dilution levels in increments of 10 and 5 compartments per dilution. Testing with the EC BlueQuant/MPN does not require a series of dilutions. When pouring the mixture, due to the special layout, the compartments are filled in such a way as to ensure correct serial dilution. After incubating the sample for 24 hours at about 35 °C, the result can be read off the device and converted to cfu/ml using ISO standard tables (e.g. DIN EN ISO 9308-2:2014-06).

Presence of *E. coli* can easily be detected by the occurrence of fluorescence under UV light (see EC-Blue Mini UV lamp Art. No. KK49.1). Approximately 95 % of all *E. coli* strains produce the enzyme ß-glucuronidase, which reacts with an enzyme substrate contained in EC Blue to release a fluorescent dye.

Detection limit: 1 cfu/100 ml for coliforms and *E. coli*.
The set consists of 18 EC Blue Quant/MPN chambers including lids.

Size (L x W x H)	Art. No.	Pack Qty.	€
11 x 9 x 5 cm	**0199.1**	18	364,45

Roti®-DipSlides

Sterile dip slides with solid, ready-made culture medium for easy microbiological analysis of solutions and surfaces.

- **2 in 1:** DipSlide and contact agar
- Very easy application
- Reliable assay and easy interpretation
- Suitable for determination of the microbiological status and for hygiene control in a variety of domains
- Detailed Instructions-for-use included

Tried-and-tested media in a new look – Now with optimized plastic carriers!

Roti®-DipSlides are made of a flexible plastic tongue which is coated with solid culture medium on both sides. Following dipping into the solution to be tested or inoculation by pressing to a surface, the slide is placed back into the sterile tube and incubated. Total area for analysis is 11,44 cm^2 per side. Ø tube 2,9 cm.

Please note: Larger quantities are produced freshly. Hence, longer delivery times may occur.

Detection of	Agar 1	Agar 2	Art. No.
whole germs + legionells	Plate Count Agar (PC)	Legionella Agar	2493
whole germs + enterobacteria	Plate Count Agar (PC)	Violet Red Bile Agar with Glucose (VRBD)	2924
whole germs + coliforms	Plate Count Agar (PC)	Violet Red Bile Agar with Lactose (VRB)	2925
whole germs + yeast/moulds	Plate Count Agar (PC)	Bengal Red Agar* (RBC)	2926
whole germs + yeast/moulds	Caso Agar with TTC	Bengal Red Agar (RBC) with antibiotics	3934
whole germs	Plate Count Agar (PC)	Plate Count Agar (PC)	2927
whole germs after disinfection	D/E Neutralizing Agar	D/E Neutralizing Agar	8023
whole germs + whole germs after disinfection	Plate Count Agar (PC)	Caso Agar with Lecithin/ Polysorbate 80	8715
whole germs	Nutrient Agar	Nutrient Agar with TTC	2837
enterobacteria	Violet Red Bile Agar with Glucose (VRBD)	Violet Red Bile Agar with Glucose (VRBD)	2954
yeast/moulds	Sabouraud 4 % Glucose Agar*	Sabouraud 4 % Glucose Agar*	2956
urinary tract bacteria + enterobacteria/coliforms	CLED Agar	MacConkey Agar	2957
enterobacteria + pseudomonads	MacConkey Agar	Cetrimide Agar	8045

*with chloroamphenicol

Roti®-DipSlide PCA/RBCplus

ready-to-use | S

ready-to-use, sterile, for microbiology

For total germ count and for detection of yeasts and moulds in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Side 1 (PCA): Plate Count Agar (acc. to APHA, ISO 4833:2003) (Art. No. X930) for total germ count.
Side 2 (RBCplus): Bengal Red Agar (with chloroamphenicol) (Art. No. AE24) for detection of yeasts and moulds.

Expiration time on request.
Do NOT freeze!

Formulation:

Agar side 1 (PCA):

Casein peptone	5 g/l
Yeast extract	2,5 g/l
Glucose	1 g/l
Agar	15 g/l
pH value	7,0
Colour	amber, slightly opalescent
Growth of test strains	complies

Agar side 2 (RBCplus):

Peptone	5 g/l
Glucose	10 g/l
Potassium phosphate	1 g/l
Magnesium sulphate ($MgSO_4$)	0,5 g/l
Chloroamphenicol	0,1 g/l
Bengal red	0,05 g/l
Agar	15 g/l
pH-value	7,2
Colour	intense pink
Growth of test strains	complies

2926.1	20 slides	box	64,40 €

▶ DipSlide Incubator EM4 see page 995
▶ Other incubators see page 995
▶ Convenient for Disposal: Benchtop autoclave see page 931

Roti®-DipSlide PCA/TSA-Letheen

ready-to-use S

ready-to-use, sterile, for microbiology

For total germ count in liquids or on surfaces. Suitable for analysis of cosmetics and of preservative containing products or after disinfection. Contains two neutralizers.

Storage temp.: +4-15 °C • Transport temp.: cooled

Warning H319

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.

Roti®-DipSlide PCA/TSA-Letheen is suitable for 14-day controls of **evaporative cooling systems**, **cooling towers** and **wet separators** (**42. Federal Emission Control Act (BImschV), VDI guideline 2047**).

Lecithin and Polysorbate 80 (Tween® 80) neutralise the growth-inhibiting impact of disinfectants and preservatives.
Side 1 (PCA): Plate Count Agar (acc. to APHA, ISO 4833:2003) (Art. No. X930) for total germ count.
Side 2 (TSA-Letheen): CASO Agar with Lecithin/Polysorbate 80 (Art. No. 8848) for detection of microorganisms from cosmetics and disinfected surfaces.

Expiration time on request.
Do NOT freeze!

Formulation:

Agar side 1 (PCA):

Casein peptone	5,0 g/l
Glucose	1,0 g/l
Yeast extract	2,5 g/l
Agar	15,0 g/l
pH value	7,0 ± 0,2
Colour	amber, slightly opalescent
Growth of test strains	complies

Agar side 2 (TSA-Letheen):

Pancreatic digest of casein	15,0 g/l
Soy peptone (papain hydrolysate)	5,0 g/l
Sodium chloride (NaCl)	5,0 g/l
Lecithin	0,7 g/l
Polysorbate 80	5 g/l
Agar	15,0
pH-value	7,2 ±0,2
Colour	amber, slightly opalescent
Growth of test strains	complies

8715.1	20 slides	box	64,40 €

Neutraliser	Active substance
Polysorbate 80 + Lecithin	Amphotensides, benzamidine, chlorhexidine (guanidine), quaternary ammonium compounds, substituted phenols
Sodium bisulphite	Aldehydes, glutaraldehyde
Natrium thioglycolate	Isothiazoline (Kathon CG), mercury compounds
Sodium thiosulfate	Iodine and iodophore, chlorine

Sources: Walhäuser (1988), APHA (2001), AAMI (1984)

Roti®-DipSlide PCA/Legionella

ready-to-use S

ready-to-use, sterile, for microbiology

For total germ count and for detection of legionells in solution or on surface.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.

Roti®-DipSlide PCA/Legionella is suitable for supervision of units for **heating of drinking water** (**Drinking Water Regulations**), for surveillance of **ventilation and air conditioning**, as well as for monitoring of the microbiological status of **evaporative cooling systems**.

Side 1 (PCA): Plate Count Agar (acc. to APHA, ISO 4833:2003) (Art. No. X930) for total germ count.
Side 2 (Legionella): Legionella Agar (acc. to ISO 11731-2) (Art. No. CL48) for selective detection of legionells.

Expiration time on request.
Do NOT freeze!

Formulation:

Agar side 1 (PCA):

Casein peptone	5 g/l
Yeast extract	2,5 g/l
Glucose	1 g/l
Agar	15 g/l
pH value	7,0
Colour	amber, slightly opalescent
Growth of test strains	complies

Agar side 2 (Legionella):

Yeast extract	10 g/l
Charcoal activated	2 g/l
GVPC selective additive	complies
Growth additive	complies
Agar	13 g/l
pH-value	6,9
Colour	black
Growth of test strains	complies

2493.1	20 pieces	box	64,40 €

Inactivation of anti-microbiological products:

Disinfectants and preservatives have the task of preventing the growth of, or killing bacteria. However, there are particularly resistant bacteria that can survive anti-microbe agents, or even survive in the active substance.
To determine the bacterial count, the bactericide or fungicide effect is neutralized by so-called uninhibitors. Thus, media containing uninhibitors can be used to check the effectiveness of the disinfectants and preservatives.

Roti®-DipSlide CASO-TTC/RBCenr

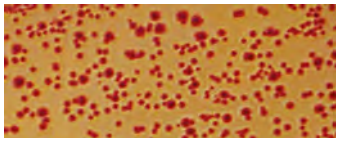
ready-to-use S

ready-to-use, sterile, for microbiology

For total germ count and for detection of yeasts and moulds in solution or on surface. Suitable for analysis of water-mixable cooling lubricants, air conditions, water-soluble paint, and cosmetics.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Side 1 (CASO-TTC): Tryptic Soy Agar (CASO) (Ph. Eur.) (Art. No. X937) for reliable total germ count.
Side 2 (RBCenr): enriched Bengal Red Agar (with antibiotics) for detection of yeasts and moulds.



E. coli (wild type) on agar supplemented with TTC (example).

Expiration time on request.
Do NOT freeze!

Formulation:

Agar side 1 (CASO-TTC):

Caseine peptone.	15 g/l
Soja peptone.	5 g/l
Sodium chloride (NaCl).	5 g/l
TTC.	0,05 g/l
Agar.	15 g/l
pH value.	7,3
Colour.	amber, slightly opalescent
Growth of test strains.	complies

Agar side 2 (RBCenr):

Peptone.	5 g/l
Glucose.	40 g/l
Bengal red.	0,05 g/l
Magnesium sulphate.	0,5 g/l
Potassium phosphate.	1,0 g/l
Chloroamphenicol.	0,1 g/l
Agar.	15 g/l
pH-value.	7,2
Colour.	intense pink
Growth of test strains.	complies

3934.1	20 pieces	box	64,40 €

Roti®-DipSlide CASO-TTC/RBCenr is suitable for analysis of **water-mixable cooling lubricants**, **air conditions**, **water-soluble paint**, and **cosmetics**.

Roti®-DipSlide D/Eneutral

ready-to-use S

ready-to-use, sterile, for microbiology

For total germ count on surface after disinfection.
Contains 5 neutralizers.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Sodium bisulfite, Sodium thioglycolate, Sodium thiosulphate, Lecithin and Polysorbate 80 (Tween® 80) neutralise the growth-inhibiting impact of disinfectants and preservatives.
Both sides (D/Eneutral): D/E Neutralizing Agar (Art. No. 8850) for total germ count after disinfection. For hygiene monitoring.

Expiration time on request.
Do NOT freeze!

Formulation:

Agar both sides (D/Eneutral):

Dextrose.	10 g/l
Lecithin.	7 g/l
Sodium thiosulphate.	6 g/l
Casein peptone.	5 g/l
Polysorbate 80.	5 g/l
Yeast extract.	2,5 g/l
Sodium bisulfite.	2,5 g/l
Sodium thioglycolate.	1 g/l
Bromocresol purple.	0,02 g/l
Agar.	15 g/l
pH value.	7,6 ±0,2
Colour.	purple
Growth of test strains.	complies

8023.1	20 slides	box	64,40 €

Application:

- Remove carrier from sterile vial. Screw-cap serves automatically as holder.
- Press agar gently onto surface or immerse in liquid
- Replace carrier into vial and close cap
- Incubate vial with carrier at a temperature suitable for the bacteria

Instructions for use
can be found on the Internet next to the product description.

Roti®-DipSlide Nutrient-TTC

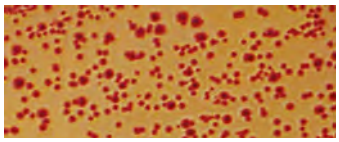
ready-to-use | S | ❄

ready-to-use, sterile, for microbiology

For total germ count in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Side 1 (Nutrient): Nutrient agar for total germ count
Side 2 (Nutrient-TTC): Nutrient agar with TTC for reliable detection of all living micro-organisms by formazan caused staining (red) of all colonies.



E. coli (wild type) on agar supplemented with TTC (example).

Expiration time on request.
Do NOT freeze!

Formulation:

Agar side 1 (Nutrient):

Gelatine peptone.	5 g/l
Meat extract.	3 g/l
Agar.	15 g/l
pH value.	7,0
Colour.	amber, slightly opalescent
Growth of test strains.	complies

Agar side 2 (Nutrient-TTC):

Gelatine peptone.	5 g/l
Meat extract.	3 g/l
TTC.	0,05 g/l
Agar.	15 g/l
pH-value.	7,0
Colour.	amber, slightly opalescent
Growth of test strains.	complies

2837.1	20 pieces	box	64,40 €

Roti®-DipSlide PCA

ready-to-use | S | ❄

ready-to-use, sterile, for microbiology

For total germ count in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Both sides (PCA): Plate Count Agar (acc. to APHA, ISO 4833:2003) (Art. No. X930) for total germ count.

Expiration time on request.
Do NOT freeze!

Formulation:

Agar both sides (PCA):

Casein peptone .	5 g/l
Yeast extract.	2,5 g/l
Glucose.	1 g/l
Agar.	15 g/l
pH value.	7,0
Colour.	amber, slightly opalescent
Growth of test strains.	complies

2927.1	20 slides	box	64,40 €

Roti®-DipSlide Sab4plus

ready-to-use | S | ❄

ready-to-use, sterile, for microbiology

For detection of yeasts and moulds in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Both sides (Sab4plus): Sabouraud 4 % Glucose Agar (with chloro-amphenicol) (Art. No. X933) for detection of yeasts and moulds.

Expiration time on request.
Do NOT freeze!

Formulation:

Agar both sides (Sab4plus):

Meat and casein peptone.	10 g/l
Glucose.	40 g/l
Chloroamphenicol.	0,5 g/l
Agar.	15 g/l
pH value.	5,6
Colour.	amber, slightly opalescent
Growth of test strains.	complies

2956.1	20 slides	box	64,40 €

❄

Important information on refrigerated transports

All products identified as being particularly temperature-sensitive are shipped in **special ice boxes with freezer packs or in dry ice.**
Additional costs resulting from such, **will be invoiced** (further information on request).

Please note:
In order to guarantee optimum product quality, the dispatch of refrigerated transport products will be carried out **on Mon and Tue only outside Germany!**
Slight delays in delivery are therefore possible.

Roti®-DipSlide MacCon/Cetr

ready-to-use S ❄

ready-to-use, sterile, for microbiology

For detection of enterobacteria like salmonellae or shigellae and pseudomonads in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Roti®-DipSlide MacCon/Cetr is suitable for the supervision of cooling and process water as well as of pool water (DIN EN ISO 16266) and for monitoring of the microbiological status of evaporative cooling systems and cooling towers (VDI guideline 2047, Federal Environment Ministry (BImSchG)).
Side 1 (MacCon): MacConkey Agar (Art. No. X922) for detection of enterobacteria/coliforms like salmonellae or shigellae.
Side 2 (Cetr): Cetrimide Agar (Art. No. X918) for detection of pseudomonads.

Expiration time on request.
Do NOT freeze!

Formulation:

Agar side 1 (MacCon):

Gelatine peptone.	17,0 g/l
Meat and casein peptone.	3,0 g/l
Lactose monohydrate.	10,0 g/l
Sodium chloride (NaCl).	5,0 g/l
Bile salt (Cholate).	1,5 g/l
Neutral red.	0,03 g/l
Crystal Violet.	0,001 g/l
Agar.	13,5 g/l
pH value.	7,1 ± 0,2
Colour.	violet-red
Growth of test strains.	complies

Agar side 2 (Cetr):

Pancreas hydrolysate made from gelatin.	20,0 g/l
Magnesium chloride.	1,4 g/l
Potassium sulphate.	10,0 g/l
Cetrimide.	0,3 g/l
Agar.	13,6 g/l
pH-value.	7,2 ±0,2
Colour.	opaque white
Growth of test strains.	complies

8045.1	20 slides	box	64,40 €

Roti®-DipSlide CLED/MacCon

ready-to-use S ❄

ready-to-use, sterile, for microbiology

For detection of bacteria of the urinary tract and of enterobacteria/Coliforms in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Side 1 (CLED): CLED Agar (Art. No. 2835) for detection of bacteria of the urinary tract.
Side 2 (MacCon): MacConkey-Agar (Ph. Eur.) (Art. No. X922) for detection of enterobacteria/Coliforms.

Expiration time on request.
Do NOT freeze!

Formulation:

Agar side 1 (CLED):

Casein peptone.	4 g/l
Gelatine peptone.	4 g/l
Beef extract.	3 g/l
Lactose.	10 g/l
L-Cystine.	0,128 g/l
Bromothymol blue.	0,02 g/l
Agar.	15 g/l
pH value.	7,3
Colour.	green
Growth of test strains.	complies

Agar side 2 (MacCon):

Gelatin peptone (Pancreas hydrolysate).	17 g/l
Meat and casein peptone.	3 g/l
Lactose monohydrate.	10 g/l
Bile salt (Cholate).	1,5 g/l
Sodium chloride (NaCl).	5 g/l
Neutral red.	0,03 g/l
Crystal Violet.	0,001 g/l
Agar.	13,5 g/l
pH-value.	7,1
Colour.	violet-red
Growth of test strains.	complies

2957.1	20 slides	box	64,40 €

▶ DipSlide incubator EM4 see page 1417

For easy interpretation of results, use the following table:

No. of colonies	Result	Interpretation
0	Negative	No contamination
1-10	Weakly positive	Weak contamination
11-20	Positive	Low contamination
21-100	Strongly positive	High contamination
>100	Highly positive	Very high contamination

Detection limit is 10^2 cfu/ml solution assayed.
For detailed instructions on interpretation see instruction-for-use.

Roti®-DipSlide PCA/VRB

ready-to-use S ❄

ready-to-use, sterile, for microbiology

For total germ count and for detection of Coliforms in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Side 1 (PCA): Plate Count Agar (acc. to APHA, ISO 4833:2003) (Art. No. X930) for total germ count.
Side 2 (VRB): Violet Red Bile Agar with Lactose (Art. No. X940) for detection of Coliforms.

Expiration time on request.
Do NOT freeze!

Formulation:

Agar side 1 (PCA):

Casein peptone	5 g/l
Yeast extract	2,5 g/l
Glucose	1 g/l
Agar	15 g/l
pH value	7,0
Colour	amber, slightly opalescent
Growth of test strains	complies

Agar side 2 (VRB):

Yeast extract	3 g/l
Pancreas hydrolysate made from gelatin	7 g/l
Sodium chloride (NaCl)	5 g/l
Bile salts	1,5 g/l
Lactose	10 g/l
Neutral red	0,03 g/l
Crystal Violet	0,002 g/l
Agar	15 g/l
pH-value	7,4
Colour	purple-red
Growth of test strains	complies

2925.1	20 slides	box	64,40 €

Roti®-DipSlide PCA/VRBD

ready-to-use S ❄

ready-to-use, sterile, for microbiology

For total germ count and for detection of enterobacteria in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Side 1 (PCA): Plate Count Agar (acc. to APHA, ISO 4833:2003) (Art. No. X930) for total germ count.
Side 2 (VRBD): Violet Red Bile Agar with Glucose (Ph. Eur.) (Art. No. X939) for detection of enterobacteria.

Expiration time on request.
Do NOT freeze!

Formulation:

Agar side 1 (PCA):

Casein peptone	5 g/l
Yeast extract	2,5 g/l
Glucose	1 g/l
Agar	15 g/l
pH value	7,0
Colour	amber, slightly opalescent
Growth of test strains	complies

Agar side 2 (VRBD):

Yeast extract	3 g/l
Pancreas hydrolysate made from gelatin	7 g/l
Sodium chloride (NaCl)	5 g/l
Bile salts	1,5 g/l
Glucose monohydrate	10 g/l
Neutral red	0,03 g/l
Crystal Violet	0,002 g/l
Agar	15 g/l
pH-value	7,4
Colour	purple-red
Growth of test strains	complies

2924.1	20 slides	box	64,40 €

DipSlide incubator EM4

Lightweight, small incubator specially designed for DipSlides. With transparent, easily removable cover for quick insertion and removal of DipSlides. Easy to operate, even for inexperienced users. A stand insert and a thermometer are also supplied. Also usable without a stand for incubation of Petri dishes and contact plates.

Technical specifications:

Capacity	23 DipSlides
Temperature range	Room temperature +5 °C to 44 °C
Capacity	4 l
Inner dimensions (W x H x D)	180 x 125 x 180 mm
Outer dimensions (W x H x D)	230 x 180 x 230 mm
Weight	1.5 kg
Power supply	220 V, 25 W

Art. No.	Pack Qty.	€
KK43.1	1	461,20

Roti®-DipSlide VRBD

ready-to-use S ❄

ready-to-use, sterile, for microbiology

For detection of enterobacteria in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Both sides (VRBD): Violet Red Bile Agar with Glucose (Ph. Eur.) (Art. No. X939) for detection of enterobateria.

Expiration time on request.
Do NOT freeze!

Formulation:

Agar both sides (VRBD):

Yeast extract	3 g/l
Pancreas hydrolysate made from gelatin	7 g/l
Sodium chloride (NaCl)	5 g/l
Bile salts	1,5 g/l
Glucose monohydrate	10 g/l
Neutral red	0,03 g/l
Crystal Violet	0,002 g/l
Agar	15 g/l
pH value	7,4
Colour	purple-red
Growth of test strains	complies

2954.1	20 slides	box	64,40 €

Roti®-ContiPlates

Sterile culture medium contact plates for the microbiological analysis of surfaces.

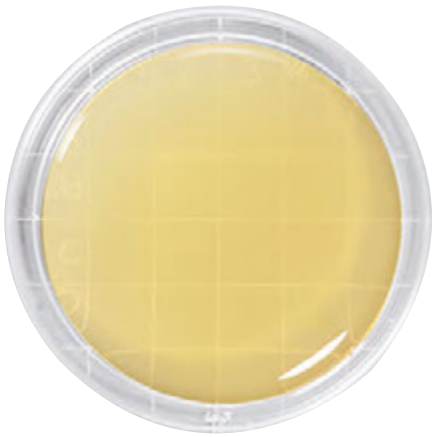
Example of use:

The plate is gently pressed onto the surface for some seconds. Afterwards the plate is closed with the lid and incubated.
Please note: Larger quantities are produced freshly. Hence, longer delivery times may occur.

Summary Roti®-ContiPlates

Art. No.	Abbreviation	Agar	Application
9630	PCA	Plate-Count-Agar	Whole germs
9631	VRBD	Violet Red Bile Agar with Glucose	Enterobacteria
9632	RBC	Bengal Red Agar (with chloroamphenicol)	Yeasts and moulds
9633	Sab4plus	Sabouraud 4 % Glucose Agar (with chloroamphenicol)	Yeasts and fungi
9634	TSA-Letheen	CASO Agar with Lecithin/Polysorbate 80	Whole germs after disinfection
2312	TSA	CASO Agar	Whole Germs
2313	MacCon	MacConkey Agar	Enterobacteria
2314	VRB	Violet Red Bile Agar with Lactose	Coliforms

- Diameter 60 mm
- Very easy application
- Domed agar surface especially suitable for testing specimen surfaces
- Prepared with our tried and tested dehydrated media mixtures
- Grid on the bottom of the plate for easy interpretation
- Each plate can be obtained individually without contaminating the other plates
- Detailed Instructions-for-use included



Roti®-ContiPlate TSA NEW ready-to-use S

ready-to-use, sterile, for microbiology

For total germ count on surfaces.
Roti®-ContiPlate CASO
Storage temp.: +4-15 °C • Transport temp.: cooled
CASO agar (Art. No. X937) is suitable for establishing the total viable count, in accordance with the European Pharmacopoeia standards.
Expiration time on request. Do NOT freeze!

Formulation:

Casein peptone	15 g/l
Soy peptone	5 g/l
Sodium chloride (NaCl)	5 g/l
Agar	15 g/l
pH value	7,3±0,2
Colour	straw-colored
Growth of test strains	complies
Diameter	60 mm

2312.1	30 pieces	box	62,25 €

Roti®-ContiPlate VRB NEW ready-to-use S

ready-to-use, sterile, for microbiology

For the study of coliforms on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Violet red bile agar with lactose (VRB, Art. No. X940) is suitable for analysing coliforms, in accordance with ISO 4832.
Expiration time on request. Do NOT freeze!

Formulation:

Yeast extract	3 g/l
Meat peptone	7 g/l
Sodium chloride (NaCl)	5 g/l
Bile salt (Cholate)	1,5 g/l
Lactose	10 g/l
Neutral red	0,03 g/l
Crystal Violet	0,002 g/l
Agar	15 g/l
pH value	7,4±0,2
Colour	violett-pink
Growth of test strains	complies
Diameter	60 mm

2314.1	30 pieces	box	62,25 €

Roti®-ContiPlate RBC ready-to-use S

ready-to-use, sterile, for microbiology

For counting yeasts and moulds on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Danger H318

The Bengal Red Agar (with chloroamphenicol) (Art. No. AE24) is recommended for enumeration of yeasts and moulds.
Expiration time on request. Do NOT freeze!

Formulation:

Glucose	10 g/l
Peptone	5 g/l
Potassium phosphate	1 g/l
Magnesium sulphate ($MgSO_4$)	0,5 g/l
Chloroamphenicol	0,1 g/l
Bengal red	0,05 g/l
Agar	15 g/l
pH value	7,2 ±0,2
Colour	intense pink
Growth of test strains	complies
Diameter	60 mm

9632.1	30 pieces	box	62,25 €

Roti®-ContiPlate TSA-Letheen ready-to-use S

ready-to-use, sterile, for microbiology

For detection of microorganisms on disinfected surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Warning H319

The TSA-Letheen Agar (Art. No. 8848) is recommended for detection of microorganisms in presence of preservatives or after disinfection.
Expiration time on request. Do NOT freeze!

Formulation:

Pancreatic digest of casein	15 g/l
Soy peptone (papain hydrolysate)	5 g/l
Sodium chloride (NaCl)	5 g/l
Lecithin	0,7 g/l
Polysorbate 80	5 g/l
Triton® X-100	1,0 g/l
Agar	15 g/l
pH value	7,2 ±0,2
Colour	amber, slightly opalescent
Growth of test strains	complies
Diameter	60 mm

9634.1	30 pieces	box	62,25 €

Roti®-ContiPlate MacCon NEW ready-to-use S

ready-to-use, sterile, for microbiology

For the study of enterobacteria on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

MacConkey agar (Art. No. X922) is suitable for analysing enterobacteria, in accordance with the European Pharmacopoeia standards and ISO 21567.
Expiration time on request. Do NOT freeze!

Formulation:

Gelatine peptone	17 g/l
Meat and casein peptone	3 g/l
Lactose	10 g/l
Bile salt (Cholate)	1,5 g/l
Sodium chloride (NaCl)	5 g/l
Neutral red	0,03 g/l
Crystal Violet	0,001 g/l
Agar	15 g/l
pH value	7,1±0,2
Colour	pink
Growth of test strains	complies
Diameter	60 mm

2313.1	30 pieces	box	62,25 €

Roti®-ContiPlate VRBD ready-to-use S

ready-to-use, sterile, for microbiology

For detection of enterobacteria on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile culture medium contact plates for the microbiological analysis of surfaces.
The Violet Red Bile Agar with Glucose (Art. No. X939) is recommended by Pharm. Eur. and ISO 21528 for enumeration of enterobacteria.
Expiration time on request. Do NOT freeze!

Formulation:

Glucose monohydrate.	10 g/l
Gelatine peptone.	7 g/l
Sodium chloride (NaCl).	5 g/l
Yeast extract.	3 g/l
Bile salts.	1,5 g/l
Neutral red.	0,03 g/l
Crystal Violet.	0,002 g/l
Agar.	13 g/l
pH value.	7,4 ±0,2
Colour.	purple-red
Growth of test strains.	complies
Diameter.	60 mm

9631.1	30 pieces	box	62,25 €

Roti®-ContiPlate PCA ready-to-use S

ready-to-use, sterile, for microbiology

For total germ count on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Plate Count Agar (Art. No. X930) is recommended by APHA and ISO 4833 for total germ count.
Expiration time on request. Do NOT freeze!

Formulation:

Casein peptone	5 g/l
Yeast extract.	2,5 g/l
Glucose.	1 g/l
Agar.	15 g/l
pH value.	7,0 ±0,2
Colour.	amber, slightly opalescent
Growth of test strains.	complies
Diameter.	60 mm

9630.1	30 pieces	box	62,25 €

Roti®-ContiPlate Sab4plus ready-to-use S

ready-to-use, sterile, for microbiology

For selective detection of yeasts and pathogenic fungi on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Sabouraud 4 % Glucose Agar (with chloroamphenicol) (Art. No. X933) is recommended for selective isolation of yeasts and pathogenic fungi.
Expiration time on request. Do NOT freeze!

Formulation:

Glucose.	40 g/l
Meat and casein peptone.	10 g/l
Chloroamphenicol.	0,5 g/l
Agar.	15 g/l
pH value.	5,6 ±0,2
Colour.	amber, slightly opalescent
Growth of test strains.	complies
Diameter.	60 mm

9633.1	30 pieces	box	62,25 €

Roti®-Aquatest Plates

Sterile culture medium plates for the microbiological analysis of liquid samples.

- Diameter 55 mm
- Easy application
- Optimal for membrane filtration method
- Also applicable for the microbiological analysis of samples in general
- Prepared with our tried and tested dehydrated media mixtures
- Detailed instructions-for-use included

The germs of expected low-germ liquid samples are concentrated by membrane filtration. Afterwards, the membrane is placed on top of the medium and incubated.
Using a membrane with a grid helps counting the resulting colonies.

Samples which are expected to have a higher microbiological burden are prepared in a serial dilution. Afterwards, every dilution step is plated and incubated. The number of grown colonies is noted as result.
Please note: Larger quantities are produced freshly. Hence, longer delivery times may occur.

Summary Roti®-Aquatest Plates

Art. No.	Abbreviation	Agar	Application
9640	PCA	Plate-Count-Agar	Whole germs
9641	Colichrom	*E. coli* and Coliforms chromogenic Agar	*E. coli* and Coliforms
9642	YE	Yeast extract Agar	Bacteria, Yeast, Moulds and moulds
9643	Sab4	Sabouraud 4 % Glucose-Agar	Yeast and fungi
9644	R2A	Reasoner's 2A Agar	Heterotrophic bacteria
9646	Cetr	Cetrimide Agar	*Pseudomonas aeruginosa*
9648	Strep	Slanetz-Bartley Agar	Faecal streptococci
9649	mCP	m-CP Agar	*Clostridium perfringens*
9650	Staph	Mannitol Salt Agar/ Chapman Agar	Pathogenic staphylococci

Roti®-Aquatest Plate PCA

ready-to-use | S

APHA, ISO 4833, ready-to-use, sterile, for microbiology

For enumeration of the aerobic microbial flora.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Plate Count Agar (Art. No. X930) is recommended by APHA and ISO 4833 for total germ count.
Expiration time on request. Do NOT freeze!

Formulation:

Casein peptone	5 g/l
Yeast extract	2,5 g/l
Glucose	1 g/l
Agar	14 g/l
pH value	7,0 ±0,2
Colour	amber, slightly opalescent
Growth of test strains	complies
Diameter	55 mm

9640.1	30 pieces	box	49,35 €

Roti®-Aquatest Plate Colichrom

ready-to-use | S

ready-to-use, sterile, for microbiology

For detection and enumeration of *E. coli* and other coliforms.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Coliforms chromogenic Agar (Art. No. CL45) is recommended for detection of *E. coli* and other Coliforms.
Expiration time on request. Do NOT freeze!

Formulation:

Sodium chloride (NaCl)	5 g/l
Casein, enzymatically digested	3 g/l
di-Sodium hydrogen phosphate	2,7 g/l
Sodium dihydrogen phosphate	2,2 g/l
Sodium pyruvate	1 g/l
Tryptophane	1 g/l
Sorbitol	1 g/l
Chromogene Mixture	0,4 g/l
Sodium heptadecyl sulphate (Tergitol-7)	0,15 g/l
Vancomycin	0,005 g/l
Cefsulodin	0,005 g/l
Agar	13 g/l
pH value	6,8 ±0,2
Colour	amber
Growth of test strains	complies
Diameter	55 mm

9641.1	30 pieces	box	119,25 €

Roti®-Aquatest Plate YE

ready-to-use S

DEV, ISO 6222, ready-to-use, sterile, for microbiology

For enumeration of microorganisms in general, e.g. bacteria, moulds or yeast.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Yeast Extract Agar (Art. No. CP63) is recommended for enumeration of microorganisms in general.
Expiration time on request. Do NOT freeze!

Formulation:

Tryptone.	6 g/l
Yeast extract.	3 g/l
Agar.	15 g/l
pH value.	7,2 ±0,2
Colour.	amber, slightly opalescent
Growth of test strains.	complies
Diameter.	55 mm

9642.1	30 pieces	box	49,35 €

Roti®-Aquatest Plate R2A

ready-to-use S

Ph.Eur., ready-to-use, sterile, for microbiology

For enumeration of heterotrophic bacteria.

Storage temp.: +4-15 °C • Transport temp.: cooled

The R2A Agar (Art. No. CL01) is recommended by the Ph. Eur. for enumeration of heterotrophic bacteria.
Expiration time on request. Do NOT freeze!

Formulation:

Yeast extract.	0,5 g/l
Peptone.	0,5 g/l
Casein hydrolysed.	0,5 g/l
Glucose.	0,5 g/l
Starch.	0,5 g/l
di-Potassium hydrogen phosphate.	0,3 g/l
Magnesium sulphate ($MgSO_4$).	0,024 g/l
Sodium pyruvate.	0,3 g/l
Agar.	15 g/l
pH value.	7,2 ±0,2
Colour.	amber
Growth of test strains.	complies
Diameter.	55 mm

9644.1	30 pieces	box	60,10 €

Roti®-Aquatest Plate Cetr

ready-to-use S

Ph.Eur., ready-to-use, sterile, for microbiology

For isolation of *Pseudomonas aeruginosa*.

Storage temp.: +4-15 °C • Transport temp.: cooled

Warning H400

The Cetrimide Agar (Art. No. X918) is recommended by the Ph. Eur. for isolation of *Pseudomonas aeruginosa*.
Expiration time on request. Do NOT freeze!

Formulation:

Gelatin peptone (Pancreas hydrolysate).	20 g/l
Magnesium chloride.	1,4 g/l
Potassium sulphate.	10 g/l
Cetrimide.	0,3 g/l
Glycerol.	10 ml/l
Agar.	13,6 g/l
pH value.	7,2 ±0,2
Colour.	opaque white
Growth of test strains.	complies
Diameter.	55 mm

9646.1	30 pieces	box	49,35 €

Roti®-Aquatest Plate Sab4

ready-to-use S

Ph.Eur., ready-to-use, sterile, for microbiology

For cultivation of yeasts and fungi.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Sabouraud 4% Glucose Agar (Art. No. X932) is recommended by the Ph. Eur. for cultivation of yeasts like *Candida albicans* and moulds.
Expiration time on request. Do NOT freeze!

Formulation:

Glucose.	40 g/l
Meat and casein peptone.	10 g/l
Agar.	15 g/l
pH value.	5,6 ±0,2
Colour.	amber, slightly opalescent
Growth of test strains.	complies
Diameter.	55 mm

9643.1	30 pieces	box	49,35 €

Roti®-Aquatest Plate m-CP

ready-to-use S ❄

TWVO 2001, ready-to-use, sterile, for microbiology

For enumeration of *Clostridium perfringens.*

Storage temp.: +4-15 °C • Transport temp.: cooled

The m-CP Agar (Art. No. CL55) is recommended by the TWVO 2001 for enumeration of *Clostridium perfringens*.
Expiration time on request. Do NOT freeze!

Formulation:

Saccharose.	5 g/l
L-Cysteine hydrochloride.	1 g/l
Magnesium sulphate heptahydrate.	0,1 g/l
Iron(III)-chloride solution 4,5 %.	2 ml
Bromocresol purple.	0,04 g/l
Chromogene Mixture.	0,16 g/l
D-Cycloserine.	0,4 g/l
Polymyxin B sulphate.	0,025 g/l
Tryptose.	30 g/l
Yeast extract.	20 g/l
Agar.	15 g/l
pH value.	7,6 ±0,2
Colour.	purple
Growth of test strains.	complies
Diameter.	55 mm

9649.1	30 pieces	box	103,75 €

Roti®-Aquatest Plate Staph

ready-to-use S ❄

Ph.Eur., ready-to-use, sterile, for microbiology

For isolation of pathogenic staphylococci.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Mannitol Salt Agar (Chapman Agar) (Art. No. CL81) is recommended by the Ph.Eur. for isolation of pathogenic staphylococci.
Expiration time on request. Do NOT freeze!

Formulation:

Pancreatic digest of casein.	5 g/l
Peptone (peptic digest of animal tissue).	5 g/l
Beef extract.	1 g/l
Sodium chloride (NaCl).	75 g/l
D-Mannitol.	10 g/l
Phenol red.	0,025 g/l
Agar.	15 g/l
pH value.	7,4 ±0,2
Colour.	red
Growth of test strains.	complies
Diameter.	55 mm

9650.1	30 pieces	box	49,35 €

Roti®-Aquatest Plate Strep

ready-to-use S ❄

DEV, ISO 7899-2, ready-to-use, sterile, for microbiology

For enumeration of intestinal streptococci.

Storage temp.: +4-15 °C • Transport temp.: cooled

Warning H312-H412-EUH032

The Slanetz-Bartley Agar (Art. No. X935) is recommended by the ISO 7899-2 for enumeration of intestinal streptococci.
Expiration time on request. Do NOT freeze!

Formulation:

di-Potassium hydrogen phosphate.	4 g/l
Sodium azide.	0,4 g/l
Tetrazolium chloride (TTC).	0,1 g/l
Tryptose.	20 g/l
Yeast extract.	5 g/l
Glucose.	2 g/l
Agar.	12 g/l
pH value.	7,2 ±0,1
Colour.	amber, slightly opalescent
Growth of test strains.	complies
Diameter.	55 mm

9648.1	30 pieces	box	56,90 €

Our tip for most simple **filtration and microbiological analysis of liquids:**

Bottle-top filter holders **KA90.1**
+ Cellulose mixed ester (CME) membrane filters **NH80.1** (non-sterile)
+ Screw neck bottles DURAN - pressure plus (e.g. 1 Litre, **H995.1**)

- Apply membrane to filter holder
- Screw filter holder onto bottle
- *Optional:* Wrap whole construct in aluminum foil
- Steam sterilize
- Ready-for-use (or ready-for-store)

▶ Membrane filters see page 521

Compact Dry Ready-Made Plates

Dry ready-made plates for easy microbiological analysis of solutions and compact samples.

made by NISSUI

- Storage and transport at room temperature
- Simple and safe use
- Safely stackable
- Easy interpretation through chromogenic additives and 1 x 1 cm grid
- Detailed instructions-for-use included
- Suitable for control of foods and feeds, cosmetics and pharmaceutical samples, for hygiene monitoring and contamination survey, for schooling and student's courses

Compact Dry plates made by NISSUI are suitable for detection and enumeration of microorganisms from foods and feeds, cosmetics and pharmaceutical samples, as well as for hygiene monitoring and contamination control in food-producing areas. Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret.
Compact Dry plates are easy and safe to handle. Due to storage at room temperature, they may be used even on site. One millilitre of the sample to be analysed is applied onto the sterile plate surface, spreading itself evenly over the plate during rehydration of the medium. Dry sample matter is homogenised and solubilised using the Compact Dry Dilution Rack (Art. No. 4823.1) prior to plate inoculation.

Growth area is 20 cm^2. Inner Ø 47 mm.

Compact Dry CF

ready-to-use S

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of coliforms.

Ready-made agar plate coliforms

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry CF plates is related to the Coliform chromogenic Agar and resembles a modified version of the Compact dry EC plates. The Chromogenic mixture has been replaced by X-Gal, causing all coliform bacteria to grow in colonies of a bright blue colour.

AOAC-, MicroVal-, and NordVal- certified.

4827.1	40 plates	blister	79,45 €
4827.2	240 plates	blister	407,45 €

Compact Dry EC

ready-to-use S

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of coliforms in general, particularly *E. coli*.

Ready-made agar plate *E. coli*

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry EC plates is related to the Coliform chromogenic Agar. Colonies of *E. coli* show a bright blue colour, while other coliforms grow in red to pink coloured colonies. Addition of red and blue colonies results in total count of coliforms.

AOAC-, MicroVal-, and NordVal- certified.

4826.1	40 plates		blister	79,45 €
4826.3	120 plates	New size	blister	212,35 €
4826.2	240 plates		blister	407,45 €

Ready-Made Media

Compact Dry ETB ready-to-use S

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of enterobacteriaceae.

Ready-made agar plate enterobacteria

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry ETB plates is deduced from the Violet Red Bile Agar with Dextrose (VRBD). Enterobacteriaceae grow in red colonies.

MicroVal- and NordVal-certified.

4828.3	8 plates	New size	blister	23,55 €
4828.1	40 plates		blister	87,00 €
4828.2	240 plates		blister	456,90 €

Compact Dry TC ready-to-use S

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for total germ count.

Ready-made agar plate total count

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. Compact Dry TC are based on a standard total-germ-count agar under addition of TTC which, being a redox-indicator, stains all living bacterial colonies red.

AOAC- MicroVal-, and Nordval certified.

4816.3	8 plates	New size	blister	21,40 €
4816.1	40 plates		blister	75,15 €
4816.2	240 plates		blister	375,20 €

Compact Dry SL ready-to-use S

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of salmonellae.

Ready-made agar plate salmonells

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry SL plates is deduced from the formulation of Triple Sugar Iron Agar. Salmonellae may easily be identified by the green colouring of the colonies, accompanied by colour shift of the plate to yellow due to alcalization of the medium. Salmonellae producing hydrogen sulphide grow in black colonies on yellow medium.

4817.1	40 plates		blister	102,05 €
4817.2	240 plates		blister	504,20 €

Compact Dry X-BC ready-to-use S

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of *Bacillus cereus.*

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry X-BC plates is based on a nutritious formulation, using mannitol as selective agent. Colonies of *Bacillus cereus* grow in a light blue or blue colour.

MicroVal certified.

1070.1	40 plates		blister	107,00 €
1070.2	240 plates		blister	557,95 €

Art. No.	Compact Dry	Detection of	Certificate
4816	TC	whole germs	AOAC, MicroVal, NordVal
1070	X-BC	*Bacillus cereus*	MicroVal
1087	X-SA	*Staphylococcus aureus*	AOAC, MicroVal, NordVal
4817	SL	salmonells	-
4818	YM	yeast/moulds	AOAC, MicroVal, NordVal
4826	EC	coliforms /*E. coli*	AOAC, MicroVal, NordVal
4827	CF	coliforms	AOAC, MicroVal, NordVal
4828	ETB	enterobacteria	MicroVal, NordVal

Compact Dry X-SA

ready-to-use S

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of *Staphylococcus aureus.*

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry X-SA plates is based on a mannitol agar, using lithium as additional selective agent. *Staphylococci* grow in a light to bright cyan-blue colour.

AOAC-, MicroVal-, and NordVal certified.

1087.1	40 plates	blister	107,00 €
1087.2	240 plates	blister	557,95 €

Compact Dry YM

ready-to-use S

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of yeasts and moulds.

Ready-made agar plate yeasts and moulds

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry YM plates is deduced from an enriched version of the Potato Extract Glucose Agar. While accompanying bacteria are inhibited by inherent antibiotics, yeast colonies show a bright blue colour. Due to the net quality of the plate matrix, moulds are able to form their natural, three-dimensional growth structure accompanied by their respective characteristic colouring.

Figure:
A: *Candida albicans* ATCC 10231
B: *Aspergillus niger* ATCC 16404

AOAC-, MicroVal-, and Nordval-certified.

4818.3	8 plates	New size	blister	22,50 €
4818.1	40 plates		blister	80,55 €
4818.2	240 plates		blister	429,50 €

▶ Membrane filters see page 521

Compact Dry Swab

ready-to-use S

NISSUI for microbiology

All-in-one set of swab and nutrient broth for microbiological sampling of surfaces.

Storage temp.: +20 °C

Sterile all-in-one system for sampling in the microbiological field of work. Suitable for analysis of foods and feeds, in pharmaceutical areas, as well as for hygiene monitoring, and for exclusion of contaminations.
Compact Dry Swabs made by NISSUI are particularly easy to apply, and may also be used by laymen. In order to test a surface, the respective area is wiped with the sterile cotton swab. After returning the swab into the tube, the germs are released into the nutrient broth by agitation. The amount of 1 ml medium has been optimised for inoculation of nutrient agar plates in general, also making this swab most compatible with Compact Dry plates.

Compact Dry Swabs are particularly suitable for sampling at difficult-to-access areas or when working on site. The sample taken may be transported inside the swab.
Storage at room temperature as well as easy application makes them a very versatile tool in microbiology.

Contains 1 ml **Peptone Water, buffered**

Type analysis:

Appearance nutrient broth. ..... light yellow
Turbidity..... clear
Sterility.....complies
pH value. 6,8-7,2

4809.1	40 swabs	box	102,05 €
4809.2	240 swabs	box	504,20 €

Our tip for most simple **filtration and microbiological analysis of liquids:**

Bottle-top filter holders **KA90.1**
+ Cellulose mixed ester (CME) membrane filters **NH80.1** (non-sterile)
+ Screw neck bottles DURAN - pressure plus (e.g. 1 Litre, **H995.1**)

- Apply membrane to filter holder
- Screw filter holder onto bottle
- *Optional:* Wrap whole construct in aluminum foil
- Steam sterilize
- Ready-for-use (or ready-for-store)

Compact Dry Dilution Rack MRD

ready-to-use S

ELMEX for microbiology

For preparation of dilution series of microbiological samples.
Sterile nutrient broth.

Maximum Recovery Solution in racks

Storage temp.: +20 °C

Ready-made nutrient broth in racks for easy preparation of dilution series for microbiological assays.
Each rack consist of 4 wells with 9 mls of Maximum Recovery Solution each (Art. No. 5766). By transferring 1 ml, 10-fold dilution series are very easily prepared.
Each well is sealed by an aluminium foil, and may be separated from the others at a perforation line. Using the Compact Dry Opener (Art. No. 4825.1, please order separately) a hole may be pierced into the lid, providing access for pipetting.

128 wells in 32 racks of 4 separable wells each.

Type analysis:

Appearance of solution. ..... light beige
Turbidity ..... clear
Peptone. ..... 1,0 g/l
NaCl. ..... 8,5 ±0,5 g/l
Sterility ..... complies
pH value. ..... 7,1 ±0,5

1096.1	128 wells	box	186,55 €

Compact Dry Opener

Made by NISSUI. Metal pen for easy penetration of the aluminium foil sealing the Compact Dry Dilution Racks.

Art. No.	Pack Qty.	€
4825.1	1	32,15

Compact Dry Dilution Rack

ready-to-use S

ELMEX for microbiology

For preparation of dilution series of microbiological samples.
Sterile PBS.

Storage temp.: +20 °C

Sterile buffer solution in racks for easy preparation of dilution series for microbiological assays.

Each rack consist of 4 wells with 9 mls phosphate buffered saline each. By transferring 1 ml, 10-fold dilution series are very easily prepared. Each well is sealed by an aluminium foil, and may be separated from the others at a perforation line. Using the Compact Dry Opener (Art. No. 4825.1) a hole may be pierced into the lid, providing access for pipetting.

128 wells in 32 racks of 4 separable wells each.

Type analysis:

Appearance of solution. ..... limpid to light yellow
Turbidity ..... clear
Content NaCl. ..... 0,85 ±0,1 %
Sterility ..... complies
pH value. ..... 7,1±0,5

4823.1	128 wells	box	160,75 €

Nutrient Media

Microbiological Nutrient Media

ROTH provides the most important microbiological nutrient media as ready-made mixtures. Our anhydrous media fulfil the highest purity and quality requirements, several media are formulated according to the specifications of the European Pharmakopoeia (Ph.Eur.), European and German drinking water regulations, APHA, and other ISO standards.
Our microbiological nutrient media are suitable for analysis of food, cosmetics, pharmaceutics, and research, as well as for service and waste water analysis.

- **Optimised formulation**
- **Superior quality and purity**
- **Tried and tested ready-made mixtures**
- **Big packs on request**

Acetamide Broth (Solution A)

DEV, EN ISO 16266:2008, for microbiology

For confirmation of *Pseudomonas aeruginosa* in water samples.

Storage temp.: +20 °C

Warning H351

Application: Use 3,4 g for 1 l broth. Solubilise in 900 ml, add freshly prepared solution B (sodium molybdate, Art. No. 0274.1, and iron sulfat, Art. No. P015.1) and adjust with water to 1 l.

Guarantee analysis:

Potassium dihydrogen phosphate.	1 g/l
Magnesium sulphate ($MgSO_4$)	0,2 g/l
Acetamide.	2 g/l
Sodium chloride (NaCl).	0,2 g/l
pH value.	7,0 ±0,5

CP61.1	500 g	plastic	185,45 €
Original pack 6 x 500 g			176,18/500 g

Antibiotic Medium No. 1

Ph.Eur., for microbiology

Standard agar medium for detection and for assaying the potency of antibiotics.

Antibiotic Agar No. 1 (Ph.Eur. 7,0), Penassay Seed Agar

Storage temp.: +20 °C

Application: Use 30,5 g for 1 l agar.

Guarantee analysis:

Peptone.	6,0 g/l
Casein peptone (Pancreas hydrolysate).	4,0 g/l
Yeast extract.	3,0 g/l
Beef extract.	1,5 g/l
Glucose monohydrate.	1,0 g/l
Agar.	15,0 g/l
pH value	6,6 ±0,1

CL53.1	500 g	plastic	121,40 €
Original pack 6 x 500 g			115,33/500 g

Antibiotic Medium No. 23

for microbiology

Agar medium for detection and for assaying the potency of antibiotics.

Storage temp.: +20 °C

Application: Use 27,1 g for 1 l agar. Directly prior to pouring add 14,3 g ammonium chloride in 10 ml sterile water.

Guarantee analysis:

Glucose.	10,0 g/l
Yeast extract.	2,5 g/l
di-Potassium hydrogen phosphate.	0,69 g/l
Potassium dihydrogen phosphate.	0,45 g/l
Agar.	13,5 g/l
pH value .	5,6 ±0,1

CL54.1	500 g	plastic	107,40 €
Original pack 6 x 500 g			102,03/500 g

Azide Dextrose Broth

for microbiology

For enrichment and detection of enterococci.

Storage temp.: +20 °C

Warning H302-H412

Application: Use 34,7 g (1x) or 69,4 g (2x) for 1 l broth.

Formulation:

Casein peptone.	15 g/l
Meat extract.	4,5 g/l
Glucose.	7,5 g/l
Sodium chloride (NaCl).	7,5 g/l
Sodium azide.	0,2 g/l
pH value.	7,2 ±0,2

CL79.1	500 g	plastic	97,75 €
Original pack 6 x 500 g			92,86/500 g

Baird Parker Agar (Base)

Ph.Eur., for microbiology

For isolation and enumeration of staphylococci.
Agar medium O (Ph.Eur. 6.0)
Storage temp.: +20 °C

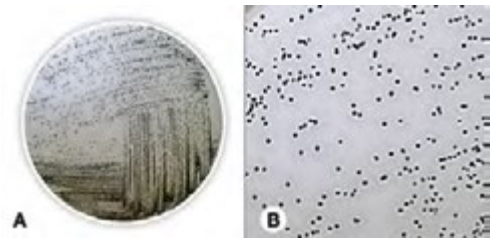


Figure:
A: *Staphylococcus aureus*
B: Enlargement of A, showing clear zones round the colonies (Lecithinase break-down of egg yolk).

Application: Use 63 g for 1 l agar. Add egg yolk emulsion tellurit (Art. No. 0339.1) to 5 % final concentration.

Guarantee analysis:

Casein peptone (pancreas hydrolysate)	10 g/l
Beef extract.	5 g/l
Yeast extract.	1 g/l
Lithium chloride.	5 g/l
Glycine.	12 g/l
Sodium pyruvate.	10 g/l
Agar.	20 g/l
pH value.	6,8 ±0,2

X913.1	500 g	plastic	113,85 €
Original pack 6 x 500 g			108,16/500 g

▶ RPF Supplement see page 1461
▶ Egg Yolk Tellurite Emulsion see page 1429

Bengal Red Agar (with chloroamphenicol)

for microbiology

Standard-selective agar for counting yeast and food mould fungi.

RBC Agar

Storage temp.: +20 °C

The addition of chloroamphenicol inhibits bacterial growth.
Bengal red limits the size and the spreading of fungal colonies, so that slow-growing species are not overgrown by fast-growing ones.

Figure:
Aspergillus niger
Application: Use 31,6 g for 1 l agar.

Formulation:

Peptone.	5 g/l
Glucose.	10 g/l
Potassium phosphate.	1 g/l
Magnesium sulphate ($MgSO_4$)	0,5 g/l
Chloroamphenicol.	0,1 g/l
Bengal red.	0,05 g/l
Agar.	15 g/l
pH value.	7,2 ±0,2

AE24.1	500 g	plastic	116,00 €
Original pack 6 x 500 g			110,20/500 g

Bile Esculin Azide Agar

DEV, ISO 7899-2:2000, for microbiology

For isolation and identification of intestinal enterococci from water samples.
Storage temp.: +20 °C

Warning H412-H302

Figure:
Esculin hydrolysis and reaction with ferric citrate caused by *Enterococcus faecalis*. Medium surrounding the brown to black coloured *E. faecalis* colonies is also stained brown.
Application: Use 56,6 g for 1 l agar.

Guarantee analysis:

Tryptone.	17 g/l
Peptone.	3 g/l
Yeast extract.	5 g/l
Ox bile dehydrated.	10 g/l
Sodium chloride (NaCl).	5 g/l
Esculin.	1 g/l
Ammonium iron(III) citrate.	0,5 g/l
Sodium azide.	0,15 g/l
Agar.	15 g/l
pH value.	7,1 ±0,1

CP62.1	500 g	plastic	203,75 €
Original pack 6 x 500 g			193,56/500 g

Blood Agar (Base)

for microbiology

For isolation, cultivation and detection of haemolytic reaction of fastidious microorganisms.
Storage temp.: +20 °C

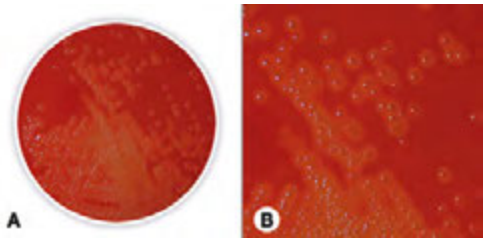


Figure:
A: *Streptococcus pyogenes*
B: Enlargement of A, showing β-haemolysis caused by *S. pyogenes*
Application: Use 40 g for 1 l agar. If required, add 50-110 ml defibr. blood.

Formulation:

Meat peptone.	10 g/l
Heart infusion.	10 g/l
Sodium chloride (NaCl).	5 g/l
Agar.	15 g/l
pH value.	7,3 ±0,2

X914.1	500 g	plastic	159,00 €
Original pack 6 x 500 g			151,05/500 g

Instructions for use
can be found on the Internet next to the product description.

Blood Agar No. 2 (Base)

ISO 7932, ISO 11290-1, for microbiology

For cultivation and detection of haemolytic reaction of fastidious microorganisms.

Storage temp.: +20 °C

Particularly recommended for confirmation of *Bacillus cereus* and *Listeria monocytogenes*.

Application: Use 39,5 g for 1 l agar, add 50-70 ml defibr. blood.

Guarantee analysis:

Proteose peptone.	15 g/l
Yeast extract.	5 g/l
Sodium chloride (NaCl).	5 g/l
Liver extract.	2,5 g/l
Agar.	12 g/l
pH value.	7,0 ±0,2

8281.1	500 g	plastic	117,75 €
Original pack 6 x 500 g			111,86/500 g

Brain-Heart-Infusion Broth

for microbiology

For cultivation of fastidious microorganisms.

BHI Broth

Storage temp.: +20 °C

Application: Use 37 g for 1 l broth.

Formulation:

Pig brain infusion.	7,5 g/l
Pig heart infusion.	10 g/l
Peptone.	10 g/l
Glucose.	2 g/l
Sodium chloride (NaCl).	5 g/l
Disodium phosphate.	2,5 g/l
pH value.	7,4 ±0,2

X916.1	500 g	plastic	93,00 €
Original pack 6 x 500 g			88,35/500 g
X916.2	1 kg	plastic	158,60 €
Original pack 6 x 1 kg			150,67/1 kg

Brain-Heart-Infusion Agar

for microbiology

For cultivation of fastidious microorganisms.

BHI Agar

Storage temp.: +20 °C

Application: Use 52 g for 1 l agar.

Formulation:

Calf Brain Infusion.	7,5 g/l
Beef Heart Infusion.	10 g/l
Peptone.	10 g/l
Glucose.	2 g/l
Sodium chloride (NaCl).	5 g/l
Disodium phosphate.	2,5 g/l
Agar.	15 g/l
pH value.	7,4 ±0,2

X915.1	500 g	plastic	100,55 €
Original pack 6 x 500 g			95,52/500 g

„Infusion“

In the early days of bacteriology, so-called "infusions" (tissue extraction) were used in microbiological media. During the development of the dry media, these extracts were dried and used in a powdery form to produce purified and standardised extracts. Today, extracts or special, highly purified peptones are commonly used in modern media.

As simply manufactured and non-standardised natural products, "infusion" have a relatively low batch-to-batch constancy and vary both in composition and in nutrient content. However, they are still commonly used in several classic media.

Brilliant Green Bile Broth

DIN 10172, for microbiology

For selective enrichment and enumeration of coli bacteria in milk, water samples, faeces and other material.

Storage temp.: +20 °C

Adding 40 mg/l Novobiocin (Art. No. 0247.1) during selective detection of coliform bacteria further reduces the growth of attendant flora (Alcaide *et al.*, 1982, *J. Appl. Bact.* 53:143-6).

Figure:
① *Escherichia coli* (turbidity and gas formation (arrow))
② *Enterobacter aerogenes* (turbidity)
③ Uninoculated broth

Application: Use 40 g for 1 l broth.

Guarantee analysis:

Gelatine peptone.	10 g/l
Lactose.	10 g/l
Bile salts.	20 g/l
Brilliant green.	0,0133 g/l
pH value.	7,2 ±0,2

CL06.1	500 g	plastic	147,85 €
Original pack 6 x 500 g			140,46/500 g

Brilliant Green Lactose Sucrose Agar

Ph.Eur., for microbiology

Highly selective medium for the isolation of *Salmonellae* from pathological specimens and food.

Agar medium L (Ph.Eur. 6.0), **BPLS**

Storage temp.: +20 °C

Application: Use 58,1 g for 1 l agar.

Guarantee analysis:

Meat and casein peptone.	10 g/l
Yeast extract.	3 g/l
Sodium chloride (NaCl).	5 g/l
Lactose monohydrate.	10 g/l
Saccharose.	10 g/l
Phenol red.	0,08 g/l
Brilliant green.	0,0125 g/l
Agar.	20 g/l
pH value.	6,9 ±0,2

AE43.1	500 g	plastic	99,90 €
Original pack 6 x 500 g			94,91/500 g

Brilliant Green Tetrathionate Bile Broth

Ph.Eur., for microbiology

For selective enrichment of *Salmonellae* in food and faeces.
Broth medium I (Ph.Eur. 6.0)
Storage temp.: +20 °C

Application: Use 63 g for 1 l broth.

Guarantee analysis:

Peptone.	8,6 g/l
Dried beef bile.	8 g/l
Sodium chloride (NaCl).	6,4 g/l
Calcium carbonate.	20 g/l
Potassium tetrathionate.	20 g/l
Brilliant green.	0,07 g/l
pH value.	7,0 ±0,2

AE42.2	100 g	plastic	118,15 €
AE42.1	500 g	plastic	461,20 €
Original pack 6 x 500 g			438,14/500 g

Brucella Broth

for microbiology

For cultivation of *Brucella* and other fastidious microorganisms.
Storage temp.: +20 °C
Also suitable for enrichment of fastidious microorganisms like, e.g. *Campylobacter*.

Application: Use 28,1 g for 1 l broth.

Formulation:

Meat peptone	10 g/l
Casein peptone.	10 g/l
Sodium chloride.	5 g/l
Yeast extract.	2 g/l
Glucose.	1 g/l
Sodium bisulfite.	0,1 g/l
pH value.	7,0 ±0,2

5754.1	500 g	plastic	85,90 €
Original pack 6 x 500 g			81,61/500 g

Brucella Agar

for microbiology

For cultivation of *Brucella* and other fastidious microorganisms in foods and other specimens.
Storage temp.: +20 °C
In order to gain a selective medium, supplement with Nystatin, Bacitracin, Polymyxin B, Cycloheximide, Vancomycin and Nalidixic acid.

Application: Use 43,1 g for 1 l agar, add 50 ml defibr. sheep blood.

Formulation:

Meat peptone	10 g/l
Casein peptone.	10 g/l
Sodium chloride.	5 g/l
Yeast extract.	2 g/l
Glucose.	1 g/l
Sodium bisulfite.	0,1 g/l
Agar.	15 g/l
pH value.	7,0 ±0,2

5752.1	500 g	plastic	98,80 €
Original pack 6 x 500 g			93,86/500 g

Campylobacter Agar, blood-free (Base)

for microbiology

For isolation of *Campylobacter jejuni*, *Campylobacter coli*, and *Campylobacter laridis* in foods, and other samples.
Campy-Selective-Bloodfree-Medium, Bolton-Agar, Blood-free **CCDA**, Modified **CCDA**
Storage temp.: +20 °C
Modified formulation acc. to Bolton (Bolton *et al.*, (1984) *Clin. Microbiol.* 19:169-171), replacing blood with charcoal, sodium pyruvate and iron sulphate.

Application: Use 45,5 g for 1 l agar. After cooling add 2 vials (2x5 ml) reconstituted Campylobacter Supplement (Art. No. 4857.1).

Formulation:

Casein peptone.	10 g/l
Beef extract.	10 g/l
Sodium chloride.	5 g/l
Casein hydrolysed.	3 g/l
Bacteriological charcoal.	4 g/l
Sodium deoxycholate.	1 g/l
Iron sulphate.	0,25 g/l
Sodium pyruvate	0,25 g/l
Agar.	12 g/l
pH value.	7,4 ±0,2

5756.1	500 g	plastic	160,20 €
Original pack 6 x 500 g			152,19/500 g

▶ Campylobacter Supplement see page 1458

Please note our **Technical Information Brochure** on the Internet next to the products:

Microbiological Media
Manual for preparation and storage

Campylobacter Selective Agar (Base)

for microbiology

For isolation of *Campylobacter coli* and *C. jejuni*.
Preston Agar, Campy Agar
Storage temp.: +20 °C
The Campylobacter Selective Agar is based on the formulation of Bolton and Robertson (Bolton and Robertson (1982) *J. Clin. Path.* 35:462-7). Trough addition of the Campylobacter Preston Supplement (Art. No. 8851), the Agar is highly selective for *Campylobacter coli* and *C. jejuni.*

Application: Use 18,5 g for 475 ml agar. After cooling add 5-7 % lysed blood and 1 vial of Campylobacter Preston Supplement (Art. No. 8851).

Formulation:

Casein peptone.	10 g/l
Beef extract.	10 g/l
Sodium chloride (NaCl).	5 g/l
Agar.	12 g/l
pH value.	7,5 ±0,2

8847.1	500 g	plastic	141,80 €
Original pack 6 x 500 g			134,71/500 g

▶ Campylobacter Preston Supplement see page 1458

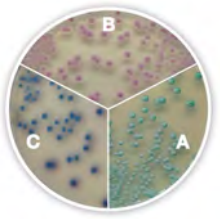
Candida chromogenic Agar

for microbiology

Selective medium for isolation and quick identification of pathogeneous Candida species.

Storage temp.: +4 °C

Warning H351



Staining of species:
A: *Candida albicans* turquoise-green (glucuronidase)
B: *Candida krusei* purple-pink (galactosidase)
C: *Candida tropicalis* blue (glucosidase)
Candida parasilosis and *C. glabrata* light-purple to light white

Application: Use 45,9 g for 1 l agar.

Formulation:

Peptone.	10 g/l
Glucose.	20 g/l
Chloroamphenicol.	0,5 g/l
Chromogene Mixture.	0,4 g/l
Agar.	15 g/l
pH value.	6,1 ±0,2

2922.2	100 g	plastic	149,45 €
2922.1	500 g	plastic	547,20 €
Original pack 6 x 500 g			519,84/500 g

CASO Broth

Ph.Eur., for microbiology

For cultivation of fastidious and non-fastidious microorganisms.
Broth medium A (Ph.Eur. 6.0), Casein Soya Bean Digest Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Peptone Broth, **TSB Broth**, Tryptic Soy Broth
Storage temp.: +20 °C

Application: Use 30 g for 1 l broth.

Guarantee analysis:

Casein peptone (pancreas hydrolysate) .	17 g/l
Soy peptone (papain hydrolysate).	3 g/l
di-Potassium hydrogen phosphate.	2,5 g/l
Sodium chloride (NaCl).	5 g/l
Glucose monohydrate.	2,5 g/l
pH value.	7,3 ±0,2

X938.1	500 g	plastic	70,45 €
Original pack 6 x 500 g			66,93/500 g
X938.2	1 kg	plastic	117,75 €
Original pack 6 x 1 kg			111,86/1 kg
X938.3	2,5 kg	plastic	249,95 €

▶ CASO Broth, **granulated** see page 1456

CASO Broth vegetal

animal-free

for microbiology, animal-free

For cultivation of fastidious and non-fastidious microorganisms.
Soy Peptone Broth, **TSB Broth**, Tryptic Soy Broth
Storage temp.: +20 °C
Application: Use 30 g for 1 l broth.

Formulation:

Vegetable peptone .	20 g/l
di-Potassium hydrogen phosphate.	2,5 g/l
Sodium chloride (NaCl).	5 g/l
Glucose.	2,5 g/l
pH value.	7,3 ±0,2

0139.1	500 g	plastic	85,90 €
Original pack 6 x 500 g			81,61/500 g

CASO Agar

Ph.Eur., for microbiology

For isolation and cultivation of non-fastidious organisms.
Agar medium B (Ph.Eur. 6.0), Casein Soya Bean Digest Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Peptone Agar, **TSB Agar**, Trypticasein Soy Agar
Storage temp.: +20 °C

Application: Use 40 g for 1 l agar.

Guarantee analysis:

Casein peptone (pancreas hydrolysate) .	15 g/l
Soy peptone (papain hydrolysate).	5 g/l
Sodium chloride (NaCl).	5 g/l
Agar.	15 g/l
pH value.	7,3 ±0,2

X937.1	500 g	plastic	84,40 €
Original pack 6 x 500 g			80,18/500 g
X937.2	1 kg	plastic	150,40 €
Original pack 6 x 1 kg			142,88/1 kg
X937.3	2,5 kg	plastic	322,00 €

▶ CASO Agar, **granulated** see page 1456

CASO Agar with Lecithin/Polysorbate 80

for microbiology

For detection of microorganisms from cosmetics and disinfected surfaces.
TSA Letheen, Tryptone Soy Agar Letheen, TSA with Tween® 80 and Lecithin
Storage temp.: +20 °C
Lecithin and Tween® 80 enable growth and colony counting of bacteria through inactivating disinfectants and preservatives like quaternary ammonium compounds.

Application: Use 45,7 g for 1 l agar.

Formulation:

Pancreatic digest of casein.	15 g/l
Soy peptone.	5 g/l
Sodium chloride (NaCl).	5 g/l
Lecithin.	0,7 g/l
Polysorbate 80.	5 g/l
Agar.	15 g/l
pH value.	7,2 ±0,2

8848.1	500 g	plastic	116,00 €
Original pack 6 x 500 g			110,20/500 g

Cetrimide Agar (Base)

Ph.Eur., for microbiology

For isolation and identification of *Pseudomonas aeruginosa*.
Agar medium N (Ph.Eur. 6.0), Cetrimide Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
CTM
Storage temp.: +20 °C

Warning H400

Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for growth of *Pseudomonas aeruginosa*.

Figure:
Production of pyoverdin by *Pseudomonas aeruginosa*. Being water soluble, pyoverdin diffuses through the agar, staining the originally opaque-white medium fluorescent greenish-yellow where *P. aeruginosa* colonies are located.

Application: Use 45,3 g for 1 l agar, add 10 ml glycerol.

Guarantee analysis:

Gelatin peptone (Pancreas hydrolysate)	20 g/l
Magnesium chloride.	1,4 g/l
Potassium sulphate.	10 g/l
Cetrimide.	0,3 g/l
Agar.	13,6 g/l
pH value.	7,2 ±0,2

X918.1	500 g	plastic	98,40 €
Original pack 6 x 500 g			93,48/500 g

Safety data sheets
can be found on the Internet next to the product description.

CLED Agar

for microbiology

For cultivation, differentiation and enumeration of gram-positive and gram-negative bacteria from the urinary tract.
Storage temp.: +20 °C
Inhibits swarming of *Proteus*.

Figure:
A: *Proteus vulgaris* (blue colour due to pH-shift to >7.6)
B: *Escherichia coli* (colour greenish-yellow due to acid production caused by lactose fermentation)

Application: Use 36 g for 1 l agar.

Formulation:

Casein peptone.	4 g/l
Gelatine peptone.	4 g/l
Beef extract.	3 g/l
Lactose.	10 g/l
L-Cystine.	0,128 g/l
Bromothymol blue.	0,02 g/l
Agar.	15 g/l
pH value.	7,3 ±0,2

2835.1	500 g	plastic	95,60 €
Original pack 6 x 500 g			90,82/500 g
2835.2	1 kg	plastic	160,75 €
Original pack 6 x 1 kg			152,71/1 kg

CLED Agar plus

for microbiology

For cultivation, easy differentiation by colour, and enumeration of gram-positive and gram-negative bacteria from the urinary tract.
Storage temp.: +20 °C
Inhibits swarming of *Proteus*. **With Andrade´s indicator**.

Application: Use 36,2 g for 1 l agar.

Formulation:

Casein peptone.	4 g/l
Gelatine peptone.	4 g/l
Beef extract.	3 g/l
Lactose.	10 g/l
L-Cystine.	0,128 g/l
Bromothymol blue.	0,02 g/l
Andrade's indicator.	0,1 g/l
Agar.	15 g/l
pH value.	7,5 ±0,2

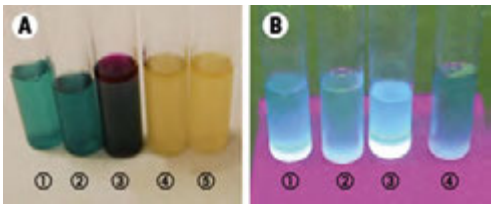
2836.1	500 g	plastic	107,40 €
Original pack 6 x 500 g			102,03/500 g

Coli Fluoro Broth

for microbiology

Enrichment medium for the simultaneous and easy detection of total Coliforms and *E. coli* in water, foods and dairy products.

Storage temp.: +4 °C



A) Staining of species:
E. coli greenish-blue (1,2), black-red after Indole reaction (3)
Enterobacter, Klebsiella, Citrobacter greenish-blue (1,2)
Shigella, Salmonella no colour change (4,5)
B) Fluorescence detection (365 nm):
E. coli fluorescence-positive (1,3)
Enterobacter, Klebsiella, Citrobacter, Shigella, Salmonella no fluorescence (2,4)
Application: Use 17 g for 1 l broth.

Formulation:

Tryptose	5 g/l
Sodium chloride	5 g/l
Dipotassium phosphate	2,7 g/l
Potassium phosphate	2 g/l
Sorbitol	1 g/l
Tryptophane	1 g/l
Sodium lauryl sulphate	0,1 g/l
Chromogenic-fluorogenic mixture	0,23 g/l
pH value	6,8 ±0,2

2923.2	100 g	plastic	90,20 €
2923.1	500 g	plastic	364,45 €
Original pack 6 x 500 g			346,23/500 g

Coliforms chromogenic Agar (ISO)

ISO 9308-1, for microbiology

For detection and enumeration of *E. coli* and other coliforms in water.

CCA

Storage temp.: +4 °C

Staining of species:
E. coli ATCC 25922 blue -dark violet (by reaction of the ß-D-Glucuronidase). *Enterobacter aerogenes* ATCC 13048 red rose (by reaction of the ß-D-galactosidase).
The addition of tryptophane enables an indole test for *E. coli*.
Application: Use 26,45 g for 1 l agar.

Guarantee analysis:

Sodium chloride (NaCl)	5,0 g/l
di-Sodium hydrogen phosphate	2,7 g/l
Sodium dihydrogen phosphate	2,2 g/l
Yeast extract	2,0 g/l
Casein, enzymatically digested	1,0 g/l
Sodium pyruvate	1,0 g/l
Tryptophane	1,0 g/l
Sorbitol	1,0 g/l
Chromogene Mixture	0,4 g/l
Sodium heptadecyl sulphate (Tergitol-7)	0,15 g/l
Agar	10 g/l
pH value	6,8 ±0,2

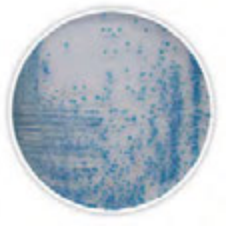
8849.1	500 g	plastic	471,95 €
Original pack 6 x 500 g			448,35/500 g

Coliforms chromogenic Agar

for microbiology

For selective enrichment and simultaneous detection of *E. coli* and other Coliforms in water and food samples.

Storage temp.: +20 °C



Staining of species:
A: *E. coli* blue (by reaction of the ß-D-Glucuronidase)
B: Other Coliforms salmon (by reaction of the ß-D-galactosidase)
E. coli (blue) and *Citrobacter* (salmon).

Application: Use 26,4 g for 1 l agar.

Formulation:

Sodium chloride (NaCl)	5 g/l
Phosphate buffer	4,9 g/l
Peptone	3 g/l
Sodium pyruvate	1 g/l
Tryptophane	1 g/l
Sorbitol	1 g/l
Chromogene Mixture	0,36 g/l
Sodium heptadecyl sulphate (Tergitol-7)	0,1 g/l
Agar	10 g/l
pH value	6,8 ±0,2

CL45.2	100 g	plastic	127,85 €
CL45.1	525 g	plastic	470,75 €

Columbia Agar (Base)

Ph.Eur., for microbiology

For cultivation of fastidious and non-fastidious microorganisms, also for Mycoplasms.

Medium Q (Ph.Eur. 6.0), Columbia Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Columbia Blood Agar (Base)

Storage temp.: +20 °C

Application: Use 42,5 g for 1 l agar. If required, add 50-110 ml defibr. blood.

Guarantee analysis:

Casein peptone (Pancreas hydrolysate)	10 g/l
Meat peptone (Pepsin hydrolysate)	5 g/l
Heart peptone (Pancreas hydrolysate)	3 g/l
Yeast extract	5 g/l
Corn starch	1 g/l
Sodium chloride (NaCl)	5 g/l
Agar	13,5 g/l
pH value	7,3 ±0,2

X919.1	500 g	plastic	78,40 €
Original pack 6 x 500 g			74,48/500 g
X919.2	1 kg	plastic	142,45 €
Original pack 6 x 1 kg			135,33/1 kg

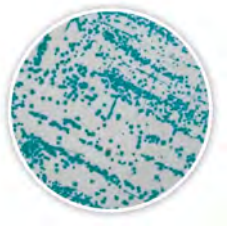
▶ Columbia Agar (Base), **granulated**
see page 1456

Cronobacter chromogenic Agar

ISO 22964:2017, for microbiology

Selective medium for detection of *Cronobacter* (formerly *Enterobacter*) *sakazakii* in milk powder and powdered infant formulae.

Storage temp.: +4 °C



Staining of species:
Cronobacter (*Enterobacter) sakazakii* green to turquois
(by reaction of the α-D-glucosidase)
E. coli transparent to red/violet
Staphylococcus inhibited

Application: Use 30,7 g for 1 l agar.

Guarantee analysis:

Casein peptone (Pancreas hydrolysate)	7 g/l
Sodium chloride	5 g/l
Yeast extract	3 g/l
Sodium deoxycholate	0,25 g/l
Chromogene Mixture	0,15 g/l
Sodium thiosulphate	1 g/l
Ammonium iron(III) citrate	1 g/l
Agar	15 g/l
pH value	7,3 ±0,2

2997.1	100 g	plastic	234,25 €

D/E Neutralizing Agar

for microbiology

For detection and enumeration of microorganisms from a sanitized environment.

Dey-Engley Agar

Storage temp.: +20 °C

Warning H317-EUH031

Particularly recommended for testing areas or samples that have been treated with disinfectants or preservatives.

Application: Use 54 g for 1 l agar.

Formulation:

Dextrose	10 g/l
Lecithin	7 g/l
Sodium thiosulphate	6 g/l
Casein peptone	5 g/l
Polysorbate 80	5 g/l
Yeast extract	2,5 g/l
Sodium bisulfite	2,5 g/l
Sodium thioglycolate	1 g/l
Bromocresol purple	0,02 g/l
Agar	15 g/l
pH value	7,6 ±0,2

8850.1	500 g	plastic	99,45 €
Original pack 6 x 500 g			94,48/500 g

Deoxycholate Citrate Agar

Ph.Eur., for microbiology

For highly selective isolation of enteric pathogenes, particularly *Salmonella* and *Shigella*.

Agar medium J (Ph.Eur. 6.0)

Storage temp.: +20 °C

Figure:
Salmonella typhimurium grows well-developed, colourless colonies with a distinct black center.

Application: Use 70 g for 1 l agar.

Guarantee analysis:

Beef extract	10 g/l
Meat peptone	10 g/l
Lactose monohydrate	10 g/l
Sodium citrate	20 g/l
Iron(III) citrate	1 g/l
Sodium deoxycholate	5 g/l
Neutral red	0,02 g/l
Agar	13,5 g/l
pH value	7,5 ±0,2

AE44.1	500 g	plastic	107,40 €
Original pack 6 x 500 g			102,03/500 g
AE44.2	1 kg	plastic	188,15 €
Original pack 6 x 1 kg			178,74/1 kg

Dichlorane Bengal Red Agar (with chloroamphenicol)

ISO 21527-1, for microbiology

Selective agar for enumeration of yeast and food mould fungi, especially for strongly hyphen-forming fungi.

DRBC Agar

Storage temp.: +20 °C

The addition of dichlorane inhibits hyphae-forming fungi from spreading and improves counting. Chloroamphenicol and a low pH-value inhibit the growth of bacteria.

Figure:
Aspergillus brasiliensis
Application: Use 31,6 g for 1 l agar.

Formulation:

Peptone	5 g/l
Glucose	10 g/l
Potassium phosphate	1 g/l
Magnesium sulphate ($MgSO_4$)	0,5 g/l
Chloroamphenicol	0,1 g/l
Dichlorane	0,002 g/l
Bengal red	0,025 g/l
Agar	15 g/l
pH value	5,6 ±0,2

AE25.1	500 g	plastic	153,65 €
Original pack 6 x 500 g			145,97/500 g

Dichlorane Glycerol Agar (Base)

ISO 21527-2, for microbiology

Selective agar for enumeration of yeast and food mould fungi, especially in half-dry and dry food.

DG18 Agar

Storage temp.: +20 °C

The addition of dichlorane, the reduction of the water content by adding glycerol, and the low pH-value inhibit bacterial growth.

Figure:
Saccharomyces cerevisiae
Application: Use 31,6 g for 1 l agar, add 18 vol.-% glycerol.

Formulation:

Peptone.	5 g/l
Glucose.	10 g/l
Potassium phosphate.	1 g/l
Magnesium sulphate ($MgSO_4$)	0,5 g/l
Chloroamphenicol.	0,1 g/l
Dichlorane.	0,002 g/l
Agar.	15 g/l
pH value.	5,6 ±0,2

AE26.1	500 g	plastic	129,55 €
Original pack 6 x 500 g			123,07/500 g

Differential Reinforced Clostridial Medium

for microbiology

For enrichment and enumeration of clostridia in foods and other samples.

DRCM

Storage temp.: +20 °C

Application: Use 27,5 g for 1 l broth.

Formulation:

Casein peptone.	5 g/l
Meat peptone.	5 g/l
Beef extract.	8 g/l
Yeast extract.	1 g/l
Soluble starch.	1 g/l
Glucose monohydrate.	1 g/l
Cystein hydrochloride.	0,5 g/l
Sodium acetate.	5 g/l
Sodium bisulfite.	0,5 g/l
Ammonium iron(III) citrate.	0,5 g/l
Sodium resazurin.	0,002 g/l
pH value.	7,1 ±0,2

CL78.1	500 g	plastic	120,95 €
Original pack 6 x 500 g			114,90/500 g

DNase Test Agar

for microbiology

For detection of DNase activity for identification of pathogenic bacteria.

Storage temp.: +20 °C

Particularly recommended for identification of pathogenic *Staphylococci*.

Figure:
Clear, DNA-free zone around a streak of *Staphylococcus aureus* ATCC 25923 (DNase positive).
Application: Use 42 g for 1 l agar.

Formulation:

Casein peptone.	15 g/l
Soy peptone.	5 g/l
Sodium chloride (NaCl).	5 g/l
Deoxyribonucleic acid.	2 g/l
Agar.	15 g/l
pH value.	7,3 ±0,2

8295.1	500 g	plastic	241,90 €
Original pack 6 x 500 g			229,81/500 g

EC Broth

ISO 7251, for microbiology

For detection and enumeration of coliform bacteria in water.

E. coli Bouillon

Storage temp.: +20 °C

Application: Use 37,4 g for 1 l broth.

Guarantee analysis:

Tryptose.	20 g/l
Lactose.	5 g/l
Sodium chloride (NaCl).	5 g/l
Dipotassium phosphate.	4 g/l
Potassium phosphate.	1,5 g/l
Bile salts No. 3.	1,5 g/l
pH value.	6,9 ±0,2

8310.1	500 g	plastic	110,65 €
Original pack 6 x 500 g			105,12/500 g

Microbiological Quality Control

Microbiological quality control of Roth molecular biological and microbiological culture media and agar is carried out according to following guidelines:

- Plating relevant bacterial strains from standardized stock solution (as a rule in dilutions of 10^{-1} to 10^{-10}) on agar plates of culture medium to be tested. The preparation of the media and agar must be carried out strictly according to the instructions, which are included.
- Plates from a checked batch of culture media are used as a reference
- The developed colonies are counted and rated after adequate incubation. Counting is always carried out using the plate with colony number 30-300.
- Standardization and validation of test: reference plates are compared with the number of bacteria expected
- Reference and test plate colonies are analysed for size, colour, appearance and possible reaction to certain chemicals
- Growth count on the test plates:

„good“ or „satisfactory“	colony number = 50 % - 99 % of expected growth
„moderate“	colony number = 30 % - 50 % of expected growth
„inhibited“	colony number ≤ 30 % of expected growth
„zero“	no growth

Endo Agar (Base)

for microbiology

For isolation of enteric gram-negative bacteria, especially coliforms, from water, dairy products and foods.

Storage temp.: +20 °C

Figure:
Escherichia coli grows red colonies accompanied by red staining of the surrounding medium (sodium sulphite/fuchsin reaction).
Application: Use 36 g for 1 l agar, add 5 ml basic fuchsin solution.

Formulation:

Peptone. ..... 10 g/l
Lactose. ..... 10 g/l
di-Potassium phosphate. ..... 3,5 g/l
Sodium sulphite. ..... 2,5 g/l
Agar. ..... 10 g/l
pH value. ..... 7,5 ±0,2

X920.1	500 g	plastic	82,25 €
Original pack 6 x 500 g			78,14/500 g

Fraser Broth (Base)

ISO 11290-1, for microbiology

Enrichment medium for detection and isolation of *Listeria* in foods and environmental samples.

Storage temp.: +20 °C

Full Fraser Broth including esculin, acriflavine and nalidixic acid.
Application: Use 57,3 g for 1 l broth. A slight precipitate may appear after autoclaving. Prior to use add sterile filtered ferric(III) ammonium citrate solution ad 0,5 g/l broth (Art. No. 3130.1).

Guarantee analysis:

Pancreatic digest of casein. ..... 5 g/l
Meat peptone. ..... 5 g/l
Beef extract. ..... 5 g/l
Yeast extract. ..... 5 g/l
Sodium chloride. ..... 20 g/l
Disodium phosphate. ..... 12 g/l
Potassium phosphate. ..... 1,35 g/l
Lithium chloride. ..... 3 g/l
Esculin. ..... 1 g/l
Acriflavine. ..... 0,025 g/l
Nalidixic acid. ..... 0,02 g/l
pH value. ..... 7,2 ±0,2

HP17.1	500 g	plastic	128,90 €
Original pack 6 x 500 g			122,46/500 g

▶ Ammonium iron(III)citrate solution
see page 1458

Light-coloured precipitates in nutrient media

In media containing potassium or sodium phosphate, large amounts of yeast extract,or non-fat milk, light-coloured precipitates may form during autoclaving, appearing as opaqueness, light-coloured clouding or white precipitate. In the majority of cases this is insoluble calcium- or magnesium phosphates, which originate in exceeding of the solubility product during heating, and which don't resolubilise during cooling. Typical media showing these phosphate crystals are, for instance, Terrific Broth (TB), Plate Count Agar with non-fat milk, or **Fraser media**.

The amount of phosphates present is only slightly reduced by that, so the medium may be used without any problems. In case the cloudiness hinders analyses, the bouillon may be cleared from precipitates by sterile filtration. Agar media may generally be used directly.

In cases of recurrence we recommend to thoroughly check the desalting plant, or to desalt the water used repeatedly, in order to remove residual calcium carbonate (chalk).

Fraser Half Broth (Base)

ISO 11290-1, for microbiology

Enrichment medium for detection and isolation of *Listeria* in foods and environmental samples.

Storage temp.: +20 °C

Fraser Broth including esculin. With reduced amounts of acriflavine and nalidixic acid.
Application: Use 57,3 g for 1 l broth. A slight precipitate may appear after autoclaving. Prior to use add sterile filtered iron(III) ammonium citrate solution ad 0,5 g/l broth (Art. No. 3130.1).

Guarantee analysis:

Pancreatic digest of casein. ..... 5 g/l
Meat peptone. ..... 5 g/l
Beef extract. ..... 5 g/l
Yeast extract. ..... 5 g/l
Sodium chloride. ..... 20 g/l
Disodium phosphate. ..... 12 g/l
Potassium phosphate. ..... 1,3 g/l
Lithium chloride. ..... 3 g/l
Esculin. ..... 1 g/l
Acriflavine. ..... 0,0125 g/l
Nalidixic acid. ..... 0,01 g/l
pH value. ..... 7,2 ±0,2

HP18.1	500 g	plastic	100,95 €
Original pack 6 x 500 g			95,90/500 g
HP18.2	1 kg	plastic	180,10 €
Original pack 6 x 1 kg			171,10/1 kg

Gelatin Agar (DEV)

DEV, for microbiology

For enumeration of the total microbial population and detection of gelatin-liquefying microorganisms in water samples.

Storage temp.: +20 °C

Application: Use 50 g for 1 l agar.

Guarantee analysis:

Meat peptone. ..... 10 g/l
Meat extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Gelatine. ..... 10 g/l
Agar. ..... 15 g/l
pH value. ..... 7,3 ±0,2

HP07.1	500 g	plastic	149,45 €
Original pack 6 x 500 g			141,98/500 g

King's B Medium (Base)

DEV, EN ISO 16266:2008, for microbiology

For confirmation of *Pseudomonas aeruginosa* in water samples.

Storage temp.: +20 °C

Application: Use 38 g for 990 ml agar. Add 10 ml glycerol.

Guarantee analysis:

Peptone. ..... 20 g/l
di-Potassium hydrogen phosphate. ..... 1,5 g/l
Magnesium sulphate heptahydrate. ..... 1,5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,2

CP64.1	500 g	plastic	166,55 €
Original pack 6 x 500 g			158,22/500 g

Instructions for use
can be found on the Internet next to the product description.

Kligler Iron Agar

for microbiology

For differentiation of gram-negative enterobacteria.
Double Sugar Iron Agar, **KIA**
Storage temp.: +20 °C

Figure:
① *Salmonella enteritidis*
② Uninoculated agar
Application: Use 52 g for 1 l agar.

Formulation:

Peptone mixture	20 g/l
Lactose	10 g/l
Sodium chloride	5 g/l
Glucose	1 g/l
Ammonium iron(III) citrate	0,5 g/l
Sodium thiosulphate	0,5 g/l
Phenol red	0,025 g/l
Agar	15 g/l
pH value	7,4 ±0,2

5758.1	500 g	plastic	89,15 €
Original pack 6 x 500 g			84,69/500 g

Lactose Broth

Ph.Eur., for microbiology

For detection and enumeration of coliform bacteria and for enrichment of *Salmonellae*.
Broth medium D (Ph.Eur. 6.0)
Storage temp.: +20 °C

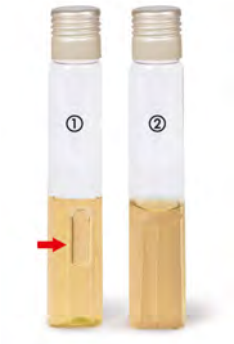


Figure:
① *Escherichia coli* (gas formation (arrow))
② Uninoculated broth
Application: Use 13 g for 1 l broth.

Guarantee analysis:

Gelatin peptone (Pancreas hydrolysate)	5 g/l
Lactose monohydrate	5 g/l
Beef extract	3 g/l
pH value	6,9 ±0,2

X921.1	500 g	plastic	70,85 €
Original pack 6 x 500 g			67,31/500 g

Lactose-Broth (DEV)

DEV, for microbiology

For confirmation of *Escherichia coli* in water samples by lactose fermentation.
Storage temp.: +20 °C
Application: Use 28 g for 1 l broth.

Guarantee analysis:

Meat peptone	10 g/l
Meat extract	3 g/l
Sodium chloride (NaCl)	5 g/l
Lactose	10 g/l
Bromcresol purple	0,02 g/l
pH value	7,2 ±0,2

CL76.1	500 g	plastic	94,10 €
Original pack 6 x 500 g			89,40/500 g

Lactose Peptone Broth (DEV)

DEV, for microbiology

For enrichment and enumeration of coliform bacteria in water samples.
Storage temp.: +20 °C
Application: Use 35 g for 1 l broth.

Guarantee analysis:

Meat peptone	17 g/l
Soy peptone	3 g/l
Sodium chloride (NaCl)	5 g/l
Lactose	10 g/l
Bromcresol purple	0,02 g/l
pH value	7,2 ±0,2

CL77.1	500 g	plastic	113,45 €
Original pack 6 x 500 g			107,78/500 g
CL77.2	1 kg	plastic	193,00 €
Original pack 6 x 1 kg			183,35/1 kg

Lactose Sulphite Broth (Base)

Ph.Eur., for microbiology

For selective detection and enumeration of *C. perfringens*.
Medium R (Ph.Eur. 6.0)
Storage temp.: +20 °C
Application: Use 20,3 g for 1 l broth. Prior to use add sodium bisulphite solution and iron(III) ammonium citrate solution (Art. No. 3130.1).

Guarantee analysis:

Casein peptone (Pancreas hydrolysate)	5 g/l
Yeast extract	2,5 g/l
Sodium chloride (NaCl)	2,5 g/l
Lactose monohydrate	10 g/l
Cystein hydrochloride	0,3 g/l
pH value	7,1 ±0,2

AE46.1	500 g	plastic	82,70 €
Original pack 6 x 500 g			78,57/500 g

▶ Ammonium iron(III)citrate solution
see page 1458

Instructions for use
can be found on the Internet next to the product description.

Lauryl Sulphate Broth

ISO 4831:2006, for microbiology

For enrichment and detection of coliform bacteria in waters.
Flu Broth • Storage temp.: +20 °C
Application: Use 35,6 g for 1 l broth.

Guarantee analysis:

Tryptose.	20 g/l
Lactose.	5 g/l
Sodium chloride (NaCl).	5 g/l
Potassium phosphate.	2,75 g/l
di-Potassium phosphate.	2,75 g/l
Sodium lauryl sulphate.	0,1 g/l
pH value.	6,8 ±0,2

CL80.1	500 g	plastic	111,70 €
Original pack 6 x 500 g			106,12/500 g

Legionella Agar (Base)

EN ISO 11731-2, for microbiology

For selective cultivation of *Legionella*.
BCYE Agar (Base), **GVCP Agar** (Base) • Storage temp.: +20 °C

Figure: *Legionella pneumophila*
Application: Use 2,5 g for 90 ml agar. After autoclaving add 1 vial (10 ml) reconstituted *Legionella* Growth Supplement (Art. No. CL49.1).
If required also add reconstituted *Legionella* GVCP Supplement (Art. No. CL50.1).

Guarantee analysis:

Yeast extract.	10,0 g/l
Charcoal activated.	2,0 g/l
Agar.	13,0 g/l
pH value.	6,9 ±0,2

CL48.1	500 g	plastic	126,35 €
Original pack 6 x 500 g			120,03/500 g

▶ Legionella Supplements see page 1459

▶ Legionella Acid Buffer see page 1463

Letheen Broth modified

for microbiology

For microbiological analyses of cosmetics, and samples containing disinfectants or preservatives. • Storage temp.: +20 °C
Based on the formulation acc. to FDA (Food and Drug Administration, USA), Bacteriological Analytical Manual (1995), Microbiological Methods for Cosmetics.
Application: Use 43,8 g for 1 l broth.

Formulation:

Meat peptone.	20 g/l
Casein peptone.	5 g/l
Polysorbate 80.	5 g/l
Sodium chloride.	5 g/l
Beef extract.	5 g/l
Yeast extract.	2 g/l
Glucose.	1 g/l
Lecithin.	0,7 g/l
Sodium bisulfite.	0,1 g/l
pH value.	7,2 ±0,2

5761.1	500 g	plastic	106,35 €
Original pack 6 x 500 g			101,03/500 g

Letheen Agar modified

for microbiology

For microbiological analyses of cosmetics, and samples containing disinfectants or preservatives.
Storage temp.: +20 °C
Based on the formulation acc. to FDA (Food and Drug Administration, USA), Bacteriological Analytical Manual (1995), Microbiological Methods for Cosmetics.
Application: Use 59,1 g for 1 l agar.

Formulation:

Meat peptone.	10 g/l
Casein peptone.	10 g/l
Polysorbate 80.	7 g/l
Sodium chloride.	5 g/l
Beef extract.	3 g/l
Yeast extract.	2 g/l
Glucose.	1 g/l
Lecithin.	1 g/l
Sodium bisulfite.	0,1 g/l
Agar.	20 g/l
pH value.	7,2 ±0,2

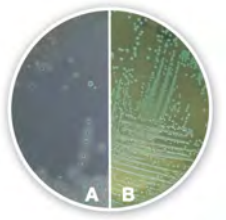
5759.1	500 g	plastic	117,75 €
Original pack 6 x 500 g			111,86/500 g

Listeria chromogenic Agar (Base)

ISO 11290:2004, for microbiology

Selective medium for detection and enumeration of *Listeria monocytogenes* according to Ottaviani and Agosti.
ALOA
Storage temp.: +4 °C

Warning H315-H319



Staining of species:
A: *Listeria monocytogenes* cyan-blue to turquois (by reaction of the β-D-glucosidase) with halo
B: *Listeria innocua* green to light greenish-blue
Enterococcus and *E. coli* inhibited

Application: Use 70,55 g for 1 l agar. After cooling add 2 vials (10 ml reconstituted) Listeria Chromo Selective Supplement (Art. No. 2947.1) and 2 vials (10 ml each) Listeria Chromo Lipase C Supplement (Art. No. 2948.1).

Guarantee analysis:

Meat peptone.	18 g/l
Lithium chloride.	10 g/l
Yeast extract.	10 g/l
Tryptone.	6 g/l
Sodium chloride.	5 g/l
di-Sodium hydrogen phosphate.	2,5 g/l
Glucose.	2 g/l
Sodium pyruvate.	2 g/l
Magnesium glycerophosphate.	1 g/l
Magnesium sulphate.	0,5 g/l
Chromogene Mixture.	0,05 g/l
Agar.	13,5 g/l
pH value.	7,2 ±0,2

3008.1	100 g	plastic	66,55 €

▶ Listeria Supplements see page 1460

Lysine Iron Agar

for microbiology

For rapid differentiation of *Enterobacteriaceae,* particularly *Salmonella arizonae.*

Storage temp.: +20 °C

Differentiation of *Enterobacteriaceae* on the basis of Lysine decarboxylation and -deamination, as well as of H_2S production.
Application: Use 33 g for 1 l agar.

Formulation:

L-Lysin.	10 g/l
Gelatine peptone.	5 g/l
Yeast extract.	3 g/l
Dextrose.	1 g/l
Ammonium iron(III) citrate.	0,5 g/l
Sodium thiosulphate.	0,04 g/l
Bromocresol purple.	0,02 g/l
Agar.	13,5 g/l
pH value.	6,7 ±0,2

8322.1	500 g	plastic	178,35 €
Original pack 6 x 500 g			169,43/500 g

MacConkey Broth

Ph.Eur., for microbiology

For detection of coliform bacteria in water, milk and other liquids.

Broth medium G (Ph.Eur. 6.0), MacConkey Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

Application: Use 35 g for 1 l broth.

Guarantee analysis:

Gelatin peptone (Pancreas hydrolysate)	20 g/l
Lactose monohydrate.	10 g/l
Dehydrated ox bile.	5 g/l
Bromocresol purple.	0,01 g/l
pH value.	7,3 ±0,2

AE47.1	500 g	plastic	83,35 €
Original pack 6 x 500 g			79,18/500 g

MacConkey Agar

Ph.Eur., EN ISO 21567, for microbiology

For selective isolation and identification of enterobacteria from waste water, foods and other samples.

Agar medium H (Ph.Eur. 6.0), MacConkey Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0) • Storage temp.: +20 °C

Figure: A: *Enterobacter aerogenes,* **B**: *Shigella dysenteriae*
Application: Use 50 g for 1 l agar.

Guarantee analysis:

Gelatin peptone (Pancreas hydrolysate)	17 g/l
Meat and casein peptone.	3 g/l
Lactose monohydrate.	10 g/l
Bile salt (Cholate).	1,5 g/l
Sodium chloride (NaCl).	5 g/l
Neutral red.	0,03 g/l
Crystal Violet	0,001 g/l
Agar.	13,5 g/l
pH value.	7,1 ±0,2

X922.1	500 g	plastic	84,40 €
Original pack 6 x 500 g			80,18/500 g
X922.2	1 kg	plastic	150,00 €
Original pack 6 x 1 kg			142,50/1 kg

▶ MacConkey Agar, **granulated**, see page 1456

Malt Extract Broth

for microbiology

For isolation and enumeration of yeasts and moulds, as well as for sterility testing.

Storage temp.: +20 °C

Application: Use 19 g for 1 l broth.

Formulation:

Malt extract.	13,0 g/l
Gelatine peptone.	5,5 g/l
Yeast extract.	0,5 g/l
pH value.	4,7 ±0,2

CP75.1	500 g	plastic	90,85 €
Original pack 6 x 500 g			86,31/500 g

Sterilisation of media containing sugar

Media containing sugar or **malt extract**, particularly those with a low pH, must be sterilised with care. We recommend autoclaving at up to 118 °C for a maximum of 15 min. Please observe the guidelines given in the instructions for use.

The reasons are as follows:

a) Heating sugar in combination with amino acids (from peptone, meat extract, yeast extract, or similar) can result in **toxic Maillard reaction products** which may interfere with proliferation of micro-organisms.

b) Inclusion of different sugar molecules and sugar degradation products will cause premature chain termination and inhibit chain cross-linking. The **gelability of agars containing sugar** will thereby be reduced.

Malt Extract Agar

for microbiology

For cultivation of fungi and yeasts.

MEA

Storage temp.: +20 °C

Application: Use 33,6 g for 1 l agar.

Formulation:

Malt extract.	12,75 g/l
Gelatine peptone.	0,78 g/l
Glycerol.	2,35 g/l
Dextrine.	2,75 g/l
Agar.	15 g/l
pH value.	4,7 ±0,2

X923.1	500 g	plastic	84,40 €
Original pack 6 x 500 g			80,18/500 g
X923.2	1 kg	plastic	150,00 €
Original pack 6 x 1 kg			142,50/1 kg

Please note our **Technical Information Brochure** on the Internet next to the products:

Why Doesn't My Agar Gel?
Basics, tips & tricks

Mannitol Egg Yolk Polymyxin Agar (Base)

for microbiology

For enumeration and isolation of *Bacillus cereus* in food, acc. to Mossel.
Bacillus cereus Selective Agar, **MYP Agar**
Storage temp.: +20 °C

Figure:
Bacillus cereus
Application: Use 43 g for 1 l agar. After cooling add 100 ml Egg Yolk Emulsion (Art. No. 0402.1) and 2 vials (2x5 ml) reconstituted Bacillus cereus Supplement (Art. No. 4856.1).

Formulation:

Meat peptone	10 g/l
Sodium chloride	10 g/l
D-Mannitol	10 g/l
Beef extract	1 g/l
Phenol red	0,025 g/l
Agar	12 g/l
pH value	7,1 ±0,2

5765.1	500 g	plastic	100,55 €
Original pack 6 x 500 g			95,52/500 g

▶ Bacillus cereus Supplement see page 1458

Mannitol Salt Agar

Ph.Eur., for microbiology

For isolation of pathogenic *Staphylococci*.
Chapman Agar, Mannitol Salt Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
Storage temp.: +20 °C
Recommended by the Harmonized Method (Ph. Eur. 6.0, 2.6.13.B) for proliferation and identification of *Staphylococcus aureus*.

Figure:
Staphylococcus aureus
Application: Use 111 g for 1 l agar. Optional: Add egg yolk emulsion (Art. No. 0402.1) to 5 % final concentration.

Guarantee analysis:

Pancreatic digest of casein	5 g/l
Peptone (peptic digest of animal tissue)	5 g/l
Beef extract	1 g/l
Sodium chloride	75 g/l
D-Mannitol	10 g/l
Phenol red	0,025 g/l
Agar	15 g/l
pH value	7,4 ±0,2

CL81.1	500 g	plastic	65,05 €
Original pack 6 x 500 g			61,80/500 g

▶ Egg Yolk Emulsion see page 1459

Marine Broth

for microbiology

For enumeration and isolation of heterotropic marine bacteria.
Storage temp.: +20 °C
Application: Use 40,1 g for 1 l broth. May be slightly opalescent and may present a light precipitation.

Formulation:

Sodium chloride (NaCl)	19,4 g/l
Magnesium chloride	8,8 g/l
Peptone	5 g/l
Sodium sulphate (Na_2SO_4)	3,24 g/l
Calcium chloride	1,8 g/l
Yeast extract	1 g/l
Potassium chloride (KCl)	0,55 g/l
Sodium bicarbonate	0,16 g/l
Ferric citrate	0,1 g/l
Potassium bromide	0,08 g/l
Strontium chloride	0,034 g/l
Boric acid	0,022 g/l
Sodium silicate	0,004 g/l
Sodium fluoride	0,0024 g/l
Ammonium nitrate	0,0016 g/l
Disodium phosphate	0,008 g/l
pH value	7,6 ±0,2

CP73.1	500 g	plastic	94,10 €
Original pack 6 x 500 g			89,40/500 g

Maximum Recovery Solution

DIN 10162, LMBG, DIN EN ISO 6887-1, for microbiology

For homogenization and dilution of microbiological samples.
Storage temp.: +20 °C
Application: Use 9,5 g for 1 l broth.

Guarantee analysis:

Sodium chloride	8,5 g/l
Casein peptone	1 g/l
pH value	7,0 ±0,2

5766.1	500 g	plastic	55,40 €
Original pack 6 x 500 g			52,63/500 g

Please note our **Technical Information Brochure** on the Internet next to the products:

Guidelines for the production and storage of media and agars
Basics, tips & tricks

m-CP Agar

acc. to TWVO 2001, for microbiology

For isolation and enumeration of *Clostridium perfringens.*

Storage temp.: +20 °C

Application: Use 71,1 g for 1 l agar. After autoclaving add 2 vials (4 ml) reconstituted Clostridium perfringens Supplement (Art. No. CL52.1) and other supplements.

Guarantee analysis:

Tryptose.	30 g/l
Yeast extract.	20 g/l
Saccharose.	5 g/l
L-Cysteine hydrochloride.	1 g/l
Magnesium sulphate heptahydrate.	0,1 g/l
Bromocresol purple.	0,04 g/l
Agar.	15 g/l
pH value	7,6 ±0,2

CL55.1	500 g	plastic	196,20 €
Original pack 6 x 500 g			186,39/500 g

▶ Clostridium perfringens Supplement 1458

m-EI-chromogenic Agar (Base)

for microbiology

For detection and enumeration of *Enterococcus* in water via single step membrane filtration.

Storage temp.: +4 °C

⚠ **Warning** H302

Staining of species:
Enterococcus blue (by reaction of the β-D-glucosidase)
E. coli inhibited
Application: Use 71,95 g for 1 l agar. After autoclaving add 0,24 g nalidixic acid (Art. No. CN32.1) solubilised in water.

Formulation:

Yeast extract.	30 g/l
Sodium chloride.	15 g/l
Peptone.	10 g/l
Esculin.	1 g/l
Chromogene Mixture.	0,75 g/l
Sodium azide.	0,15 g/l
Cycloheximide.	0,05 g/l
Agar.	15 g/l
pH value.	7,1 ±0,2

3014.1	100 g	plastic	89,80 €

Mossel EE Broth

Ph.Eur., for microbiology

For selective enrichment of enterobacteria in foods, particularly *Salmonella* and Coliforms.

Enriched broth medium E (Ph.Eur. 6.0), Enterobacteria enrichment broth-Mossel (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

Figure:
① Enterobacteria (here: *E. coli*), indicated by colour yellow caused by pH-shift
② Uninoculated broth
Application: Use 45 g for 1 l broth.

Guarantee analysis:

Pancreas hydrolysate made from gelatin.	10 g/l
Glucose monohydrate.	5 g/l
Dehydrated ox bile.	20 g/l
Potassium dihydrogen phosphate.	2 g/l
di-Sodium hydrogenphosphate dihydrate.	8 g/l
Brilliant green.	0,015 g/l
pH value.	7,2 ±0,2

AE65.1	500 g	plastic	181,70 €
Original pack 6 x 500 g			172,62/500 g

MRSA chromogenic Agar (Base)

for microbiology

For detection of methicillin resistant staphylococci.

Storage temp.: +4 °C

Staining of species:
Staphylococcus aureus ATCC 43300 blue
(by reaction of the α-D-glucosidase)
Staphylococcus aureus ATCC 25923 and *E. coli* inhibited
Application: Use 103,4 g for 1 l agar. Do not overheat! After cooling add 2 vials (10 ml) reconstituted MRSA Cefoxitin Supplement (Art. No. 2975.1).

Formulation:

Nutrients.	78 g/l
Peptone.	11 g/l
Chromogene Mixture.	1,9 g/l
Agar.	12,5 g/l
pH value.	7,2 ±0,2

3026.1	100 g	plastic	77,95 €

▶ MRSA Cefoxitin Supplement see page 1461

MRS Broth
for microbiology

For cultivation of lactobacilli. According to deMan, Rogosa and Sharpe.
Storage temp.: +4 °C
Application: Use 52 g for 1 l broth.

Formulation:

Peptone.	10 g/l
Yeast extract.	4 g/l
Beef extract.	8 g/l
Glucose.	20 g/l
Dipotassium phosphate.	2 g/l
Sodium acetate.	5 g/l
Ammonium citrate.	2 g/l
Magnesium sulphate ($MgSO_4$).	0,2 g/l
Manganese sulphate.	0,05 g/l
Polysorbate 80.	1 g/l
pH value.	6,2 ±0,2

X925.1	500 g	plastic	75,15 €
Original pack 6 x 500 g			71,39/500 g
X925.2	1 kg	plastic	126,35 €
Original pack 6 x 1 kg			120,03/1 kg
X925.3	2,5 kg	plastic	271,45 €

MRS Broth pH 5.7
ISO 15214, for microbiology

For cultivation of pH sensitive lactobacilli from foods and feeding stuff. According to deMan, Rogosa and Sharpe.
Storage temp.: +4 °C
MRS Broth with low pH value. For cultivation of special strains of lactobacilli, which show reduced growth under higher pH-values. Also for efficient protein expression of many proteins of *Lactobacillus*. 0.1 g/l Magnesium sulphate (anhydrous) is equivalent to 0.2 g/l Magnesium sulphate heptahydrate. 0.003 g/l Manganese sulphate (anhydrous) is equivalent to
0.05 g/l Manganese sulphate tetrahydrate.
Application: Use 54 g for 1 l broth.

Guarantee analysis:

Casein peptone.	10 g/l
Yeast extract.	4 g/l
Beef extract.	10 g/l
Glucose.	20 g/l
Dipotassium phosphate.	2 g/l
Sodium acetate.	5 g/l
Triammonium citrate.	2 g/l
Magnesium sulphate heptahydrate.	0,20 g/l
Mangansulphate tetrahydrate.	0,05 g/l
Polysorbate 80.	1,08 g/l
pH value.	5,7 ±0,1

HP64.1	500 g	plastic	79,45 €
Original pack 6 x 500 g			75,48/500 g

MRS Agar
for microbiology

For cultivation of lactobacilli. According to deMan, Rogosa and Sharpe.
Storage temp.: +4 °C
Application: Use 62 g for 1 l agar.

Formulation:

Peptone.	10 g/l
Yeast extract.	4 g/l
Beef extract.	8 g/l
Glucose.	20 g/l
Dipotassium phosphate.	2 g/l
Sodium acetate.	5 g/l
Ammonium citrate.	2 g/l
Magnesium sulphate ($MgSO_4$).	0,2 g/l
Manganese sulphate.	0,05 g/l
Polysorbate 80.	1 g/l
Agar.	10 g/l
pH value.	6,2 ±0,2

X924.1	500 g	plastic	79,45 €
Original pack 6 x 500 g			75,48/500 g
X924.2	1 kg	plastic	138,15 €
Original pack 6 x 1 kg			131,24/1 kg

MRS Agar pH 5.7
ISO 15214, for microbiology

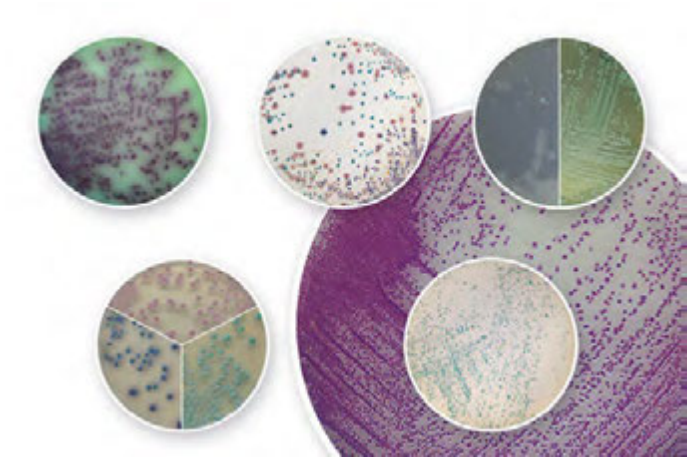
For cultivation of pH sensitive lactobacilli from foods and feeding stuff. According to deMan, Rogosa and Sharpe.
Storage temp.: +4 °C
MRS Agar with low pH value. For cultivation of special strains of lactobacilli, which show reduced growth under higher pH-values. Also for efficient protein expression of many proteins of *Lactobacillus*.
0.1 g/l Magnesium sulphate (anhydrous) is equivalent to 0.2 g/l Magnesium sulphate heptahydrate. 0.003 g/l Manganese sulphate (anhydrous) is equivalent to 0.05 g/l Manganese sulphate tetrahydrate.
Application: Use 64 g for 1 l agar.

Guarantee analysis:

Casein peptone.	10 g/l
Yeast extract.	4 g/l
Beef extract.	10 g/l
Glucose.	20 g/l
Dipotassium phosphate.	2 g/l
Sodium acetate.	5 g/l
Triammonium citrate.	2 g/l
Magnesium sulphate heptahydrate.	0,20 g/l
Mangansulphate tetrahydrate.	0,05 g/l
Polysorbate 80.	1,08 g/l
Agar.	10 g/l
pH value.	5,7 ±0,1

HP65.1	500 g	plastic	86,55 €
Original pack 6 x 500 g			82,22/500 g

Chromogenic Agars made by Roth



Mueller Hinton Broth

for microbiology

For cultivation of microorganisms and for antibiotic-sensitivity testing.
Storage temp.: +20 °C

Application: Use 21 g for 1 l broth. Slightly opalescent.

Formulation:

Beef Infusion	2 g/l
Casein peptone (acidic hydrolysate)	17,5 g/l
Corn starch	1,5 g/l
pH value	7,4 ±0,2

X927.1	500 g	plastic	125,25 €
Original pack 6 x 500 g			118,99/500 g

Mueller Hinton Agar

for microbiology

For testing of organism susceptibility to antimicrobial agents by disk diffusion method. Also for cultivation of *Neisseria*.
Storage temp.: +20 °C
Application: Use 38 g for 1 l agar. Slightly opalescent.

Formulation:

Beef Infusion	2 g/l
Casein peptone (acidic hydrolysate)	17,5 g/l
Corn starch	1,5 g/l
Agar	17 g/l
pH value	7,4 ±0,2

X926.1	500 g	plastic	95,60 €
Original pack 6 x 500 g			90,82/500 g

▶ McFarland Turbidity standards see page 1490

Mueller Kauffmann Broth (Base)

for microbiology

For selective enrichment of *Salmonella* from meat and other foods.
Tetrathionate Broth, Tetrathionate Enrichment Broth
Storage temp.: +20 °C

Application: Use 82 g for 1 l broth. Add iodine and brilliant green.

Formulation:

Sodium thiosulphate	40,7 g/l
Calcium carbonate	25 g/l
Dehydrated ox bile	4,75 g/l
Sodium chloride (NaCl)	4,5 g/l
Meat peptone	4,5 g/l
Yeast extract	1,8 g/l
Meat extract	0,9 g/l
pH value	7,6 ±0,2

8323.1	500 g	plastic	85,50 €
Original pack 6 x 500 g			81,23/500 g

Nutrient Broth

for microbiology

For cultivation of non-fastidious microorganisms.
Storage temp.: +20 °C

Application: Use 8 g for 1 l broth.

Formulation:

Beef extract	3 g/l
Gelatine peptone	5 g/l
pH value	6,8 ±0,2

X929.1	500 g	plastic	78,40 €
Original pack 6 x 500 g			74,48/500 g
X929.2	1 kg	plastic	139,25 €
Original pack 6 x 1 kg			132,29/1 kg

Nutrient Agar

EN ISO 6579, ISO 10273, for microbiology

For cultivation of non-fastidious microorganisms.
Storage temp.: +20 °C

Application: Use 23 g for 1 l agar.

Guarantee analysis:

Gelatine peptone	5 g/l
Beef extract	3 g/l
Agar	15 g/l
pH value	6,8 ±0,2

X928.1	500 g	plastic	91,95 €
Original pack 6 x 500 g			87,35/500 g
X928.2	1 kg	plastic	162,90 €
Original pack 6 x 1 kg			154,76/1 kg

Nutrient Agar (DEV)

DEV, DIN 38 411, for microbiology

For biochemical analysis of *E.coli* and Coliforms in water samples and other sample material.
Storage temp.: +20 °C
Application: Use 43 g for 1 l agar.

Guarantee analysis:

Meat peptone	10 g/l
Meat extract	10 g/l
Sodium chloride (NaCl)	5 g/l
Agar	18 g/l
pH value	7,3 ±0,2

CL02.1	500 g	plastic	105,25 €
Original pack 6 x 500 g			99,99/500 g
CL02.2	1 kg	plastic	188,15 €
Original pack 6 x 1 kg			178,74/1 kg

Nutrient Agar (DEV/ISO)

DEV, EN ISO 16266:2008, for microbiology

For confirmation of *Pseudomonas aeruginosa* in water samples.
Storage temp.: +20 °C
Application: Use 28 g for 1 l agar.

Guarantee analysis:

Peptone	5 g/l
Meat extract	1 g/l
Yeast extract	2 g/l
Sodium chloride (NaCl)	5 g/l
Agar	15 g/l
pH value	7,4 ±0,2

CP66.1	500 g	plastic	115,60 €
Original pack 6 x 500 g			109,82/500 g

Instructions for use
can be found on the Internet next to the product description.

Orange Serum Agar
for microbiology

For isolation, detection and enumeration of acid-tolerant pathogens in fruit juices and fruit juice concentrates, particularly citrus products.

Storage temp.: +20 °C

Warning H315-H317-H411-EUH208

Application: Use 40 g for 1 l agar.

Formulation:

Casein peptone.	10 g/l
Orange extract.	5 g/l
Glucose.	4 g/l
Potassium phosphate.	3 g/l
Yeast extract.	3 g/l
Agar.	15 g/l
pH value.	5,5 ±0,2

HP09.1	500 g	plastic	169,35 €
Original pack 6 x 500 g			160,88/500 g

▶ Orange Serum Agar, **granulated**, see page 1456

Oxford Listeria Agar (Base)
ISO 11290-1, for microbiology

Selective medium for detection of *Listeria monocytogenes.*

Oxford Agar

Storage temp.: +20 °C

Warning H302-H315-H319

Based on Columbia Agar (Base) (Art. No. X919).

Figure:
Listeria monocytogenes
Application: Use 55,5 g for 1 l agar. After cooling add 2 vials (2x2 ml) reconstituted Listeria Oxford Supplement (Art. No. 5801.1).

Guarantee analysis:

Peptone mixture.	23 g/l
Sodium chloride.	5 g/l
Starch.	1 g/l
Lithium chloride.	15 g/l
Esculin.	1 g/l
Ammonium iron(III) citrate.	0,5 g/l
Agar.	10 g/l
pH value.	7,0 ±0,2

5767.1	500 g	plastic	158,60 €
Original pack 6 x 500 g			150,67/500 g

▶ Listeria Oxford Supplement see page 1460

Palcam Listeria Agar (Base)
ISO 11290-1, for microbiology

Differential medium for detection of *Listeria ssp.*, particularly *L. monocytogenes.*

Palcam Agar

Storage temp.: +20 °C

Warning H315-H319

Based on Columbia Agar (Base) (Art. No. X919).

Figure:
Listeria monocytogenes
Application: Use 68,8 g for 1 l agar. After cooling add 2 vials (2x2 ml) reconstituted Listeria Palcam Supplement (Art. No. 5803.1).

Guarantee analysis:

Peptone mixture.	23 g/l
Sodium chloride.	5 g/l
Starch.	1 g/l
Lithium chloride.	15 g/l
D-Mannitol.	10 g/l
Yeast extract.	3 g/l
Esculin.	0,8 g/l
Glucose.	0,5 g/l
Phenol red.	0,08 g/l
Ammonium iron(III) citrate.	0,5 g/l
Agar.	10 g/l
pH value.	7,2 ±0,2

5768.1	500 g	plastic	147,85 €
Original pack 6 x 500 g			140,46/500 g

▶ Listeria Palcam Supplement see page 1460

Ready-Made Media by Roth
see the front part of this chapter

Peptone Water, buffered

Ph.Eur., for microbiology

For dilution and homogenisation of samples during microbiological analysis of food.
Sodium peptone buffer solution (Ph.Eur. 6.0), Buffered Sodium Chloride-Peptone Solution (Ph.Eur. 6.3, 7.0, 8.0 and 9.0) .
Storage temp.: +20 °C
Application: Use 16,1 g for 1 l broth.

Guarantee analysis:

Potassium hydrogen phosphate*..... 3,6 g/l
di-Sodium hydrogen phosphate dihydrate*..... 7,2 g/l
Sodium chloride (NaCl). ..... 4,3 g/l
Casein peptone (Pancreas hydrolysate)..... 1,0 g/l
pH value. ..... 7,0 ±0,2
*equivalent to 0,067 M phosphate

AE67.1	500 g	plastic	66,15 €
Original pack 6 x 500 g			62,84/500 g
AE67.2	1 kg	plastic	112,90 €
Original pack 6 x 1 kg			107,26/1 kg

Please note our **Technical Information Brochure** on the Internet next to the products:

Clouding of Microbiological Nutrient Media
Basics, tips and tricks

Peptone Water, buffered

EN ISO 6887, EN ISO 6579, ISO 22964, EN ISO 19250, for microbiology

Diluent for homogenisation of food samples and for sample preparation for microbiological analysis.
Storage temp.: +20 °C
Application: Use 20 g for 1 l broth.

Guarantee analysis:

Pancreatic digest of casein..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Disodium phosphate..... 3,5 g/l
Potassium phosphate. ..... 1,5 g/l
pH value. ..... 7,0 ±0,2

X917.1	500 g	plastic	56,45 €
Original pack 6 x 500 g			53,63/500 g
X917.2	1 kg	plastic	101,60 €
Original pack 6 x 1 kg			96,52/1 kg
X917.3	2,5 kg	plastic	207,40 €

▶ Peptone water, buffered, **granulated**, see page 1456

Plate Count Agar

APHA, ISO 4833:2003, for microbiology

For enumeration of the aerobic microbial flora in milk, foods and other material.
Storage temp.: +20 °C
Application: Use 23,5 g for 1 l agar.

Guarantee analysis:

Casein peptone . ..... 5 g/l
Yeast extract..... 2,5 g/l
Glucose. ..... 1 g/l
Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

X930.1	500 g	plastic	87,65 €
Original pack 6 x 500 g			83,27/500 g
X930.2	1 kg	plastic	164,40 €
Original pack 6 x 1 kg			156,18/1 kg
X930.3	2,5 kg	plastic	332,20 €

▶ Plate Count Agar, **granulated**, see page 1457

Plate Count Agar with Powdered Milk

APHA, DIN 10192, LMBG, IDF, for microbiology

For enumeration of microorganisms in milk and dairy derivatives.
Storage temp.: +20 °C
Application: Use 24.5 g for 1 l agar.

Guarantee analysis:

Tryptone (Peptone from Casein)..... 5 g/l
Yeast extract..... 2,5 g/l
Glucose. ..... 1 g/l
Skimmed Milk Powder. ..... 1 g/l
Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

HP08.1	500 g	plastic	98,80 €
Original pack 6 x 500 g			93,86/500 g

Potato Extract Glucose Broth

for microbiology

For identification, cultivation and enumeration of yeasts and moulds.
Storage temp.: +20 °C
Application: Use 26,5 g for 1 l broth. Slightly opalescent.

Formulation:

Potato infusion. ..... 6,5 g/l
Glucose. ..... 20 g/l
pH value. ..... 5,6 ±0,2

CP74.1	500 g	plastic	69,35 €
Original pack 6 x 500 g			65,88/500 g
CP74.2	1 kg	plastic	125,70 €
Original pack 6 x 1 kg			119,42/1 kg

Potato Extract Glucose Agar

Ph.Eur., for microbiology

For cultivation and identification of yeasts and moulds.
Potato Dextrose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
Storage temp.: +20 °C
Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.12.B) for preperation of strains of *Aspergillus brasiliensis*.

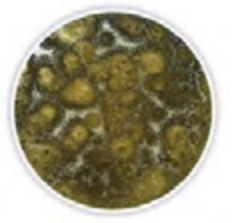


Figure:
Aspergillus brasiliensis
Application: Use 39 g for 1 l agar. Slightly opalescent.

Guarantee analysis:

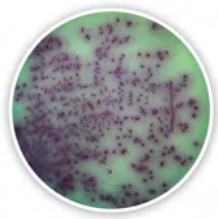
Potato infusion. ..... 4 g/l
Glucose. ..... 20 g/l
Agar. ..... 15 g/l
pH value. ..... 5,6 ±0,2

X931.1	500 g	plastic	99,45 €
Original pack 6 x 500 g			94,48/500 g
X931.2	1 kg	plastic	177,40 €
Original pack 6 x 1 kg			168,53/1 kg
X931.3	2,5 kg	plastic	407,45 €

Pseudomonas chromogenic Agar

for microbiology

For detection and isolation of *Pseudomonas*.
Storage temp.: +4 °C



Staining of species:
Pseudomonas aeruginosa magenta on green-blue coloured agar
E. coli, *Enterococcus*, *Salmonella* and *Staphylococcus* inhibited or colourless
Application: Use 37 g for 1 l agar. Do not overheat!

Formulation:

Nutrients. ..... 14 g/l
Peptone. ..... 10 g/l
Chromogene Mixture. ..... 1 g/l
Bromothymol blue. ..... 0,02 g/l
Agar. ..... 12 g/l
pH value. ..... 7,2 ±0,2

3075.1	100 g	plastic	117,75 €

Pseudomonas Selective Agar (Base)

DEV, EN ISO 16266:2008, for microbiology

For determination and enumeration of *Pseudomonas aeruginosa* from water samples by membrane filtration method.

CN Agar

Storage temp.: +20 °C

Warning H400

Application: Use 50,6 g for 990 ml agar. Add 10 ml glycerol.

Guarantee analysis:

Gelatine peptone. ..... 16 g/l
Casein hydrolysed. ..... 10 g/l
Anhydrous potassium sulphate. ..... 10 g/l
Anhydrous magnesium chloride. ..... 1,4 g/l
Cetrimide. ..... 0,2 g/l
Nalidixic acid. ..... 0,015 g/l
Agar. ..... 13 g/l
pH value. ..... 7,1 ±0,2

CP67.1	500 g	plastic	142,45 €
Original pack 6 x 500 g			135,33/500 g

R2A-Agar

Ph.Eur., for microbiology

For enumeration of heterotrophic bacteria from water samples.

Agar medium S (Ph.Eur. 6.0), Reasoner's 2A Agar

Storage temp.: +20 °C

Nutritionally reduced medium. Incubation of water samples on R2A Agar often leads to higher colony numbers of micro organisms than found for rich media, particularly when incubation is performed at lower temperatures. The medium was originally developed by Reasoner and Geldreich to determine the total germ number in drinking water (Reasoner and Geldreich, 1985, *Appl. Environ. Microbiol.* 49:1).
Application: Use 18,1 g for 1 l agar.

Guarantee analysis:

Yeast extract	0,5 g/l
Peptone	0,5 g/l
Casein hydrolysed	0,5 g/l
Glucose	0,5 g/l
Starch	0,5 g/l
di-Potassium hydrogen phosphate	0,3 g/l
Magnesium sulphate ($MgSO_4$)	0,024 g/l
Sodium pyruvate	0,3 g/l
Agar	15 g/l
pH value	7,2 ±0,2

CL01.1	500 g	plastic	141,40 €
Original pack 6 x 500 g			134,33/500 g

▶ R2A-Agar, **granulated** see page 1457

Rappaport Vassiliadis Broth

Ph.Eur., for microbiology

For selective enrichment of *Salmonellae* in foods, water- and other samples.

R10 Broth, Rappaport Vassiliadis *Salmonella* Enrichment Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), RVS Broth

Storage temp.: +20 °C

Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for proliferation of *Salmonella*.
This particular formulation is a slight modification of the original medium developed by Rappaport (Rappaport *et al.*, 1956, *J. Clin. Pathol.* 9: 261-1).
Application: Use 27,1 g for 1 l broth.

Guarantee analysis:

Anhydrous magnesium chloride	13,58 g/l
Sodium chloride (NaCl)	8,0 g/l
Soy peptone	4,5 g/l
Potassium dihydrogen phosphate	0,6 g/l
di-Potassium hydrogen phosphate	0,4 g/l
Malachite green	0,036 g/l
pH value	5,2 ±0,2

CL03.1	500 g	plastic	97,30 €
Original pack 6 x 500 g			92,44/500 g

Reinforced Clostridial Medium

Ph.Eur., for microbiology

For enrichment and enumeration of *Clostridiae* and other anaerobes from foods and other specimens.

Medium P (Ph.Eur. 6.0), Reinforced Medium for *Clostridia* (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), **RCM**

Storage temp.: +20 °C

Application: Use 38 g for 1 l broth.

Guarantee analysis:

Beef extract	10 g/l
Peptone	10 g/l
Yeast extract	3 g/l
Soluble starch	1 g/l
Glucose monohydrate	5 g/l
Cystein hydrochloride	0,5 g/l
Sodium chloride (NaCl)	5 g/l
Sodium acetate	3 g/l
Agar	0,5 g/l
pH value	6,8 ±0,2

AE66.1	500 g	plastic	107,00 €
Original pack 6 x 500 g			101,65/500 g

Rogosa Agar

for microbiology

For selective cultivation of lactobacilli.

Lactobacillus Selective Agar acc. to Rogosa

Storage temp.: +20 °C

Application: Use 75 g for 1 l agar.

Formulation:

Sodium acetate	15 g/l
Tryptone	10 g/l
Dextrose	10 g/l
Potassium phosphate	6 g/l
Yeast extract	5 g/l
Sucrose	5 g/l
Arabinose	5 g/l
Ammonium citrate	2 g/l
Polysorbate 80	1 g/l
Magnesium sulphate ($MgSO_4$)	0,57 g/l
Manganese sulphate	0,12 g/l
Iron sulphate	0,03 g/l
Agar	15 g/l
pH value	5,4 ±0,2

8329.1	500 g	plastic	143,55 €
Original pack 6 x 500 g			136,37/500 g

Sabouraud 2 % Glucose Broth

Ph.Eur., for microbiology

Selective media for taxonomic analysis of pathogenic fungi.

Sabouraud Dextrose Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for growth of *Candida albicans*.
The low amount of glucose supports the activation of the secondary metabolism and, subsequently, pigment formation.

Application: Use 30 g for 1 l broth.

Guarantee analysis:

Meat and casein peptone	10 g/l
Glucose	20 g/l
pH value	5,6 ±0,2

AE23.1	500 g	plastic	67,65 €
Original pack 6 x 500 g			64,27/500 g

▶ Sabouraud 2 % Glucose Broth, **granulated** see page 1457

Sabouraud 2 % Glucose Agar

for microbiology

Selective agar for taxonomic analysis of pathogenic fungi.

Storage temp.: +20 °C

The low amount of glucose supports the activation of the secondary metabolism and, subsequently, pigment formation.

Application: Use 47 g for 1 l agar.

Formulation:

Meat and casein peptone	10 g/l
Glucose	20 g/l
Agar	17 g/l
pH value	5,6 ±0,2

AE22.1	500 g	plastic	80,10 €
Original pack 6 x 500 g			76,10/500 g

Sabouraud 4 % Glucose Agar

Ph.Eur., for microbiology

For isolation, differentiation and cultivation of yeasts and fungi.
Agar medium C (Ph.Eur. 6.0), Sabouraud Dextrose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
Storage temp.: +20 °C
Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for growth and identification of *Candida albicans*.

Figure:
A: *Aspergillus brasiliensis*
B: *Candida albicans*

Application: Use 65 g for 1 l agar.

Guarantee analysis:

Meat and casein peptone.	10 g/l
Glucose monohydrate.	40 g/l
Agar.	15 g/l
pH value.	5,6 ±0,2

X932.1	500 g	plastic	68,30 €
Original pack 6 x 500 g			64,89/500 g
X932.2	1 kg	plastic	123,10 €
Original pack 6 x 1 kg			116,95/1 kg

Sabouraud 4 % Glucose Agar (with chloroamphenicol)

Ph.Eur., for microbiology

Selective agar for cultivation and isolation of yeasts and pathogenic fungi.
Agar medium C with chloroamphenicol (Ph.Eur. 6.0)
Storage temp.: +20 °C

Application: Use 65 g for 1 l agar.

Guarantee analysis:

Meat and casein peptone.	10 g/l
Glucose monohydrate.	40 g/l
Chloroamphenicol.	0,05 g/l
Agar.	15 g/l
pH value.	5,6 ±0,2

AE48.1	500 g	plastic	87,00 €
Original pack 6 x 500 g			82,65/500 g

Sabouraud 4 % Glucose Agar (with chloroamphenicol)

for microbiology

For selective isolation of yeasts and pathogenic fungi.
Storage temp.: +20 °C

Application: Use 65,5 g for 1 l agar.

Formulation:

Meat and casein peptone.	10 g/l
Glucose.	40 g/l
Chloroamphenicol.	0,5 g/l
Agar.	15 g/l
pH value.	5,6 ±0,2

X933.1	500 g	plastic	77,30 €
Original pack 6 x 500 g			73,44/500 g

Salmonella chromogenic Agar

for microbiology

For isolation of *Salmonella* from foods, waters and other samples.
Storage temp.: +4 °C

Staining of species:
Salmonella magenta (by reaction of the ß-D-galactosidase)
E. coli turquoise (by reaction of the ß-D-glucuronidase)
other *Enterobacteriaceae* clear or inhibited

Application: Use 37,1 g for 1 l agar.

Formulation:

Sodium citrate.	8,5 g/l
Casein peptone.	5 g/l
Beef extract.	5 g/l
Chromogene Mixture.	5,81 g/l
Agar.	12,8 g/l
pH value.	7,2 ±0,2

CL46.2	100 g	plastic	145,05 €
CL46.1	575 g	plastic	482,70 €

Salmonella-Shigella Agar

for microbiology

For isolation of pathogenic enterobacteria, especially *Salmonella* and *Shigella*.
Storage temp.: +20 °C

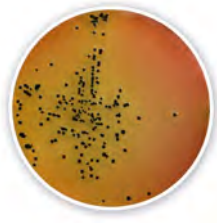


Figure:
Salmonella typhimurium

Application: Use 60 g for 1 l agar.

Formulation:

Beef extract.	5 g/l
Peptone mixture.	5 g/l
Lactose.	10 g/l
Ferric citrate.	1 g/l
Bile salts.	8,5 g/l
Sodium citrate.	8,5 g/l
Sodium thiosulphate.	8,5 g/l
Brilliant green.	0,0003 g/l
Neutral red.	0,025 g/l
Agar.	13,5 g/l
pH value.	7,0 ±0,2

X934.1	500 g	plastic	61,85 €
Original pack 6 x 500 g			58,76/500 g

Schaedler Broth

for microbiology

For enrichment and cultivation of anaerobic microorganisms.
Storage temp.: +20 °C

Warning H315-H319

Based on CASO Broth / Trypticasein Soy Broth (Art. No. X938).

Application: Use 28,4 g for 1 l broth.

Formulation:

Casein peptone.	5,66 g/l
Soy peptone.	1 g/l
Sodium chloride.	1,66 g/l
Dipotassium hydrogen phosphate.	0,83 g/l
Peptone mixture.	5 g/l
Yeast extract.	5 g/l
Glucose.	5,83 g/l
Tris (hydroxymethyl aminomethane).	3 g/l
L-Cystine.	0,4 g/l
Hemin.	0,01 g/l
pH value.	7,6 ±0,2

5772.1	500 g	plastic	111,70 €
Original pack 6 x 500 g			106,12/500 g

Schaedler Agar

for microbiology

For recovery and cultivation of anaerobic microorganisms.
Storage temp.: +20 °C
Based on CASO Broth / Trypticasein Soy Broth (Art. No. X938).

Application: Use 41,9 g for 1 l agar.

Formulation:

Casein peptone.	5,66 g/l
Soy peptone.	1 g/l
Sodium chloride.	1,66 g/l
Dipotassium hydrogen phosphate.	0,83 g/l
Peptone mixture.	5 g/l
Yeast extract.	5 g/l
Glucose.	5,83 g/l
Tris (hydroxymethyl aminomethane).	3 g/l
L-Cystine.	0,4 g/l
Hemin.	0,01 g/l
Agar.	13,5 g/l
pH value.	7,6 ±0,2

5771.1	500 g	plastic	127,95 €
Original pack 6 x 500 g			121,55/500 g

Simmons Citrate Agar

ISO 10273, for microbiology

For differentiation of microorganisms on the basis of citrate utilization.
Koser Citrate Agar (modified)
Storage temp.: +20 °C

Application: Use 24,3 g for 1 l agar.

Guarantee analysis:

Sodium chloride.	5 g/l
Sodium citrate.	2 g/l
Ammonium dihydrogen phosphate.	1 g/l
di-Potassium hydrogen phosphate.	1 g/l
Magnesium sulphate.	0,2 g/l
Bromothymol blue.	0,08 g/l
Agar.	15 g/l
pH value.	6,9 ±0,2

5774.1	500 g	plastic	138,70 €
Original pack 6 x 500 g			131,77/500 g

Slanetz-Bartley Agar

ISO 7899-2, for microbiology

For detection and enumeration of faecal *streptococci* by membrane filtration method or by direct plating.
Storage temp.: +20 °C

Warning H302-H412

Application: Use 41,5 g for 1 l agar.

Formulation:

Tryptose.	20 g/l
Yeast extract.	5 g/l
Glucose.	2 g/l
Dipotassium phosphate.	4 g/l
Sodium azide.	0,4 g/l
Tetrazolium chloride (TTC).	0,1 g/l
Agar.	10 g/l
pH value.	7,2 ±0,1

X935.1	500 g	plastic	155,35 €
Original pack 6 x 500 g			147,58/500 g

Slanetz-Bartley Medium (with tetrazolium chloride)

DEV, ISO 7899-2:2000, for microbiology

For detection and enumeration of intestinal enterococci from water samples.
Storage temp.: +20 °C

Warning H302-H412

Figure:
Enterococcus faecalis

Application: Use 41,5 g for 1 l agar.
Sterilise by sterile filtration, do not autoclave.

Guarantee analysis:

Tryptose.	20 g/l
Yeast extract.	5 g/l
Glucose.	2 g/l
di-Potassium hydrogen phosphate.	4 g/l
Sodium azide.	0,4 g/l
Tetrazolium chloride (TTC).	0,1 g/l
Agar.	10 g/l
pH value.	7,2 ±0,1

CP68.1	500 g	plastic	169,35 €
Original pack 6 x 500 g			160,88/500 g

Instructions for use
can be found on the Internet next to the product description.

Sorbitol MacConkey Agar

for microbiology

Selective and differential medium for detection of sorbitol-fermenting *E. coli* O157:H7.

MacConkey Agar with sorbitol, **SMAC Agar**

Storage temp.: +20 °C

Figure:
A: *Escherichia coli* ATCC 25922
B: *Escherichia coli* O157:H7

Application: Use 51,5 g for 1 l agar.

Formulation:

Gelatine peptone.	20 g/l
Sorbitol.	10 g/l
Sodium chloride.	5 g/l
Bile salts No. 3.	1,5 g/l
Neutral red.	0,03 g/l
Crystal Violet.	0,001 g/l
Agar.	15 g/l
pH value.	7,1 ±0,2

5778.1	500 g	plastic	105,90 €
Original pack 6 x 500 g			100,61/500 g

Standard Count Agar

for microbiology

For enumeration of aerobic bacteria in milk, water and wastewaters.

Storage temp.: +20 °C

Application: Use 25 g for 1 l agar.

Formulation:

Meat extract.	3 g/l
Casein peptone.	5 g/l
Sodium chloride (NaCl).	5 g/l
Agar.	12 g/l
pH value.	7,2 ±0,2

AE91.1	500 g	plastic	102,70 €
Original pack 6 x 500 g			97,57/500 g

Standard Nutrient Broth I

for microbiology

For cultivation and enumeration of fastidious bacteria.
Also high-base for preparing special culture media.

Storage temp.: +20 °C

Application: Use 25 g for 1 l broth.

Formulation:

Peptone.	15 g/l
Yeast extract.	3 g/l
Sodium chloride (NaCl).	6 g/l
Glucose.	1 g/l
pH value.	7,5 ±0,2

AE92.1	500 g	plastic	80,10 €
Original pack 6 x 500 g			76,10/500 g
AE92.2	1 kg	plastic	143,55 €
Original pack 6 x 1 kg			136,37/1 kg

▶ Standard Nutrient Broth I, **granulated**
see page 1457

Standard Nutrient Agar I

for microbiology

For cultivation and enumeration of fastidious bacteria.
Also high-base for preparing special culture agars.

Storage temp.: +20 °C

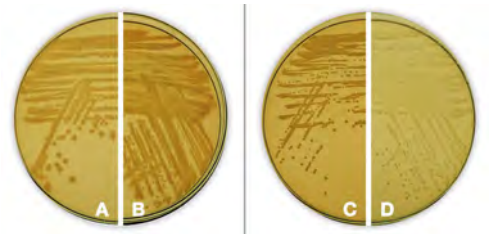


Figure:
A: *Escherichia coli*
B: *Pseudomonas aeruginosa*
C: *Staphylococcus aureus*
D: *Streptococcus agalactiae*

With kind permission of Nils Niederstebruch, GLOBOLAB e.V., Assling

Application: Use 37 g for 1 l agar.

Formulation:

Peptone.	15 g/l
Yeast extract.	3 g/l
Sodium chloride (NaCl).	6 g/l
Glucose.	1 g/l
Agar.	12 g/l
pH value.	7,5 ±0,2

AE93.1	500 g	plastic	83,75 €
Original pack 6 x 500 g			79,56/500 g
AE93.2	1 kg	plastic	145,15 €
Original pack 6 x 1 kg			137,89/1 kg

▶ Standard Nurtrient Agar I, **granulated**
see page 1457

TAT Broth (Base)

for microbiology

For proliferation and regeneration of microorganisms from a variety of matters, e.g. from cosmetics, and matters contaminated with antimicrobial reagents.

Casein peptone Lecithin Polysorbate Broth, **CPLP Broth**

Storage temp.: +20 °C

Application: Use 25 g for 1 l broth. Before autoclaving add 40 ml Tween® 20 (polysorbate).

Guarantee analysis:

Casein peptone.	20 g/l
Soya lecithin.	5 g/l
pH value.	7,1 ±0,2

3935.1	500 g	plastic	111,30 €
Original pack 6 x 500 g			105,74/500 g
3935.2	1 kg	plastic	197,30 €
Original pack 6 x 1 kg			187,44/1 kg

TBX chromogenic Agar

ISO 16649-2 and -3, for microbiology

Selective agar for detection of *E.coli* in food samples.
Storage temp.: +20 °C

Staining of species:
E. coli turquoise (by reaction of the ß-D-glucuronidase)
other Enterobacteriaceae (*Salmonella, Streptococcus, Klebsiella*)
clear or inhibited
Application: Use 36,6 g for 1 l agar.

Guarantee analysis:

Casein peptone.	20,0 g/l
Bile salts.	1,5 g/l
x-β-D-Glucuronide.	0,075 g/l
Agar.	15,0 g/l
pH value.	7,2 ±0,2

CL47.2	100 g	plastic	96,65 €
CL47.1	500 g	plastic	349,40 €
Original pack 6 x 500 g			331,93/500 g

TCBS Agar

for microbiology

For selective isolation of *Vibrio.*
Thiosulphate Citrate Bile Sucrose Agar, Cholera Medium TCBS, Cholera Agar
Storage temp.: +20 °C
Application: Use 88 g for 1 l agar.

Formulation:

Sucrose.	20 g/l
Sodium chloride (NaCl).	10 g/l
Sodium thiosulphate.	10 g/l
Sodium citrate.	10 g/l
Meat peptone.	5 g/l
Casein peptone.	5 g/l
Yeast extract.	5 g/l
Dehydrated ox bile.	5 g/l
Sodium cholate.	3 g/l
Ammonium iron(III) citrate.	1 g/l
Thymol blue.	0,04 g/l
Bromothymol blue.	0,04 g/l
Agar.	14 g/l
pH value.	8,6 ±0,2

8333.1	500 g	plastic	117,75 €
Original pack 6 x 500 g			111,86/500 g

Todd-Hewitt-Broth

for microbiology

For cultivation of β-hemolytic streptococci for serological typing.
Storage temp.: +20 °C
Application: Use 30 g for 1 l broth.

Formulation:

Heart infusion.	3,1 g/l
Peptone.	20 g/l
Glucose.	2 g/l
Sodium carbonate.	2,5 g/l
Sodium chloride (NaCl).	2 g/l
Disodium phosphate.	0,4 g/l
pH value.	7,8 ±0,2

X936.1	500 g	plastic	90,85 €
Original pack 6 x 500 g			86,31/500 g

Triple Sugar Iron Agar

Ph.Eur., for microbiology

For identification and differentiation of enterobacteria and for determination of *Salmonellae*.
Agar medium M (Ph.Eur. 6.0), **TSI agar**
Storage temp.: +20 °C
Application: Use 64.6 g for 1 l agar.

Guarantee analysis:

Beef extract.	3 g/l
Yeast extract.	3 g/l
Beef- and casein peptone.	20 g/l
Sodium chloride (NaCl).	5 g/l
Lactose monohydrate.	10 g/l
Saccharose.	10 g/l
Glucose monohydrate.	1 g/l
Ammonium iron(III) citrate.	0,3 g/l
Sodium thiosulphate.	0,3 g/l
Phenol red.	0,025 g/l
Agar.	12 g/l
pH value.	7,4 ±0,2

AE49.1	500 g	plastic	81,20 €
Original pack 6 x 500 g			77,14/500 g

Tryptone Bile Salts Agar

DEV, EN ISO 9308-1:2000, for microbiology

For detection and enumeration of *E. coli* in foods and water samples.
TBA
Storage temp.: +20 °C
Application: Use 36,5 g for 1 l agar.

Guarantee analysis:

Tryptone.	20 g/l
Bile salts.	1,5 g/l
Agar.	15 g/l
pH value.	7,2 ±0,1

CP69.1	500 g	plastic	124,20 €
Original pack 6 x 500 g			117,99/500 g

Tryptone Soy Agar

DEV, EN ISO 9308-1:2000, for microbiology

For the detection and enumeration of *E. coli* and other coliform bacteria in foods and water samples.
TSA, Trypticase-Soya-Agar
Storage temp.: +20 °C
Application: Use 40 g for 1 l agar.

Guarantee analysis:

Casein, tryptic digest.	15 g/l
Soy peptone.	5 g/l
Sodium chloride (NaCl).	5 g/l
Agar.	15 g/l
pH value.	7,2 ±0,1

CP70.1	500 g	plastic	83,35 €
Original pack 6 x 500 g			79,18/500 g

Tryptophane Culture Broth

DEV, EN ISO 9308-1:2000, for microbiology

For the detection of *E. coli* in foods and water samples by indole production.
Storage temp.: +20 °C
Escherichia transform lactose under acid production via β-galactosidase, and are negative in oxidase test and positive in indole production test. Kovac Reagent (Art. No. 2950.1) is added to 24-48 h old cultures in a concentration of 0.2 to 0.5 ml per 5 ml broth. A colour shift to dark red shows presence of indole.
Application: Use 16 g for 1 l broth.

Guarantee analysis:

Casein, tryptic digest.	10 g/l
L-Tryptophan.	1 g/l
Sodium chloride (NaCl).	5 g/l
pH value.	7,5 ±0,1

CP71.1	500 g	plastic	169,35 €
Original pack 6 x 500 g			160,88/500 g

▶ Kovacs' Reagent see page 1463

TSC Agar (Base)

DEV, EN ISO 7937:2004, for microbiology

For detection and enumeration of *Clostridium perfringens* in foods and animal feed.

Tryptose Soy Citrate Agar, Perfringens Agar, Clostridium perfringens Agar,

SFP Agar

Storage temp.: +20 °C

Warning H319

Application: Use 42 g for 1 l agar. After autoclaving add 2 vials (4 ml) reconstituted Clostridium perfringens Supplement (Art. No. CL52.1). Add 50 ml egg yolk emulsion (Art. No. 0402.1).

Guarantee analysis:

Tryptose.	15 g/l
Soy peptone.	5 g/l
Yeast extract.	5 g/l
Sodium bisulfite.	1 g/l
Ammonium iron(III) citrate.	1 g/l
Agar.	15,0 g/l
pH value.	7,6 ±0,2

CL51.1	500 g	plastic	117,75 €
Original pack 6 x 500 g			111,86/500 g

▶ Clostridium perfringens Supplement see page 1458

▶ Egg Yolk Emulsion see page 1459

TTC Chapman Agar (with sodium heptadecylsulphate) (Base)

DEV, EN ISO 9308-1:2000, for microbiology

For isolation and enumeration of coliform bacteria from water samples.

Chapman TTC Agar, Chapman Lactose Agar, TTC Tergitol 7 Agar

Storage temp.: +20 °C

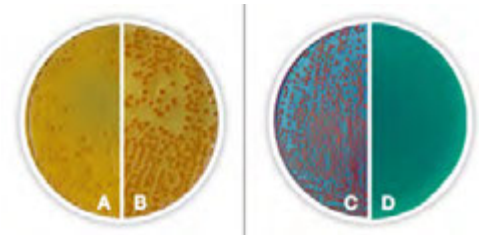


Figure:
A: *E. coli* ATCC 25922 (yellow colonies with orange centre)
B: *Klebsiella spp.* (orange colonies)
C: non-lactose fermenting species
D: non-induced agar

Application: Use 56,2 g for 1 l agar. Contains Tergitol. After autoclaving add TTC solution (Art. No. CP72.1) to 0.0025 %.

Guarantee analysis:

Lactose.	20 g/l
Peptone.	10 g/l
Yeast extract.	6 g/l
Meat extract.	5 g/l
Bromothymol blue.	0,05 g/l
Sodium heptadecyl sulphate (Tergitol 7).	0,1 g/l
Agar.	15 g/l
pH value.	7,2 ±0,1

CP65.1	500 g	plastic	84,40 €
Original pack 6 x 500 g			80,18/500 g

▶ TTC Supplement see page 1461

Universal Beer Agar (Base)

for microbiology

For cultivation of beer spoiling microorganisms.

UBA

Storage temp.: +20 °C

Application: Use 55 g for 1 l agar. Add 250 ml beer.

Formulation:

Peptonised milk.	15 g/l
Yeast extract.	10 g/l
Dextrose.	10 g/l
Tomato juice.	7 g/l
Potassium phosphate.	0,5 g/l
Dipotassium phosphate.	0,5 g/l
Sodium chloride (NaCl).	0,01 g/l
Magnesium sulphate ($MgSO_4$).	0,01 g/l
Manganese sulphate.	0,01 g/l
Iron sulphate.	0,01 g/l
Agar.	12 g/l
pH value.	6,3 ±0,2

8337.1	500 g	plastic	111,30 €
Original pack 6 x 500 g			105,74/500 g

Urea Agar acc. to Christensen (Base)

ISO 6579, ISO 19250, for microbiology

For differentiation of enterobacteria on the basis of urease production.

Christensen Agar

Storage temp.: +4 °C

Particularly recommended for differentiation between members of the *genera Proteus* and *Salmonella/Shigella*.

Application: Use 29 g for 1 l medium. Add 15 g Agar.

Guarantee analysis:

Urea.	20 g/l
Sodium chloride (NaCl).	5 g/l
Potassium phosphate.	2 g/l
Gelatine peptone.	1 g/l
Dextrose.	1 g/l
Phenol red.	0,012 g/l
pH value.	6,8 ±0,2

8320.1	500 g	plastic	125,25 €
Original pack 6 x 500 g			118,99/500 g

UTI chromogenic Agar

for microbiology

For detection and differentiation of microorganisms causing urinary tract infections.

Urinary Tract Infection chromogenic Agar

Storage temp.: +4 °C

Staining of species:
E. coli pink (by reaction of the β-D-galactosidase)
Enterobacter, Klebsiella dark blue to violet (by reaction of the β-D-galactosidase and β-D-glucosidase)
Proteus light brown (by reaction of the tryptophan deaminase)
Enterococcus light to medium blue (by reaction of the β-D-glucosidase)
Staphylococcus light beige (natural colony colour)
Application: Use 47,5 g for 1 l agar.

Formulation:

Nutrients.	13 g/l
Peptone.	16 g/l
Tryptophane.	2 g/l
Chromogene Mixture.	0,5 g/l
Agar.	16 g/l
pH value.	7,2 ±0,2

3089.1	100 g	plastic	149,45 €

Violet Red Bile Agar with Dextrose and Lactose

Ph.Eur., for microbiology

For detection and enumeration of enterobacteria.
Agar Medium F (Ph.Eur. 6.0)
Storage temp.: +20 °C
Application: Use 51,5 g for 1 l agar.

Guarantee analysis:

Yeast extract	3 g/l
Pancreas hydrolysate made from gelatin	7 g/l
Cholate	1,5 g/l
Lactose monohydrate	10 g/l
Sodium chloride (NaCl)	5 g/l
Glucose monohydrate	10 g/l
Neutral red	0,03 g/l
Crystal Violet	0,002 g/l
Agar	15 g/l
pH value	7,4 ±0,2

AE45.1	500 g	plastic	82,70 €
Original pack 6 x 500 g			78,57/500 g

Violet Red Bile Agar with Glucose

ISO 21528, Ph.Eur., for microbiology

For cultivation and enumeration of enterobacteria in water, foods and other materials.
Violet Red Bile Glucose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0),
VRBD Agar
Storage temp.: +20 °C
Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for growth and identification of *Escherichia coli* and *Pseudomonas aeruginosa* durin testing for bile-tolerant gram-negative bacteria.
Application: Use 41,5 g for 1 l agar.

Guarantee analysis:

Yeast extract	3 g/l
Pancreas hydrolysate made from gelatin	7 g/l
Sodium chloride (NaCl)	5 g/l
Bile salts	1,5 g/l
Glucose monohydrate	10 g/l
Neutral red	0,03 g/l
Crystal Violet	0,002 g/l
Agar	15 g/l
pH value	7,4 ±0,2

X939.1	500 g	plastic	78,40 €
Original pack 6 x 500 g			74,48/500 g
X939.2	1 kg	plastic	137,50 €
Original pack 6 x 1 kg			130,63/1 kg
X939.3	2,5 kg	plastic	274,15 €

▶ Violet Red Bile Agar with Glucose, **granulated** see page 1457

Violet Red Bile Agar with Lactose

ISO 4832, for microbiology

For detection and enumeration of coliforms in milk, foods and other materials.
VRB Agar
Storage temp.: +20 °C

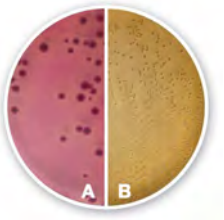


Figure:
A: *Escherichia coli*
B: *Salmonella gallinarium*
Application: Use 41,5 g for 1 l agar.

Guarantee analysis:

Yeast extract	3 g/l
Gelatine peptone	7 g/l
Sodium chloride (NaCl)	5 g/l
Bile salts	1,5 g/l
Lactose	10 g/l
Neutral red	0,03 g/l
Crystal Violet	0,002 g/l
Agar	15 g/l
pH value	7,4 ±0,2

X940.1	500 g	plastic	76,25 €
Original pack 6 x 500 g			72,44/500 g

Wort Broth

for microbiology

For cultivation and enumeration of fungi, particularly of yeast.
Storage temp.: +20 °C

Application: Use 33 g for 1 l broth.

Formulation:

Malt extract	15 g/l
D-Maltose	12,5 g/l
Dextrine	2,5 g/l
Casein peptone	1 g/l
Dipotassium hydrogen phosphate	1 g/l
Ammonium chloride	1 g/l
pH value	4,8 ±0,2

5779.1	500 g	plastic	138,70 €
Original pack 6 x 500 g			131,77/500 g

Wort Agar (Base)

for microbiology

For cultivation and enumeration of yeasts.
Storage temp.: +20 °C

Application: Use 48,25 g for 1 l agar. Add 2,35 g (1,9 ml) glycerol.

Formulation:

Malt extract	15 g/l
Maltose	12,75 g/l
Dextrine	2,75 g/l
di-Potassium hydrogen phosphate	1 g/l
Ammonium chloride	1 g/l
Peptone	0,75 g/l
Agar	15 g/l
pH value	4,8 ±0,2

CL04.1	500 g	plastic	160,20 €
Original pack 6 x 500 g			152,19/500 g

XLD-Agar

Ph.Eur., for microbiology

For isolation of enteropathogenic bacteria, especially from the genera *Shigella* and *Salmonella*.

Agar medium K (Ph.Eur. 6.0), Xylose Lysine Desoxycholate Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0) • Storage temp.: +20 °C

Figure: *Salmonella typhimurium*
Application: Use 55,2 g for 1 l agar.

Guarantee analysis:

Xylose	3,5 g/l
Lactose monohydrate	7,5 g/l
L-Lysin	5 g/l
Saccharose	7,5 g/l
Sodium chloride (NaCl)	5 g/l
Yeast extract	3 g/l
Phenol red	0,08 g/l
Ammonium iron(III) citrate	0,8 g/l
Sodium deoxycholate	2,5 g/l
Sodium thiosulphate	6,8 g/l
Agar	13,5 g/l
pH value	7,4 ±0,2

X941.1	500 g	plastic	116,00 €
Original pack 6 x 500 g			110,20/500 g
X941.2	1 kg	plastic	204,15 €
Original pack 6 x 1 kg			193,94/1 kg

Yeast Extract Agar

DEV, EN ISO 6222, for microbiology

For the isolation and enumeration of microorganisms in general, e.g. bacteria, moulds, or yeast.
Particularly for count of microorganisms isolated from water samples.

Water Plate Count Agar, **WPCA**

Storage temp.: +20 °C

Application: Use 24 g for 1 l agar.

Guarantee analysis:

Tryptone	6 g/l
Yeast extract	3 g/l
Agar	15 g/l
pH value	7,2 ±0,2

CP63.1	500 g	plastic	91,30 €
Original pack 6 x 500 g			86,74/500 g

Yeast Glucose Agar (with chloroamphenicol)

for microbiology

Selective medium for enumeration of yeasts and mould in milk and dairy products. **YGC Agar**

Storage temp.: +20 °C

Application: Use 40,2 g for 1 l agar.

Formulation:

Yeast extract	5 g/l
Glucose	20 g/l
Chloroamphenicol	0,2 g/l
Agar	15 g/l
pH value	6,6 ±0,2

CL00.1	500 g	plastic	91,95 €
Original pack 6 x 500 g			87,35/500 g
CL00.2	1 kg	plastic	156,85 €
Original pack 6 x 1 kg			149,01/1 kg

▶ Yeast Glucose Agar (with chloroamphenicol), **granulated**, see page 1457

Yersinia Selective Agar (Base)

ISO 10273, for microbiology

Selective medium for isolation of *Yersinia*, particularly *Y. enterocolitica.*

CIN Agar, Yersinia Agar acc. to Schiemann

Storage temp.: +20 °C

Figure:
Yersinia enterocolitica
Application: Use 58 g for 1 l agar. After cooling add 2 vials (2x5 ml) reconstituted Yersinia Supplement (Art. No. 4880.1).

Guarantee analysis:

D-Mannitol	20 g/l
Gelatine peptone	17 g/l
Peptone mixture	3 g/l
Yeast extract	2 g/l
Sodium pyruvate	2 g/l
Sodium chloride	1 g/l
Sodium deoxycholate	0,5 g/l
Neutral red	0,03 g/l
Magnesium sulphate anhydrous	0,01 g/l
Crystal Violet	0,001 g/l
Agar	12,5 g/l
pH value	7,4 ±0,2

5780.1	500 g	plastic	113,85 €
Original pack 6 x 500 g			108,16/500 g

▶ Yersinia Supplement see page 1461

Microbiological Quality Control

Microbiological quality control of Roth molecular biological and microbiological culture media and agar is carried out according to following guidelines:

- Plating relevant bacterial strains from standardized stock solution (as a rule in dilutions of 10^{-1} to 10^{-10}) on agar plates of culture medium to be tested. The preparation of the media and agar must be carried out strictly according to the instructions, which are included.
- Plates from a checked batch of culture media are used as a reference
- The developed colonies are counted and rated after adequate incubation. Counting is always carried out using the plate with colony number 30-300.
- Standardization and validation of test: reference plates are compared with the number of bacteria expected
- Reference and test plate colonies are analysed for size, colour, appearance and possible reaction to certain chemicals
- Growth count on the test plates:

„good“ or „satisfactory“	colony number = 50 % - 99 % of expected growth
„moderate“	colony number = 30 % - 50 % of expected growth
„inhibited“	colony number ≤ 30 % of expected growth
„zero“	no growth

Granulated Media for Microbiology

- **Easy:** high solubility
- **Safe:** dust minimised granules reduce health risk
- **Clean:** minimised contamination of workplace
- **Homogeneous:** reduced formation of lumps or separation of the components
- **Fast:** improved flowability for faster processing
- **Tried and tested:** formulation equals our powder media, without any further additives
- **All-round:** suitable for enviromental analysis, cosmetic-, food- and water-industry, and many more
- **Storage temp.:** +20 °C

CASO Broth, granulated

granulated, Ph.Eur., for microbiology

For cultivation of fastidious and non-fastidious microorganisms.

Broth medium A (Ph.Eur. 6.0), Casein Soya Bean Digest Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Peptone Broth, **TSB Broth**, Tryptic Soy Broth

Application: Use 30 g for 1 l broth.

Guarantee analysis:

Casein peptone (pancreas hydrolysate)	17 g/l
Soy peptone (papain hydrolysate)	3 g/l
di-Potassium hydrogen phosphate	2,5 g/l
Sodium chloride (NaCl)	5 g/l
Glucose monohydrate	2,5 g/l
pH value	7,3 ±0,2
Granulation	complies

6678.1	500 g	plastic	105,25 €
Original pack 6 x 500 g			99,99/500 g
6678.2	1 kg	plastic	170,85 €
Original pack 6 x 1 kg			162,31/1 kg

CASO Agar, granulated

granulated, Ph.Eur., for microbiology

For isolation and cultivation of non-fastidious organisms.

Agar medium B (Ph.Eur. 6.0), Agar medium with Casein- and Soy Peptone (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Pepton Agar, **TSB Agar**, Trypticasein Soy Agar

Application: Use 40 g for 1 l agar.

Guarantee analysis:

Casein peptone (pancreas hydrolysate)	15 g/l
Soy peptone (papain hydrolysate)	5 g/l
Sodium chloride (NaCl)	5 g/l
Agar	15 g/l
pH value	7,3 ±0,2

1506.1	500 g	plastic	114,50 €
Original pack 6 x 500 g			108,78/500 g

Columbia Agar (Base), granulated

granulated, Ph.Eur., for microbiology

For cultivation of fastidious and non-fastidious micro-organisms, also for Mycoplasms.

Medium Q (Ph.Eur. 6.0), Columbia Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Columbia Blood Agar (Base)

Application: Use 44 g for 1 l agar. If required, add 50-110 ml defibr. blood.

Guarantee analysis:

Casein peptone (Pancreas hydrolysate)	10 g/l
Meat peptone (Pepsin hydrolysate)	5 g/l
Heart peptone (Pancreas hydrolysate)	3 g/l
Yeast extract	5 g/l
Corn starch	1 g/l
Sodium chloride (NaCl)	5 g/l
Agar	15 g/l
pH value	7,3 ±0,2

1507.1	500 g	plastic	113,85 €
Original pack 6 x 500 g			108,16/500 g

MacConkey Agar, granulated

granulated, Ph.Eur., for microbiology

For selective isolation and identification of enterobacteria from waste water, foods and other samples.

Agar medium H (Ph.Eur. 6.0), MacConkey Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Application: Use 49,53 g for 1 l agar.

Guarantee analysis:

Gelatin peptone (Pancreas hydrolysate)	17 g/l
Meat and casein peptone	3 g/l
Lactose monohydrate	10 g/l
Bile salt (Cholate)	1,5 g/l
Sodium chloride (NaCl)	5 g/l
Neutral red	0,03 g/l
Crystal Violet	0,001 g/l
Agar	13,5 g/l
pH value	7,1 ±0,2

1514.1	500 g	plastic	104,85 €
Original pack 6 x 500 g			99,61/500 g

Orange Serum Agar, granulated

granulated, for microbiology

For isolation, detection and enumeration of acid-tolerant pathogens in fruit juices and fruit juice concentrates, particularly citrus products.

Warning H315-H317-H411-EUH208

Application: Use 45,5 g for 1 l agar.

Formulation:

Casein peptone	10 g/l
Orange extract	9 g/l
Glucose	4 g/l
Potassium phosphate	2,5 g/l
Yeast extract	3 g/l
Agar	17 g/l
pH value	5,5 ±0,2

1520.1	500 g	plastic	198,90 €
Original pack 6 x 500 g			188,96/500 g

Peptone water, buffered, granulated

granulated, EN ISO 6887, EN ISO 6579, ISO 22964, EN ISO 19250, for microbiology

Diluent for homogenisation of food samples and for sample preparation for microbiological analysis.

Application: Use 20 g for 1 l broth.

Guarantee analysis:

Pancreatic digest of casein	10 g/l
Sodium chloride (NaCl)	5 g/l
Disodium phosphate	3,5 g/l
Potassium phosphate	1,5 g/l
pH value	7,0 ±0,2
Granulation	complies

6680.1	500 g	plastic	84,40 €
Original pack 6 x 500 g			80,18/500 g
6680.2	1 kg	plastic	149,45 €
Original pack 6 x 1 kg			141,98/1 kg

Plate Count Agar, granulated

granulated, for microbiology

For enumeration of the aerobic microbial flora in milk, foods and other material. **PCA**

Application: Use 23,5 g for 1 l agar.

Formulation:

Casein peptone ..... 5 g/l
Yeast extract ..... 2,5 g/l
Glucose ..... 1 g/l
Agar ..... 15 g/l
pH value ..... 7,0 ±0,2

1521.1	500 g	plastic	117,20 €
Original pack 6 x 500 g			111,34/500 g

R2A-Agar, granulated

granulated, Ph.Eur., for microbiology

For enumeration of heterotrophic bacteria from water samples.

Nutritionally reduced medium. Incubation of water samples on R2A Agar often leads to higher colony numbers of micro organisms than found for rich media, particularly when incubation is performed at lower temperatures.
Application: Use 18,1 g for 1 l agar.

Guarantee analysis:

Yeast extract ..... 0,5 g/l
Peptone ..... 0,5 g/l
Casein hydrolysed ..... 0,5 g/l
Glucose ..... 0,5 g/l
Starch ..... 0,5 g/l
di-Potassium hydrogen phosphate ..... 0,3 g/l
Magnesium sulphate ($MgSO_4$) ..... 0,024 g/l
Sodium pyruvate ..... 0,3 g/l
Agar ..... 15 g/l
pH value ..... 7,2 ±0,2

1523.1	500 g	plastic	177,40 €
Original pack 6 x 500 g			168,53/500 g

Sabouraud 2 % Glucose Broth, granulated

granulated, Ph.Eur., for microbiology

Selective media for taxonomic analysis of pathogenic fungi.

Sabouraud Dextrose Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for growth of *Candida albicans*.
The low amount of glucose supports the activation of the secondary metabolism and, subsequently, pigment formation.
Application: Use 30 g for 1 l broth.

Guarantee analysis:

Meat and casein peptone ..... 10 g/l
Glucose ..... 20 g/l
pH value ..... 5,7 ±0,2

1508.1	500 g	plastic	85,90 €
Original pack 6 x 500 g			81,61/500 g

▶ Granulated media for molecular biology see page 1467

Standard Nutrient Broth I, granulated

granulated, for microbiology

For cultivation and enumeration of fastidious bacteria.
Also base for preparing special culture media.

Application: Use 25 g for 1 l broth.

Formulation:

Peptone ..... 15 g/l
Yeast extract ..... 3 g/l
Sodium chloride (NaCl) ..... 6 g/l
Glucose ..... 1 g/l
pH value ..... 7,5 ±0,2

1533.1	500 g	plastic	109,55 €
Original pack 6 x 500 g			104,07/500 g

Standard Nutrient Agar I, granulated

granulated, for microbiology

For cultivation and enumeration of fastidious bacteria.
Also base for preparing special culture agars.

Application: Use 37 g for 1 l agar.

Formulation:

Peptone ..... 15 g/l
Yeast extract ..... 3 g/l
Sodium chloride (NaCl) ..... 6 g/l
Glucose ..... 1 g/l
Agar ..... 12 g/l
pH value ..... 7,5 ±0,2

1524.1	500 g	plastic	112,90 €
Original pack 6 x 500 g			107,26/500 g

Violet Red Bile Agar with Glucose, granulated

granulated, Ph.Eur., for microbiology

For cultivation and enumeration of enterobacteria in water, foods and other materials. **VRBD agar**

Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for growth and identification of *Escherichia coli* and *Pseudomonas aeruginosa* durin testing for bile-tolerant gram-negative bacteria.
Application: Use 38,53 g for 1 l agar.

Guarantee analysis:

Yeast extract ..... 3 g/l
Pepton .....
Sodium chloride (NaCl) ..... 5 g/l
Bile salts ..... 1,5 g/l
Glucose monohydrate ..... 10 g/l
Neutral red ..... 0,03 g/l
Crystal Violet ..... 0,002 g/l
Agar ..... 12 g/l
pH value ..... 7,4 ±0,2

1525.1	500 g	plastic	110,65 €
Original pack 6 x 500 g			105,12/500 g

Yeast Glucose Agar (with chloroamphenicol), granulated

granulated, for microbiology

Selective medium for enumeration of yeasts and mould in milk and dairy products. **YGC agar**

Application: Use 40,1 g for 1 l agar.

Formulation:

Yeast extract ..... 5 g/l
Glucose ..... 20 g/l
Chloroamphenicol ..... 0,1 g/l
Agar ..... 15 g/l
pH value ..... 6,6 ±0,2

1526.1	500 g	plastic	131,05 €
Original pack 6 x 500 g			124,50/500 g

Additives

Ammonium iron(III) citrate solution ready-to-use S

12,5 %, sterile, ready-to-use

Media supplement for detection of *Listeria monocytogenes*.

Storage temp.: +20 °C

Ammonium iron (III) citrate (ferric ammonium (III) citrate) is used as additive in nutrient media for detection of Listeria species. Hydrolysis of esculin by *Listeria* species results in 6,7-dihydroxycoumarin which reacts with ferric ions producing blackening of the medium. Additionally, ferric ammonium citrate has been shown to improve the growth of *Listeria monocytogenes* (Cowart and Foster (1985) *J. Infect. Dis.* 151:721).

Application: One vial ferric ammonium (III) citrate solution (0.25 g in 2 ml) is added to 500 ml autoclaved Fraser Broth (Art. No. HP17) or Fraser Half Broth (Art. No. HP18). Mix carefully and store cooled for 2 weeks in maximum. Fraser Broth is used in the rapid detection of Listeria from food and environmental samples (Fraser and Sperber (1988) *J. Food Protect.* 51:762).
One box of 10 vials Ammonium iron(III) citrate solution is sufficient for 10 x 500 ml Fraser Broth.

Formulation per vial:

Ammonium iron(III) citrate..... 0,25 g

3130.1	10 x 2 ml	plastic	41,40 €
3130.2	30 x 2 ml	plastic	103,75 €

▶ Fraser media see page 1437

Bacillus cereus Supplement

lyophilised

Media supplement for selective isolation of *Bacillus cereus.*

Storage temp.: +4 °C

Application: One vial Bacillus cereus Supplement is reconstituted in 5 ml sterile distilled water, and is subsequently added to 450 ml autoclaved Mannitol Egg Yolk Polymyxin Agar (Base) (Art. No. 5765.1) plus 50 ml Egg Yolk Emulsion (Art. No. 0402.1).
One box of 10 vials Bacillus cereus Supplement is sufficient for 10 x 500 ml Mannitol Egg Yolk Polymyxin Agar.

Formulation per vial:

Polymyxin B..... 50 000 I.U.

4856.1	10 vials	glass	110,65 €

▶ Mannitol Egg Yolk Polymyxin Agar (Base) see page 1441

Campylobacter Preston Supplement

lyophilised

For selective isolation of *Campylobacter spp.*

Preston Supplement

Storage temp.: +4 °C

Danger H300-H341-H360D-H411

Application: One vial Campylobacter Preston Supplement is reconstituted in 5 ml sterile 1:1 mixture of acetone and demineralized water and is subsequently added to 500 ml autoclaved Campylobacter Selective Agar (Art. No. 8847.1) and 5-10 % defibrinated blood.
One box of 10 vials Campylobacter Preston Supplement is sufficient for 10 x 500 ml Campylobacter Selective Agar.

Formulation per vial:

Polymyxin B sulphate..... 2500 IU
Cycloheximide..... 50 mg
Rifampicin..... 5 mg
Trimetoprim..... 5 mg

8851.1	10 vials	glass	186,95 €

▶ Campylobacter Selective Agar (Base) see page 1431

Campylobacter Supplement

lyophilised

Media supplement for selective isolation of *Campylobacter jejuni, C. coli,* and *C. laridis.*

CCDA Supplement

Storage temp.: +4 °C

Danger H334-H317

Amphotericin reduces growth of yeasts and moulds, while Cefoperazone inhibits Enterobacteriaceae.
Application: One vial Campylobacter Supplement is reconstituted in 5 ml sterile distilled water, and is subsequently added to 500 ml autoclaved Campylobacter Agar, blood-free (Base) (Art. No. 5756.1).
One box of 10 vials Campylobacter Supplement is sufficient for 10 x 500 ml Campylobacter Agar, blood-free.

Formulation per vial:

Cefoperazone..... 16 mg
Amphotericin B..... 5 mg

4857.1	10 vials	glass	159,00 €

▶ Campylobacter Agar, blood-free (Base) see page 1431

Clostridium perfringens Supplement

lyophilised

Media supplement for selective isolation of *Clostridium perfringens.*

Storage temp.: +4 °C

D-cycloserine largely inhibits the accompanying bacterial flora, hence providing selective growth of small and distinct colonies of *Clostridium perfringens.*
Application: One vial Clostridium perfringens Supplement (0.2 g) is reconstituted in 2 ml sterile, demineralized water and is subsequently added to 500 ml autoclaved TSC Agar (Base) (Art. No. CL51.1) or to 500 ml autoclaved m-CP Agar (Art. No. CL55.1).
One box of 10 vials Clostridium perfringens Supplement is sufficient for 10 x 500 ml TSC Agar or for 10 x 500 ml m-CP Agar.

Formulation per vial:

D-Cycloserine..... 0,2 g

CL52.1	10 vials	glass	224,70 €

▶ TSC Agar (Base) see page 1453
▶ m-CP Agar (Base) see page 1442

Egg Yolk Emulsion (20 %) S

ISO 7932, sterile, stabilised, for microbiology

Media supplement for preparation of egg yolk agar for detection of microbial lecithinase activity.

Storage temp.: +4 °C • Transport temp.: room temp.

Egg Yolk Emulsion is used as supplement in nutrient agars for detection of lecithinase activity in microbial colonies. Herewith, bacterial species like *Bacillus cereus* and *Clostridium perfringens*, or *Staphylococcus aureus* may be identified. The lecithinase activity can be noted by formation of light, sometimes whitish halos surrounding the colonies.

Application: The ISO 7932 recommends a final concentration of 10 % emulsion in the prepared medium in general, e.g. in Mannitol Egg Yolk Polymyxin Agar (Base) (Art. No. 5765.1) for examining the lecithinase activity of *Bacillus cereus*.

We recommend using TSC Agar (Base) (Art. No. CL51.1), Mannitol Salt Agar (Art. No. CL81.1) or Palcam Listeria Agar (Base) (Art. No. 5768.1) for base agar with the addition of 5 % emulsion.
Add after autoclaving.

100 ml Egg Yolk Emulsion are sufficient for 1 l agar medium.

Guarantee analysis:

Colour. ..... yellow
Egg yolk. ..... 20 %
Sterility. ..... complies

0402.1	100 ml	glass	44,00 €

- ▶ Mannitol Salt Agar see page 1441
- ▶ TSC Agar (Base) see page 1453
- ▶ Palcam Listeria Agar (Base) see page 1445

Egg Yolk Tellurite Emulsion (20 %) S

ISO 6888, sterile, stabilised, for microbiology

Media supplement for preparation of egg yolk tellurite agar, for detection of *Staphylococcus aureus*.

Storage temp.: +4 °C • Transport temp.: room temp.

Egg Yolk Tellurite Emulsion is used as supplement in nutrient agars for detection of lecithinase activity and concurrent tellurite reduction in microbial colonies. Hence, *Staphylococcus aureus* may be identified by the dark grey to black staining of the colonies due to tellurite reduction, accompanied by lecithinase-caused formation of light, sometimes whitish halos surrounding the colonies.

We recommend using Baird Parker Agar (Base) (Art. No. X913.1) for base agar.
Application: The ISO 6888 recommends a final concentration of 5 % emulsion in the prepared medium.
Add after autoclaving.

100 ml Egg Yolk Tellurite Emulsion is sufficient for 2 l agar medium.

Guarantee analysis:

Colour. ..... yellow
Egg yolk. ..... 20 %
Sterile saline sol. ..... 80 %
Potassium tellurite. ..... 0,21 %
Sterility. ..... complies

0339.1	100 ml	glass	47,85 €

- ▶ Baird Parker Agar (Base) see page 1429

Legionella GVPC Supplement

lyophilised

Media supplement for selective isolation of *Legionella.*

Storage temp.: +4 °C

Danger H301-H360D-H341-H412-EUH208

The mixture of glycine and antibiotics largely inhibits the accompanying bacterial flora, hence providing selective growth of legionella.
Application: One vial Legionella GVPC Supplement is reconstituted in 5 ml of sterile 1:1 mixture of actone and distilled water and is subsequently added to 500 ml autoclaved Legionella Agar (Art. No. CL48.1).

One box of 10 vials Legionella GVPC Supplement is sufficient for 10 x 500 ml Legionella Agar.

Formulation per vial:

Glycine. ..... 1,5 g
Polymyxin B. ..... ~39 600 IU
Cycloheximide. ..... 0,04 g
Vancomycin. ..... 0,5 mg

CL50.1	10 vials	glass	188,15 €

Legionella Growth Supplement

lyophilised

Growth supplement for isolation of *Legionella.*

BCYE additive

Storage temp.: +4 °C

Danger H314-H302

Application: One vial Legionella Growth Supplement is reconstituted in 10 ml sterile, demineralized water and is subsequently added to 90 ml autoclaved Legionella Agar (Art. No. CL48.1). For selective isolation of legionella we recommend additional supplementation with Legionella GVPC Supplement (Art. No. CL50.1).

One box of 10 vials Legionella Growth Supplement is sufficient for 10 x 100 ml Legionella Agar.

Formulation per vial:

ACES Buffer. ..... 1,0 g
Potassium hydroxide (KOH). ..... 0,28 g
alpha-Ketoglutarate. ..... 0,1 g
L-Cysteine. ..... 0,04 g
Ferric pyrophosphate. ..... 0,025 g

CL49.1	10 vials	glass	192,45 €

- ▶ Legionella Agar (Base) see page 1439
- ▶ Legionella Acid Buffer see page 1463

Listeria Chromo Lipase C Supplement

0,1 g/ml, sterile, ready-to-use

Media supplement for selective isolation of *Listeria*.

Storage temp.: +4 °C

Application: One vial Listeria Chromo Lipase C Supplement is added to 500 ml autoclaved Listeria chromogenic Agar (Art. No. 3008.1). For selective isolation of *Listeriae* we recommend additional supplementation with Listeria Chromo Selective Supplement (Art. No. 2947.1).

One box of 10 vials Listeria Chromo Lipase C Supplement is sufficient for 10 x 500 ml Listeria chromogenic Agar.

Formulation per vial:

Phospholipase C substrate..... 1 g

2948.1	10 x 10 ml	glass	107,40 €

Listeria Chromo Selective Supplement

lyophilised

Media supplement for selective isolation of *Listeria*.

Storage temp.: +4 °C

Danger H300-H334-H317-H341-H360D-H411

Application: One vial Listeria Chromo Selective Supplement is reconstituted in 5 ml sterile distilled water and is subsequently added to 500 ml autoclaved Listeria chromogenic Agar (Art. No. 3008.1). For activation of the listerial phospholipase C we recommend additional supplementation with Listeria Chromo Lipase C Supplement (Art. No. 2948.1).

One box of 10 vials Listeria Chromo Selective Supplement is sufficient for 10 x 500 ml Listeria chromogenic Agar.

Formulation per vial:

Cycloheximide..... 0,025 g
Polymyxin B sulphate..... 38500 I.E.
Nalidixic acid sodium salt..... 0,01 g
Ceftazidime (Fortam)..... 0,01 g

2947.1	10 vials	glass	107,40 €

▶ Listeria chromogenic Agar (Base) see page 1439

▶ Kovacs' Reagent see page 1463

Listeria Oxford Supplement

lyophilised

Media supplement for selective isolation of *Listeria monocytogenes.*

Oxford Supplement

Storage temp.: +4 °C

Danger H300-H341-H360D-H411

Application: One vial Listeria-Oxford Supplement is reconstituted in 5 ml of a sterile 1:1 mixture of acetone and distilled water, and is subsequently added to 500 ml autoclaved Oxford Listeria Agar (Base) (Art. No. 5767.1).

One box of 10 vials Listeria Oxford Supplement is sufficient for 10 x 500 ml Oxford Listeria Agar.

Formulation per vial:

Cycloheximide..... 200 mg
Colistinsulphate..... 10 mg
Fosfomycin..... 5 mg
Acryflavine..... 2,5 mg
Cefotetan..... 1 mg
Acriflavinium hydrochloride..... 2,5 mg

5801.1	10 vials	glass	141,40 €

▶ Oxford Listeria Agar (Base) see page 1445

Listeria Palcam Supplement

lyophilised

Media supplement for selective isolation of *Listeria monocytogenes.*

Palcam Supplement

Storage temp.: +4 °C

Danger H334-H317

Application: One vial Listeria-Palcam Supplement is reconstituted in 2 ml sterile distilled water, and is subsequently added to 500 ml autoclaved Palcam Listeria Agar (Base) (Art. No. 5768.1).

One box of 10 vials Listeria Palcam Supplement is sufficient for 10 x 500 ml Palcam Listeria Agar.

Formulation per vial:

Ceftazidime (Fortam)..... 10 mg
Polymyxin B..... 5 mg
Acryflavine..... 2,5 mg

5803.1	10 vials	glass	103,75 €

▶ Palcam Listeria Agar (Base) see page 1445

MRSA Cefoxitin Supplement

lyophilised

Media supplement for selective detection of methicillin resistent *Staphylococcus aureus*.

Storage temp.: +4 °C

Cefoxitin inhibits growth of methicillin sensitive *Staphylococcus aureus* strains.

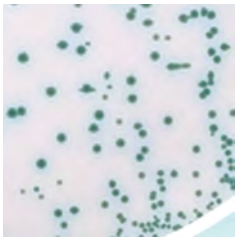


Figure: Detection of *Staphylococcus aureus* ATCC 43300 by MRSA chromogenic Agar (Art. No. 3026.1) plus MRSA Cefoxitin Supplement.

Application: One vial MRSA Cefoxitin Supplement is reconstituted in 5 ml sterile, distilled water, and is subsequently added to 500 ml solubilised MRSA chromogenic Agar (Base) (Art. No. 3026.1).
One box of 10 vials MRSA Cefoxitin Supplement is sufficient for 10 x 500 ml MRSA chromogenic Agar.

Formulation per vial:

Cefoxitin. ..... 0,002 g

2975.1	10 vials	glass	75,15 €

▶ MRSA chromogenic Agar (Base) see page 1442

RPF Supplement

lyophilised

Media supplement for identification and enumeration of *Staphylococcus aureus.*

Rabbit Plasma Fibrinogen Supplement

Storage temp.: +4 °C

Warning H302+H312+H332

Application: One vial RPF Supplement is reconstituted in 10 ml sterile distilled water, and is incubated for 10 mins. at room temperature until completely dissolved.
Subsequently add to 90 ml autoclaved Baird Parker Agar (e.g. Art. No. X913.1).
One box of 10 vials RPF Supplement is sufficient for 10x 100 ml Baird Parker Agar.

Formulation per vial:

Rabbit plasma..... 2,5 ml
Bovine fibrinogen..... 380 mg
Trypsin inhibitor. ..... 2,5 mg
Potassium tellurite. ..... 2,5 mg

6064.1	10 vials	glass	418,20 €

▶ Baird Parker Agar (Base) see page 1429

TTC-Supplement

lyophilised

Media supplement for identification of coliform enterobacteria.

2,3,5-Triphenyl-tetrazolium chloride, Red tetrazolium

Storage temp.: +4 °C

Warning H315-H319-H335

TTC is used as additive for microbiological nutrient media, in order to accelerate the identification of coliform enterobacteria, e.g. TTC Chapman Agar acc. to EN ISO 9308-1:2000 (Art. No. CP65.1).

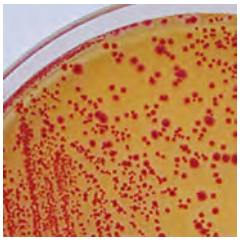


Figure: Detection of *E. coli* (wild type) by TTC Chapman Agar (Art. No. CP65.1) plus TTC supplement.

Application: One vial TTC-Supplement (50 mg) is reconstituted in 5 ml sterile, distilled water. Store solution at 4 °C for one week in maximum. Long-term storage in aliquots at -20 °C.
One box of 10 x 50 mg TTC-Supplement is sufficient for 20 l TTC Chapman Agar.

Guarantee analysis:

Triphenyltetrazolium chloride (per vial). ..... 50 mg

CP72.1	10 vials	glass	76,90 €

▶ TTC Chapman Agar (Base) see page 1453

Yersinia Supplement

lyophilised

Media supplement for selective isolation of *Yersinia enterocolitica*

CIN Supplement

Storage temp.: +4 °C

Danger H315-H317-H319-H334-H400-H410

Application: One vial Yersinia Supplement is reconstituted in 5 ml sterile distilled water, and is subsequently added to 500 ml autoclaved Yersinia Selective Agar (Base) (Art. No. 5780.1).
One box of 10 vials Yersinia Supplement is sufficient for 10 x 500 ml Yersinia Selective Agar.

Formulation per vial:

Cefsulodin. ..... 7,5 mg
Novobiocin. ..... 1,25 mg
Irgasan..... 2 mg

4880.1	10 vials	glass	111,30 €

▶ Yersinia Selective Agar (Base) see page 1455

Further Additives

Product	Purity	Art. No.	Pack Qty.	€
Brilliant green (C.I. 42040)	for microscopy	**0324.1**	25 g	18,20
		0324.2	100 g	40,75
5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide	≥99,5 %, for biochemistry	**4149.1**	25 mg	22,05
		4149.2	100 mg	44,00
Bromocresol green	ACS	**T115.1**	1 g	17,10
Bromocresol green sodium salt	ACS	**KK18.1**	1 g	12,80
		KK18.2	5 g	34,30
Bromocresol purple	p.a., ACS	**0317.1**	5 g	21,40
		0317.2	25 g	66,55
Bromothymol blue	p.a., ACS	**T117.1**	5 g	24,65
		T117.7	100 g	175,80
Bromothymol blue sodium salt	p.a.	**KK19.1**	5 g	21,00
		KK19.2	10 g	32,80
Cholic acid sodium salt	≥99 %, for biochemistry	**3407.1**	50 g	61,20
o-Cresol red	p.a.	**KK15.1**	5 g	19,25
		KK15.2	10 g	31,10
		KK15.3	25 g	62,25
Crystal violet (C.I. 42555)	p.a., ACS	**T123.1**	25 g	27,85
Dextrin	for microbiology	**3488.2**	100 g	21,40
		3488.1	250 g	36,05
Esculin sesquihydrate	≥97,5 %, DAB, for biochemistry	**8704.1**	5 g	21,40
Fuchsine basic (C.I. 42510)	for microscopy	**3256.1**	50 g	62,25
Gelatine	platinum, extra pure, 240 Bloom	**4582.3**	500 g	32,15
		4582.1	1 kg	52,15
		4582.2	5 kg	186,55
D(+)-Glucose monohydrate	for microbiology	**6887.1**	1 kg	19,25
		6887.2	2,5 kg	40,75
		6887.5	25 kg	177,40
Roti®fair 20% Glucose	for 1000 ml/pouch, for microbiology and biochemistry	**1030.1**	5 pouches	168,70
Glycerol	≥99,5 %, p.a., anhydrous	**3783.1**	1 l	53,65
		3783.3	1 l	57,95
		3783.2	2,5 l	97,75
		3783.4	2,5 l	102,05
Iron(II) sulphate heptahydrate	≥99 %, p.a., ACS	**P015.1**	500 g	24,65
		P015.2	1 kg	36,45
		P015.3	2,5 kg	78,40
		P015.4	5 kg	138,70
		P015.6	10 kg	252,55
		P015.5	25 kg	514,95
IPTG	≥99 %, BioScience-Grade, dioxane free, animal free	**2316.1**	250 mg	21,00
		2316.2	1 g	45,05
		2316.3	5 g	128,50
		2316.4	25 g	429,50
		2316.5	100 g	977,20
Lactose monohydrate	for microbiology	**6868.1**	1 kg	25,70
		6868.2	5 kg	88,05
		6868.3	50 kg	557,95
Lecithin	≥97 %, made from soybeans, for biochemistry	**9812.1**	250 g	21,40
		9812.3	1 kg	53,65
		9812.2	2,5 kg	120,30
		9812.8	25 kg	751,45
Methyl red (C.I. 13020)	p.a., ACS	**T120.1**	10 g	15,60
		T120.2	25 g	25,70
4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide	≥98 %, for biochemistry	**4083.1**	100 mg	42,90
		4083.2	250 mg	75,15
		4083.3	500 mg	124,60
4-Methylumbelliferyl-α-D-glucopyranoside	≥99 %, for biochemistry	**4086.1**	100 mg	44,00
		4086.2	250 mg	84,85
4-Methylumbelliferyl-β-D-glucopyranoside	≥99 %, for biochemistry	**4093.1**	500 mg	44,00
		4093.2	1 g	75,15
		4093.3	2,5 g	147,85
4-Methylumbelliferyl phosphate	≥99 %, for biochemistry	**4103.1**	250 mg	34,95
		4103.2	1 g	103,10

Product	Purity	Art. No.	Pack Qty.	€
MUG	≥99 %, p.a.	**6394.1**	50 mg	23,55
		6394.2	250 mg	64,40
		6394.3	1 g	198,90
Neutral red (C.I. 50040)	p.a.	**T122.1**	10 g	55,80
4-Nitrophenyl-N-acetyl-β-D-glucosaminide	≥99 %, for biochemistry	**4062.1**	100 mg	27,45
		4062.2	500 mg	77,30
		4062.3	1 g	147,85
4-Nitrophenyl-α-D-galactopyranoside	for biochemistry	**4063.1**	100 mg	21,00
		4063.2	500 mg	48,30
		4063.3	1 g	77,30
4-Nitrophenyl-β-D-galactopyranoside	≥98 %, for biochemistry	**4081.1**	1 g	32,80
		4081.2	2,5 g	77,30
		4081.3	5 g	139,25
Phenol red	p.a., ACS	**T127.1**	5 g	15,60
Rose Bengale B (C.I. 45440)	for microscopy	**3162.1**	50 g	95,70
Sodium metabisulphite	≥97 %, p.a., ACS	**P755.1**	500 g	20,35
		P755.2	1 kg	31,10
		P755.5	25 kg	332,20
Sodium molybdate dihydrate	≥99,5 %, p.a.	**0274.1**	50 g	18,85
		0274.2	100 g	27,45
		0274.3	250 g	49,35
		0274.4	1 kg	177,40
D(+)-Saccharose	≥99,5 %, p.a.	**4621.1**	1 kg	20,35
		4621.2	5 kg	86,55
		4621.5	25 kg	198,90
Tetrazolium blue chloride	≥95 %, for biochemistry	**4176.1**	1 g	56,90
		4176.2	5 g	213,95
2,3,5-Triphenyltetrazolium chloride	≥98,5 %, p.a.	**KK13.1**	10 g	53,25
		KK13.2	50 g	220,30
Tween® 80	for bacteriology	**4859.1**	25 g	19,25
X-β-Gal	≥99 %, BioScience-Grade	**2315.1**	100 mg	21,40
		2315.2	500 mg	61,20
		2315.3	1 g	114,50
		2315.4	5 g	385,95
X-Glc	≥98 %, for biochemistry	**8434.2**	250 mg	171,50
		8434.3	500 mg	319,85
		8434.1	100 mg	81,60
X-Glu	≥98 %, for biochemistry	**4041.1**	50 mg	39,70
		4041.2	100 mg	66,55

For additional product data and safety information, see chapter Chemicals A-Z.

Identification of Microorganisms

Testing Reagents

Kovacs' Reagent
for microbiology

Media supplement for detection of microbial indole.
Indole Reagent
Storage temp.: +4 °C

Danger H226-H290-H302-H315-H318-H335-H336

Tryptophanase-positive microorganisms (e.g. *E. coli, S. faecalis, Proteus sp.*) that cleave tryptophane hereby release indole, which may be detected by reaction with dimethylaminobenzaldehyde by forming a dark red dye. Microorganisms must be incubated in a glucose-free broth with high concentrations of tryptophane present.
Kovacs' Reagent is added to 24-48 h old cultures in a concentration of 0.2 to 0.5 ml per 5 ml broth. A colour shift to dark red shows presence of indole, thus confirming the inoculating colony as being indole-/tryptophanase-positive.

Application: Customary concentration in medium: 4-10 %
100 ml Kovacs' Reagent is sufficient for approx. 2 l medium.

Type analysis:

Appearance	yellowish, clear liquid
4-(Dimethylamino)benzaldehyde	50 g/l
1-Butanol	75 %
Hydrochloric acid (37 %)	25 %
pH value	>1

2950.1	100 ml	glass	46,80 €

▶ Tryptophane Culture Broth see page 1452

Reagents for Kovacs´s Indolreaction

Reagent	Purity	Art. No.	Pack Qty.	€
n-Butanol	≥99.5 %, p.a., ACS, ISO	**7171.2**	1 l	50,45
		7171.1	2,5 l	102,05
4-(Dimethylamino)-benzaldehyde	≥99 %, p.a.	**X867.1**	25 g	45,05
		X867.2	100 g	113,45
Hydrochloric, acid fuming	p.a., ACS, ISO	**4625.1**	1 l	21,00
		4625.2	2,5 l	33,25
Isoamyl alcohol	≥98.5 %, p.a., ACS	**T870.1**	500 ml	41,85
		T870.2	1 l	79,45
		T870.3	2,5 l	175,15

For additional product data and safety information, see chapter Chemicals A-Z.

Rotitest® Oxidase strips ready-to-use
Rotitest® Bio Analysis

Rapid test system for detection of cytochrome oxidase in microorganisms.
Storage temp.: +4 °C
Rapid test system for detection of oxidase-positive microorganisms.
A green coloured area indicates the reaction zone, impregnated with detection reagent, at one end of the paper strip. The colony to be analysed is smeared onto this reaction zone. Within 15 seconds, a dark-blue to violet colouring indicates presence of oxidase-positive microorganisms.

The following microorganisms are typically oxidase-positive: *Helicobacter pylori, Vibrio cholerae, Campylobacter jejuni, Legionella pneumophila, Neisseria, Moraxella*, many *Pseudomonaceae* and *Diplococci*.
Many *Enterobacteriaceae* are typically oxidase-negative.

8469.1	100 pieces	tube	37,10 €

Legionella Acid Buffer ready-to-use S
EN ISO 11731-2, sterile, ready-to-use for microbiology

Sterile acid buffer solution for detection of legionella.
0.2 M HCl/KCl Solution, pH 2.2, Acid buffer pH 2.2, HCl/KCl-Puffer
Storage temp.: +20 °C • Transport temp.: +20 °C
To minimize the accompanying bacterial flora, 30 ±5 ml of Legionella Acid Buffer are applied to the membrane after membrane filtration. After an exposure time of approx. 5 minutes, the buffer is vacuumed off and the membrane rinsed with sterile distilled water.
The filter is transferred sterile to a legionella selective agar, e.g. Legionella Agar (Base) (Art. No. CL48.1) and incubated.
Bottle with 50 ml graduation. With original seal.
The buffer should be used within 4 weeks after opening.

9979.1	1 l	plastic	39,70 €
Original pack 6 x 1 l			37,72/1 l

▶ Legionella Agar (Base) see page 1439

RiboFlow® Kits for biomolecular detection of germs

By SY-LAB
- Specificity comparable to PCR
- Short assay time (<30 min)
- Simple protocol
- No expensive instrumentation necessary
- Particularly convenient for testing foods, toiletries and cosmetics
- Storage temp.: room temp.

SY-LAB´s RiboFlow® Test Kits were especially developed for detection of relevant bacterial contamination on-site, based on molecular flow technology - quickly and highly specific, without the need for sophisticated sampling , complex amplification techniques and expensive equipment.
Replicating cells are reliably detected by their ribosomal RNA in less than 30 minutes.
RiboFlow® Salmonella and RiboFlow® Listeria Twin are validated according to ISO 16140-2:2016.

The test is easily performed with usual cultures in enrichment media or with single colonies from agar plates. The sample is just mixed with the included solutions and pipetted on the test cassette. As result, a distinctive and easy to read line occurs only in the presence of the target organism.
Every kit includes a detailed manual with Standard- and Quick reference protocols.

We recommend the usage of a small laboratory centrifuge with at least 2000 x g (e.g. Art. No. CX73.1), a mini incubator, optimally with window (e.g. Art. No. YC53.1) and a tray (e.g. Art. No. YH58.1, Measures: 26 x 20 x 2 cm) as accessories for the application of the kits.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

Fig.: Example result of the RiboFlow® test cassettes

A: RiboFlow®-Listeria Twin (Art. No. 9884.1):
Line topmost: Control line
Line in the middle: positive result for *Listeria monocytogenes*
Bottom line: positive result for *Listeria* spp.

B: RiboFlow®-Salmonella (Art. No. 9881.1)
Line topmost: Control line
No other line: negative result, the organism has not been detected

Product	Use	Art. No.	Pack Qty.	€
RiboFlow® Salmonella	For detection of *Salmonella* spp.	**9881.1**	24 tests	274,15
RiboFlow® Cronobacter	For detection of *Cronobacter* spp.	**9882.1**	24 tests	220,40
RiboFlow® Listeria Twin*	For detection and differentiation of *Listeria* spp. and *Listeria monocytogenes*	**9884.1**	24 tests	375,20
RiboFlow® Campylobacter	For detection of thermophilic *Campylobacter* spp.	**9885.1**	24 tests	284,90
RiboFlow® Vibrio parahaemolyticus	For detection of *Vibrio parahaemolyticus*	**9888.1**	24 tests	299,95
RiboFlow® Staphylococcus aureus	For detection of *Staphylococcus aureus*	**9889.1**	24 tests	263,40
RiboFlow® Enterobacteriaceae	For detection of enterobacteria	**9890.1**	24 tests	263,40
RiboFlow® E. coli	For detection of *Escherichia coli*	**9891.1**	24 tests	263,40
RiboFlow® Pseudomonas aeruginosa	For detection of *Pseudomonas aeruginosa*	**9892.1**	24 tests	263,40
RiboFlow® Candida albicans	For detection of *Candida albicans*	**9893.1**	24 tests	263,40
RiboFlow® Cosmetics**	For detection and differentiation of *E. coli, Ps. aeruginosa, S. aureus, C. albicans*	**9894.1**	6 x 4 tests	203,20
RiboFlow® P/En***	For detection and differentiation of *Pseudomonas* spp. and *Enterobacteriaceae*	**9895.1**	24 tests	263,40

* Within the RiboFlow® Listeria Twin Kit, one test cassette detects simultaneously the presence of *Listeria monocytogenes* and/or of other *Listeria spp*.

** The RiboFlow® Cosmetics Combi test Kit consists of 6 sets with 4 test cassettes each with whom the target organisms *Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus* and *Candida albicans* can be tested parallely.

*** Within the RiboFlow® P/En Kit, one test cassette detects simultaneously the presence of *Pseudomonas aeruginosa* and/or of enterobacteria.

Microbiological Staining

Microbiological staining is mostly applied for identification of microorganisms during microscopic analysis. Due to their affinity to certain cell structures, acidic dyes or salts of basic aniline dyes are used frequently for contrastation of cells, differential staining, or accentuation of specific structures (flagella, spores, or capsules).

For detailed information on the products please see chapters Histology/Staining and Chemicals A-Z.

Solutions for Gram Staining

Classic Staining acc. to Gram for differentiation of microorganisms.

Product	Art. No.	Pack Qty.	€
Ethanol 96 %	**P075.1**	1 l	73,00
	P075.3	1 l	71,95
	P075.2	2,5 l	153,65
	P075.4	2,5 l	150,40
	P075.5	5 l	282,65
Ethanol 96 % denatured	**T171.1**	2,5 l	24,65
	T171.3	2,5 l	22,50
	T171.4	5 l	41,85
	T171.2	25 l	124,60
Carbolic fuchsine solution	**A130.2**	500 ml	23,15
	A130.1	1 l	35,40
Gram staining kit	**HP02.1**	1 kit	90,85
Gram's decolourising solution	**CN02.1**	500 ml	23,15
Iodine-potassium iodide solution acc. to Lugol	**N052.1**	250 ml	17,75
	N052.3	500 ml	24,65
	N052.2	1 l	30,65
Safranin solution	**CN01.1**	500 ml	33,25
Carbol gentian violet solution	**CN00.1**	500 ml	23,55
	CN00.2	1 l	34,30

For additional product data and safety information, see chapter Chemicals A-Z.

Solutions for Neisser Staining

Routine staining method, mainly used for identification of Coryne bacteria causing Diphtheria.

Dye	Art. No.	Pack Qty.	€
Neisser's solution I	**3463.1**	100 ml	19,90
	3463.2	500 ml	37,55
Neisser's solution II	**3464.1**	100 ml	19,90
	3464.2	500 ml	37,55
Neisser's solution III	**3466.1**	100 ml	19,90
	3466.2	500 ml	37,55

For additional product data and safety information, see chapter Chemicals A-Z.

Dyes for Spore Staining

Stains spores green and bacteria red or rose.

Product	Art. No.	Pack Qty.	€
Eosin Y (C.I. 45380)	**7089.1**	50 g	33,90
	7089.2	100 g	57,55
Safranin O (C.I. 50240)	**T129.1**	10 g	42,50
Malachite green oxalate (C.I. 42000)	**5895.2**	25 g	16,70
	5895.1	100 g	33,25

For additional product data and safety information, see chapter Chemicals A-Z.

Dyes for Staining of Bacteria

Product	Art. No.	Pack Qty.	€
Lactophenol blue solution	**3097.1**	100 ml	26,35
LOEFFLER's methylene blue solution	**AE64.1**	500 ml	25,30
	AE64.2	1 l	31,75
	AE64.3	2,5 l	65,50
Carbolic fuchsine solution	**A130.2**	500 ml	23,15
	A130.1	1 l	35,40
Sudan black B (C.I. 26150)	**0292.1**	10 g	23,55
Rose Bengale B (C.I. 45440)	**3162.1**	50 g	95,70
Alizarin red S (C.I. 58005)	**0348.1**	10 g	19,90
	0348.2	25 g	31,10
Crystal violet (C.I. 42555)	**T123.1**	25 g	27,85

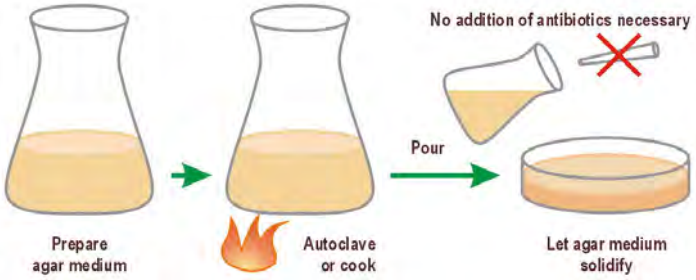
For additional product data and safety information, see chapter Chemicals A-Z.

Nutrient Media for Molecular Biology

Selective Media with Antibiotics TIP

Nutrient media for selection and selective cultivation of recombinant *E.coli*.

- Tried and tested Standard media for molecular biology complemented with antibiotics
- Easy and uncomplicated storage of the powder at 20 °C
- With low or high salt content according to Luria/Miller or Lennox
- With antibiotics in different end concentrations
- Instruction for use: 35 g (according to the Lennox method) or 40 g (according to the Luria/Miller method) of the powder are weighed out per 1 litre of agar.



Product	Properties	Art. No.	Pack Qty.	Packaging	€
LB-Agar (Lennox) / Amp100	Low salt content acc. to Lennox. With ampicillin: end concentration of 100 µg/ml.	**8852.1**	500 g	plastic	89,15
		8852.2	1 kg	plastic	166,65
		8852.3	2,5 kg	plastic	385,95
LB-Agar (Lennox) / Kana50	Low salt content acc. to Lennox. With kanamycin: end concentration of 50 µg/ml. Autoclavable.	**8853.1**	500 g	plastic	141,40
		8853.2	1 kg	plastic	264,35
LB-Agar (Luria/Miller) / Kana50	High salt content acc. to Luria/Miller. With kanamycin: end concentration of 50 µg/ml. Autoclavable.	**8860.1**	500 g	plastic	126,35
		8860.2	1 kg	plastic	232,10
LB-Agar (Luria/Miller) / Amp50	High salt content acc. to Luria/Miller. With ampicillin: end concentration of 50 µg/ml.	**8858.1**	500 g	plastic	80,10
		8858.2	1 kg	plastic	149,45
		8858.3	2,5 kg	plastic	343,50
LB-Agar (Luria/Miller) / Amp100	High salt content acc. to Luria/Miller. With ampicillin: end concentration of 100 µg/ml.	**8855.1**	500 g	plastic	76,25
		8855.2	1 kg	plastic	142,45
		8855.3	2,5 kg	plastic	328,45
LB-Agar (Luria/Miller) / Chloramph34	High salt content acc. to Luria/Miller. With chloroamphenicol: end concentration of 34 µg/ml. Autoclavable.	**8861.1**	500 g	plastic	74,75
		8861.2	1 kg	plastic	137,10
		8861.3	2,5 kg	plastic	317,15

Instructions for use
can be found on the Internet next to the product description.

Granulated Media

Storage temp.: +20 °C

Benefits of granulated Media:
- Dust minimized
- High solubility
- Without additives

LB Broth (Lennox), granulated

granulated, for molecular biology

Standard formulation used for propagation and culturing of *E. coli*. Low salt content for high-copy plasmid proliferation and preparation, as well as for phage propagation under supplementation with magnesium chloride.
Granulated, dust-minimized version with high solubility and superior homogeneity.
Application: Use 20 g for 1 l broth.

Formulation:

Tryptone	10 g/l
Yeast extract	5 g/l
Sodium chloride (NaCl)	5 g/l
pH value	7,0 ±0,2
Granulation	complies

6669.1	500 g		plastic	89,80 €
Original pack 6 x 500 g				85,31/500 g
6669.2	1 kg		plastic	159,00 €
Original pack 6 x 1 kg				151,05/1 kg
6669.3	2,5 kg		plastic	356,40 €
6669.4	5 kg	BIG PACK	plastic	644,50 €

LB-Agar (Lennox), granulated

granulated, for molecular biology

Granulated, dust-minimized version of the Luria-Bertani Agar formulated acc. to Lennox; With high solubility and superior homogeneity.
Application: Use 35 g for 1 l agar.

Formulation:

Tryptone	10 g/l
Yeast extract	5 g/l
Sodium chloride (NaCl)	5 g/l
Agar-Agar	15 g/l
pH value	7,0 ±0,2
Granulation	complies

6671.1	500 g		plastic	99,45 €
Original pack 6 x 500 g				94,48/500 g
6671.2	1 kg		plastic	186,95 €
Original pack 6 x 1 kg				177,60/1 kg
6671.3	2,5 kg		plastic	403,70 €

LB Broth (Luria/Miller), granulated

granulated, for molecular biology

Standard formulation used for propagation and culturing of *E. coli*. Due to the high salt content particularly suited for bacterial proliferation prior to plasmid preparation.
Granulated, dust-minimized version with high solubility and superior homogeneity.
Application: Use 25 g for 1 l broth.

Formulation:

Tryptone	10 g/l
Yeast extract	5 g/l
Sodium chloride (NaCl)	10 g/l
pH value	7,0 ±0,2
Granulation	complies

6673.1	500 g		plastic	81,60 €
Original pack 6 x 500 g				77,52/500 g
6673.2	1 kg		plastic	153,20 €
Original pack 6 x 1 kg				145,54/1 kg
6673.3	2,5 kg		plastic	332,20 €
6673.4	5 kg	BIG PACK	plastic	604,70 €

LB Agar (Luria/Miller), granulated

granulated, for molecular biology

Granulated, dust-minimized version of the Luria-Bertani Agar formulated acc. to Luria and Miller; With high solubility and superior homogeneity.
Application: Use 40 g for 1 l agar.

Formulation:

Tryptone	10 g/l
Yeast extract	5 g/l
Sodium chloride (NaCl)	10 g/l
Agar-Agar	15 g/l
pH value	7,0 ±0,2
Granulation	complies

6675.1	500 g		plastic	89,15 €
Original pack 6 x 500 g				84,69/500 g
6675.2	1 kg		plastic	162,25 €
Original pack 6 x 1 kg				154,14/1 kg
6675.3	2,5 kg		plastic	353,70 €

2x YT Broth, granulated

granulated, for molecular biology

Nutritious medium for proliferation of *E. coli*, formulated in order to increase replication and yield of filamentous ssDNA bacteriophages (such as the M13 phage).
Granulated, dust-minimized version with high solubility and superior homogeneity.
Application: Use 31 g for 1 l broth.

Formulation:

Tryptone	16 g/l
Yeast extract	10 g/l
Sodium chloride (NaCl)	5 g/l
pH value	7,0 ±0,2
Granulation	complies

6676.1	500 g		plastic	102,05 €
Original pack 6 x 500 g				96,95/500 g
6676.2	1 kg		plastic	171,50 €
Original pack 6 x 1 kg				162,93/1 kg
6676.3	2,5 kg		plastic	396,70 €

Standard Media

Storage temp.: +20 °C

All nutrient media for molecular biology are according to the data given in Sambrook and Russell, *Cold Spring Harbour Laboratory Press*, Cold Spring Harbour, New York, 2001.

Yeast-Nitrogen-Base (without Amino Acids)

for molecular biology

For yeast classification based on amino acid and carbohydrate requirements. **YNB Medium**

Yeast Nitrogen Base (without amino acids) contains ammonium sulphate, all vitamins and all organic salts needed to cultivate yeasts, **except for the amino acids and carbohydrate sources**. By selective addition of single amino acids and sugars the yeast cells are tested for sugar assimilation and for their dependency on specific amino acids, hereby revealing parameters for their classification.
Application: Add 6,7 g for 100 ml broth for 10x stock solution.
Use selected sugar/amino acid.
Do not boil, do not autoclave! Sterilise by sterile filtration!

Formulation:

Ammonium sulphate.	5,0 g/l
Potassium phosphate.	1,0 g/l
Magnesium sulphate.	0,5 g/l
Calcium chloride.	0,1 g/l
Sodium chloride (NaCl).	0,1 g/l
Inositol.	2,0 mg/l
Boric acid.	0,5 mg/l
Niacin.	0,4 mg/l
Thiamine hydrochloride.	0,4 mg/l
Pyridoxin hydrochloride.	0,4 mg/l
Calcium pantothenate.	0,4 mg/l
Manganese sulphate.	0,4 mg/l
Zinc sulphate.	0,4 mg/l
P-Aminobenzoic acid.	0,2 mg/l
Iron chloride.	0,2 mg/l
Riboflavine.	0,2 mg/l
Sodium molybdate.	0,2 mg/l
Potassium iodide.	0,1 mg/l
Copper sulphate.	0,04 mg/l
Biotin.	0,002 mg/l
Folic acid.	0,002 mg/l
pH value.	5,4 ±0,2

HP26.1	500 g		plastic	145,70 €
Original pack 6 x 500 g				138,42/500 g

▶ Amino Acids for drop-out mixtures see chapter Chemicals A-Z.

LB Broth (Lennox)

for molecular biology

Standard formulation used for propagation and culturing of *E. coli*. The salt content was adjusted to enable high-copy plasmid proliferation and preparation. Additionally, LB medium may be supplemented with magnesium chloride in order to gain an enriched broth for phage propagation.
Application: Use 20 g for 1 l broth.

Formulation:

Tryptone.	10 g/l
Yeast extract.	5 g/l
Sodium chloride (NaCl).	5 g/l
pH value.	7,0 ±0,2

X964.1	500 g		plastic	60,75 €
Original pack 6 x 500 g				57,71/500 g
X964.2	1 kg		plastic	107,40 €
Original pack 6 x 1 kg				102,03/1 kg
X964.3	2,5 kg		plastic	246,75 €
X964.4	5 kg	BIG PACK	plastic	446,15 €

LB Agar (Lennox)

for molecular biology

Application: Use 35 g for 1 l agar.

Formulation:

Tryptone.	10 g/l
Yeast extract.	5 g/l
Sodium chloride (NaCl).	5 g/l
Agar-Agar.	15 g/l
pH value.	7,0 ±0,2

X965.1	500 g		plastic	75,80 €
Original pack 6 x 500 g				72,01/500 g
X965.2	1 kg		plastic	144,60 €
Original pack 6 x 1 kg				137,37/1 kg
X965.3	2,5 kg		plastic	332,20 €

LB Broth (Luria/Miller)

for molecular biology

Standard medium for propagation of *E. coli*. Due to the high salt content, this classical formulation acc. to Luria and Bertani is superior when culturing cells for plasmid preparation.
Application: Use 25 g for 1 l broth.

Formulation:

Tryptone.	10 g/l
Yeast extract.	5 g/l
Sodium chloride (NaCl).	10 g/l
pH value.	7,0 ±0,2

X968.1	500 g		plastic	53,65 €
Original pack 6 x 500 g				50,97/500 g
X968.2	1 kg		plastic	100,55 €
Original pack 6 x 1 kg				95,52/1 kg
X968.3	2,5 kg		plastic	217,70 €
X968.4	5 kg	BIG PACK	plastic	392,40 €

LB Agar (Luria/Miller)

for molecular biology

Application: Use 40 g for 1 l agar.

Formulation:

Tryptone.	10 g/l
Yeast extract.	5 g/l
Sodium chloride (NaCl).	10 g/l
Agar-Agar.	15 g/l
pH value.	7,0 ±0,2

X969.1	500 g		plastic	67,20 €
Original pack 6 x 500 g				63,84/500 g
X969.2	1 kg		plastic	123,10 €
Original pack 6 x 1 kg				116,95/1 kg
X969.3	2,5 kg		plastic	273,60 €

▶ IPTG see page 1284
▶ X-ß-Gal see page 1284

LB-Broth

LB-Broth is a standard medium for maintanance and propagation of *E. coli*. The LB-series of media (**L**uria and **B**ertani) includes several formulations, which differ mainly in their salt contents.

Typical LB-Broth formulations are: Luria, Luria-Bertani, LennoxL, LennoxLB, Luria/Miller. For plasmid propagation, salt concentrations between 5 and 10 g/l are recommended.

NZCYM Broth

for molecular biology

A superior medium for increased yields of phage Lambda.
Application: Use 22 g for 1 l broth.

Formulation:

Casein, enzymatically digested. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Casamino Acids. ..... 1 g/l
Magnesium sulphate ($MgSO_4$), anhydrous. ..... 0,98 g/l
pH value. ..... 7,0 ±0,2

X974.1	500 g	plastic	61,20 €
Original pack 6 x 500 g			58,14/500 g

NZYM Broth

for molecular biology

Designed for increased replication of phage Lambda.
Application: Use 21 g for 1 l broth.

Formulation:

Casein, enzymatically digested. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Magnesium sulphate ($MgSO_4$), anhydrous. ..... 0,98 g/l
pH value. ..... 7,0 ±0,2

X973.1	500 g	plastic	61,20 €
Original pack 6 x 500 g			58,14/500 g

NZYM- and NZCYM Broth

These media were designed for the propagation of **bacteriophage Lambda**.
In order to encourage multi phage insertion into the host cell, supplementation with 0.2 % maltose is recommended (prepare a 20 % solution and add 1 ml per 100 ml of medium), which promotes expression of LamB (lambda receptor).

If maltose is added, the medium should not be used to create phage stocks, as binding of phage particles to membrane fragments will occur because of increased LamB density.

SOB Broth

for molecular biology

Enriched broth for propagation of *E. coli*, particularly suited for proliferation of competent cells after transformation.
May be enriched to SOC-medium with 20 mM glucose.
Application: Use 26,64 g for 1 l broth.

Formulation:

Tryptone. ..... 20 g/l
Yeast extract. ..... 5 g/l
Magnesium chloride. ..... 0,96 g/l
Sodium chloride (NaCl). ..... 0,5 g/l
Potassium chloride (KCl). ..... 0,186 g/l
pH value. ..... 7,0 ±0,2

AE27.1	500 g	plastic	67,65 €
Original pack 6 x 500 g			64,27/500 g

SOB

Super **O**ptimal **B**roth (SOB) is a complex, nutritious nutrient medium which is used prior to and after transformation of *E. coli* bacteria. By adding 20 mM glucose it is enriched to SOC (**S**uper **O**ptimal Broth with **C**atabolite repression) which is optimal for coddling up of freshly transformed bacteria. Through this, SOC increases transformation efficiency.
In order to avoid caramelisation, glucose may only be added after autoclaving.
Acc. to D. Hanahan (1983) *J. Mol. Biol.* 166/4:557-580

Terrific Broth

for molecular biology

Terrific Broth is a nutricious medium for the culture and proliferation of *E. coli*. Compared to LB medium Terrific Broth supports higher cellular density, therefore increasing the yield during plasmid and protein preparations.
Application: Use 50,8 g for 1 l broth. Before autoclaving add 4 ml glycerol per litre medium.

Formulation:

Casein, enzymatically digested. ..... 12 g/l
Yeast extract. ..... 24 g/l
K_2HPO_4. ..... 12,54 g/l
KH_2PO_4. ..... 2,31 g/l
pH value. ..... 7,2 ±0,2

X972.1	500 g	plastic	67,65 €
Original pack 6 x 500 g			64,27/500 g
X972.2	1 kg	plastic	118,80 €
Original pack 6 x 1 kg			112,86/1 kg
X972.3	2,5 kg	plastic	252,65 €

Terrific Broth modified

for molecular biology

Nutricious medium for the culture and proliferation of *E. coli*. Terrific Broth supports high cellular density and is recommended for use during cultivation of bacteria for plasmid isolation or *in vitro* protein expression.
In the formulation of Terrific Broth modified, the phosphate content has been reduced, in order to prevent precipitation of insoluble salts during autoclaving.
Application: Use 47,6 g for 1 l broth. Before autoclaving add 4 ml glycerol per litre medium.

Formulation:

Casein, enzymatically digested. ..... 12 g/l
Yeast extract. ..... 24 g/l
K_2HPO_4. ..... 9,4 g/l
KH_2PO_4. ..... 2,2 g/l
pH value. ..... 7,2 ±0,2

HP61.1	500 g	plastic	63,35 €
Original pack 6 x 500 g			60,18/500 g
HP61.2	1 kg	plastic	113,45 €
Original pack 6 x 1 kg			107,78/1 kg

Terrific Broth

Terrific Broth is a phosphate buffered, highly nutritious medium that is particularly used prior to plasmid isolation, in order to increase the yield. Compared with LB Broth, TB contains a nearly 5x elevated concentration of yeast extract, providing the required growth factors, vitamis and nucleotides. The phosphate buffer stabilises pH values. Hence, bacteria proliferate to high cell density, while lysation is slowed down.

The high phosphate concentration may lead to precipitation of insoluble magnesium- or calcium phosphates. After autoclaving, antibiotics, glycerine, dextrose etc. may be added for further enrichment of the broth.

YPD Broth

for molecular biology

For maintenance and propagation of *S. cerevisiae*.
Application: Use 50 g for 1 l broth.

Formulation:

Peptone. ..... 20 g/l
Yeast extract. ..... 10 g/l
Glucose. ..... 20 g/l
pH value. ..... 6,5 ±0,2

X970.1	500 g	plastic	62,25 €
Original pack 6 x 500 g			59,14/500 g
X970.2	1 kg	plastic	107,40 €
Original pack 6 x 1 kg			102,03/1 kg
X970.3	2,5 kg	plastic	241,90 €

YPD Agar

for molecular biology

Application: Use 65 g for 1 l agar.

Formulation:

Peptone. ..... 20 g/l
Yeast extract. ..... 10 g/l
Glucose. ..... 20 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 6,5 ±0,2

X971.1	500 g	plastic	79,45 €
Original pack 6 x 500 g			75,48/500 g
X971.2	1 kg	plastic	137,10 €
Original pack 6 x 1 kg			130,25/1 kg
X971.3	2,5 kg	plastic	314,45 €

YPD Medium

YPD is a rich medium for the maintenance and propagation of *S. cerevisiae*.
It is suitable if selections for auxotrophies are not intended.

Glucose is included as a carbon source.

Wild type strains of *S. cerevisiae* show a doubling time of approx. 90 min in YPD.

2xYT Broth

for molecular biology

A nutritious liquid medium formulated to promote the growth of host cells *(E. coli)*, thereby encouraging increased replication and yield from filamentous ssDNA bacteriophages (such as the M13 phage).
Application: Use 31 g for 1 l broth.

Formulation:

Tryptone. ..... 16 g/l
Yeast extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,0 ±0,2

X966.1	500 g	plastic	67,20 €
Original pack 6 x 500 g			63,84/500 g
X966.2	1 kg	plastic	117,20 €
Original pack 6 x 1 kg			111,34/1 kg
X966.3	2,5 kg	plastic	273,60 €

2xYT Agar

for molecular biology

Application: Use 46 g for 1 l agar.

Formulation:

Tryptone. ..... 16 g/l
Yeast extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

X967.1	500 g	plastic	81,20 €
Original pack 6 x 500 g			77,14/500 g

2x YT Media

Very nutricious medium for proliferation of M13 and other filamentous phages in *E. coli*.
2x YT Medium (**Y**east extract / **T**ryptone) contains big amounts of vitamins, amino acids, nucleic acids and other base components, allowing phages to propagate without weakening the host bacterium.

This medium may also be used for proliferation of recombinant *E. coli*.

▶ Granulated Nutrient Media see page 1467

Nutrient Media of vegetable origin

animal-free

Storage temp.: +20 °C

- Free from animal components
- Product origin statement available on request
- Free from TSE/BSE

LB Broth (Lennox) vegetal

for molecular biology, animal-free

Standard formulation made from compounds of pure vegetable origin, used for propagation and culturing of *E. coli*. Low salt content for plasmid isolation. Supplemented with magnesium chloride also suitable for phage propagation.
Application: Use 20 g for 1 l broth.

Formulation:

Vegetable peptone . ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,0 ±0,2

0155.1	500 g	plastic	70,45 €
Original pack 6 x 500 g			66,93/500 g
0155.2	1 kg	plastic	126,35 €
Original pack 6 x 1 kg			120,03/1 kg

LB Agar (Lennox) vegetal

for molecular biology, animal-free

Standard formulation made from compounds of pure vegetable origin, used for propagation and culturing of *E. coli*.
Application: Use 35 g for 1 l agar.

Formulation:

Vegetable peptone . ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

0159.1	500 g	plastic	87,00 €
Original pack 6 x 500 g			82,65/500 g
0159.2	1 kg	plastic	160,75 €
Original pack 6 x 1 kg			152,71/1 kg

Terrific Broth vegetal

for molecular biology, animal-free

Nutritious medium made from compounds of pure vegetable origin for culture and proliferation of *E. coli*. Terrific Broth supports very high cellular density, therefore increasing the yield during plasmid and protein preparations.
Application: Use 50,8 g for 1 l broth. Before autoclaving add 4 ml glycerol per litre medium.

Formulation:

Vegetable peptone . ..... 12 g/l
Yeast extract. ..... 24 g/l
K_2HPO_4. ..... 12,5 g/l
KH_2PO_4. ..... 2,3 g/l
pH value. ..... 7,2 ±0,2

0161.1	500 g	plastic	80,10 €
Original pack 6 x 500 g			76,10/500 g

Basic Reagents for Nutrient Media

High-quality compounds are vital for rapid growth and efficient selection of microorganisms. Peptones in particular are an easily accessible source of carbohydrates as well as nitrogen and amino acids. Yeast extracts additionally are very rich in vitamins, growth factors, and nucleic acids. The most common basic reagents for nutrient media have been assembled here.

Casein hydrolysate, bacteriological

for biochemistry, acidic hydrolysate

Casamino acids

Storage temp.: +20 °C

Manufactured by hydrolysation of casein by hydrochloric acid. Tryptophane-free. High-grade casein hydrolysate **with superior amino-nitrogen/total nitrogen ratio (AN/TN)**. Particularly suitable for sensitive assays and applications requiring high yields, like production of bacterial toxins or vaccines.

Type analysis:

Total nitrogen. ..... 7,0-8,5 %
pH value 4,5-6,0
Loss on drying. ..... <6 %
Ratio AN/TN. ..... 56-93 %

A157.3	250 g	plastic	94,10 €
A157.1	500 g	plastic	143,55 €
Original pack 6 x 500 g			136,37/500 g
A157.2	1 kg	plastic	257,50 €
Original pack 6 x 1 kg			244,63/1 kg

Casein hydrolysate, standard

for molecular biology, acidic hydrolysate

Ingredient of molecular and microbiological nutrient media, vitamin-free.

Casamino acids

Storage temp.: +20 °C

Acidic hydrolysate of casein with low cystein and tryptophane content, free of vitamins. Excellent for the production of bacterial toxins and vaccins. **With standard amino-nitrogen/total nitrogen ratio (AN/TN).**

Type analysis:

Total nitrogen. ..... ≥5,0 %
Amino nitrogen. ..... ≥3,5 %
Ratio AN/TN. ..... ≥46 %
Ash content. ..... ≤45 %
pH value (2 % solution). 6,5-7,5

AE41.1	500 g	plastic	76,25 €
Original pack 6 x 500 g			72,44/500 g
AE41.2	1 kg	plastic	136,45 €
Original pack 6 x 1 kg			129,63/1 kg

Meat extract

powder, for nutrient media

Equates Lab-Lemco™

Storage temp.: +20 °C

High-grade nutrient media additive also ideal for supplementation of media for fermentation studies.

Guarantee analysis:

Total nitrogen (as N). ..... ≥10 %
Loss on drying. ..... ≤6 %
Ash. ..... ≤16 %
pH (2 % solution). ..... 7,0 ±0,5

X975.1	500 g	plastic	127,95 €
Original pack 6 x 500 g			121,55/500 g
X975.2	1 kg	plastic	231,15 €
Original pack 6 x 1 kg			219,59/1 kg

Meat extract paste

paste, for nutrient media

Storage temp.: +20 °C

High-grade paste made of slightly proteolytic meat.

Guarantee analysis:

Dry substance. ..... ≥78 %
Ash (dry substance). ..... ≤30 %
Creatinine content. ..... 6,5-6,9 %
In H_2O insoluble matter. ..... ≤1,5 %
NaCl. ..... ≤7 %
Copper (Cu). ..... ≤0,0006 %
Zinc (Zn). ..... ≤0,0001 %
Microbiological assay. ..... complies

5770.1	250 g	plastic	67,65 €
5770.2	1 kg	plastic	214,50 €
Original pack 6 x 1 kg			203,78/1 kg

Yeast Extract

powdered, for bacteriology

Storage temp.: +20 °C

Water-soluble. Produced through aqueous extraction of autolysed brewer´s yeast. High content of vitamins. Ideal, therefore, in many standard nutrient media, e.g. LB-medium as for vitamins, carbohydrates, and amino acids.

Guarantee analysis:

Total nitrogen. ..... ≥8 %
Amino nitrogen. ..... 4,8-6,3 %
Ratio AN/TN. 41-60
Loss on drying. ..... ≤6 %
Ash. ..... ≤18 %
pH value (5 % in H_2O). 6,4-7,4
Solubility (5 % solution). ..... clear

2363.1	250 g		plastic	44,00 €
2363.3	500 g		plastic	80,55 €
Original pack 6 x 500 g				76,52/500 g
2363.2	1 kg		plastic	155,80 €
Original pack 6 x 1 kg				148,01/1 kg
2363.4	2,5 kg		plastic	285,85 €
2363.5	5 kg	BIG PACK	plastic	514,95 €

Yeast Extract, micro-granulated

micro-granulated, for bacteriology

Storage temp.: +20 °C

Micro-granulated, water soluble extract of selected autolysed yeast cells. Easy to handle and dust-reduced.

Fig.: Close-up

Yeast extract is used as a rich source for vitamins, carbon and amino acids in many microbiological culture media formulations. Rich in B-vitamines and growth factors.

Type analysis:

Total nitrogen.....≥10 %
Amino nitrogen. .....≥4,5 %
Dry substance.....≥94 %
Ash. .....≤16 %
pH (2 % solution). 6,8-7,2

2904.1	250 g		plastic	50,00 €
2904.2	500 g		plastic	90,20 €
Original pack 6 x 500 g				85,69/500 g
2904.3	1 kg		plastic	171,50 €
Original pack 6 x 1 kg				162,93/1 kg
2904.4	2,5 kg		plastic	327,90 €
2904.5	5 kg	BIG PACK	plastic	575,15 €

Heart infusion

for microbiology

Storage temp.: +20 °C

Heart Infusion is an especially formulated preparation of dried infusion from bovine hearts retaining all the nutritive and growth stimulating properties of fresh tissues. It is a typical ingredient of Blood Agar, Brain-Heart-Infus Media etc.

Type analysis:

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH (2 % solution). 6,5-7,5

7596.1	250 g		plastic	59,70 €
7596.2	500 g		plastic	102,05 €
Original pack 6 x 500 g				96,95/500 g

In the early days of bacteriology, so-called **"infusions"** (tissue extraction) were used in microbiological media. As simply manufactured and non-standardised natural products, "infusion" have a relatively low batch-to-batch constancy and vary both in composition and in nutrient content. However, they are still commonly used in several classic media (Art. No. 7596).

Starch, soluble

soluble

Oxidized corn starch

Important compound of many nutrient media for cultivation of fastidious microorganisms in general, and *Clostridia* in particular. Please solubilise the starch in very few cold water prior to addition to the medium.

4701.1	1 kg		plastic	24,65 €
Original pack 6 x 1 kg				23,42/1 kg
4701.2	5 kg	BIG PACK	plastic	82,25 €

Lactalbumin

for microbiology

Storage temp.: +20 °C

Lactalbumin is produced by enzymatic hydrolysis of milk whey. It consists of peptides, amino acids and carbohydrates, simple and complex.
It is used in media for culturing of bacterial cells (e.g. *lactobacilli*), for tissue culture, production of vaccines and in fermentation procedures.

Type analysis:

Total nitrogen.....≥10 %
Amino nitrogen. .....≥4,8 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH (2 % solution). 6,5-7,5

7597.1	250 g		plastic	75,15 €
7597.2	500 g		plastic	134,95 €
Original pack 6 x 500 g				128,20/500 g

Malt extract, bacteriological

powdered, for microbiology

Additive to malt containing culture media and agars.

Storage temp.: +20 °C

High quality additive for nutrient media requiring a superior malt content. Optimally suited for bacteriological applications due to low pH value. Free of nitrite. Do not overheat!

Type analysis:

Colour. ..... beige
Loss on drying. .....≤6 %
Maltose. .....~70 %
Total nitrogen (TN).....~1,3 %
Amino nitrogen. .....~0,4 %
Sulphated ash. .....≤3 %
pH value (1,5 % sol.). 4,5-5,5

AE68.1	500 g		plastic	60,10 €
Original pack 6 x 500 g				57,10/500 g

Malt extract, standard

powdered, for culture media

Storage temp.: +20 °C

Powdered malt extract for standard applications.
Malt extract possesses a very large amount of carbohydrates. The medium, therefore, turns dark brown very quickly when overheated.

Type analysis:

Colour. ..... beige
Loss on drying. .....≤6,0 %
Reducing sugar. .....≥60,0 %
Ash. .....≤4,5 %
pH value (3 % aqueous solution). 4,8-5,8

X976.1	500 g		plastic	36,45 €
Original pack 6 x 500 g				34,63/500 g
X976.2	1 kg		plastic	63,35 €
Original pack 6 x 1 kg				60,18/1 kg

Sterilisation of media containing sugar

Media containing sugar or **malt extract**, particularly those with a low pH, must be sterilised with care. We recommend autoclaving at up to 118 °C for a maximum of 15 min. Please observe the guidelines given in the instructions for use.

The reasons are as follows:

a) Heating sugar in combination with amino acids (from peptone, meat extract, yeast extract, or similar) can result in **toxic Maillard reaction products** which may interfere with proliferation of micro-organisms.

b) Inclusion of different sugar molecules and sugar degradation products will cause premature chain termination and inhibit chain cross-linking. The **gelability of agars containing sugar** will thereby be reduced.

The term **peptone** is used for all proteins digested by acid or enzymes. In addition, the source (e. g. 8986.1: Peptone ex Casein) and the digesting compound should be given (e. g. "tryptic"). Source of nitrogen and amino acids.

Tryptone is manufactured by digestion of casein with pancreas extract (pancreatic digest). Tryptone is rich in tryptophane, and an ideal source of nitrogen and amino acids used in a number of microbiological nutrient media (Art. No. 8952 and 6681).

NZamine also is manufactured by pancreatic digestion of casein. Being similar to tryptone it is often used as source of nitrogen and amino acids in nutrient media for bacterial growth in molecular biology (Art. No. CP76).

Proteose peptone is formed by hydrolytic cleavage of proteins from animal tissue, more complete that which occurs for peptones in general, but not strong enough to form single amino acids. Proteose peptone is rich for peptides with high molecular weight, beeing a high-grade component of microbiological nutrient media (Art. No. HP32).

Casamino acids originate from hydolysis of casein by acid. This compound is used as source of nitrogen and amino acids when completely hydrolysed protein is required, e. g. in proliferation assays or during production of vaccines and toxins (Art. No. AE41 and A157).

NZamine

for molecular biology

Component of nutrition media for molecular biological assays, particularly LB Broth.

Storage temp.: +20 °C

Highly nutritive peptone, produced by pancreatic digest of Casein under distinct conditions. Best source of nitrogen and amino acids in nutrient media for molecular biological assays, particularly broth acc. to Luria/Bertani (LB).

Guarantee analysis:

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3,9 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH value (2 % solution).....7,0 ±0,5

CP76.2	250 g	plastic	47,20 €
CP76.1	500 g	plastic	75,15 €
Original pack 6 x 500 g			71,39/500 g

Ox Bile, bacteriological

for microbiology

Storage temp.: +20 °C

Ox Bile is produced by a low dehydration process of bovine liver. It is a mixture of free and conjugated bile salts. It works as a selective agent for bile-tolerant microorganisms in culture media; gram positive bacteria are inhibited.

Type analysis:

Cholic acid.....≥45 %
Loss on drying. .....≤6 %
pH (2 % solution). 6,0-8,5
Solubility (2 % solution).....clear

7595.1	250 g	plastic	124,60 €
7595.2	500 g	plastic	222,00 €
Original pack 6 x 500 g			210,90/500 g

Peptone ex gelatin

pancreatic digest, for microbiology

Storage temp.: +20 °C

Peptone produced from porcine skin by digestion with pancreatic extract. Gelatin pepton is low in fermentable carbohydrates, and is used in culture media especially for non-fastidious microorganisms and for fermentation studies.

Type analysis:

Total nitrogen.....≥10 %
Amino nitrogen. .....≥2,7 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH value (2 % solution).....7,0 ±0,5

HP99.1	500 g	plastic	71,95 €
Original pack 6 x 500 g			68,35/500 g

Peptone ex casein

tryptic digest, for microbiology

Storage temp.: +20 °C

Produced by proteolytic digestion of casein with trypsin-rich pancreas extract. Low-cost peptone that is used as an additive to nutrient media in the production of toxins, vaccins, enzymes and further biological products.

Type analysis:

Total nitrogen.....≥12,5 %
Amino nitrogen. .....≥3,0 %
Loss on drying. .....≤6 %
Ash. .....≤16 %
pH value 6,5-7,5

8986.1	500 g		plastic	80,10 €
Original pack 6 x 500 g				76,10/500 g
8986.2	1 kg		plastic	142,45 €
Original pack 6 x 1 kg				135,33/1 kg
8986.3	2,5 kg		plastic	314,45 €
8986.4	5 kg	BIG PACK	plastic	547,20 €

Peptone ex meat

peptic digest, for microbiology

Storage temp.: +20 °C

Extremely high-grade peptone, particularly nutritive. Peptone from meat is gained from animal tissue by peptic digestion. It is used as a biological nutrient for tissue cultures, fermentations and for the production of vaccines.

Type analysis:

Total nitrogen.....≥12,0 %
Amino nitrogen. .....2,0-3,1 %
Loss on drying. .....≤5 %
Ash. .....≤20 %
pH value 6,5-7,5
Solubility (2 % solution). .....clear

2366.1	250 g	plastic	57,55 €
2366.3	500 g	plastic	106,35 €
Original pack 6 x 500 g			101,03/500 g
2366.2	1 kg	plastic	198,90 €
Original pack 6 x 1 kg			188,96/1 kg
2366.4	2,5 kg	plastic	392,40 €

Peptone ex soya

papainic digest, for microbiology

Storage temp.: +20 °C

Particularly broad nutrient spectrum and high content of carbohydrates and vitamins. Peptone from soya beans is gained from papainic digestion of soya bean flour and used for culture media, for fermentation and for the production of vaccines.

Type analysis:

Total nitrogen.....≥9,0 %
Amino nitrogen. .....≥2,5 %
Loss on drying. .....≤6 %
Ash. .....≤21,0 %
pH value (5 % solution).....6,5-7,5

2365.1	250 g		plastic	39,70 €
2365.3	500 g		plastic	66,55 €
Original pack 6 x 500 g				63,22/500 g
2365.2	1 kg		plastic	128,50 €
Original pack 6 x 1 kg				122,08/1 kg
2365.4	2,5 kg		plastic	239,20 €

Peptone ex soya (animal-free/GMO-free)

animal-free and GMO-free, papainic digest, for microbiology

Storage temp.: +20 °C

Soya peptone (animal-free/GMO-free) is extracted by papainic digestion from soybean flour from non-genetically modified plants. Moreover, strict production guidelines guarantee that it is free from all animal substances, even TSE/BSE. Peptone ex soja (animal-free/GVO-free) complies with EG regulations 1829/2003 and 1830/2003. The corresponding certificates are available upon request.
Peptone ex soya is particularly characterized by its broad nutrient spectrum and high vitamin content. It is suitable for application in microbiology, tissue culture and fermentation.

Type analysis:

Total nitrogen.....≥7 %
Amino nitrogen. .....≥2,2 %
Loss on drying. .....≤6 %
Animal-free. .....complies
GMO-free. .....complies
pH value (5 % solution).....6,5-7,5

2832.1	250 g	plastic	57,55 €
2832.2	500 g	plastic	94,10 €
Original pack 6 x 500 g			89,40/500 g
2832.3	1 kg	plastic	170,95 €
Original pack 6 x 1 kg			162,40/1 kg

Polypeptone

for microbiology

Storage temp.: +20 °C

Specially designed mixture of casein peptone and meat peptone. Polypeptone may be used as a rich source for vitamins, carbon and amino acids in many microbiological culture media formulations. For several microorganisms it is known to stimulate proliferation better than the individual petones.

Type analysis:

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3,7 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH (2 % solution). 6,5-7,5

2903.1	250 g	plastic	52,15 €
2903.2	500 g	plastic	98,80 €
Original pack 6 x 500 g			93,86/500 g
2903.3	1 kg	plastic	179,00 €
Original pack 6 x 1 kg			170,05/1 kg

Proteose Peptone

for microbiology

Rich component of microbiological nutrition media, particularly used for production of toxins and vaccines. From enzymatic digestion of animal tissue.

Storage temp.: +20 °C

Highly nutritious source for the growth of a wide range of fastidious micro-organisms or when bacteria have to be well fed. Best suited for the production of vaccines, antibiotics, and other substances like enzymes, ideal for starter cultures and well usable for bacterial stocks. Proteose peptone has been used for, e.g., the production of Diphteria toxin, *Pneumococcus* toxin and the toxins from *Clostridium botulinum* and *Cl. perfringens*, as well as for culture of *Neisseria, Haemophilus, Salmonella, Corynebacterium* and *Staphylococcus*.

Guarantee analysis:

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3,4 %
Loss on drying. .....≤6 %
Ash. .....≤10 %
pH value (2 % solution).....7,0 ±0,5

HP32.1	500 g	plastic	94,10 €
Original pack 6 x 500 g			89,40/500 g

Peptone ex pea

for microbiology

Storage temp.: +20 °C

The nitrogen-rich peptone from peas is produced by the enzymatic hydrolysis from non-genetically modified plants. As an alternative to soy peptone, it is used in media for fastidious microorganisms in industry, in cell culture or in microbiological analysis.

Type analysis:

Total nitrogen.....≥12 %
Amino nitrogen. .....≥3,8 %
Loss on drying. .....≤6 %
Ash. .....≤16 %
pH value (5 % solution).....6,7-7,7

2122.1	250 g	plastic	66,15 €
2122.2	500 g	plastic	121,40 €

Tryptone/Peptone ex casein

pancreatic digest, for microbiology

Similar to NZamine • Storage temp.: +20 °C

Rich in short-chained peptides and amino acids, including trytophane. Essential ingredient of many nutrient media like LB, 2YT. Produced by pancreatic digestion of casein. It is used as an additive to nutrient media in the production of toxins, vaccins, enzymes and further biological products.

Type analysis:

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3,9 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH (2 % solution). 6,5-7,5

8952.1	250 g	plastic	52,60 €
8952.3	500 g	plastic	92,35 €
Original pack 6 x 500 g			87,73/500 g
8952.2	1 kg	plastic	160,20 €
Original pack 6 x 1 kg			152,19/1 kg
8952.4	2,5 kg	plastic	349,40 €
8952.5	5 kg BIG PACK	plastic	607,40 €

Tryptone/Peptone ex casein, granulated

granulated, pancreatic digest, for microbiology

Similar to NZamine • Storage temp.: +20 °C

Granulated, dust-minimized casein peptone made by pancreatic digestion. Rich in short-chained peptides and amino acids, including tryptophane. Essential ingredient of many nutrient media like, for instance, LB, 2YT and others.

Type analysis:

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3,9 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH (2 % solution). 6,5-7,5
Granulation. .....complies

6681.1	250 g	plastic	66,55 €
6681.2	500 g	plastic	114,50 €
Original pack 6 x 500 g			108,78/500 g
6681.3	1 kg	plastic	198,90 €
Original pack 6 x 1 kg			188,96/1 kg
6681.4	2,5 kg	plastic	403,15 €
6681.5	5 kg BIG PACK	plastic	762,20 €

Agar

Agar-Agar, Kobe I

Kobe I, powdered, for microbiology

Standard-Agar for application in culture media for molecular biology (e.g. LB medium) and microbiology.
Storage temp.: +20 °C

Type analysis:

Gel strength (1,5 % gel). ..... ≥1000 g/cm²
Gelling temperature. ..... 35-42 °C
Moisture. ..... ≤22 %
pH value 5,0-8,0
Ash. ..... ≤1,5 %

5210.1	250 g		plastic	39,25 €
5210.3	500 g		plastic	66,55 €
Original pack 6 x 500 g				63,22/500 g
5210.2	1 kg		plastic	126,35 €
Original pack 6 x 1 kg				120,03/1 kg
5210.4	2,5 kg		plastic	263,40 €
5210.5	5 kg	BIG PACK	plastic	461,20 €

Agar types

The designation Agar **Kobe I** derives from the geographical origin of the agar, which is the Japanese city of Kobe on the main island of Honshu. In former times, when agar was still traded in strips, threads or squares, agar was graded into three main quality groups:

Kobe I - top quality, pure white
Korea I - slightly inferior quality, slightly yellowish to light beige
China - inferior quality, yellow-beige

These terms and the associated differences in quality are now obsolete - for some time now, agar of consistent quality has been available from all parts of Asia. However, for reasons unknown, the designation Kobe I is used today to describe ground agar of very high quality which is used as a microbiological standard agar.

BioScience Agar forms clear gels and is of high purity without any residues that could hinder growth of transformed - and therefore stressed - GMOs. Hence, it is particularly recommended for production of agar plates for bioengeneering. **BioScience Agar** is used as gelating agent in our *Anhydrous Nutrient Media for Molecular Biology*.

In addition, the designation **bacteriological agar** has become an established definition for ultra-pure agar, which represents a preliminary stage of purified agarose and is manufactured for special microbiological applications.

Danish agar, also known as Furcelleran, is a saccharide-enriched **carrageenan** extracted from the red algae *Furcellaria fastgiata*.

▶ Self-adhesive labels for Petri dishes, see page 1492

Please note our **Technical Information Brochure** on the Internet next to the products:

Why Doesn't My Agar Gel?
Basics, tips & tricks

Agar-Agar, BioScience

BioScience-Grade, powdered

Agar of high purity for all culture media used in molecular- and microbiology. Recommended for plating in genetic engineering (GMOs).
Storage temp.: +20 °C
Highly pure Agar-Agar, essentially free of impurities that could hinder bacterial growth. Forms very clear gels.
Particularly recommended for preparation of culture plates used for plating of recombinant bacteria (GMOs) during genetic engineering.

Guarantee analysis:

Water content. ..... ≤10 %
Ash. ..... ≤4,5 %
Gel strength (1,5 % Nikan). ..... 800-1100 g/cm²
Gelling temperature (1,5 % gel). ..... 35 ±3 °C
Melting temperature (1,5 % gel). ..... 85 ±5 °C
Turbidity (1,5 % solution). ..... ≤12 NTU
Absorption (450 nm). ..... ≤0,200
pH (1,5 % gel) before autoclaving. ..... 7,0 ±0,4

6494.1	250 g		plastic	59,05 €
6494.2	500 g		plastic	100,55 €
Original pack 6 x 500 g				95,52/500 g
6494.3	1 kg		plastic	179,00 €
Original pack 6 x 1 kg				170,05/1 kg
6494.4	2,5 kg		plastic	396,70 €

Agar-Agar, BioScience, granulated

BioScience-Grade, granulated

Agar of high purity for all culture media used in molecular- and microbiology. Recommended for plating in genetic engineering (GMOs).
Storage temp.: +20 °C
Granulated, dust-minimized Agar-Agar.
Essentially free of impurities that could hinder bacterial growth.
Forming very clear gels.
Particularly recommended for preparation of culture plates used for plating of recombinant bacteria (GMOs) during genetic engineering.

Guarantee analysis:

Water content. ..... ≤10 %
Ash. ..... ≤5,0%
Gel strength (1,5 % Nikan). ..... 800-1100 g/cm²
Gelling temperature (1,5 % gel). ..... 35 ±3 °C
Melting temperature (1,5 % gel). ..... 85 ±5 °C
Turbidity (1,5 % solution). ..... ≤12 NTU
Absorption (450 nm). ..... ≤0,200
pH (1,5 % gel) before autoclaving. ..... 7,2 ±0,4
Granulation. ..... complies

1347.1	250 g		plastic	70,85 €
1347.2	500 g		plastic	125,25 €
Original pack 6 x 500 g				118,99/500 g
1347.3	1 kg		plastic	231,15 €
Original pack 6 x 1 kg				219,59/1 kg
1347.4	2,5 kg		plastic	510,65 €

Agar-Agar, bacteriological

for bacteriology, extremely pure quality

Ideal for immunodiffusion and electrophoresis and as a medium for tissue and cell cultures, bacteriology and mycology.

Storage temp.: +20 °C

Qualitatively high-grade Agar which is clearly superior to bacteriological Agar in its purity. Forms very clear gels.
Essentially free of impurities that could interfere with other products in culture media formulation. Free of bacterial inhibitors.
Recommended in media to be used for the determination of susceptibility of microorganisms to antibiotics or drugs.

Guarantee analysis:

Electroendosmosis (EEO)	≤0,450
Water content	≤12 %
Ash	≤1,6 %
Gel strength (1,5 % Nikan)	500-1200 g/cm²
Gelling temperature (1,5 % gel)	34-38 °C
Melting temperature (1,5 % gel)	85-90 °C
Turbidity (1,5 % solution)	≤10 NTU
Absorption (450 nm)	≤0,100
pH (1,5 % gel) before autoclaving	5,0-7,0
Resistance (1 % suspension)	≥20000 Ohm

2266.1	250 g	plastic	110,65 €
2266.3	500 g	plastic	188,15 €
Original pack 6 x 500 g			178,74/500 g
2266.2	1 kg	plastic	342,95 €
Original pack 6 x 1 kg			325,80/1 kg
2266.4	2,5 kg	plastic	725,65 €

Agar-Agar, plant

Genetic engineering quality, for plants

For plant propagation and plant cell culture.

Storage temp.: +20 °C

High-pure agar recommended for propagation of ornamental and economic plant species, as for *in vitro* genetic engineering in plant research and commercial applications. The high gel strength of the agar allows usage at low concentrations of about 0.5 %. Forms very clear and transparent gels.

Guarantee analysis:

Water content	<18 %
Ash	3,0 ±0,5 %
Gel strength (1,5 % Nikan)	≥1000 g/cm²
pH (1,5 % gel) before autoclaving	7,2 ±0,4
pH (1,5 % gel) after autoclaving	7,0 ±0,4
Gelling temperature	34 ±2 °C
Melting temperature	92 ±2 °C
Turbidity (1,5 % gel)	≤25 NTU

4807.1	250 g	plastic	83,75 €
4807.2	500 g	plastic	138,70 €
Original pack 6 x 500 g			131,77/500 g
4807.3	1 kg	plastic	241,80 €
Original pack 6 x 1 kg			229,71/1 kg
4807.4	2,5 kg	plastic	514,95 €

Instructions:

Culture-Plates: 15 g/l medium;

approx. 30-35 ml medium is required for a 90 mm culture plate.

Top-Agar: 7 g/l medium.

The solution should be autoclaved for 20 min and the preparation carefully swayed to distribute the agar evenly. Cool the agar down to 50 °C before adding the antibiotic. Sway the agar solution again before casting the plates.

Any air bubbles on the surface of the culture plates can be removed with a bunsen burner flame. Once the agar has hardened, the plates should be stored top-down at 4 °C.

Carrageenans

Carrageenans are agar-related hydrocolloids consisting of esters of galactose and anhydro-galactose polysaccarides and forming particularly clear gels. In order to polymerise, carrageenans require cations, while gel strength may be altered by addition of $MgCl_2$ or KCl.

Agar-Agar, danish

Standardised Carrageenan mixture, sugar-containing, powdered

Mixture of highly pured Carrageen extracts. For gelling of watery liquids like, e.g. media for cultivation of plants, and for special microbiological applications. Saccharated.

Storage temp.: +20 °C

Each lot of this Carrageenan mixture is standardised with sugars and KCl to the gel strength noted in the type analysis. Being extracts from natural products, the properties (e.g. gelling behaviour, salt content) may vary from lot to lot. Further information on analysis data see Chemicals A-Z.

Type analysis:

Appearance	cream-coloured powder
Moisture	<12 %
Sulphate (as SO_4, dry substance)	15-40 %
Gel strength (1,5 % sol.)	~400-500 g/cm²
Viscosity (1,5 % sol., 75 °C)	≥0,005 Pas
pH value (1,5 % sol.)	7,0-10,5
Arsenic (As)	≤0,0003 %
Lead (Pb)	≤0,0005 %
Cadmium (Cd)	≤0,0002 %
Mercury (Hg)	≤0,0001 %
Methanol, ethanol, isopropanol	≤1 %
Ash insoluble in 1 % H_2SO_4 (dry substance)	≤2 %

Standardized by mono- or disaccharides and KCl

4508.1	1 kg		plastic	76,25 €
Original pack 6 x 1 kg				72,44/1 kg
4508.2	5 kg	BIG PACK	plastic	327,90 €

Please Note:

Being extracts from natural products, the properties (e.g. gelling behaviour, salt content) may vary from lot to lot. Further information on analysis data see Chemicals A-Z.

Carrageenan, kappa

acc. to FAO/WHO, EEC, FCC, highly pure

Strongly gelling Carrageenan of kappa type. Forms gels of high gel strength. For gelling of watery liquids like e.g. culture media for plants or animals. Manufactured from cultured and controlled sea weeds.

Carrageenan E407

Carrageenans are agar-related hydrocolloids consisting of esters of galactose and anhydro-galactose polysaccarides. Kappa Carrageenan is obtained by alkaline extraction from red algae (*Rhodophyceae*) of the order *Gigartinales*, purified by filtration and recovered by KCl precipitation. In ionic solutions, heat-solubilized kappa Carrageenan self-assembles into helical structures and gels during cooling, the gel parameters depending on the ions present: Potassium ions form rigid gels, calcium gels are strong but more flexibel. Being an extract from natural products, the properties (e.g. gelling behaviour, salt content) may vary from lot to lot.

Guarantee analysis:

Appearance. ..... white-pale tan
Gel strength (1,5 %, aqueous). ..... 1200-1800 g/cm²
Particle size (95 %). ..... <0,25 mm
Loss on drying. ..... <12 %
Arsenic (As). ..... <3 ppm
Lead (Pb). ..... <5 ppm
Cadmium (Cd). ..... <2 ppm
Mercury (Hg). ..... <1 ppm
pH value. 7,0-11,0
Microbiological Analysis. ..... complies
Contains KCl

3059.1	25 g	plastic	23,15 €
3059.2	100 g	plastic	58,60 €
3059.3	500 g	plastic	203,20 €
Original pack 6 x 500 g			193,04/500 g

Carrageenan, iota

acc. to FAO/WHO, EEC, FCC, highly pure

Weakly gelating Carrageenan of iota type. Forms soft gels. For gelling of watery liquids like culture media for plants or animals in general, and for gelling of dairy products in particular. Manufactured from cultured and controlled sea weeds.

Carrageenan E407

Carrageenans are agar-related hydrocolloids consisting of esters of galactose and anhydrogalactose polysaccarides. Iota Carrageenan is obtained by alkaline extraction from red algae (*Rhodophyceae*) of the order *Gigartinales*, purified by filtration and recovered by alcoholic precipitation. In solutions containing calcium ions, heat-solubilised iota Carrageenan self-assembles into helical structures and gels during cooling. Being an extract from natural products, the properties (e.g. gelling behaviour, salt content) may vary from lot to lot.

Guarantee analysis:

Appearance. ..... pale tan
Particle size (95 %). ..... <0,149 mm
Loss on drying. ..... <12 %
Arsenic (As). ..... <3 ppm
Lead (Pb). ..... <5 ppm
Cadmium (Cd). ..... <2 ppm
Mercury (Hg). ..... <1 ppm
pH value. 7,0-11,0
Microbiological Analysis. ..... complies

3675.1	25 g	plastic	23,15 €
3675.2	100 g	plastic	58,60 €
3675.3	500 g	plastic	203,20 €
Original pack 6 x 500 g			193,04/500 g

GELRITE®

Gelling agent for microbiological culture media

Alternative to Agar

Storage temp.: +20 °C

GELRITE® is a highly-purified, natural heteropolysaccharide which forms stable, agar-like gels when exposed to soluble salts. Compared to agar however, only about half the amount is required.
GELRITE® has been specially developed as a gelling agent for microbiological culture media. It can however, replace agar in other applications, too. Polymerisation of GELRITE® is enhanced in the presence of (bivalent) kations. It is therefore supplemented by $MgCl_2$ if a solid gel structure is required. Elevated salt concentrations increase gelling temperature (e.g. 500 mM Na^+ to approx. 68 °C with 1 % GELRITE®). When using very high salt concentrations like e.g. seawater, gelling capacity may be significantly reduced.

Chemical composition:
Linear polysaccharide comprising of O-acetylate glycuronic acid, glucose and rhamnose units.

Advantages of GELRITE® compared to Agar:

- consistent product quality, almost 100 % batch-to-batch conformity
- forms remarkably clear gels
- reduces preparation time as gels form faster
- remains stable even at high temperatures and is therefore also ideal for thermophilic microorganisms; gels can withstand repeated autoclaving without any changes to gel strength
- indicates no toxic contaminations (e.g. through phenols, as found in agar)
- is chemically inert against most media additives
- is resistant to enzymatic degradation
- is non-toxic (no signs of toxicity in rats exposed to a dose of 5.000 mg/kg)
- is very economical to use

Type analysis:

Gel strength. ..... 400-700 g/cm²
Loss on drying. ..... ≤15,0 %

0039.1	500 g	plastic	267,70 €
Original pack 6 x 500 g			254,32/500 g
0039.2	1 kg	plastic	428,95 €
Original pack 6 x 1 kg			407,50/1 kg

Media preparation with GELRITE®

Dissolve the corresponding amounts of media additive, GELRITE® and $MgCl_2 \cdot 6\ H_2O$ in 1 litre of distilled water.
Autoclave mixture for 15 min at +120 °C.
Cool to 60 °C and pour the medium into Petri dishes.

Examples:

Medium	GELRITE®	$MgCl_2 \cdot 6\ H_2O$
Bismuth sulphite	10.0 g/l	0.75 g/l
Brillant green	9.0 g/l	0.75 g/l
Eosin methylene blue	7.5 g/l	0.75 g/l
Triple Iron Sugar	6.0 g/l	0.75 g/l
MacConkey	7.0 g/l	0.75 g/l
Nutrient broth	8.0 g/l	0.75 g/l
Plant agar	2.0 g/l	-
Salmonella Shigella	5.5 g/l	-
Seawater (High Salt solution)	not recommended	-

Roti®-Antibiotic Discs NEW

The range of Roti®-Antibiotic Discs is designed for the qualitative analysis of the sensitivity of bacteria or fungi to anti-microbiological reagents by means of *in vitro* diffusion methods.
A fresh starter culture is adjusted at a cell density of $1x10^6$-$5x10^6$ cfu/ml (in acc. with McFarland Standard 0,5) and applied evenly to a culture medium plate with Mueller-Hinton agar (Art. No. X926 for fungal cultures add 2 % glucose + 0,5 µm methylene blue). The antibiotic discs are individually applied to the plate using sterile tweezers or a dispenser (Art. No. 1505). After a suitable period of incubation, the size of the inhibiting zone around the discs is measured.
The diameter of the inhibiting zone is assessed using standardised values in the available standards and databases and is an indicator of the culture's sensitivity to the antibiotic.

Storage temp.: -20 °C • Transport temp.: cooled

Product	Concentration/Activity	Imprint on each disc	Art. No.	Pack Qty.	€
Roti®-Antibiotic Discs Amphotericin B (AP)	100 Units	AP 100	**1454.1**	5 x 50 discs	40,75
			1454.2	50 discs	12,80
Roti®-Antibiotic Discs Ampicillin (AMP)	10 µg	AMP 10	**1456.1**	5 x 50 discs	27,85
			1456.2	50 discs	9,60
Roti®-Antibiotic Discs Bacitracin (B)	10 Units	B 10	**1458.1**	5 x 50 discs	27,85
			1458.2	50 discs	9,60
Roti®-Antibiotic Discs Carbenicillin (CB)	100 µg	CB 100	**1459.1**	5 x 50 discs	27,85
			1459.2	50 discs	9,60
Roti®-Antibiotic Discs Cefoxitin (CX)	30 µg	CX 100	**1460.1**	5 x 50 discs	27,85
			1460.2	50 discs	9,60
Roti®-Antibiotic Discs Chloroamphenicol (C)	30 µg	C 30	**1461.1**	5 x 50 discs	27,85
			1461.2	50 discs	9,60
Roti®-Antibiotic Discs Colistin (CL)	10 µg	CI 30	**1462.1**	5 x 50 discs	32,15
			1462.2	50 discs	10,65
Roti®-Antibiotic Discs Erythromycin (E)	15 µg	E 15	**1463.1**	5 x 50 discs	27,85
			1463.2	50 discs	9,60
Roti®-Antibiotic Discs Gentamycin (GEN)	10 µg	GEN 10	**1464.1**	5 x 50 discs	27,85
			1464.2	50 discs	9,60
Roti®-Antibiotic Discs Kanamycin (K)	5 µg	K 5	**1465.1**	5 x 50 discs	32,15
			1465.2	50 discs	10,65
Roti®-Antibiotic Discs Nalidixic acid (NA)	30 µg	NA 30	**1466.1**	5 x 50 discs	27,85
			1466.2	50 discs	9,60
Roti®-Antibiotic Discs Neomycin (N)	10 µg	N 10	**1467.1**	5 x 50 discs	27,85
			1467.2	50 discs	9,60
Roti®-Antibiotic Discs Novobiocin (NV)	30 µg	NV 30	**1468.1**	5 x 50 discs	27,85
			1468.2	50 discs	9,60
Roti®-Antibiotic Discs Nystatin (NS)	100 Units	NS 100	**1476.1**	5 x 50 discs	27,85
			1476.2	50 discs	9,60
Roti®-Antibiotic Discs Penicillin (P)	10 Units	P 10	**1494.1**	5 x 50 discs	27,85
			1494.2	50 discs	9,60
Roti®-Antibiotic Discs Polymyxin B (PB)	300 Units	PB 300	**1495.1**	5 x 50 discs	27,85
			1495.2	50 discs	9,60
Roti®-Antibiotic Discs Rifampicin (RIF)	5 µg	RIF 5	**1496.1**	5 x 50 discs	27,85
			1496.2	50 discs	9,60
Roti®-Antibiotic Discs Streptomycin (S)	10 µg	S 10	**1497.1**	5 x 50 discs	27,85
			1497.2	50 discs	9,60
Roti®-Antibiotic Discs Tetracycline (TE)	30 µg	TE 30	**1498.1**	5 x 50 discs	27,85
			1498.2	50 discs	9,60
Roti®-Antibiotic Discs Ticarcillin (TI)	75 µg	TI 75	**1499.1**	5 x 50 discs	27,85
			1499.2	50 discs	9,60
Roti®-Antibiotic Discs Vancomycin (VA)	30 µg	VA 30	**1501.1**	5 x 50 discs	27,85
			1501.2	50 discs	9,60

▶ Accessories (McFarland Standard, Dispenser) for the Roti®-Antibiotic Discs see page 1491

Antibiotics/Antimycotics

Reliable quality for microbiology, molecular biology and cell culture.

Denoted concentrations of working solutions are guiding values and have to be established for each application and cell type.

Actinomycin D

≥95 %, for biochemistry

Peptide antibiotic. Pure actinomycin C_1.

Actinomycin IV, Actinomycin C_1, Dactinomycin

$C_{62}H_{86}N_{12}O_{16}$ • M 1255,5 g/mol • Storage temp.: +4 °C

Danger H300

Specific inhibitor of DNA-dependent RNA-synthesis. Inhibition is caused byintercalation in dsDNA and, therefore, is not specific for procaryotic cells. Standard application is the preparation of cDNA. Actinomycin D is cytostatic, toxic and sensitive to light. Stock solution should be kept in a bottle covered with foil.
Stock solution 10 mg/ml in DMSO or methanol.
Storage of stock solution: -20 °C
Working concentration: 50 µg/ml

8969.1	5 mg	glass	81,60 €

Amphotericin B

≥850 I.U./mg, for biochemistry

Broad-range fungicide, polyene.

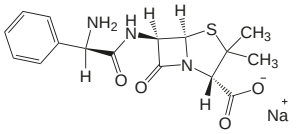
Fungizon

$C_{47}H_{73}NO_{17}$ • M 924,10 g/mol • Storage temp.: +4 °C

Warning H315-H319-H335

Alteration of cell membrane permeability by attachment to sterols. High concentration causes pore formation in cell membranes in general.
Amphotericin A: ≤0,4 %
Stock solution: 40 mg/ml in DMSO
Storage of stock solution: -20 °C
Working concentration: ≥3 µg/ml

0246.1	50 mg	glass	22,05 €
0246.2	250 mg	glass	70,85 €
0246.3	500 mg	glass	128,50 €



Ampicillin

CELLPURE® ≥91 %

β-lactam antibiotic. Semi synthetic penicillin.
For cell culture and biochemistry.

D-α-Aminobenzylpenicillin sodium salt

$C_{16}H_{18}N_3NaO_4S$ • M 371,39 g/mol • Storage temp.: +4 °C

Danger H334-H317

Inhibits cell wall biosynthesis in growing bacteria.
Endotoxins: <0.15 E.U./mg
Stock solution: 50 mg/ml in H_2O
Storage of stock solution: -20 °C, aliquoted
Working concentration in LB-plates or media: 50-100 µg/ml.
Important:
Solubilised ampicillin loses approx. 65 % activity after 7 days at +4 °C

HP62.1	10 g	plastic	47,20 €
HP62.2	50 g	plastic	175,15 €

Ampicillin

≥97 %, BioScience-Grade, for molecular biology and biochemistry

β-lactam antibiotic. Semi synthetic penicillin.

D-α-Aminobenzylpenicillin sodium salt

$C_{16}H_{18}N_3NaO_4S$ • M 371,39 g/mol • Storage temp.: +4 °C

Danger H334-H317

Inhibits cell wall biosynthesis in growing bacteria.
Stock solution: 50 mg/ml in H_2O
Storage of stock solution: -20 °C, aliquoted
Working concentration in LB-plates or media: 50-100 µg/ml.
Important:
Solubilised ampicillin loses approx. 65 % activity after 7 days at +4 °C

K029.1	10 g		plastic	23,55 €
K029.4	25 g		plastic	44,00 €
K029.5	50 g		plastic	76,25 €
K029.2	100 g		plastic	128,50 €
K029.3	250 g	BIG PACK	plastic	278,45 €

▶ IPTG and X-ß-Gal see chapter Life Science - Molecular Biology page 1284

Bacitracin

≥60 IU/mg, Ph.Eur., for biochemistry

Peptide antibiotic and protease inhibitor.

$C_{66}H_{103}N_{17}O_{16}S$ • M 1422,72 g/mol • Storage temp.: +4 °C

Inhibits cell wall biosynthesis in gram-positive bacteria and *Neisseria* by interaction with murein biosynthesis.
Also used as protease-inhibitor for inhibition of the gluthatione-insuline-transhydrogenase or some endopeptidases.

Application:
Stock solution: 100-1000 mg/ml in H_2O or ethanol
Storage of stock solution at -20 °C
Working concentration: 0.1-1 mg/ml (0.07-0.7 mM)
Bacitracin is very stable in a pH range of 4-5, but is rapidly inactivated in pH of over 5 at room temperature.
Do not use at a pH of over 8.

5655.1	5 g	glass	54,75 €
5655.2	25 g	plastic	224,70 €

Blasticidin

≥98 %, for biochemistry

Nucleoside antibiotic, Blasticidin S hydrochloride

$C_{17}H_{26}N_8O_5 \cdot HCl$ • M 458,90 g/mol • Storage temp.: +4 °C

Danger H300

Inhibits protein biosynthesis in pro- and eukaryotes by blocking of formation of peptide bonds. Selection marker for cells transfected with *brs* or *BSD* resistance genes.
Stock solution: 50 mg/ml in H_2O, PBS or HEPES
Storage of stock solution at -20 °C.
Working concentration: 3-100 µg/ml

CP14.1	10 mg	glass	71,50 €
CP14.2	25 mg	glass	142,90 €
CP14.3	50 mg	glass	235,45 €
CP14.4	100 mg	glass	428,95 €

Carbenicillin

≥88 %, for biochemistry

β-lactam antibiotic, semi synthetic penicillin

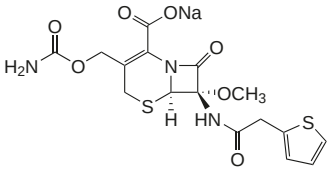
α-Carboxybenzyl penicillin disodium salt

$C_{17}H_{16}N_2O_6SNa_2 \cdot HCl$ • M 422,4 g/mol • Storage temp.: +4 °C

Danger H334-H317

Carbenicillin inhibits cell wall biosynthesis in bacteria. Compared to ampicilline, carbenicillin is more resistant to hydrolysis by β-lactamase.
Stock solution: 50 mg/ml in 50 % ethanol / 50 % water
Working concentration: 20-60 µg/ml

6344.1	1 g	glass	29,60 €
6344.2	5 g	plastic	67,20 €
6344.3	25 g	plastic	299,95 €



Cefoxitin

≥98 %, for biochemistry

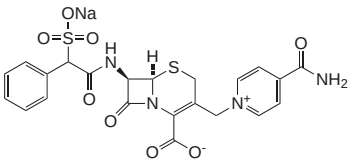
Cephalosporin-antibiotic, Cefoxitin sodium salt

$C_{16}H_{16}N_3NaO_7S_2 \cdot HCl$ • M 449,43 g/mol • Storage temp.: +4 °C

Danger H334-H335-H315-H319-H317

Semi-synthetic second generation cephalosporin derivate. Cefoxitin interferes with peptidoglycan layer composition during cell wall synthesis and is effective against a broad spectrum of gram-positive bacteria. Its effectivity against gram-negative bacteria is lower. Also active against anaerobic bacteria. Zone of inhibition analysis with Cefoxitin is used to detect methicilin resistance. Stable against cleavage by β-lactamase. Sensitive to light and temperature!
Stock solution: 100 mg/ml in water
Store stock solution in the dark at -20 °C (durability 30 weeks)
Working concentration: 2-100 µg/ml

4156.1	250 mg	glass	53,25 €
4156.2	500 mg	glass	86,55 €



Cefsulodin

≥97 %, for biochemistry

Cephalosporin-antibiotic, Cefsulodin sodium salt

Cefomonil, Pseudocef

$C_{22}H_{19}N_4O_8S_2Na$ • M 554,53 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Danger H334-H335-H315-H319-H317

Semi-synthetic third generation cephalosporin derivate. Cefsulodin interferes with peptidoglycan layer composition during cell wall synthesis and is effective against a broad spectrum of gram-positive and gram-negative bacteria. Also active against anaerobes. Stable against cleavage by β-lactamase. Sensitive to light and temperature!
Stock solution: 20 mg/ml in water
Store stock solution in the dark at -20 °C
Working concentration: 2-20 µg/ml

4014.1	100 mg	glass	53,65 €
4014.2	250 mg	glass	93,45 €

Chloroamphenicol

≥98,5 %, Ph.Eur., for biochemistry

Bacteriostatic antibiotic

Chloromycetin

$C_{11}H_{12}Cl_2N_2O_5$ • M 323,15 g/mol • Storage temp.: +20 °C

Warning H351-H361d

Broad application range against gram-negative and gram-positive bacteria. Bacteriostatic effect by inhibiting bacterial protein biosynthesis. Light-sensitive. Store in the dark!
Stock solution: 34 mg/ml in ethanol
Storage of stock solution at -20 °C in the dark
Working concentration:
For plasmid amplification: 170 µg/ml
For selection of resistant bacteria: 10-30 µg/ml
For culture plates: 10-30 µg/ml (storage at +4 °C for 1-5 days)

3886.2	25 g		plastic	19,90 €
3886.1	50 g		plastic	33,25 €
3886.3	100 g	BIG PACK	plastic	54,30 €

Colistin

≥19000 IU/mg, for biochemistry

Bacteriostatic antibiotic, peptide antibiotic

Polymyxin E_1-disulphate, Colinsulphate

$C_{45}H_{85}N_{13}O_{10} \cdot H_2SO_4$ • M 1066,32 g/mol • Storage temp.: +4 °C

Danger H301

Effectual against proliferating and non-proliferating gram-negative bacteria. Coupling to bacterial lipopolysaccharides results in permeabilisation of cell membranes.
Stock solution: 1-10 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: 2-200 µg/ml

CN31.1	100 mg	glass	26,35 €
CN31.2	250 mg	glass	52,15 €
CN31.3	1 g	glass	80,10 €

Cycloheximide

≥98 %, for biochemistry

Glutarimid antibiotiotic, fungicidal

Naramycin A, Actidione

$C_{15}H_{23}NO_4$ • M 281,36 g/mol • Storage temp.: +4°C

Danger H300-H360D-H341-H411

Antibiotic isolated from *Streptomyces griseus*. Its main biological activity is translation inhibition in eukaryotes by binding to the 60S subunit of the ribosomes. Cycloheximide inhibits binding of Aminoacyl-tRNA to the ribosomes, Peptidyltransferase, detachment of deacylated tRNA, and translocation of Aminoacyl-tRNA, resulting in cell growth arrest and apoptotic cell death. Not effective against bacteria.
Cycloheximide is widely used for selection of cycloheximide-resistant strains of yeast and fungi, for inhibition of eukaryotic contaminants in bacterial microbiology, for controlled inhibition of protein synthesis in cell culture and for detection of short-lived proteins, and for apoptosis induction or facilitation of apoptosis induction by death receptors.
Stock solution: 10 mg/ml in H_2O or acetone
Storage of stock solution at -20 °C
Working concentration: 1-10 µg/ml
Note: Inactivated at basic pH values. Heat- and acid stabile.
No inactivation after 15 mins. 95 °C in pH 7.0.

8682.1	1 g	glass	39,25 €
8682.3	5 g	glass	153,65 €
8682.4	10 g	glass	263,40 €

▶ More physical and chemical details on antibiotics see chapter Chemicals A-Z.

D-Cycloserine

≥90 %, for biochemistry

Bacteriostatic antibiotic

Oxamycin, D-4-Amino-3-isoxazolidinone

$C_3H_6N_2O_2$ • M 102,09 g/mol • Storage temp.: +4 °C

Bacteriostatic against gram negative and gram positive bacteria and some protozoans by inhibition of synthesis of the cell wall.
Stock solution: 10-100 mg/ml in H_2O and 96 % ethanol
Stability of stock solution: Neutral or acidic solutions are unstable. Sodium carbonate buffered solutions (pH 10) may be stored at +4 °C for approx. 7 days without loosing activity.
Recommended storage of stock solution at -20 °C (6 months).
Working concentration: 20-100 µg/ml
Note: Optimum of activity at pH 6.4-7.4.
It is recommended to prepare fresh solutions each time for use.

CN37.1	1 g	glass	25,30 €
CN37.2	5 g	plastic	54,75 €
CN37.3	10 g	plastic	103,75 €

Erythromycin

≥93 %, for biochemistry

Macrolide antibiotic

$C_{37}H_{67}NO_{13}$ • M 733,95 g/mol • Storage temp.: RT

Erythromycin is a macrolide antibiotic (macrocyclic lactone antibiotic) which is produced from an actinomycete strain (*Saccharopolyspora erythraea*, formerly known as *Streptomyces erythraeus*). Its spectrum of activity is similar to but broader than that of penicillin, which means that erythromycin is also very effective against bacteria such as legionella or mycoplasma. Erythromycin binds to the bacterial 70s rRNA, interferes with the aminoacyl translocation and consequently inhibits biosynthesis. It is used in microbiological fungal culture to prevent bacterial growth and as a selection marker for selection on bacteria with an erythromycin resistance-mediating gene cassette (*erm*).
Stock solution: 10 mg/ml in ethanol
Store stock solution at -20 °C (2 months)
Working concentration: 0.1-5 µg/ml
pH-optimum at 8.5. Only stable for approx. 24 hours at pH-range 7 to 7.5. Extremely unstable below pH 6.0

4166.1	5 g	glass	30,00 €
4166.2	10 g	glass	48,95 €

Geldanamycin

≥98 %, for biochemistry

HSP90 inhibitor, tyrosin kinase inhibitor. Benzoquinone ansamycin antibiotic. Binds specifically to the heat shock protein HSP90.

$C_{29}H_{40}N_2O_9$ • M 560,64 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

The specific binding of geldanamycin to heat shock protein 90 (HSP90) and its ER homologue GP96 leads to inhibition of the chaperone, results in degradation of Hsp90 substrates and, subsequently, to deregulation of central cell mechanisms - cell cycle, cell proliferation, apoptosis/cell vitality. Geldanamycin arrests cells in G_2 phase, thus interfering with angiogenesis and oncogenesis. Due to its antitumor potential it may be used as antibiotic against several eucaryotic carcinogenic cell lines. Additionally, geldanamycin is used as inhibitor of tyrosin-kinase and during analysis of several other physiological regulatory mechanisms.

Application:
Stock solution: 1000x in DMSO or methanol
Storage of stock solution at -20 °C, max. 2 weeks at 4 °C
Working concentration: 1-10 µg/ml
Photo sensitive! Store protected from light.

HN71.1	1 mg	glass	69,80 €
HN71.2	5 mg	glass	171,50 €
HN71.3	10 mg	glass	247,15 €

Geneticin (G418 Sulphate)

≥650 U/mg, for biochemistry

Aminoglycoside antibiotic

Antibiotic G418, Geneticin disulphate, G418 sulphate

$C_{20}H_{40}N_4O_{10} \cdot 2\ H_2SO_4$ • M 692,70 g/mol • Storage temp.: +4 °C

Danger H334-H317

Inhibits protein biosynthesis by binding to ribosomes, particularly to eukaryotic 80S ribosomes. Through interference with the tRNA docking process, sequence errors appear and the elongating peptide chain is truncated. Geneticin disulphate unspecifically effects all cells, and is highly toxic for eukaryotic cells. Resistance is mediated by the bacterial enzyme aminoglycoside-3-phosphotransferase.
Application: Selection of transfected eukaryotic cells
Resistance gene: *Neomycin*
Stock solution: 10-50 mg/ml in H_2O or culture medium
Storage of stock solution: -20 °C
Working concentration: 50-1000 µg/ml, has to be established for each cell type

0239.1	250 mg	glass	36,45 €
0239.2	500 mg	glass	47,85 €
0239.3	1 g	glass	88,70 €
0239.4	10 g	glass	618,15 €

Geneticin (G418)-solution ready-to-use S

CELLPURE® 50 mg/ml, steril

Aminoglycoside antibiotic. For cell culture, biochemistry and molecular biology.

Aqueous G418 sulphate solution, G418 solution

$C_{20}H_{40}N_4O_{10} \cdot 2\ H_2SO_4$ • M 692,70 g/mol • Storage temp.: +4 °C

Danger H334-H317

Inhibits protein biosynthesis by binding to ribosomes, particularly to eukaryotic 80S ribosomes. Through interference with the tRNA docking process, sequence errors appear and the elongating peptide chain is truncated. Geneticin disulphate unspecifically effects all cells, and is highly toxic for eukaryotic cells. Resistance is mediated by the bacterial enzyme aminoglycoside-3-phosphotransferase.
Application: Selection of transfected eukaryotic cells
Resistance gene: *Neomycin*
Endotoxins: <10 E.U./ml
Stock solution, specifically suitable for cell culturing
Working concentration: 50-1000 µg/ml, has to be determined for each cell type.

CP11.1	10 ml	plastic	69,80 €
CP11.2	20 ml	plastic	93,45 €
CP11.3	100 ml	plastic	332,20 €

▶ Roti®-CELL media for cell culture
see new chapter Cell Biology!

Geneticin (G418)-solution ready-to-use S

50 mg/ml, BioScience-Grade, sterile

Aminoglycoside antibiotic. For cell culture, biochemistry and molecular biology.

Aqueous G418 sulphate solution, G418 solution, Geneticin disulphate (G418)-solution

$C_{20}H_{40}N_4O_{10} \cdot 2\ H_2SO_4$ • M 692,70 g/mol • Storage temp.: +4 °C

Danger H334-H317

Inhibits protein biosynthesis by binding to ribosomes, particularly to eukaryotic 80S ribosomes. Through interference with the tRNA docking process, sequence errors appear and the elongating peptide chain is truncated. Geneticin disulphate unspecifically effects all cells, and is highly toxic for eukaryotic cells. Resistance is mediated by the bacterial enzyme aminoglycoside-3-phosphotransferase.
Application: Selection of transfected eukaryotic cells
Resistance gene: *neomycin*.
Sterile stock solution, suitable for cell culturing, as well as for biochemical and biomolecular assays.
Extracted from *Micromonospora rhodorangea*.
Working concentration: 50-1000 µg/ml, has to be determined for each cell type.

2039.1	10 ml	plastic	65,05 €
2039.2	20 ml	plastic	85,50 €
2039.3	100 ml	plastic	321,45 €

Gentamycin

≥590 I.U./mg, for biochemistry

Aminoglycoside antibiotic

Gentamicin sulphate

$C_{19\text{-}21}H_{39\text{-}43}N_5O_7 \cdot 2{,}5\ H_2SO_4$ • M 694,75-723,75 g/mol • Storage temp.: +4 °C

Danger H334-H317

Inhibits protein biosynthesis through binding to ribosomal 50S subunits.
Effectual against gram-positive and -negative bacteria.
Stock solution: 10-20 mg/ml in H_2O or formamide.
Storage of stock solution: -20 °C.
Working concentration: 15-50 µg/ml.
Extracted from *Micromonospora purpurea*.

0233.1	1 g	glass	11,30 €
0233.2	5 g	glass	22,05 €
0233.3	10 g	glass	33,25 €
0233.4	25 g	glass	64,40 €

Gentamycin solution ready-to-use S

CELLPURE® 50 mg/ml, sterile

Aminoglycoside antibiotic. For cell culture and biochemistry.

Aqueous gentamycin sulphate solution

$C_{19\text{-}21}H_{39\text{-}43}N_5O_7 \cdot 2{,}5\ H_2SO_4$ • M 694,75-723,75 g/mol • Storage temp.: +4 °C

Danger H334-H317

Inhibits protein biosynthesis through binding to ribosomal 50S subunits.
Effectual against gram-positive and -negative bacteria.
Endotoxins: ≤10 E.U./ml
Stock solution, specifically suitable for cell culturing.
Working concentration: 15-50 µg/ml
Extracted from *Micromonospora purpurea*.

HN09.1	20 ml	plastic	99,90 €
HN09.2	100 ml	plastic	321,45 €

Gentamycin solution ready-to-use S

50 mg/ml, BioScience-Grade, sterile

Aminoglycoside antibiotic. For cell culture and biochemistry.

Aqueous gentamycin sulphate solution

$C_{19\text{-}21}H_{39\text{-}43}N_5O_7 \cdot 2{,}5\ H_2SO_4$ • M 694,75-723,75 g/mol • Storage temp.: +4 °C

Danger H334-H317

Inhibits protein biosynthesis through binding to ribosomal 50S subunits.
Effectual against gram-positive and -negative bacteria.
Sterile stock solution, suitable for cell culturing and biochemical assays.
Working concentration: 15-50 µg/ml

2475.1	20 ml	plastic	99,45 €
2475.2	100 ml	plastic	310,70 €

Please note our **Technical Information Brochure** on the Internet next to the products:

Antibiotics
Overview and recommendations for application

Hygromycin B

>950 µg/mg, for biochemistry

Aminoglycoside antibiotic.

$C_{20}H_{37}N_3O_{13}$ • M 527,53 g/mol • Storage temp.: +4 °C

Danger H300+H310+H330-H318-H334-H317

Inhibits protein biosynthesis in pro- and eukaryotes by altering translocation during ribosomal chain elongation, therefore resulting in frame reading errors and abortion of chain elongation. Selection marker for *hph* transfected cells.
Stock solution: 50-400 mg/ml in H_2O or PBS.
Storage of stock solution at -20 °C.
Working concentration: 20-1000 µg/ml.

CP13.1	250 mg	glass	60,75 €
CP13.2	500 mg	glass	104,85 €
CP13.3	1 g	glass	182,25 €
CP13.4	5 g	glass	628,90 €

Hygromycin B solution ready-to-use S

50 mg/ml, BioScience-Grade, sterile

Aminoglycoside antibiotic. For cell culture, biochemistry, molecular biology and microbiology. **In a septum bottle.**

Hygromycin B solution **in PBS**

$C_{20}H_{37}N_3O_{13}$ • M 527,53 g/mol • Storage temp.: +4 °C

Danger H301-H310+H330-H318-H334-H317

Inhibits protein biosynthesis in pro- and eukaryotes by blocking translocation, therefore resulting in frame reading errors and abortion of chain elongation. Selection marker for *hph* transfected cells.
Sterile stock solution, suitable for cell culturing and microbiology, as well as for biochemical and biomolecular assays.
Extracted from *Streptomyces hygroscopicus*.
Working concentration: 20-1000 µg/ml

1287.1	10 ml	glass	103,10 €
1287.2	20 ml	glass	160,75 €

Safety data sheets
can be found on the Internet next to the product description.

Hygromycin B solution ready-to-use S

CELLPURE® 50 mg/ml, sterile

Aminoglycoside antibiotic. For cell culture, biochemistry, molecular biology and microbiology.

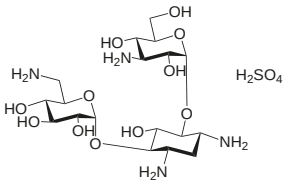
Aqueous hygromycin B solution

$C_{20}H_{37}N_3O_{13}$ • M 527,53 g/mol • Storage temp.: +4 °C

Danger H301-H310+H330-H318-H334-H317

Inhibits protein biosynthesis in pro- and eukaryotes by blocking translocation, therefore resulting in frame reading errors and abortion of chain elongation. Selection marker for *hph* transfected cells.
Endotoxins: <10 E.U./ml
Stock solution, specifically suitable for cell culturing.
Working concentration: 20-1000 µg/ml

CP12.1	10 ml	plastic	117,75 €
CP12.2	20 ml	plastic	203,75 €



Kanamycin

≥750 I.U./mg, for biochemistry

Bacteriostatic antibiotic

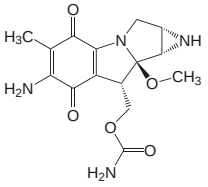
Kanamycin sulphate

$C_{18}H_{36}N_4O_{11} \cdot H_2SO_4$ • M 582,58 g/mol • Storage temp.: +20 °C

Danger H360D

Kanamycin inhibits protein biosynthesis and is effective against gram-negative and gram-positive bacteria.
Easily water-soluble, stable powder.
Main component: Kanamycin A
Stock solution: 10 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: 100 µg/ml

T832.1	5 g		plastic	22,05 €
T832.2	25 g		plastic	61,20 €
T832.3	50 g		plastic	100,95 €
T832.4	100 g	BIG PACK	plastic	168,25 €



Mitomycin C

≥98 %, for biochemistry

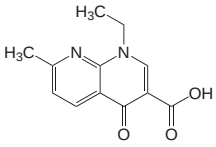
Mitosis inhibitor

$C_{15}H_{18}N_4O_5$ • M 334,30 g/mol • Storage temp.: +4 °C

Danger H300-H351

Covalent linkage to DNA. Causes cross-linking of complementary DNA-strands and strand breakage. Mitomycin C is unstable at low pH-value. Mitomycin C should always be stored away from light.
Stock solution: 1 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: variable (1 µg/ml up to 100 µg/ml)

4150.1	2 mg	glass	100,95 €



Nalidixic acid

≥99 %, for biochemistry

Quinolon antibiotiotic

1,4-Dihydro-1-ethyl-7-methyl-1,8-naphthyridin-4-on-3-carbolic acid

$C_{12}H_{12}N_2O_3$ • M 232,23 g/mol • Storage temp.: +20 °C

Danger H334-H317

Inhibits proliferation of gram-negative bacteria and coccae by inhibition of topoisomerase II (gyrase) and, therefore, of DNA replication.
Also effective against mycoplasms.
Stock solution: 10 mg/ml in chloroform or toluol
Storage of stock solution: -20 °C
Working concentration: 2-200 µg/ml

CN32.1	10 g		plastic	17,75 €
CN32.2	25 g		plastic	34,30 €
CN32.3	100 g	BIG PACK	plastic	103,10 €

Neomycin

≥600 I.U./mg, for biochemistry

Inhibitor for protein biosynthesis, aminoglycoside antibiotic, Neomycin sulphate

$C_{23}H_{46}N_6O_{13} \cdot 3\ H_2SO_4$

Storage temp.: +4 °C

Danger H317-H334

Antibiotic from *Streptomyces fradiae* which inhibits bacterial protein synthesis in a broad range of procaryotes (even in dormant germs).
Inhibition of protein biosynthesis through binding to ribosomal 30S subunits.
Resistance: Neomycin resistance
Main component: Neomycin B
Stock solution: e.g. 100 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: variable

8668.1	10 g		plastic	14,55 €
8668.2	100 g	BIG PACK	plastic	66,55 €

Nourseothricin

≥85 %, for biochemistry and microbiology

Broad-band antibiotic and antimycotic of viruses, bacteria and fungi.

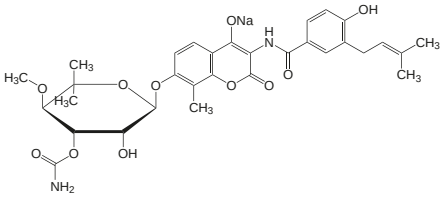
Streptothricine, Nourseothricin dihydrogen sulphate

Storage temp.: +4 °C

Warning H302-H315-H319-H335

Antibiotic of the streptothricine family, effective against a broad spectrum of viruses, bacteria and fungi. Used as selection antibiotic for genetically modified bacteria, yeasts, filamentous fungi, protozoa and plants.
Nourseothricin inhibits biosynthesis and induces miscoding. Resistance is mediated by the *sat1* encoded N-acetyltransferase, which inactivates nourseothricin by acetylation of the β-amino group of the β-lysin.
Streptothricine F: n=1 (MW 599.59), Streptothricine D: n=3 (MW 857.95)
Stock solution: 100 mg/ml in water
Storage of stock solution at -20 °C
Working concentration: ca. 100 µg/ml
Recommendation: One package Nourseothricin should be solubilized in whole and the stock solution should be frozen in aliquots. By removing the overlaying argon during weighing, the stability of the lyophilsate is reduced.

3011.1	25 mg		plastic	42,90 €
3011.2	100 mg		plastic	100,95 €
3011.3	1 g		plastic	514,95 €



Novobiocin

≥850 µg/mg, for biochemistry

Bacteriostatic antibiotic, HSP90 inhibitor, Novobiocin sodium salt

$C_{31}H_{35}N_2NaO_{11}$ • M 634,62 g/mol • Storage temp.: +4 °C

Warning H319-H317

Reduces growth of gram-positive bacteria by inhibition of initiation of DNA-synthesis via binding to ATP-binding sites of gyrase and topoisomerase. Novobiocin also interacts with the C-terminal ATP-binding site of HSP90, hence inhibiting its Chaperon quality.
Also well suited as additive to microbiological nutrient media. Adding 40 mg/l Novobiocin during selective detection of coliform bacteria on Brilliant Green Bile broth (Art. No. CL06.1) efficiently reduces the growth of attendant flora (Alcaide et al., 1982, *J. Appl. Bact.* 53:143-6).

Application:
Stock solution: 100 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: variable

0247.1	1 g	glass	30,00 €
0247.2	5 g	glass	115,60 €
0247.3	10 g	glass	167,60 €

Nystatin

≥4400 I.U./mg, for biochemistry

Broad-range fungizide, polyene, Nystatin dihydrate

Mycostatin, Fungicidin

$C_{47}H_{75}NO_{17} \cdot 2\ H_2O$ • M 962,14 g/mol • Storage temp.: +4 °C

Alteration of cell membrane permeability by attachment to sterols.
High concentration causes pore formation in cell membranes in general.
Stock solution: 5 mg/ml in DMSO or DMF
Storage of stock solution: -20 °C
Working concentration: 2-50 µg/ml

0241.1	5 g	glass	36,45 €
0241.2	10 g	glass	62,25 €

Safety data sheets
can be found on the Internet next to the product description.

Pen/Strep-PreMix

CELLPURE®

For elimination and prevention of bacterial contamination in cell culture.
Storage temp.: +4 °C

Danger H302-H317-H334-H361d

Antibiotic compound of penicillin, streptomycin and stabilising sodium chloride for application in cell culture. The premixed powder is extremely stable during storage at room temperature and, due to the excellent solubility of the reagents in pyrogen-free water (e.g. Art. No. 3255.1), it can be mixed quickly to a 100x stock solution.

Penicillin inhibits cell wall biosynthesis in Gram-positive bacteria.
Streptomycin produces the antibiotic effect in Gram-negative bacteria through inhibition of the translation.
The dissolved antibiotics are stable for approx. 3 days at 37 °C.
The final concentration of the 100x stock solution is:
Penicillin: 10.000 I.U. / ml
Streptomycin: 10 mg / ml
Sodium chloride: 0.9 %

Endotoxin content per vial: ≤210 I.U. complies ≤4.2 I.U. / ml

Application: The pack contains 2 vials with premixed powder for 2 times 50 ml 100x stock solution. 50 ml of the 100x stock solution can be obtained directly by adding 49.2 ml pyrogen-free water (Art. No. 3255).
We recommend application in a 1:100 dilution.
The stock solution mix (100 ml) is sufficient for 10 l medium.
Storage of stock solution: in 1-10 ml aliquots at -20 °C.
Comes with original seal.

HP10.1	powder mix for 100 ml	plastic	63,35 €

Penicillin G potassium salt

CELLPURE® ≥1550 U/mg

β-Lactam antibiotic. For cell culture and biochemistry.
Benzylpenicillin potassium salt
$C_{16}H_{17}KN_2O_4S$ • M 372,48 g/mol • Storage temp.: +4 °C

Danger H334-H317

Endotoxins: ≤0.25 E.U./mg
Inhibits cell wall biosynthesis in gram-positive bacteria by irreversible interaction with transpeptidase.
Application equivalent to Penicillin G sodium salt.
Preferable when addition of sodium is to be avoided.
Stock solution: 10-100 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: 20-100 µg/ml

HP49.1	1 g		plastic	20,35 €
HP49.2	10 g		plastic	38,60 €
HP49.3	25 g		plastic	76,25 €

Penicillin G potassium salt

~1600 U/mg, for biochemistry

β-Lactam antibiotic
Benzylpenicillin potassium salt
$C_{16}H_{17}KN_2O_4S$ • M 372,48 g/mol • Storage temp.: +4 °C

Danger H334-H317

Inhibits cell wall biosynthesis in gram-positive bacteria by irreversible interaction with transpeptidase.
Application equivalent to Penicillin G sodium salt.
Preferable when addition of sodium is to be avoided.
Stock solution: 10-100 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: 20-100 µg/ml

CN29.1	10 g		plastic	20,35 €
CN29.2	25 g		plastic	31,10 €
CN29.3	100 g	BIG PACK	plastic	83,35 €

Penicillin G sodium salt

CELLPURE® ≥1550 U/mg

β-Lactam antibiotic. For cell culture and biochemistry.
Benzylpenicillin sodium salt
$C_{16}H_{17}N_2NaO_4S$ • M 356,37 g/mol • Storage temp.: +4 °C

Danger H334-H317

Endotoxins: ≤0.25 E.U./mg
Inhibits cell wall biosynthesis in gram-positive bacteria by irreversible interaction with transpeptidase.
Application equivalent to Penicillin G potassium salt.
Preferable when addition of potassium is to be avoided.
Stock solution: 10-100 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: 20-100 µg/ml

HP48.1	1 g		plastic	16,70 €
HP48.2	10 g		plastic	34,30 €
HP48.3	25 g		plastic	68,30 €

Penicillin G sodium salt

≥96 %, for biochemistry

β-Lactam antibiotic
Benzylpenicillin sodium salt
$C_{16}H_{17}N_2NaO_4S$ • M 356,37 g/mol • Storage temp.: +4 °C

Danger H334-H317

Inhibits cell wall biosynthesis in gram-positive bacteria by irreversible interaction with transpeptidase.
Application equivalent to Penicillin G potassium salt.
Preferable when addition of potassium is to be avoided.
Stock solution: 10-100 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: 20-100 µg/ml

CN28.1	10 g		plastic	18,20 €
CN28.2	25 g		plastic	30,65 €
CN28.3	100 g	BIG PACK	plastic	87,00 €

Polymyxin B

≥80 %, for biochemistry

Bacteriostatic antibiotic, peptide antibiotic

Aerosporin, Polymyxin B sulphate

$C_{55}H_{96}N_{16}O_{13} \cdot 2\ H_2SO_4$ • M 1385,63 g/mol • Storage temp.: +4 °C

Warning H302

Effectual against proliferating and non-proliferating gram-negative bacteria. Coupling to bacterial lipopolysaccharides results in permeabilisation of cell membranes.
Stock solution: 10-20 mg/ml in H_2O or methanol
Storage of stock solution: -20 °C
Working concentration: 5-500 ng/ml
Extracted from strains of *Bacillus polymyxa*.

0235.1	1 g	glass	48,95 €
0235.2	5 g	glass	198,90 €
0235.3	10 g	glass	359,60 €

Puromycin

≥99 %, for biochemistry

Inhibitor of proteine biosynthesis, aminonucleoside antibiotic.

Purimycin, Puromycin dihydrochloride

$C_{22}H_{29}N_7O_5 \cdot 2\ HCl$ • M 544,44 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Warning H302

Inhibits protein biosynthesis by premature release of the nascent polypeptide chain. Functions as analogon to amino acyl-tRNA molecules.
Stock solution: 10-100 mg/ml in H_2O or HEPES
Storage of stock solution: -20 °C
Working solution: 1-50 µg/ml

0240.1	5 mg	glass	19,90 €
0240.2	10 mg	glass	31,75 €
0240.3	25 mg	glass	70,45 €
0240.4	50 mg	glass	127,95 €

Radicicol

≥98 %, for biochemistry

Strong HSP90 inhibitor, macrolactone antibiotic. Binds specifically to the heat shock protein HSP90.

$C_{18}H_{17}ClO_6$ • M 364,79 g/mol

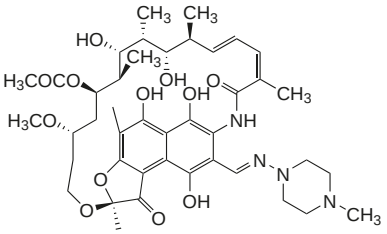
Storage temp.: -20 °C • Transport temp.: room temp.

Danger H301-H315-H319-H335

The strong specific binding of radicicol to heat shock protein 90 (HSP90) leads to deregulation of its target mechanisms: cell cycle, cell proliferation, apoptosis/cell vitality. Also binds to yeast HSP90, *E.coli* HtpG and TRAP-1. Antifungal effects are probably caused by inactivation of chitin synthase in fungal cells.

Application:
Stock solution: 10 mg/ml (27 mM) in ethanol or DMSO
Storage of stock solution at -20 °C, max. 2 weeks at 4 °C
Working concentration: 5-300 µM
Photo sensitive! Store protected from light.

HN72.1	1 mg	glass	98,80 €
HN72.2	5 mg	glass	396,70 €
HN72.3	10 mg	glass	628,90 €



Rifampicin

≥90 %, for biochemistry

Bacteriostatic antibiotic

3-(4-Methylpiperazinyliminomethyl)rifamycin SV

$C_{43}H_{58}N_4O_{12}$ • M 822,94 g/mol • Storage temp.: +4 °C

Warning H302-H315-H319-H335

Rifampicin inhibits bacterial DNA-dependent RNA-polymerase and consequently prevents transcription. Its spectrum of activity is strictly bacterial (the eukaryotic DNA-dependent RNA-polymerase can only be inhibited at extremely high concentrations) and rifampicin is particularly very effective against mycobacteria. Enterbacteria, acinetobacteria and pseudomonades are resistant against rifampicin. The resistance-mediating genes can be applied as selection markers in molecular biology. Light-sensitive. Store in the dark!
Stock solution: 100 mg/ml in chloroform or DMSO, 15 mg/ml in methanol, 1 mg/ml in water (pH 7,3)
Store stock solution at -20 °C, is stable for approx. 2 weeks in DMSO when stored in the dark at 4 °C
Working concentration: 20-200 µg/ml
Art. No. 4163.3: A stock solution with a concentration of 100 mg/ml can be prepared directly by adding 5 ml chloroform or DMSO.

4163.1	500 mg	glass	32,15 €
4163.3	500 mg (in a 10 ml glass bottle)		39,70 €
4163.2	1 g	glass	55,80 €

Streptomycin

CELLPURE® ≥720 I.U./mg

Bacteriostatic antibiotic. For cell culture and biochemistry,
Streptomycin sulphate

$C_{42}H_{84}N_{14}O_{36}S_3$ • M 1457,38 g/mol • Storage temp.: +20 °C

Warning H302-H361d

Effectual against mycobacteria, many gram-negative cocci and gram-negative bacteria in general. Results in translation errors by interaction with ribosomal 30S subunits.
Streptomycin B: ≤3,0 %
Endotoxins: ≤0.25 E.U./mg
Stock solution: 10-50 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: 10-100 µg/ml

HP66.1	10 g	glass	28,95 €
HP66.2	25 g	glass	42,50 €
HP66.3	50 g	glass	68,30 €

Streptomycin

>720 I.U./mg, for biochemistry

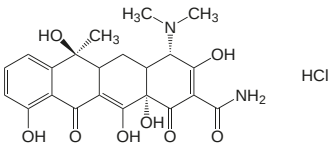
Bacteriostatic antibiotic, Streptomycin sulphate

$C_{42}H_{84}N_{14}O_{36}S_3$ • M 1457,38 g/mol • Storage temp.: +20 °C

Warning H302-H361d

Effectual against mycobacteria, many gram-negative cocci and gram-negative bacteria in general. Results in translation errors by interaction with ribosomal 30S subunits.
Stock solution: 10-50 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: 10-100 µg/ml

0236.1	10 g	glass	21,00 €
0236.2	25 g	glass	31,75 €
0236.3	50 g	glass	50,45 €



Tetracycline

CELLPURE® ≥900 µg/mg

Bacteriostatic antibiotic. For cell culture, molecular biology and biochemistry.

Achromycin hydrochloride, Tetracycline hydrochloride

$C_{22}H_{25}Cl\ N_2O_8$ • M 480,90 g/mol • Storage temp.: -20 °C

Warning H319-H361d

Effectual against gram-positive and -negative bacteria. Inhibits bacterial protein biosynthesis by coupling to amino acyl-tRNA. Modern application: Activation or inhibition of gene expression through tetracyclin-regulated promotor systems *in vitro* and *in vivo*. Light-sensitive.
Endotoxins: ≤0.5 E.U./mg
Stock solution: 10-20 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: 10-50 µg/ml

HP63.1	10 g	glass	25,30 €
HP63.2	50 g	glass	89,15 €

Tetracycline

≥900 µg/mg, for biochemistry and molecular biology

Bacteriostatic antibiotic

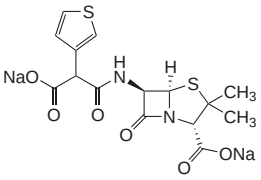
Achromycin hydrochloride, Tetracycline hydrochloride

$C_{22}H_{25}Cl\ N_2O_8$ • M 480,90 g/mol • Storage temp.: -20 °C

Warning H319-H361d

Effectual against gram-positive and -negative bacteria. Inhibits bacterial protein biosynthesis by coupling to amino acyl-tRNA. Modern application: Activation or inhibition of gene expression through tetracyclin-regulated promotor systems *in vitro* and *in vivo*. Light-sensitive.
Stock solution: 10-20 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: 10-50 µg/ml

0237.1	25 g		glass	37,55 €
0237.2	50 g		glass	64,40 €
0237.3	100 g	BIG PACK	glass	119,25 €



Ticarcillin

≥90 %, for biochemistry

β-Lactam antibiotic

α-Carboxy-α-3-thienylmethylpenicillin disodium salt, Ticarcillin · 2 Na

$C_{15}H_{14}N_2Na_2O_6S_2$ • M 428,4 g/mol • Storage temp.: +4 °C

Danger H334-H335-H315-H319-H317

Ticarcillin belongs to the carboxy penicillin family, the only difference to carbenicillin being a group of a side chain. It is inactivated through β-lactamase. Ticarcillin inhibits bacterial cell wall synthesis by inhibiting the transpeptidase.
Stock solution: 100 mg/ml in water
Store stock solution at -20 °C
Working concentration: 25-250 µg/ml
The stock solution should be cooled immediately as its activity decreases quickly and ticarcillin may precipitate.

4161.1	500 mg	glass	39,70 €
4161.2	1 g	glass	64,40 €

Vancomycin

CELLPURE® ≥900 U./mg

Bacteriostatic antibiotic. For cell culture and biochemistry.

Glycopeptide antibiotic, Vancomycin hydrochloride

$C_{66}H_{75}Cl_2N_9O_{24}$ · HCl

M 1485,73 g/mol

Storage temp.: +4 °C

Warning H317

Inhibits bacterial cell cleavage through binding to cell membrane pre-stages.
Endotoxins: ≤0.33 E.U./mg
Stock solution: e.g. 100 mg/ml in H_2O
Storage of stock solution: -20 °C
Working concentration: variable

0242.1	250 mg	glass	34,30 €
0242.2	500 mg	glass	55,80 €
0242.3	1 g	glass	100,95 €
0242.7	5 g	plastic	332,20 €

The History of Antibiotics

In the history of mankind there have always been highly developed cultures who have possessed remarkable knowledge. For example, surgeons in the ancient world and Middle Ages placed mouldy rags on wounds to prevent infection.

First observations of antibiotic effects in modern times were made by the French chemist Louis Pasteur in the 19th century, who discovered that certain bacteria could kill anthrax germs. The German bacteriologist Rudolf von Emmerich isolated the antibiotic medium pyocyan (cholera and diptheria) around 1900 and in 1910 experiments carried out by the German doctor and chemist Paul Ehrlich led to the development of salvarsan (syphillis and tropical diseases).

Penicillin was discovered by accident in 1928 by Alexander Fleming in *Penicillium notatum* mould fungus cultures when he observed that in laboratory cultures *P. notatum* inhibited the growth of vicinal bacteria colonies. Streptomycin followed in 1943.

The first antibiotics were isolates from bacteria cultures. The preparations used nowadays, however, are almost exclusively of chemical origin, which has enabled specialisation and optimisation.

Cryo-Conservation

Roti®-Store cryo vials

ready-to-use S

Sterile. Suitable for freezing all types of microorganisms, including recombinant bacteria.
Storage temp.: +4 °C

- Preparation of cryogenic cultures
- Safe storage
- Simple recultivation

Roti®-Store cryo vials are ideal for preparing freezing stocks from different microorganisms, even DMSO-sensitive organisms. The stocks are protected by a special cryo medium during freezing.
Optimally suited for cryopreservation of recombinant bacteria in genetic engineering.
Store at -80 °C or in liquid nitrogen.
Short-term storage for a few days at -20 °C is possible.
Also suitable for conservation of marine microorganisms, even during field work (Siebert *et al.*, *Appl. Environ. Microbiol.* 2004 (70) 5912-5).
∅ 11 mm, length 47 mm.

Instructions:
To freeze, pipette and mix 0.5 ml fresh culture solution into a Roti®-Store cryo vial. Remove the supernatant and freeze the vial. To recultivate, take one of the glass pellets and inoculate the desired culture medium.

One cryo vial contains 25 glass pellets suitable for 25 recultivations per cryogenic culture.

P730.3	5 vials, with 25 glass globules each	13,45 €
P730.1	50 vials, with 25 glass globules each	111,30 €
P730.2	250 vials, with 25 glass globules each	521,40 €

Instructions for use
can be found on the Internet next to the product description.

Roti®-Store yeast cryo vials

ready-to-use S

Sterile. Ideal for freezing yeast and monocellular moulds.
Storage temp.: +4 °C
Roti®-Store yeast cryo vials contain a special yeast cryo medium, developed for safe storage of yeasts such as *Saccaromyces cerevisiae* or *Candida albicans*.
Cryo-conversation has been succesfully tested for *S. cerevisiae*, *C. albicans*, *C. sake*, *C. tropicals*, *Zygosaccharomyces rouxii*, *Dekkera bruxellensis* and *Malesezzia furfur*.

The yeast is protected by a special yeast cryo medium during freezing.
Long-term storage at -80 °C or in liquid nitrogen, short-term storage for a few days at -20 °C is possible.
Suitable for preparing 50 different cryo-cultures and for up to 25 recultivations per cryogenic culture.
∅ 11 mm, length 47 mm.

X983.1	50 cryo vials, with 25 glass globules each	137,10 €

Glycerol

ROTIPURAN® ≥99,5 %, p.a., anhydrous
1,2,3-Propanetriol
$C_3H_8O_3$
M 92,09 g/mol
This anhydrous glycerol is used for the storage and concentration of enzymes and other samples at low temperatures. It is also used for the purification of bacteriophages and other biological molecules by a glycerol step gradient.
Due to its high density it is often a component of electrophoresis loading buffers.

3783.1	1 l	plastic	53,65 €
Original pack 6 x 1 l			50,97/1 l
3783.3	1 l	glass	57,95 €
Original pack 6 x 1 l			55,05/1 l
3783.2	2,5 l	plastic	97,75 €
Original pack 4 x 2,5 l			92,86/2,5 l
3783.4	2,5 l	glass	102,05 €
Original pack 4 x 2,5 l			96,95/2,5 l
3783.5	5 l	plastic	148,90 €
Original pack 2 x 5 l			141,46/5 l
3783.6	10 l	plastic	228,90 €

NEW

Anaerobic Jar

By schuett-biotec. Break-proof and ageing-resistant container made of rustproof, robust stainless steel or transparent polycarbonate enables the growth of the colony to be monitored without opening the container.

The anaerobic atmosphere can be generated in the vessels by evacuating using a vacuum pump and gassing (e.g. with nitrogen) or with chemical anaerobic systems.

Connectors:

The lid, made of UV-stable black plastic (POM) or transparent polycarbonate (PC), is equipped with a ventilation screw on the "eco" and "crystal eco" models.

The lids of the "small", "standard", "large" and "crystal" models are equipped with two corner valves including chemical-resistant hose connectors for gassing hoses and vacuum hoses (5 mm inner diameter) and provided with a pressure gauge for precisely monitoring the vacuum or overpressure (-1 to +0,2 bar).

Capacity:

The "standard", "eco", "crystal" and "crystal eco" vessels can be used with up to 15 Petri dishes with a diameter of 60-100 mm.

The "small" anaerobic vessel is suitable for up to 10 Petri dishes with a diameter of 60-100 mm.

The "large" vessel can hold up to 15 Petri dishes with a diameter of 60-150 mm.

Technical specifications:

Figure	Type	Volume (l)	Ø Inner x Height (mm)	Material (vessel/lid)	Suitable insertable frames
(1)	small	2	120 x 184	stainless steel/plastic	2415.1, 2570.1
(2)	standard	3	120 x 280	stainless steel/plastic	2415.1, 2390.1, 2570.1
(4)	eco	3	120 x 280	stainless steel/PC	2415.1, 2390.1, 2570.1
(3)	large	6	175 x 270	stainless steel/plastic	2415.1, 2390.1, 2417.1, 2535.1, 2568.1, 2570.1
(5)	crystal	3	120 x 280	PC/PC	2415.1, 2390.1, 2570.1
	crystal eco	3	120 x 280	PC/plastic	2415.1, 2390.1, 2570.1

Type	Art. No.	Pack Qty.	€
Anaerobic Jar, small	**2386.1**	1	333,25
Anaerobic Jar, standard	**2356.1**	1	320,35
Anaerobic Jar, eco	**2364.1**	1	267,70
Anaerobic Jar, large	**2387.1**	1	536,45
Anaerobic Jar, crystal	**2388.1**	1	483,75
Anaerobic Jar, crystal eco	**2389.1**	1	333,25

NEW

Petri Dish Racks

By schuett-biotec. Suitable autoclavable insertable steel frames for anaerobic vessels made of stainless by schuett-biotec. For easy and secure handling of up to 45 Petri dishes, microtiter plates or test tubes for anaerobic incubation.

Technical specifications for Insertable frames:

Type	suitable for	Art. No.
Petri dish insertable frame, small	10 Petri dishes Ø 60-100 mm	2415.1
Petri dish insertable frame, standard	15 Petri dishes Ø 60-100 mm	2390.1
Petri dish insertable frame, 150	15 Petri dishes Ø 150 mm	2417.1
Petri dish insertable frame, 3x60	45 Petri dishes Ø 60 mm	2535.1
Microtiter plate insertable frame, micro	Microtiter plates	2568.1
Test tube rack, test tube	9 Test tubes up to Ø 18 mm	2570.1

Type	Art. No.	Pack Qty.	€
Petri Dish Rack, small	**2415.1**	1	64,00
Petri Dish Rack, standard	**2390.1**	1	64,00
Petri Dish Rack, 150	**2417.1**	1	86,00
Petri Dish Rack, 3x60	**2535.1**	1	112,90
Microtiter plate insertable frame, micro	**2568.1**	1	107,50
Test tube rack, test tube	**2570.1**	1	107,50

Accessories for Antimicrobial Susceptibility Testing

Turbidity standards

McFarland BSS 0,5 ready-to-use

for microbiology

Turbidity Standard for adjusting the density of a bacterial suspension.

Turbidity Standard, Barium sulphate suspension

Storage temp.: +20 °C • Transport temp.: room temp.

The McFarland BSS Standards are used as turbidity standards since 1907 to produce an expected reproducible cell density of a bacterial suspension. The cell density is adjusted in the simple comparison to the standard. This can be directly performed visually or by measuring with a spectrophotometer.

The turbidity value of the standard of 0,5 MFU (McFarland Units) corresponds to approximately a culture density of 1,5 x 10^8 cells/ml. This cell density is specially needed as bacterial inoculum for the antibiotic susceptibility test.

Guarantee analysis:

Turbidity (625 nm, 1 cm cuvette)..... 0,5 MFU

1307.1	1 vial	26,90 €

▶ Mueller Hinton Agar see page 1444

McFarland PMS 0,5 ready-to-use

for microbiology

Turbidity Standard for adjusting the density of a bacterial suspension.

Turbidity Standard, Polymer Microparticle Suspension

Storage temp.: +20 °C • Transport temp.: room temp.

The McFarland PMS Standards are equivalent turbidity standards to the original barium sulfate standards. The optimised Polymer Microparticle Suspension (PMS) separates slower than the barium sulfate version. The cell density is adjusted in the simple comparison to the standard. This can be directly performed visually or by measuring with a spectrophotometer.
The turbidity value of the standard of 0,5 MFU (McFarland Units) corresponds to approximately a culture density of 1,5 x 10^8 cells/ml. This cell density is specially needed as bacterial inoculum for the antibiotic susceptibility test.

Guarantee analysis:

Turbidity (625 nm, 1 cm cuvette)..... 0,5 MFU

1440.1	1 vial	26,90 €

Petri dish revolving tables

For smoothing out liquids evenly on agar surfaces in Petri dishes.

Technical specifications:

Model	① Petriturn-M	② Petriturn-E
Operation	manual	electric drive
Housing material	-	Stainless steel
Special features	· Strong drive and long running due to high mass of the rotary disc · **Can be used on both sides**	· Non-contact operation of rotary disc via **sensor with automatic switch-off** (3 s to 2 min) · Continuous operation possible
Foot switch-control	-	Can also be operated via foot switch (please order separately ③)
Suitable for petri dishes up to:	∅ 100 mm, or to ∅ 150 mm by simply turning over	to ∅ 100 mm (Please order attachment for up to ∅ 150 mm separately ④)
Speed control	-	10 to 100 min^{-1}, continuously variable
Voltage supply	-	Power unit 12 V DC / 5 VA
Dimensions ∅ x H (mm)	160 x 45	160 x 70
Weight	2.3 kg	approx. 1 kg

Type	Art. No.	Pack Qty.	€
① Petriturn-M	**N962.1**	1	209,65
② Petriturn-E	**HT52.1**	1	418,20

Accessories:

③ Foot switch (Petriturn-E)	**HT53.1**	1	74,10
④ Rotary disc attachment for petri dishes ∅ 150 mm (Petriturn-E)	**HT54.1**	1	69,45

NEW

Antibiotic Disc Dispenser

By HiMedia. With the antibiotic disc dispenser, up to eight Roti®-Antibiotic Discs can be evenly placed on a culture medium at the same time. The antibiotic disc dispenser is suitable for Petri dishes with a diameter of 90 mm.

The base ring of the dispenser can be easily adjusted to the height of the culture medium without the need for additional tools.

The required combination of antibiotic disc cartridges are inserted into the slots in the dispenser until a click is heard. The loaded dispenser is positioned over the Petri dish. Carefully pressing the plunger all the way down with one hand pushes one antibiotic disc out of each cartridge onto the culture medium.

The dispenser can be operated with one hand, meaning that antibiotic sensitivity tests can be set up quickly for the disc diffusion method. This saves time, especially when a number of samples are to be tested.

The dispenser is supplied in a practical storage container to protect it from moisture.

When the dispenser is not in use, it should be stored at a temperature between 2-8 °C and should be brought to room temperature shortly before use.

For use with Roti®-Antibiotic Discs.

Art. No.	Pack Qty.	€
1505.1	1 pieces	750,35

▶ Roti®-Antibiotic Discs see page 1478
▶ Pocket Slide Rule see page 768

Kit for preparation of competent cells

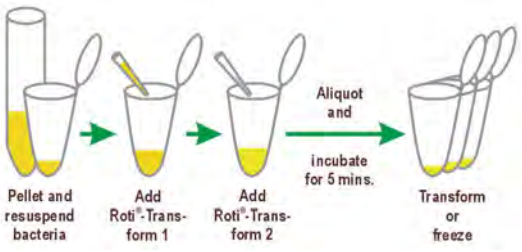
Roti®-Transform ready-to-use S

Sterile. For preparation of competent *E. coli*.
Storage temp.: -20 °C • Transport temp.: room temp.

- Flexible selection of strains
- Effective, simple and fast
- Adequate for 500 transformations

Roti®-Transform
Roti®-Transform is a simple, effective and fast method of producing competent *E. coli* in three steps. The competent cells may be used directly for transformation or may be frozen for later transformations. Transformation efficiency is 5 x 10^5 to 1 x 10^6 colonies per µg DNA.

Protocol:
1. Resuspend cells in fresh, cold LB-medium
2. Add Roti®-Transform 1
3. Add Roti®-Transform 2 and incubate for 5 minutes on ice



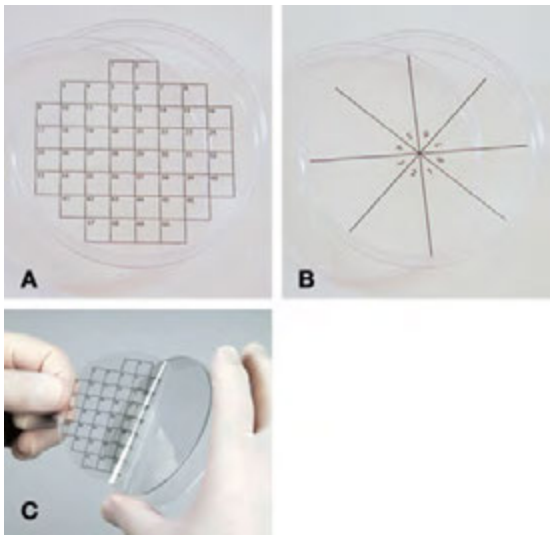
Long-term Storage of the Kit at -20 °C.

Storage for use:
Reagent 1: Short-term storage may be done at 4 °C.
For long-term storage of over 14 days we recommend a storage temperature of -20 °C.
Reagent 2: Storage at 4 °C.

Roti®-Transform consists of 45 ml Roti®-Transform 1 (Art. No. P041) and 5 ml Roti®-Transform 2 (Art. No. P042). One kit is sufficient for producing competent *E. coli* for 500 transformations.
Contents of this Kit may not be bought separately.

P043.1	1 kit	63,35 €

Instructions for use
can be found on the Internet next to the product description.



PetriSticker™

Pre-cut circular self-adhesive foils for easy and accurate labelling of 90 mm agar plates. With well legible numbers and partitions designed in two layouts and many variants. The foil is simply fixed to the bottom outside of an agar plate and the labelling is legible from the top.

Area of Sqare Grids

Art. No.	No. of arrays	Size of each array (mm x mm)	Area of each arrays (cm^2)
AE87	32	12 x 12	1,44
AE88	50	8,5 x 8,5	0,72
AE89	70	7 x 7	0,49
AE90	100	6 x 6	0,36

The following products are depicted in figure
A: Art. No. AE88.1 (square grid)
B: Art. No. AE96.1 (pie cut)

Type	No. of arrays	Art. No.	Pack Qty.	€
Square grid	32	**AE87.1**	36	30,00
Square grid	50	**AE88.1**	36	30,00
Square grid	70	**AE89.1**	36	30,00
Square grid	100	**AE90.1**	36	30,00
Pie cut	6	**AE95.1**	36	30,00
Pie cut	8	**AE96.1**	36	30,00
Pie cut	12	**AE97.1**	36	30,00
Pie cut	16	**AE98.1**	36	30,00

▶ A wide range of accessories for microbiology is available from page 284

Replicator stamp

Replicator stamp for transfer of bacterial or yeast colonies from one culture medium plate to another. Stamp with fixationring in yellow coloured. 12 autoclavable transfer tissues are included. Transfer tissues may also be bought separately in colours blue, red, and beige (for brightly coloured colonies).

In order to duplicate the colony plates, fix one of the sterile tissues on the stamp with the aluminium ring (see figure). Then press the top side of the original colony plate gently onto the stamp. For cloning press a fresh plate onto the inoculated tissue surface.

Applicable for petri dishes of 90 to 100 mm diameter. The replicator stamp is made of PVC. Height: 72 mm, diameter: 81 mm. Fixation rings are made from coated aluminium. Transfer tissues are made from an autoclavable cotton-polyester mix. Size of one tissue: 15 x 15 cm. The stamps can be disinfected with ethanol (sanitisation).

Art. No.	Pack Qty.	€
4708.1	Stamp + aluminium ring (yellow) + 12 autoclavable tissues (blue)	117,20

Transfer tissues for replicator stamps

Art. No.	Pack Qty.	€
4670.1	36 autoclavable transfer tissues (blue)	124,70
4688.1	36 autoclavable transfer tissues (red)	124,70
4698.1	36 autoclavable transfer tissues (beige)	124,70

Replicator stamp

The replicator stamp enables the transfer of bacterial or yeast colonies from one culture medium plate to another. To duplicate the colony plates, fix one of the sterile tissues on the stamp with the aluminium ring. Then press the top side of the colony plate gently onto velvety surface of the stamp. Use a new plate to produce the duplication.

The replicator stamp is made of PVC. Height: 69 mm, ∅: 81 mm.
Size of one tissue: 15 x 15 cm. It is suitable for max. 100 mm ∅ petri dishes.

The stamps can be disinfected with ethanol.

Art. No.	Pack Qty.	€
X994.1	Stamp + aluminium ring + 12 autoclavable tissues	179,55
X995.1	36 autoclavable tissues	179,55

Colony counter SC6 PLUS

By Stuart. For fast and exact counting of bacterial colonies in Petri dishes.
- Counting is initiated by pressing down on the Petri dish with any pen
- Pressure sensitivity is individually adjustable
- Confirmation of count by audible signal (optional)
- With integrated average counter for evaluating up to 99 Petri dishes
- Optional light or dark background (dark background aids counting translucent colonies)
- With non-reflective LED lighting
- Three-digit LED display
- Connectivity to PC
- With antimicrobial BioCote® surface coating

Technical specifications:

Digital display	0-999
Ambient temperature range	+5 to +40 °C
Dimensions (W x D x H)	310 x 300 x 140 mm
Weight	1.5 kg
Power supply	230 V, 50 Hz

Delivery incl. 2 Wolffhügel grids and 2 reducer rings (centring aids) for Petri dishes 50-90 mm in diameter, USB cable (1 m long). Please order magnifying glasses for counting microscopic colonies separately.

Type	Art. No.	Pack Qty.	€
Colony counter SC6 PLUS	**EN38.1**	1	810,00

Accessories:

Magnifying glass, 1.7x magnification (with flexible swan neck stand)	**EN39.1**	1	98,95
Magnifying glass, 3x magnification (with fixed stand arm)	**EN40.1**	1	118,00
Clear protective covers	**EN43.1**	5	79,60
Replacement Wolffhügel grid	**EN41.1**	10	96,25
Replacement Petri dish holder	**TK07.1**	1	21,50
Replacement reducer rings (centring aids)	**EN42.1**	2	24,90

S

Rotilabo®-cotton buds

With cotton tip. **Sterile** (ETO-gas sterilized, individually wrapped) or non-sterile. Ideal for hygiene, cleaning or laboratory applications.

Supports	Design	∅ Head (mm)	Handle L x ∅ (mm)	Art. No.	Pack Qty.	€
Wood	non-sterile	4-5,5	150 x 2,2	**EH11.1**	100	3,90
Wood	**sterile**	4-5,5	150 x 2,2	**EH12.1**	100	12,55
Wood	non-sterile	10-12	200 x 3	**XL54.1**	50	9,10
Aluminium	**sterile**	2	150 x 1	**XL55.1**	100	25,75
PP	**sterile**	4-5,5	150 x 2,5	**XL56.1**	100	15,00
PP	**sterile**	10-12	150 x 4,7	**XL57.1**	100	22,90

S

Bacterial cell spreaders Delta™

Made of **ABS**. **Sterile** (packed individually). With smooth surface, prevents scratching of agrar surfaces. Delta-shaped head distributes the contact pressure evenly for a smooth application. Dimensions: L 172 x W 37 x ∅ 4 mm.

Art. No.	Pack Qty.	€
PC59.1	500	92,35

S

Disposable inoculation loops and needles

Precision-moulded from **PS**. **Sterile**. The loops are smooth, flexible and enable inoculation in clear streaks. Needles can be used for intradermal inoculation in all types of culture media as well as colony picking. Length 227 mm. Subpacked in resealable pressure lock bags, individually packed inoculation loop in disposable packaging made of paper/plastic.

Design	Colour	Packaging	Art. No.	Pack Qty.	€
Inoculation loop, 1 µl	blue	250 x 1	**AEL0.1**	250	112,90
Inoculation loop, 1 µl	blue	100 x 10	**EA88.1**	1000	92,75
Inoculation loop, 1 µl	blue	40 x 25	**EA89.1**	1000	78,40
Inoculation loop, 10 µl	yellow	250 x 1	**AEL1.1**	250	112,90
Inoculation loop, 10 µl	yellow	100 x 10	**EA90.1**	1000	92,75
Inoculation loop, 10 µl	yellow	40 x 25	**EA91.1**	1000	78,40
Needles	white	250 x 1	**AEL2.1**	250	112,90
Needles	white	100 x 10	**EA92.1**	1000	96,30
Needles	white	40 x 25	**EA93.1**	1000	78,40

Histology/ Microscopy

Clearing Agents	Xylene Alternatives	1495
	Xylene	1497
	Ethanol/Isopropanol	1497
Reagents	General Reagents	1498
	Reagents for Decalcification	1499
	Blocking Reagents	1500
	Buffer Solutions and Salts	1500
Fixing Agents	Formaldehyde/Formalin	1502
	Fixing Agents for Cytology	1504
	Fixative Mixtures	1505
	Glutaraldehyde	1506
	Osmium tetraoxide	1506
Embedding	Paraffins	1507
	Cryo Embedding	1508
	Electron Microscopy	1509
	PEG/Carbowax	1509
Staining	Staining Solutions & Kits	1510
	Dyes	1516
	Substrates	1527
Mounting Media	Hydrophobic Mounting Media	1528
	Hydrophilic Mounting Media	1529
Accessories for Microscopy		
	Oils for Microscopy	1532
	Barrier Marker	1532
	Specimen Protection Roti®-Seal	1533
	Demoslides	1533
	Adhesion Slides	1533

Xylene Alternatives

- Adequate replacement for xylene
- Miscible with IPA, butanol, ethanol
- Application as clearing agent and dewaxing medium

Roti®-Histol on base of limonene

The alternative solvent for histology and cytology. Excellent for all histological hand work. Replaces clearing agents like xylene or toluol without the need for changing working procedures.

Roti®-Histol ready-to-use

for histology

Clearing agent on base of limonene.
For dewaxing of histological sections. Alternative product for xylene.

Danger H304-H226-H400-H410-H315-H317

Roti®-Histol is a natural product, manufactured from untreated orange peel. It consists of 96-98 % limonene, a terpene with a characteristic odour of lemon or orange.
Roti®-Histol replaces current clearing agents without the need for changing working procedures. **No harmful vapours!** It can be mixed with IPA, butanol, ethanol and all standard embedding media.

Clearing with Roti®-Histol prevents tissue samples from hardening and brittleness. It is particularly suitable for manual work which usually exposes the user to solvent vapours in high concentrations.

Roti®-Histol produces excellent results with **Roti®-Histokitt** mounting medium **(Art. No. 6638)** and special paraffins such as Roti®-Plast (Art. No. 6642).

Please contact us for your free sample!

6640.1	1 l		glass	30,00 €
Original pack 6 x 1 l				28,50/1 l
6640.4	2,5 l		glass	57,95 €
Original pack 4 x 2,5 l				55,05/2,5 l
6640.2	10 l		tinplate	173,00 €
6640.5	5 l		aluminium	97,30 €
Original pack 2 x 5 l				92,44/5 l
6640.3	22 kg	BIG PACK	tinplate	411,65 €

Xylene Alternatives - Summary

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Acetic acid n-butyl ester	ROTIPURAN® ≥99 %, p.a.	**P036.1**	1 l	glass	46,15
		P036.2	2,5 l	glass	102,05
Acetic acid ethyl ester	≥99,5 %, p.a., ACS, ISO	**6784.1**	1 l	glass	33,90
		6784.3	1 l	plastic	32,80
		6784.2	2,5 l	glass	62,25
		6784.4	2,5 l	plastic	60,75
		6784.5	5 l	plastic	99,90
Acetone	≥99,7 %, Ph.Eur., extra pure	**CP40.1**	1 l	glass	22,40
		CP40.2	2,5 l	glass	48,95
		CP40.3	2,5 l	plastic	44,65
		CP40.4	5 l	plastic	61,20
		CP40.5	10 l	tinplate	107,00
		CP40.6	25 l	tinplate	212,35
Ammonia solution 25 %	≥25 %, p.a.	**6774.1**	1 l	glass	22,05
		6774.2	2,5 l	glass	34,30
		6774.3	5 l	plastic	51,10
Benzoic acid methyl ester	≥99 %, for histology and microscopy	**6944.5**	500 ml	glass	33,25
		6944.1	1 l	glass	59,70
		6944.2	2,5 l	glass	119,25
		6944.4	25 kg	tinplate	611,70
1-Butanol	≥99,5 %, p.a.	**7171.2**	1 l	glass	50,45
		7171.1	2,5 l	glass	102,05
Decahydro-naphthalene	≥98 %, for synthesis	**4438.1**	1 l	glass	33,25
		4438.3	2,5 l	glass	61,20
		4438.4	5 l	aluminium	107,40
		4438.2	10 l	tinplate	203,20
N,N-Dimethyl-formamide (DMF)	≥99,8 %, p.a., ACS, ISO	**T921.3**	250 ml	glass	19,25
		T921.1	1 l	glass	37,10
		T921.2	2,5 l	glass	67,30
1,4-Dioxane	≥99,5 %, p.a., ACS, ISO	**4626.4**	100 ml	glass	13,45
		4626.3	500 ml	glass	37,55
		4626.1	1 l	glass	66,15
		4626.2	2,5 l	glass	137,10
		4626.5	5 l	aluminium	247,15
		4626.6	25 l	tinplate	1181,45
Oil of cedar wood	for microscopy	**5308.1**	100 ml	glass	16,05
		5308.2	250 ml	glass	24,20
		5308.3	500 ml	glass	41,85
Petroleum ether 40-60 °C	p.a., ACS, ISO	**T173.1**	1 l	glass	34,30
		T173.2	2,5 l	glass	64,40
		T173.3	5 l	aluminium	107,40
		T173.5	25 l	tinplate	342,95
Roticlear®	for histology	**A538.1**	1 l	glass	16,70
		A538.5	2,5 l	glass	31,10
		A538.2	10 l	tinplate	92,35
		A538.3	25 l	tinplate	184,40
		A538.4	200 l	barrel	794,45
Roti®-Histol	for histology	**6640.1**	1 l	glass	30,00
		6640.4	2,5 l	glass	57,95
		6640.2	10 l	tinplate	173,00
		6640.5	5 l	aluminium	97,30
		6640.3	22 kg	tinplate	411,65
Tetrahydrofuran	≥99,9 % (≤50 ppm H_2O)	**AE07.1**	1 l	glass	50,00
Toluene	≥99,5 %, p.a., ACS, ISO	**7115.1**	1 l	glass	38,20
		7115.2	2,5 l	glass	75,15
		7115.3	5 l	aluminium	105,90
		7115.4	25 l	tinplate	299,95
Trichloromethane/ Chloroform	≥99 %, p.a.	**3313.4**	100 ml	glass	16,70
		3313.1	1 l	glass	42,50
		3313.2	2,5 l	glass	88,70
		3313.5	25 l	tinplate	461,20
Water	hypotonic, sterile, free from pyrogen	**3255.1**	1 l	plastic	9,60

For additional product data and safety information, see chapter Chemicals A-Z.

Roticlear® on base of aliphatic hydrocarbons

The alternative product for use in histology and cytology. Roticlear® is a special formulation to replace toluene, xylene and trichloromethane. Excellent for dewaxing histological sections.

Roticlear® ready-to-use

for histology

Clearing agent of aliphatic hydrocarbons, practically free from aromatic compounds. For dewaxing of histological sections. Alternative product for xylene.

Danger H226-H304-H336-H412-EUH066

Roticlear® consists of different aliphatic hydrocarbons with only little own odour. It is **practically free from aromatic compounds** (≤0,005 %) and can be mixed with IPA, butanol, ethanol and acetone.

Roticlear® can be used like xylene. The absorption capacity for paraffin is even better than that known from xylene. Therefore, water baths for removing the paraffin need not to be changed so frequently. Due to a short evaporation period, Roticlear® enables fast and effective working.

Roticlear® produces excellent results with **Roti®-Mount (Art. No. HP68)**. After clearing with Roticlear® the sample can be embedded in Roti®-Mount immediately.

Roticlear® can be used in automates without any difficulty.

Please contact us for your free sample!

Type analysis:

Density (15 °C). 0,7460-0,7638
Colour (Hazen). ..... <10
Flash point. ..... >23 °C
Boiling range. ..... 130-170 °C
Aromatic compounds. ..... ≤0,005 %

A538.1	1 l		glass	16,70 €
Original pack 6 x 1 l				15,87/1 l
A538.5	2,5 l		glass	31,10 €
Original pack 4 x 2,5 l				29,55/2,5 l
A538.2	10 l		tinplate	92,35 €
A538.3	25 l		tinplate	184,40 €
A538.4	200 l	BIG PACK	barrel	794,45 €

▶ Compatible mounting media for xylene and xylene alternatives see page 1528

Please note our **Technical Information Brochure** on the Internet next to the products:

Xylene Alternatives
Roti®-Histol and Roticlear®

Xylene Alternatives compared to Xylene

	Roti®-Histol	Roticlear®	Xylene
Composition	natural product from limonene	mixture of different hydrocarbons, aromatic compounds ≤0.005 %	aromatic hydrocarbon
Classification as hazardous substance	yes	yes	yes
Odour	like oranges	slightly like benzine	characteristic
Vapours	not harmful	not harmful, may cause drowsiness	harmful
Flash point (°C)	50 °C - flammable	25 °C - flammable	25 °C - flammable
Boiling Range	177 °C	139 °C - 164 °C	137 °C - 143 °C
Effects to skin	irritating, may cause sensitisation	may cause skin dryness or cracking	irritating, harmful
Storage	in well-sealed glass bottles, **no plastic bottles**	in well-sealed glass bottles	in well-sealed glass bottles
Shelf life	minimum 1 years	minimum 3 years	minimum 3 years
Use	particulary suitable for manual applications	manual and automatical applications	manual and automatical applications
Immunhistochemical applications	suitable	suitable	suitable
Paraffin embedding	suitable	suitable	suitable
Dewaxing	suitable	suitable - better absorption capacity for paraffin than xylene	suitable
Mounting	suitable	suitable - short evaporation period	suitable
Mounting medium (compatibility tested)	**Roti®-Histokitt (Art. No. 6638)**	**Roti®-Mount (Art. No. HP68)**	**Roti®-Histokitt II (Art. No. T160)**
Further possible mounting media	Entellan, Eukitt, DePex	Entellan	Entellan *et al.*

Xylene

Xylene is the typical solvent in histology. ROTH xylenes have been used very successfully in histology for dewaxing histological sections and as clearing agent.

Xylene can be used together with **Roti®-Histokitt II mounting medium (Art. No. T160)** and ROTH paraffins such as Roti®-Plast special paraffin (Art. No. 6642).

Xylene - Summary

Product	Purity	Art. No.	Pack Qty.	€
Xylene (isomers)	≥99 %, p.a., ACS, ISO	**4436.1**	1 l	38,60
		4436.2	2,5 l	85,90
		4436.3	5 l	121,40
		4436.7	25 l	342,95
Xylene (isomers)	≥98,5 %, Ph.Helv., extra pure	**CN80.1**	1 l	27,85
		CN80.2	2,5 l	50,00
		CN80.5	5 l	77,30
		CN80.3	10 l	134,40
		CN80.4	25 l	263,40
Xylene (isomers)	>98 %, pure, for histology	**9713.1**	1 l	26,35
		9713.3	2,5 l	48,95
		9713.5	5 l	73,00
		9713.2	10 l	124,60
		9713.4	25 l	231,15
Xylene (isomers)	≥97 %, for synthesis	**2662.1**	1 l	21,00
		2662.2	2,5 l	32,15
		2662.5	5 l	56,45
		2662.3	10 l	89,15
		2662.4	25 l	185,45

For additional product data and safety information, see chapter Chemicals A-Z.

Please note:
Xylene can only dissolve a limited amount of paraffin, it should therefore be changed frequently. Please also note that the solubilizing process is often very slow at low temperatures. We recommend working in a warming cupboard at 25 to 30 °C.

Our Tip:
You can use a pipe wrench to open the solvent canister 10 l and 25 l. However, it's much easier and simpler with our **barrel and keg key** (Art. No. 0398).

Safety data sheets
can be found on the Internet next to the product description.

Alcohols

Variously usable in histology: for hydration and dehydration (series of alcohol), for fixation, as an ingredient of staining solution etc.

Alcohols - Summary

Product	Purity	Art. No.	Pack Qty	Packa-ging	€
Ethanol	≥99,8 %, p.a.	**9065.1**	1 l	glass	83,75
		9065.3	1 l	plastic	82,70
		9065.2	2,5 l	glass	169,35
		9065.4	2,5 l	plastic	167,20
		9065.5	5 l	plastic	300,50
		9065.6	25 l	tinplate	1048,15
Ethanol	≥99,5 %, Ph.Eur., extra pure	**5054.1**	1 l	glass	74,75
		5054.3	1 l	plastic	73,65
		5054.2	2,5 l	glass	154,70
		5054.4	2,5 l	plastic	152,15
		5054.5	5 l	plastic	289,75
		5054.6	25 l	tinplate	998,70
Ethanol denatured	≥99,8 %, with ~1 % MEK	**K928.5**	1 l	plastic	13,90
		K928.1	2,5 l	glass	29,60
		K928.3	2,5 l	plastic	27,85
		K928.4	5 l	plastic	50,00
		K928.6	10 l	tinplate	85,90
		K928.2	25 l	tinplate	165,45
Ethanol 96 %	96 %, Ph.Eur., extra pure	**P075.1**	1 l	glass	73,00
		P075.3	1 l	plastic	71,95
		P075.2	2,5 l	glass	153,65
		P075.4	2,5 l	plastic	150,40
		P075.5	5 l	plastic	282,65
		P075.6	10 l	tinplate	450,45
Ethanol 96 % denatured	≥96 %, with 1 % MEK	**T171.5**	1 l	plastic	12,80
		T171.1	2,5 l	glass	24,65
		T171.3	2,5 l	plastic	22,50
		T171.4	5 l	plastic	41,85
		T171.6	10 l	tinplate	73,65
		T171.2	25 l	tinplate	124,60
Ethanol 70 %	≥70 %, p.a.	**T868.1**	1 l	plastic	56,45
		T868.2	2,5 l	plastic	124,60
		T868.3	5 l	plastic	234,25
		T868.4	10 l	glass	428,95
		T868.5	25 l	glass	848,20
Ethanol 70 % denatured	≥70 %, with approx. 1 % MEK	**T913.1**	1 l	plastic	12,40
		T913.2	2,5 l	plastic	21,40
		T913.3	5 l	plastic	35,40
		T913.4	10 l	plastic	57,55
		T913.5	25 l	plastic	113,45
2-Propanol	≥99,8 %, p.a., ACS, ISO	**6752.1**	1 l	glass	25,30
		6752.3	1 l	plastic	24,20
		6752.2	2,5 l	glass	56,90
		6752.4	2,5 l	plastic	54,75
		6752.5	5 l	plastic	84,85
		6752.7	10 l	Weißbl.	138,70
		6752.6	25 l	tinplate	246,75

For additional product data and safety information, see chapter Chemicals A-Z.

Isopropanol as clearing agent
Isopropanol is well suited as clearing agent for paraffin-embedding, because it is compatible to melted paraffin: After dehydrating with isopropanol the sample is incubated in a mixture of isopropanol abs. and paraffin (1:1) at approx. 60 °C. After a further incubation step with pure paraffin, the sample is embedded as usual. This method is particularly suitable to smooth organs. Since embedding can start immediately after alcohol step, the working process is shortened significantly.

General Reagents

Essential helpers for routine histological work such as fixing, embedding, staining and so on.

APES

≥98 %, for GC
Silylation reagent
γ-Aminopropyltriethoxysilane, 3-Aminopropyltriethoxysilane, APTES
$C_9H_{23}NO_3Si$
M 221,37 g/mol

Danger H314-H302

APES is used for silanising microscope slides causing better adherence of cut to slide.

2328.1	25 g	glass	21,40 €
2328.2	100 g	glass	62,25 €

Chloral hydrate

≥99,5 %, Ph.Eur., BP, USP
Trichloroacetaldehyde monohydrate
$C_2H_3Cl_3O_2$
M 165,40 g/mol

Danger H301-H315-H319

In botany chloralhydrate is used as clearing agent and for removing cell content of plant samples.

K318.3	100 g	plastic	27,45 €
K318.1	500 g	plastic	110,65 €
Original pack 6 x 500 g			105,12/500 g
K318.2	2,5 kg	plastic	461,20 €

HCl-ethanol solutions

for histology
Differentiating solution for histological staining.
Hydrochloric acid in ethanol
After staining tissues are rinsed with HCl-ethanol solution to remove excessive stain. This decolourisation is selective for certain tissue structures retain the stain better than others (differentiation). HCl-ethanol solution is used for regressive hemalum staining, but also for detection of mycobacteria.

HCl-ethanol solution 0,75 % ready-to-use

Danger H225-H290-H319

Solution of 0,75 % hydrochloric acid in ethanol 70 %.

9969.1	500 ml	plastic	16,05 €
9969.2	1 l	plastic	25,70 €
Original pack 6 x 1 l			24,42/1 l
9969.3	5 l	plastic	88,05 €
Original pack 2 x 5 l			83,65/5 l

HCl-ethanol solution 3 % ready-to-use

Danger H225

Solution of 3 % hydrochloric acid in ethanol 70 %.

6477.1	500 ml	plastic	17,75 €
6477.2	1 l	plastic	30,65 €
Original pack 6 x 1 l			29,12/1 l
6477.3	5 l	plastic	107,00 €
Original pack 2 x 5 l			101,65/5 l

Other General Reagents

Product	Purity	Art. No.	Pack Qty.	€
Ammonium iron(III) sulphate dodecahydrate	≥98,5 %, p.a., ACS, ISO	**P734.1**	500 g	31,10
		P734.2	1 kg	53,65
		P734.3	2,5 kg	111,70
Ammonium iron(II) sulphate hexahydrate	≥99 %, p.a., ISO	**P728.1**	500 g	28,50
		P728.2	1 kg	47,85
		P728.3	2,5 kg	107,40
Dimethyl sulphoxide (DMSO)	≥99,8 %, p.a.	**4720.4**	100 ml	16,70
		4720.2	500 ml	30,00
		4720.1	1 l	50,45
		4720.3	2,5 l	104,20
Hydrogen peroxide 30 %	p.a., ISO, stabilized	**8070.2**	250 ml	21,40
		8070.4	500 ml	27,85
		8070.1	1 l	40,35
		8070.3	2,5 l	69,35
Hydroquinone	≥99,5 %, p.a.	**3586.1**	100 g	13,45
		3586.2	250 g	20,35
		3586.3	1 kg	60,10
Lithium carbonate	≥99 %, p.a., ACS	**3995.1**	250 g	68,70
		3995.2	500 g	121,40
Phloroglucinol dihydrate	≥98 %	**7662.1**	50 g	67,20
Potassium aluminium sulphate dodecahydrate	≥98 %, p.a., ACS	**P724.2**	500 g	26,80
		P724.1	1 kg	47,20
		P724.3	2,5 kg	99,90
Potassium hexacyano-ferrate(II) trihydrate	≥99 %, p.a., ACS, ISO	**P745.1**	500 g	93,00
		P745.2	1 kg	167,60
		P745.3	2,5 kg	364,45
Potassium hexacyano-ferrate(III)	≥99 %, p.a., ACS	**P746.3**	100 g	22,50
		P746.1	500 g	71,95
		P746.2	1 kg	130,65
Potassium hydroxide	≥85 %, p.a., pellets	**6751.3**	250 g	16,70
		6751.1	1 kg	27,45
		6751.2	5 kg	94,10
		6751.5	25 kg	289,20
Sodium chloride	≥99 %, Ph.Eur., USP	**P029.1**	500 g	11,75
		P029.2	1 kg	13,90
		P029.3	5 kg	42,90
		P029.4	10 kg	71,95
		P029.5	25 kg	134,40
Sodium metabisulphite	≥97 %, p.a., ACS	**P755.1**	500 g	20,35
		P755.2	1 kg	31,10
		P755.3	2,5 kg	57,55
		P755.4	5 kg	100,95
		P755.5	25 kg	332,20
Sodium hydroxide	≥98 %, Ph.Eur., USP, BP, in pellets	**P031.1**	500 g	18,20
		P031.2	1 kg	27,45
		P031.3	5 kg	97,30
		P031.7	25 kg	396,70
Silver nitrate	≥99 %, Ph.Eur., extra pure	**9370.4**	10 g	28,50
		9370.1	50 g	99,90
		9370.9	100 g	188,70
		9370.2	250 g	407,45
		9370.3	1 kg	1525,45
Tetrachloroauric(III) acid trihydrate	≥99,5 %, p.a.	**3867.1**	1 g	139,25
		3867.2	5 g	557,95

For additional product data and safety information, see chapter Chemicals A-Z.

Reagents for Decalcification

Tissues containing solid material such as bones or keratin are to be decalcified before paraffin embedding. Usually the specimens are treated with acids of different concentrations and mixtures.

An especially gentle method is decalcification with EDTA solution.

Decalcifier soft ready-to-use

SOLVAGREEN® for histology

Decalcifier solution on base of EDTA.
Used for gentle decalcification of bones and other calcified tissues.
The solution is also suitable for immunological applications.

Danger H290-H314-H373

The solution contains 25 % EDTA. The process of decalcification takes more time than acid decalcification (see Decalcifier standard, Art. No. 6483), e.g. bone biopsies need approx. 3-4 days. The procedure can be accelerated by using a magnetic stirrer. The decalcification takes place in a weakly basic milieu. Nucleic acids and enzymes are not affected; therefore, the solution is also suitable for immunological applications.

Type analysis:

Appearance. ..... clear, colourless
pH (20 °C) 7-9

6484.1	500 ml	glass	24,20 €
6484.2	1 l	glass	36,45 €
Original pack 6 x 1 l			34,63/1 l
6484.3	2,5 l	plastic	55,80 €
Original pack 4 x 2,5 l			53,01/2,5 l
6484.4	5 l	plastic	96,25 €
Original pack 2 x 5 l			91,44/5 l

Decalcifier standard ready-to-use

for histology

Acid-based decalcifier. Contains trichloracetic acid and formalin.
Used for acid decalcification of bones and other calcified tissues.

Danger H314-H335-H350-H411-EUH208

The solution contains trichloroacetic acid and formalin and, therefore, has also fixing qualities. Nevertheless, we recommend sufficient fixing of specimens before decalcifying for trichloroacetic acid may cause morphological changes in unfixed tissue. The length of the decalcification process depends on the specimen's size and type. Little bones (diameter a few mm) need 1-2 days for complete decalcification.
The decalcifier standard is not suitable for immunological applications. We recommend our Decalcifier soft (Art. No. 6484) on base of EDTA.

Type analysis:

Appearance. ..... clear, colourless
pH (20 °C) ..... 0,9 ±0,3

6483.1	500 ml	glass	24,20 €
6483.2	1 l	glass	36,45 €
Original pack 6 x 1 l			34,63/1 l
6483.3	2,5 l	plastic	55,80 €
Original pack 4 x 2,5 l			53,01/2,5 l
6483.4	5 l	plastic	96,25 €
Original pack 2 x 5 l			91,44/5 l

Reagents for Decalcification - Summary

Product	Purity	Art. No.	Pack Qty.	€
Acetic acid 100 %	100 %, p.a.	**3738.1**	1 l	25,30
		3738.4	1 l	23,15
		3738.2	2,5 l	53,65
		3738.5	2,5 l	51,50
		3738.6	5 l	76,25
		3738.3	10 l	128,90
Decalcifier soft	for histology	**6484.1**	500 ml	24,20
		6484.2	1 l	36,45
		6484.3	2,5 l	55,80
		6484.4	5 l	96,25
Decalcifier standard	for histology	**6483.1**	500 ml	24,20
		6483.2	1 l	36,45
		6483.3	2,5 l	55,80
		6483.4	5 l	96,25
Ethylenediamine tetraacetic acid disodium salt dihydrate	≥99 %, p.a., ACS	**8043.3**	100 g	22,05
		8043.1	250 g	35,40
		8043.2	1 kg	103,75
		8043.6	2,5 kg	198,35
		8043.4	5 kg	375,20
		8043.5	25 kg	858,95
Formic acid 98 %	≥98 %, p.a., ACS	**4724.3**	500 ml	21,40
		4724.1	1 l	35,40
		4724.2	2,5 l	75,15
Hydrochloric acid fuming 37 %	37 %, p.a., ACS, ISO	**4625.1**	1 l	21,00
		4625.2	2,5 l	33,25
		4625.3	10 l	82,70
Nitric acid 65 %	≥65 %, p.a., ISO	**4989.3**	250 ml	19,25
		4989.1	1 l	30,65
		4989.2	2,5 l	60,10
Trichloroacetic acid	≥99 %, p.a.	**8789.2**	500 g	55,80
		8789.1	1 kg	95,60
Trichloroacetic acid	≥99 %, Ph.Eur, extra pure	**3744.2**	500 g	54,30
		3744.1	1 kg	92,35

For additional product data and safety information, see chapter Chemicals A-Z.

Instructions for use
can be found on the Internet next to the product description.

Blocking Reagents

In immunohistological assays it is necessary to block non-specific antibody binding sites or other unspecific protein-protein-interactions.
For that purpose ROTH offers protein-containing and protein free blocking reagents.

Albumins/BSA

Product	Purity	Art. No.	Pack Qty.	€
Albumin, IgG free	>98 %, IgG-free, for biochemistry and molecular biology	**3737.1**	10 g	56,90
		3737.2	50 g	155,90
		3737.3	200 g	471,95
		3737.4	500 g	962,15
Albumin, nuclease-free	>99 %, nuclease-free, for molecular biology	**8895.1**	10 mg	31,75
		8895.2	100 mg	169,75
Albumin Fraction V	≥98 %, powdered, for molecular biology	**8076.1**	10 g	27,85
		8076.2	50 g	87,00
		8076.4	200 g	298,35
		8076.3	500 g	654,70
		8076.5	1 kg	1127,70
Albumin Fraction V, biotin-free	≥98 %, biotin-free, for molecular biology	**0163.1**	10 g	34,30
		0163.2	50 g	107,00
		0163.4	200 g	370,90
		0163.3	500 g	805,20
Albumin Fraction V, very low endotoxin	>98 %, very low endotoxin	**CP77.1**	10 g	142,90
		CP77.2	50 g	547,20
Albumin Fraction V, endotoxin-tested	>98 %, low endotoxin	**CP84.1**	10 g	35,40
		CP84.2	50 g	110,65
		CP84.3	500 g	858,95
Albumin Fraction V, fatty acid-free	≥95 %, fatty acid-free, for molecular biology	**0052.1**	1 g	18,85
		0052.2	10 g	98,40
		0052.3	50 g	385,95
Albumin Fraction V, pH 5,2	>97 %, powdered, for protein analysis	**2834.1**	10 g	40,75
		2834.2	50 g	130,65
		2834.3	200 g	407,45
		2834.4	500 g	826,70
Albumin Fraction V, protease-free	≥98 %, protease-free, for molecular biology	**T844.1**	10 g	55,80
		T844.2	50 g	127,95
		T844.4	200 g	418,20
		T844.3	500 g	865,40
Albumin Fraction V, US-Origin	≥98 %, powdered, for molecular biology and biochemistry	**3854.1**	10 g	31,10
		3854.2	50 g	94,10
		3854.3	200 g	321,45
		3854.4	500 g	693,40
		3854.5	1 kg	1159,95

For additional product data and safety information, see chapter Chemicals A-Z.

Roti®-ImmunoBlock ready-to-use

ready-to-use, 10x conc.

Protein free blocking reagent for immunocytological assays.
Roti®-ImmunoBlock is an innovative blocking reagent on a polymer base without detergents and proteins.

Suitable for
- Immunocytological assays
- Immunohistological assays
- Paraffin- and cryosections
- *in situ* hybridisation
- Cell culture samples
- Whole mount samples

T144.1	250 ml	glass	46,80 €

▶ For detailed information on albumins and albumin solutions see page 1334

▶ Additional blocking reagents see page 1358

Buffer Solutions and Salts

Buffer Salts - Summary

Product	Purity	Art. No.	Pack Qty.	€
Cacodylic acid sodium salt trihydrate	≥98 %	**5169.3**	10 g	22,50
		5169.1	50 g	64,40
		5169.2	250 g	209,65
Citric acid monohydrate	≥99,5 %, p.a., ACS, ISO	**3958.2**	500 g	19,25
		3958.1	1 kg	31,10
		3958.3	2,5 kg	57,55
		3958.4	5 kg	105,90
		3958.6	10 kg	177,40
		3958.5	25 kg	375,20
Ethylenediamine tetraacetic acid disodium salt dihydrate	≥99 %, p.a., ACS	**8043.3**	100 g	22,05
		8043.1	250 g	35,40
		8043.2	1 kg	103,75
		8043.6	2,5 kg	198,35
		8043.4	5 kg	375,20
		8043.5	25 kg	858,95
HEPES	≥99,5 %, p.a.	**9105.2**	100 g	34,30
		9105.4	500 g	139,65
		9105.3	1 kg	231,70
		9105.6	2,5 kg	461,20
		9105.5	5 kg	869,70
PIPES	≥99 %	**9156.1**	25 g	19,90
		9156.2	100 g	56,90
		9156.3	250 g	125,25
		9156.4	500 g	212,35
Potassium chloride	≥99,5 %, p.a., ACS, ISO	**6781.3**	500 g	18,85
		6781.1	1 kg	26,35
		6781.2	5 kg	104,20
		6781.5	25 kg	396,70
Potassium dihydrogen phosphate	≥99 %, p.a., ACS	**3904.2**	250 g	18,85
		3904.1*	1 kg	54,75
		3904.3	5 kg	219,20
		3904.5	25 kg	955,70
di-Potassium hydrogen phosphate trihydrate	≥99 %, p.a.	**6878.2**	250 g	20,35
		6878.1	1 kg	48,30
		6878.3	2,5 kg	97,75
tri-Sodium citrate dihydrate	≥99 %, p.a., ACS	**3580.4**	250 g	21,00
		3580.3	500 g	27,85
		3580.1	1 kg	44,65
		3580.2	5 kg	188,15
		3580.5	25 kg	439,70
Sodium dihydrogen phosphate dihydrate	≥99 %, p.a.	**T879.1**	500 g	23,55
		T879.2	1 kg	35,40
		T879.3	2,5 kg	75,15
		T879.5	25 kg	622,45
di-Sodium hydrogen phosphate dihydrate	≥99,5 %, p.a.	**4984.2**	500 g	27,45
		4984.1	1 kg	45,70
		4984.3	2,5 kg	98,40
		4984.4	5 kg	135,35
		4984.5	10 kg	228,90
		4984.7	25 kg	396,70
TRIS	≥99,9 %, p.a.	**4855.1**	500 g	51,50
		4855.2	1 kg	92,35
		4855.5	2,5 kg	190,85
		4855.3	5 kg	381,65
		4855.4	10 kg	725,65
TRIS hydrochloride	≥99 %, p.a.	**9090.1**	50 g	14,55
		9090.2	500 g	90,85
		9090.3	1 kg	134,40
		9090.5	2,5 kg	282,20
		9090.4	5 kg	536,45

For additional product data and safety information, see chapter Chemicals A-Z.

Buffer solution acc. to Weise NEW

for histology

Stabilized buffer concentrate for the preparation of buffer solution according to Weise.

- Ready for use immediately - no dissolving of tablets or powder
- Microfiltered solution - no disturbing suspended particles
- Economical use - **10 ml concentrate on 1 l distilled water (= working solution)**
- Demand-oriented packaging - pouches or bottles

Buffer solution according to Weise is a phosphate-buffered salt solution which is mainly used for staining blood and bone marrow smears, e.g. for diluting the Giemsa stock solution in Pappenheim staining.

The buffer concentrates are available in three different pH variants.
The prepared solutions are stable for approx. 4 weeks.

Weise buffer concentrate 100x, pH 6,4

10 ml concentrate on 1 l distilled water

1665.1	5 x 10 ml	pouches	21,40 €
1665.2	10 x 10 ml	pouches	34,30 €
1665.3	100 x 10 ml	pouches	274,15 €
1711.1	5 x 20 ml	plastic	34,30 €
1711.2	10 x 20 ml	plastic	62,25 €
1711.3	100 x 20 ml	plastic	521,40 €
1504.1	250 ml	plastic	39,70 €

Weise buffer concentrate 100x, pH 7,2

10 ml concentrate on 1 l distilled water

1674.1	5 x 10 ml	pouches	21,40 €
1674.2	10 x 10 ml	pouches	34,30 €
1674.3	100 x 10 ml	pouches	274,15 €
1740.1	5 x 20 ml	plastic	34,30 €
1740.2	10 x 20 ml	plastic	62,25 €
1740.3	100 x 20 ml	plastic	521,40 €
1675.1	250 ml	plastic	39,70 €

Weise buffer concentrate 100x, pH 6,8

10 ml concentrate on 1 l distilled water

1673.1	5 x 10 ml	pouches	21,40 €
1673.2	10 x 10 ml	pouches	34,30 €
1673.3	100 x 10 ml	pouches	274,15 €
1727.1	5 x 20 ml	plastic	34,30 €
1727.2	10 x 20 ml	plastic	62,25 €
1727.3	100 x 20 ml	plastic	521,40 €
1569.1	250 ml	plastic	39,70 €

▶ Roti®-fair buffer mixtures, ready-to-use mixtures and ready-to-use solutions PBS/TBS see chapter Biochemistry

Formalin-free Fixing Solution

ready-to-use

An adequate substitute for formalin on base of hexamethylene tetramine. Roti®-Histofix ECO Plus is classified as non-hazardous.

Roti®-Histofix ECO Plus

SOLVAGREEN® Fixing agent without formalin

For fixing of histological and immunochemical specimens.
Formalin substitute.
Storage temp.: +20 °C

- Formaldehyde-free, non-toxic fixative
- Good fixation properties
- pH 4,5 -5,0
- No denaturing effect, e.g. shrinkage or crosslinking
- Adequate substitute for formaldehyde

Roti®-Histofix ECO Plus is a ready-to-use, aqueous solution on base of hexamethylene tetramine. The solution has as similar good fixation properties as formaldehyde, but is, unlike formaldehyde, classified as non-toxic. The original morphology of the tissue is preserved during the fixation process. The protein molecules are cross-linked in a reversible way, their structures are preserved. That is especially important for antigen-antibody reactions. Samples are - in contrary to other fixative media - free of artefacts such as shrinkage of tissue or irreversible protein crosslinking. The solution is therefore ideal for immunohistochemistry. All conventional staining processes can be carried out following fixation.
Roti®-Histofix ECO Plus has an indicator dye and is scented for better identification (< 1ppm).

Formalin-free, non-toxic solution. For fixing of histological specimens.
Pleasantly aromatic odour. Forrmalin substitute.

8907.1	500 ml	plastic	15,60 €
8907.2	2,5 l	plastic	47,85 €
Original pack 4 x 2,5 l			45,46/2,5 l
8907.3	5 l	plastic	89,15 €
Original pack 2 x 5 l			84,69/5 l

Do not store formaldehyde solutions below +15 °C!

Experience shows that low temperatures support polymerisation to paraformaldehyde. Small amounts of solids (fine precipitation) can be filtered off, the formaldehyde solution is still fully functional. In case of major amounts of solids, however, the solution should be discarded, for the concentration of formaldehyde is too much reduced.

Ready-to-use Formaldehyde Solutions

ready-to-use

Roti®-Histofix solutions are **stabilised formaldehyde solutions**. The added phosphate buffer (pH 7) neutralises formic acid formed by oxidation of formaldehyde during storage. Furthermore, a small amount of methanol is added to protect against polymerisation.

Roti®-Histofix in prefilled containers

Fixative for histology, prefilled in screw cap containers.
Stabilised with methanol.
Storage temp.: +15-25 °C

Danger H302-H317-H341-H350

Neutral buffered formaldehyde solution (pH 7), prefilled in screw cap containers, packaged in a cardboard shipping box. The containers are labelled, specimen data can be added.

- Specimen can be added directly
- Sample is securely packaged and ready for shipment within a short time
- Reduced health risk for user because no diluting and decanting of concentrated formaldehyde solution is necessary
- Time saving, containers are ready-to-use

Technical specifications:

Dimension containers	20 ml	100 ml	180 ml
Diameter bottom (mm)	27	43	52
Diameter cap (mm)	31	48	57
Height with cap (mm)	48	88	104

Roti®-Histofix 4 %, prefilled containers

acid free (pH 7), phosphate-buffered formaldehyde solution 4 %

Type analysis:

Appearance. ..... clear, colourless liquid
Assay (formaldehyde) ..... ~4 %
pH value. ..... 7,0 ±0,5
Stabilised with methanol

3105.1	100 x 10 ml (in 20 ml-container)	carton	84,85 €
3105.2	54 x 50 ml (in 100 ml-container)	carton	57,55 €

Roti®-Histofix 4,5 %, prefilled containers

acid free (pH 7), phosphate-buffered formaldehyde solution 4,5 %

Type analysis:

Appearance. ..... clear, colourless liquid
Assay (formaldehyde) ..... 4,0-5,0 %
pH value. ..... 7,2 ±0,2
Stabilised with methanol

8244.1	100 x 10 ml (in 20 ml container)	carton	82,70 €
8244.2	54 x 50 ml (in 100 ml container)	carton	57,95 €
8244.3	32 x 100 ml (in 180 ml container)	carton	54,30 €

Roti®-Histofix 4 %

acid free (pH 7), phosphate-buffered formaldehyde solution 4 %
Fixative for histology, stabilized with methanol.
Storage temp.: +15-25 °C

Danger H350-H341-H302-H317

P087.4	500 ml		plastic	10,25 €
P087.6	1 l		plastic	12,80 €
Original pack 6 x 1 l				12,16/1 l
P087.5	2,5 l		plastic	17,10 €
Original pack 4 x 2,5 l				16,25/2,5 l
P087.3	5 l		plastic	27,45 €
Original pack 2 x 5 l				26,08/5 l
P087.1	10 l		plastic	50,45 €
P087.2	30 l	BIG PACK	plastic	131,70 €

Roti®-Histofix 4,5 %

acid free (pH 7), phosphate-buffered formaldehyde solution 4,5 %
Fixative for histology, stabilized with methanol.
Storage temp.: +15-25 °C

Danger H302-H317-H341-H350

2213.4	500 ml		plastic	10,65 €
2213.6	1 l		plastic	12,80 €
Original pack 6 x 1 l				12,16/1 l
2213.5	2,5 l		plastic	19,25 €
Original pack 4 x 2,5 l				18,29/2,5 l
2213.3	5 l		plastic	28,95 €
Original pack 2 x 5 l				27,50/5 l
2213.1	10 l		plastic	52,15 €
2213.2	30 l	BIG PACK	plastic	128,50 €

Roti®-Histofix 10 %

acid free (pH 7), phosphate-buffered formaldehyde solution 10 %
Fixative for histology, stabilized with methanol.
Storage temp.: +15-25 °C

Danger H302+H312-H315-H317-H319-H335-H341-H350-H371

A146.4	500 ml		plastic	12,40 €
A146.6	1 l		plastic	14,95 €
Original pack 6 x 1 l				14,20/1 l
A146.5	2,5 l		plastic	26,35 €
Original pack 4 x 2,5 l				25,03/2,5 l
A146.3	5 l		plastic	44,00 €
Original pack 2 x 5 l				41,80/5 l
A146.1	10 l		plastic	69,80 €
A146.2	30 l	BIG PACK	plastic	171,90 €

▶ Formaldehyde solution 23,5 %, low-methanol, see chapter Chemicals A-Z.

Our Tip:
Our **10-l and 30-l standard canisters** with **drain cocks** (Art. No. 5666.2) enable easy and simple withdrawal.

Concentrated Formaldehyde Solutions/Formol/Formalin

Standard Solutions

The formaldehyde solutions are stabilised with approx. 10 % methanol.

Product	Purity	Art. No.	Pack Qty	€
Formaldehyde solution 37 %	37 %, p.a., ACS	**4979.1**	1 l	27,45
		4979.2	2,5 l	51,10
		4979.3	5 l	67,65
Formaldehyde solution 37 %	≥37 %, Ph.Eur., BP, USP	**CP10.1**	1 l	18,20
		CP10.2	2,5 l	32,15
		CP10.3	5 l	46,15
		CP10.4	10 l	68,70
Formaldehyde solution 37 %	≥37 %, for synthesis	**7398.1**	1 l	14,55
		7398.4	2,5 l	23,15
		7398.2	10 l	55,40
		7398.3	30 l	112,80
Formaldehyde solution 35 %	≥35 % DAB, for histology	**4980.1**	1 l	16,70
		4980.2	5 l	38,60
		4980.4	10 l	61,85
		4980.3	30 l	122,05

For additional product data and safety information, see chapter Chemicals A-Z.

Special Solutions

Formaldehyde solution 30 %, low-methanol

30 %
Formol, Formalin
CH_2O
M 30,03 g/mol
Storage temp.: >+15 °C

Danger H302-H311+H331-H314-H317-H341-H350-H335

The solution is nearly free from methanol (≤1,5 %). It is used for sensitive assays e.g. enzyme histochemical assays. Do not store solution below 15 °C.

4235.1	1 l		plastic	12,80 €
Original pack 6 x 1 l				12,16/1 l
4235.2	5 l		plastic	31,10 €
Original pack 2 x 5 l				29,55/5 l
4235.3	10 l		plastic	43,55 €
4235.4	30 l	BIG PACK	plastic	102,05 €

Formaldehyde solution, non-acidic

≥37 %, for histology
Stabilized with methanol and calcium carbonate.
Formol, Formalin
Storage temp.: >+15 °C

Danger H301+H311+H331-H341-H350-H314-H317-H370-H335

Stabilised with calcium carbonate (acid-binding solids) and methanol (8-12 %). If required, filter before use. Do not store solution below 15 °C.

P733.1	1 l		plastic	18,20 €
Original pack 6 x 1 l				17,29/1 l
P733.2	2,5 l		plastic	33,25 €
Original pack 4 x 2,5 l				31,59/2,5 l
P733.3	30 l	BIG PACK	plastic	125,25 €

Paraformaldehyde

Paraformaldehyde is a formaldehyde polymer.
It is used for applications requiring a formaldehyde solution without stabilising additives.

Paraformaldehyde

extra pure
Fixative
Polyoxymethylene
$(CH_2O)_n$
Storage temp.: +4-15 °C

Danger
H228-H302+H332-H315-H317-H318-H335-H341-H350

Paraformaldehyde is a formaldehyde polymer. It is used for applications requiring a formaldehyde solution without stabilising additives.
Store product below 15 °C.

0335.1	250 g	plastic	15,60 €
0335.2	500 g	plastic	19,25 €
Original pack 6 x 500 g			18,29/500 g
0335.3	1 kg	plastic	24,65 €
Original pack 6 x 1 kg			23,42/1 kg
0335.4	5 kg	plastic	93,45 €

To prepare a 4 % paraformaldhyde solution:
Mix 4 g of paraformaldehyde into 60 ml distilled water (milky liquid), heat with frequent agitation to 60 °C. Add drop wise 1N NaOH, at pH 7 the solution becomes clear. Add distilled water until the volume reaches 100 ml then let it cool down. The solution is to be used immediately, because it is not stable at room temperature. Store in aliquots at -20 °C, is stable for approx. 6 months.

Fixing Agents for Cytology

Roti®-Fix spray fixative

ready-to-use

for cytology
For fixation of samples from cytological material.

Danger H225

Cytological smears must be fixed immediately in order to avoid artefacts. Therefore, the still moist specimens are sprayed about 3 times from a distance of 15-20 cm. After rehydration by descending alcohol series the samples can be stained as usual, e.g. by Papanicolaou staining.

Type analysis:
Alcoholic solution of ethanol and 2-propanol

CL85.1	100 ml	spray bottle	16,70 €

Fixative Mixtures

Bouin's fixative

NEW ready-to-use

for histology

For fixing of histological specimens.

Danger H302-H315-H317-H319-H335-H341-H350

The Bouin solution consists of picric acid, formaldehyde and acetic acid. It is particularly suitable for fixation prior to trichrome staining.

Type analysis:

Appearance. .....yellow liquid
Odour. .....formaldehyde
Solution contains. .....picric acid, formaldehyde, acetic acid, dem. water

6482.2	250 ml	glass	37,10 €
6482.3	500 ml	glass	51,10 €
6482.4	1 l	glass	80,10 €
Original pack 6 x 1 l			76,10/1 l

Fixation

Fixing agents: In order to stop their natural degradation process, specimens must be fixed as quickly as possible after extraction. This is usually done with pure fixing agents such as formalin or alcohol. The solutions are easy to use and lead to good results. Formalin, despite its smell and harmful properties, is still the universal fixing agent, whereas alcohol has proved to be best when fixing smears. To get fixing agents with special properties, mixtures from different fixing agents should be used. This also will compensate for the distinct handicaps of many fixing agents, e.g. shrinkage caused by high-percentage alcohol is greatly reduced when glacial acetic acid is added.

Fixing process: Alcohols, various salts and acids denature the protein molecules. The structurally altered molecules form cross-links between each other. In contrast, formalin does not denature. It binds directly to proteins and cross-links the molecules actively with each other.

Fixation of pure lipids or carbohydrates is extremely difficult. When using conventional fixing agents, they are only trapped in the tissue and often washed out in subsequent rinsing steps. Better results are achieved with frozen sections. In electron microscopy lipids can be fixed with osmium tetraoxide.

Reagents for Fixative Mixtures

Product	Purity	Art. No.	Pack Qty.	€
Acetic acid 100 %	100 %, p.a.	**3738.1**	1 l	25,30
		3738.4	1 l	23,15
		3738.2	2,5 l	53,65
		3738.5	2,5 l	51,50
		3738.6	5 l	76,25
		3738.3	10 l	128,90
Mercury(II) chloride	≥99,5 %, pure	**7904.1**	100 g	83,75
		7904.3	500 g	332,20
		7904.2	1 kg	611,70
Potassium dichromate	≥99,5 %, p.a., ACS, ISO	**P744.3**	100 g	27,45
		P744.1	500 g	98,80
		P744.2	1 kg	167,60
Propionic acid	≥99,5 %, for synthesis	**6026.2**	500 ml	15,60
		6026.1	1 l	22,50
		6026.3	2,5 l	41,85
5-Sulphosalicylic acid dihydrate	≥99 %, for biochemistry	**4119.1**	100 g	18,85
		4119.2	500 g	52,60
		4119.7	1 kg	89,15
Trichloroacetic acid solution 20 %	p.a., 20 % aqueous solution	**7437.1**	1 l	32,80
Trichloroacetic acid solution 10 %	p.a., 10 % aqueous solution	**9383.2**	1 l	26,80
		9383.1	10 l	150,00

For additional product data and safety information, see chapter Chemicals A-Z.

Safety data sheets
can be found on the Internet next to the product description.

Glutaraldehyde for Electron Microscopy

Fixation with glutaraldehyde is similar to the fixation process with formalin. Optimal results can be achieved with a concentration of 1 to 6 %.

Glutaraldehyde 50 %

for electron microscopy
50 % solution in water.
1,5-Pentanedial, Glutaric dialdehyde, Glutaral
$C_5H_8O_2$
M 100,12 g/mol

Danger
H301-H314-H317-H330-H334-H335-H410-EUH071

4995.1	500 ml	plastic	73,00 €
4995.2	2,5 l	plastic	299,95 €
Original pack 4 x 2,5 l			284,95/2,5 l

Glutaraldehyde 25 %

for electron microscopy
25 % solution in water.
1,5-Pentanedial, Glutaric dialdehyde, Glutaral
$C_5H_8O_2$
M 100,12 g/mol

Danger
H302-H314-H317-H331-H334-H335-H410-EUH071

3778.1	1 l	plastic	56,90 €
Original pack 6 x 1 l			54,06/1 l
3778.2	5 l	plastic	222,45 €
Original pack 2 x 5 l			211,33/5 l

Glutaraldehyde 25 % Mini Pack

for electron microscopy
25 % solution in water.
1,5-Pentanedial, Glutaric dialdehyde, Glutaral
$C_5H_8O_2$
M 100,12 g/mol

Danger
H302-H314-H317-H331-H334-H335-H410-EUH071

4157.1	25 ml	glass	18,85 €
4157.2	10 x 1 ml (with septum)	card board box	67,65 €

Storage of Glutaraldehyde
Ideally at 2-8 °C under protective gas (argon or nitrogen). Do not freeze!

Osmium tetraoxide for Electron Microscopy

Osmium tetraoxide is suitable for fixing lipides and proteins. Because of the low penetration power, application is primarily limited to ultra thin techniques with small tissue samples.

Osmium tetraoxide

≥99,95 %, p.a., for electron microscopy
In sealed off glass ampoules.
Osmium(VIII) oxide, Osmic acid
OsO_4M 254,20 g/molStorage temp.: +4 °C

Danger H300+H310+H330-H314

8371.1	100 mg	glass	42,50 €
8371.2	500 mg	glass	103,10 €
8371.3	1 g	glass	160,10 €

Osmium tetraoxide solution 2 %

for electron microscopy
In sealed off glass ampoules.
OsO_4Storage temp.: +4 °C

Danger H301+H331-H310-H315-H318

7436.1	5 ml	glass	39,25 €

Osmium tetraoxide solution 4 %

for electron microscopy
In sealed off glass ampoules.
OsO_4Storage temp.: +4 °C

Danger H301+H331-H310-H315-H318

8088.1	5 ml	glass	59,05 €

To prepare a 1-4 % solution of osmium tetraoxide, Art. No. 8371:

- Score the glass ampoule in centre (e.g. with glass cutter Art. No. 8209.1)
- Open it carefully at the section
- Draw the crystals into a sealable glass jar
- Add the needed amount of distilled water
- Place the sealed jar into an ultrasonic bath, the dissolution process requires 1-2 h
- Store the solution in aliquots at -20 °C in a well-sealed container

Please note: OsO_4 vapours damage the cornea and the mucous membranes of the mouth and the nose. Therefore, working with protective equipment in a fume cupboard is required!

Paraffins

In order to meet the different requirements of paraffin embedding, we provide a large selection of paraffins.

Special paraffin Roti®-Plast

- High-purity paraffin
- Top-quality for routine applications
- Available with or without DMSO
- Defined melting range
- Excellent embedding and cutting properties
- Guaranteed tested quality

Roti®-Plast

100 % paraffin, for histology
Melting range: 54-56 °C
Roti®-Plast is a special paraffin of highest quality without any additives. It penetrates the tissue quickly, completely and gives it its plasticity.

Type analysis:
Appearance. ..... white pastilles
Solidification point. ..... 54-56 °C

6642.1	1 kg		plastic	18,20 €
Original pack 6 x 1 kg				17,29/1 kg
6642.5	2,5 kg		plastic	33,25 €
6642.2	10 kg		plastic	112,80 €
6642.6	20 kg	BIG PACK	plastic	192,45 €

Roti®-Plast with DMSO

paraffin, for histology
Melting range: 56-58 °C
Special paraffin, treated with DMSO, enriched with polymers. Makes it easier to penetrate the tissue.

Type analysis:
Appearance. ..... white droplets
Solidification point. ..... 56-58 °C

6643.1	1 kg		carton	22,50 €
Original pack 6 x 1 kg				21,38/1 kg
6643.3	20 x 1 kg		carton	332,20 €
6643.2	2 kg		plastic	38,60 €

Please note:
Protein glycerol (Art. No. P049) contains egg albumin, colloidally dissolved in glycerol. At room temperature it may flocculate. But it will redissolve by gentle warming.

Low Melting Paraffins

These paraffins allow embedding already at temperatures below 55 °C.

If high solid tissue blocks are required, we recommend a final embedding step at standard temperature (56-58 °C).

Paraffin 50-52 °C

extra pure, for histology

Type analysis:
Appearance. ..... pastilles
Solidification point. ..... 50-52 °C

CN48.1	500 g		plastic	21,40 €
Original pack 6 x 500 g				20,33/500 g
CN48.2	1 kg		plastic	32,80 €
Original pack 6 x 1 kg				31,16/1 kg

Paraffin 52-54 °C

extra pure, for histology

Type analysis:
Appearance. ..... pastilles
Solidification point. ..... 52-54 °C

CN49.1	500 g		plastic	21,00 €
Original pack 6 x 500 g				19,95/500 g
CN49.2	1 kg		plastic	33,25 €
Original pack 6 x 1 kg				31,59/1 kg

Granopent® "P"

Paraffin, in pellets, for histology
Melting range: 52-54 °C

Type analysis:
Appearance. ..... white, wax-like pellets
Solidification point. ..... 52-54 °C
Needle penetration (25 °C, 1/10 mm). 14-20

9279.1	1 kg		plastic	19,90 €
Original pack 6 x 1 kg				18,91/1 kg
9279.2	2,5 kg		plastic	39,70 €

Protein glycerol ready-to-use

for microscopy
For fixing and stretching of the cuts.

Type analysis:
Appearance. ..... turbic, colourless to light yellow solution

P049.1	100 ml		glass	17,75 €

Paraplast®-Paraffins

Published on the authority of Leica Biosystems.

Paraplast® is recommended for general tissue embedding. It is composed of a refined mixture of highly purified paraffin containing plastic polymers of regulated molecular weights. This provides improved tissue infiltration and superior quality sections with minimal compression. Paraplast® gives brittle, difficult-to-section tissue an innate elasticity, producing excellent, wrinkle-free sections.

Paraplast®

for histology, in pellets

Tissue embedding medium composed of highly purified paraffin containing complex elastomers with regulated molecular weights.
Melting point: 56 °C

X880.1	1 kg	paper bag	17,75 €
Original pack	6 x 1 kg		16,86/1 kg
X880.3	3 x 1 kg	paper bag	48,30 €
X880.2	8 x 1 kg	paper bag	117,20 €

Paraplast PLUS®

for histology, in pellets

Tissue embedding medium composed of highly purified paraffin containing complex elastomers with regulated molecular weights and an addition of DMSO for large and difficult-to-infiltrate tissue samples.
Melting point: 56 °C

X881.1	1 kg	paper bag	20,35 €
X881.3	3 x 1 kg	paper bag	57,95 €
X881.2	8 x 1 kg	paper bag	123,10 €

Paraplast X-TRA®

for histology, in pellets

Tissue embedding medium composed of polymers with low molecular weights and highly purified paraffin for large and difficult-to-infiltrate tissue samples at low temperatures.
Melting point: 52 °C

X882.1	1 kg	paper bag	23,15 €
X882.2	8 x 1 kg	paper bag	160,20 €

Our Tip:
Heat Paraplast paraffin to maximum 62 °C.
Higher temperatures may damage the synthetic additives.

Cryo-Embedding

For preparation of cryo-sections.

Solidofix®-Cryo spray ready-to-use

for histology

Freezing of histological specimens. Cooling of paraffin blocks. Cooling to -45 °C.

Danger H222-H229

Application:
The tissue is sprayed for a few seconds with Solidofix®-Cryo spray. Then it can be cut.

Properties:
- Solidofix®-Cryo spray cools quickly and gently down to -45 °C
- Contents: Propane/butane gas
- For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

T200.1	300 ml	spray bottle	8,85 €
T200.2	5 x 300 ml	spray bottle	34,30 €

OCT Embedding Matrix ready-to-use

for histology

Embedding medium for frozen tissue sections.

OCT is a cryo embedding matrix designed for cryostat sectioning of tissue specimens at temperatures of -10 °C and below. OCT is designed as a supportive and protective aid. The resulting frozen sections are used to rapidly perform examination in laboratory.

Type analysis:

Appearance	viscous, colourless liquid
Spec. gravity	1,032-1,040
Micro examination	free of undissolved matter
Film	hazy

6478.1	125 ml	plastic	25,70 €
6478.2	3 x 125 ml	plastic	70,45 €

Embedding Media for Electron Microscopy

Glycidether 100
for electron microscopy
Formerly known as Epon 812, Epoxipropyl ether of glycerol.
Epon 812

Warning H319-H335

8619.1	500 g	glass	37,55 €
Original pack 6 x 500 g			35,67/500 g
8619.2	2,5 kg	glass	134,95 €

Glycidether Hardener DBA
for glycidether 100
DDSA, 2-Dodecenylsuccinic acid anhydride

Warning H315-H319-H335

8623.1	100 g	glass	27,45 €
8623.2	1 kg	glass	161,25 €
Original pack 6 x 1 kg			153,19/1 kg

Glycidether Hardener MNA
for glycidether 100
1-Methyl-5-norbornene-2,3-dicarboxylic acid anhydride, Methylnadic anhydride
$C_{10}H_{10}O_3$
M 178,15 g/mol

Danger H334-H302-H335-H315-H319

8639.1	100 g	glass	33,25 €
8639.2	1 kg	glass	222,45 €
Original pack 6 x 1 kg			211,33/1 kg

Glycidether Accelerator DMP-30
for glycidether 100
2,4,6-Tris(dimethylaminomethyl)-phenol

Warning H302-H315-H319

8621.1	100 g	glass	25,30 €

Methacrylic acid methyl ester
≥99 %, extra pure
For electron microscopy.
Methyl methacrylate
$C_5H_8O_2$
M 100,12 g/mol

Danger H225-H315-H317-H335

4233.7	250 ml	glass	14,55 €
4233.1	1 l	glass	31,10 €
Original pack 6 x 1 l			29,55/1 l
4233.2	2,5 l	glass	62,25 €
Original pack 4 x 2,5 l			59,14/2,5 l
4233.8	25 l	tinplate	482,70 €

Gelatine Capsules
for electron microscopy
No. 0, length 22 mm, diameter 7 mm, volume 0,68 ml.
Capsules are made of hard gelatine, usually 200-260 Bloom.
Appearance: clear, colourless.

8641.1	100 pieces	plastic	19,25 €

Hydrophilic Carbowax-Embedding

This method is particularly suitable for histochemical specimens. It is based on the ability of polyethylene glycol (PEG, carbowax) to polymerise and, therefore, to build hardened blocks.

Polyethylene glycol 400
ROTIPURAN® Ph.Eur.
Type 400 (liquid), PEG 400, Polyglycol, Polyoxyethylene
M 380-420 g/mol

0144.1	1 l		plastic	27,85 €
Original pack 6 x 1 l				26,46/1 l
0144.2	5 l		plastic	95,60 €
Original pack 2 x 5 l				90,82/5 l
0144.3	25 kg	BIG PACK	plastic	332,20 €

Polyethylene glycol 1000
ROTIPURAN® Ph.Eur.
Type 1000 (solid), PEG 1000, Polyglycol, Polyoxyethylene
M 950-1050 g/mol

0150.3	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
0150.1	1 kg	plastic	32,15 €
Original pack 6 x 1 kg			30,54/1 kg
0150.2	5 kg	plastic	113,85 €

Polyethylene glycol 1500
ROTIPURAN® Ph.Eur.
Type 1500 (solid), PEG 1500, Polyglycol, Polyoxyethylene
M 1400-1600 g/mol

0152.3	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
0152.1	1 kg	plastic	32,15 €
Original pack 6 x 1 kg			30,54/1 kg
0152.2	5 kg	plastic	113,85 €

Polyethylene glycol 2000
ROTIPURAN® Ph.Eur.
Type 2000 (solid), PEG 2000, Polyglycol, Polyoxyethylene
M 1800-2200 g/mol

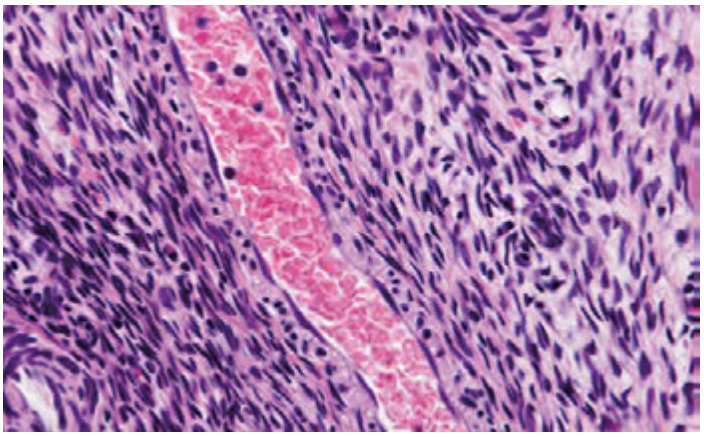
0154.3	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
0154.1	1 kg	plastic	32,15 €
Original pack 6 x 1 kg			30,54/1 kg
0154.2	5 kg	plastic	113,85 €

▶ Our complete range of polyethylene glycol see chapter Chemicals A-Z.

▶ Accessories for Embedding see chapter Labware - Laboratory Glass, Vessels & Consumables / Microbiology, Histology & Instruments.

Staining Solutions & Kits

for histology, microscopy and cytology.



ROTH staining solutions have been developed, tested and optimised for scientific routine applications.

Ready-to-use staining solutions:
- Simple, quick and solid application
- Excellent quality
- Specially selected starting material
- Good reproducibility

Staining Methods for Blood Smears

ready-to-use

We offer staining solutions for classic preparing of blood elements and for other standard assays, e.g. detection of blood parasites or bacteria.

LOEFFLER's methylene blue solution

for microscopy and cell counting

For visualising nuclei.

Methylene blue solution 0,5 %

LÖFFLER'S methylene blue solution is used for staining bacteria, fungi and blood parasites in blood smears, e.g. together with carbolic fuchsine solution (Art. No. A130) for Ziehl-Neelsen staining (detection of TB bacteria). Furthermore, it is used as a vital staining agent for selective staining of nuclei during counting of eukaryotic cells.

AE64.1	500 ml	glass	25,30 €
AE64.2	1 l	glass	31,75 €
Original pack 6 x 1 l			30,16/1 l
AE64.3	2,5 l	plastic	65,50 €
Original pack 4 x 2,5 l			62,23/2,5 l

Wright's eosin methylene blue solution

for microscopy

For differential staining of blood and bone marrow smears.

Wrights staining solution, eosin methylene blue solution acc. to Wright.

Danger H225-H370-H301+H311+H331

Wrights eosin methylene blue solution is used especially for staining blood and bone marrow smears. Additionally, there are various applicabilities in staining of cytological material such as urine, sputum etc.

CN05.1	500 ml	glass	26,35 €
CN05.2	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l

Application range:
Giemsa- and May-Grünwald-solution can be combined and then used to obtain particularly high-contrast staining ("Panoptic staining according to Pappenheim").

▶ Buffer solution acc. to Weise see page 1501

May-Gruenwald's solution

for microscopy

For differential staining of blood smears and cytological specimens.

Eosine methylene blue solution

Danger H225-H370-H301+H311+H331

May-Gruenwald's solution is a methanolic solution of eosin methylene blue. Due to the high concentration of methanol, the specimens are fixed at the same time (recommended residence time: 3 min).
May-Gruenwald's solution is used for differential staining of blood smears and cytological specimens.

T863.1	500 ml	plastic	24,20 €
T863.2	1 l	glass	28,50 €
Original pack 6 x 1 l			27,08/1 l
T863.3	2,5 l	plastic	59,70 €
Original pack 4 x 2,5 l			56,72/2,5 l

Giemsa stock solution

for microscopy

For differential staining of blood and bone marrow smears.

Azure eosin solution

Danger H225-H301+H311+H331-H370

Giemsa solution contains azure, eosine, methanol and glycerin. Before staining a fixing step with methanol for about 10 min is recommended. Giemsa solution is appropriate for use in all current assays of blood and bone marrow smears.
Working solution: Dilute stock solution at a ratio of 1:20 (e.g. 0.5 ml with 9.5 ml dist. water).

T862.1	500 ml	plastic	26,80 €
T862.2	1 l	glass	39,70 €
Original pack 6 x 1 l			37,72/1 l
T862.3	2,5 l	plastic	85,50 €
Original pack 4 x 2,5 l			81,23/2,5 l

Panoptical fast staining kit

for microscopy

Staining kit for fast oversight staining of blood smears and other cytological preparations (modified method acc. to Pappenheim), incl. instructions for use.

Pappenheim fast stainingStorage temp.: +20 °C

Danger H225-H301+H311+H331-H370

Formulation:
Panoptical fast staining solution 1 (Art. No. 8934)
Panoptical fast staining solution 2 (Art. No. 8935)
Panoptical fast staining solution, fixatif (Art. No. 8939)

Contents of this kit may not be bought separately.

6487.1	1 kit (3 x 250 ml)	plastic	80,10 €
6487.2	1 kit (3 x 500 ml)	plastic	144,60 €

Elastica Staining ready-to-use

ROTH staining solutions for preparing elastic fibres in tissue sections.

Nuclear fast red aluminium sulphate solution

for microscopy

For visualising nuclei e.g. during Elastica Staining.

Danger H318

N069.1	500 ml	glass	33,25 €

Resorcinol-Fuchsine-solution acc. to Weigert

for microscopy

For visualising elastic fibres.
WEIGERT'S Resorcinol-Fuchsine-solution

Danger H225-H302+H312+H332-H319-H317-H370-H336

X877.1	500 ml	glass	33,90 €
X877.2	1 l	glass	57,95 €
Original pack 6 x 1 l			55,05/1 l
X877.3	2,5 l	plastic	116,65 €
Original pack 4 x 2,5 l			110,82/2,5 l

Elastica van Gieson staining kit

for microscopy

Staining kit for visualising connective tissue with elastic fibres, incl. instructions for use. Isolated solutions at the following pages.
Storage temp.: +20 °C

Danger H224-H302-H312-H332-H318-H336-H370-EUH001

Formulation:

Hematoxylin solution A acc. to Weigert (Art. No. X906)..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907)..... 500 ml
Van Gieson's Solution (Art.-No. 3925)..... 500 ml
Resorcinol-Fuchsine-solution acc. to Weigert (Art. No. X877)..... 500 ml

8275.1	1 kit	glass	133,85 €

Our Tip:
The ready-to-use staining solutions should be filtrated before use.

Staining protocols
can be found on the internet next to the product description.

Hematoxylin-Eosin Staining (H&E Staining) ready-to-use

Simple and quick staining method for visualising nuclei and cytoplasm.

Hemalum solution acid acc. to Mayer

for microscopy

For visualising nuclei..

Warning H302-H315-H319

T865.1	500 ml	glass	26,80 €
T865.2	1 l	glass	44,00 €
Original pack 6 x 1 l			41,80/1 l
T865.3	2,5 l	plastic	79,45 €
Original pack 4 x 2,5 l			75,48/2,5 l

Eosin Y solutions

For visualising cell structures during standard staining methods.

Product	Purity	Art. No.	Pack Qty	€
Eosin Y solution 0,5 % in water	for microscopy	**X883.1**	500 ml	21,00
		X883.2	1 l	29,60
Eosin Y solution 1 % in water		**3137.1**	500 ml	23,15
		3137.2	1 l	32,80
Eosin Y solution 1 % in methanol		**3139.1**	500 ml	26,80
		3139.2	1 l	40,35

For additional product data and safety information, see chapter Chemicals A-Z.

H&E fast staining kit

for microscopy

Staining kit for fast oversight staining of tissue sections. Hematoxylin-eosin staining, incl. instructions for use.
Storage temp.: +20 °C

Danger H225-H301+H311+H331-H370-H318

Formulation:

Fast staining H&E, solution 1 (Art. No. 8947)
Fast staining H&E, solution 2 (Art. No. 8950)
Contents of this kit may not be bought separately.

9194.1	2 x 250 ml	plastic	54,75 €
9194.2	2 x 500 ml	plastic	80,10 €

Trichrome Staining

ready-to-use

A standard staining method for analysis of connective tissue, allowing a differentiated visualisation of various fibres of connective tissue against epithelial and muscle tissue.

We offer the necessary solutions for staining acc. to Masson-Goldner and van Gieson and in addition hematoxylin solutions for acid resistant staining of nuclei acc. to Weigert.

Hematoxylin solutions acc. to Weigert

For visualising nuclei.

Working solution:
Mix WEIGERT'S solution A and WEIGERT'S solution B at a ratio of 1:1 prior to use (iron hematoxylin solution). This working solution is stable for 8 days in maximum at room temperature.

Product	Synonym	Purity	Art. No.	Pack Qty	€
Hematoxylin solution A acc. to Weigert	Solution A acc. to Weigert	for microscopy	**X906.1**	500 ml	56,90
Hematoxylin solution B acc. to Weigert	Solution B acc. to Weigert		**X907.1**	500 ml	21,40

For additional product data and safety information, see chapter Chemicals A-Z.

Weigert's iron hematoxylin staining kit

for microscopy

Staining kit for acid resistant staining of nuclei, incl. instructions for use.
Storage temp.: +20 °C

Danger H225-H318-H336

Formulation:
Hematoxylin solution A acc. to Weigert (Art. No. X906)..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907)..... 500 ml

9192.1	1 kit	glass	76,25 €

Application range:
WEIGERT'S iron hematoxylin solution results in very acidoresistant staining of nuclei. Therefore, the method is particularly suitable for staining delimed tissues and for sections intended to be counter-stained with acid dyes.

Masson-Goldner's trichrome staining kit

for microscopy

Staining kit for visualising connective tissue (Masson-Goldner trichrome staining), incl. instructions for use.
Storage temp.: +20 °C

Danger H225-H315-H318-H336

Application: Firstly the nuclei are stained with Weigert's iron hematoxylin solution, an acidoresistant staining. Subsequently the trichrome staining is carried out with the acid stains acc. to Goldner. Every staining step is followed by a rinsing step with acetic acid 1%. This reagent is not included to the kit.
Result: Visualisation of nuclei, cytoplasm, muscle, erythrocytes, connective tissue.

Formulation:
Hematoxylin solution A acc. to Weigert (Art. No. X906)..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907)..... 500 ml
Goldner's stain I (Art. No. 3469)..... 500 ml
Goldner's stain II (Art. No. 3470)..... 500 ml
Goldner's stain III (Art. No. 3473)..... 500 ml

3459.1	1 kit	glass	162,25 €

Van Gieson's Solution

for microscopy

For visualising connective tissue during van Gieson trichrome staining and Elastica van Gieson staining.
Van Gieson's picrofuchsin

EUH001

Application: First the nuclei are stained with Weigert's iron hematoxylin solution (Art. No. X906.1 Hematoxylin solution A and Art. No. X907.1 Hematoxylin solution B at a ratio of 1:1). Subsequently the trichrome staining is carried out with van Gieson's picrofuchsin solution.
Result: Visualisation of nuclei, connective tissue, cytoplasm, muscle and other tissue components.

3925.1	500 ml	glass	25,70 €
3925.2	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l

Van Gieson trichrome staining kit

for microscopy

Staining kit for visualising connective tissue, incl. instructions for use.
Storage temp.: +20 °C

Danger H225-H318-H336-EUH001

Formulation:
Hematoxylin solution A acc. to Weigert (Art. No. X906)..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907)..... 500 ml
Van Gieson's Solution (Art.-No. 3925)..... 500 ml

9193.1	1 kit	glass	99,90 €

Goldner's staining solutions

For visualising connective tissue (Masson-Goldner trichrome staining).

Product	Synonym	Purity	Art. No.	Pack Qty	€
Goldner's staining I	Ponceau-Fuchsin solution	for microscopy	**3469.1**	500 ml	28,95
			3469.2	1 l	40,75
Goldner's staining II	Phosphotungstic acid-Orange G solution		**3470.1**	500 ml	52,15
			3470.2	1 l	88,05
Goldner's staining III	Light green SF yellowish solution		**3473.1**	500 ml	30,00
			3473.2	1 l	39,70

For additional product data and safety information, see chapter Chemicals A-Z.

Staining protocols
can be found on the internet next to the product description.

PAS-Staining ready-to-use

PAS staining kit
for microscopy
Staining kit for Periodic Acid Schiff (PAS) staining, incl. instructions for use.
Storage temp.: +4 °C

Danger H302-H315-H319-H350

Periodic Acid Schiff staining is generally used for detecting carbohydrates in tissue.

Formulation:
Periodic acid solution 1 % (Art. No. HP00)..... 500 ml
Schiff´s reagent (Art. No. X900)..... 500 ml
Hemalum solution acid acc. to Mayer (Art. No. T865)..... 500 ml

HP01.1	1 kit	glass	85,90 €

Periodic acid solution 1 %
for microscopy
For hydrolysis of carbohydrates, e.g. in PAS reaction (Periodic Acid Schiff reaction).
$H_5IO_6 + H_2O$

Warning H315-H319

HP00.1	500 ml	glass	40,75 €

Schiff's reagent
for microscopy
Staining reagent for detection of carbohydrates in tissue (PAS reaction).
Fuchsine sulphurous acid

Danger H350

Schiff´s reagent has a wide spectrum of application in PAS reaction (Periodic Acid Schiff reaction), in combined alcian blue PAS staining and as a reagent for detecting aldehydes.
Storage: At room temperature in the dark. After the bottle has been opened well-sealed at 4-8 °C. Discard the solution if it turns reddish.

X900.1	500 ml	glass	23,15 €
X900.2	1 l	glass	31,10 €
Original pack 6 x 1 l			29,55/1 l

Alcian blue 1 % in acetic acid 3 % ready-to-use
for microscopy
For selective staining of acidic mucins.
Alcian Blue solution 1 %
The solution stains acidic mucopolysaccharides in tissue blue. Often the staining is combined with the PAS reaction.

1431.1	500 ml	glass	155,80 €
1431.2	1 l	glass	235,45 €
Original pack 6 x 1 l			223,68/1 l

Cytological Routine Staining

Ready-made solutions for routine applications, like, e.g., staining acc. to Papanicolaou, which is mainly used for visualisation of cancer cells. ready-to-use

Hematoxylin solution acc. to Delafield
20x conc., for microscopy
Delafield's hematoxylin solution

Danger H225-H370-H332+H312+H302

Dilution for use: 1:20 in distilled water (staining 30 min).

Type analysis:
Suitability for microscopy..... complies

CN03.1	500 ml	glass	39,70 €

Hematoxylin solution acid acc. to Ehrlich
for microscopy
Ehrlich's acid hematoxylin solution

Danger H225-H319-H336

Type analysis:
Suitability for microscopy..... complies

CN04.1	500 ml	glass	39,70 €

Hematoxylin solution acc. to Gill II
for microscopy

Danger H302-H318-H373-EUH208

Type analysis:
Suitability for microscopy (tissue section)..... complies

T864.1	500 ml	glass	39,70 €
T864.2	1 l	glass	56,90 €
Original pack 6 x 1 l			54,06/1 l
T864.3	2,5 l	plastic	110,65 €
Original pack 4 x 2,5 l			105,12/2,5 l

Hematoxylin solution acc. to Harris
for microscopy
Harris Hematoxylin solution, Papanicolaou solution 1a

Type analysis:
Suitability for microscopy (tissue section)..... complies

X903.1	500 ml	glass	34,30 €
X903.2	1 l	glass	53,25 €
Original pack 6 x 1 l			50,59/1 l
X903.3	2,5 l	plastic	110,65 €
Original pack 4 x 2,5 l			105,12/2,5 l

Papanicolaou-orange solution 2a (OG 6)
for microscopy

Danger H225

Type analysis:
Suitability for microscopy..... complies

T867.1	500 ml	glass	24,20 €
T867.2	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l
T867.3	2,5 l	plastic	75,15 €
Original pack 4 x 2,5 l			71,39/2,5 l

Papanicolaou solution 2b Orange II solution
for microscopy

Danger H225-H301+H311+H331-H370-H319

Type analysis:
Suitability for microscopy. ..... complies

AE62.1	500 ml	glass	32,15 €
AE62.2	1 l	glass	42,50 €
Original pack 6 x 1 l			40,38/1 l
AE62.3	2,5 l	plastic	77,30 €
Original pack 4 x 2,5 l			73,44/2,5 l

Papanicolaou polychrome solution 3a (EA31)
for microscopy

Danger H225-H301+H311+H331-H370-H319

Type analysis:
Suitability for microscopy. ..... complies

AE63.1	500 ml	glass	26,80 €
AE63.2	1 l	glass	40,35 €
Original pack 6 x 1 l			38,33/1 l
AE63.3	2,5 l	plastic	85,90 €
Original pack 4 x 2,5 l			81,61/2,5 l

Papanicolaou polychrome solution 3b (EA 50)
for microscopy

Danger H225-H301+H311+H331-H370-H319

Type analysis:
Suitability for microscopy. ..... complies

T866.1	500 ml	glass	28,50 €
T866.2	1 l	glass	38,20 €
Original pack 6 x 1 l			36,29/1 l
T866.3	2,5 l	plastic	79,45 €
Original pack 4 x 2,5 l			75,48/2,5 l

PAP fast staining kit
for microscopy

Staining kit for fast staining of cytological smears (fast staining acc. to Papanicolaou), incl. instructions for use.
Storage temp.: +20 °C

Danger
H225-H302+H312+H332-H319-H370-H373-EUH208

Formulation:
PAP fast staining, solution 1 (Art. No. 9197)
PAP fast staining, solution 2 (Art. No. 9199)
Contents of this kit may not be bought separately.

9195.1	2 x 250 ml	plastic	61,20 €
9195.2	2 x 500 ml	plastic	94,50 €

▶ Accessories for staining see chapter Labware - Laboratory Glass, Vessels & Consumables / Microbiology, Histology & Instruments.

Staining protocols
can be found on the internet next to the product description.

Bacteriological Staining

Staining of acid-fast bacteria ready-to-use

Acid-fast bacteria (e.g. Mycobacteria) cannot or only difficult be stained by usual staining methods due to the high proportion of lipids in their cell walls.

The most popular method for staining of acid-fast bacteria is the hot staining method acc. to Franz Ziehl and Friedrich Neelsen (Ziehl-Neelsen staining), in which the cell walls are "melted" by heating.

Furthermore cold staining methods have been developed like Kinyoun, Gabett or Ziehl-Neelsen (cold) to avoid harmful vapours resulting in the hot staining method.

Ziehl-Neelsen staining kit
for microscopy

Staining kit for visualising acid-fast bacteria (e.g. pathogen of TB *Mycobacterium tuberculosis*), incl. instructions for use.
Isolated solutions see p. 1452 and 1457
Storage temp.: +20 °C

Danger H314-H341-H371

Formulation:
Löffler's methylene blue solution (Art. No. AE64)..... 500 ml
Carbol fuchsine solution (Art. No. A130)..... 500 ml

8276.1	1 kit	glass	46,15 €

Methylene blue solution 0.1 %, aqueous
for microscopy

For staining of nuclei.
Gabett solution
Aqueous methylene blue solution without further additives for staining of nuclei. It is used for cold staining of acid-fast bacteria (e. g. Mycobacteria). Methods are Kinyoun or Gabett's staining.

1433.1	250 ml	glass	20,35 €
1433.2	500 ml	glass	25,30 €
1433.3	1 l	glass	32,80 €
Original pack 6 x 1 l			31,16/1 l

Neisser Staining ready-to-use

Standard staining method in bacteriology, especially used for visualising diphtheria bacteria.

Product	Synonym	Purity	Art. No.	Pack Qty.	€
Neisser's solution I	Methylene blue solution 0,1 % acid	for microscopy	**3463.1**	100 ml	19,90
			3463.2	500 ml	37,55
Neisser's solution II	Crystal violet solution		**3464.1**	100 ml	19,90
			3464.2	500 ml	37,55
Neisser's solution III	Chrysoidine solution 0,3 %		**3466.1**	100 ml	19,90
			3466.2	500 ml	37,55

For additional product data and safety information, see chapter Chemicals A-Z.

Gram Staining

ready-to-use

Gram staining is the most important technique for differentiation and identification of bacteria. It was developed by the Danish bacteriologist Hans Christian Gram (1853-1938).

Due to the structure of their cell walls nearly all bacterial species can be differentiated in gram-positive and gram-negative bacteria.

Gram staining kit

for microscopy

Kit for differentiation of gram-positive and gram-negative bacteria, incl. instructions for use.

Storage temp.: +20 °C

Danger H225-H314-H302+H312+H332-H336-H341

This classical staining method allows a quick differentiation of gram-positive and gram-negative bacteria. Subsequently a specific treatment with antibiotics is possible.

Application:

In the first step bacteria are stained by Carbol gentianaviolet and Lugol solution. Afterwards gram-negative bacteria are decolourised by Gram's decolourising solution. In the last step these bacteria are counterstained by Carbol fuchsine solution.

Result:

Gram-positive bacteria appear blue, gram-negative bacteria red.

Formulation:

Carbol gentianaviolet solution (Art. No. CN00). ..... 500 ml
Iodine-potassium iodide solution acc. to Lugol (Art. No. N052). ..... 500 ml
Gram's decolourising solution (Art. No. CN02). ..... 500 ml
Carbol fuchsine solution (Art. No. A130). ..... 500 ml

HP02.1	1 kit	glass	90,85 €

Gram's decolourising solution

for Gram staining

Ethanolic solution containing 25 % acetone. It is used for differentiation of bacteria during Gram staining.

Danger H225-H319-H336-EUH066

Ethanolic solution containing 25 % acetone. It is used for differentiation of bacteria during Gram staining.

CN02.1	500 ml	glass	23,15 €

Iodine-potassium iodide solution acc. to Lugol

for microscopy

For Gram staining.

Lugol solution

Warning H373

1 % aqueous iodine solution. Contains ~3,3 g/l iodine and ~6,7 g/l potassium iodide.

N052.1	250 ml	glass	17,75 €
N052.3	500 ml	glass	24,65 €
N052.2	1 l	glass	30,65 €
Original pack 6 x 1 l			29,12/1 l

Our Tip:

The ready-to-use staining solutions should be filtrated before use.

Carbolic fuchsine solution

for microscopy

For bacterial staining (Gram staining and staining of acid-fast bacteria, e.g. TB bacteria acc. to Ziehl-Neelsen).

Danger H314-H341

A130.2	500 ml	glass	23,15 €
A130.1	1 l	glass	35,40 €
Original pack 6 x 1 l			33,63/1 l

Carbol gentian violet solution

for microscopy

For Gram staining.

Warning H226-H319

The solution is used for the first step of Gram staining. It can be applied like crystal violet solution acc. to Gram. Gentian violet and crystal violet are two different names for the same dye.

Type analysis:

Suitability for microscopy. ..... complies

CN00.1	500 ml	glass	23,55 €
CN00.2	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l

Safranin solution

for Gram staining

1 % safranine solution in water. Replaces Carbolic fuchsine solution during staining procedure of gram-negative bacteria.

CN01.1	500 ml	glass	33,25 €

Preparation of an oxalate gentian violet solution

Dissolve 0.8 g ammonium oxalate (Art. No. P737.1) in 80 ml dist. water. Then dissolve 2 g gentian violet (crystal violet, Art. No. T123.1) in 20 ml 96 % ethanol (Art. No. T171.1). Mix both solutions well. Filter solution before using.

Lactophenol Blue Staining

ready-to-use

Staining method for identification and visualisation of fungi cells during microbiological assays.

Lactophenol blue solution
for microscopy

Fungal stain for microbiological material.

Danger H302+H312+H332-H314-H341-H373

Lactophenol blue solution is used to visualise fungi cells in air-dried, heat-fixed smears of various cytological materials. After staining the fungi cells appear dark blue.

3097.1	100 ml	glass	26,35 €

Staining of Cellulose According to Behrens

ready-to-use

Zinc iodine chloride solution
acc. to Behrens, for microscopy

Reagent for cellulose.

Danger H302-H314-H373-H410

Type analysis:

Appearance. ..... yellowish-brown solution

6395.1	100 ml	glass	26,35 €

Performing detection of cellulose:

Add one drop of the solution to the section applied to a slide. After 30 min in maximum cellulose fibres are stained blue; wood, cork and cutin are stained yellow. The cellulose staining is a dichroitic staining. Depending on the polarisation direction of light different wavelengths of light are absorbed. Thus the dye changes from dark blue to colourless.

Acc. to Dieter Gerlach: Bot. Mikrotechnik, 2. Edition, Thieme (1977)

Safety data sheets

can be found on the Internet next to the product description.

Dyes

ROTH offers a wide range of staining agents in a tried and tested quality for use in botany, bacteriology, histology and cell culture.

Chromogenic Dyes

Alcian blue 8 GS (C.I. 74240)
for microscopy

Bacteriology and histology.

Alcian Blue 8 GX, Ingrain Blue 1

Basic dye, soluble in diluted acetic acid solution (0.1 % - 3 %) in concentrations of 0.05 % to 1 %. Used e.g. for staining of glycoproteins as an alternative to PAS-Staining.

3082.2	5 g	glass	36,45 €
3082.1	10 g	glass	62,25 €
3082.3	25 g	glass	137,10 €
3082.4	100 g	glass	418,20 €

Acid blue 93 (C.I. 42780)
p.a., water soluble

For staining of histological sections and for cytology.

Aniline blue water soluble, Methyl blue

$C_{37}H_{27}N_3O_9S_3Na_2$

M 799,81 g/mol

Acid blue 93 is a plasma stain. It is often used in trichome stains to visualise connective tissue. Solution 1 % in water.

4002.1	10 g	glass	77,30 €
4002.2	25 g	glass	167,60 €

Astra blue FM (C.I. 48048)
for microscopy

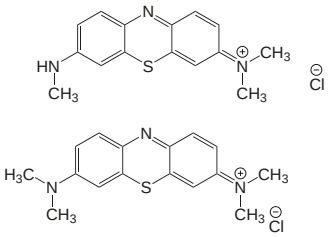
$C_{47}H_{52}CuN_{14}O_6S_3$

M 1068,75 g/mol

Warning H315-H319-H335

Soluble in water (0.5 %), staining reagent for cellulose.

5165.1	10 g	glass	13,90 €
5165.2	50 g	glass	28,95 €



Azure II

for microscopy

1:1 mixture of Azure B and Methylen blue

$C_{16}H_{18}ClN_3S \cdot C_{15}H_{16}ClN_3S$

M 625,68 g/mol

Warning H302-H412

Azure II is a mixture of equal parts of the basic coal tar dyes methylene blue and Azure B. These dyes are mainly used for staining of blood elements (e.g. in Giemsa staining solution, Art. No. T862). In watery solution they form special salts with the acid eosin, the eosinates.

7640.1	1 g	glass	11,75 €
7640.2	10 g	glass	19,90 €
7640.3	50 g	glass	48,30 €

Azure II eosinat

for microscopy

1:1:1 mixture of Azure B, Methylen blue and Eosine Y

$C_{16}H_{18}ClN_3S \cdot C_{15}H_{16}ClN_3S \cdot C_{20}H_6Br_4Na_2O_5$

M 1317,92 g/mol

Danger H318

Azure II is a mixture of equal parts of the basic coal tar dyes methylene blue, Azure B and eosin. It is mainly used for staining of blood elements (e.g. in Giemsa staining solution, Art. No. T862). In watery solution it forms Azure B eosinates which cause the so called "Romanowsky-Giemsa effect", a polychromatic, pH-dependent staining of chromatin.

7642.1	5 g	glass	19,25 €
7642.2	25 g	glass	36,45 €
7642.3	100 g	glass	106,35 €

Azure B (C.I. 52010)

for microscopy

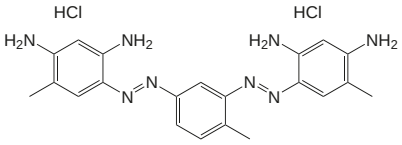
N,N,N'-Trimethylthionin, Azure I

$C_{15}H_{16}ClN_3S$

M 305,83 g/mol

Azure B belongs to the basic coal tar dyes (methylene blue and its derivatives). These dyes are mainly used for staining of blood elements. In watery solution they form special salts with the acid eosin, the eosinates. Besides eosin and methylene blue Azure B is the main component of Giemsa staining solution (Art. No. T862). The Azure B eosinates in the solution cause the so called "Romanowsky-Giemsa effect", a polychromatic, pH-dependent staining of chromatin.

7637.1	5 g	glass	14,55 €
7637.2	25 g	glass	24,65 €
7637.3	100 g	glass	62,25 €



Bismarck brown R (C.I. 21010)

for microscopy

For modified Coomassie Blue-staining.

Basic brown 4, Vesuvin R

$C_{21}H_{24}N_8 \cdot 2\ HCl$

M 461,40 g/mol

Basic azo dye, soluble in ethanol or methanol (1 - 3 %), low-soluble in water (0.5 %). Used for staining of brown alga, for mucus and vital staining. Ingredient of staining solutions according to Papanicolaou.

0316.1	25 g	plastic	20,35 €

Bismarck brown Y (C.I. 21000)

for microscopy

Basic Brown 1, Bismarck brown G

$C_{18}H_{18}N_8 \cdot 2\ HCl$

M 418,33 g/mol

0313.1	10 g	glass	19,90 €
0313.2	25 g	glass	34,30 €

Brilliant cresyl blue (C.I. 51010)

p.a.

Brilliant blue C

$(C_{17}H_{20}N_3O)_2 \cdot ZnCl_4$

M 385,96 g/mol

Warning H315-H319-H335

Basic vital dye, soluble in water (3 %) and ethanol (2 %).

5162.1	5 g	glass	23,55 €
5162.2	10 g	glass	35,40 €

Brilliant green (C.I. 42040)

for microscopy

Indicator pH 0,0-2,6

Basic green 1, Malachite green G, Diamond green G, Ethyl green

$C_{27}H_{34}N_2O_4S$

M 482,64 g/mol

Warning H302-H319

Basic dye, soluble in water and alcohol (1-5 %). Used e.g. for spore staining according to Rakette (substitute for malachite green).

0324.1	25 g	glass	18,20 €
0324.2	100 g	plastic	40,75 €

Bromophenol blue

ACS, for microscopy

Indicator pH 3,0-4,6

3,3',5,5'-Tetrabromophenolsulphonphthalein, BPB

$C_{19}H_{10}Br_4O_5S$

M 669,99 g/mol

Well-soluble in ethanol, used for vital staining of spermatozoa.

T116.1	5 g	glass	22,50 €
T116.2	10 g	glass	30,00 €
T116.3	25 g	glass	47,20 €

Carmine (C.I. 75470)

for microscopy

Karmin

$C_{22}H_{20}O_{13}$
M 492,38 g/mol

Water-insoluble natural dye, obtained from dried female scale insects (Cochenille). Main ingredient is carminic acid. For use as a dye in microscopy it is applied in conjunction with a mordant, usually based on aluminium, producing a well-staining calcium aluminium lake of carminic acid.

6859.1	10 g	glass	46,15 €
6859.2	25 g	glass	96,25 €

Celestine blue (C.I. 51050)

for microscopy

$C_{17}H_{18}ClN_3O_4$
M 363,80 g/mol

A watery solution of Celestine blue Hemalum is used for acid resistant staining of nuclei. It replaces Weigert's iron hematoxylin solution e.g. during trichrome staining.

7646.1	5 g	glass	25,30 €
7646.2	25 g	glass	91,95 €
7646.3	100 g	glass	310,70 €

Chromotrope® 2R (C.I. 16570)

for microscopy

Indicator for complexometry.

$C_{16}H_{10}N_2Na_2O_8S_2$
M 468,39 g/mol

Warning H315-H319-H335

Water soluble azo dye, stains cytoplasm red. Commonly used in concentrations of 0.5-1.0 %.

4937.2	10 g	glass	30,00 €
4937.1	50 g	glass	110,65 €

Congo red (C.I. 22120)

for microscopy

Bacteriology, indicator pH 3,0-5,0

Direct Red 28, Disodium-3,3'[[1,1-biphenyl]-4,4'-diylbis(azo)]bis(4-amino-naphthalin-1-sulphonate)

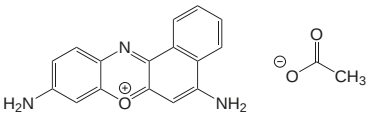
$C_{32}H_{22}N_6Na_2O_6S_2$
M 696,66 g/mol

Danger H350-H361d

Azo dye, soluble in water (colloidal solution) and ethanol. A 1% solution in ethanol is used for detection of amyloid proteins (= abnormally mutated proteins).

0322.1	5 g	glass	16,05 €
0322.2	25 g	glass	29,60 €
0322.3	100 g	glass	59,05 €

▶ Ready-made staining solutions
see from page 1510



Cresyl violet acetate

p.a.

Cresyl echt violet, Cresyl fast violet

$C_{18}H_{15}N_3O_3$
M 321,34 g/mol

Cresyl violet acetate is a nuclear stain. It is used for visualising nerve tissue during Nissl staining. Usually, a 1% solution in water is applied.

7651.1	5 g	glass	55,80 €
7651.2	10 g	glass	94,50 €
7651.3	25 g	glass	219,85 €

Crystal violet (C.I. 42555)

p.a., ACS

Indicator pH 0,0-2,0

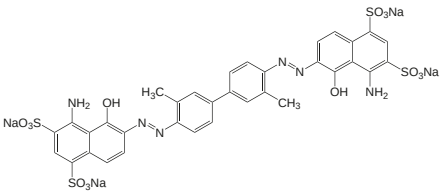
Hexamethylpararosaniline chloride, Methyl violet 10B, Gentian violet

$C_{25}H_{30}ClN_3$
M 407,99 g/mol

Danger H318-H351-H400-H410-H302

Crystal violet, also called gentian violet, is soluble in water and alcohol and is used for multiple histological stains, e.g. Gram staining.

T123.2	5 g	glass	17,75 €
T123.1	25 g	glass	27,85 €
T123.3	100 g	glass	71,95 €



Evan's blue (C.I. 23860)

for microscopy

Direct Blue 53

$C_{34}H_{24}N_6Na_4O_{14}S_4$
M 960,82 g/mol

Danger H350-H361d

Diazo dye for intravital staining.

7684.1	5 g	glass	27,85 €
7684.2	25 g	glass	56,90 €
7684.3	100 g	glass	188,15 €

Fast Green FCF

for microscopy

For staining proteins.

Food Green 3

$C_{37}H_{34}N_2Na_2O_{10}S_3$
M 808,84 g/mol

Warning H341

Soluble in ethanol and water, replaces light green in Masson Goldner Staining or in Papanicolaou solutions.

0301.1	25 g	glass	95,60 €

Fuchsine basic (C.I. 42510)

for microscopy

Indicator pH 1,0-3,1

Basic violet, Magenta

$C_{20}H_{20}N_3Cl$

M 337,85 g/mol

Warning H351

Soluble in ethanol and water. Multiple use in histology, e.g. carbolic fuchsine solution in Gram staining oder resorcinol fuchsine solution in elastica staining.

3256.2	25 g	glass	34,30 €
3256.1	50 g	glass	62,25 €
3256.3	100 g	glass	82,70 €

Giemsa stain

for microscopy

Warning H319

Mixture of Azure and Eosin for preparing Giemsa solution. It is used for staining blood and bone marrow smears. Ingredient of the Giemsa stock solution (Art. No. T862).

7691.1	5 g	glass	14,55 €
7691.2	25 g	glass	25,30 €
7691.3	100 g	glass	64,40 €

Hematoxylin (C.I. 75290)

for microscopy

Hydroxybrasilin

$C_{16}H_{14}O_6$

M 302,29 g/mol

A beige natural dye which achieves its active form, the hemalum, by oxidation (e.g. with sodium iodate) and treating with a metallic mordant (e.g. alum). Hemalum lakes stain cell nuclei blue.

3816.1	10 g	glass	42,50 €
3816.3	50 g	glass	164,40 €
3816.2	100 g	glass	295,65 €

Indigo carmine (C.I. 73015)

for microscopy

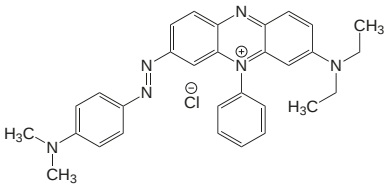
Indicator pH 11,5-13,0

$C_{16}H_8N_2Na_2O_8S_2$

M 466,36 g/mol

Warning H302

5156.1	10 g	glass	14,95 €
5156.2	25 g	glass	22,05 €
5156.3	100 g	glass	64,40 €



Janus green B (C.I. 11050)

for microscopy

Diazin Green S

$C_{30}H_{31}ClN_6$

M 511,07 g/mol

Vital dye for staining of leucocytes and for visualising mitochondria. Besides Janus green is used as counter stain during the modified Ziehl-Neelsen staining.

Oxidized indicator blue, reduced indicator pink

7697.1	5 g	glass	25,70 €
7697.2	25 g	glass	62,25 €
7697.3	100 g	glass	203,20 €

Jenner Stain

for microscopy

Mixture of eosin, methylene blue, Azure A, B and C

Methylene blue eosinate (Romanowsky dye mixture) for staining blood smears, bone marrow smears et al. acc. to Jenner. Usually 1 g dye is dissolved in 400 ml methanol (stock solution). For use the solution is diluted 1:1 with aqua dest.

7698.1	5 g	glass	14,55 €
7698.2	25 g	glass	25,70 €
7698.3	100 g	glass	62,25 €

Leishman stain

for microscopy

Mixture of methylen blue, Azure A, B and C

Eosin methylene blue acc. to Leishman

Eosin methylene blue mixture (Romanowsky dye) for staining blood smears, bone marrow smears et al. acc. to Leishman.

7702.1	5 g	glass	14,55 €
7702.2	25 g	glass	25,30 €
7702.3	100 g	glass	62,25 €

Light green SF (C.I. 42095)

for microscopy

Acid green 5

$C_{37}H_{34}N_2Na_2O_9S_3$

M 792,86 g/mol

Water-soluble dye for visualising connective tissue during Masson-Goldner trichrome staining (ingredient of Goldner's stain III).

7706.1	5 g	glass	19,90 €
7706.2	25 g	glass	45,05 €
7706.3	100 g	glass	138,70 €

Malachite green oxalate (C.I. 42000)

for microscopy

Indicator pH 0,0-2,0, for protein analysis.
Basic green 4
$C_{52}H_{54}N_4O_{12}$
M 927,02 g/mol

Danger H318-H361d-H400-H410-H301

Water soluble dye; in botany used for staining bacteria and fungal infected tissues and for detection of spores.

5895.2	25 g	glass	16,70 €
5895.1	100 g	glass	33,25 €
5895.3	250 g	glass	47,85 €

Spore staining acc. to Wirtz

Boil the heat fixed smear with malachite green, Art. No. 5895, (5 % solution in water) for 20 sec and allow to act for at least 30 sec. Rinse in running tap water, counterstain with safranin O, Art. No. T129, (0.5 % solution in water) for 30 sec, rinse again and dry.

Result: Spores green, other bacteria parts red

Methylene blue (C.I. 52015)

For microscopy and staining of nucleic acids in polyacrylamide gels.
Basic blue 9
$C_{16}H_{18}ClN_3S$
M 319,9 g/mol

Warning H302-H412

Water-soluble nuclear dye, does not intercalate between base pair stacks of DNA. Especially used for staining of blood cells.

Application note:
Staining of nucleic acids in PAA

- Use a 0.2 % solution of methylene blue for staining
- Stain for 20 min.
- Wash for 15 min. in distilled water

Nucleic acids are visible as blue bands.
Detection limit: 20 ng/band.

A514.1	10 g	glass	20,35 €
A514.2	50 g	glass	48,30 €
A514.3	100 g	glass	78,40 €

Methyl green (C.I. 42590)

for microscopy

Indicator pH 0,1-2,3
Methyl green zinc chloride double salt, Ethyl green zinc chloride double salt
$C_{27}H_{35}Cl_2N_3 \cdot ZnCl_2$
M 608,78 g/mol

Danger H314-H351-H411

Acid nitroso dye, staining reagent for visualising nuclei, water soluble (1 %).

5159.1	5 g	glass	22,50 €
5159.2	10 g	glass	35,40 €
5159.3	25 g	glass	69,80 €

▶ Ready-made staining solutions
see from page 1510

Methyl orange (C.I. 13025)

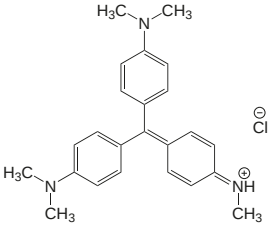
ACS, for microscopy

Indicator pH 3,2-4,4
4-(Dimethylamino)-azobenzene -4'-sulphonic acid sodium salt, Orange III
$C_{14}H_{14}N_3NaO_3S$
M 327,4 g/mol

Danger H301

Azo dye, low soluble in water (5 g/l).
Ingredient of trichrom stains used for detection of connective tissue.

T118.1	50 g	glass	26,80 €
T118.2	100 g	glass	39,70 €
T118.3	250 g	glass	60,10 €



Methyl violet 2B (C.I. 42535)

for microscopy

Basic violet
$C_{24}H_{28}N_3Cl$
M 393,96 g/mol

Danger H302-H318-H351-H410

Water-soluble dye (30 g/l), closely related to crystal violet, used e.g. for fibrin staining acc. to Weigert.

7715.1	5 g	glass	14,55 €
7715.2	25 g	glass	25,30 €
7715.3	100 g	glass	49,35 €

Naphthol green B (C.I. 10020)

for microscopy

Acid green 1
$(C_{10}H_5NNaO_5S)_3Fe$
M 878,47 g/mol
Acid nitroso dye, soluble in water (1 %).

5161.1	25 g	glass	19,90 €
5161.2	100 g	glass	48,30 €

Neutral red (C.I. 50040)

p.a.

Indicator pH 6,8-8,0
Toluylene red
$C_{15}H_{17}ClN_4$
M 288,78 g/mol
Water-soluble vital staining dye.

T122.2	1 g	glass	22,05 €
T122.1	10 g	glass	55,80 €
T122.3	25 g	glass	110,65 €

Nigrosin, water soluble (C.I. 50420)

for microscopy

Acid black 2

Water-soluble dye (10 g/l), is used in bacteriology.

7718.1	25 g	glass	14,55 €
7718.2	100 g	glass	36,45 €

Nile blue A (C.I. 51180)

~80 %

Nile blue sulphate

$C_{40}H_{40}N_6O_6S$

M 732,84 g/mol

Lipid staining dye, soluble in water (acidulated with H_2SO_4). It stains neutral lipids pink and acid lipids blue.

4377.2	5 g	glass	17,75 €
4377.1	10 g	glass	30,00 €
4377.3	25 g	glass	47,85 €

Nuclear fast red (C.I. 60760)

for microscopy

$C_{14}H_8NNaO_7S$

M 357,28 g/mol

Nucleic acid dye, ingredient of the nuclear fast red aluminium sulphate solution (Art. No. N069).

7728.1	1 g	glass	24,65 €
7728.2	5 g	glass	74,10 €
7728.3	10 g	glass	122,05 €

Orange II sodium salt (C.I. 15510)

for microscopy

Indicator pH 7,4-8,6 and pH 10,2-11,8

Acid orange 7

$C_{16}H_{11}N_2NaO_4S$

M 350,33 g/mol

Water-soluble dye, is used in cytology, e.g. as ingredient of Papanicolaou solution 2b.

7729.1	5 g	glass	14,55 €
7729.2	25 g	glass	25,70 €
7729.3	100 g	glass	61,20 €

Orange IV sodium salt (C.I. 13080)

for microscopy

Indicator pH 1,2-2,7

Tropaeolin OO

$C_{18}H_{14}N_3NaO_3S$

M 375,39 g/mol

Water-soluble dye.

7731.1	5 g	glass	14,55 €
7731.2	25 g	glass	25,70 €
7731.3	100 g	glass	61,20 €

Orange G (C.I. 16230)

for microscopy and electrophoresis

Acid orange 10

$C_{16}H_{10}N_2Na_2O_7S_2$

M 452,37 g/mol

Azo dye, soluble in ethanol. Ingredient of Papanicolaou solutions used for staining of cytological material.

0318.1	10 g	glass	13,90 €
0318.2	25 g	glass	19,90 €
0318.3	100 g	glass	47,20 €

Orcein

for microscopy

Natural red 28

Organic plant pigment, extracted from lichen. Soluble in alcohol (red) or diluted alkaline solutions (blue). Used for detection of elastic fibres.

0320.1	25 g	plastic	385,95 €

Ponceau S (C.I. 27195)

for histology and electrophoresis

For reversible protein staining on membranes and for microscopy.

Scarlet red

$C_{22}H_{12}N_4Na_4O_{13}S_4$

M 760,56 g/mol

Warning H315-H319-H335

5938.2	10 g	glass	26,80 €
5938.1	25 g	glass	53,65 €

Safranin O (C.I. 50240)

for microscopy

Safranin T

$C_{20}H_{19}ClN_4$

M 350,85 g/mol

Warning H315-H319

Basic azin dye, soluble in water and ethanol, well adapted to visualise chromosomes. Safranin is used for bacteria staining, e.g. during Gram-staining or spore staining acc. to Wirtz.

T129.1	10 g	glass	42,50 €

▶ Papanicolaou solutions see from page 1513

Silver nitrate
≥99 %, Ph.Eur., extra pure
$AgNO_3$
M 169,88 g/mol

Danger H272-H314-H400-H410

In histology silver nitrate is used for silver impregnation. It results a fine precipitation of silver visualising different structures in specimens, e.g. reticular fibres of connective tissue, fine neurocytes.

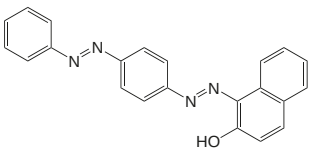
9370.4	10 g	plastic	28,50 €
9370.1	50 g	plastic	99,90 €
9370.2	250 g	plastic	407,45 €
9370.3	1 kg	plastic	1525,45 €
Original pack 6 x 1 kg			1449,18/1 kg

Sudan II (C.I. 12140)
for microscopy
Solvent Orange 7
$C_{18}H_{16}N_2O$
M 276,34 g/mol

Warning H315-H319-H335

Orange, lipo-soluble azo dye, used for detection of lipids in tissue sections.

7732.1	5 g	glass	12,40 €
7732.2	25 g	glass	25,70 €
7732.3	100 g	glass	60,10 €



Sudan III (C.I. 26100)
for microscopy
Sudan Red B
$C_{22}H_{16}N_4O$
M 352,39 g/mol
Fat-soluble dye used for staining of lipoids and lipids.

4711.2	50 g	glass	24,20 €
4711.1	100 g	plastic	45,70 €

Sudan IV (C.I. 26105)
for microscopy
Scarlet red, Fatty ponceau
$C_{24}H_{20}N_4O$
M 380,45 g/mol

Warning H315-H319-H341

Fat-soluble azo dye, used for staining of neutral triglycerides and lipids.

0327.1	25 g	glass	23,55 €
0327.2	50 g	glass	33,25 €

▶ For more details on specifications, see chapter Chemicals A-Z.

Sudan black B (C.I. 26150)
for microscopy
Neptune black, Rich black
$C_{29}H_{24}N_6$
M 456,55 g/mol
Fat-soluble azo dye, used for detection of neutral triglycerides and lipids.

0292.1	10 g	glass	23,55 €
0292.2	25 g	glass	33,25 €
0292.3	50 g	glass	52,60 €

Sudan orange G (C.I. 11920)
for microscopy
Solvent Orange 1
$C_{12}H_{10}N_2O_2$
M 214,22 g/mol
Lipo-soluble azo dye for staining of triglycerides in tissue sections.

7733.1	5 g	glass	12,40 €
7733.2	25 g	glass	25,70 €
7733.3	100 g	glass	60,10 €

Sulfobromophthalein disodium salt
≥95 %, for biochemistry
Organic dye for microscopy.
Bromosulfalein, Phenoltetrabromophthalein disulfonic acid disodium salt
$C_{20}H_8Br_4O_{10}S_2Na_2$
M 838 g/mol

Danger H334-H317

4033.1	1 g	glass	39,70 €
4033.2	5 g	glass	149,45 €

Tetrazolium blue chloride
≥95 %, for biochemistry
For vital staining of cells.
Blue tetrazolium chloride, BTC, 3,3'-Dianisole-4,4'-bis(3,5-diphenyltetrazolium chloride), 3,3'-(3,3'-Dimethoxy[1,1'biphenyl]-4,4'diyl)-bis(2,5-diphenyl-2H-tetrazolium) dichloride
$C_{40}H_{32}Cl_2N_8O_2$
M 727,64 g/mol

Danger H350

Application of tetrazolium blue chloride: histochemical detection of succinate dehydrogenase and NAD-linked enzymes, vital staining for detection of living cells through the reduction of tetrazolium to formazan, biochemical assays of glucose oxidase, analysis of various corticosteroids.

4176.1	1 g	glass	56,90 €
4176.2	5 g	glass	213,95 €

Tetrazolium violet
for microscopy
$C_{23}H_{17}ClN_4$
M 384,86 g/mol
Redox indicator for detection of living cells.

7736.1	1 g	glass	41,85 €
7736.2	5 g	glass	160,20 €
7736.3	10 g	glass	299,95 €

Thiazolyl blue

≥98 %, for biochemistry

3-(4,5-Dimethylthiazole-2-yl)-2,5-diphenyl-2H-tetrazolium bromide, MTT

$C_{18}H_{16}BrN_5S$

M 414,33 g/mol

Danger H315-H319-H335-H341

MTT-reagent, used for detection of apoptosis.
Stock solution: 5 mg/ml in PBS buffer solution, sterile filtrated (pH <5)
Stability of stock solution: approx. 1 month at +4 °C, protected from light
Working concentration: 1 mg/ml

4022.1	1 g	glass	31,10 €
4022.3	5 g	glass	131,70 €
4022.2	10 g	glass	206,95 €
4022.4	25 g	glass	418,20 €

Thionine (acetate) (C.I. 52000)

for microscopy

Nuclear dye

3,7-Diaminophenothiazin-5-ium acetate, Lauth's violet

$C_{14}H_{13}N_3O_2S$

M 287,34 g/mol

Blue nuclear dye, used e.g. for Nissl staining for detection of neutrocytes.

9937.1	5 g	plastic	92,35 €
9937.2	10 g	plastic	170,95 €

Toluidine blue O (C.I. 52040)

for microscopy

Basic blue 17

$C_{15}H_{16}Cl\,N_3S$

M 305,83 g/mol

Basic water-soluble nuclear dye, used in solutions of 0.03 % - 0.1 %.
In histology e.g. used for staining of neurohistological specimens,
in botany for detection of plant cells (solutions of 0.03 % - 0.1 %).

0300.1	5 g	glass	18,85 €
0300.2	10 g	glass	28,95 €
0300.3	25 g	glass	54,75 €
0300.4	100 g	glass	155,90 €

2,3,5-Triphenyltetrazolium chloride

≥98,5 %, p.a.

For microbiology and histochemistry.
For vital staining of cells.

Tetrazolium red, TTC, TTZ, TPTZ

$C_{19}H_{15}ClN_4$

M 334,79 g/mol

Storage temp.: +4 °C

Warning H315-H319-H335

Used in biochemistry to measure the activity of dehydrogenases and in vital staining to detect living cells through the reduction of tetrazolium to formazan via the dehydrogenases of the respiratory chain. Triphenyltetrazolium chloride can be used to measure the bacterial content of liquids in food analysis and/or to determine seed vitality. In microbiology it is used to distinguish between coliform and noncoliform bacteria, whereas in thin layer chromatography it is ideal as a spray reagent on reducing sugar, corticosteroids and other reducing agents.

KK13.1	10 g	glass	53,25 €
KK13.2	50 g	glass	220,30 €

Trypan blue (C.I. 23850)

for microscopy and cell staining

For vital and histological staining.

Benzamine blue, Tolidin-diazo-bis-8-amino-1-naphthol-3,6-disulphonic acid tetrasodium salt

$C_{34}H_{24}N_6Na_4O_{14}S_4$

M 960,82 g/mol

Danger H350

Trypan blue is a protein staining azo dye used for vital staining (vitality test of cells), based on its selective ability to pass membranes of damaged cells. Used for polychromatic staining, e.g. to visualise collagen fibres in connective tissue.

Application:
Stock solution: 0.5 % in PBS or in NaCl solution (0.9 %).
Stabile for several months when sterile filtrated and stored at room temperature.
Working concentration: 0.1-0.2 % in PBS
Note:
Always keep bottles tightly closed.

CN76.1	10 g	glass	24,20 €
CN76.2	25 g	glass	43,55 €
CN76.3	50 g	glass	78,40 €

Trypan blue solution 0,4 %

NEW ready-to-use

for cell culture and microscopy

For detection of dead cells during vital staining.

Danger H350

As an anionic azo dye trypan blue binds to the cell proteins. Since it is not membrane-permeable, it only stains dead cells. It is commonly used in a 0,4 % aqueous solution to determine the vitality of cells. The solution is sterile-filtered and durable for a period of two years.

1680.1	100 ml	plastic	32,15 €

Wright's stain

for microscopy

Eosin methylene blue

Eosin methylene blue mixture (Romanowsky dye) for staining blood smears, bone marrow smears et al. acc. to Wright. Ingredient of Wright's eosin methylene blue solution (Art. No. CN05).

7744.1	5 g	glass	14,55 €
7744.2	25 g	glass	25,70 €
7744.3	100 g	glass	62,25 €

Xylidine Ponceau 2R (C.I. 16150)

for microscopy

Xylidine red, Ponceau de Xylidine

$C_{18}H_{14}N_2Na_2O_7S_2$

M 480,40 g/mol

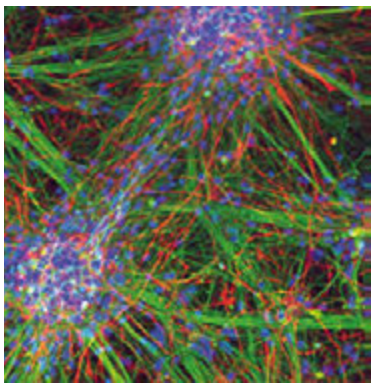
Warning H351

Water-soluble dye, used e.g. for Masson-Goldner trichrome staining (ingredient of Goldner's stain I, Art. No. 3469).

7747.1	5 g	glass	14,95 €
7747.2	25 g	glass	25,30 €
7747.3	100 g	glass	62,25 €

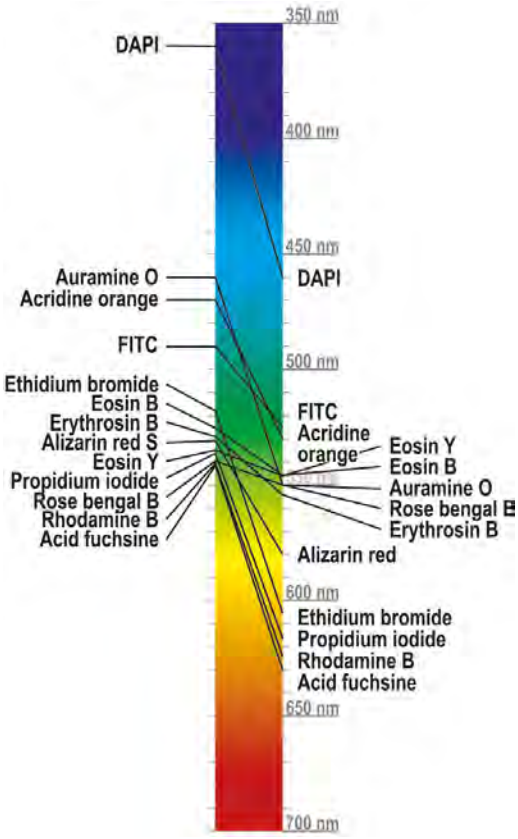
Safety data sheets
can be found on the Internet next to the product description.

Fluorescent Dyes



Fluorescent preparation Fluoro-4C (Art. No. 8987)
20x objective (laser scanning microscope), marker: Tubulin-Cy2; Nestin-Cy3; DCX-Cy5; DAPI

Fluorescent dyes are suitable for various applications in microscopy, e.g. in order to tag antibodies used in immunohistochemical assays or for counter-staining of nuclei.
Fluorescent dyes are sensitive to light, therefore they are to be **stored in the dark**.

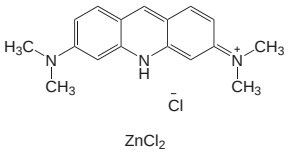


Acid fuchsin (C.I. 42685)

for microscopy
Fuchsine acidic
$C_{20}H_{17}N_3Na_2O_9S_3$
M 585,54 g/mol
Used as plasma stain in 0.5-1.0 % watery solution.

Excitation maximum: 540 nm
Emission maximum: 630 nm

T128.1	10 g	glass	60,10 €



$ZnCl_2$

Acridine orange (C.I. 46005)

for microscopy
Fluorescence indicator
Acridine orange zinc chloride double salt, Basic orange 14
$C_{17}H_{20}Cl_3N_3Zn$ • M 438,09 g/mol

Warning H341

Fluorescent dye with DNA intercalating properties. Application range: Differentiation of dsDNA (green fluorescence) and ssDNA/RNA (red fluorescence), vitality test for determination of living cells. Soluble in water and ethanol.

Excitation maximum: 470 nm
Emission maximum: 526 nm (green)
Emission maximum: 650 nm (red)

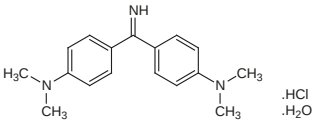
0249.1	10 g	glass	23,15 €
0249.2	25 g	glass	43,55 €

Alizarin red S (C.I. 58005)

Indicator pH 4,3-6,3 and pH 9,4-12,0
Alizarin sulphonic acid sodium salt, Alizarin carmine
$C_{14}H_7NaO_7S$ • M 342,26 g/mol
Dye for vital staining, e.g. staining of mineralized sites in bone tissue. Soluble in water and ethanol (0.1-1.0 %).

Excitation maximum: 530-560 nm
Emission maximum: 580 nm

0348.1	10 g	glass	19,90 €
0348.2	25 g	glass	31,10 €
0348.3	100 g	glass	96,25 €



.HCl
.H_2O

Auramine O (C.I. 41000)

for microscopy
4,4'-Bis-(dimethylamino)-benzophenonimide-hydrochloride, Basic yellow 2
$C_{17}H_{22}ClN_3$
M 303,84 g/mol

Warning H351-H302-H319-H411

Used for detection of acid-fast bacteria (e.g. Mycobacteria) in histological sections, 1 % in ethanol 95 %.
Excitation maximum: 460 nm
Emission maximum: 550 nm

0319.1	25 g	glass	16,70 €
0319.2	50 g	glass	27,85 €

DAPI

≥98 %, p.a.

For DNA-staining.

4',6-Diamidino-2-phenylindole dihydrochloride

$C_{16}H_{17}Cl_2N_5$

M 350,3 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Fluorescent dye with specific DNA-binding capacity. For detection of mycoplasms in cell culture, for quantitative DNA measurement, and for chromosome counter staining. Store in the dark! Stabile for one year when solubilised, stored at -20 °C, and protected from light
Stock solution: 1 to 10 mg/ml in sterile water

Working concentration:
Nucleus staining in living cells: approx. 1 µg/ml in medium
Nucleus staining in fixed cells or fixed tissue sections: approx. 0.2 µg/ml in PBS, TBS or another incubation buffer
Detection of mycoplasms: 1 µg/ml in methanol
Excitation maximum: 359 nm
Emission maximum: 461 nm

6335.1	25 mg	glass	92,35 €
6335.2	100 mg	glass	260,05 €

Eosin B (C.I. 45400)

for microscopy

Eosin scarlet, Eosin bluish, 4',5'-Dibromo-2',7'-dinitrofluoroesceine disodium salt.

$C_{20}H_6Br_2N_2Na_2O_9$

M 624,09 g/mol

Like eosin Y used as a plasma stain, e.g. for hematoxylin-eosin (H&E) staining. Soluble in water and ethanol, usual concentration 0.5 - 2.0 %.

Excitation maximum: 525 nm
Emission maximum: 545 nm

0306.1	10 g	glass	17,75 €
0306.2	25 g	glass	28,50 €
0306.3	50 g	glass	44,65 €

▶ Accessories for staining see chapter Labware - Laboratory Glass, Vessels & Consumables / Microbiology, Histology & Instruments.

Eosin Y (C.I. 45380)

for microscopy

Eosin yellowish

$C_{20}H_6Br_4Na_2O_5$

M 691,86 g/mol

Warning H319

Eosin Y is a slightly acid fluorescent dye, which stains cytoplasm red. It is soluble in alcohol and water (usual concentrations: 0.5 - 2.0 %). Manifold use, e.g. for hematoxylin-eosin (H&E) staining, spore staining etc.

Excitation maximum: 534 nm
Emission maximum: 544 nm

7089.1	50 g	glass	33,90 €
7089.2	100 g	glass	57,55 €
7089.3	500 g	glass	182,65 €
Original pack 6 x 500 g			173,52/500 g

Spore staining acc. to Rakette

Boil the heat fixed smear with malachite green, Art. No. 5895, (5 % solution in water) for 20 sec and allow to act for at least 30 sec. Rinse in running tap water, counterstain with Eosin Y, Art. No. 7089, (2.5 % solution in water) for 1 min, rinse again and dry.

Result: Spores green, other bacteria parts red.

Acc. to Dieter Gerlach: Bot. Mikrotechnik, 2. Auflage, Thieme (1977)

Erythrosine B (C.I. 45430)

for microscopy

Tetraiodine fluorescein disodium salt, Iodine eosin, Erythrosine bluish, Acid red 51

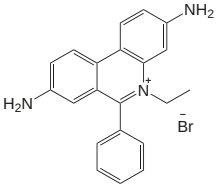
$C_{20}H_6I_4Na_2O_5$

M 879,84 g/mol

Warning H302

Water-soluble plasma stain (0.5-2.0 %), used like eosin Y, e.g. for hematoxylin-eosin (H&E) staining.
Excitation maximum: 529 nm
Emission maximum: 554 nm

0331.1	25 g	plastic	46,80 €



Ethidium bromide

≥98 %

For DNA-staining.

Homidium bromide, 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide

$C_{21}H_{20}BrN_3$

M 394,33 g/mol

Storage temp.: +20 °C

Danger H330-H341-H302

Fluorescent dye with specific DNA binding capacity. Intercalates between base pair stacks of dsDNA, causing weaker staining of ssDNA or RNA. For staining of DNA/RNA in gels and for counterstaining of nuclei in histological and cytological analyses. Store in the dark!

Excitation maximum: 518 nm
Emission maximum: 605 nm

7870.1	1 g	glass	23,55 €
7870.2	5 g	glass	94,10 €

ready-to-use

Ethidium bromide solution 0,5 % in dropper bottle

aqueous solution (5 mg/ml)

For counterstaining of nuclei in histology and cytology.
For staining of DNA/RNA after electrophoresis.

Warning H332

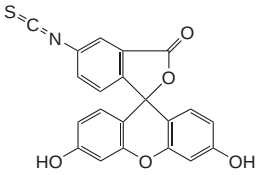
In spite of newly developed fluorescent staining reagents ethidium bromide remains the standard staining technic for nucleic acid in electrophoresis. Ethidium bromide is a carcinogenic substance which shouldn't come in contact with skin. In order to minimise this danger we offer ready-to-use ethidium bromide solution in dropper bottles for easy handling and maximum safety.
Application:
In order to prepare a staining solution add 5 drops of ethidium bromide solution to 500 ml water, buffer, or electrophoresis running buffer, respectively.
Nuclei / nucleic acids are stained red.

Excitation maxima (unbound): 210 nm, 285 nm, 470 nm
Excitation maxima (bound to DNA): 330 nm, 500 nm
Excitation possible via DNA at 254 nm

Emission maximum: 605 nm.

Please store in the dark!

HP46.1	15 ml	plastic	30,65 €
HP46.2	5 x 15 ml	plastic	107,40 €



Fluorescein isothiocyanate Isomer I

≥90 %, p.a.

For the study of antigen and antibody reactions.
FITC
$C_{21}H_{11}NO_5S$
M 389,39 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.

Danger H334-H317

Used for labeling of different biomolecules in immunohistology and immunocytology.

Excitation maximum: 490 nm
Emission maximum: 525 nm

3745.2	100 mg	glass	39,70 €
3745.1	250 mg	glass	76,25 €

Propidiumiodide

≥95 %, p.a.

For fluorescence staining of DNA.
3,8-Diamino-5-(3-diethylaminopropyl)-6-phenyl-phenanthridinium iodide methiodide
$C_{27}H_{34}I_2N_4$
M 668,4 g/mol
Storage temp.: +4 °C

Warning H315-H319-H335-H341

Fluorescent dye with specific DNA-binding capacity. Like ethidium bromide it intercalates between base pair stacks of DNA.
Used for detection of mycoplasms in cell cultures, for quantitative DNA measurement and for chromosome counter staining. In Annexin staining it is used for counter staining of the nuclei (detection of apoptotic cells).
Application:
Living cells: approx. 1-5 mg/ml in medium
Fixed cells: approx. 1-50 µg/ml in PBS
Excitation maximum: 535 nm
Emission maximum: 617 nm

Note:
Store solution and powder at +4 °C protected from light
(stabile for approx. 6 months)

CN74.1	25 mg	glass	69,80 €
CN74.2	50 mg	glass	122,05 €
CN74.3	100 mg	glass	217,70 €

Rhodamine B (C.I. 45170)

for microscopy

Oil-soluble red A, Safraniline, Rosaceine
$C_{28}H_{31}ClN_2O_3$
M 479,02 g/mol

Danger H318-H412

Water-soluble fluorescent dye for detection of acid-fast bacteria (e.g. Mycobacteria) in histological sections, usually in combination with auramine O.

Excitation maximum: 540 nm
Emission maximum: 625 nm

T130.1	25 g	glass	34,30 €
T130.7	50 g	glass	55,80 €

Rose Bengale B (C.I. 45440)

for microscopy

4,5,6,7-Tetrachloro-2',4',5',7'-tetraiodofluorescein-dipotassium salt
$C_{20}H_2Cl_4I_4Na_2O_5$ • M 1017,65 g/mol
Water-soluble fluorescent dye, e.g. for use in bacteriological assays.
Excitation maximum: 540 nm
Emission maximum: 550-600 nm

3162.1	50 g	plastic	95,70 €

Lipid Staining Dyes

Product	Application	Staining	Art. No.	Pack Qty	€
Nile blue A (C.I. 51180)	saturated aqueous solution (acidulated with H_2SO_4)	neutral lipids pink, acid lipids blue	**4377.2**	5 g	17,75
			4377.1	10 g	30,00
			4377.3	25 g	47,85
Sudan III (C.I. 26100)	ethanolic solution 0,2-1,0 %	neutral triglycerides red	**4711.2**	50 g	24,20
			4711.1	100 g	45,70
Sudan IV (C.I. 26105)	saturated ethanolic solution	neutral triglycerides red	**0327.1**	25 g	23,55
			0327.2	50 g	33,25
Sudan black B (C.I. 26150)	ethanolic solution 1%	neutral triglycerides dark brown	**0292.1**	10 g	23,55
			0292.2	25 g	33,25
			0292.3	50 g	52,60

For additional product data and safety information, see chapter Chemicals A-Z.

Dyes for Vital Staining

Usual stock solution: 1 % dye in distilled water.
Dilute solution as required prior to use.

Product	Application	Staining	Art. No.	Pack Qty.	€
Acridine orange (C.I. 46005)	vitality test	living cells green fluorescence	**0249.1**	10 g	23,15
			0249.2	25 g	43,55
Alizarin red S (C.I. 58005)	detection of mineralized sites in bone tissue	red fluorescence	**0348.1**	10 g	19,90
			0348.2	25 g	31,10
			0348.3	100 g	96,25
Bismarck brown R (C.I. 21010)	vitality test	living cells brownish	**0316.1**	25 g	20,35
Brilliant cresyl blue (C.I. 51010)	supravital staining	reticulocystes dark blue	**5162.1**	5 g	23,55
			5162.2	10 g	35,40
Bromophenol blue	vitality test of spermatozoa	dead cells blue	**T116.1**	5 g	22,50
			T116.2	10 g	30,00
			T116.3	25 g	47,20
Eosin Y (C.I. 45380)	vitality test of spermatozoa	dead cells red	**7089.1**	50 g	33,90
			7089.2	100 g	57,55
			7089.3	500 g	182,65
Erythrosine B (C.I. 45430)	vitality test	dead cells red	**0331.1**	25 g	46,80
Ethidium bromide	vitality test	dead cells red fluorescence	**7870.1**	1 g	23,55
			7870.2	5 g	94,10
Evan's blue (C.I. 23860)	intravital staining	dead cells blue	**7684.1**	5 g	27,85
			7684.2	25 g	56,90
			7684.3	100 g	188,15
Janus green B (C.I. 11050)	supravital staining	mitochondria in living cells blue	**7697.1**	5 g	25,70
			7697.2	25 g	62,25
			7697.3	100 g	203,20
Methylene blue (C.I. 52015)	vitality test	dead cells blue	**A514.1**	10 g	20,35
			A514.2	50 g	48,30
			A514.3	100 g	78,40
Neutral red (C.I. 50040)	vitality test	dead cells red	**T122.2**	1 g	22,05
			T122.1	10 g	55,80
			T122.3	25 g	110,65
Nile blue A (C.I. 51180)	vitality test	dead cells blue	**4377.2**	5 g	17,75
			4377.1	10 g	30,00
			4377.3	25 g	47,85
Propidiumiodide	vitality test	dead cells red fluorescence	**CN74.1**	25 mg	69,80
			CN74.2	50 mg	122,05
			CN74.3	100 mg	217,70
Tetrazolium blue chloride	vitality test	living cells red	**4176.1**	1 g	56,90
			4176.2	5 g	213,95
Thiazolyl blue	vitality test	living cells blue-violet	**4022.1**	1 g	31,10
			4022.3	5 g	131,70
			4022.2	10 g	206,95
			4022.4	25 g	418,20
Toluidine blue O (C.I. 52040)	intravital staining	abnormal cells blue	**0300.1**	5 g	18,85
			0300.2	10 g	28,95
			0300.3	25 g	54,75
			0300.4	100 g	155,90
2,3,5-Triphenyl-tetrazolium chloride	vitality test	living cells red	**KK13.1**	10 g	53,25
			KK13.2	50 g	220,30
Trypan blue (C.I. 23850)	vitality test	dead cells blue	**CN76.1**	10 g	24,20
			CN76.2	25 g	43,55
			CN76.3	50 g	78,40

For additional product data and safety information, see chapter Chemicals A-Z.

Substrates

Carl Roth offers you a wide range of substrates for biochemistry, cellular biology and microbiology. The key substrates for Western Blot and *in situ*-hybridisation are summarised here.

For detailed information regarding usage, chemical details, safety instructions and further package sizes for these and many other substrates, refer to chapter **"Substrates"** in chapter Biochemistry or to Chemicals A-Z.

For Alkaline Phosphatase (AP)

Substrate	Application	Detection	Art. No.	Pack Qty.	€
BCIP-Natrium salt	western, *in situ*, histochemistry	colour (brown-violet)	**A155.1**	100 mg	27,85
			A155.2	500 mg	118,15
			A155.3	1 g	203,20
			A155.4	5 g	665,45
BCIP-Toluidin salt*	western, *in situ*, histochemistry	colour (brown)	**6368.1**	500 mg	36,45
			6368.2	1 g	70,45
			6368.3	5 g	267,70
NBT*	western, *in situ*, histochemistry	colour (brown-violet)	**4421.1**	100 mg	17,75
			4421.2	500 mg	44,65
			4421.3	1 g	84,85
			4421.4	5 g	306,40
Rose-phos-Toluidin salt	western, *in situ*, histochemistry	colour (pink)	**4247.1**	50 mg	47,20
			4247.2	100 mg	84,85

For additional product data and safety information, see chapter Chemicals A-Z.
***combined**

For Horse Raddish Peroxidase (HRP)

Substrate	Application	Detection	Art. No.	Pack Qty	€
DAB	western, *in situ*, histochemistry	colour (brown)	**CN75.1**	1 g	23,55
			CN75.2	5 g	76,25
			CN75.3	10 g	130,65
Roti®-DAB Kit	western, *in situ*, histochemistry	colour (brown)	**9202.1**	1 kit	188,70
Roti®-Lumin	western	chemolumine-scence	**P078.2**	1 mini kit	78,40
			P078.1	1 kit	278,45

For additional product data and safety information, see chapter Chemicals A-Z.

Please note our **Technical Information Brochure** on the Internet next to the products:

Immunostaining by HRP and AP
Protocols

Hydrophobic Mounting Media

The classical mounting media for producing durable sections in microscopy.

ready-to-use

ROTH offers **synthetic mounting media** like the proved Roti®-Histokitt and **natural balsams** like the classic Canada balsam.

Roti®-Histokitt

mounting medium, for histology
Compatible with Roti®-Histol (Art. No. 6640).

Danger H225-H304-H361d-H373-H315-H336

Synthetic, quick-drying mountant for producing durable sections.
- Results in permanent specimens with neutral pH
- Protects against bleaching
- Not suitable for aqueous samples!

Type analysis:

Appearance.	clear, viscous liquid
Identity.	complies
Refractive index n_D^{20}.	1,4930-1,4960

6638.1	100 ml	glass	13,45 €
6638.2	500 ml	glass	37,10 €

Roti®-Histokitt II

mounting medium, for histology
Compatible with xylene (e.g. Art. No. 9713).

Danger H226-H302+H332-H304-H315-H319-H335-H373-EUH208

Synthetic, xylene-soluble mountant for producing durable sections.
- Results in permanent specimens with neutral pH
- Protects against bleaching
- Not suitable for aqueous samples!
- Adapted for embedding machines!
- Typical refractive index: 1.4930-1.4960

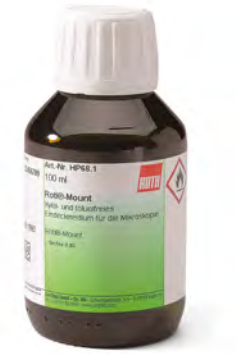
Type analysis:

Appearance.	clear, viscous liquid
Density (d 20 °C/4 °C).	0,95
Viscosity (20 °C).	250-450 mPa s

T160.1	100 ml	glass	13,90 €
T160.2	500 ml	glass	37,55 €

▶ Immersion oil & Oil of cedar wood
see page 1532

Safety data sheets
can be found on the Internet next to the product description.



Roti®-Mount

Mountant for microscopy, free from xylene and toluene.
Compatible with Roticlear® (Art. No. A538) and n-Butyl acetate (Art. No. P036).

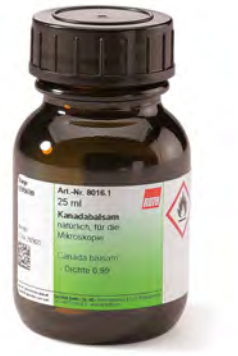
Danger H225-H304-H372-H411-EUH066

Synthetic mountant for producing durable specimens in histology and cytology, free from xylene and toluene. Not suitable for aqueous samples!
Storage:
For long-term storage we recommend a storage temperature of 4 °C in the dark. For use the product should have room temperature to ensure an ideal consistence.

Type analysis:

Appearance.	colourless to light yellowish, viscous liquid
Viscosity (20 °C).	1000-1200 mPas
Refractive index (20 °C).	1,43-1,46
Density (20 °C).	0,850-900

HP68.1	100 ml	glass	21,00 €
HP68.2	500 ml	glass	64,40 €



Canada balsam

natural, for microscopy
Balsamum Canadense

Warning H226

Type analysis:

Appearance.	yellowish translucent, highly viscous
Odour.	characteristic (like conifers)
Density (20 °C).	0,980-0,998
Refractive index n_D^{20}.	1,520-1,530
Flash point.	43 °C
Solubility in:	
Ether.	1:1
Toluene.	1:1
Chloroform.	1:1

8016.1	25 ml	glass	20,35 €
8016.2	100 ml	glass	50,00 €

Mounting with Euparal

ready-to-use

Euparal

for microscopy

Mounting agent

Warning H226-H315-H319

Euparal is an alternative to Canada balsam for mounting microscopic specimens and is used in the same way. Unlike Canada balsam, which is very sensitive to water and can only be used after specimens have been dehydrated with high-percentage alcohol and xylene, mounting in Euparal with 80 % alcohol is possible without any cloudiness occuring. Euparal solidifies slower than balsam.

Refractive index for liquid Euparal: 1.483
Refractive index for completely solidified Euparal: 1.535

The duration of the solidifying process depends on the mounted object and temperature. Euparal solidifies faster when warm.

Euparal-essence (Art. No. A145) serves as a diluent and solvent for euparal. Euparal and Euparal essence are not compatible with organic solvents.

As it is a natural resin and there is no polymerisation, permanent Euparal preparations can be dissolved later under gentle heating with Euparal essence.
Euparal contains Sandarac resin, camphor and salol. Paraldehyde and eucalyptol serve as a solvent.

Type analysis:

Appearance. ..... yellowish solution
Solubility (EtOH). ..... soluble
Refractive index (20 °C) 1,480-1,510

7356.1	100 g	glass	52,15 €
7356.2	5 x 100 g	glass	214,50 €

Euparal essence

for microscopy

Diluent and solvent for Euparal (Art. No. 7356).

Warning H226-H315-H319-H335

Type analysis:

Appearance. ..... yellowish solution
Refractive index (20 °C) 1,450-1,500

A145.1	100 ml	glass	45,05 €

Hydrophilic Mounting Media

These mounting media allow embedding without previous dehydration. Thus shrinking of specimens caused by organic solvents can be avoided. Additionally the hydrophilic milieu prevents washing out of cell ingredients like lipids, an important requirement for use in histochemistry.

Roti®-Mount Aqua

ready-to-use

for microscopy

Aqueous mounting medium

Roti®-Mount Aqua is an aqueous solution of polyacrylate resin used for mounting of paraffin sections and cryostat sections directly after staining. The solution is ready to use. Colours and tissue structures are preserved in an optimal way. For long-term preserving of fluorescent dyes we recommend Roti®-Mount FluorCare (Art. No. HP19).
Application:
Residues of staining solution are removed by rinsing with buffer or destilled water. Afterwards the specimens are mounted with Roti®-Mount Aqua.
Storage:
Store at +4 °C in the dark, shelf life minimum 1 year.

Type analysis:

Appearance. ..... colourless, viscous liquid
Viscosity (20 °C). ..... 170-220 mPas
Refractive index (20 °C) 1,3750-1,3950
Density (20 °C). ..... 1,05-1,18 g/cm³

2848.1	15 ml	dropp. bottle	22,05 €
2848.2	50 ml	glass	40,75 €

Roti®-Mount FluorCare

ready-to-use

for fluorescence microscopy

Aqueous mounting medium with antifading effect.

Storage temp.: +4 °C

Roti®-Mount FluorCare has been developed especially for fluorescene microscopy and is compatible with all current fluorescent dyes. It is an aqueous mountant with an additional antifading reagent which reduces photobleaching drastically. Fluorescence will remain for many weeks. In contrast to other mounting media Roti®-Mount FluorCare does not show autofluorescence at any common wavelength.
Roti®-Mount FluorCare is also available with the dyes DAPI (HP20.1) and propidiumiodide (HP21.1) for simultaneous counter staining of nuclei.
Storage:
The solution should be stored at +4 °C in the dark.
Shelf life: minimum 1 year.

Type analysis:

Appearance. ..... clear, viscous liquid
Viscosity (20 °C). ..... 170-220 mPas
Refractive index (20 °C) 1,44-1,465
Density (20 °C). 1,05-1,18

HP19.1	15 ml	dropp. bottle	57,55 €

Roti®-Mount FluorCare DAPI

ready-to-use

for fluorescence microscopy

Aqueous mounting medium with antifading effect.
Contains DAPI for counterstaining.

Storage temp.: +4 °C

Roti®-Mount FluorCare DAPI is an aqueous mounting medium with antifading effect. Additional it contains ready-to-use DAPI allowing counterstaining of nuclei and mounting at the same time. DAPI has an excitation maximum at 359 nm and an emission maximum at 461 nm. Roti®-Mount FluorCare is also available with the dye propidiumiodide (HP21.1) and without dye (HP19.1).

Storage:
The solution should be stored at +4 °C in the dark. Shelf life: minimum 1 year.

Type analysis:

Appearance	clear, viscous liquid
Viscosity (20 °C)	170-220 mPas
Refractive index (20 °C)	1,44-1,465
Density (20 °C)	1,05-1,18

HP20.1	15 ml	dropp. bottle	70,45 €

Roti®-Mount FluorCare PI

ready-to-use

for fluorescence microscopy

Aqueous mounting medium with antifading effect.
Contains propidiumiodide (PI) for counterstaining.

Storage temp.: +4 °C

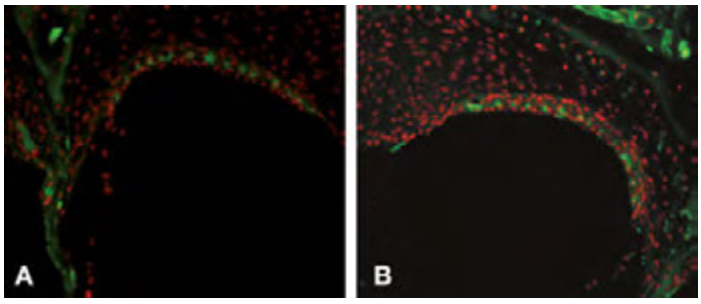
Roti®-Mount FluorCare PI is an aqueous mounting medium with antifading effect. Additional it contains ready-to-use propidiumiodide allowing counterstaining of nuclei and mounting at the same time. Propidiumiodide has an emission maximum of 535 nm and an emission maximum of 617 nm.
Roti®-Mount FluorCare is also available with the dye DAPI (Art. No. HP20.1) and without dye (Art. No. HP19.1).

Storage:
The solution should be stored at +4 °C in the dark. Shelf life: minimum 1 year.

Type analysis:

Appearance	viscous, slightly reddish liquid
Viscosity (20 °C)	170-220 mPas
Refractive index (20 °C)	1,44-1,465
Density (20 °C)	1,05-1,18

HP21.1	15 ml	dropp. bottle	70,45 €



Example of Use

Figure:
Immunostaining of DNA adducts (red) and CNPase (green) in cryosections of the inner ear (stria vascularis) from mice
a) mounted in glycerol
b) mounted in Roti®-Mount FluorCare

With kind assistance of laboratory Dr. J. Thomale, DNA-Repair Group, Institute of Cell Biology, West German Cancer Centre Essen

Instructions for use
can be found on the Internet next to the product description.

Mowiol®4-88

granulated

Aqueous mounting medium in histology.
Polyvinyl alcohol
$(-CH_2CHOH-)_n$
M ~31,000 g/mol

For durable preparations.
Mowiol 4-88 is used as hydrophilic mounting medium, particularly for immune histochemical applications. Usually it is applied in combination with the antibleaching reagent DABCO (1.4-Diazabicyclo-(2.2.2)octan), Art. No. 0718, which conserves the colours and the fluorescence of durable samples.

Type analysis:

Appearance	colourless to light yellow granules
Viscosity (4 %, H_2O, 20 °C)	3,0-5,0 mPas
Degree of hydrolysis, Mol.- %	86,7-88,7
Ester value (mg KOH/g)	130-150
Residual acetate	10,0-11,6 %
Ash content (as Na_2O)	≤0,5 %

0713.1	50 g	plastic	11,75 €
0713.2	100 g	plastic	17,75 €

DABCO®

≥99 %

Anti-bleaching reagent in histology.
Triethylendiamine, 1,4-Diazabicyclo[2.2.2]octane
$C_6H_{12}N_2$
M 112,18 g/mol

Danger H228-H302-H315-H318-H335

DABCO is an anti-bleaching reagent. It is combined with hydrophilic mounting media as Mowiol 4-88, Art. No. 0713, or glycerol in order to conserve the colours and the fluorescence of durable samples. Solubility may change depending on the batch. If required stir solution constantly overnight at a temperature of 40-60 °C.

Type analysis:

Appearance	white to off-white crystals
Assay	≥99,0 %
Water	≤0,5 %

0718.1	25 g	glass	20,35 €
0718.2	50 g	glass	36,45 €
0718.7	250 g	glass	106,45 €
0718.9	500 g	glass	176,85 €
Original pack 6 x 500 g			168,01/500 g

Alginic acid sodium salt

for biochemistry

From brown algae.
Sodium alginate

9180.1	250 g	plastic	30,00 €
9180.2	1 kg	plastic	81,60 €
Original pack 6 x 1 kg			77,52/1 kg

Kaiser's glycerol gelatine phenol-free

for microscopy

Aqueous mounting medium

- Non-hazardous ingredients
- Neutral pH (6-7)
- Convenient also for sensitive stainings

It is an aqueous mounting medium which is solid at room temperature. Composition and application are according to the classical Kaiser's glycerol gelatine; however, it does not contain phenol. The added preserving agent is classified as non-hazardous. The pH value of the product is 6-7. Therefore, it is suitable also for stainings which are sensitive against acids (e.g. hematoxylin). Prior to use the glycerol gelatine is melted on a water bath (max. 50-55 °C) and then dropped onto the slide by using a pipette or a glass rod.

Type analysis:

Appearance. ..... light yellowish coloured, solid medium
Glycerol. ..... ~40 %
Gelatine. ..... 7-12 %
Refractive index (20 °C) 1,44-1,47
Density (20 °C). 1,02

6474.1	50 ml	glass	18,85 €

Glycerol-gelatine (acc. to Kaiser)

Preparation:

Dissolve 10 g gelatine gold in 60 ml water and add 70 ml glycerol.

Add 0.1 g phenol to 100 g mixture, heat 10-25 minutes in the water bath while stirring until purification, then filter hot over glass wool or paper.

Avoid heating much beyond 60 °C, because overheated gelatine loses its ability to solidify.

Glycerols - Summary

Product	Purity	Art. No.	Pack Qty.	€
Glycerol	≥99,5 %, p.a., anhydrous	**3783.1**	1 l	53,65
		3783.3	1 l	57,95
		3783.2	2,5 l	97,75
		3783.4	2,5 l	102,05
		3783.5	5 l	148,90
		3783.6	10 l	228,90
Glycerol	≥98 %, Ph.Eur., anhydrous	**7530.1**	1 l	37,55
		7530.4	2,5 l	61,85
		7530.5	5 l	111,30
		7530.2	10 l	205,90
		7530.3	35 kg	400,45
Glycerol 86 %	≥86 %, p.a.	**4043.1**	1 l	48,30
		4043.3	2,5 l	71,95
		4043.2	5 l	128,90
Glycerol 86 %	~86 %, Ph.Eur., extra pure	**7533.1**	1 l	34,30
		7533.3	2,5 l	62,25
		7533.4	5 l	105,25
		7533.2	10 l	185,45
		7533.5	25 l	360,15

For additional product data and safety information, see chapter Chemicals A-Z.

Gelatine

platinum, extra pure, 240 Bloom

Storage temp.: +20 °C

Type analysis:

Gel strength. ..... 240 Bloom
Particle size. ..... ≤30 mesh
Water ..... <15 %
Ash. ..... <2 %
Peroxides (as H_2O_2). ..... <0,001 %
Sulphur dioxide (SO_2). ..... <0,005 %
Gelatine is produced from porcine skin.

4582.3	500 g	plastic	32,15 €
Original pack 6 x 500 g			30,54/500 g
4582.1	1 kg	plastic	52,15 €
Original pack 6 x 1 kg			49,54/1 kg
4582.2	5 kg	plastic	186,55 €

Our tip:

The Bloom grade declares the strength of the gelatine film. The higher the bloom grade the more rigid the gelatine film. Usually, a Bloom grade of 180 is sufficient for histological applications.

Gelatine

gold, extra pure, 180 Bloom

Storage temp.: +20 °C

Type analysis:

Gel strength. ..... approx. 180 Bloom
Particle size. ..... ≤30 mesh
Water ..... <15 %
Ash. ..... <2 %
Peroxides (as H_2O_2). ..... <0,001 %
Sulphur dioxide (SO_2). ..... <0,005 %
Gelatine is produced from porcine skin.

4274.3	500 g	plastic	30,65 €
Original pack 6 x 500 g			29,12/500 g
4274.1	1 kg	plastic	44,00 €
Original pack 6 x 1 kg			41,80/1 kg
4274.2	5 kg	plastic	181,15 €

Phytohistol® plus

ready-to-use

for microscopy

Botanical mounting medium based on sugar

- New compound
- High stability
- No hazardous ingredients
- Neutral pH 6-7

Phytohistol® plus is an aqueous mounting medium based on sugar with the consistency of liquid honey. It is especially suitable for plant materials. After evaporation of the water a rubber-like film remains. For producing durable specimens we recommend to seal the edges of the cover slip with our Roti®-Seal cover slip sealant (Art. No. 6473).
Shelf life: The solution contains a preserving agent and is stable for minimum 4 years after manufacture.
Application: Drop on slide, add specimen. When free from air bubbles place cover slip.

Type analysis:

Appearance. ..... yellow to brownish, viscous liquid
Refractive index (20 °C) 1,51-1,53

6471.1	15 ml	dropp. bottle	21,40 €
6471.2	50 ml	plastic	57,55 €

Immersion Oils ready-to-use

Immersion oil
for microscopy, fluorescence tested

Warning H41 0

An immersion oil with low viscosity and low background fluorescence, especially suitable for fluorescence microscopy.

Guarantee analysis:

Density (d 20 °C/4 °C). 1,0245-1,0265
Refractive index (20 °C)..... 1,5150-1,5170
Viscosity (20 °C). ..... 100-120 mPas
UV-transmission
450 nm..... ≥90 %
400 nm..... ≥78 %
380 nm..... ≥65 %
Fluorescence (as quinine):
365 nm..... ≤1,5 ppm

X899.4	15 ml	dropp. bottle	9,15 €
X899.1	50 ml	glass	14,95 €
X899.2	100 ml	glass	22,50 €
X899.3	500 ml	glass	80,10 €

Immersion oil
for microscopy

A viscous solution of natural oils based on oil of cedar wood.

Danger H304-H411

Type analysis:

Appearance. ..... clear, yellow-brownish, viscous oil
Density (20 °C). 0,981-0,998
Refractive index (20 °C)..... 1,508-1,525

5789.1	50 ml	glass	10,65 €
5789.3	100 ml	glass	14,55 €
5789.2	500 ml	glass	36,45 €

Oil of cedar wood
for microscopy

Oleum Ligni cedri

Danger H304-H410

The classic medium for immersion microscopy

Type analysis:

Appearance. ..... yellow to brownish, translucent, viscous
Odour. ..... characteristic
Refractive index n_D^{20}. 1,51-1,525

5308.1	100 ml	glass	16,05 €
5308.2	250 ml	glass	24,20 €
5308.3	500 ml	glass	41,85 €

Barrier Marker ready-to-use

Roti®-Liquid Barrier Marker, colourless
For immunology, histology and molecular biology. Glass bottle with brush.

Danger H225-H304-H315-H336-H411

The solution is applied to slides or other glass surfaces. After drying, a resistant hydrophobic film remains providing a barrier to aqueous liquids. Circles drawn with Roti®-Liquid Barrier Marker prevent aqueous solutions from spreading by increasing the surface tension of the water. Therefore expensive antibody solutions for example, can be used more effectively. The barrier film can be wiped off the glass surface with a dry cloth or a cloth impregnated with xylene.
Areas of applications: Ideal for immunological, histological and molecularbiological assays.

Roti®-Liquid Barrier Marker, colourless
For use with aqueous liquids and solvents as ethanol or acetone.

AN91.1	10 ml	glass	33,90 €
AN91.2	5 x 10 ml	glass	132,15 €

Roti®-Liquid Barrier Marker, red
For use with aqueous liquids only. The red dye is not solvent resistant.

AN92.1	10 ml	glass	33,90 €
AN92.2	5 x 10 ml	glass	132,15 €

▶ More slides and slide magazines see chapter Labware - Laboratory Glass, Vessels & Consumables / Microbiology, Histology & Instruments.

Instructions for use
can be found on the Internet next to the product description.

Specimen Sealing

Roti®-Seal

for microscopy

Aqueous cover slip sealant.

- Non-hazardous ingredients
- Solvent-free
- Solidification by light

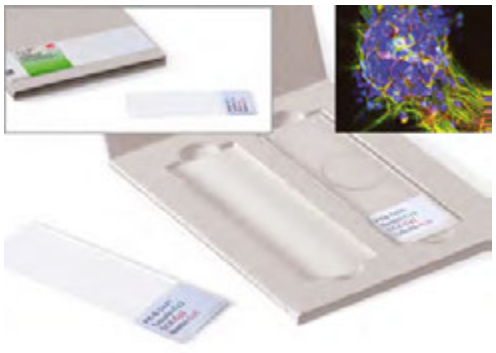
Roti®-Seal is used to seal the edges of the coverslip. Therefore, it protects the mounted specimen reliably against damages caused by air humidity. Roti®-Seal is solid at room temperature. Prior to use it is melted on a water bath (max. 50-55 °C), then it is applied around the edges of the coverslip by using a pipette or a glass rod. Exposure to light (day-light is sufficient) allows the sealant to harden within a short time.
Melt on a water bath (50-55 °C) prior to use.

Type analysis:

Appearance. ..... light yellowish coloured, solid medium

6473.1	20 ml	glass	13,90 €

Demoslides



Demoslides Fluoro-4C ready-to-use

Reference sample for fluorescent microscopy

Glass slide with ready-to-use cell specimen.
For fine tuning of fluorescent microscopes.
Storage temp.: +4 °C

- Stained with 4 fluorochromes
- Planar and 3D cell structures
- Excellent signal output
- Good photo stability

For detailed information see chapter Cell Biology / Cell Analysis.

8987.1	1 piece	283,30 €
8987.2	2 pieces	536,45 €

Adhesion Slides

For sophisticated immunohistochemical assays.

121°C

Roti®-Bond Adhesion Slides

Fast and highly efficient immobilisation of cellular material with optimal structure conservation.

The new adhesive coating of the Roti®-Bond adhesion slides reacts to natural surface structures of cells and tissues, anchoring them securely to the glass surface. Due to this procedure, based on different binding principles, the cells do not lose their antigenicity, their cell functionality and their three-dimensional structure.

- Assays using only several hundred cells possible
- No cell loss even during harsh incubation procedures
- Excellent recovery rate
- Compatible with all standard and modern assay systems and all fluorescent dyes
- Particularly adapted to assays using stem cells

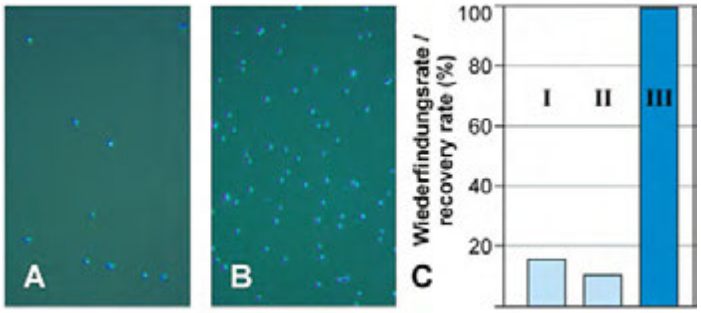


Figure:

Brand comparison of efficient cell immobilisation.
1800 murine myeloma cells in 30 µl PBS were applied to each slide. Cells were counted after full immunohistochemical assay including alkali treatment (70 mM NaOH, 150 mM NaCl, 40 % ethanol, 5 min, RT) and DAPI-counterstaining of the remaining nuclei.

A: Other adhesion slide,

B: Roti®-Bond Adhesion Slide,

C: Recovery rate in percent (I and II: other adhesion slides, III: Roti®-Bond)

Application:

Immobilisation of cells or tissue sections occurs immediately after contact to the glass surface. Drying of the samples is therefore not necessary. The cellular material can then be fixed with all common fixatives. Cell cultivation can be continued in appropriate culture medium after cell adhesion, allowing *in-vivo* live assays, e.g. with a multiphoton or laserscan microscope.

At present, there is no evidence of any preferential cell type binding in heterogenous cellular material.

Dimensions: L 75 mm x W 25 mm, thickness 1 mm

Roti®-Bond adhesion slides 50 and 100 are delivered in Rotilabo®-slide boxes.

Art. No.	Pack Qty	€
CL20.1	5	11,75
CL20.2	50	84,85
CL20.3	100	118,25

Chemicals

Organic & bioorganic chemicals

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Organic & bioorganic chemicals

Click Chemistry

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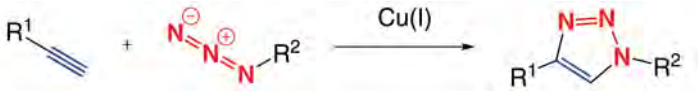
Click Chemistry

The copper(I)-catalysed azide-alkyne cycloaddition (CuAAC) is the most prominent example of a group of reactions named click reactions. According to Sharpless' definition, these reactions are characterised by high yields, mild reaction conditions, and by their tolerance of a broad range of functional groups.[1-3] Typically, the reactions require simple or no workup or purification of the product. The most important characteristic of the CuAAC reaction is its unique bioorthogonality as neither azide nor terminal alkyne functional groups are generally present in natural systems.



Schematic illustration of the copper(I)-catalysed azide-alkyne cycloaddition (CuAAC)

References:
1 H. C. Kolb, M.G. Finn, K. B. Sharpless, *Angew. Chem. Int. Ed.* **2001**, *40*, 2004-2021.
2 C.W. Tornoe, C. Christensen, M. Meldal, *J. Org. Chem.* **2002**, *67*, 3057-3064.
3 V. V. Rostovtsev, L. G. Green, V. V. Fokin, K. B. Sharpless, *Angew. Chem.* **2002**, *114*, 2708-2711; *Angew. Chem. Int. Ed.* **2002**, *41*, 2596-2599.

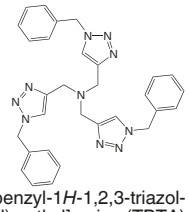
Reagents for Click Chemistry

Starting from diverse copper catalyst sources, over Cu(I) stabilising ligands to buffer additives and solvents, you will find all necessary reagents in the special ROTI®click quality to perform your click reactions here.

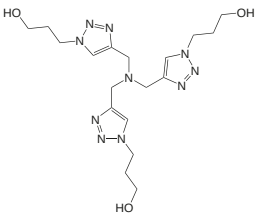
Catalysts, Ligands, Additives and Solvents

Product	Purity	Art. No.	Pack Qty.	€
L(+)-Ascorbic acid sodium salt	≥99 %, ROTI®click Grade	**7819.1**	10 mg	13,80
		7819.2	5 x 10 mg	40,75
Copper(I) bromide	≥99,999 %, ROTI®click Grade	**7813.1**	5 mg	14,55
		7813.2	10 x 5 mg	76,25
Copper(II) sulphate	≥98 %, anhydrous, ROTI®click Grade	**7816.1**	10 mg	14,95
		7816.2	5 x10 mg	42,90
DMSO/t-Butanol Solvent	ROTI®click Grade	**7815.1**	1 ml	14,95
		7815.2	10 x 1 ml	69,80
Tris[(1-benzyl-1*H*-1,2,3-triazol-4-yl)methyl]amine (TBTA)	≥95 %, ROTI®click Grade	**7814.1**	5 mg	34,95
		7814.2	10 mg	50,00
		7814.3	50 mg	85,90
		7814.4	100 mg	143,95
Tris(3-hydroxypropyltriazolylmethyl)amine (THPTA)	≥95 %, ROTI®click Grade	**7822.1**	5 mg	34,95
		7822.2	10 mg	50,00
		7822.3	50 mg	85,90
		7822.4	100 mg	143,95

For additional product data and safety information, see chapter Chemicals A-Z.



Tris[(1-benzyl-1*H*-1,2,3-triazol-4-yl)methyl]amine (TBTA)



Tris(3-hydroxypropyltriazolyl-methyl)amine (THPTA)

Tip:
TBTA (Art.No. 7814) is suitable as Copper-stabilising ligand for reactions in organic solvents. **THPTA (Art.No. 7822)** on the other hand is an optimal ligand for reactions in aqueous media.

Azides and Alkynes

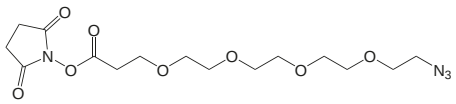
PEGylation and Linker

Click chemistry opens the door to introduce polyethylene glycols (PEGs) or other linkers in very sophisticated manner into your sample, which are still active for following reaction by the means of amine, carboxyl, malemide or NHS-functional terminal groups. You can choose between alkyne and azide structured PEGs and linkers which you find in the table below.

PEG and Linker Azides

Product	Purity	Art. No.	Pack Qty.	€
4-Azidobenzoic acid	≥97 %	**7835.1**	10 mg	39,70
5-Azidopentanoic acid	≥99 %	**7836.1**	5 mg	36,45
		7836.2	10 mg	48,30
HO-PEG2-Azide	≥90 %	**7828.1**	5 mg	43,55
		7828.2	10 mg	69,80
Aminooxy-PEG3-Azide	≥90 %	**7832.1**	5 mg	96,65
		7832.2	10 mg	146,10
H_2N-PEG3-Azide	≥90 %	**7830.1**	5 mg	43,55
		7830.2	10 mg	69,80
NHS-PEG4-Azide	≥90 %	**7823.1**	5 mg	66,55
		7823.2	10 mg	96,65
		7823.3	50 mg	332,75
		7823.4	100 mg	633,20
PEG8-Azide	≥90 %	**7826.1**	5 mg	64,40
		7826.2	10 mg	95,60
H_2N-PEG8-Azide	≥90 %	**7829.1**	5 mg	43,55
		7829.2	10 mg	69,80
PEG24-Azide	≥90 %	**7825.1**	5 mg	64,40
		7825.2	10 mg	95,60

For additional product data and safety information, see chapter Chemicals A-Z.

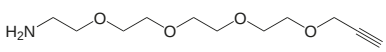


NHS-PEG4-Azide

PEG and Linker Alkynes

Product	Purity	Art. No.	Pack Qty.	€
H_2N-PEG4-Alkyne	≥90 %	**7840.1**	5 mg	69,80
		7840.2	10 mg	123,55
NHS-PEG5-Alkyne	≥95 %	**7838.1**	5 mg	69,80
		7838.2	10 mg	123,55

For additional product data and safety information, see chapter Chemicals A-Z.



H_2N-PEG4-Alkyne

Important information on refrigerated transports

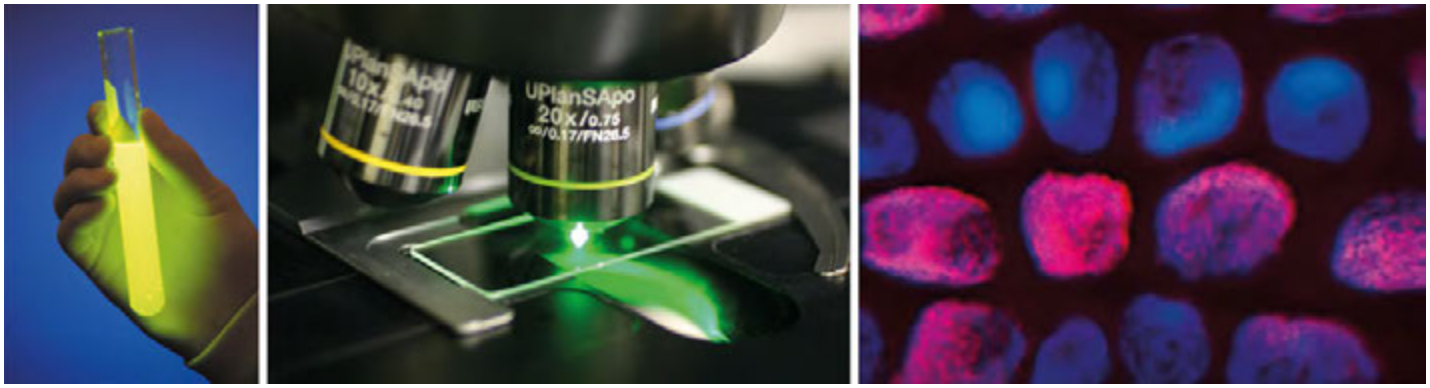
All products identified as being particularly temperature-sensitive are shipped in **special ice boxes with freezer packs or in dry ice.**
Additional costs resulting from such, **will be invoiced** (further information on request).

Please note:
In order to guarantee optimum product quality, the dispatch of refrigerated transport products will be carried out **on Mon and Tue only outside Germany!**
Slight delays in delivery are therefore possible.

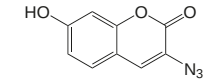
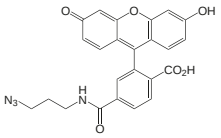
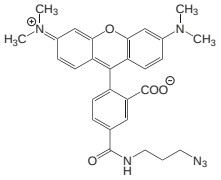
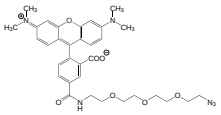
Tags

Fluorescent Tags

ROTH offers a selection of fluorescent tags for labelling of (bio-)molecules via click chemistry. All available tags are suitable for fluorescence spectroscopy applications due to their excellent absorption properties and good solubility. Tags with PEG-spacer are beneficial for applications with as little interaction between the analyte and the tag as possible. The coumarine derivative (Art No. **7811**) offers a unique feature: fluorescence is only detected after the coupling via click reaction.



Fluorescent Tags with azide funtion

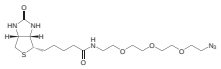
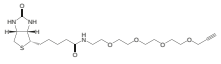
Product	Structural formula	Purity	Absorption max. (buffer, pH 7)	Emission max. (buffer, pH 7)	Molar extinction coefficient ε	Art. No.	Pack Qty.	€
3-Azido-7-hydroxycoumarin		≥98 %	404 nm (after click reaction)	480 nm (after click reaction)	n. d.	**7811.1**	1 mg	90,85
						7811.2	5 mg	303,70
6-Carboxyfluorescein Azide (6-FAM-Azide)		≥95 %	496 nm	516 nm	83 000 $cm^{-1}M^{-1}$	**7806.1**	1 mg	47,20
						7806.2	5 mg	81,60
						7806.3	10 mg	121,40
						7806.4	100 mg	478,40
5-Carboxytetramethylrhodamine Azide (5-TAMRA-Azide)		≥95 %	546 nm	579 nm	91 000 $cm^{-1}M^{-1}$	**7807.1**	1 mg	47,20
						7807.2	5 mg	81,60
						7807.3	10 mg	121,40
						7807.4	100 mg	478,40
5-Carboxytetramethylrhodamine-PEG3-Azide (5-TAMRA-PEG3-Azide)		≥90 %	546 nm	579 nm	91 000 $cm^{-1}M^{-1}$	**7808.1**	1 mg	45,70
						7808.2	5 mg	79,45
						7808.3	10 mg	120,95
						7808.4	100 mg	471,95

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Further Fluorescent Tags see chapter Histology/Microscopy

Non-Fluorescent Tags

Besides fluorescent tags other non-fluorescent labels play an important role in biochemistry and microbiology. Incorporation of such functional groups into your sample with high yields and selectivity is easily possible by click chemistry. Further, the click reaction is compatible with or rather orthogonal to various other labelling methodologies. In order to enlarge the scope for your personalised application we offer these tags in azide and alkyne functional form.

Product	Structural formula	Purity	Art. No.	Pack Qty.	€
Biotin-PEG3-Azide		≥90 %	**7804.1**	1 mg	107,40
			7804.2	5 mg	181,70
Biotin-PEG4-Alkyne		≥95 %	**7805.1**	1 mg	113,85
			7805.2	5 mg	403,15

▶ Solvents see Chapter chemicals A-Z

Important information on refrigerated transports

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Azido Amino Acids

With the emergence of click chemistry the use of azide- and alkyne-derivatised α-amino acids has found high interest e.g. in the area of peptide synthesis as a powerful tool in the development of new therapeutics and biological chemistry fundamental research.
Peptide labelling mostly requires reactions which are running close to physiological conditions (neutral pH, aqueous solution, ambient temperature).
Cu(I)-catalysed alkyne-azide cycloaddition (CuAAC) is optimal for such biological compounds, here the advantages of click chemistry once again show their potential.
The low reactant concentrations, low background labelling, the quantitative and rapid labelling, plus the mild reaction conditions fit the necessary reactivity, selectivity and biocompatibility criteria for the peptide labelling and thus ensure the preservation of biological function.
ROTH provides high quality azido amino acids. In this form they can easily undergo click reaction when an alkyne functional reporter molecule is present.

Product	Synonym	Purity	CAS No.	Art. No.	Pack Qty.	€
D-β-Azidoalanine hydrochloride	H-D-Aza-OH · HCl	≥99 %	1379690-01-3	**7856.1**	5 mg	43,55
				7856.2	10 mg	69,80
				7856.3	100 mg	220,40
				7856.4	500 mg	568,70
L-β-Azidoalanine hydrochloride	H-L-Aza-OH · HCl	≥98 %	105661-40-3	**7854.1**	5 mg	43,55
				7854.2	10 mg	69,80
				7854.3	100 mg	220,40
				7854.4	500 mg	568,70
D-γ-Azidohomoalanine hydrochloride	H-D-Aha-OH · HCl	≥99 %	120042-14-0	**7858.1**	5 mg	43,55
				7858.2	10 mg	69,80
				7858.3	100 mg	220,40
				7858.4	500 mg	568,70
L-γ-Azidohomoalanine hydrochloride	H-L-Aha-OH · HCl	≥98 %	942518-29-8	**7857.1**	5 mg	43,55
				7857.2	10 mg	69,80
				7857.3	100 mg	220,40
				7857.4	500 mg	568,70
D-Azidolysine hydrochloride	H-D-Lys(N_3)-OH · HCl	≥99 %	1159610-92-1	**7862.1**	5 mg	43,55
				7862.2	10 mg	69,80
				7862.3	100 mg	220,40
				7862.4	500 mg	568,70
L-Azidolysine hydrochloride	H-L-Lys(N_3)-OH · HCl	≥98 %	159610-92-1	**7861.1**	5 mg	43,55
				7861.2	10 mg	69,80
				7861.3	100 mg	220,40
				7861.4	500 mg	568,70
D-4-Azidophenylalanine	H-D-Phe(4-N_3)-OH	≥98 %	1241681-80-0	**7853.1**	5 mg	43,55
				7853.2	10 mg	69,80
				7853.3	100 mg	220,40
				7853.4	500 mg	568,70
L-4-Azidophenylalanine	H-L-Phe(4-N_3)-OH	≥98 %	33173-53-4	**7850.1**	5 mg	43,55
				7850.2	10 mg	69,80
				7850.3	100 mg	220,40
				7850.4	500 mg	568,70
D-Azidoornithine hydrochloride	H-D-Orn(N_3)-OH · HCl	≥99 %	-	**7860.1**	5 mg	43,55
				7860.2	10 mg	69,80
				7860.3	100 mg	220,40
				7860.4	500 mg	568,70
L-Azidoornithine hydrochloride	H-L-Orn(N_3)-OH · HCl	≥99 %	156463-09-1	**7859.1**	5 mg	43,55
				7859.2	10 mg	69,80
				7859.3	100 mg	220,40
				7859.4	500 mg	568,70

For additional product data and safety information, see chapter Chemicals A-Z.

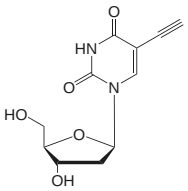
Fmoc Protected Azido Amino Acids

Product	Synonym	Purity	CAS No.	Art. No.	Pack Qty.	€
Fmoc-L-β-Azidoalanine	Fmoc-L-Aza-OH	≥98 %, for biochemistry	684270-46-0	**7369.1**	250 mg	110,65
				7369.2	1 g	364,45
Fmoc-L-γ-Azidohomoalanine	Fmoc-L-Aha-OH	≥99 %, for biochemistry	942518-20-9	**7363.1**	250 mg	89,15
				7363.2	1 g	306,40
Fmoc-L-Azidolysine	Fmoc-L-Lys(N_3)-OH	≥98 %, for biochemistry	159610-89-6	**7357.1**	250 mg	105,90
				7357.2	1 g	342,95
Fmoc-L-Azidoornithine	Fmoc-L-Orn(N_3)-OH	≥98 %, for biochemistry	1097192-04-5	**7362.1**	250 mg	110,65
				7362.2	1 g	364,45
Fmoc-L-4-Azidophenylalanine	Fmoc-L-Phe(4-N_3)-OH	≥98 %, for biochemistry	163217-43-4	**7485.1**	100 mg	54,75
				7485.2	250 mg	117,20
Fmoc-L-4-Azidoproline (2S,4R)	Fmoc-L-Pro(4-N_3)-OH	≥98 %, for biochemistry	702679-55-8	**7367.1**	100 mg	99,90
				7367.2	250 mg	199,45
				7367.3	1 g	643,95

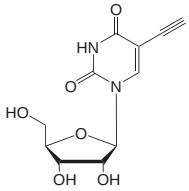
Nucleosides and Nucleotides

Nucleosides

The detection of cell proliferation is of utmost importance for monitoring cell vitality, determining genotoxicity or evaluating anticancer drugs. The feeding of cells with EdU (5-ethynyl-2'-deoxyuridine) or EU (5-ethynyl uridine) can be used in cell proliferation studies.



5-Ethynyl-2'-deoxyuridine

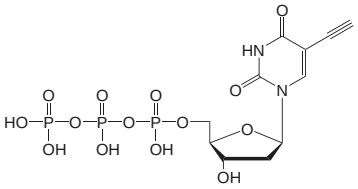


5-Ethinyl uridine

Product	Purity	Art. No.	Pack Qty.	€
5-Ethynyl-2'-deoxyuridine (EdU)	≥98 %	**7845.1**	5 mg	28,50
		7845.2	10 mg	43,55
		7845.3	50 mg	100,55
		7845.4	100 mg	160,20
		7845.5	500 mg	557,95
		7845.6	1 g	1020,20
5-Ethynyl uridine (EU)	≥98 %	**7848.1**	5 mg	59,05
		7848.2	10 mg	99,45

Nucleotides

Our modified nucleotides for click chemistry complement our range of unmodified standard nucleotides. You can use our alkyne-triphosphates in your nucleotide mixture to incorporate alkyne groups into your PCR fragment. These alkyne groups can be used to label the PCR fragment in a subsequent click reaction.



5-Ethynyl-dUTP

≥98 %, 100 mM in water
5-Ethynyl-2'-deoxyuridine-5'-triphosphate, EdUTP
$C_{11}H_{15}N_2O_{14}P_3$
M 491,97 g/mol
Storage temp.: -20 °C • Transport temp.: cooled

Type analysis:
Appearance. ..... clear solution
Assay (HPLC). ..... ≥98 %

7802.1	0,5 µmol	plastic	95,15 €
7802.2	2,5 µmol	plastic	360,15 €
7802.3	5,0 µmol	plastic	553,65 €

▶ Further nucleosides and nucleotides see page 1549

▶ dNTP solutions see page 1299

Important information on refrigerated transports

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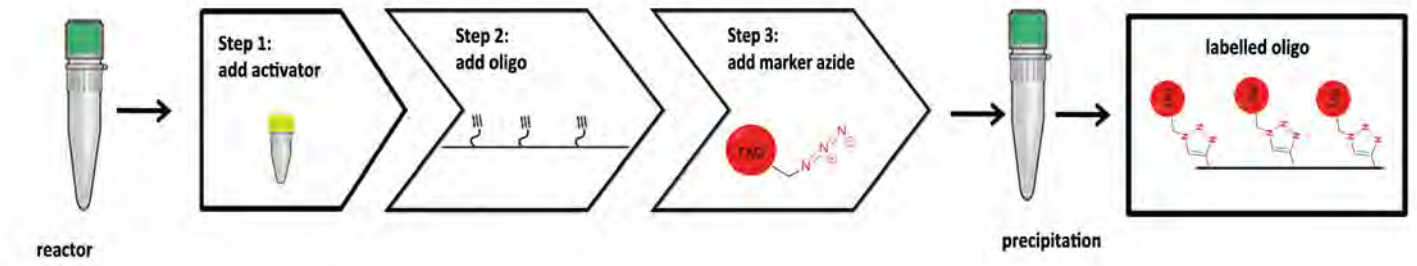
Applications

Labelling of Oligos with Roti®kits for DNA Labelling

The ROTI®kits for DNA Labelling are optimized for the labelling of up to 100 nmol of a single or double alkyne-modified oligonucleotide via copper(I)-catalyzed azide-alkyne cycloaddition (CuAAC; click chemistry). These kits provide all reagents needed to perform your click reaction on alkyne bearing oligonucleotides using a fast, simple and straight forward protocol.

The Oligo Click kits are based on a new solid heterogeneous catalyst. This air-stable, insoluble Cu(I) source provided in a ready-to-use vial (reactor) along with an activator allows efficient click reactions in both aqueous and organic solvents. Both catalyst and activator result in a much easier and faster handling including only three steps:



More than 100 azides are compatible with these kits.

Oligo Click S Reload

ROTI®kit for DNA labelling

For DNA labelling assays.

Storage temp.: see below, room temp./-20 °C • Transport temp.: cooled

Warning H226-H319

- Highly reliable
- Easy to perform
- Fast detection procedure (only 30 min)
- Mild conditions (no DNA denaturation required)
- Modular system due to click chemistry
- Compatible with various dyes and readouts

Markerazides and Oligonucleotides not included.

The Oligo Click S Reload Kit is designed for 9 reactions with 10 nmol alkyne-modified oligonucleotide (1-2 alkynes).

Components:

Activator. ..... 35 µl
Reactor S. ..... 9 x 2,5 mg
Store at -20 °C (Activator); room temp. (Reactor S)

7764.1	1 kit	cardboard	64,40 €

Oligo Click M Reload

ROTI®kit for DNA labelling

For DNA labelling assays.

Storage temp.: see below, room temp./-20 °C • Transport temp.: cooled

Warning H319

- Highly reliable
- Easy to perform
- Fast detection procedure (only 30 min)
- Mild conditions (no DNA denaturation required)
- Modular system due to click chemistry
- Compatible with various dyes and readouts

Markerazides and Oligonucleotides not included.

The Oligo Click M Reload Kit is designed for 9 reactions with 100 nmol alkyne-modified oligonucleotide (1-2 alkynes).

Components:

Activator. ..... 50 µl
Reactor M. ..... 9 x 5 mg
Store at -20 °C (Activator); room temp. (Reactor M)

7765.1	1 kit	cardboard	80,55 €

Instructions for use
can be found on the Internet next to the product description.

Cell Proliferation Assays

Our ROTI®Kits for EdU mediated detection of cell proliferation provide a superior alternative to time-consuming and less sensitive bromodeoxyuridine (BrdU) assays. Similar to BrdU assays, our assays utilise a uracil derivative (in this case ethynyldeoxyuridine, EdU) which is incorporated into the replicating DNA.
EdU is not detected via antibodies; instead fluorescent dyes are coupled directly via click reaction.
This fast and elegant approach allows direct labelling of replicating DNA with the desired fluorescent dye.
Thus, the assay is perfectly adaptable to the present facilities and to the assay situation (e.g. for double or triple detection). Furthermore, the click reaction is highly selective and therefore prevents any unspecific labelling.
The protocol includes only few steps and decreases the total amount of time.

Advantages of the click chemistry based approach:

Schematic illustration of the click chemistry based EdU cell proliferation assay. A) Incubation of cells with EdU. EdU is a thymidine analogue and is incorporated in DNA during active DNA synthesis. B) After DNA synthesis, EdU was incorporated in the DNA strands. C) Detection of proliferating cells via click chemistry. This reaction is finished within 30 minutes, whereby a variety of different fluorescent dye azides can be used.

Benefits of the Click Assay:

- Highly reliable
- Easy handling
- Fast detection procedure (only 30 min)
- Mild conditions, no DNA denaturation required
- Compatible with various dyes
- Modular system in click chemistry
- Compatible with multiplexing

Kits available for:

- **Fluorescence microscopy (ROTI®kits for Imaging)**
- **Flow Cytometry (ROTI®kits for Flow Cytometry)**
- **High Throughput Screening (ROTI®kits for High Throughput Screening)**

Code in product name	Markers	Absorption (nm)	Emission (nm)	Filter configuration
-488	**6-FAM azide**	496	516	FITC
-555	**5-TAMRA azide**	546	579	Cy3™
-594	**5/6 Sulforhodamine**	584	603	Texas Red®
-647	**Eterneon red (analogous to cyanine 5 azide)**	643	662	Cy5™

Tip:
The number at the end of the product name specifies the excitation wavelength of the included fluorescent marker. Suitable excitation source are:

- 488 nm (blue-green argon laser 488 nm, blue diode laser 473 nm)
- 555 nm (green Nd:YAG laser 532 nm, green helium-neon-laser 543 nm)
- 594 nm (yellow helium-neon-laser 594 nm, yellow diode laser 594 nm)
- 647 nm (red krypton laser 647 nm, red helium-neon-laser 633 nm, red diode laser 635 or 650 nm)

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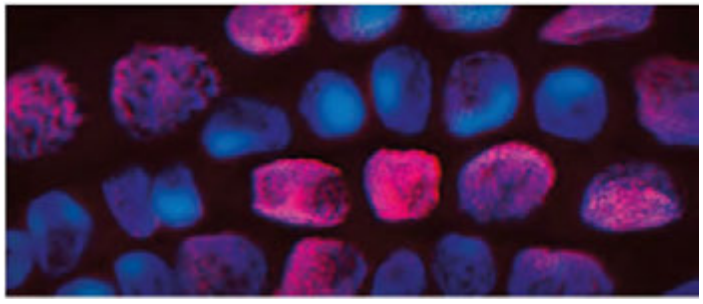
ROTI®kits for Imaging

The detection of cell proliferation is of utmost importance for monitoring of cell vitality, determining genotoxicity or evaluating anticancer drugs. ROTH's cell proliferation assays based on EdU (5-ethynyl-2'-deoxyuridine) provide a superior alternative to BrdU (bromodeoxyuridine) assays. ROTH's EdU Click assays are not antibody based and therefore do not require DNA denaturation for detection of the incorporated nucleoside. Instead, the EdU Click assay utilizes click chemistry for detection in a variety of dye fluorescent readouts. Furthermore, the streamlined detection protocol both reduces the total number of steps and significantly decreases the total amount of time.



Proliferating tissue of barley meristem labeled via EdU Click-555 kit (Art. Nr. 7775.1). Dividing cells incorporated EdU and were labeled via click reaction with TAMRA (pink stained cells). Nuclei were counterstained with DAPI (blue). Magnification: 100x; Filterset: Sp. Aqua HC mFISH; Sp. Green HC mFISH

ROTI®kits for Imaging

ready-to-use

Warning H315-H319-H400-H410

Product	Marker	λ (nm)	Application	Art. No.	Pack Qty.	€
EdU Click-488	6-FAM	488	For 100 Assays.	**7773.1**	1 kit	375,20
EdU Click-555	5-TAMRA	555	For 100 Assays.	**7775.1**	1 kit	375,20
EdU Click-594	5/6 Sulforhodamine	594	For 100 Assays.	**7776.1**	1 kit	375,20
EdU Click-647	Eterneon Red	647	For 100 Assays.	**7777.1**	1 kit	375,20

For additional product data and safety information, see chapter Chemicals A-Z.

Referenzen:

1 S. Vidak *et al.*, Proliferation of progeria cells is enhanced by lamina-associated polypeptide 2α (LAP2α) through expression of extracellular matrix proteins, Genes & Development **2015**, 29, 2022-2036.

EdU Click-488:

2 V. Fock *et al.*, Trophoblast subtype-specific EGFR/ ERBB4 expression correlates with cell cycle progression and hyperplasia in complete hydatidiform moles. Human Reproduction 2015, 30, 4, 789-799.

3 K. Plessl *et al.*, Expression pattern and function of Notch2 in different subtypes of first trimester cytotrophoblast. Placenta **2015**, 36, 365-371.

4 G. Meinhardt *et al.*, Wingless ligand 5a is a critical regulator of placental growth and survival. Scientific reports **2016**, 6, 28127.

5 V. Ziegler, A. Albers, G. Fritz, Lovastatin protects keratinocytes from DNA damage-related pro-apoptotic stress responses stimulated by anticancer therapeutics. Biochimica et Biophysica Acta **2016**, 1863, 1082-1092.

EdU Click-555:

6 S. Barberán, S. Fraguas and F. Cebrià, The EGFR signaling pathway controls gut progenitor differentiation during planarian regeneration and homeostasis. Development **2016,** 143, 2089-2102.

7 M. Hennenberg *et al.*, Cooperative effects of EGF, FGF, and FGF-ß1 in prostate stromal cells are different from responses to single growth factors. Life Sciences **2015**, 123, 18-24.

8 D. Herrmann *et al.*, Honokiol, a constituent of Magnolia species, inhibits adrenergic contraction of human prostate strips and induces stromal cell death. Prostate Int **2014**, 2, 3, 140-146.

Instructions for use
can be found on the Internet next to the product description.

▶ Cell culture media and further reagents for cell culture see chapter Cell biology

ROTI®kits for Flow Cytometry (FC)

The ROTI®kits for Flow Cytometry by ROTH use click chemistry to detect cell proliferation by means of a large number of fluorescent stain read-outs. In the detection procedure both, the total number of steps and the processing time are significantly reduced. The simple click chemistry detection procedure is complete within 30 minutes.

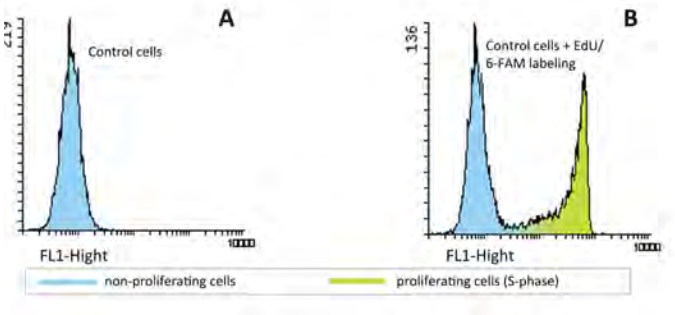
ROTI®kits for Flow Cytometry (FC) ready-to-use

Product	Marker	λ (nm)	Application	Art. No.	Pack Qty.	€
EdU Click FC-488	6-FAM	488	For 50 assays.	**7779.1**	1 kit	385,95
EdU Click FC-555	5-TAMRA	555	For 50 assays.	**7780.1**	1 kit	385,95
EdU Click FC-594	5/6 Sulforhodamine	594	For 50 assays.	**7781.1**	1 kit	385,95
EdU Click FC-647	Eterneon Red	647	For 50 assays.	**7783.1**	1 kit	385,95

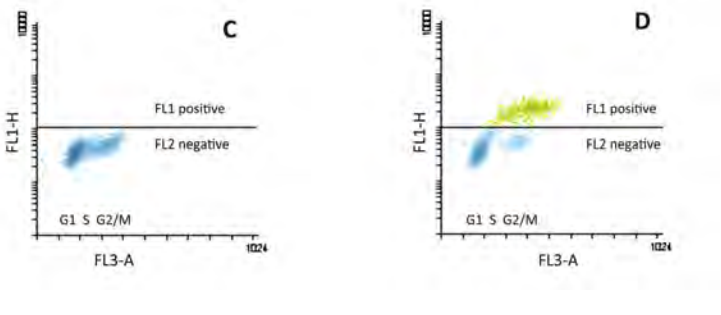
For additional product data and safety information, see chapter Chemicals A-Z.

References:

1 N. Dinh Van et al., Modulation of HCV reinfection after orthotopic liver transplantation by fibroblast growth factor-2 and other non-interferon mediators. Gut 2016, 65, 1015-1023.
2 L. Pisarsky et al., Targeting Metabolic Symbiosis to Overcome Resistance to Anti-angiogenic Therapy. Cell Reports 2016, 15, 1-14.



HeLa cells treated without (A) and with (B) 10µM EdU for 2 h.
Click reaction was performed using 6-FAM-Azide.
A: negative control, cells without EdU incorporation.
B: non-proliferating cells without EdU incorporation (blue coloured left peak) and proliferating cells (S-phase) having incorporated EdU and are labeled with 6-FAM Azide (green coloured right peak).



Density blots of PI (propidium iodide) stained samples without (C) and with (D) EdU incubation and followed click reaction. The y-axis presents the FL1-Fluorescence intensity and the x-axis the content of DNA measured with FL3-area. Cell cycle phases are indicated as G1, S and G2/M phase.

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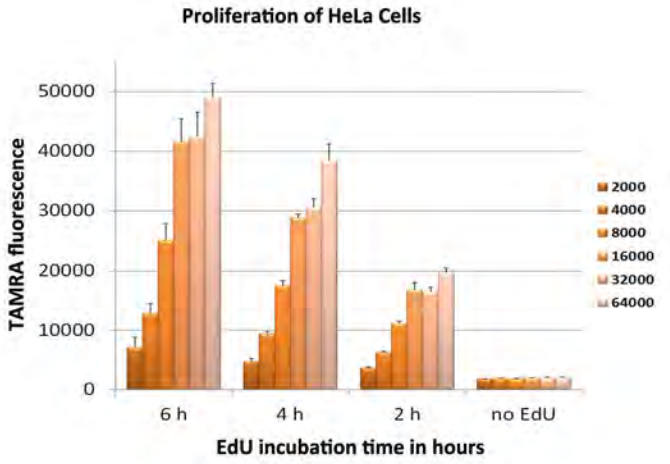
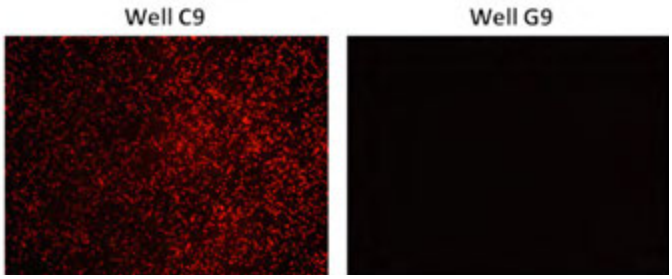
Slight delays in delivery are therefore possible.

ROTI®kits for High Throughput Screening (HTS)

The ROTI®kits for High Troughput Screening measures DNA synthesis of adherent cells in 96 well plates. By utilizing click chemistry, detection of a variety of fluorescent dyes is highly specific and very fast. The kits are available in different sizes. The size (2, 4 or 20) refers to the number of 96-well plates for which the kit is designed.



HeLa cells incubated without and with 10 µM EdU for 2, 4 or 6 h in 96 well plate. EdU incorporation was detected over time and for different cell numbers using a fluorescence plate reader. Control: Without EdU no fluorescence was detected after 6 h incubation time.



Fluorescence imaging of 2 wells:
Well C9: incubated for 6 h with EdU;
Well G9: incubation without EdU.

ROTI®kits for High Throughput Screening (HTS) ready-to-use

Product	Marker	λ (nm)	Application	Art. No.	Pack Qty.	€
EdU Click HTS 2-488	6-FAM	488	For 200 reactions or 2 x 96 well plates.	**7786.1**	1 kit	218,15
EdU Click HTS 4-488	6-FAM	488	For 400 reactions or 4 x 96 well plates.	**7787.1**	1 kit	332,20
EdU Click HTS 20-488	6-FAM	488	For 2000 reactions or 20 x 96 well plates.	**7788.1**	1 kit	1095,45
EdU Click HTS 2-555	5-TAMRA	555	For 200 reactions or 2 x 96 well plates.	**7789.1**	1 kit	218,15
EdU Click HTS 4-555	5-TAMRA	555	For 400 reactions or 4 x 96 well plates.	**7791.1**	1 kit	332,20
EdU Click HTS 20-555	5-TAMRA	555	For 2000 reactions or 20 x 96 well plates.	**7792.1**	1 kit	1095,45

▶ 96-well plates (microplates) see page 479

DNA Synthesis

Nucleobases & Derivatives

Product	Purity	Art. No.	Pack Qty.	€
Adenine	≥98 %, for biochemistry	**3025.1**	5 g	17,10
		3025.2	25 g	42,90
6-Azauracil	≥98 %, for biochemistry	**5488.1**	5 g	66,55
		5488.2	10 g	110,65
6-Benzylaminopurine	≥98 %, for biochemistry	**5552.1**	1 g	18,20
		5552.2	5 g	41,95
		5552.3	25 g	166,55
Cytosine	≥99 %, for biochemistry	**7295.1**	5 g	31,75
		7295.2	25 g	74,10
		7295.3	100 g	196,65
Guanine	≥97 %, for biochemistry	**7505.1**	10 g	26,35
		7505.2	25 g	53,25
Guanine hydrochloride	≥98 %, for biochemistry	**3814.2**	5 g	14,95
		3814.1	10 g	22,05
		3814.3	50 g	75,15
Hypoxanthine	≥98 %, for biochemistry	**6416.1**	5 g	76,90
Kinetin	≥98 %, for biochemistry	**4142.1**	1 g	21,00
		4142.2	5 g	53,25
Orotic acid	≥99 %, anhydrous	**6820.2**	25 g	34,30
		6820.1	100 g	75,15
Theobromine	≥99 %, Ph.Eur., for biochemistry	**8963.1**	10 g	19,90
		8963.2	100 g	78,40
2-Thiouracil	≥98 %, for biochemistry	**5245.1**	50 g	45,05
		5245.2	100 g	76,25
Thymine	≥99 %, for biochemistry	**7289.1**	5 g	25,30
		7289.2	25 g	39,70
		7289.3	100 g	87,00
Uracil	≥99 %, for biochemistry	**7288.1**	5 g	15,60
		7288.2	25 g	27,45
		7288.3	100 g	67,20

For additional product data and safety information, see chapter Chemicals A-Z.

Nucleosides

Product	Purity	Art. No.	Pack Qty.	€
Adenosine	≥99 %, p.a.	**6122.1**	5 g	16,70
		6122.2	10 g	25,70
		6122.3	25 g	51,50
	NEW	**6122.7**	100 g	177,40
5-Bromo-2'-deoxyuridine	≥99 %, for biochemistry	**3243.1**	250 mg	34,30
Cytidine	≥99 %, for biochemistry	**0717.1**	10 g	38,60
		0717.2	25 g	75,15
5-Ethynyl-2'-deoxyuridine (EdU)	≥98 %	**7845.1**	5 mg	28,50
		7845.2	10 mg	43,55
		7845.3	50 mg	100,55
		7845.4	100 mg	160,20
		7845.5	500 mg	557,95
		7845.6	1 g	1020,20
5-Ethynyl uridine (EU)	≥98 %	**7848.1**	5 mg	59,05
		7848.2	10 mg	99,45
Guanosine	≥98 %, for biochemistry	**0715.1**	10 g	22,50
		0715.2	25 g	39,70
Inosine	≥98 %, for biochemistry	**6770.1**	5 g	21,40
Thymidine	≥99 %, p.a.	**3005.2**	500 mg	19,90
		3005.1	1 g	23,55
		3005.3	5 g	50,45
		3005.4	25 g	150,40
Uridine	≥99 %, for biochemistry	**0714.1**	5 g	21,00
		0714.2	10 g	30,00
		0714.3	25 g	56,90

For additional product data and safety information, see chapter Chemicals A-Z.

Nucleotides

Product	Purity	Art. No.	Pack Qty.	€
Adenosin-5'-triphosphate disodium salt (ATP)	≥98 %, for biochemistry	**HN35.1**	5 g	24,20
		HN35.2	10 g	34,30
		HN35.3	25 g	64,00
		HN35.4	100 g	209,65
ATP	≥98 %, lyophilised	**K054.1**	1 g	30,00
		K054.2	5 g	40,35
		K054.3	10 g	119,90
		K054.4	25 g	140,30
		K054.5	50 g	256,95
CTP	≥98 %, lyophilised	**K057.1**	100 mg	60,10
		K057.2	250 mg	55,80
		K057.3	500 mg	107,00
		K057.4	1 g	239,65
GTP	≥90 %, lyophilised	**K056.1**	100 mg	59,70
		K056.2	250 mg	99,45
		K056.3	500 mg	192,45
		K056.4	1 g	239,20
UTP	≥90 %, lyophilised	**K055.1**	100 mg	59,70
		K055.2	500 mg	139,25

For additional product data and safety information, see chapter Chemicals A-Z.

CPG/Supports

Support material for DNA-Synthesis

Derivated Controlled Pore Glass (CPG) is used as support material for DNA-synthesis. The 500 Å supports are ideal for virtually all applications.
In order to avoid steric hindrance between the growing oligo-nucleotide chains and to gain a maximum yield of full-length chains, a long-chained alkylamine "spacer arm" is used.

500 Å supports are loaded with 30-40 µmol/g

Adenosine-CPG-Support
500 Å pore size
Support material for DNA-synthesis.
dA-lcaa-CPG
Storage temp.: +4 °C

Type analysis:
Purity (HPLC).....≥98,0 %
CPG loading. .....30-40 µmol/g
Coupling efficiency. .....≥99 %

2318.3	1 g	plastic	59,05 €

Cytidine-CPG-Support
500 Å pore size
Support material for DNA-synthesis.
dC-lcaa-CPG
Storage temp.: +4 °C

Type analysis:
Purity (HPLC).....≥95,0 %
CPG loading. .....30-40 µmol/g
Coupling efficiency. .....≥99 %

2319.3	1 g	plastic	58,60 €

Guanosine-CPG-Support
500 Å pore size
Support material for DNA-synthesis.
dG-lcaa-CPG
Storage temp.: +4 °C

Type analysis:
Purity (HPLC).....≥98,0 %
CPG loading. .....30-40 µmol/g
Coupling efficiency. .....≥99 %

2320.3	1 g	plastic	58,60 €

Thymidine-CPG-Support
500 Å pore size
Support material for DNA-synthesis.
dT-lcaa-CPG
Storage temp.: +4 °C

Type analysis:
Purity (HPLC).....≥98,0 %
CPG loading. .....30-40 µmol/g
Coupling efficiency. .....≥99 %

2321.3	1 g	plastic	58,60 €

BCE-Phosphoramidites

for PerSeptive Expedite™ and PolyGen® Synthesizer

Adenosine-BCE-phosphoramidite
for DNA synthesis
For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-dA(N-Bz)P-(OCH_2CH_2CN)-N(iPr)$_2$
$C_{47}H_{52}N_7O_7P$
M 857,7 g/mol
Storage temp.: +4 °C

K921.1	1 g	glass	35,40 €

Cytidine-BCE-phosphoramidite
for DNA synthesis
For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-dC(N-Bz)P-(OCH_2CH_2CN)-N(iPr)$_2$
$C_{46}H_{52}N_5O_8P$
M 833,7 g/mol
Storage temp.: +4 °C

K922.1	1 g	glass	35,40 €

Guanosine-BCE-phosphoramidite
for DNA synthesis
For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-dG(N-Bu)P-(OCH_2CH_2CN)-N(iPr)$_2$
$C_{44}H_{54}N_7O_8P$
M 839,7 g/mol
Storage temp.: +4 °C

K923.1	1 g	glass	35,40 €

Thymidine-BCE-phosphoramidite
for DNA synthesis
For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-T-P(OCH_2CH_2CN)-N(iPr)$_2$
$C_{40}H_{49}N_4O_8P$
M 744,6 g/mol
Storage temp.: +4 °C

K924.1	1 g	glass	35,40 €

Reagents

ready-to-use

for ABI™- and PolyGen® Synthesizer

Molecular sieve 3 Å
activated, under argon
Suitable for PolyGen® Synthesizer, 3 Å.
Storage temp.: +20 °C

N893.1	100 ml	glass	12,80 €

Activation reagent

for DNA synthesis with ABI™ and PolyGen® Synthesizer

Tetrazole/Acetonitrile

Danger H225-H302+H312+H332-H319

2253.1	200 ml	glass	107,00 €
2253.2	450 ml	glass	209,65 €

Capping reagent I

for DNA synthesis with ABI™ and PolyGen® Synthesizer

Mixture of acetic anhydride, pyridine and tetrahydrofuran

Storage temp.: +4 °C

Danger

H225-H318-H302+H332-H335-H351-H315-EUH019

2255.1	200 ml	glass	37,55 €
2255.2	450 ml	glass	79,45 €
2255.3	2,5 l	glass	218,15 €
Original pack 4 x 2,5 l			207,24/2,5 l

Capping reagent II

for DNA synthesis with ABI™ and PolyGen® Synthesizer

Mixture of 1-Methylimidazole and tetrahydrofuran

Storage temp.: +4 °C

Danger H225-H314-H302-H335-H351-EUH019

2256.1	200 ml	glass	36,45 €
2256.2	450 ml	glass	76,25 €
2256.3	2,5 l	glass	203,20 €
Original pack 4 x 2,5 l			193,04/2,5 l

DMT removal DCE

for DNA-synthesis with PolyGen® Synthesizer

3 % Trichloro acetic acid in 1,2-dichloroethane

Danger H225-H302-H315-H318-H335-H350-H411

K060.1	450 ml	glass	38,20 €
K060.2	2,5 l	glass	122,45 €
Original pack 4 x 2,5 l			116,33/2,5 l

DMT removal reagent

for DNA synthesis with ABI™ Synthesizer

3 % Trichloro acetic acid in dichloromethane

Danger H315-H318-H335-H336-H351-H373-H411

2257.1	450 ml	glass	37,55 €
2257.2	2,5 l	glass	121,40 €
Original pack 4 x 2,5 l			115,33/2,5 l

Oxidation reagent

for DNA-Synthesis with ABI™ and PolyGen® Synthesizer

Iodine/water/pyridine/tetrahydrofuran-mixture. 0,05 M iodine.

Danger H225-H315-H319-H335-H351-H373-EUH019

2254.1	200 ml	glass	28,50 €
2254.2	450 ml	glass	52,60 €
2254.3	2,5 l	glass	220,40 €
Original pack 4 x 2,5 l			209,38/2,5 l

Fast Oxidation reagent

for DNA-Synthesis with ABI™ and PolyGen® Synthesizer

For quick separating phosphoramidites.

Iodine/water/pyridine/tetrahydrofuran-mixture. 0,02 M iodine.

Storage temp.: +20 °C

Danger H225-H315-H319-H335-H351-H373-EUH019

A133.2	450 ml	glass	52,15 €

4,4'-Dimethoxytrityl chloride (DMT-Cl)

≥98 %, for synthesis

Protective group reagent

9671.1	5 g	glass	24,20 €
9671.2	25 g	glass	71,95 €
9671.3	50 g	glass	117,75 €
9671.4	100 g	glass	188,05 €

Starter Kit DNA Synthesis for approx. 100x30mers

Product	Art. No.	Pack Qty.	€	Recommended order amount
Adenosine-CPG-support (500 Å)	**2318.3**	1 g	59,05	1
Cytidine-CPG-support (500 Å)	**2319.3**	1 g	58,60	1
Guanosine-CPG-supports (500 Å)	**2320.3**	1 g	58,60	1
Thymidine-CPG-support (500 Å)	**2321.3**	1 g	58,60	1
Adenosine-BCE-phosphoramidite	**K921.1**	1 g	35,40	5
Cytidine-BCE-phosphoramidite	**K922.1**	1 g	35,40	5
Guanosine-BCE-phosphoramidite	**K923.1**	1 g	35,40	5
Thymidine-BCE-phosphoramidite	**K924.1**	1 g	35,40	5
Activation reagent	**2253.2**	450 ml	209,65	1
Oxidation reagent	**2254.2**	450 ml	52,60	1
Capping reagent I	**2255.2**	450 ml	79,45	2
Capping reagent II	**2256.2**	450 ml	76,25	1
DMT removal DCE	**K060.1**	450 ml	38,20	1
Acetonitrile (water content ≤10 ppm)	**8824.2**	2,5 l	107,00	2
Molecular sieve 3 Å	**N893.1**	100 ml	12,80	5
Ammonia solution 32 %	**A990.1**	200 ml	17,75	1
Acetonitrile (water content ≤30 ppm)	**3620.1**	100 ml	27,85	5
Disposable syringes, Luer-fitting	**0059.1**	100 pieces	20,35	1
Disposable needles Sterican®, long edge	**C721.1**	100 pieces	6,90	1
PCR-reaction vials (0.2 ml)	**XT87.1**	1000 pieces	54,95	1

For additional product data and safety information, see chapter Chemicals A-Z.

Solvents for DNA Synthesis

- Each reagent is specially purified for DNA synthesis
- Each batch is tested on a synthesizer to determine maximum yield
- Extremely careful manufacturing, testing and packing guarantee a new standard of quality - the DNA Synthesis Grade

Acetonitrile

ROTISOLV® ≥99,9 %, for DNA synthesis

Water content ≤10 ppm

Danger H225-H302+H312+H332-H319

For solubilisation of phosphoamidites during synthesis of oligonucleotides >20mer.

Guarantee analysis:

Assay (GC).....≥99,9 %
Water (KF).....≤0,001 %
Non volatile matter.....≤0,0001 %

8824.2	2,5 l	glass	107,00 €
Original pack 4 x 2,5 l			101,65/2,5 l

Acetonitrile

ROTISOLV® ≥99,9 %, for DNA synthesis

Water content ≤30 ppm

Danger H225-H302+H312+H332-H319

For solubilisation of phosphoamidites during synthesis of oligonucleotides ≤20mer.

Guarantee analysis:

Assay (GC).....≥99,9 %
Water (KF).....≤0,003 %
Free acid.....≤0,002 %
Non volatile matter.....≤0,0003 %

2216.2	2,5 l	glass	84,85 €
Original pack 4 x 2,5 l			80,61/2,5 l

Acetonitrile

ROTISOLV® ≥99,9 %, for DNA synthesis

Water content ≤30 ppm

Danger H225-H302+H312+H332-H319

For solubilisation of phosphoamidites during synthesis of oligonucleotides ≤20mer. Sealed with septum cap.

Guarantee analysis:

Assay (GC).....≥99,9 %
Water (KF).....≤0,003 %
Packed for Applied Biosystems and Biosearch DNA-Synthesizer.

3620.1	100 ml	septum bottle	27,85 €

Ammonia solution 32 %

30-33 %, for DNA synthesis.

Storage temp.: +4 °C

Danger H290-H314-H400-H335

For oligo separation from supports and for neutralising protective groups. Comes in bottle to fit ABI 391/392/394.

Type analysis:

Assay (NH_3).....≥30 %

A990.1	200 ml	glass	17,75 €

Acetonitrile

ROTIDRY® ≥99,9 % (≤10 ppm H_2O)

Dried; for DNA synthesis and analysis.

Danger H225-H302+H312+H332-H319

Guarantee analysis:

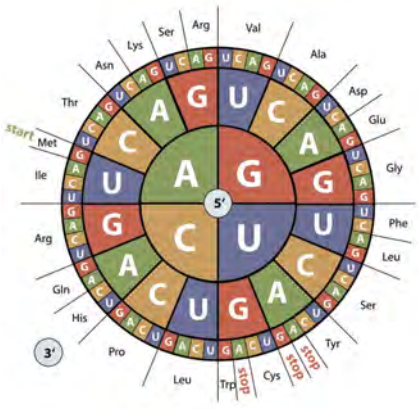
Assay (GC).....≥99,9 %
Colour (Hazen).....≤10
Water (KF).....≤0,001 %
Acidity.....≤0,0005 meq/g
Evaporation residue.....≤0,0005 %
Filtered through a membrane and filled under protective gas.

AE00.1	1 l	glass	36,45 €
Original pack 6 x 1 l			34,63/1 l
AE00.2	2,5 l	glass	75,15 €
Original pack 4 x 2,5 l			71,39/2,5 l
AE00.3	4 l	glass	112,35 €

▶ Further dried solvents see page 1588

Amino Acids

Our amino acids are of the highest purity and suitable for a broad range of applications in biochemistry. Besides the natural occurring L-amino acids, we offer a selection of unnatural D-amino acids and DL-amino acids.



Alanine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Alanine	≥99 %, for biochemistry	**7866.1**	5 g	plastic	21,40
		7866.2	25 g	plastic	66,15
		7866.3	100 g	plastic	196,20
DL-Alanine	≥99 %, for biochemistry	**9798.2**	25 g	plastic	11,30
		9798.1	100 g	plastic	23,15
		9798.3	250 g	plastic	44,65
L-Alanine	≥98,5 %, for biochemistry	**3076.1**	25 g	plastic	20,65
		3076.2	250 g	plastic	104,20

Arginine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
DL-Arginine	≥98,5 %, for biochemistry	**8592.1**	5 g	plastic	21,00
		8592.2	25 g	plastic	61,85
		8592.3	100 g	plastic	203,20
L-Arginine	≥99 % CELLPURE®	**1655.1**	25 g	plastic	10,65
		1655.2	100 g	plastic	26,80
		1655.3	500 g	plastic	87,00
	≥98,5 %, USP, for biochemistry	**3144.1**	50 g	plastic	17,75
		3144.3	250 g	plastic	45,05
		3144.2	1 kg	plastic	139,65
D-Arginine monohydrochloride	≥99 %, for biochemistry	**7868.1**	1 g	plastic	24,65
		7868.2	5 g	plastic	74,10
		7868.3	25 g	plastic	213,95
DL-Arginine monohydrochloride	≥98 %, for biochemistry	**4925.1**	5 g	plastic	82,70
L-Arginine monohydrochloride	≥98,5 % CELLPURE®	**1689.1**	25 g	plastic	15,60
		1689.2	100 g	plastic	27,45
		1689.3	500 g	plastic	90,20
	≥98,5 %, Ph.Eur., USP	**3145.1**	50 g	plastic	17,75
		3145.2	250 g	plastic	47,20

Asparagine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Asparagine monohydrate	≥98 %, for biochemistry	**7872.1**	5 g	plastic	24,65
		7872.2	25 g	plastic	74,10
DL-Asparagine monohydrate	≥98 %, for biochemistry	**5495.1**	100 g	plastic	40,75
		5495.2	250 g	plastic	88,70
L-Asparagine monohydrate	≥99 % CELLPURE®	**KK37.1**	50 g	plastic	27,45
		KK37.2	250 g	plastic	93,45
		KK37.3	500 g	plastic	171,90
	≥99 %, Ph.Eur., for biochemistry	**HN23.1**	100 g	plastic	38,20
		HN23.2	500 g	plastic	161,15
		HN23.3	1 kg	plastic	264,35

Aspartic acid

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Aspartic acid	≥98 %, for biochemistry	**7873.1**	5 g	plastic	21,00
		7873.2	25 g	plastic	61,20
		7873.3	100 g	plastic	149,45
DL-Aspartic acid	≥98 %, for biochemistry	**8593.1**	100 g	plastic	32,15
		8593.2	500 g	plastic	138,70
L-Aspartic acid	≥99 % CELLPURE®	**1690.1**	25 g	plasitc	14,95
		1690.2	100 g	plasitc	26,80
		1690.3	500 g	plasitc	88,05
	≥98,5 %, Ph.Eur., for biochemistry	**T202.1**	100 g	plastic	17,10
		T202.2	500 g	plastic	74,20
		T202.3	1 kg	plastic	123,55

Cysteine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
DL-Cysteine	≥98 %, for biochemistry	**8594.1**	5 g	plastic	49,35
		8594.2	25 g	plastic	120,30
		8594.3	100 g	plastic	342,95
L-Cysteine	≥99 % CELLPURE®	**1693.1**	25 g	plastic	27,45
		1693.2	100 g	plastic	67,20
		1693.3	500 g	plastic	286,95
	≥98 %, DAB, for biochemistry	**3467.1**	10 g	glass	15,60
		3467.2	50 g	glass	30,65
		3467.3	250 g	plastic	113,85
L-Cysteine hydrochloride	≥99 %, p.a., anhydrous	**3468.1**	10 g	plastic	15,60
		3468.2	50 g	plastic	27,85
		3468.3	250 g	plastic	79,45
D-Cysteine hydrochloride monohydrate	≥98,5 %, for biochemistry	**7874.1**	1 g	glass	25,70
		7874.2	5 g	plastic	75,15
L-Cysteine hydrochloride monohydrate	≥99 % CELLPURE®	**1694.1**	25 g	plastic	19,25
		1694.2	100 g	plastic	43,55
		1694.3	500 g	plastic	180,10
	≥98,5 %, for biochemistry	**T203.1**	50 g	plastic	26,80
		T203.2	100 g	plastic	41,40
		T203.3	500 g	plastic	169,35

Cystine (disulfide of cysteine)

Product	Purity	Art. No.	Pack Qty.	Pack.	€
DL-Cystine	≥98,5 %	**5565.1**	1 g	glass	20,35
L-Cystine	≥98,5 % CELLPURE®	**1695.1**	25 g	plastic	27,85
		1695.2	100 g	plastic	71,95
		1695.3	500 g	plastic	299,95
	≥98,5 %, for biochemistry	**3471.1**	100 g	plastic	64,40
		3471.2	500 g	plastic	289,20

Glutamine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Glutamine	≥98,5 %, for biochemistry	**7876.1**	1 g	glass	25,30
		7876.2	5 g	plastic	75,15
		7876.3	25 g	plastic	220,30
DL-Glutamine	≥98,5 %, for biochemistry	**8595.1**	1 g	glass	48,30
		8595.2	5 g	plastic	90,85
		8595.3	25 g	plastic	289,20
L-Glutamine	≥99 % CELLPURE®	**HN08.1**	25 g	plastic	19,90
		HN08.2	100 g	plastic	38,20
		HN08.3	500 g	plastic	131,05
	≥99 %, USP, for biochemistry	**3772.1**	100 g	plastic	32,15
		3772.2	500 g	plastic	103,75

Glutamic acid

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Glutamic acid	≥99 %, for biochemistry	**7879.1**	5 g	plastic	25,30
		7879.2	25 g	plastic	75,15
		7879.3	100 g	plastic	181,70
DL-Glutamic acid	≥98,5 %, for biochemistry	**8596.1**	25 g	plastic	62,25
		8596.2	100 g	plastic	198,90
L-Glutamic acid	≥99 % CELLPURE®	**1743.1**	25 g	plastic	14,95
		1743.2	100 g	plastic	23,15
		1743.3	500 g	plastic	74,75
	≥98,5 %, Ph.Eur., for biochemistry	**3774.1**	250 g	plastic	32,80
		3774.2	1 kg	plastic	91,95

Glycine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Glycine	≥99 %, Blotting-Grade	**0079.1**	250 g	plastic	26,35
		0079.2	500 g	plastic	48,95
		0079.3	1 kg	plastic	77,95
		0079.4	2,5 kg	plastic	154,70
	≥99 %, p.a. PUFFERAN®	**3908.1**	250 g	plastic	23,15
		3908.2	1 kg	plastic	74,75
	NEW	**3908.4**	2,5 kg	plastic	137,10
		3908.3	5 kg	plastic	208,05
		3908.6	10 kg	plastic	353,70
	NEW	**3908.5**	25 kg	plastic	736,40
	≥99 % CELLPURE®	**HN07.1**	100 g	plastic	17,10
		HN07.2	500 g	plastic	48,30
		HN07.3	1 kg	plastic	86,55
	≥98,5 %, Ph.Eur., USP, JP	**T873.1**	250 g	plastic	25,70
		T873.3	500 g	plastic	47,20
		T873.2	1 kg	plastic	81,60
		T873.4	2,5 kg	plastic	177,40
	≥99 %, for biochemistry	**3187.1**	250 g	plastic	19,90
		3187.2	500 g	plastic	26,35
		3187.3	1 kg	plastic	40,35
	NEW	**3187.5**	2,5 kg	plastic	85,90
		3187.4	5 kg	plastic	164,40
	NEW	**3187.6**	10 kg	plastic	267,70
		3187.7	25 kg	plastic	514,95
	≥99 %, for synthesis	**3790.1**	250 g	plastic	18,20
		3790.2	1 kg	plastic	36,45
	NEW	**3790.4**	2,5 kg	plastic	71,50
		3790.3	5 kg	plastic	131,05
	NEW	**3790.5**	10 kg	plastic	235,45
		3790.6	25 kg	plastic	482,70

Histidine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Histidine	≥98 %, for biochemistry	**7880.1**	5 g	plastic	48,30
		7880.2	25 g	plastic	143,95
DL-Histidine	≥98,5 %, for biochemistry	**8597.1**	5 g	plastic	32,15
		8597.2	25 g	plastic	94,50
		8597.3	100 g	plastic	306,40
L-Histidine	≥99 % CELLPURE®	**1696.1**	25 g	plastic	27,45
		1696.2	100 g	plastic	59,05
		1696.3	500 g	plastic	241,90
	≥98,5 %, Ph.Eur., for biochemistry	**3852.1**	25 g	plastic	17,75
		3852.3	100 g	plastic	48,30
		3852.2	1 kg	plastic	364,45
L-Histidine hydrochloride monohydrate	≥99 % CELLPURE®	**1697.1**	25 g	plastic	23,15
		1697.2	100 g	plastic	55,40
		1697.3	500 g	plastic	222,00
	≥98,5 %, Ph.Eur., for biochemistry	**9455.1**	100 g	plastic	44,00
		9455.3	250 g	plastic	93,45
		9455.2	500 g	plastic	171,50

For additional product data and safety information, see chapter Chemicals A-Z.

Isoleucine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
DL-Isoleucine	≥98,5 %, for biochemistry	**8598.1**	10 g	plastic	25,70
		8598.2	50 g	plastic	94,50
		8598.3	100 g	plastic	169,75
L-Isoleucine	≥99 % CELLPURE®	**1698.1**	25 g	plastic	24,20
		1698.2	100 g	plastic	59,05
		1698.3	500 g	plastic	235,45
	≥98,5 %, USP, for biochemistry NEW	**3922.1**	10 g	glass	14,55
		3922.2	100 g	plastic	46,15
		3922.4	500 g	plastic	181,70
		3922.3	1 kg	plastic	342,95

Leucine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Leucine	≥99 %, for biochemistry	**7882.1**	5 g	plastic	31,10
		7882.2	25 g	plastic	93,00
		7882.3	100 g	plastic	278,45
DL-Leucine	≥98,5 %, for biochemistry	**8599.1**	25 g	plastic	23,15
		8599.2	50 g	plastic	39,70
		8599.3	250 g	plastic	160,20
L-Leucine	≥99 % CELLPURE®	**1699.1**	25 g	plastic	19,90
		1699.2	100 g	plastic	44,00
		1699.3	500 g	plastic	150,00
	≥98,5 %, Ph.Eur., USP, for biochemistry	**3984.1**	100 g	plastic	35,40
		3984.3	250 g	plastic	65,50
		3984.4	500 g	plastic	113,85
		3984.2	1 kg	plastic	212,35

Lysine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
L-Lysine monohydrate	≥98,5 % CELLPURE®	**6829.1**	25 g	plastic	50,00
		6829.2	100 g	plastic	90,85
		6829.3	500 g	plastic	332,20
	≥98,5 %, for biochemistry	**4207.1**	25 g	plastic	46,15
		4207.2	100 g	plastic	85,90
D-Lysine hydrochloride	≥99 %, for biochemistry	**7883.1**	1 g	glass	25,30
		7883.2	5 g	plastic	56,90
		7883.3	25 g	plastic	136,00
DL-Lysine hydrochloride	≥98 %, for biochemistry	**8600.1**	500 mg	glass	21,00
		8600.2	1 g	glass	32,80
		8600.3	5 g	plastic	57,55
L-Lysine hydrochloride	≥99 % CELLPURE®	**1700.1**	25 g	plastic	16,05
		1700.2	100 g	plastic	29,60
		1700.3	500 g	plastic	98,80
	≥98,5 %, Ph.Eur., USP, JP, for biochemistry	**9357.1**	100 g	plastic	18,20
		9357.3	250 g	plastic	37,55
		9357.4	500 g	plastic	64,40
		9357.2	1 kg	plastic	115,60

Methionine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Methionine	≥98 %, for biochemistry	**7885.1**	5 g	plastic	19,90
		7885.2	25 g	plastic	60,10
		7885.3	100 g	plastic	149,45
DL-Methionine	≥98 %, for biochemistry	**8602.1**	100 g	plastic	30,00
		8602.2	500 g	plastic	117,20
L-Methionine	≥99 % CELLPURE®	**1702.1**	25 g	plastic	17,75
		1702.2	100 g	plastic	36,45
		1702.3	500 g	plastic	142,90
	≥99 %, for biochemistry	**9359.1**	100 g	plastic	30,00
		9359.3	250 g	plastic	61,20
		9359.4	500 g	plastic	110,65
		9359.2	1 kg	plastic	209,65

Ornithine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
L-Ornithine monohydrochloride	≥99 % CELLPURE®	**1703.1**	25 g	plastic	24,20
		1703.2	100 g	plastic	55,80
		1703.3	500 g	plastic	213,95
	≥99 %, for biochemistry	**T204.1**	25 g	plastic	14,95
		T204.2	100 g	plastic	39,25
		T204.3	500 g	plastic	138,70

Phenylalanine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Phenylalanine	≥98,5 %, for biochemistry	**7886.1**	5 g	plastic	22,05
		7886.2	25 g	plastic	67,65
		7886.3	100 g	plastic	166,10
DL-Phenylalanine	≥98,5 %, for biochemistry	**8603.1**	25 g	plastic	22,05
		8603.2	100 g	plastic	61,20
		8603.3	250 g	plastic	127,95
L-Phenylalanine	≥99 % CELLPURE®	**1709.1**	25 g	plastic	20,35
		1709.2	100 g	plastic	45,70
		1709.3	500 g	plastic	177,40
	≥98,5 %, Ph.Eur., for biochemistry	**4491.3**	25 g	plastic	14,55
		4491.1	100 g	plastic	40,35
		4491.4	250 g	plastic	80,55
		4491.2	1 kg	plastic	284,90

For additional product data and safety information, see chapter Chemicals A-Z.

Proline

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Proline	≥98,5 %, for biochemistry	**7888.1**	1 g	glass	25,70
		7888.2	5 g	plastic	75,15
		7888.3	25 g	plastic	198,90
DL-Proline	≥99 %, for biochemistry	**5267.1**	5 g	plastic	25,70
		5267.2	10 g	plastic	46,15
		5267.3	25 g	plastic	90,20
L-Proline	≥98,5 % CELLPURE®	**1713.1**	25 g	plastic	21,40
		1713.2	100 g	plastic	45,70
		1713.3	500 g	plastic	170,95
	≥98,5 %, Ph.Eur., for biochemistry	**T205.1**	25 g	plastic	16,70
		T205.2	100 g	plastic	32,80
		T205.3	500 g	plastic	126,35

Serine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Serine	≥99 %, for biochemistry	**7531.2**	1 g	glass	13,45
		7531.1	5 g	plastic	21,00
		7531.3	25 g	plastic	83,75
DL-Serine	≥99 %, for biochemistry	**8606.1**	100 g	plastic	46,80
		8606.2	500 g	plastic	200,50
L-Serine	≥99 % CELLPURE®	**1714.1**	25 g	plastic	26,35
		1714.2	100 g	plastic	63,35
		1714.3	500 g	plastic	256,95
	≥98,5 %, Ph.Eur.	**4682.1**	100 g	plastic	45,70
		4682.3	250 g	plastic	89,15
		4682.4	500 g	plastic	166,10
		4682.2	1 kg	plastic	289,20

Threonine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Threonine	≥98,5 % for biochemistry	**7889.1**	5 g	plastic	25,70
		7889.2	25 g	plastic	75,80
		7889.3	100 g	plastic	241,90
DL-Threonine	≥98 %, for biochemistry	**7532.1**	10 g	plastic	22,50
		7532.4	50 g	plastic	50,00
		7532.2	100 g	plastic	78,40
		7532.3	500 g	plastic	332,20
L-Threonine	≥99 % CELLPURE®	**1738.1**	25 g	plastic	19,90
		1738.2	100 g	plastic	40,35
		1738.3	500 g	plastic	162,90
	≥99 %, Ph.Eur., for biochemistry	**T206.1**	25 g	plastic	16,05
		T206.2	100 g	plastic	32,15
		T206.4	250 g	plastic	61,85
		T206.3	500 g	plastic	115,60

Tryptophan

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Tryptophan	≥98,5 %, for biochemistry	**7700.1**	5 g	plastic	50,00
		7700.2	25 g	plastic	145,05
DL-Tryptophan	≥98 %, for biochemistry	**5236.1**	10 g	plastic	15,60
		5236.2	25 g	plastic	30,00
		5236.3	100 g	plastic	96,65
L-Tryptophan	≥99 % CELLPURE®	**1739.1**	25 g	plastic	30,00
		1739.2	100 g	plastic	89,15
		1739.3	500 g	plastic	364,45
	≥98,5 %, Ph.Eur., for biochemistry	**4858.1**	10 g	glass	14,95
		4858.2	100 g	plastic	75,15
		4858.4	250 g	plastic	170,95
		4858.3	1 kg	plastic	611,70

Tyrosine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Tyrosine	≥98 %, for biochemistry	**7890.1**	1 g	glass	22,05
		7890.2	5 g	plastic	67,20
		7890.3	25 g	plastic	198,90
DL-Tyrosine	≥98,5 %, for biochemistry	**8608.1**	10 g	plastic	25,30
		8608.2	50 g	plastic	73,00
		8608.3	250 g	plastic	278,45
L-Tyrosine	≥99 % CELLPURE®	**1741.1**	25 g	plastic	24,20
		1741.2	100 g	plastic	63,35
		1741.3	500 g	plastic	252,65
	≥99 %, Ph.Eur., for biochemistry	**T207.1**	25 g	plastic	16,05
		T207.2	100 g	plastic	40,35
		T207.3	500 g	plastic	160,10

Valine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
D-Valine	≥98,5 %, for biochemistry	**7891.1**	5 g	plastic	25,70
		7891.2	25 g	plastic	76,25
		7891.3	100 g	plastic	235,45
DL-Valine	≥99 %, for biochemistry	**7540.1**	50 g	plastic	29,60
		7540.2	100 g	plastic	51,50
		7540.3	250 g	plastic	100,55
L-Valine	≥99 % CELLPURE®	**1742.1**	25 g	plastic	21,00
		1742.2	100 g	plastic	41,85
		1742.3	500 g	plastic	155,90
	≥98,5 %, USP, for biochemistry	**4879.1**	25 g	plastic	17,10
		4879.3	100 g	plastic	38,60
		4879.4	250 g	plastic	76,25
		4879.5	500 g	plastic	122,45
		4879.2	1 kg	plastic	221,35

For additional product data and safety information, see chapter Chemicals A-Z.

Amino Acid Derivatives

Product	Purity	Art. No.	Pack Qty.	€
N-Acetyl-L-cysteine	≥98 %, for biochemistry	**4126.1**	25 g	24,20
		4126.2	100 g	77,30
N-Acetylglycine	≥99 %, for biochemistry	**5526.1**	25 g	17,10
		5526.2	100 g	31,10
		5526.3	500 g	113,85
β-Alanine	≥99 %, for biochemistry	**3078.2**	50 g	25,70
		3078.1	250 g	73,65
L-Alaninol	≥98 %, for biochemistry	**5521.1**	1 g	24,65
		5521.2	5 g	91,30
		5521.3	10 g	145,70
L-Alanyl-L-glutamine	≥99 % CELLPURE®	**6831.1**	5 g	32,15
		6831.2	10 g	45,05
		6831.3	25 g	90,20
		6831.4	100 g	306,40
	≥98 %, for biochemistry	**6830.1**	10 g	38,60
		6830.2	50 g	135,35
Alliin	ROTICHROM® HPLC	**K031.1**	10 mg	284,90
2-Amino-5-bromobenzoic acid	≥95 %, for biochemistry	**5519.1**	5 g	24,20
		5519.2	25 g	79,05
DL-2-Aminobutyric acid	≥98 %, for biochemistry	**5518.1**	25 g	46,80
		5518.2	100 g	138,70
2-Amino-4-chlorobenzoic acid	≥98 %, for biochemistry	**5516.1**	10 g	18,85
		5516.2	25 g	30,65
		5516.3	100 g	91,30
6-Aminohexanoic acid	≥99 %, for synthesis	**3113.1**	100 g	26,80
		3113.3	250 g	53,65
		3113.2	500 g	96,25
4-Aminohippuric acid	≥98 %, for biochemistry	**6187.1**	10 g	36,45
		6187.2	100 g	267,70
2-Aminoisobutyric acid	≥97 %, for biochemistry	**5514.1**	50 g	39,70
		5514.2	100 g	67,20
5-Aminolevulinic acid hydrochloride	≥98 %, for biochemistry	**8451.1**	500 mg	25,30
		8451.2	1 g	37,55
		8451.3	5 g	110,65
DL-Carnitinchloride	≥98 %, for biochemistry	**7212.1**	25 g	60,75
L-Carnosine	≥98 %, for biochemistry	**4148.1**	1 g	26,80
		4148.2	5 g	88,05
Cysteamine hydrochloride	≥99 %, for biochemistry	**7625.1**	25 g	28,95
		7625.2	100 g	75,15
		7625.3	250 g	132,15
		7625.8	500 g	221,35
DL-2,3-Diaminopropionic acid hydrochloride	≥99 %, for biochemistry	**5431.1**	1 g	24,65
		5431.2	5 g	85,50
N-Formyl-L-Leucine	≥98 %, for biochemistry	**6665.1**	500 mg	21,40
		6665.2	1 g	39,70
		6665.3	5 g	149,45

Product	Purity	Art. No.	Pack Qty.	€
Glutathione oxidized	≥98 %, for biochemistry	**6378.1**	1 g	36,45
		6378.2	5 g	150,40
L-Glutathione reduced	≥98 %, for biochemistry	**6382.1**	5 g	28,50
		6382.2	25 g	94,50
		6382.3	50 g	170,95
		6382.4	100 g	306,40
Glycinamide hydrochloride	≥95 %, for biochemistry	**5543.1**	10 g	23,55
		5543.2	25 g	44,00
		5543.3	50 g	69,35
Glycine anhydride	extra pure	**5542.1**	25 g	44,00
Glycylglycine	≥99 %, ultra quality PUFFERAN®	**3794.1**	10 g	17,10
		3794.2	100 g	87,00
		3794.3	250 g	186,95
		3794.4	500 g	340,70
	≥98,5 %, Buffer Grade PUFFERAN®	**HN74.1**	50 g	34,30
		HN74.2	100 g	55,40
		HN74.3	250 g	119,90
		HN74.4	500 g	214,50
Hippuric acid sodium salt hydrate	≥99 %, cryst.	**7507.1**	25 g	96,25
o-Hydroxyhippuric acid	≥95 %, for biochemistry	**7511.1**	1 g	57,95
L-4-Hydroxyproline	≥98 %, for biochemistry	**3893.1**	5 g	44,00
L-Hydroxyproline methylester hydrochloride	≥98 %, for biochemistry	**6662.1**	500 mg	12,80
		6662.2	1 g	18,20
		6662.3	5 g	38,60
L-Kynurenine	≥98 %, for biochemistry	**8456.1**	100 mg	59,05
		8456.2	250 mg	110,65
		8456.3	500 mg	198,90
L-tert-Leucine methylester hydrochloride	≥98 %, for biochemistry	**6664.1**	500 mg	33,25
		6664.2	1 g	50,45
3-Nitro-L-tyrosine	≥98 %, for biochemistry	**5275.1**	5 g	60,10
		5275.2	10 g	107,00
L-Norvalinol	≥98 %, for biochemistry	**6663.1**	500 mg	33,25
		6663.2	1 g	51,50
N-Phenylglycine	≥97 %, for biochemistry	**5939.1**	10 g	60,10
Serotonin creatinine sulphate monohydrate	≥99 %, for biochemistry	**8385.1**	1 g	123,55
Serotonin hydrochloride	≥98 %, for biochemistry	**8367.1**	100 mg	21,00
		8367.2	1 g	38,60
		8367.3	5 g	153,65
Taurine	≥99 %, for biochemistry	**4721.1**	100 g	19,90
		4721.2	500 g	54,30
Tyramine	≥98 %, for biochemistry	**4862.2**	1 g	15,60
		4862.1	5 g	23,55
		4862.3	25 g	60,10

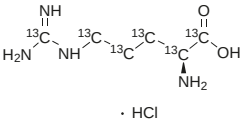
For additional product data and safety information, see chapter Chemicals A-Z.

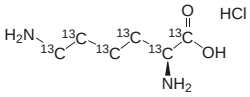
Isotope-labelled Amino Acids (SILAC)

NEW

Stable Isotope Labelling with Amino Acids in Cell Culture (SILAC) is a metabolic labelling technique for mass spectrometric (MS)-based quantitative proteomics. For this purpose originally identical cell cultures are cultivated with different nutrient media. One of the cell populations is fed with growth medium containing unlabelled amino acids. In contrast, the second cell culture is fed with a medium containing one or two amino acids labelled with stable (non-radioactive) heavy isotopes. For example, the medium may contain arginine labelled with ^{13}C carbon instead of the normal ^{12}C carbon. The cells growing in this medium incorporate the heavy arginine into all their proteins. Then all peptides containing a single arginine are 6 Dalton heavier than their normal counterparts. The proteins from both cell populations are then mixed together in a ratio of 1:1 and analysed by mass spectroscopy. Pairs of chemically identical peptides of different isotopic compositions can be distinguished in a mass spectrometer on the basis of their mass difference. The ratio of the intensities in the mass spectrum for such peptide pairs reflects the frequency ratio for the two proteins.

References:
S.-E. Ong and M. Mann, A practical recipe for stable isotope labeling by amino acids in cell culture (SILAC). Nature Protocols 2006, 1, 2650-2660.





L-Arginine $^{13}C_6$ monohydrochloride

NEW

≥98 % ^{13}C

For proteomics by mass spectrometry.
(2S)-Amino-5-guanidino-n-valeric acid $^{13}C_6$ hydrochloride,
H-L-Arg-OH · HCl $^{13}C_6$
$^{13}C_6H_{14}N_4O_2 \cdot HCl$
M 216,7 g/mol

Type analysis:

Appearance	white powder
Assay (HPLC)	≥95 %
Isotope enrichment (^{13}C)	≥98 %

2061.1	100 mg	glass	188,15 €

L-Lysine $^{13}C_6$ hydrochloride

NEW

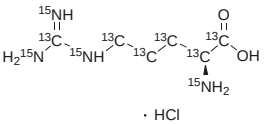
≥98 % ^{13}C

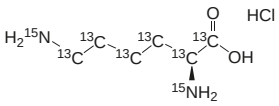
For proteomics by mass spectrometry.
(2S)-2,6-Diaminohexanoic acid $^{13}C_6$ hydrochloride,
H-L-Lys-OH · HCl $^{13}C_6$
$^{13}C_6H_{14}N_2O_2 \cdot HCl$
M 188,7 g/mol

Type analysis:

Appearance	white solid
Assay (HPLC)	≥95 %
Isotope enrichment (^{13}C)	≥98 %

2083.1	100 mg	glass	188,15 €





L-Arginine $^{13}C_6$ $^{15}N_4$ monohydrochloride

NEW

≥98 % ^{13}C ^{15}N

For proteomics by mass spectrometry.
(2S)-Amino-5-guanidino-n-valeric acid $^{13}C_6{}^{15}N_4$ hydrochloride,
H-L-Arg-OH · HCl $^{13}C_6{}^{15}N_4$
$^{13}C_6H_{14}{}^{15}N_4O_2 \cdot HCl$
M 220,7 g/mol

Type analysis:

Appearance	white powder
Assay (HPLC)	≥95 %
Isotope enrichment (^{13}C, ^{15}N)	≥98 %

2063.1	100 mg	glass	172,00 €

L-Lysine $^{13}C_6$ $^{15}N_2$ hydrochloride

NEW

≥98 % ^{13}C ^{15}N

For proteomics by mass spectrometry.
(2S)-2,6-Diaminohexanoic acid $^{13}C_6{}^{15}N_2$ hydrochloride,
H-L-Lys-OH · HCl $^{13}C_6{}^{15}N_2$
$^{13}C_6H_{14}{}^{15}N_2O_2 \cdot HCl$
M 190,7 g/mol

Type analysis:

Appearance	white powder
Assay (HPLC)	≥95 %
Isotope enrichment (^{13}C, ^{15}N)	≥98 %

2085.1	100 mg	glass	188,15 €

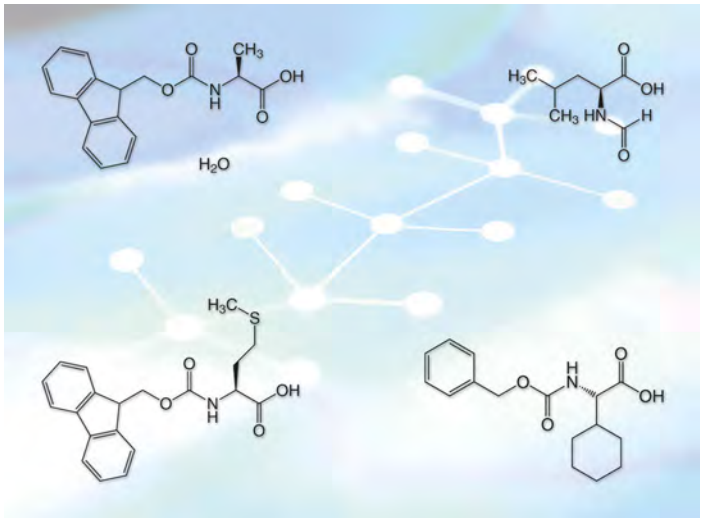
PEPTIPURE® Reagents

Our Brand for Peptide Synthesis

Peptide synthesis reagents must meet very high requirements to ensure that no by-products are produced during peptide synthesis and that very high yields can be achieved. Under the brand name PEPTIPURE® you will find all reagents that are especially suitable for peptide synthesis.

Protected Amino Acids

We supply protected amino acids of the highest quality and purity for standard applications in biochemistry and specifically for peptide synthesis.



Ala

Alanine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Alanine	PEPTIPURE® ≥98,5 %, for biochemistry	Boc-L-Ala-OH	**6907.1**	5 g	16,05
			6907.2	25 g	39,70
			6907.3	100 g	115,60
Fmoc-L-Alanine monohydrate	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Ala-OH	**6646.1**	10 g	16,05
			6646.2	50 g	37,55
			6646.3	250 g	142,90
			6646.4	500 g	256,95
			6646.5	1 kg	493,45
Fmoc-L-β-Azidoalanine	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Aza-OH	**7369.1**	250 mg	110,65
			7369.2	1 g	364,45
Fmoc-L-γ-Azidohomo-alanine	PEPTIPURE® ≥99 %, for biochemistry	Fmoc-L-Aha-OH	**7363.1**	250 mg	89,15
			7363.2	1 g	306,40

Arg

Arginine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Arginine hydrochloride monohydrate	PEPTIPURE® ≥98 %, for biochemistry	Boc-L-Arg-OH	**6914.1**	5 g	29,60
			6914.2	25 g	78,40
			6914.3	100 g	228,90
Fmoc-L-Arginine	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Arg-OH	**6896.1**	5 g	32,80
			6896.2	25 g	126,35
Fmoc-L-Arginine-(Pbf)	PEPTIPURE® ≥85 %, for biochemistry	Fmoc-L-Arg(Pbf)-OH	**8833.1**	5 g	39,70
			8833.2	25 g	146,75
			8833.3	100 g	471,95
Z-L-Arginine	PEPTIPURE® ≥98,5 %, for biochemistry	Cbz-L-Arginine	**1914.1**	5 g	17,10
			1914.2	25 g	40,35
			1914.3	100 g	111,70

Asn

Asparagine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Asparagine	PEPTIPURE® ≥98 %, for biochemistry	Boc-L-Asn-OH	**6915.1**	5 g	12,05
			6915.2	25 g	32,15
			6915.3	100 g	99,90
Fmoc-L-Asparagine	PEPTIPURE® ≥98,5 %, for biochemistry	Fmoc-L-Asn-OH	**6897.1**	5 g	18,85
			6897.2	25 g	53,65
			6897.3	100 g	169,35
Fmoc-L-Asparagine-(Trityl)	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Asn(Trt)-OH	**9652.1**	5 g	21,40
			9652.2	25 g	65,05
			9652.3	100 g	214,50

Asp

Aspartic acid

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Aspartic acid-(OBenzyl)	PEPTIPURE® ≥98,5 %, for biochemistry	Boc-L-Asp (OBzl)-OH	**8846.1**	5 g	19,25
			8846.2	25 g	56,90
			8846.3	100 g	181,70
Fmoc-L-Aspartic acid-(OAllyl)	PEPTIPURE® ≥98,5 %, for biochemistry	Fmoc-L-Asp(OAll)-OH	**6641.1**	500 mg	20,35
			6641.2	1 g	31,10
			6641.3	5 g	126,75
Fmoc-L-Aspartic acid-(OtBu)	PEPTIPURE® ≥96 %, for biochemistry	Fmoc-L-Asp (OtBu)-OH	**9654.1**	5 g	23,55
			9654.2	25 g	71,95
			9654.3	100 g	235,45
Z-L-Aspartic acid	PEPTIPURE® ≥98,5 %, for biochemistry	Z-L-Asp-OH	**1894.1**	5 g	18,85
			1894.2	25 g	54,75
			1894.3	100 g	145,05

For additional product data and safety information, see chapter Chemicals A-Z.

Cysteine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Cysteine-(4-Mbzl)	PEPTIPURE® ≥98,5 %, for biochemistry	Boc-Cys (4-Mbzl)-OH	**2042.1**	5 g	23,55
			2042.2	10 g	41,85
			2042.3	25 g	85,90
Fmoc-L-Cysteine-(Acetamidomethyl)	PEPTIPURE® ≥99 %, for biochemistry	Fmoc-L-Cys(Acm)-OH	**8842.1**	5 g	35,40
			8842.2	25 g	104,20
			8842.3	100 g	321,45
Fmoc-L-Cysteine-(Trityl)	PEPTIPURE® ≥98,5 %, for biochemistry	Fmoc-L-Cys(Trt)-OH	**8841.1**	5 g	19,90
			8841.2	25 g	60,10
			8841.3	100 g	181,70

Glutamine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Glutamine	PEPTIPURE® ≥99 %, for biochemistry	Boc-L-Gln-OH	**6916.1**	5 g	12,05
			6916.2	25 g	32,15
			6916.3	100 g	99,90
Fmoc-L-Glutamine	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Gln-OH	**6898.1**	5 g	18,85
			6898.2	25 g	53,65
			6898.3	100 g	169,35
Fmoc-L-Glutamine-(Trityl)	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Gln(Trt)-OH	**9653.1**	5 g	25,70
			9653.2	25 g	83,35
			9653.3	100 g	278,45

Glutamic acid

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Glutamic acid	PEPTIPURE® ≥99 %, for biochemistry	Boc-L-Glu-OH	**6917.1**	5 g	19,90
			6917.2	25 g	62,25
			6917.3	100 g	213,95
Fmoc-L-Glutamic acid-(OtBu) monohydrate	PEPTIPURE® ≥99 %, for biochemistry	Fmoc-L-Glu (OtBu)-OH	**9655.1**	5 g	22,50
			9655.2	25 g	69,80
			9655.3	100 g	224,70
Z-L-Glutamic acid	PEPTIPURE® ≥98,5 %, for biochemistry	Z-L-Glu-OH	**1885.1**	5 g	17,75
			1885.2	25 g	44,00
			1885.3	100 g	133,85

Glycine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-Glycine	PEPTIPURE® ≥98 %, for biochemistry	Boc-Gly-OH	**6918.1**	5 g	12,05
			6918.2	25 g	32,15
			6918.3	100 g	99,90
Fmoc-Glycine	PEPTIPURE® ≥99 %, for biochemistry	Fmoc-Gly-OH	**6899.1**	5 g	12,40
			6899.2	25 g	35,40
			6899.3	100 g	121,40
Cbz-Cyclohexyl-L-glycine	PEPTIPURE® ≥98 %, for biochemistry	Cbz-L-Chg-OH	**6636.1**	500 mg	21,00
			6636.2	1 g	33,25
			6636.3	5 g	139,25

Histidine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Histidine	PEPTIPURE® ≥98 %, for biochemistry	Boc-L-His-OH	**6920.1**	5 g	27,45
			6920.2	25 g	107,00
Boc-L-Histidine-(Dnp)	PEPTIPURE® ≥97,5 %, for biochemistry	Boc-L-His(Dnp)-OH	**1994.1**	1 g	22,05
			1994.2	5 g	49,35
			1994.3	10 g	88,05
Fmoc-L-Histidine-(Trityl)	PEPTIPURE® ≥97 %, for biochemistry	Fmoc-L-His(Trt)-OH	**8843.1**	5 g	22,50
			8843.2	25 g	69,80
			8843.3	100 g	211,25

Hydroxyproline

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Hydroxyproline	PEPTIPURE® ≥98 %, for biochemistry	Boc-L-Hyp-OH	**6921.1**	5 g	49,35
			6921.2	25 g	170,95

Isoleucine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Isoleucine hemihydrate	PEPTIPURE® ≥98 %, for biochemistry	Boc-L-Ile-OH	**6923.1**	5 g	12,05
			6923.2	25 g	32,15
			6923.3	100 g	99,90
Fmoc-L-Isoleucine	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Ile-OH	**6647.1**	10 g	16,05
			6647.2	50 g	37,55
			6647.3	250 g	142,45

For additional product data and safety information, see chapter Chemicals A-Z.

Leucine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Leucine monohydrate	PEPTIPURE® ≥98 %, for biochemistry	Boc-L-Leu-OH	**6924.1**	5 g	12,05
			6924.2	25 g	32,15
			6924.3	100 g	99,90
Boc-L-tert-Leucine	PEPTIPURE® ≥98,5 %, for biochemistry	Boc-L-Tle-OH	**6942.1**	1 g	25,30
			6942.2	5 g	100,55
			6942.3	10 g	175,15
Fmoc-L-Leucine	PEPTIPURE® ≥95 %, for biochemistry	Fmoc-L-Leu-OH	**6654.1**	10 g	16,05
			6654.2	50 g	37,55
			6654.3	250 g	142,45
			6654.4	500 g	256,95
Z-L-Leucine	PEPTIPURE® ≥94 %, for biochemistry	Z-L-Leu-OH	**1859.1**	5 g	16,70
			1859.2	25 g	40,35
			1859.3	100 g	111,70

Lysine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Lysine	PEPTIPURE® ≥98 %, for biochemistry	Boc-L-Lys-OH	**6926.1**	1 g	19,90
			6926.2	5 g	61,85
			6926.3	10 g	112,35
Fmoc-L-Lysine	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Lys-OH	**6900.1**	1 g	17,75
			6900.2	5 g	54,75
			6900.3	10 g	96,65
Fmoc-L-Lysine-(Boc)	PEPTIPURE® ≥98,5 %, for biochemistry	Fmoc-L-Lys(Boc)-OH	**8840.1**	5 g	19,90
			8840.2	25 g	60,10
			8840.3	100 g	181,70
Fmoc-L-Azidolysine	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Lys(N_3)-OH	**7357.1**	250 mg	105,90
			7357.2	1 g	342,95
Z-L-Lysine	PEPTIPURE® ≥98 %, for biochemistry	Z-L-Lys-OH	**1907.1**	1 g	22,05
			1907.2	5 g	67,20
			1907.3	10 g	111,70

Methionine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Methionine	PEPTIPURE® ≥99 %, for biochemistry	Boc-L-Met-OH	**6928.1**	5 g	16,05
			6928.2	25 g	39,25
			6928.3	100 g	117,20
Fmoc-L-Methionine	PEPTIPURE® ≥95 %, for biochemistry	Fmoc-L-Met-OH	**6656.1**	10 g	16,05
			6656.2	50 g	37,55
			6656.3	250 g	142,90

Dioxaoctanioc acid

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Fmoc-8-Amino-3,6-dioxaoctanoic acid	PEPTIPURE® ≥99 %, for biochemistry	Fmoc-O_2Oc-OH	**7400.1**	500 mg	75,15
			7400.2	1 g	121,40

Ornithine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Fmoc-L-Azidoornithine	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Orn(N_3)-OH	**7362.1**	250 mg	110,65
			7362.2	1 g	364,45
Fmoc-L-Ornithine-(Boc)	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Orn(Boc)-OH	**1932.1**	1 g	22,05
			1932.2	5 g	54,75
			1932.3	10 g	98,40

Phenylalanine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Phenylalanine	PEPTIPURE ≥99 %, for biochemistry	Boc-L-Phe-OH	**6931.1**	5 g	12,05
			6931.2	25 g	32,15
			6931.3	100 g	99,90
Fmoc-L-Phenylalanine	PEPTIPURE® ≥99 %, for biochemistry	Fmoc-L-Phe-OH	**6658.1**	10 g	17,75
			6658.2	50 g	44,65
			6658.3	250 g	169,35
Fmoc-L-4-Azido-phenylalanine	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Phe (4-N_3)-OH	**7485.1**	100 mg	54,75
			7485.2	250 mg	117,20
Z-L-Phenylalanine	PEPTIPURE® ≥98 %, for biochemistry	Z-L-Phe-OH	**1865.1**	5 g	22,05
			1865.2	25 g	55,80
			1865.3	100 g	144,60

Propargylglycine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Fmoc-L-Propargyl-glycine	PEPTIPURE® ≥99 %, for biochemistry	Fmoc-L-Pra-OH	**7491.1**	100 mg	50,45
			7491.2	250 mg	93,45

Proline

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Proline	PEPTIPURE® ≥99 %, for biochemistry	Boc-L-Pro-OH	**6932.1**	5 g	12,05
			6932.2	25 g	32,15
			6932.3	100 g	99,90
Fmoc-L-Proline	PEPTIPURE® ≥99 %, for biochemistry	Fmoc-L-Pro-OH	**6659.1**	10 g	17,75
			6659.2	50 g	44,65
			6659.3	250 g	169,35
Fmoc-L-4-Azidoproline (2S,4R)	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Pro (4-N_3)-OH	**7367.1**	100 mg	99,90
			7367.2	250 mg	199,45
			7367.3	1 g	643,95

Serine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Serine	PEPTIPURE® ≥99 %, for biochemistry	Boc-L-Ser-OH	**6933.1**	5 g	19,25
			6933.2	25 g	56,90
			6933.3	100 g	181,70
Fmoc-L-Serine monohydrate	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Ser-OH	**6901.1**	5 g	53,65
			6901.2	25 g	169,35
Fmoc-L-Serine-(tBu)	PEPTIPURE® ≥99 %, for biochemistry	Fmoc-L-Ser(tBu)-OH	**9666.1**	5 g	23,55
			9666.2	25 g	71,95
			9666.3	100 g	235,45

Threonine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Threonine	PEPTIPURE® ≥98 %, for biochemistry	Boc-L-Thr-OH	**6935.1**	5 g	27,45
			6935.2	25 g	103,10
Fmoc-L-Threonine-(tBu)	PEPTIPURE® ≥99 %, for biochemistry	Fmoc-L-Thr(tBu)-OH	**9659.1**	5 g	23,55
			9659.2	25 g	71,95
			9659.3	100 g	235,45

Tryptophan

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Tryptophan	PEPTIPURE® ≥95 %, for biochemistry	Boc-L-Trp-OH	**6945.1**	5 g	12,05
			6945.2	25 g	32,15
			6945.3	100 g	99,45
Fmoc-L-Tryptophan	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Trp-OH	**6903.1**	5 g	19,25
			6903.2	25 g	56,90
			6903.3	100 g	192,45
Fmoc-L-Tryptophan-(Boc)	PEPTIPURE® ≥97 %, for biochemistry	Fmoc-L-Trp(Boc)-OH	**9668.1**	5 g	30,00
			9668.2	25 g	99,90
			9668.3	100 g	314,45

Tyrosine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Tyrosine	PEPTIPURE® ≥98 %, for biochemistry	Boc-L-Tyr-OH	**6949.1**	5 g	26,35
			6949.2	25 g	74,75
Fmoc-L-Tyrosine	PEPTIPURE® ≥98 %, for biochemistry	Fmoc-L-Tyr-OH	**6906.1**	1 g	35,40
			6906.2	5 g	83,75
			6906.3	10 g	143,95
Fmoc-L-Tyrosine-(tBu)	PEPTIPURE® ≥99 %, for biochemistry	Fmoc-L-Tyr(tBu)-OH	**9669.1**	5 g	23,55
			9669.2	25 g	71,95
			9669.3	100 g	235,45

Valine

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Boc-L-Valine	PEPTIPURE® ≥98 %, for biochemistry	Boc-L-Val-OH	**6950.1**	5 g	12,05
			6950.2	25 g	32,15
			6950.3	100 g	99,90
Fmoc-L-Valine	PEPTIPURE® ≥95 %, for biochemistry	Fmoc-L-Val-OH	**6660.1**	10 g	16,05
			6660.2	50 g	37,55
			6660.3	250 g	142,45
			6660.4	500 g	256,95

For additional product data and safety information, see chapter Chemicals A-Z.

PEPTIPURE® Coupling Reagents

Our range of traditional and innovative coupling reagents is suited for standard coupling reactions.
We offer premium quality products and excellent value for money.

Product	Purity	Art. No.	Pack Qty.	€
BOP	PEPTIPURE® ≥99 %	**2168.1**	5 g	21,00
		2168.2	25 g	53,65
		2168.3	100 g	160,20
CDI	PEPTIPURE® ≥98 %	**6992.1**	10 g	27,45
		6992.2	25 g	50,45
		6992.3	100 g	117,20
		6992.4	500 g	450,45
COMU®	PEPTIPURE® ≥99 %	**2100.1**	5 g	37,55
		2100.2	25 g	134,30
		2100.3	100 g	454,65
DCC	PEPTIPURE® ≥98 %	**4193.1**	100 g	20,35
		4193.2	250 g	39,70
		4193.3	500 g	70,85
		4193.4	1 kg	130,65
		4193.5	2,5 kg	295,65
DIC	PEPTIPURE® ≥99 %	**6981.1**	5 ml	20,35
		6981.2	25 ml	55,40
		6981.3	100 ml	153,65
		6981.4	500 ml	536,45
DMAP	PEPTIPURE® ≥99 %	**6988.1**	5 g	13,90
		6988.2	25 g	27,85
		6988.3	100 g	85,50
		6988.4	500 g	298,35
DSC	PEPTIPURE® ≥99 %	**2110.1**	5 g	24,20
		2110.2	25 g	62,25
		2110.3	100 g	171,90
EDC-HCl	PEPTIPURE® ≥99 %	**2156.1**	5 g	21,00
		2156.2	25 g	56,45
		2156.3	100 g	161,80
HATU	PEPTIPURE® ≥99 %	**2131.1**	5 g	54,30
		2131.2	25 g	206,30
HBTU	PEPTIPURE® ≥99 %	**2132.1**	5 g	18,20
		2132.2	25 g	40,75
		2132.3	100 g	107,40
		2132.5	1 kg	547,20
HCTU	PEPTIPURE® ≥99 %	**2112.1**	5 g	21,00
		2112.2	25 g	34,30
		2112.3	100 g	99,45
		2112.5	1 kg	590,20
HDMA	PEPTIPURE® ≥98 %	**6888.1**	5 g	41,85
		6888.2	25 g	134,40
		6888.3	100 g	439,70
HDMC	PEPTIPURE® ≥99 %	**6893.1**	5 g	40,75
		6893.2	25 g	160,20
		6893.3	100 g	536,45
K-Oxyma	PEPTIPURE® ≥99 %	**6891.1**	25 g	30,00
		6891.2	50 g	49,35
		6891.3	250 g	193,00
Oxyma Pure	PEPTIPURE® ≥99,5 %	**2118.1**	25 g	28,50
		2118.2	100 g	82,70
PyBOP®	PEPTIPURE® ≥98,5 %	**2178.1**	5 g	25,70
		2178.2	25 g	76,25
		2178.3	100 g	224,70
		2178.5	1 kg	1482,45
PyBrOP®	PEPTIPURE® ≥98,5 %	**2200.1**	5 g	40,75
		2200.2	25 g	149,45
		2200.3	100 g	525,70
		2200.5	1 kg	2793,95

Product	Purity	Art. No.	Pack Qty.	€
PyClock®	PEPTIPURE® ≥98,5 %	**2123.1**	5 g	27,45
		2123.2	25 g	87,00
		2123.3	100 g	295,65
		2123.5	1 kg	1987,70
PyOxim	PEPTIPURE® ≥99 %	**2120.1**	5 g	27,85
		2120.2	25 g	88,70
		2120.3	100 g	306,40
		2120.5	1 kg	1951,15
TATU	PEPTIPURE® ≥99 %	**2148.1**	5 g	44,00
		2148.2	25 g	153,65
TBTU	PEPTIPURE® ≥99 %	**2140.1**	5 g	17,10
		2140.2	25 g	38,60
		2140.3	100 g	106,35
		2140.5	1 kg	536,45
TCTU	PEPTIPURE® ≥98 %	**6890.1**	5 g	27,85
		6890.2	25 g	85,90
		6890.3	100 g	213,95
TOTU	PEPTIPURE® ≥99 %	**2125.1**	5 g	31,10
		2125.2	25 g	96,65
		2125.3	100 g	342,95
TSTU	PEPTIPURE® ≥99 %	**2130.1**	5 g	52,15
		2130.2	25 g	203,20

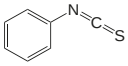
For additional product data and safety information, see chapter Chemicals A-Z.

Tip:

- There is no single coupling reagent that is suitable for every coupling reaction. Therefore, ROTH offers a broad range of established and reactive coupling reagents.
- Besides the "gold standard" HATU (Art. No. 2131), we also offer the greener alternative COMU® (Art. No. 2100), which is known to mediate the coupling in most cases at least as efficient as HATU.
- Oxyma Pure (Art. No. 2118) and K-Oxyma (Art. No. 6891) were developed as less hazardous alternatives for HOBt and HOAt, thus being a perfect one-to-one replacement in most syntheses.

Resins for Peptide Synthesis

Product	Purity	Art. No.	Pack Qty.	€
2-Chlorotrityl chloride resin	PEPTIPURE® 100-200 mesh, 1 % DVB	**7405.1**	5 g	79,45
		7405.2	25 g	307,35
Rink amide resin	PEPTIPURE® 100-200 mesh, 1 % DVB	**7515.1**	1 g	35,40
		7515.2	5 g	147,85
Sieber amide resin	PEPTIPURE® 100-200 mesh	**7408.1**	1 g	93,00
		7408.2	5 g	375,20
Wang resin	PEPTIPURE® 100-200 mesh, 1 % DVB	**7506.1**	1 g	17,75
		7506.2	5 g	40,75
		7506.3	25 g	170,95



Phenyl isothiocyanate

PEPTIPURE®

≥99 %, for biochemistry

C_7H_5NS

M 135,17 g/mol

Danger H301+H311+H331-H314

Type analysis:

Appearance. ..... colourless to pale yellow liquid
Assay (GC). ..... ≥99 %

7296.1	25 ml	glass	22,05 €
7296.2	100 ml	glass	50,45 €
7296.3	500 ml	glass	212,35 €

Tip:
A well-known method for protein sequencing is the Edman degradation. Herein, the peptide is degraded using phenylisothiocyanate (Art.No. 7296) starting from the N-terminus. Phenylisothiocyanate reacts with the N-terminal amino acid resulting in cleavage from the peptide and formation of a phenylthiohydantoin derivative. Subsequently, the phenylthiohydantoin derivative is identified by chromatographic methods through comparison with standards and the next amino acid can be addressed. Through repetition of this procedure stepwise degradation of the peptide is achieved, thus enabling sequencing of peptides with up to 50 residues.

Reactors for Peptide Synthesis

Made of **PP**, with plunger and frit.
Frit made of **PE**, pore size 25 µm, temperature resistant until +90 °C.
Column outlet: luer (male).

Type	Art. No.	Pack Qty.	€
2 ml	**7926.1**	100	79,45
5 ml	**7927.1**	100	103,10
10 ml	**7944.1**	100	105,25
20 ml	**9261.1**	100	138,70
50 ml	**9636.1**	25	68,70

Frits for Reactors

Material **PTFE**.

Type	Art. No.	Pack Qty.	€
∅ 9.1 mm, for 2 ml reactors	**7946.1**	100	71,50
∅ 12.3 mm, for 5 ml reactors	**7960.1**	100	80,55
∅ 14.6 mm, for 10 ml reactors	**7962.1**	100	91,95

Accessories: Luer Caps

Made of **PP**. To fit standard Luer (male) outlets, and for all column and cartridge sizes.

Art. No.	Pack Qty.	€
PX15.1	100	18,65

Protecting Groups for Peptide Synthesis

Product	Purity	Protecting group (short name)	Removal	Possible removal reagents	Art. No.	Pack Qty.	€
Di-*tert*-butyl dicarbonate (Boc_2O)	PEPTIPURE® ≥98 %	*tert*-Butyl (Boc)	**Acidic**	- Trifluoroacetic acid **(P088)**, pure or as a solution in dichloromethane **(P089)** - Hydrochloric acid in ethyl acetate **(6784)**	**6985.1**	100 g	149,45
					6985.2	500 g	471,95
9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl)	PEPTIPURE® ≥ 98%	Fluorenylmethyl (Fmoc)	**Alkaline**	- Piperidine **(A122)** in dimethylformamide **(A529)** - Morpholine **(9691)** in diethylformamide **(A529)**	**2201.1**	5 g	19,90
					2201.2	25 g	44,65
					2201.3	100 g	130,65
Trimethylchlorosilane (TMCS)	≥99 %	Trimethylsilyl (TMS)	**Acidic, alkaline or using fluoride ions**	- Acetic acid **(4340 oder 4341)** - Potassium carbonate **(P743)** in methanol **(8388)** - Potassium fluoride **(CN83)**	**2338.1**	25 g	49,35

Reagents for Peptide Synthesis

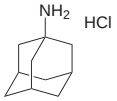
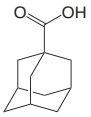
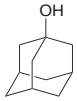
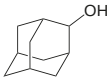
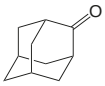
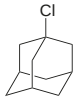
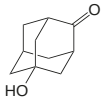
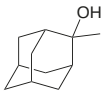
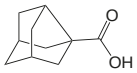
for Washing/Deprotection/Splitting

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Acetic acid anhydride	≥99 %, for synthesis	**4483.1**	1 l	glass	33,25
		4483.2	2,5 l	glass	53,25
		4483.3	5 l	plastic	71,95
		4483.4	10 l	plastic	122,45
		4483.5	25 l	plastic	252,65
Acetonitrile	≥99,5 %, for synthesis	**4380.1**	1 l	glass	30,00
		4380.2	2,5 l	glass	63,35
		4380.3	10 l	tinplate	201,60
		4380.4	25 l	tinplate	446,15
Dichloromethane	PEPTIPURE® ≥99,9 %, for peptide synthesis	**P089.1**	2,5 l	glass	64,00
N,N-Diisopropylethylamine (DIPEA)	PEPTIPURE® ≥99,5 %, for (peptide) synthesis	**2474.1**	100 ml	glass	24,20
		2474.2	250 ml	glass	43,55
		2474.3	1 l	glass	144,60
		2474.4	2,5 l	glass	295,65
N,N-Dimethylacetamide (DMA)	≥99 %, for synthesis	**3617.1**	250 ml	glass	12,80
		3617.2	1 l	glass	37,55
		3617.3	2,5 l	glass	51,50
		3617.4	10 l	plastic	124,20
		3617.5	25 l	plastic	260,70
N,N-Dimethylformamide (DMF)	PEPTIPURE® ≥99,8 %, for peptide synthesis	**A529.3**	500 ml	glass	38,60
		A529.1	2,5 l	glass	105,25
	NEW	**A529.7**	10 l	plastic	176,85
		A529.2	25 l	plastic	332,75
1,1,1,3,3,3-Hexafluoro-2-propanol	PEPTIPURE® ≥99 %, for (peptide) synthesis	**2473.1**	10 ml	glass	39,70
		2473.2	25 ml	glass	83,75
		2473.3	100 ml	glass	299,95
N-Methyl-2-pyrrolidone (NMP)	PEPTIPURE® ≥99,8 %, for peptide synthesis	**P052.1**	2,5 l	glass	118,15
Morpholine	≥99 %, for synthesis	**9691.1**	100 ml	glass	13,90
		9691.2	500 ml	glass	19,90
		9691.3	1 l	glass	30,00
		9691.4	2,5 l	glass	46,15
		9691.5	10 l	PE/steel	160,20
Piperidine	PEPTIPURE® ≥99,5 %, for peptide synthesis	**A122.1**	200 ml	glass	33,25
		A122.2	500 ml	glass	60,10
		A122.3	1 l	glass	99,45
Trifluoroacetic acid (TFA)	PEPTIPURE® ≥99,9 %, for (peptide) synthesis	**P088.1**	100 ml	glass	64,00
		P088.2	500 ml	glass	184,40
		P088.3	1 l	glass	321,45
Water	redistilled	**3478.1**	1 l	plastic	7,00
		3478.4	5 l	plastic	20,35
		3478.2	10 l	plastic	32,15
		3478.3	30 l	plastic	83,35

For additional product data and safety information, see chapter Chemicals A-Z.

Building Blocks for Synthesis

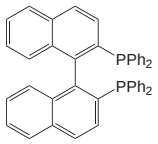
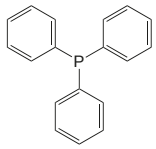
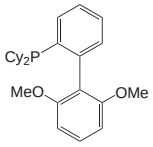
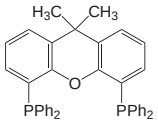
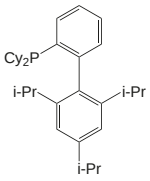
Adamantanes and Derivatives

Product	Structural formula	Purity	Empirical formula	CAS No.	Art. No.	Pack Qty.	€
1-Adamantanamine hydrochloride		≥99 %, for synthesis	$C_{10}H_{17}N \cdot HCl$	665-66-7	**7621.1**	25 g	22,05
					7621.2	100 g	52,60
Adamantane		≥99 %, for synthesis	$C_{10}H_{16}$	281-23-2	**7620.1**	25 g	17,10
					7620.2	100 g	33,25
1-Adamantanecarboxylic acid		≥99 %, for synthesis	$C_{11}H_{16}O_2$	828-51-3	**7622.1**	25 g	22,50
					7622.2	100 g	54,75
1-Adamantanol		≥98,5 %, for synthesis	$C_{10}H_{16}O$	768-95-6	**7745.1**	10 g	16,05
					7745.2	50 g	32,15
					7745.3	250 g	104,20
2-Adamantanol		≥98 %, for synthesis	$C_{10}H_{16}O$	700-57-2	**7863.1**	5 g	24,65
					7863.2	25 g	67,65
					7863.3	50 g	109,55
2-Adamantanone		≥99 %, for synthesis	$C_{10}H_{14}O$	700-58-3	**8406.1**	25 g	24,65
					8406.2	100 g	77,30
1-Chloroadamantane		≥98 %, for synthesis	$C_{10}H_{15}Cl$	935-56-8	**7627.1**	5 g	13,90
					7627.2	25 g	23,55
					7627.3	100 g	59,05
5-Hydroxy-2-adamantanone		≥98 %, for synthesis	$C_{10}H_{14}O_2$	20098-14-0	**7628.1**	1 g	21,00
					7628.2	5 g	66,55
2-Methyl-2-adamantanol		≥98 %, for synthesis	$C_{11}H_{18}O$	702-98-7	**7630.1**	1 g	15,60
					7630.2	5 g	36,45
3-Noradamantanecarboxylic acid		≥99 %, for synthesis	$C_{10}H_{14}O_2$	16200-53-6	**7631.1**	1 g	22,05
					7631.2	5 g	67,20

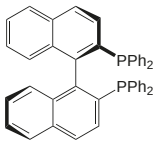
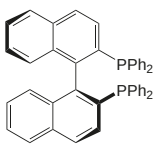
For additional product data and safety information, see chapter Chemicals A-Z.

Phosphine Ligands

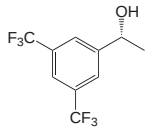
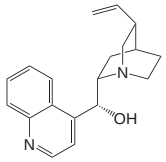
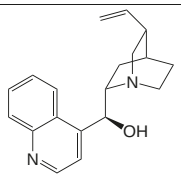
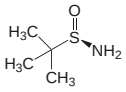
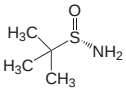
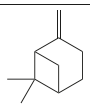
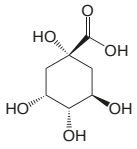
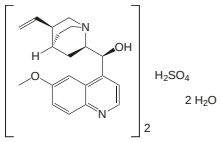
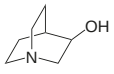
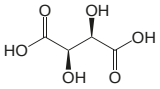
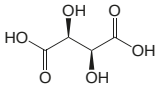
Transition metal-catalysed cross-couping reactions are an efficient method for linking new C-C, C-N and C-O bonds in the organic synthesis. Ligands, particularly phosphine ligands, play a key role in the stabilization and activation of metal lions in the transition metal complexes. The correct selection of the phosphine ligands can change important factors such as the reactivity and lifetime of the catalyst, the electron density at the metal atom and also the sterical properties of the catalyst. When using chiral phosphine ligands, it is also possible to achieve enantioselectivity of a reaction.

Structural formula	Product	Purity	CAS No.	Art. No.	Pack Qty.	€
	**(rac)-BINAP**	≥97 %	98327-87-8	**1845.1**	1 g	32,15
				1845.2	5 g	85,90
				1845.3	10 g	138,70
	**Triphenylphosphine**	≥99,5 %, for synthesis	603-35-0	**4110.1**	10 g	12,80
				4110.2	100 g	19,90
				4110.3	250 g	35,40
				4110.4	1 kg	106,45
	**SPhos**	≥98 %	657408-07-6	**1911.1**	1 g	26,80
				1911.2	5 g	100,95
	**Xantphos**	≥98 %	161265-03-8	**2058.1**	1 g	33,25
				2058.2	5 g	110,65
	**XPhos**	≥97 %	564483-18-7	**1445.1**	1 g	27,85
				1445.2	5 g	99,90
				1445.3	10 g	166,65

Chiral Phosphine Ligands

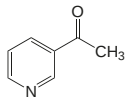
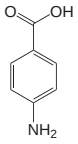
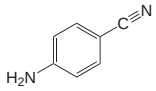
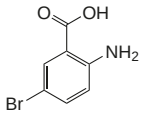
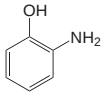
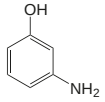
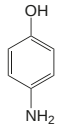
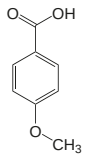
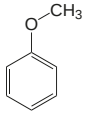
Structural formula	Product	Purity	CAS No.	Art. No.	Pack Qty.	€
	**(R)-BINAP**	≥98 %	76189-55-4	**2040.1**	250 mg	19,90
				2040.2	1 g	44,00
				2040.3	5 g	120,30
	**(S)-BINAP**	≥98 %	76189-56-5	**1950.1**	250 mg	18,85
				1950.2	1 g	38,60
				1950.3	5 g	106,45

Chiral Building Blocks and Auxiliaries

Product	Structural formula	Purity	Empirical formula	CAS No.	Art. No.	Pack Qty.	€
(R)-1-[3,5-Bis(trifluoromethyl)-phenyl]ethanol		≥99 %	$C_{10}H_8F_6O$	127852-28-2	**7481.1**	1 g	27,85
					7481.2	5 g	66,55
					7481.3	25 g	231,15
Cinchonidine		≥99 %	$C_{19}H_{22}N_2O$	485-71-2	**8872.1**	25 g	109,55
Cinchonine		≥99 %	$C_{19}H_{22}N_2O$	118-10-5	**8875.1**	50 g	149,45
(R)-(+)-2-Methyl-2-propanesulfinamide		≥97 %	$C_4H_{11}NOS$	196929-78-9	**0610.1**	1 g	19,25
					0610.2	5 g	53,65
					0610.3	25 g	170,95
(S)-(-)-2-Methyl-2-propanesulfinamide		≥98 %	$C_4H_{11}NOS$	343338-28-3	**1442.1**	1 g	22,05
					1442.2	5 g	66,55
					1442.3	25 g	198,90
α-Pinene		≥98 %, for synthesis	$C_{10}H_{16}$	7785-26-4	**5647.1**	100 ml	32,15
β-Pinene		pure	$C_{10}H_{16}$	18172-67-3	**7106.1**	250 ml	23,55
(-)-Quinic acid		≥98 %	$C_7H_{12}O_6$	77-95-2	**8835.1**	25 g	93,00
					8835.2	100 g	297,70
Quinidine sulphate dihydrate		≥99 %	$(C_{20}H_{24}N_2O_2)_2 \cdot H_2SO_4 \cdot 2\,H_2O$	6591-63-5	**3348.1**	10 g	33,25
(R)-3-Quinuclidinol		≥99 %	$C_7H_{13}NO$	25333-42-0	**7483.1**	1 g	17,75
					7483.2	5 g	61,20
					7483.3	10 g	113,85
D(-)-Tartaric acid		≥99 %, for biochemistry	$C_4H_6O_6$	147-71-7	**5529.1**	25 g	51,50
L(+)-Tartaric acid		≥99 %, for biochemistry	$C_4H_6O_6$	87-69-4	**4890.3**	500 g	23,55
					4890.1	1 kg	40,75
					4890.2	5 kg	149,45
					4890.5	25 kg	579,45

For additional product data and safety information, see chapter Chemicals A-Z.

Aromatic Building Blocks

Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	**3-Acetylpyridine**	≥99 %, for synthesis	C_7H_7NO	**8740.1**	10 g	20,35
				8740.2	50 g	55,80
				8740.3	100 g	96,65
	**4-Aminobenzoic acid**	≥98,5 %, for synthesis	$C_7H_7NO_2$	**0979.1**	50 g	17,10
				0979.2	250 g	34,30
				0979.3	1 kg	91,95
	**4-Aminobenzonitrile**	≥98 %, for synthesis	$C_7H_6N_2$	**8721.1**	10 g	18,20
				8721.2	50 g	77,95
				8721.3	100 g	133,20
	**2-Amino-5-bromobenzoic acid**	≥95 %, for biochemistry	$C_7H_6BrNO_2$	**5519.1**	5 g	24,20
				5519.2	25 g	79,05
	**2-Aminophenol** NEW	≥99 %, for synthesis	C_6H_7NO	**0879.1**	100 g	19,25
				0879.2	500 g	61,20
	**3-Aminophenol** NEW	≥99 %, for synthesis	C_6H_7NO	**0957.1**	100 g	18,20
				0957.2	500 g	64,40
	**4-Aminophenol** NEW	≥98 %, for synthesis	C_6H_7NO	**0950.1**	100 g	18,20
				0950.2	500 g	46,15
	Aniline	≥99,5 %, p.a.	C_6H_7N	**9846.1**	100 ml	19,25
				9846.2	500 ml	41,85
				9846.3	1 l	61,20
		≥99 %, for synthesis	C_6H_7N	**9931.1**	250 ml	13,45
				9931.2	1 l	31,10
				9931.3	2,5 l	63,35
	**4-Anisic acid**	≥98 %	$C_8H_8O_3$	**3631.1**	100 g	19,90
				3631.2	250 g	37,55
				3631.3	500 g	69,35
	**Anisole**	≥99 %, for synthesis	C_7H_8O	**4417.1**	100 ml	13,45
				4417.2	500 ml	25,70
				4417.3	1 l	41,85
				4417.4	2,5 l	85,90

For additional product data and safety information, see chapter Chemicals A-Z.

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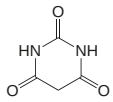
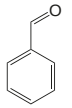
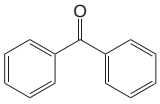
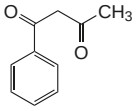
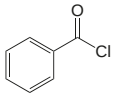
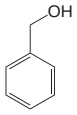
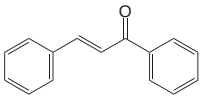
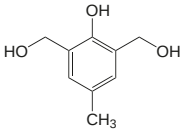
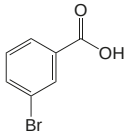
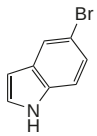
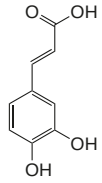
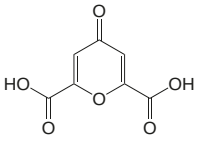
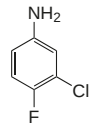
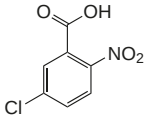
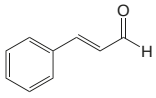
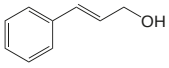
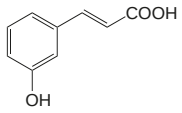
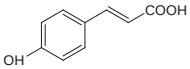
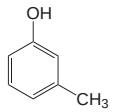
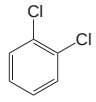
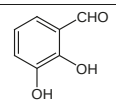
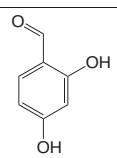
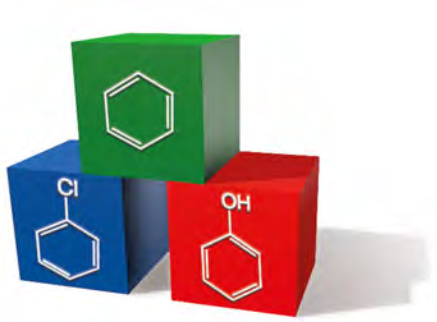
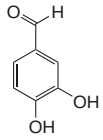
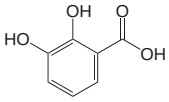
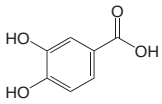
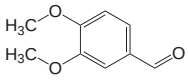
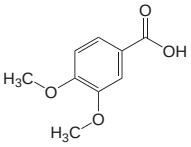
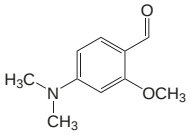
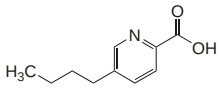
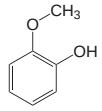
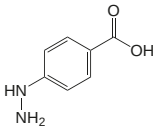
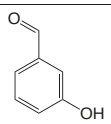
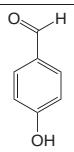
Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	7-Azaindole	≥98 %	$C_7H_6N_2$	**5490.1**	1 g	19,25
				5490.2	5 g	61,85
				5490.3	10 g	110,65
	**Barbituric acid**	≥99 %, extra pure	$C_4H_4N_2O_3$	**4927.1**	100 g	82,25
				4927.2	500 g	317,15
	**Benzaldehyde**	≥99,5 %, for synthesis	C_7H_6O	**4372.1**	100 ml	13,90
				4372.2	500 ml	23,15
				4372.3	1 l	30,00
				4372.4	2,5 l	55,80
	Benzene	≥99,5 %, extra pure	C_6H_6	**5785.3**	100 ml	19,90
				5785.1	1 l	46,80
				5785.4	2,5 l	96,65
				5785.2	10 l	353,70
	**Benzophenone** NEW	≥99 %, for synthesis	$C_{13}H_{10}O$	**0963.1**	250 g	16,05
				0963.2	1 kg	41,85
	**Benzoylacetone**	≥99 %	$C_{10}H_{10}O_2$	**5484.1**	25 g	63,35
				5484.2	100 g	224,70
	**Benzoyl chloride**	≥99 %, for synthesis	C_7H_5ClO	**7456.1**	100 ml	13,90
				7456.2	500 ml	30,00
				7456.3	1 l	44,00
				7456.4	2,5 l	85,50
	**Benzyl alcohol**	≥98 %, for synthesis	C_7H_8O	**4478.1**	500 ml	22,05
				4478.2	1 l	33,25
				4478.3	2,5 l	71,50
	**Benzylidene acetophenone**	≥98 %, for synthesis	$C_{15}H_{12}O$	**3982.1**	100 g	112,80
	**2,6-Bis(hydroxymethyl)-p-cresol**	≥97 %	$C_9H_{12}O_3$	**7299.1**	25 g	28,95
				7299.2	100 g	75,15
	**3-Brombenzoic acid**	≥99 %, for synthesis	$C_7H_5BrO_2$	**4273.1**	25 g	32,80
				4273.2	100 g	82,70
	**5-Bromoindole**	≥99,5 %	C_8H_6BrN	**5469.1**	5 g	25,30
				5469.2	25 g	100,95

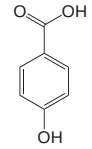
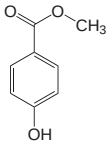
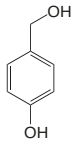
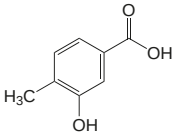
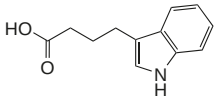
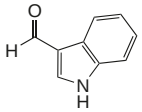
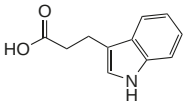
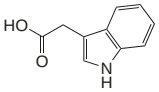
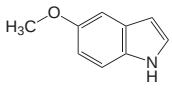
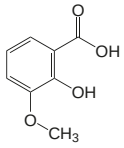
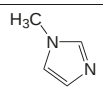
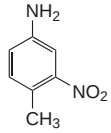
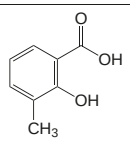
Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	**Caffeic acid**	≥98 %	$C_9H_8O_4$	**5869.3**	5 g	19,90
				5869.1	10 g	32,80
				5869.2	50 g	122,45
	**Chelidonic acid**	98 % cryst.	$C_7H_4O_6$	**6240.1**	5 g	214,90
	Chlorobenzene	≥99,5 %, for synthesis	C_6H_5Cl	**KK01.1**	100 ml	13,30
				KK01.2	500 ml	25,30
				KK01.3	1 l	36,45
	**3-Chloro-4-fluoroaniline**	≥95 %	C_6H_5ClFN	**5461.1**	25 g	43,55
				5461.2	100 g	124,60
	**5-Chloro-2-nitrobenzoic acid**	≥98 %, for synthesis	$C_7H_4ClNO_4$	**5456.1**	25 g	24,65
				5456.2	100 g	67,65
	**Cinnamaldehyde**	≥98 %, for synthesis	C_9H_8O	**5549.1**	250 ml	26,35
	**Cinnamyl alcohol**	≥98 %, for synthesis	$C_9H_{10}O$	**4905.1**	100 g	14,95
	**m-Coumaric acid**	≥98 %	$C_9H_8O_3$	**9904.1**	5 g	61,85
	**p-Coumaric acid**	≥98 %	$C_9H_8O_3$	**9908.1**	10 g	36,45
				9908.2	50 g	75,15
	**m-Cresol**	≥99 %, for synthesis	C_7H_8O	**9269.1**	250 g	40,75
			NEW	**9269.7**	1 l	111,70
	**1,2-Dichlorobenzene**	≥98 %, for synthesis	$C_6H_4Cl_2$	**4374.1**	100 ml	13,90
				4374.2	500 ml	27,85
				4374.3	1 l	42,50
	**2,3-Dihydroxybenzaldehyde**	≥98 %	$C_7H_6O_3$	**7274.1**	1 g	16,05
				7274.2	5 g	30,00
				7274.3	25 g	96,65
	**2,4-Dihydroxybenzaldehyde**	≥98 %, for synthesis	$C_7H_6O_3$	**4039.1**	25 g	38,60
				4039.2	100 g	113,85
				4039.3	250 g	228,45

For additional product data and safety information, see chapter Chemicals A-Z.



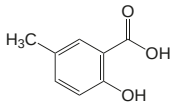
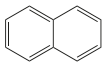
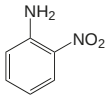
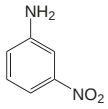
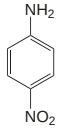
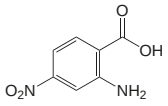
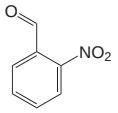
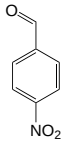
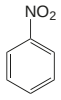
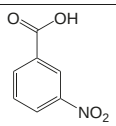
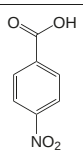
Aromatic Building Blocks

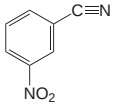
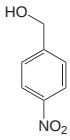
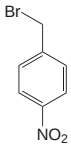
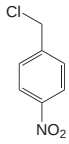
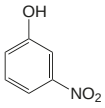
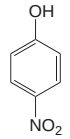
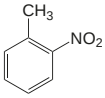
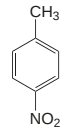
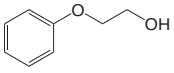
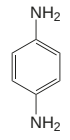
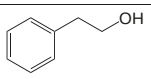
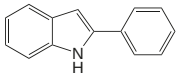
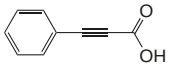
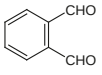
Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	**3,4-Dihydroxybenzaldehyde**	≥98 %	$C_7H_6O_3$	**5424.1**	5 g	17,10
				5424.2	25 g	39,25
				5424.3	100 g	107,40
	**2,3-Dihydroxybenzoic acid**	≥98 %	$C_7H_6O_4$	**6057.1**	5 g	28,95
	**3,4-Dihydroxybenzoic acid**	≥97 %	$C_7H_6O_4$	**8274.1**	10 g	46,15
	**3,4-Dimethoxybenzaldehyde**	≥99 %, for synthesis	$C_9H_{10}O_3$	**9651.1**	100 g	46,80
				9651.2	500 g	198,35
	**3,4-Dimethoxybenzoic acid**	≥99 %, for synthesis	$C_9H_{10}O_4$	**4230.1**	100 g	42,90
				4230.2	250 g	95,15
				4230.3	1 kg	353,70
	**4-Dimethylamino-2-methoxy-benzaldehyde**	≥98 %, for biochemistry	$C_{10}H_{13}NO_2$	**8412.1**	1 g	42,90
				8412.2	5 g	176,85
	**Fusaric acid**	≥99 %	$C_{10}H_{13}NO_2$	**5561.1**	250 mg	36,45
				5561.2	1 g	114,50
	**Guaiacol**	≥98 %, extra pure	$C_7H_8O_2$	**7308.1**	100 ml	41,40
	**4-Hydrazinobenzoic acid**	≥97 %, for synthesis	$C_7H_8N_2O_2$	**4539.1**	10 g	32,15
				4539.2	50 g	82,25
				4539.3	100 g	136,00
	**3-Hydroxybenzaldehyde**	≥97 %, for synthesis	$C_7H_6O_2$	**4493.1**	50 g	25,30
				4493.2	100 g	35,40
				4493.3	250 g	75,15
	**4-Hydroxybenzaldehyde**	≥99 %, for synthesis	$C_7H_6O_2$	**3870.2**	50 g	19,25
				3870.1	250 g	80,10

Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	**4-Hydroxybenzoic acid**	≥99 %, for synthesis	$C_7H_6O_3$	**3872.1**	100 g	18,85
				3872.2	500 g	46,15
				3872.3	1 kg	78,40
	**4-Hydroxybenzoic acid methyl ester**	≥99 %	$C_8H_8O_3$	**3646.1**	100 g	16,70
				3646.2	250 g	22,50
				3646.3	500 g	38,20
				3646.4	1 kg	67,20
	**4-Hydroxybenzyl alcohol**	≥99,5 %	$C_7H_8O_2$	**6257.1**	5 g	38,60
	**3-Hydroxy-4-methylbenzoic acid**	≥98 %, for synthesis	$C_8H_8O_3$	**4298.1**	1 g	31,10
				4298.2	5 g	50,45
				4298.3	25 g	142,45
	**Indole-3-butyric acid**	≥99 %, for biochemistry	$C_{12}H_{13}NO_2$	**4143.1**	5 g	19,90
				4143.2	25 g	62,25
	**Indole-3-carboxaldehyde**	≥98 %	C_9H_7NO	**5538.1**	25 g	51,50
				5538.2	50 g	90,20
	**Indole-3-propionic acid**	≥99 %, for biochemistry	$C_{11}H_{11}NO_2$	**4144.1**	10 g	39,70
				4144.2	50 g	131,05
	**Indolyl 3-acetic acid**	≥99 %, for biochemistry	$C_{10}H_9NO_2$	**7280.1**	5 g	18,85
				7280.2	25 g	62,25
				7280.3	50 g	107,00
	**5-Methoxyindole**	≥98 %, for synthesis	C_9H_9NO	**6546.1**	1 g	30,00
				6546.2	5 g	53,65
				6546.3	25 g	171,90
	**3-Methoxysalicylic acid**	≥97 %, for synthesis	$C_8H_8O_4$	**4504.1**	5 g	20,35
				4504.2	25 g	50,45
	**1-Methylimidazole**	≥99 %, for synthesis	$C_4H_6N_2$	**N353.1**	100 ml	21,40
				N353.2	1 l	118,15
	**4-Methyl-3-nitroaniline**	≥99 %, for synthesis	$C_7H_8N_2O_2$	**5532.1**	25 g	31,10
				5532.2	50 g	52,60
	**3-Methylsalicylic acid**	≥98,5 %, for synthesis	$C_8H_8O_3$	**4525.1**	100 g	25,70
				4525.2	500 g	83,75

For additional product data and safety information, see chapter Chemicals A-Z.

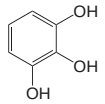
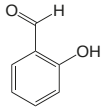
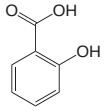
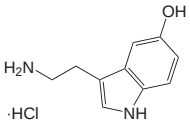
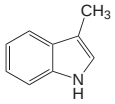
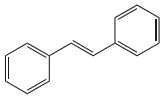
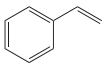
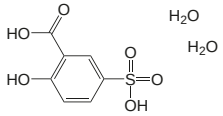
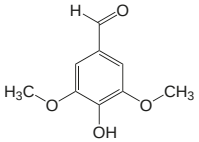
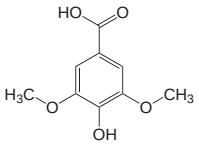
Aromatic Building Blocks

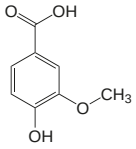
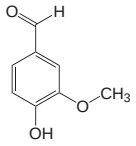
Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	**5-Methylsalicylic acid**	≥98 %, for synthesis	$C_8H_8O_3$	**6547.1**	1 g	19,25
				6547.2	5 g	46,15
				6547.3	25 g	90,20
	**Naphthalene**	≥99 %, for synthesis	$C_{10}H_8$	**6714.1**	100 g	14,55
				6714.2	500 g	31,10
				6714.3	1 kg	51,50
				6714.4	2,5 kg	93,45
				6714.5	5 kg	147,85
	**2-Nitroaniline**	≥98 %, for synthesis	$C_6H_6N_2O_2$	**9878.1**	100 g	17,10
				9878.2	500 g	40,75
				9878.3	1 kg	64,00
	**3-Nitroaniline**	≥99 %, for synthesis	$C_6H_6N_2O_2$	**9867.1**	100 g	19,25
				9867.2	500 g	52,60
				9867.3	1 kg	87,00
	**4-Nitroaniline**	≥98,5 %, for synthesis	$C_6H_6N_2O_2$	**9850.1**	100 g	22,50
				9850.2	500 g	46,15
				9850.3	1 kg	83,75
	**4-Nitroanthranilic acid**	≥98 %, for synthesis	$C_7H_6N_2O_4$	**4543.1**	1 g	46,15
				4543.2	5 g	90,20
	**2-Nitrobenzaldehyde**	≥98 %, for synthesis	$C_7H_5NO_3$	**4224.1**	25 g	33,25
				4224.2	100 g	65,50
				4224.3	250 g	113,85
	**4-Nitrobenzaldehyde**	≥98 %, for synthesis	$C_7H_5NO_3$	**5667.1**	25 g	26,35
				5667.2	100 g	51,50
				5667.3	250 g	95,60
	**Nitrobenzene**	≥99 %, for synthesis	$C_6H_5NO_2$	**4394.2**	500 ml	34,30
				4394.1	1 l	57,55
	**3-Nitrobenzoic acid**	≥99 %, for synthesis	$C_7H_5NO_4$	**0445.1**	100 g	14,55
				0445.2	500 g	44,65
				0445.3	1 kg	80,55
	**4-Nitrobenzoic acid**	≥99,5 %, for synthesis	$C_7H_5NO_4$	**0450.1**	100 g	13,90
				0450.2	500 g	33,25
				0450.3	1 kg	55,80

Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	**3-Nitrobenzonitrile**	≥98 %, for synthesis	$C_7H_4N_2O_2$	**4530.1**	25 g	46,15
				4530.2	100 g	97,75
	**4-Nitrobenzylalcohol**	≥99 %, for synthesis	$C_7H_7NO_3$	**6522.1**	25 g	31,10
				6522.2	100 g	62,25
				6522.3	250 g	111,70
	**4-Nitrobenzyl bromide**	≥99 %, for synthesis	$C_7H_6NO_2Br$	**5680.1**	25 g	27,45
				5680.2	100 g	52,60
				5680.3	250 g	96,25
	**4-Nitrobenzyl chloride**	≥98 %, for synthesis	$C_7H_6NO_2Cl$	**5697.1**	10 g	17,75
				5697.2	50 g	39,25
	**3-Nitrophenol**	≥99 %, for synthesis	$C_6H_5NO_3$	**4533.1**	25 g	55,40
				4533.2	100 g	137,10
				4533.3	250 g	299,95
	**4-Nitrophenol**	≥99 %, for synthesis	$C_6H_5NO_3$	**6524.1**	25 g	13,45
				6524.2	100 g	21,00
				6524.3	500 g	49,35
	**o-Nitrotoluene** NEW	≥99 %, for synthesis	$C_7H_7NO_2$	**0961.1**	100 ml	13,90
				0961.2	1 l	39,70
	**p-Nitrotoluene** NEW	≥98 %, for synthesis	$C_7H_7NO_2$	**0881.1**	100 g	13,90
				0881.2	1 kg	42,90
	**2-Phenoxyethanol**	≥99 %, for synthesis	$C_8H_{10}O_2$	**4348.1**	250 ml	23,55
				4348.2	1 l	47,85
				4348.3	10 l	239,20
	**1,4-Phenylenediamine**	≥99 %, for synthesis	$C_6H_8N_2$	**4499.2**	50 g	24,65
				4499.1	100 g	36,45
				4499.3	250 g	55,80
	**2-Phenylethanol**	≥99 %, for synthesis	$C_8H_{10}O$	**4422.1**	5 ml	10,65
				4422.2	250 ml	17,10
				4422.3	1 l	46,15
	**2-Phenylindole**	≥94,5 %	$C_{14}H_{11}N$	**6279.1**	50 g	47,20
	**Phenylpropiolic acid**	≥98 %, for synthesis	$C_9H_6O_2$	**5271.1**	5 g	42,90
				5271.2	25 g	155,90
	**o-Phthaldialdehyde**	≥99 %, for synthesis	$C_8H_6O_2$	**5980.1**	25 g	117,20

For additional product data and safety information, see chapter Chemicals A-Z.

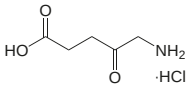
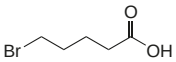
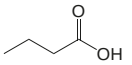
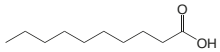
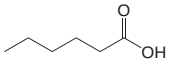
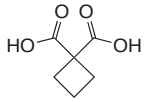
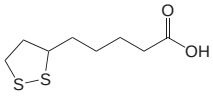
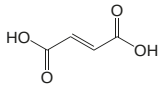
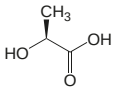
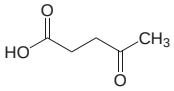
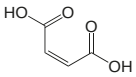
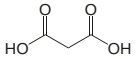
Aromatic Building Blocks

Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	**Pyrogallol**	≥98 %, for synthesis	$C_6H_6O_3$	**3963.2**	50 g	26,80
				3963.1	100 g	48,30
				3963.3	250 g	95,60
				3963.4	1 kg	342,95
	**Salicylaldehyde**	≥99 %, for synthesis	$C_7H_6O_2$	**4662.1**	100 ml	22,50
	**Salicylic acid**	≥99 %, for biochemistry	$C_7H_6O_3$	**9268.2**	500 g	34,30
				9268.1	1 kg	57,95
				9268.3	2,5 kg	85,90
	**Serotonin hydrochloride**	≥98 %, for biochemistry	$C_{10}H_{12}N_2O \cdot HCl$	**8367.1**	100 mg	21,00
				8367.2	1 g	38,60
				8367.3	5 g	153,65
	**Skatole**	>99 %	C_9H_9N	**4696.1**	10 g	84,85
	**trans-Stilbene**	≥97 %	$C_{14}H_{12}$	**5246.1**	50 g	46,15
				5246.2	100 g	80,55
	**Styrene**	≥99,5 %, for synthesis, stab.	C_8H_8	NEW **2641.7**	100 ml	10,65
				2641.1	500 ml	21,00
				2641.2	1 l	30,65
				2641.3	2,5 l	55,80
	**5-Sulphosalicylic acid dihydrate**	≥99 %, for biochemistry	$C_7H_6O_6S \cdot 2\ H_2O$	**4119.1**	100 g	18,85
				4119.2	500 g	52,60
	**Syringaldehyde**	≥98 %	$C_9H_{10}O_4$	**5359.1**	5 g	48,30
	**Syringic acid**	≥97 %	$C_9H_{10}O_5$	**5361.1**	10 g	67,20
	1,2,4-Triazole	≥99 %	$C_2H_3N_3$	**5242.1**	25 g	22,05
				5242.2	100 g	62,25

Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	**Vanillic acid**	≥98 %	$C_8H_8O_4$	**3685.1**	10 g	38,60
	**Vanillin**	≥99 %, for biochemistry	$C_8H_8O_3$	**7887.1**	100 g	17,75
				7887.2	1 kg	89,80

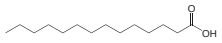
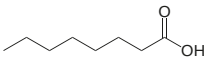
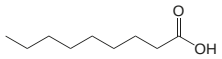
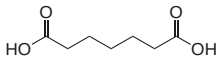
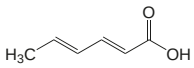
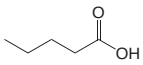
For additional product data and safety information, see chapter Chemicals A-Z.

Aliphatic Carboxylic Acids

Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	**5-Aminolevulinic acid hydrochloride**	≥98 %, for biochemistry	$C_5H_9NO_3 \cdot HCl$	**8451.1**	500 mg	25,30
				8451.2	1 g	37,55
				8451.3	5 g	110,65
	**5-Bromovaleric acid**	≥96 %	$C_5H_9BrO_2$	**5466.1**	10 g	14,95
				5466.2	50 g	49,35
	**Butyric acid**	≥99 %, for synthesis	$C_4H_8O_2$	**3277.1**	100 ml	16,70
				3277.2	1 l	64,40
	**Capric acid**	≥98 %, for synthesis	$C_{10}H_{20}O_2$	**8797.1**	100 g	20,35
				8797.3	500 g	49,35
				8797.2	1 kg	85,50
	**Caproic acid**	≥98 %, for synthesis	$C_6H_{12}O_2$	**8799.1**	100 ml	18,85
				8799.3	500 ml	32,15
				8799.2	1 l	54,30
				8799.4	2,5 l	109,55
	**Cyclobutane-1,1-dicarboxylic acid**	≥98 %	$C_6H_8O_4$	**5451.1**	5 g	38,60
				5451.2	25 g	135,35
	**DL-6,8-Dithiooctanoic acid**	≥98 %	$C_8H_{14}O_2S_2$	**6229.1**	5 g	121,40
	**Fumaric acid**	≥99,5 %, for biochemistry	$C_4H_4O_4$	**3748.1**	500 g	19,90
				3748.2	2,5 kg	66,55
	**L-Lactic acid**	≥98 %, for biochemistry	$C_3H_6O_3$	**8360.1**	5 g	36,45
				8360.2	10 g	55,40
				8360.3	25 g	110,65
	**Levulinic acid**	≥98 %, for synthesis	$C_5H_8O_3$	**3976.1**	50 g	14,95
				3976.2	500 g	81,60
	**Maleic acid**	≥99 %, for synthesis	$C_4H_4O_4$	**3538.2**	100 g	17,75
				3538.1	500 g	33,25
				3538.3	1 kg	53,65
				3538.4	2,5 kg	106,35
				3538.5	5 kg	171,50
	**Malonic acid**	≥99 %, for synthesis	$C_3H_4O_4$	**9851.1**	100 g	16,05
				9851.2	500 g	57,95
				9851.3	1 kg	103,10

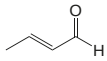
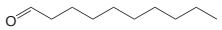
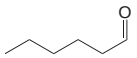
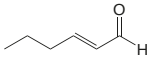
For additional product data and safety information, see chapter Chemicals A-Z.

Aliphatic Carboxylic Acids

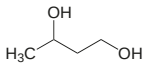
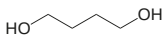
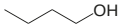
Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	**Myristic acid**	≥98 %, for biochemistry	$C_{14}H_{28}O_2$	**6469.2**	100 g	12,80
				6469.3	500 g	32,15
				6469.1	1 kg	50,45
	**Octanoic acid**	≥99,5 %, for synthesis	$C_8H_{16}O_2$	**2613.1**	100 ml	14,55
				2613.2	500 ml	24,20
				2613.3	1 l	31,75
				2613.4	2,5 l	62,90
	**Pelargonic acid**	≥97 %	$C_9H_{18}O_2$	**7015.1**	50 ml	35,40
	**Pimelic acid**	≥99 %	$C_7H_{12}O_4$	**5270.1**	25 g	31,10
				5270.2	50 g	45,70
	Propionic acid	≥99,5 %, for synthesis	$C_3H_6O_2$	**6026.2**	500 ml	15,60
				6026.1	1 l	22,50
				6026.3	2,5 l	41,85
	**Sorbic acid**	≥99 %, Ph.Eur., extra pure	$C_6H_8O_2$	**7158.1**	250 g	42,90
				7158.2	500 g	80,55
				7158.3	1 kg	150,40
	**n-Valeric acid**	≥98 %	$C_5H_{10}O_2$	**4874.1**	250 ml	31,75

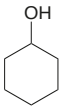
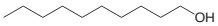
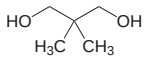
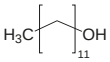
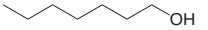
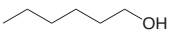
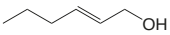
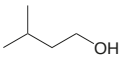
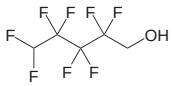
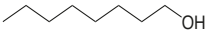
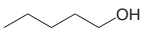
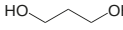
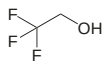
For additional product data and safety information, see chapter Chemicals A-Z.

Aliphatic Aldehydes

Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	**2-Butenal**	≥98 %, for synthesis	C_4H_6O	**3425.1**	250 ml	45,05
	**Capric aldehyde**	≥97 %, for synthesis	$C_{10}H_{20}O$	**7547.1**	100 ml	116,00
	**Caproic aldehyde**	≥98 %, for synthesis	$C_6H_{12}O$	**3327.1**	100 ml	39,70
	Dodecyl aldehyde	≥98 %, for synthesis	$C_{12}H_{24}O$	**3754.1**	50 ml	50,00
	**trans-Hexen-2-al**	>96 %	$C_6H_{10}O$	**3757.1**	25 ml	67,65

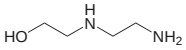
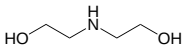
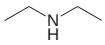
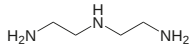
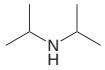
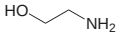
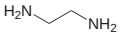
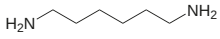
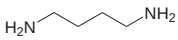
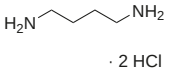
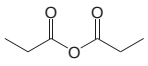
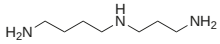
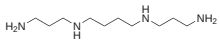
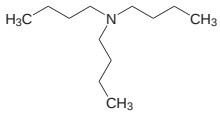
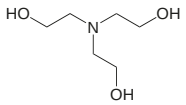
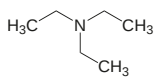
Aliphatic Alcohols

Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	**1,3-Butanediol**	≥99 %, for synthesis	$C_4H_{10}O_2$	**7473.1**	250 ml	25,30
				7473.2	500 ml	42,50
				7473.3	1 l	76,25
	**1,4-Butanediol**	≥99 %, for synthesis	$C_4H_{10}O_2$	**4211.1**	1 l	37,55
				4211.2	2,5 l	81,20
				4211.3	10 l	255,75
	**1-Butanol**	≥99,5 %,for synthesis	$C_4H_{10}O$	**7724.1**	1 l	28,50
				7724.3	2,5 l	44,00
				7724.2	10 l	121,40
	2-Butanol	≥98,5 %, for synthesis	$C_4H_{10}O$	**KK02.1**	500 ml	26,80
				KK02.2	1 l	46,15
			NEW	**KK02.7**	10 l	252,65
	tert-Butanol	≥99 %, for synthesis	$C_4H_{10}O$	**4323.1**	1 l	25,30
				4323.3	2,5 l	45,05
				4323.2	10 l	156,85
			NEW	**4323.7**	25 l	306,40

Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	Cetyl alcohol	≥95 %	$C_{16}H_{34}O$	**5762.1**	1 kg	52,15
	**Cyclohexanol**	≥99 %, for synthesis	$C_6H_{12}O$	**7756.1**	1 l	30,00
				7756.2	2,5 l	56,90
			NEW	**7756.7**	25 l	375,20
	**1-Decanol**	≥99 %, for synthesis	$C_{10}H_{22}O$	**4151.1**	1 l	55,80
	**2,2-Dimethyl-1,3-propanediol**	≥99 %, for synthesis	$C_5H_{12}O_2$	**7349.1**	100 g	13,45
				7349.2	500 g	25,30
				7349.3	1 kg	37,55
				7349.4	2,5 kg	80,55
	**1-Dodecanol**	≥98 %, for synthesis	$C_{12}H_{26}O$	**9853.1**	250 ml	13,90
				9853.2	1 l	37,55
				9853.3	2,5 l	77,95
	1,7-Heptanediol	≥98 %	$C_7H_{16}O_2$	**5541.1**	5 g	69,80
				5541.2	10 g	117,75
	**1-Heptanol**	≥99 %, for synthesis	$C_7H_{16}O$	**3827.1**	500 ml	73,00
	**1-Hexanol**	≥98 %, for synthesis	$C_6H_{14}O$	**3847.1**	1 l	45,05
				3847.2	2,5 l	98,40
	**trans-2-Hexen-1-ol**	≥97 %	$C_6H_{12}O$	**3756.1**	5 ml	29,60
	**Isoamyl alcohol**	≥98,5 %, for synthesis	$C_5H_{12}O$	**8930.1**	1 l	48,95
				8930.2	2,5 l	89,15
	**2,2,3,3,4,4,5,5-Octafluoro-1-pentanol**	≥99,5 %	$C_5H_4F_8O$	**7297.1**	10 ml	17,75
				7297.2	100 ml	91,95
	**1-Octanol**	≥99 %, for synthesis	$C_8H_{18}O$	**4439.1**	100 ml	14,95
				4439.2	500 ml	25,70
				4439.3	1 l	39,25
	Pentaerythritol	≥98 %, for synthesis	$C_5H_{12}O_4$	**7522.2**	100 g	18,20
				7522.1	500 g	55,80
	**1-Pentanol**	~98 %, for synthesis	$C_5H_{12}O$	**8949.2**	500 ml	26,35
			NEW	**8949.1**	1 l	43,55
	1,2-Propanediol	≥99,5 %, for synthesis	$C_3H_8O_2$	**0340.1**	1 l	24,20
				0340.2	2,5 l	46,15
				0340.3	5 l	84,85
	**1,3-Propanediol** NEW	≥98 %, for synthesis	$C_3H_8O_2$	**0958.1**	100 ml	18,20
				0958.2	500 ml	59,05
				0958.3	1 l	106,45
				0958.4	2,5 l	213,95
	1-Propanol	≥99,5 %, for synthesis	C_3H_8O	**9169.1**	1 l	26,35
				9169.2	2,5 l	47,20
				9169.3	10 l	120,95
				9169.4	25 l	214,50
	2-Propanol	≥99,5 %, for synthesis	C_3H_8O	**9866.1**	1 l	17,75
				9866.2	2,5 l	42,50
				9866.5	2,5 l	40,35
				9866.6	5 l	57,95
				9866.3	10 l	89,15
				9866.4	25 l	177,40
	**2,2,2-Trifluoroethanol**	>99,8 %, for synthesis	CF_3CH_2OH	**CP29.1**	100 ml	36,45
				CP29.2	250 ml	67,20
				CP29.3	1 l	206,95

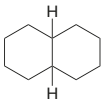
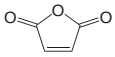
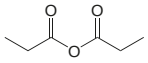
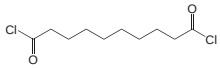
For additional product data and safety information, see chapter Chemicals A-Z.

Aliphatic Amines

Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	**2-(2-Aminoethylamino)ethanol**	≥98 %, for synthesis	$C_4H_{12}N_2O$	**6717.1**	100 ml	15,60
				6717.2	500 ml	26,35
				6717.3	1 l	41,85
				6717.4	2,5 l	89,80
	**Diethanolamine**	≥99 %, for synthesis	$C_4H_{11}NO_2$	**HN99.1**	500 ml	30,65
				HN99.2	1 l	38,60
				HN99.3	2,5 l	74,10
				HN99.4	5 l	110,65
				HN99.5	10 l	188,15
	**Diethylamine**	≥99,5 %, for synthesis	$C_4H_{11}N$	**KK00.1**	100 ml	13,90
				KK00.2	500 ml	21,40
				KK00.3	1 l	27,85
				KK00.4	2,5 l	48,30
	**Diethylene triamine**	≥98 %, for synthesis	$C_4H_{13}N_3$	**6723.1**	100 ml	13,90
				6723.2	500 ml	28,95
				6723.3	1 l	41,85
				6723.4	2,5 l	81,60
	**Diisopropylamine**	≥99,5 %, for synthesis	$C_6H_{15}N$	**4369.1**	100 ml	13,90
				4369.2	500 ml	26,80
				4369.3	1 l	42,50
	**Ethanolamine**	≥99 %, for synthesis	C_2H_7NO	**4376.1**	100 ml	12,40
				4376.2	500 ml	19,90
				4376.3	1 l	30,00
	**Ethylenediamine**	≥99,5 %, for synthesis	$C_2H_8N_2$	**4218.1**	100 ml	13,45
				4218.2	500 ml	17,75
				4218.3	1 l	27,85
				4218.4	2,5 l	54,75
				4218.5	10 l	182,65
	**Hexamethylene diamine**	≥99,5 %	$C_6H_{16}N_2$	**4465.1**	100 g	17,75
				4465.2	250 g	30,00
				4465.3	1 kg	57,95
	**Putrescin**	≥99 %, for biochemistry	$C_4H_{12}N_2$	**8379.1**	25 g	22,05
				8379.2	100 g	44,00
				8379.3	500 g	135,35
	**Putrescin dihydrochloride**	≥97 %, for biochemistry	$C_4H_{12}N_2 \cdot 2\ HCl$	**4141.1**	10 g	25,70
				4141.2	25 g	50,45
				4141.3	50 g	89,15
	**Propionic anhydride**	≥98,5 %, for synthesis	$C_6H_{10}O_3$	**7432.1**	100 ml	14,55
				7432.2	500 ml	33,25
				7432.3	1 l	54,75
				7432.4	2,5 l	117,20
	**Spermidine**	≥98 %, for biochemistry	$C_7H_{19}N_3$	**7161.2**	1 g	42,90
				7161.1	2,5 g	81,60
				7161.3	5 g	139,65
	**Spermine**	≥99 %, for biochemistry	$C_{10}H_{26}N_4$	**7162.2**	1 g	37,55
				7162.1	2,5 g	80,55
				7162.3	5 g	128,90
	**Tributylamine**	≥99 %, for synthesis	$C_{12}H_{27}N$	**4089.1**	100 ml	16,05
				4089.2	500 ml	28,50
				4089.3	1 l	38,20
				4089.4	2,5 l	67,20
	**Triethanolamine**	≥99 %, for synthesis	$C_6H_{15}NO_3$	**6300.1**	1 l	26,35
				6300.3	2,5 l	43,55
				6300.2	10 l	138,70
	**Triethylamine (TEA)**	≥99,5 %, for synthesis	$C_6H_{15}N$	**X875.1**	100 ml	12,40
				X875.2	500 ml	17,10
				X875.3	1 l	25,70
				X875.4	2,5 l	44,65

For additional product data and safety information, see chapter Chemicals A-Z.

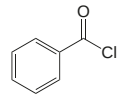
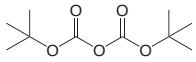
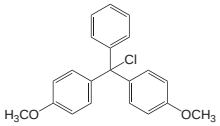
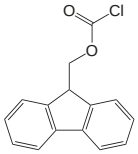
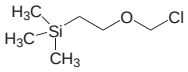
Aliphatic Building Blocks

Structural formula	Product	Purity	Empirical formula	Art. No.	Pack Qty.	€
	Cyclohexanone	≥99,5 %, extra pure	$C_6H_{10}O$	**CP27.1**	1 l	29,60
				CP27.2	2,5 l	51,50
				CP27.3	10 l	142,90
				CP27.4	25 l	267,70
	Cyclohexene	≥99 %, for synthesis	C_6H_{10}	**3451.1**	500 ml	62,90
	**Decahydronaphthalene**	≥98 %, for synthesis	$C_{10}H_{18}$	**4438.1**	1 l	33,25
				4438.3	2,5 l	61,20
				4438.2	10 l	203,20
	**Maleic anhydride**	≥99,5 %, for synthesis	$C_4H_2O_3$	**0975.1**	250 g	14,55
				0975.2	1 kg	28,95
	Nitromethane	≥98,5 %, for synthesis	CH_3NO_2	**4406.1**	500 ml	32,15
				4406.2	25 l	654,70
	**Propionic anhydride**	≥98,5 %, for synthesis	$C_6H_{10}O_3$	**7432.1**	100 ml	14,55
				7432.2	500 ml	33,25
				7432.3	1 l	54,75
				7432.4	2,5 l	117,20
	Propyl bromide	≥98 %	C_3H_7Br	**4631.1**	100 ml	38,60
	**Sebacic acid dichloride**	≥98 %	$C_{10}H_{16}Cl_2O_2$	**4472.2**	10 ml	25,70
				4472.1	50 ml	77,30
				4472.3	250 ml	241,90

For additional product data and safety information, see chapter Chemicals A-Z.

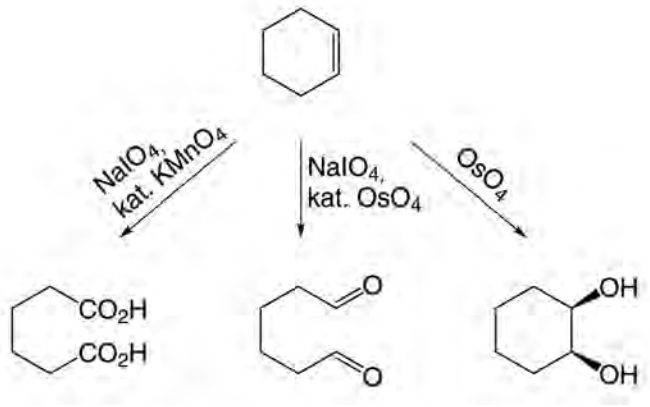
Protecting Groups

Today, protecting groups have become an important tool in the multi-stage, organic synthesis of complex compounds. The task of a protecting group is to protect a functional group from undesirable reactions with other functional groups. Then the protecting groups should be separated again under as mild as possible conditions. Good protecting groups should be specific, highly selective and both introduceable and separable in high yields, and stable under as many reaction conditions as possible.

Structural formula	Product	Protecting group (short name)	Purity	Removal	Art. No.	Pack Qty.	€
	**Benzoyl chloride**	-	≥99 %, for synthesis	alkaline	**7456.1**	100 ml	13,90
					7456.2	500 ml	30,00
					7456.3	1 l	44,00
					7456.4	2,5 l	85,50
	**Di-*tert*-butyl dicarbonate (Boc_2O)**	Boc	PEPTIPURE® ≥98 %	acidic	**6985.1**	100 g	149,45
					6985.2	500 g	471,95
	**4,4'-Dimethoxytrityl chloride (DMT-Cl)**	DMT	≥98 %, for synthesis	with TFA	**9671.1**	5 g	24,20
					9671.2	25 g	71,95
					9671.3	50 g	117,75
					9671.4	100 g	188,05
	**9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl)**	Fmoc	PEPTIPURE® ≥ 98%	alkaline	**2201.1**	5 g	19,90
					2201.2	25 g	44,65
					2201.3	100 g	130,65
	Trimethylchlorosilane (TMCS)	TMS	≥99 %	acidic, alkaline or using fluoride ions	**2338.1**	25 g	49,35
	**2-(Trimethylsilyl)ethoxymethyl chloride**	SEM	≥95 %, for synthesis	acidic, alkaline or using fluoride ions	**1444.1**	1 ml	38,60
					1444.2	5 ml	99,45

Oxidising Agents

Oxidation reactions play an important role - not only in inorganic chemistry but also in many organic synthesis processes. Several examples are shown here: Lemieux-von Rudloff oxidation, Lemieux Johnson oxidation and dihydroxylation. ROTH offers a selection of well-known and commonly available oxidants in this area.

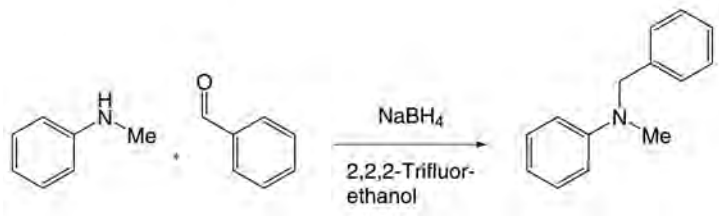


Product	Purity	Art. No.	Pack Qty.	Packaging	€
Hydrogen peroxide	50 % techn., stab.	**0034.1**	500 ml	plastic	17,10
		0034.2	1 l	plastic	22,50
		0034.3	2,5 l	plastic	33,90
		0034.4	5 l	plastic	57,95
		0034.5	10 l	plastic	104,20
	35 % pure, stabilized	**9683.4**	500 ml	plastic	16,70
		9683.1	1 l	plastic	21,40
		9683.3	2,5 l	plastic	32,15
		9683.5	5 l	plastic	53,65
		9683.2	10 l	plastic	81,20
		9683.8	25 l	plastic	177,40
	30 % for synthesis, stab.	**CP26.5**	500 ml	plastic	15,60
		CP26.1	1 l	plastic	19,25
		CP26.4	2,5 l	plastic	28,50
		CP26.2	10 l	plastic	51,50
		CP26.3	25 l	plastic	104,20
Manganese(IV) oxide	>90 %, precipitated, active	**4486.1**	250 g	glass	32,80
Osmium tetraoxide	≥99,95 %, p.a.	**8371.1**	100 mg	glass	42,50
		8371.2	500 mg	glass	103,10
		8371.3	1 g	glass	160,10
Potassium chromate	≥99 %, p.a., ACS	**HN33.1**	100 g	plastic	37,55
		HN33.2	250 g	plastic	70,85
		HN33.3	500 g	plastic	124,60
		HN33.4	1 kg	plastic	214,50
Potassium dichromate	≥99,5 % cryst.	**7953.3**	100 g	plastic	17,75
		7953.1	1 kg	plastic	94,10
		7953.2	5 kg	plastic	364,45
Potassium permanganate	≥99 %, Ph.Eur., BP, USP	**8004.1**	250 g	plastic	23,55
		8004.2	1 kg	plastic	58,60
		8004.3	5 kg	plastic	169,35
Sodium bismuthate	≥85 %, p.a.	**4401.1**	50 g	plastic	47,85
		4401.2	100 g	plastic	88,70
		4401.3	250 g	plastic	192,45
Sodium hypochlorite solution	12 % Cl, techn.	**9062.3**	1 l	plastic	18,20
		9062.4	2,5 l	plastic	27,45
		9062.1	10 l	plastic	36,45
		9062.2	33 kg	plastic	89,15
	5-10 % Cl, techn.	**6846.1**	1 l	plastic	13,45
		6846.2	2,5 l	plastic	18,85
		6846.3	10 l	plastic	28,50
		6846.4	33 kg	plastic	54,75
Sodium iodate	≥99 %, p.a.	**HN17.1**	50 g	plastic	41,85
		HN17.2	100 g	plastic	73,65
TEMPO	≥98 %, for synthesis	**6801.1**	1 g	glass	14,55
		6801.2	5 g	glass	27,85
		6801.3	25 g	glass	67,20

For additional product data and safety information, see chapter Chemicals A-Z.

Reducing Agents

As with oxidation reactions, reduction reactions are also widely used in organic synthesis. An example of this reductive amination, which is shown below. You can find commonly used reducing agents here.

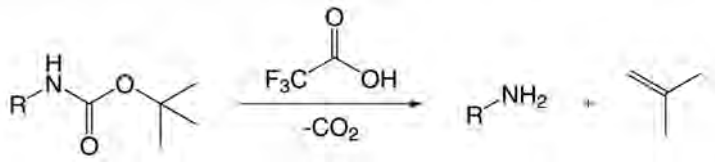


Product	Purity	Art. No.	Pack Qty.	Packaging	€
Formic acid	≥98 %, for synthesis	**4742.1**	1 l	glass	23,15
		4742.2	2,5 l	glass	45,70
		4742.4	5 l	plastic	65,50
		4742.3	10 l	plastic	99,90
Magnesium filings	≥99,9 %, acc. to Grignard, for synthesis	**AE61.1**	250 g	tin	18,20
		AE61.2	500 g	tin	27,85
		AE61.3	1 kg	tin	45,05
Sodium	≥99 %, rods, in paraffin oil	**4469.1**	250 g	plastic	159,00
Sodium borohydride	≥97 %	**4051.1**	25 g	tin	34,30
		4051.2	100 g	tin	73,00
Sodium sulphite	≥98 %, anhydrous	**8637.1**	1 kg	plastic	22,05
		8637.3	5 kg	plastic	56,90
		8637.2	10 kg	plastic	102,70
Triphenylphosphine	≥99,5 %, for synthesis	**4110.1**	10 g	plastic	12,80
		4110.2	100 g	plastic	19,90
		4110.3	250 g	plastic	35,40
		4110.4	1 kg	plastic	106,45
Zinc granule	≥99,99 %, p.a., particle size: 5-15 mm	**AE99.1**	250 g	plastic	32,15
		AE99.2	500 g	plastic	52,60
		AE99.3	1 kg	plastic	87,00
Zinc dust	≥98 %, particle size <63 µm, stab.	**9524.2**	500 g	glass	30,00
		9524.3	1 kg	glass	42,50
		9524.1	2,5 kg	glass	75,15

For additional product data and safety information, see chapter Chemicals A-Z.

(Lewis) Acids

Acids are commonly used in synthesis protocols for processing reactions. In addition, acids (usually Lewis acids) can also serve as catalysts for various reactions. The removal of the Boc protecting group shown here is formally catalysed by the acids used (in this case, trifluoroacetic acid). In addition to conventional inorganic acids, ROTH can supply other acids and Lewis acids commonly used in organic synthesis.

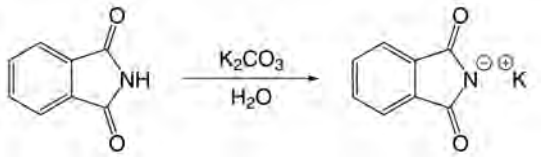


Product	Purity	Art. No.	Pack Qty.	Packaging	€
Acetic acid	≥99 %, for synthesis	**7332.1**	1 l	plastic	18,85
		7332.4	2,5 l	plastic	37,55
		7332.2	5 l	plastic	68,30
		7332.3	10 l	plastic	102,70
		7332.5	25 l	plastic	182,65
Aluminium chloride	≥98 %, anhydrous, sublimated	**CN86.1**	100 g	glass	13,90
		CN86.2	500 g	glass	28,95
		CN86.3	1 kg	glass	46,80
Ammonium chloride	≥99 %, cryst.	**5470.1**	1 kg	plastic	17,75
		5470.2	5 kg	plastic	42,90
		5470.3	10 kg	plastic	63,35
		5470.5	25 kg	plastic	117,20
Hydrochloric acid	37 %, extra pure	**9277.1**	1 l	glass	19,25
		9277.2	2,5 l	glass	31,75
		9277.3	10 l	plastic	71,50
Iron(III) chloride	≥98,5 %, extra pure, anhydrous	**5192.1**	250 g	glass	21,00
		5192.2	500 g	glass	28,50
		5192.3	1 kg	glass	41,40
Nitric acid	68 %, extra pure	**2616.1**	250 ml	glass	14,55
		2616.2	1 l	glass	25,70
		2616.3	2,5 l	glass	41,40
ortho-Phosphoric acid	85 %, extra pure	**9079.1**	1 l	plastic	40,35
		9079.2	2,5 l	plastic	71,95
		9079.3	10 l	plastic	150,00
Potassium hydrogen sulphate	≥99 %, extra pure	**X989.1**	500 g	plastic	19,25
		X989.2	1 kg	plastic	32,15
		X989.3	2,5 kg	plastic	60,10
Sodium hydrogen sulphate	≥93 %, pearls	**2373.1**	1 kg	plastic	18,85
		2373.2	5 kg	plastic	40,75
Sulphuric acid	96 %, techn.	**0971.1**	1 l	plastic	18,20
		0971.2	2,5 l	plastic	27,45
		0971.3	10 l	plastic	54,75
		0971.4	25 l	plastic	113,85
Trifluoroacetic acid (TFA)	≥99,9 %	**6957.1**	500 ml	glass	113,45
		6957.2	1 l	glass	198,90
		6957.3	2,5 l	glass	428,95

For additional product data and safety information, see chapter Chemicals A-Z.

Bases

Many reaction mechanisms require deprotonation so that the desired reaction can take place. The strength of the required bases depends entirely on the application. ROTH supplies a wide selection of bases which play an important role in organic synthesis.

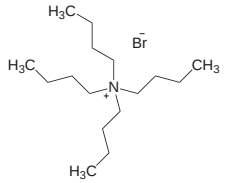
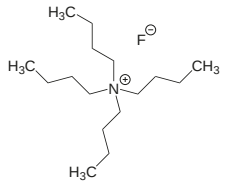
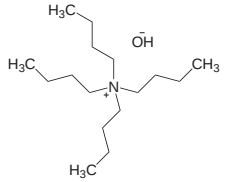
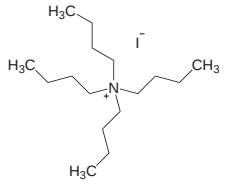
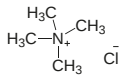


Product	Purity	Art. No.	Pack Qty.	Packaging	€
Ammonia solution	≥25 %, extra pure	**5460.1**	1 l	plastic	18,85
		5460.2	5 l	plastic	34,30
		5460.3	10 l	plastic	45,05
		5460.4	30 l	plastic	109,55
Barium hydroxide octahydrate	≥97 %, extra pure	**HN75.1**	500 g	plastic	27,85
		HN75.2	1 kg	plastic	47,20
		HN75.3	2,5 kg	plastic	103,10
Caesium carbonate	≥99,9 %, p.a.	**6873.1**	5 g	plastic	17,10
		6873.2	25 g	plastic	37,55
		6873.3	100 g	plastic	119,25
		6873.4	500 g	plastic	385,95
1,8-Diazabicyclo[5.4.0]undec-7-ene (DBU)	≥98 %, for synthesis	**6869.1**	25 ml	glass	30,00
		6869.2	100 ml	glass	88,05
		6869.3	250 ml	glass	162,25
		6869.4	500 ml	glass	289,20
N,N-Diisopropylethylamine (DIPEA)	≥99 %, for synthesis	**4105.1**	100 ml	glass	16,70
		4105.2	250 ml	glass	27,45
		4105.3	1 l	glass	77,30
		4105.4	2,5 l	glass	154,70
Imidazole	≥99 %	**3899.1**	50 g	plastic	18,20
		3899.2	250 g	plastic	48,95
		3899.3	500 g	plastic	68,70
		3899.4	1 kg	plastic	98,80
Piperidine	≥99,5 %, for peptide synthesis	**A122.1**	200 ml	glass	33,25
		A122.2	500 ml	glass	60,10
		A122.3	1 l	glass	99,45
		A122.4	2,5 l	glass	171,50
	≥99 %, for synthesis	**0976.1**	250 ml	glass	21,40
		0976.2	1 l	glass	55,80
		0976.3	2,5 l	glass	110,65
Potassium carbonate	≥98 %	**7956.1**	1 kg	plastic	18,20
		7956.2	5 kg	plastic	64,40
		7956.5	25 kg	plastic	209,65
Potassium hydrogen carbonate	≥99 %, Ph.Eur.	**X887.1**	500 g	plastic	17,75
		X887.2	1 kg	plastic	25,70
		X887.3	2,5 kg	plastic	51,10
Potassium hydroxide	≥85 %, in flakes	**7986.1**	1 kg	plastic	24,65
		7986.3	2,5 kg	plastic	44,00
		7986.2	10 kg	plastic	117,75
		7986.5	25 kg	plastic	224,70
Pyridine	≥99 %, for synthesis	**CP07.1**	500 ml	glass	34,95
		CP07.2	1 l	glass	66,55
		CP07.3	2,5 l	glass	139,25
Sodium carbonate	≥99 %, anhydrous	**8563.1**	1 kg	plastic	16,70
		8563.2	10 kg	plastic	62,25
		8563.5	25 kg	plastic	117,20
Sodium hydrogen carbonate	≥99 %	**0965.1**	500 g	plastic	11,75
		0965.2	1 kg	plastic	16,05
		0965.3	5 kg	plastic	40,75
Sodium hydroxide	≥99 %	**9356.1**	1 kg	plastic	14,95
		9356.3	5 kg	plastic	37,55
		9356.2	10 kg	plastic	66,55
		9356.5	25 kg	plastic	117,20
Triethylamine (TEA)	≥99,5 %, for synthesis	**X875.1**	100 ml	glass	12,40
		X875.2	500 ml	glass	17,10
		X875.3	1 l	glass	25,70
		X875.4	2,5 l	glass	44,65

For additional product data and safety information, see chapter Chemicals A-Z.

Quaternary Ammonium Compounds

Quaternary ammonium compounds are organic ammonium compounds, for which all four valences of a nitrogen atom are connected organically. These ammonium compounds are often used as phase-transfer catalysts and ion pair reagents.

Structural formula	Product	Purity	Empirical formula	CAS No.	Art. No.	Pack Qty.	€
	**Tetrabutylammonium bromide (TBAB)**	≥99 %, for synthesis	$C_{16}H_{36}BrN$	1643-19-2	**6633.1**	50 g	27,85
					6633.2	250 g	78,40
					6633.3	500 g	133,20
	**Tetrabutylammonium fluoride (TBAF)**	1 mol/l in THF, stab.	$(C_4H_9)_4NF$	429-41-4	**1448.1**	25 ml	25,70
					1448.2	100 ml	76,25
					1448.3	250 ml	133,20
	**Tetrabutylammonium hydroxide (TBAH)**	40 % in water	$C_{16}H_{37}NO$	2052-49-5	**5026.1**	25 ml	24,65
					5026.2	100 ml	49,35
					5026.3	250 ml	90,20
					5026.4	1 l	310,70
	**Tetrabutylammonium iodide (TBAI)**	≥99 %, p.a.	$C_{16}H_{36}IN$	311-28-4	**4735.1**	25 g	15,60
					4735.2	100 g	40,35
					4735.3	500 g	166,65
	**Tetramethylammonium chloride (TMACl)**	≥98 %, for synthesis	$C_4H_{12}ClN$	75-57-0	**4747.1**	100 g	16,70
					4747.2	500 g	59,05

Solvents

ROTIDRY® Dried Solvents

The ROTIDRY® solvents have a low water content and high product purity. Therefore, these solvents are excellent for use in organic synthesis, DNA synthesis and analysis.

ROTIDRY® dried solvents are applicable where it is necessary to have low water content e.g. chromatographic purification methods.

Properties:
- Very low water content
- Extremely high product purity
- Low evaporation residue
- Filled under inert gas
- Particle filtration

ROTIDRY® Sept Dried Solvents in Septum Bottle

Advantages of the septum bottle:
- Additional product quality assurance
- No ingress of water during removal
- Ideal for small quantities
- Removable septum for removal of large quantities
- Special cap permits multiple puncture points

Beispiel Spezifikation:

Acetonitrile

ROTIDRY® ≥99,9 % (≤10 ppm H_2O)

Dried; for DNA synthesis and analysis.

Danger H225-H302+H312+H332-H319

Guarantee analysis:

Assay (GC). ....≥99,9 %
Colour (Hazen). ....≤10
Water (KF). ....≤0,001 %
Acidity. ....≤0,0005 meq/g
Evaporation residue. ....≤0,0005 %
Filtered through a membrane and filled under protective gas.

Beispiel Spezifikation:

Acetonitrile

ROTIDRY®Sept ≥99,9 % (≤10 ppm H_2O)

Dried; in a septum bottle

Danger H225-H302+H312+H332-H319

Guarantee analysis:

Assay (GC). ....≥99,9 %
Colour (APHA). ....≤10
Water (KF). ....≤0,001 %
Acidity (as CH_3COOH). ....≤0,002 %
Evaporation residue. ....≤0,0003 %

Product	Purity	Art. No.	Pack Qty.	€
Acetic acid ethyl ester	≥99,8 % (≤100 ppm H_2O)	**4424.1**	1 l	29,60
Acetonitrile	≥99,9 % (≤10 ppm H_2O)	**AE00.1**	1 l	36,45
		AE00.2	2,5 l	75,15
		AE00.3	4 l	112,35
Dichloromethane	≥99,8 % (≤50 ppm H_2O)	**AE03.1**	1 l	32,15
Diethyl ether	≥99,5 % (≤50 ppm H_2O), stab.	**AE04.1**	1 l	46,80
Dimethyl sulphoxide (DMSO)	≥99,5 % (≤200 ppm H_2O)	**AE02.1**	1 l	65,50
1,4-Dioxane	≥99,8 % (≤100 ppm H_2O)	**4429.1**	1 l	73,00
n-Hexane	≥99 % (≤50 ppm H_2O)	**AE05.1**	1 l	69,35
Methanol	≥99,9 % (≤50 ppm H_2O)	**AE01.1**	1 l	31,10
		AE01.2	2,5 l	55,40
Tetrahydrofuran	≥99,9 % (≤50 ppm H_2O)	**AE07.1**	1 l	50,00
Toluene	≥99,5 % (≤50 ppm H_2O)	**AE06.1**	1 l	40,75
Trichloromethane/ Chloroform	≥99,8 % (≤50 ppm H_2O)	**4423.1**	1 l	27,85

Product	Purity	Art. No.	Pack Qty.	€
Acetonitrile	≥99,9 % (≤10 ppm H_2O)	**5175.1**	250 ml	47,85
Dichloromethane	≥99,9 % (≤50 ppm H_2O)	**5176.1**	250 ml	38,60
Diethyl ether	≥99,5 % (≤50 ppm H_2O), stab.	**5177.1**	250 ml	57,95
Dimethyl sulphoxide (DMSO)	≥99,8 % (≤100 ppm H_2O)	**5179.1**	250 ml	64,00
n-Hexane	≥99 % (≤30 ppm H_2O)	**5180.1**	250 ml	44,00
Methanol	≥99,9 % (≤50 ppm H_2O)	**5181.1**	250 ml	36,45
Tetrahydrofuran	≥99,8 % (≤10 ppm H_2O)	**5182.1**	250 ml	52,15
Toluene	≥99,5 % (≤30 ppm H_2O)	**5191.1**	250 ml	38,60

Solvents for Synthesis

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Acetic acid ethyl ester	≥99,5 %, for synthesis	**7338.1**	1 l	glass	23,55
		7338.3	2,5 l	glass	40,75
		7338.5	5 l	plastic	55,40
		7338.2	10 l	tinplate	90,85
		7338.4	25 l	tinplate	182,65
Acetone	≥99,5 %, for synthesis	**5025.1**	1 l	glass	18,85
		5025.2	2,5 l	glass	41,40
		5025.5	2,5 l	plastic	39,25
		5025.6	5 l	plastic	53,65
		5025.3	10 l	tinplate	95,60
		5025.4	25 l	tinplate	203,20
Acetonitrile	≥99,5 %, for synthesis	**4380.1**	1 l	glass	30,00
		4380.2	2,5 l	glass	63,35
		4380.3	10 l	tinplate	201,60
		4380.4	25 l	tinplate	446,15
Cyclohexane	≥99,5 %, for synthesis	**6570.1**	1 l	glass	22,50
		6570.3	2,5 l	glass	32,80
		6570.5	5 l	aluminium	53,65
		6570.2	10 l	tinplate	85,90
		6570.4	25 l	tinplate	171,50
Dichloromethane	≥99,5 %, for synthesis	**8424.4**	100 ml	glass	10,65
		8424.1	1 l	glass	21,00
		8424.2	2,5 l	glass	40,75
		8424.3	10 l	tinplate	107,40
		8424.5	25 l	tinplate	182,65
Diethyl ether	≥99,5 %, for synthesis, stab.	**5920.2**	1 l	glass	34,30
		5920.3	5 l	aluminium	119,90
		5920.4	25 l	tinplate	342,95
N,N-Dimethylformamide (DMF)	≥99,5 %, for synthesis	**6251.1**	1 l	glass	27,45
		6251.2	2,5 l	glass	51,50
		6251.3	2,5 l	plastic	46,15
		6251.5	10 l	plastic	113,45
		6251.4	25 l	plastic	261,15
N,N'-Dimethylpropylene urea	≥99 %, for synthesis	**0662.1**	25 ml	glass	22,05
		0662.2	100 ml	glass	50,00
		0662.3	500 ml	glass	142,90
Dimethyl sulphoxide	≥99,5 %, for synthesis	**7029.1**	1 l	glass	33,90
		7029.2	2,5 l	glass	67,65
		7029.3	10 l	plastic	207,40
1,4-Dioxane	≥99,5 %, for synthesis	**4229.1**	500 ml	glass	23,55
		4229.2	1 l	glass	33,90
		4229.3	2,5 l	glass	69,35
		4229.4	25 l	tinplate	493,45

Product	Purity	Art. No.	Pack Qty.	Pack.	€
n-Hexane	≥99 %, for synthesis	**CP47.1**	1 l	glass	46,15
		CP47.2	2,5 l	glass	102,05
		CP47.4	5 l	aluminium	184,40
		CP47.3	10 l	tinplate	341,75
		CP47.5	25 l	tinplate	686,95
Methanol	≥99 %, for synthesis	**8388.1**	1 l	glass	15,60
		8388.2	2,5 l	glass	30,65
		8388.5	2,5 l	plastic	26,80
		8388.6	5 l	plastic	41,85
		8388.3	10 l	tinplate	67,20
		8388.4	25 l	tinplate	107,00
n-Pentane	≥99 %, for synthesis	**8720.1**	1 l	glass	37,55
		8720.3	2,5 l	glass	74,10
		8720.4	5 l	aluminium	131,70
		8720.2	10 l	tinplate	246,20
		8720.5	25 l	tinplate	547,20
Piperidine	≥99 %, for synthesis	**0976.1**	250 ml	glass	21,40
		0976.2	1 l	glass	55,80
		0976.3	2,5 l	glass	110,65
Tetrahydrofuran	≥99,5 %, for synthesis	**4745.1**	250 ml	glass	22,50
		4745.2	1 l	glass	35,40
		4745.3	2,5 l	glass	76,90
		4745.4	10 l	tinplate	242,85
		4745.5	25 l	tinplate	364,45
Toluene	≥99,5 %, for synthesis	**9558.1**	1 l	glass	26,35
		9558.3	2,5 l	glass	42,50
		9558.2	10 l	tinplate	94,50
		9558.4	25 l	tinplate	177,40
Trichloromethane/ Chloroform	≥99 %, for synthesis	**Y015.1**	1 l	glass	27,45
		Y015.2	2,5 l	glass	50,45
		Y015.3	10 l	tinplate	170,95
		Y015.4	25 l	tinplate	321,45

- Further solvents see chapter Chemicals A-Z
- Tri-Sure®-barrel and keg key see page 771
- Pliers/wrench see page 770
- For 10 l and 25 l tins, the opening wrench 0398.1 is required. Please order separately.
- **How to open a ROTITAINER®?**
  You can find our technical brochures or our instruction video (only in german) at: https://www.carlroth.com/de/en/Rotitainer

Ionic Liquids

Ionic liquids are salts which are available in a liquid state over a wide temperature range. They constitute a new generation of solvents with considerable potential for being able to replace classic organic solvents. Ionic liquids are composed of organic cations and organic or anorganic anions. Due to their fully ionized composition they exhibit no vapor pressure over the entire liquid range.

- Low-melting with melting point under 100 °C
- Thermally, mechanically and electrochemically stable
- Neither volatile nor combustible
- Negligible vapor pressure
- High solubility of many different kinds of chemicals

Synonym	Type	Assay	Art. No.	Pack Qty.	€
BMIM Cl	**1-Butyl-3-methyl-imidazolium-chloride**	≥99 %	**2010.1**	25 g	127,95
			2010.2	100 g	252,65
BMIM PF_6	**1-Butyl-3-methyl-imidazolium-hexafluorophosphate**	≥99 %	**2012.1**	25 g	94,50
			2012.2	100 g	252,65
BMIM BF_4	**1-Butyl-3-methyl-imidazolium-tetrafluoroborate**	>99 %	**2014.1**	25 g	81,60
			2014.2	100 g	203,20
BMIM OTf	**1-Butyl-3-methylimidazolium-trifluoromethanesulphonate**	≥99 %	**2015.1**	25 g	203,20
			2015.2	100 g	471,95
BMPyrr NTf_2, BMPyrr BTA	**1-Butyl-1-methyl-pyrrolidinium bis(trifluoromethylsulphonyl)-imide**	≥99 %	**2021.1**	25 g	170,95
			2021.2	100 g	349,40
BMPyrr $N(CN)_2$, BMPyrr DCA	**1-Butyl-1-methyl-pyrrolidinium-dicyanamide**	≥98 %	**2022.1**	25 g	327,90
			2022.2	100 g	697,70
N1114 BTA	**Butyl-trimethyl-ammonium-bis(trifluoromethylsulphonyl)-imide**	≥99 %	**2025.1**	25 g	213,95
			2025.2	100 g	493,45
Choline DHP	**Cholin-dihydrogenphosphate**	≥98 %	**2028.1**	25 g	246,20
			2028.2	100 g	557,95
EAN	**Ethylammonium-nitrate**	≥97 %	**2035.1**	25 g	160,20
			2035.2	100 g	349,40
EMIM Br	**1-Ethyl-3-methyl-imidazolium-bromide**	≥99 %	**2037.1**	25 g	177,40
			2037.2	100 g	295,65
EMIM $N(CN)_2$, EMIM DCA	**1-Ethyl-3-methyl-imidazolium-dicyanamide**	≥98 %	**2053.1**	25 g	278,45
			2053.2	100 g	622,45
EMIM $EtOSO_3$	**1-Ethyl-3-methyl-imidazolium-ethylsulphate**	≥99 %	**2054.1**	25 g	91,40
			2054.2	100 g	198,90
EMIM OMs	**1-Ethyl-3-methyl-imidazolium-methanesulphonate**	≥99 %	**2056.1**	25 g	213,95
			2056.2	100 g	547,20
EMIM SCN	**1-Ethyl-3-methyl-imidazolium-thiocyanate**	≥98 %	**2059.1**	25 g	241,90
			2059.2	100 g	478,40
EMIM OTf	**1-Ethyl-3-methyl-imidazolium-trifluoromethanesulphonate**	≥99 %	**2062.1**	25 g	213,95
			2062.2	100 g	622,45
HMIM Cl	**1-Hexyl-3-methyl-imidazolium-chloride**	≥98 %	**2064.1**	25 g	252,65
			2064.2	100 g	439,70
HMIM PF_6	**1-Hexyl-3-methyl-imidazolium-hexafluorophosphate**	≥99 %	**2069.1**	25 g	149,45
			2069.2	100 g	332,20
HMIM BF_4	**1-Hexyl-3-methyl-imidazolium-tetrafluoroborate**	≥99 %	**2070.1**	25 g	145,15
			2070.2	100 g	295,65
OMIM PF_6	**1-Methyl-3-octyl-imidazolium-hexafluorophosphate**	>99 %	**2076.1**	25 g	192,45
			2076.2	100 g	407,45
OMIM BF_4	**1-Methyl-3-octyl-imidazolium-tetrafluoroborate**	>99 %	**2081.1**	25 g	177,40
			2081.2	100 g	370,90
PMIM I	**1-Methyl-3-propyl-imidazolium-iodide**	≥98 %	**2091.1**	25 g	155,90
			2091.2	100 g	310,70
PMPip BTA	**1-Methyl-1-propyl-piperidinium-bis-(trifluoromethylsulphonyl)-imide**	≥99 %	**2095.1**	25 g	198,90
			2095.2	100 g	424,65
S222 BTA	**Triethylsulphonium-bis-(trifluoromethylsulphonyl)-imide**	≥99 %	**2096.1**	25 g	428,95
			2096.2	100 g	772,95

For additional product data and safety information, see chapter Chemicals A-Z.

▶ For information on solubility as well as the chemical and physical properties of the ionic liquids, refer to www.carlroth.com

SOLVAGREEN® – Green Solvents
Our brand for alternative solvents

The listed sustainable solvents - Green Solvents - serve as an alternative for environmentally hazardous and harmful reagents, and thus contribute to risk minimization.

Sustainability is also achieved through the use of renewable resources or environmentally compatible manufacturing and recycling processes.

Products from renewable resources

Product	Purity	Starting material	Art. No.	Pack Qty.	Packaging	€
Bioethanol	SOLVAGREEN® 96 %, Ph.Eur.	Wheat	**6724.1**	1 l	glass	75,15
			6724.2	2,5 l	glass	157,50
			6724.3	2,5 l	plastic	153,65
			6724.4	5 l	plastic	282,65
			6724.5	10 l	plastic	525,70
			6724.6	25 l	plastic	1073,95
Bioethanol denatured	SOLVAGREEN® 96 %	Wheat	**6726.1**	1 l	plastic	13,90
			6726.2	2,5 l	plastic	24,65
			6726.3	5 l	plastic	44,00
			6726.4	10 l	plastic	69,80
			6726.5	25 l	plastic	156,45
Glycerol	SOLVAGREEN® ≥98 %, Ph.Eur., anhydrous	Vegetables	**7530.1**	1 l	plastic	37,55
			7530.4	2,5 l	plastic	61,85
			7530.5	5 l	plastic	111,30
			7530.2	10 l	plastic	205,90
			7530.3	35 kg	plastic	400,45
Glycerol	SOLVAGREEN® ~86 %, Ph.Eur., extra pure	Vegetables	**7533.1**	1 l	plastic	34,30
			7533.3	2,5 l	plastic	62,25
			7533.4	5 l	plastic	105,25
			7533.2	10 l	plastic	185,45
			7533.5	25 l	plastic	360,15

Bioethanol

Our bioethanol is manufactured by fermentation of organic wheat followed by distillation and rectification.

Advantages:
- Made from wheat grown in a controlled organic environment in accordance with EU organic farming regulation 834/2007
- Non-synthetically manufactured ethanol
- Low toxicity thanks to safe production methods
- Suitable for synthesis and other laboratory applications
- Denaturated using a non-organic denaturant (Art. No. 6726)

SOLVAGREEN® NEW
Alternative solvents

Alternative products to reagents that are harmful to the environment and health

Product	Purity	Possible alternative for	Art. No.	Pack Qty.	Packaging	€
Butylal	SOLVAGREEN® ≥99 %, for synthesis	D-Limonene, dearomatized hydrocabons, perchloroethylene	**0796.1**	100 ml	glass	17,10
			0796.2	500 ml	glass	37,55
			0796.3	1 l	glass	53,65
			0796.4	2,5 l	plastic	107,40
Cyclopentyl methyl ether	SOLVAGREEN® ≥99 %, extra pure	Diethyl ether	**7763.1**	250 ml	glass	36,45
			7763.2	500 ml	glass	62,25
			7763.3	1 l	glass	97,75
			7763.4	2,5 l	glass	196,65
Dibasic ester	SOLVAGREEN® ≥99 %, pure	Acetone	**7973.1**	1 l	plastic	24,20
			7973.2	2,5 l	plastic	43,55
			7973.3	5 l	plastic	71,95
1,3-Dioxolane	SOLVAGREEN® 90 %, for synthesis	NMP/NEP, glycols, aromatics	**0447.1**	100 ml	glass	14,55
			0447.2	500 ml	glass	33,25
			0447.3	1 l	glass	55,40
			0447.4	2,5 l	glass	110,65
Methylal	SOLVAGREEN® ≥99,5 %, for synthesis	Dichloromethane, acetone, MEK	**0783.1**	100 ml	glass	17,10
			0783.2	500 ml	glass	37,55
			0783.3	1 l	glass	53,65
			0783.4	2,5 l	plastic	107,40
2-Methyltetrahydrofuran	SOLVAGREEN® ≥99 %, extra pure	Tetrahydrofuran	**6845.1**	250 ml	glass	25,70
			6845.2	500 ml	glass	42,90
			6845.3	1 l	glass	59,05
			6845.4	2,5 l	glass	110,20
			6845.5	10 l	tinplate	375,20
Propylal	SOLVAGREEN® ≥99 %, for synthesis	Aromatics	**0795.1**	100 ml	glass	17,10
			0795.3	1 l	glass	53,65
			0795.4	2,5 l	plastic	107,40
			0795.2	500 ml	glass	37,55
Tetraoxaundecane	SOLVAGREEN® ≥99 %, for synthesis	NMP/NEP, glycols, aromatics	**0786.1**	100 ml	glass	17,10
			0786.2	500 ml	glass	37,55
			0786.3	1 l	glass	53,65
			0786.4	2,5 l	plastic	107,40

Consumer notice:
Not every alternative solvent is suitable for every application.
ROTH offers a wide range of alternative solvents in order to address a large variety of solvent problems. Acetals can also be used as additives for normal, classic solvents.

Acetals NEW

Acetals are produced from an alcohol and an aldehyde. They form an extremely stable chemical family with linear or cyclic structures.

ROTH offers a range of acetals with various properties. Acetals range from immiscible with water to extremely miscible; all acetals can be easily mixed with organic solvents.

Acetals have strong dissolving properties which allow them to dissolve many substances.

Areas of application:
- In place of hazardous solvents
- Cleaning
- Synthesis

Acetals

Product	Purity	Possible alternative for	Art. No.	Pack Qty.	Packaging	€
Butylal	SOLVAGREEN® ≥99 %, for synthesis	D-Limonene, dearomatized hydrocabons, perchloroethylene	**0796.1**	100 ml	glass	17,10
			0796.4	2,5 l	plastic	107,40
			0796.2	500 ml	glass	37,55
			0796.3	1 l	glass	53,65
1,3-Dioxolane	SOLVAGREEN® 90 %, for synthesis	NMP/NEP, glycols, aromatics	**0447.1**	100 ml	glass	14,55
			0447.2	500 ml	glass	33,25
			0447.3	1 l	glass	55,40
			0447.4	2,5 l	glass	110,65
Ethylal	SOLVAGREEN® ≥99,5 %, for synthesis	Ethanol, MEK, aromatics, butyl acetate	**0787.3**	1 l	glass	53,65
			0787.2	500 ml	glass	37,55
			0787.4	2,5 l	plastic	107,40
			0787.1	100 ml	glass	17,10
2-Ethylhexylal	SOLVAGREEN® ≥99 %, for synthesis	Toluene, Xylene	**0797.1**	100 ml	glass	17,10
			0797.4	2,5 l	plastic	107,40
			0797.2	500 ml	glass	37,55
			0797.3	1 l	glass	53,65
Glycerol formal	SOLVAGREEN® ≥99 %, for synthesis	-	**0798.1**	100 ml	glass	17,10
			0798.2	500 ml	glass	37,55
			0798.3	1 l	glass	53,65
			0798.4	2,5 l	plastic	107,40
Methylal	SOLVAGREEN® ≥99,5 %, for synthesis	Dichloromethane, acetone, MEK	**0783.1**	100 ml	glass	17,10
			0783.2	500 ml	glass	37,55
			0783.3	1 l	glass	53,65
			0783.4	2,5 l	plastic	107,40
Propylal	SOLVAGREEN® ≥99 %, for synthesis	Aromatics	**0795.1**	100 ml	glass	17,10
			0795.2	500 ml	glass	37,55
			0795.3	1 l	glass	53,65
			0795.4	2,5 l	plastic	107,40
Tetraoxaundecane	SOLVAGREEN® ≥99 %, for synthesis	NMP/NEP, glycols, aromatics	**0786.1**	100 ml	glass	17,10
			0786.2	500 ml	glass	37,55
			0786.3	1 l	glass	53,65
			0786.4	2,5 l	plastic	107,40

NMR-Spectroscopy
Deuterated Compounds

Deuterated reagents are used primarily in NMR spectroscopy.
Examples of application: Routine tasks such as structure determination and identity verfication in research and development laboratories.

- High degree of deuteration
- Defined water content
- Extremely cost effective

Deuterated Solvents

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Acetone D6	99,8 Atom%D	**AE51.1**	10 ml	glass	48,30
		AE51.4	10 ml	septum bottle	51,50
		AE51.2	50 ml	glass	213,95
		AE51.3	10 x 0,75 ml	glass ampoule	52,60
	99,5 Atom%D	**7909.1**	10 ml	glass	47,20
		7909.2	50 ml	glass	192,45
Acetonitrile D3	99,8 Atom%D	**7911.1**	10 ml	glass	75,80
		7911.2	10 x 0,75 ml	glass ampoule	77,30
	99,5 Atom%D	**AE52.1**	10 ml	glass	72,60
		AE52.3	10 ml	septum bottle	73,65
		AE52.2	25 ml	glass	150,00
Benzene D6	99,8 Atom%D	**7912.1**	10 ml	glass	80,55
		7912.2	25 ml	glass	181,70
		7912.3	10 x 0,75 ml	glass ampoule	83,75
	99,5 Atom%D	**AE53.1**	10 ml	glass	56,90
		AE53.3	10 ml	septum bottle	59,05
		AE53.2	50 ml	glass	224,70
Bromobenzene D5	99,5 Atom%D	**HN93.1**	10 ml	glass	127,95
Chlorobenzene D5	99 Atom%D	**9905.1**	5 ml	glass	123,55
Cyclohexane D12	99,5 Atom%D	**5200.1**	5 ml	glass ampoule	99,45
Deuterium oxide	100 Atom%D	**HN81.1**	10 ml	glass	30,00
		HN81.4	10 ml	septum bottle	31,10
		HN81.2	50 ml	glass	106,35
		HN81.3	10 x 0,75 ml	glass ampoule	34,30
	99,9 Atom%D	**6672.1**	10 ml	glass	26,35
		6672.5	10 ml	septum bottle	27,45
		6672.2	25 ml	glass	49,35
		6672.3	100 ml	glass	160,20
		6672.4	500 ml	glass	719,20
		6672.6	10 x 0,75 ml	glass ampoule	29,60
1,2-Dichlorobenzene D4	99 Atom%D	**HN82.2**	1 ml	glass	59,70
		HN82.1	5 ml	glass	192,45
Dichloromethane D2	99,8 Atom%D	**7913.1**	10 ml	glass	109,55
		7913.2	10 x 0,75 ml	glass ampoule	110,65
	99,5 Atom%D	**AE55.3**	5 ml	glass	54,75
		AE55.1	10 ml	glass	95,60
		AE55.2	25 ml	glass	224,70
		AE55.4	50 ml	glass	396,70
		AE55.5	10 x 0,75 ml	glass ampoule	96,65
Diethyl ether D10	99 Atom%D	**9907.1**	1 ml	glass ampoule	125,70
N,N-Dimethylformamide D7	99,5 Atom%D	**CP92.2**	1 ml	glass ampoule	74,20
		CP92.1	5 ml	glass	213,95
Dimethyl sulphoxide D6	99,9 Atom%D	**7915.1**	10 ml	glass	46,15
		7915.2	10 ml	septum bottle	47,20
		7915.3	10 x 0,75 ml	glass ampoule	49,35
	99,8 Atom%D	**AE56.1**	10 ml	glass	37,10
		AE56.4	10 ml	septum bottle	39,25
		AE56.6	25 ml	glass	85,90
		AE56.2	50 ml	glass	149,45
		AE56.5	100 ml	glass	267,70
		AE56.3	10 x 0,75 ml	glass ampoule	42,50
Dimethyl sulphoxide D6 with TMS (0,03 vol.%)	99,9 Atom%D	**7916.1**	10 x 0,75 ml	glass ampoule	48,30
	99,8 Atom%D	**AE60.1**	10 ml	glass	41,40
		AE60.2	50 ml	glass	152,55
Ethanol D1	99,5 Atom%D	**HN84.1**	50 ml	glass	131,05

For additional product data and safety information, see chapter Chemicals A-Z.

Solvents

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Ethanol D6	99 Atom%D	**CP93.2**	1 ml	glass	53,65
		CP93.1	5 ml	glass	192,45
Methanol D1	99,5 Atom%D	**HN86.1**	25 ml	glass	61,20
		HN86.2	100 ml	glass	206,95
Methanol D3	99,5 Atom%D	**9910.1**	1 ml	glass ampoule	32,15
		9910.2	5 ml	glass	95,70
Methanol D4	100 Atom%D	**7918.1**	10 ml	glass	123,65
		7918.2	10 x 0,75 ml	glass ampoule	126,75
	99,8 Atom%D	**AE57.1**	10 ml	glass	65,50
		AE57.4	10 ml	septum bottle	67,65
		AE57.5	25 ml	glass	149,45
		AE57.2	50 ml	glass	284,90
		AE57.3	10 x 0,75 ml	glass ampoule	69,35
Methanol D4 with TMS (0,03 vol.%)	99,8 Atom%D	**7919.1**	10 ml	glass	61,20
		7919.2	25 ml	glass	145,15
		7919.3	10 x 0,75 ml	glass ampoule	63,35
Methylcyclohexane D14	99,5 Atom%D	**9913.1**	5 ml	glass	121,40
Nitrobenzene D5	99,5 Atom%D	**9914.1**	5 ml	glass	68,70
		9914.2	10 ml	glass	123,55
Nitromethane D3	99 Atom%D	**HN91.2**	5 ml	glass	69,80
		HN91.1	10 ml	glass	125,70
2-Propanol D1	98 Atom%D	**9917.1**	25 ml	glass	118,15
2-Propanol D8	99,5 Atom%D	**9919.1**	5 ml	glass	111,70
Pyridine D5	99,8 Atom%D	**7922.1**	10 ml	glass	132,15
		7922.2	10 x 0,75 ml	glass ampoule	133,20
	99,5 Atom%D	**CP94.1**	10 ml	glass	127,95
		CP94.2	10 ml	septum bottle	130,00
		CP94.3	10 x 0,75 ml	glass ampoule	125,70
Styrene D8	99 Atom%D, stab. with 4-tert-Butylcatechol	**9921.1**	1 g	glass ampoule	117,75
1,1,2,2-Tetrachloroethane D2	99,5 Atom%D	**CP96.1**	10 ml	glass	102,05
		CP96.2	10 x 0,75 ml	glass ampoule	103,10
Tetrahydrofuran D8	99,5 Atom%D	**AE58.3**	5 ml	glass	103,10
		AE58.1	10 ml	glass	192,45
		AE58.2	10 ml	septum bottle	194,50
		AE58.4	25 ml	glass	418,20
		AE58.5	10 x 0,75 ml	glass ampoule	195,55
Toluene D8	99,8 Atom%D	**7924.1**	10 ml	glass	121,40
		7924.2	10 x 0,75 ml	glass ampoule	122,45
	99,5 Atom%D	**CP95.1**	10 ml	glass	89,15
		CP95.2	10 x 0,75 ml	glass ampoule	92,35
Trichloromethane/Chloroform D1	100 Atom%D	**CP91.1**	10 x 0,75 ml	glass ampoule	30,00
	99,8 Atom%D	**7903.1**	10 x 0,75 ml	glass ampoule	20,35
	99,8 Atom%D, stab. with Ag	**AE54.4**	25 ml	glass	24,20
		AE54.1	100 ml	glass	53,65
		AE54.3	100 ml	septum bottle	54,75
		AE54.2	500 ml	glass	224,70
Trichloromethane/Chloroform D1 with TMS (0,03 vol.%)	99,8 Atom%D	**7905.1**	10 x 0,75 ml	glass ampoule	22,50
	99,8 Atom%D, stab. with Ag	**AE59.1**	100 ml	glass	54,75

For additional product data and safety information, see chapter Chemicals A-Z.

Deuterated Acids and Bases

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Formic acid D2, 95 % solution in D_2O	98 Atom%D	**HN92.1**	5 ml	glass	107,40
Ammonia-D3 solution 25 % in D_2O	99 Atom%D	**9903.1**	10 ml	glass	72,60
Deuterium chloride 38 % solution in D_2O	99,5 Atom%D	**HN80.1**	10 ml	glass	40,75
Acetic acid D1	99 Atom%D	**9902.1**	50 ml	glass	91,30
Acetic acid D4	99,5 Atom%D	**HN83.1**	10 ml	glass	85,90
Sodium deuterium oxide 30 % solution in D_2O	99,5 Atom%D	**HN90.1**	10 ml	glass	61,85
ortho-Phosphoric acid D3, 85 % solution in D_2O	99 Atom%D	**9915.1**	10 ml	glass ampoule	50,45
		9915.2	25 ml	glass	105,90
Pyridine D5	99,8 Atom%D	**7922.1**	10 ml	glass	132,15
		7922.2	10 x 0,75 ml	glass ampoule	133,20
	99,5 Atom%D	**CP94.1**	10 ml	glass	127,95
		CP94.2	10 ml	septum bottle	130,00
		CP94.3	10 x 0,75 ml	glass ampoule	125,70
Sulphuric acid D2, 98 % solution in D_2O	99,5 Atom%D	**HN87.1**	10 ml	glass	39,25
		HN87.2	50 ml	glass	156,85
Trifluoroacetic acid D1	99,5 Atom%D	**CP97.1**	10 ml	glass ampoule	57,95

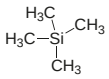
Deuterated Special Compounds

Product	Purity	Art. No.	Pack Qty.	Packaging	€
1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2)	99 Atom%D	**9909.1**	1 ml	glass ampoule	123,10
Iodomethane D3	99,5 Atom%D, stab. with Cu	**HN88.2**	5 g	glass	45,05
		HN88.1	25 g	glass	160,20
Sodium borodeuteride	98 Atom%D	**HN89.1**	1 g	glass	63,35
3-(Trimethylsilyl)propionic-2,2,3,3 acid sodium salt D4 (TSP-D4)	99 Atom%D	**9922.1**	1 g	plastic	132,15

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Isotope-labelled amino acids (SILAC) s. p. 1558

Reagents for NMR Calibration



Tetramethylsilane

≥99,9 %, for NMR-spectroscopy

For the calibration of NMR spectra; calibration substance.

TMS

Storage temp.: +4 °C

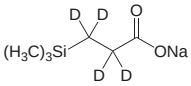
Danger H224

Type analysis:

Assay (GC). ..... ≥99,9 %

Aptitude for NMR-spectroscopy. ..... complies

CP18.1	25 ml	glass	31,10 €
CP18.2	100 ml	glass	84,85 €



3-(Trimethylsilyl)propionic-2,2,3,3 acid sodium salt D4 (TSP-D4)

99 Atom%D

For nuclear magnetic resonance spectroscopy.

TSP-D4, Sodium-2,2,3,3-trimethylsilylpropionate D4

$(CH_3)_3SiCD_2CD_2CO_2Na$

M 172,27 g/mol

Warning H315-H319-H335

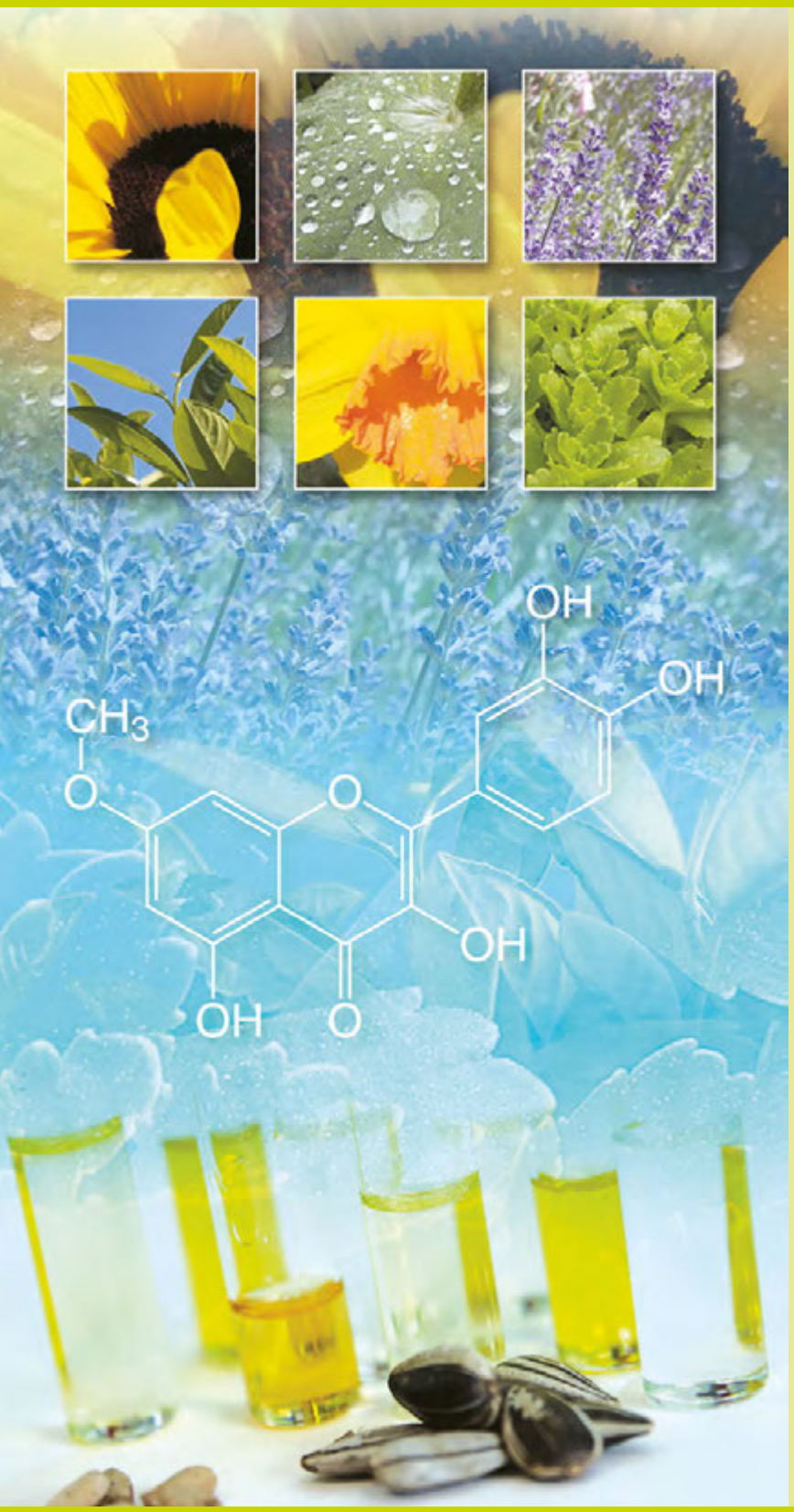
Type analysis:

Deuterising degree. ..... ≥99 %

Appearance. ..... white powder

9922.1	1 g	plastic	132,15 €

▶ NMR-Vials, further NMR accessories and scintillation tubes see page 74



Natural & Reference Materials

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Reference Standards

The reference standards are offered as powders with good flowability and crystallinity to guarantee efficient handling in the laboratory. All products of this product line are filled in brown glass vials with screw caps and are packed in foil bags. This packaging enables safe long term storage as well as proctection of the product against external influences. Hence, the storage environment is controlled.

Primary Standards

ROTI®STAR Primary Standards for pharmaceutical and food analysis

ROTI®STAR Primary Standards are extensively characterised by the analytical methods listed below.

They come with a certificate which contains:
- Proof of identity with spectra, e.g. ^{1}H NMR, ^{13}C NMR, MS, UV
- Content determined with two independent validated methods, e.g. chromatographic purity and quantitative NMR (qNMR)
- Content of residual solvent determined with two different validated GC methods
- Water determination by Karl Fischer titration

Herbal standards

Product	CAS No.	Assay (HPLC)	Assay (qNMR)	Art. No.	Pack Qty.	€
Acetoxyvalerenic acid	81397-67-3	≥90,0 %	≥85 %	**NE36.1***	10 mg	912,70
Acteoside	61276-17-3	≥90,0 %	≥80,0 %	**NE33.1**	10 mg	837,45
Apigenin	520-36-5	≥95,0 %	≥90,0 %	**NE37.1**	10 mg	837,45
Apigenin-7-glucoside	578-74-5	≥95,0 %	≥85,0 %	**NE19.1**	25 mg	1052,45
p-Arbutin	497-76-7	≥95,0 %	≥80,0 %	**NE38.1**	10 mg	532,15
Bilobalid	33570-04-6	≥95,0 %	≥95,0 %	**NE20.1***	25 mg	843,90
Casticin	479-91-4	≥95,0 %	≥90,0 %	**NE39.1**	10 mg	880,45
(+)-Dihydroquercetin	480-18-2	≥90,0 %	≥85,0 %	**NE55.1***	10 mg	880,45
3,4-Dihydroxybenzoic acid	99-50-3	≥95,0 %	≥90,0 %	**NE52.1**	50 mg	590,20
Echinacoside	82854-37-3	≥90,0 %	≥80,0 %	**NE40.1**	10 mg	536,45
(-)-Epicatechin	490-46-0	≥93,0 %	≥90,0 %	**NE41.1***	10 mg	536,45
Eriocitrin	13463-28-0	≥95,0 %	≥85,0 %	**NE42.1**	10 mg	536,45
Ginkgolide A	15291-75-5	≥95,0 %	≥90,0 %	**NE43.1***	10 mg	940,65
Ginsenoside Rb1	41753-43-9	≥90,0 %	≥80,0 %	**NE44.1**	10 mg	805,20
Ginsenoside Re	52286-59-6	≥90,0 %	≥80,0 %	**NE45.1**	10 mg	805,20
Ginsenoside Rg1	22427-39-0	≥90,0 %	≥80,0 %	**NE62.1***	10 mg	805,20

Product	CAS No.	Assay (HPLC)	Assay (qNMR)	Art. No.	Pack Qty.	€
Harpagoside	19210-12-9	≥95,0 %	≥80,0 %	**NE21.1**	25 mg	805,20
Hederacoside C	14216-03-6	≥95,0 %	≥84,0 %	**NE46.1**	10 mg	590,20
Herniarin	531-59-9	≥95,0 %	≥93,0 %	**NE47.1**	10 mg	532,15
Hydroxyvalerenic acid	1619-16-5	≥90,0 %	≥80,0 %	**NE48.1***	10 mg	532,15
Hypericin	548-04-9	≥95,0 %	≥75,0 %	**NE22.1**	10 mg	880,45
Hyperoside	482-36-0	≥95,0 %	≥85,0 %	**NE23.1**	25 mg	654,70
Isoquercitrin	482-35-9	≥95,0 %	≥85,0 %	**NE24.1**	10 mg	901,95
Isovitexin	38953-85-4	≥95,0 %	≥85,0 %	**NE25.1**	10 mg	880,45
Kaempferol	520-18-3	≥95,0 %	≥80,0 %	**NE26.1**	25 mg	880,45
Luteolin	491-70-3	≥90,0 %	≥80,0 %	**NE49.1**	25 mg	880,45
Oleanolic acid	508-02-1	≥95,0 %	≥90,0 %	**NE50.1**	10 mg	590,20
Osthol	484-12-8	≥95,0 %	≥95,0 %	**NE51.1**	10 mg	880,45
Quercetin dihydrate	6151-25-3	≥95,0 %	≥85,0 %	**NE27.1**	50 mg	751,45
Quercetin-3-O-ß-Glucuronide	22688-79-5	≥90,0 %	≥85,0 %	**NE28.1**	25 mg	1106,20
Quercitrin	522-12-3	≥95,0 %	≥80,0 %	**NE29.1**	25 mg	880,45
Rosmarinic acid	20283-92-5	≥85,0 %	≥80,0 %	**NE30.1***	50 mg	1009,45
Sennoside A	81-27-6	≥80,0 %	≥75,0 %	**NE53.1**	50 mg	1052,45
Sennoside B	128-57-4	≥85,0 %	≥80,0 %	**NE54.1**	50 mg	1052,45
Silybin	22888-70-6	≥95,0 %	≥85,0 %	**NE31.1**	50 mg	532,15
Valerenic acid	3569-10-6	≥95,0 %	≥90,0 %	**NE32.1**	25 mg	901,95
Vitexin	3681-93-4	≥95,0 %	≥85,0 %	**NE56.1**	10 mg	719,20
Vitexin-2''-O-rhamnoside	64820-99-1	≥95,0 %	≥85,0 %	**NE34.1**	10 mg	751,45
Xanthohumol	6754-58-1	≥95,0 %	≥95,0 %	**NE35.1**	10 mg	805,20

Preservatives, antioxidants and vitamins

Product	CAS No.	Assay (HPLC)	Assay (qNMR)	Art. No.	Pack Qty.	€
L(+)-Ascorbic acid	50-81-7	≥90,0 %	≥90,0 %	**NE00.1**	100 mg	762,20
Benzaldehyde	100-52-7		≥90,0 %	**NE01.1***	100 mg	751,45
Benzoic acid	65-85-0	≥95,0 %	≥90,0 %	**NE03.1**	100 mg	751,45
Benzoic acid sodium salt	532-32-1	≥95,0 %	≥95,0 %	**NE11.1**	100 mg	751,45
Benzyl alcohol	100-51-6		≥95,0 %	**NE02.1***	100 mg	751,45
Butylated hydroxyanisole	25013-16-5	≥95,0 %	≥90,0 %	**NE04.1**	100 mg	751,45
Butylated hydroxytoluene	128-37-0	≥95,0 %	≥90,0 %	**NE05.1**	100 mg	751,45
Caffeic acid	331-39-5	≥90,0 %	≥90,0 %	**NE08.1**	25 mg	590,20
Chlorogenic acid	327-97-9	≥95,0 %	≥90,0 %	**NE06.1**	25 mg	532,15
4-Hydroxybenzoic acid ethyl ester	120-47-8	≥95,0 %	≥90,0 %	**NE07.1**	100 mg	751,45
4-Hydroxybenzoic acid methyl ester	99-76-3	≥98,0 %	≥95,0 %	**NE10.1**	100 mg	751,45
4-Hydroxybenzoic acid propyl ester	94-13-3	≥97,0 %	≥95,0 %	**NE13.1**	100 mg	751,45
Potassium sorbate	24634-61-5	≥95,0 %	≥95,0 %	**NE09.1**	100 mg	751,45
2-Phenoxyethanol	122-99-6		≥95,0 %	**NE12.1**	250 mg	837,45
Rutin trihydrate	250249-75-3	≥90,0 %	≥90,0 %	**NE14.1**	50 mg	532,15
Sorbic acid	110-44-1	≥95,0 %		**NE15.1**	100 mg	751,45
DL-α-Tocopherol	10191-41-0	≥92,0 %	≥90,0 %	**NE16.1***	250 mg	751,45
RRR-α-Tocopherol	59-02-9	≥92,0 %	≥85,0 %	**NE18.1***	250 mg	805,20
DL-α-Tocopherol acetate	7695-91-2		≥93,0 %	**NE17.1**	250 mg	805,20

For additional product data and safety information, see chapter Chemicals A-Z.

* **User information:**

These products are shipped cooled. **Additional costs** resulting from such, **will be invoiced** (further information on request).

Please note:

to ensure optimal product quality, these products are shipped only from Monday until Wednesday within Germany and only on Mondays and Tuesdays outside Germany. This may lead to minor delays in delivery.

The delivery time of the primary standards is **approx. 2-4 weeks.**

Working Standards

ROTICHROM® Working Standards for Analysis

The **ROTICHROM® Working Standards** are traceable to established primary standards which are characterised extensively regarding identity and content.
Therefore, they can be used in all areas of analytics and are a cost-saving alternative to primary standards.
The standard comes with a certificate of analysis including proof of identity and defined assay.
The substances are protected optimally against external influences with a high-quality glass and foil bag packaging.

Herbal standards

Product	CAS No.	Assay (HPLC)	Art. No.	Pack Qty.	€
Acetoxyvalerenic acid	81397-67-3	≥90,0 %	**NC36.1***	10 mg	342,95
Acteoside	61276-17-3	≥80,0 %	**NC33.2**	25 mg	407,45
Apigenin	520-36-5	≥85,0 %	**NC37.1**	25 mg	235,45
Apigenin-7-glucoside	578-74-5	≥90,0 %	**NC19.1**	25 mg	317,15
p-Arbutin	497-76-7	≥85,0 %	**NC38.2**	100 mg	192,45
Bilobalid	33570-04-6	≥85,0 %	**NC20.1**	50 mg	310,70
Casticin	479-91-4	≥85,0 %	**NC39.1**	25 mg	568,70
(+)-Dihydroquercetin	480-18-2	≥85,0 %	**NC55.1***	50 mg	407,45
3,4-Dihydroxybenzoic acid	99-50-3	≥90,0 %	**NC52.1**	100 mg	145,15
Echinacoside	82854-37-3	≥80,0 %	**NC40.1**	25 mg	342,95
(-)-Epicatechin	490-46-0	≥90,0 %	**NC41.1***	50 mg	252,65
Eriocitrin	13463-28-0	≥85,0 %	**NC42.1**	25 mg	267,70
Ginkgolide A	15291-75-5	≥85,0 %	**NC43.1***	25 mg	310,70
Ginsenoside Rb1	41753-43-9	≥85,0 %	**NC44.1**	25 mg	413,90
Ginsenoside Re	52286-59-6	≥80,0 %	**NC45.1**	25 mg	256,95
Ginsenoside Rg1	22427-39-0	≥85,0 %	**NC62.1***	25 mg	424,65
Harpagoside	19210-12-9	≥80,0 %	**NC21.1**	50 mg	439,70
Hederacoside C	14216-03-6	≥85,0 %	**NC46.1**	25 mg	332,20
Herniarin	531-59-9	≥95,0 %	**NC47.1**	50 mg	235,45
Hydroxyvalerenic acid	1619-16-5	≥80,0 %	**NC48.1***	25 mg	375,20
Hypericin	548-04-9	≥70,0 %	**NC22.1**	10 mg	310,70
Hyperoside	482-36-0	≥85,0 %	**NC23.1**	50 mg	385,95
Isoquercitrin	482-35-9	≥80,0 %	**NC24.1**	25 mg	353,70
Isovitexin	38953-85-4	≥80,0 %	**NC25.1**	25 mg	381,65
Kaempferol	520-18-3	≥80,0 %	**NC26.1**	25 mg	177,40
Luteolin	491-70-3	≥80,0 %	**NC49.2**	25 mg	213,95
Oleanolic acid	508-02-1	≥85,0 %	**NC50.1**	50 mg	267,70
Osthol	484-12-8	≥90,0 %	**NC51.1**	50 mg	235,45
Quercetin dihydrate	6151-25-3	≥80,0 %	**NC27.1**	100 mg	246,20
Quercetin-3-O-ß-Glucuronide	22688-79-5	≥80,0 %	**NC28.1**	50 mg	299,95
Quercitrin	522-12-3	≥70,0 %	**NC29.2**	50 mg	364,45
Rosmarinic acid	20283-92-5	≥85,0 %	**NC30.1***	100 mg	306,40
Sennoside A	81-27-6	≥75,0 %	**NC53.1**	50 mg	364,45
Sennoside B	128-57-4	≥80,0 %	**NC54.1**	50 mg	407,45
Silybin	22888-70-6	≥85,0 %	**NC31.1**	100 mg	188,15
Valerenic acid	3569-10-6	≥90,0 %	**NC32.1**	50 mg	299,95
Vitexin	3681-93-4	≥85,0 %	**NC56.1**	25 mg	611,70
Vitexin-2''-O-rhamnoside	64820-99-1	≥80,0 %	**NC34.1**	25 mg	435,40
Xanthohumol	6754-58-1	≥95,0 %	**NC35.1**	25 mg	267,70

For additional product data and safety information, see chapter Chemicals A-Z.

Preservatives, antioxidants and vitamins

Product	CAS No.	Assay (HPLC)	Assay (GC)	Art. No.	Pack Qty.	€
L(+)-Ascorbic acid	50-81-7	≥90,0 %	-	**NC00.1**	100 mg	125,70
Benzaldehyde	100-52-7		≥80,0 %	**NC01.1**	100 mg	125,70
Benzoic acid	65-85-0	≥95,0 %	-	**NC03.1**	100 mg	125,70
Benzoic acid sodium salt	532-32-1	≥90,0 %	-	**NC11.1**	100 mg	125,70
Benzyl alcohol	100-51-6	≥90,0 %	-	**NC02.1**	100 mg	125,70
Butylated hydroxyanisole	25013-16-5		≥95,0 %	**NC04.1**	100 mg	125,70
Butylated hydroxytoluene	128-37-0		≥95,0 %	**NC05.1**	100 mg	125,70
Caffeic acid	331-39-5	≥90,0 %	-	**NC08.1**	100 mg	125,70
Chlorogenic acid	327-97-9	≥90,0 %	-	**NC06.1**	100 mg	125,70
4-Hydroxybenzoic acid ethyl ester	120-47-8	≥90,0 %	-	**NC07.1**	100 mg	125,70
4-Hydroxybenzoic acid methyl ester	99-76-3	≥91,0 %	-	**NC10.1**	100 mg	125,70
4-Hydroxybenzoic acid propyl ester	94-13-3	≥90,0 %	-	**NC13.1**	100 mg	125,70
Potassium sorbate	24634-61-5	≥85,0 %	-	**NC09.1**	100 mg	125,70
2-Phenoxyethanol	122-99-6	≥90,0 %	≥90,0 %	**NC12.1**	250 µl	125,70
Rutin trihydrate	250249-75-3	≥85,0 %	-	**NC14.1**	100 mg	125,70
Sorbic acid	110-44-1	≥95,0 %	-	**NC15.1**	100 mg	125,70
DL-α-Tocopherol	10191-41-0	≥90,0 %	-	**NC16.1***	250 µl	125,70
DL-α-Tocopherol acetate	7695-91-2	≥90,0 %	-	**NC17.1**	250 µl	125,70
RRR-α-Tocopherol	59-02-9		≥85,0 %	**NC18.1***	250 µl	125,70

For additional product data and safety information, see chapter Chemicals A-Z.

*** User information:**
These products are shipped cooled. **Additional costs** resulting from such, **will be invoiced** (further information on request).
Please note:
to ensure optimal product quality, these products are shipped only from Monday until Wednesday within Germany and only on Mondays and Tuesdays outside Germany. This may lead to minor delays in delivery.

Certificate of Analysis

Item number: NC00
L(+)-Ascorbic acid
ROTICHROM® Working Standard
batch: 406250234
CAS No.
formula:
density:
molecular weight:
print date: 10.10.2016
recommended retest date: 07.10.2021
release date: 10.10.2016

		batch results
Assay (HPLC)	≥90,0 %	99,75 %
Identity	complies	complies

Assay
Method HPLC M-0134-E, 3.5
Comparison with primary standard Batch 00071
Requirement ≥90%

Identification
Method UV-VIS M-0134-E, 2.5
Comparison with primary standard
Requirement must comply with UV spectrum of primary reference standard

Method HPLC M-0134-E, 3.5
Comparison with primary standard Batch 00071
Requirement no relevant differences in retention time between primary and working standards, no relevant difference in peak symmetry when primary and working standard are co-injected

Storage
Airtight container, protected from light at ambient temperature

Our products are tested for laboratory use only.
The stated information refers to the current status of product quality.
We reserve the right to implement necessary changes.

N. Knosp
Quality Control

N. Nyaka
Quality Assurance

This document is computer-printed and therefore not been signed by hand.

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Reference substances ROTICHROM® HPLC/TLC/GC

for Chromatography

Pure reference substances are essential for precise analysis. They are used for identifying compounds by retention time, for calibrating detectors, and for eliminating errors in quantification of the sample compounds.

In all chromatographic methods peak areas are proportional to sample quantity. For precise quantitative analysis, however, it is necessary to calibrate the detector as the signal may significantly vary with different substances.

To avoid errors during sample preparation and injection, an internal standard should be used in any case. The standard must not be present in the sample, however, its chemical and physical properties ought to be the closest possible to the analytical targets. It must be well resolved in the chromatogram within the same range of retention time as the analyte of interest. The internal standard is added prior to sample preparation and thus passes through all the steps of the analysis.

By reference to its peak area, sample losses during preparation and injection can be compensated.

Reference substances

- ROTICHROM® HPLC
- ROTICHROM® TLC
- ROTICHROM® GC

are supplied with an HPLC chromatogram, TLC chromatogram and GC chromatogram respectively, which is enclosed in the covering box.

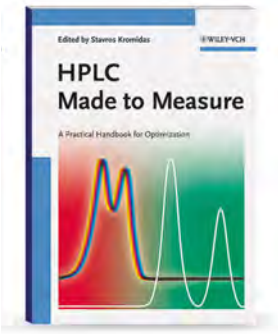
Reference substances with analytical documentation

TLC, HPLC, ^{1}H NMR, ^{13}C NMR, UV, IR, MS

The high-purity substances from this product line are supplied with extensive analytical documentation. This documentation extends to approx. 20 pages and contains all key data on the analytical methods used. Our results are generally confirmed using at least one additional method. This ensures maximum reliability in assay and identity testing.

Product	Purity (HPLC)	Art. No.	Pack Qty.	€
Acetoxyvalerenic acid	≥99,0 %	**T890.1**	25 mg	639,65
Acteoside	>98 %	**T891.1**	20 mg	532,15
Cynarin	>99 %	**T892.1**	10 mg	461,20
(+)-Dihydroquercetin	>99 %	**T893.1**	20 mg	385,95
Hydroxyvalerenic acid	>99 %	**4710.2**	50 mg	385,95
		4710.1	100 mg	676,20
Primin	>99 %	**T898.1**	20 mg	504,20
Quercetin	>99 %	**1210.1**	50 mg	493,45
Seneciphylline	>99 %	**1214.1**	20 mg	510,65
Valerenic acid	≥99,0 %	**4712.2**	50 mg	568,70
		4712.1	100 mg	1069,65

For additional product data and safety information, see chapter Chemicals A-Z.



HPLC Made to Measure

A Practical Handbook for Optimization.
Kromidas, Stavros (Ed.)
1st Edition - May 2006, 753 pages, hardcover
ISBN 978-3-527-31377-8

Short description:
The only topical book to focus on optimization, this volume addresses the needs of users wishing to improve their methods in particular in terms of throughput, accuracy and cost-effectiveness. Written by bestseller authors and scientists working for major international companies.

Titel	Art. No.	Pack Qty.	Price incl. VAT. €
HPLC Made to Measure	**HX93.1**	1	179,00

Reference substances for HPLC
ROTICHROM® HPLC

ROTH offers a broad range of reference substances for HPLC. These highly pure substances predominantly have a HPLC purity level of >98 %, which is sufficient for a meaningful analysis. You will find the certificate of analysis with a HPLC chromatogram in the outer packaging.

ROTICHROM® HPLC - first choice for reference substances for chromatography.

Anthocyanins

Product	Purity (HPLC)	Art. No.	Pack Qty.	€
Apigeninidin chloride	≥97 %	**3939.2**	10 mg	403,15
Cyanidin 3-arabinoside chloride	≥95 %	**0641.1**	10 mg	413,90
Cyanidin chloride	≥96 %	**4545.1**	10 mg	214,50
Cyanin chloride	>98 %	**1133.1**	20 mg	241,90
Delphinidin chloride	≥97 %	**4537.1**	10 mg	284,90
Delphinidin 3-galactoside chloride	≥95 %	**0643.1**	10 mg	428,95
Delphinidin 3-glucoside chloride	≥95 %	**0644.1**	10 mg	375,20
Delphinidin 3-rutinoside chloride	≥97 %	**0977.1**	20 mg	375,20
Diosmetinidin chloride	≥97 %	**9326.1**	10 mg	310,70
Idaein chloride	≥98 %	**3967.1**	5 mg	321,45
Keracyanine chloride	≥96,5 %	**6134.2**	10 mg	225,25
Kuromanin chloride	≥97 %	**6136.2**	10 mg	228,45
Luteolinidin chloride	≥91 %	**9325.1**	10 mg	407,45
Malvidin chloride	≥97 %	**6140.1**	10 mg	321,45
Malvin chloride	≥95 %	**K013.1**	10 mg	256,95
Oenin chloride	≥97 %	**K030.1**	5 mg	317,15
Peonidin chloride	≥98,5 %	**4540.1**	5 mg	310,70
Peonidin 3,5-diglucoside chloride	≥96 %	**1413.1**	10 mg	424,65
Peonidin 3-glucoside chloride	≥97 %	**1619.1**	5 mg	299,95
Pelargonidin chloride	≥99 %	**4541.1**	10 mg	317,15
Pelargonidin 3,5-diglucoside chloride	≥97 %	**1646.1**	5 mg	284,90
Petunidin 3-glucoside chloride	≥97 %	**1469.1**	5 mg	289,20
Primulin chloride	≥95 %	**K014.1**	5 mg	600,95

For additional product data and safety information, see chapter Chemicals A-Z.

Glucosinolates

Product	Purity (HPLC)	Art. No.	Pack Qty.	€
Epiprogoitrin	≥97 %	**2273.1**	10 mg	278,45
Glucobrassicanapin	≥98 %	**2276.1**	10 mg	306,40
Glucobrassicin	≥97 %	**2279.1**	20 mg	482,70
Glucoerucin	≥97 %	**2280.1**	10 mg	321,45
Glucoiberin	≥99 %	**2281.1**	10 mg	256,95
Gluconapin	≥97 %	**2282.1**	10 mg	267,70
Gluconasturtiin	≥97 %	**2357.1**	20 mg	461,20
Glucoraphanin	≥97 %	**2374.1**	10 mg	274,15
Progoitrin	≥97 %	**2436.1**	10 mg	256,95
Sinalbin potassium salt	≥97 %	**6694.1**	20 mg	263,40
Sinigrin monohydrate	≥99 %	**4542.2**	50 mg	332,20

Pyrrolizidine Alkaloids

Product	Purity (HPLC)	Art. No.	Pack Qty.	€
7-O-Acetylintermedine	≥95 %	**7975.1**	5 mg	385,95
7-O-Acetylintermedine N-oxide	≥95 %	**7980.1**	5 mg	385,95
Echimidine	≥95 %	**7992.1**	5 mg	375,20
Echimidine N-oxide	≥97 %	**8011.1**	5 mg	375,20
(Z)-Erucifoline	≥97 %	**1657.1**	5 mg	321,45
(Z)-Erucifoline N-oxide	≥97 %	**1664.1**	5 mg	338,65
Europine hydrochloride	≥97 %	**1676.1**	10 mg	418,20
Europine-N-oxide	≥97 %	**1687.1**	10 mg	418,20
Heliotrine	≥98 %	**1929.1**	20 mg	327,90
Heliotrine N-oxide	≥97 %	**1944.1**	10 mg	284,90
Indicine hydrochloride	≥97 %	**1960.1**	10 mg	375,20
Indicine N-oxide	≥96 %	**1961.1**	10 mg	413,90
Intermedine	≥95 %	**1962.1**	5 mg	364,45
Intermedine N-oxide	≥95 %	**8018.1**	5 mg	385,95
Jacobine	≥98 %	**1963.1**	5 mg	327,90
Jacobine N-oxide	≥96 %	**1970.1**	5 mg	338,65
Lasiocarpine	≥96 %	**2090.1**	10 mg	332,20
Lasiocarpine N-oxide	≥96 %	**2202.1**	10 mg	332,20
Lycopsamine	≥95 %	**2208.1**	5 mg	342,95
Lycopsamine N-oxide	≥95 %	**8022.1**	5 mg	385,95
Monocrotaline N-oxide	≥98 %	**2249.1**	10 mg	413,90
Retrorsine	>98 %	**1213.1**	20 mg	278,45
Retrorsine-N-oxide	≥97 %	**6733.1**	10 mg	284,90
Senecionine	≥96 % (GC)	**2261.1**	10 mg	117,75
Senecionine N-oxide	≥95 %	**6734.1**	10 mg	446,15
Seneciphylline N-oxide	≥97 %	**6735.1**	10 mg	499,90
Senecivernine	≥95 %	**2209.1**	5 mg	299,95
Senecivernine N-oxide	≥95 %	**2215.1**	5 mg	321,45
Senkirkine	≥95 %	**4934.1**	10 mg	353,70

For additional product data and safety information, see chapter Chemicals A-Z.

Further Reference Substances for HPLC

Product	Purity (HPLC)	Art. No.	Pack Qty.	€
Acacetin	≥99 %	6531.1	10 mg	213,95
Acetoxyvalerenic acid	>99 %	4446.1	25 mg	499,90
6-O-Acetylacteoside	>99 %	1072.1	20 mg	370,90
3-Acetyl-α-boswellic acid	>99 %	1073.1	10 mg	456,90
3-Acetyl-β-boswellic acid	>99 %	1074.1	10 mg	439,70
3-O-Acetyl-9-11-dehydro-β-boswellic acid	≥98 %	6269.1	5 mg	375,20
3-Acetyl-11-keto-β-boswellic acid	>99 %	1075.1	10 mg	403,15
Actein	>99 %	1080.1	5 mg	407,45
Acteoside	>98 %	4451.1	20 mg	428,95
Agnuside	>98 %	1081.1	10 mg	299,95
Alliin	≥98 %	K031.1	10 mg	284,90
Aloe-emodin	≥98,5 %	6004.2	20 mg	246,20
Aloenin A	>99 %	1082.1	20 mg	482,70
Aloin A	≥98 %	4744.1	25 mg	100,95
Amarogentin	≥99 %	6488.1	10 mg	310,70
Amentoflavone trihydrate	≥99 %	5255.1	10 mg	295,65
α-Amyrin	≥98,5 %	7000.1	10 mg	246,20
β-Amyrin	≥98,5 %	7001.1	10 mg	418,20
Apigenin-7-glucoside	>99 %	6348.1	10 mg	155,90
Apiin	>99 %	1085.1	10 mg	342,95
Aristolochic acid I	>99 %	1086.1	20 mg	317,15
Aristolochic acid II	>99 %	1088.1	20 mg	403,15
Asiaticoside	≥99 %	3972.1	10 mg	209,65
Aucubin	>98,5 %	7004.1	25 mg	149,45
Azadirachtin	≥96 %	4314.1	1 mg	213,95
		4314.2	5 mg	858,95
Baicalein	>99 %	1110.1	20 mg	321,45
Baicalin	>99 %	1121.1	20 mg	252,65
Bavachinin A	≥99 %	8898.1	5 mg	213,95
Bergamottin	≥99 %	8889.1	25 mg	188,15
Bergaptene	≥99 %	7006.2	20 mg	160,20
Betulinic acid	≥97 %	7007.1	25 mg	206,40
Bilobalid	>98 %	1122.1	20 mg	424,65
α-Boswellic acid	>99 %	1123.1	10 mg	428,95
β-Boswellic acid	>99 %	1124.1	10 mg	428,95
11-keto-β-Boswellic acid	>99 %	1155.1	10 mg	385,95
Butein	≥99 %	7010.1	10 mg	332,20
Caftaric acid	>98 %	1125.1	10 mg	396,70
Casticin	>98 %	1126.1	20 mg	456,90
Catalpol	>99 %	1127.1	25 mg	299,95
Caulophyllogenin	≥99 %	7439.1	5 mg	521,40
(-)-α-Chaconine	≥98 %	4192.1	5 mg	256,95
Chelidonine	>98 %	1129.1	25 mg	295,65
Chrysanthellin A	≥96 %	5261.1	10 mg	418,20
Chrysoeriol	≥99 %	6044.1	5 mg	261,15
Chrysophanic acid	≥99 %	7442.2	20 mg	224,70
Cichoric acid	>98 %	1130.1	10 mg	413,90
Cnicin	≥98 %	2823.1	10 mg	256,95
Coptisin chloride	>99 %	1131.1	10 mg	241,90
Cucurbitacin E	≥98 %	9741.1	10 mg	321,45
Cucurbitacin I	≥95 %	9032.3	10 mg	450,45
Curcumin	>98 %	1132.1	20 mg	403,15
Cynarin	>99 %	4457.1	10 mg	353,70
Daidzein	≥99 %	6047.2	20 mg	170,95
Datiscetin	≥99 %	7444.1	10 mg	254,25
27-Deoxyactein	>99 %	1134.1	5 mg	450,45
Dhurrin	≥98 %	3866.1	1 mg	55,80
Didymin	≥99 %	7445.2	10 mg	375,20
(+)-Dihydroquercetin(+)-Dihydroquercetin	>99 %	4464.1	20 mg	263,40
		4464.2	50 mg	493,45
Diosmetin	≥99 %	7446.2	20 mg	213,95
Diosmin	≥99 %	7447.2	20 mg	225,25
Echinacoside	>98 %	1135.1	10 mg	407,45
Echinocystic acid 3-glucoside	≥92 %	6995.2	10 mg	267,70
β-Elemonic acid	≥98 %	6491.1	10 mg	504,20

Product	Purity (HPLC)	Art. No.	Pack Qty.	€
Elenolic acid glucoside	>98 %	1136.1	20 mg	321,45
Eleutheroside B	>99 %	1137.1	5 mg	256,95
Eleutheroside E	>96 %	1138.1	5 mg	256,95
Émodine	≥99 %	7451.2	20 mg	188,70
Englerin A	≥96 %	6492.1	10 mg	456,90
(-)-Epicatechin	>99 %	1139.1	20 mg	213,95
(-)-Epicatechin gallate	≥98 %	6358.1	10 mg	251,05
(-)-Epigallocatechin	≥99 %	6359.1	10 mg	267,70
(-)-Epigallocatechin gallate	≥98 %	6361.1	10 mg	175,15
Eriodictyol	≥99 %	6990.1	10 mg	192,45
Eriodictyol-7-glucoside	≥99 %	6521.1	10 mg	284,90
Erythrodiol	≥98 %	7455.1	10 mg	213,95
Eupatorin	≥99 %	6493.1	20 mg	289,20
Fisetin	≥99 %	7457.1	10 mg	206,30
Flavanomarein	≥99 %	7458.1	10 mg	353,70
Formononetin	≥99 %	9570.1	10 mg	138,70
Frangulin A	>98 %	1140.1	20 mg	295,65
Frangulin B	>98 %	1142.1	10 mg	310,70
Fraxin	≥99 %	9364.1	10 mg	342,95
Friedelin	≥98 %	7459.2	20 mg	189,10
Galangin	≥99 %	7460.2	20 mg	162,90
(-)-Gallocatechin	≥99 %	4480.1	10 mg	252,65
		4480.2	20 mg	403,15
Genistin	≥99 %	9374.2	20 mg	299,95
Geraldol	≥99 %	7461.2	5 mg	310,70
[6]-Gingerol	>98 %	T895.1	10 mg	295,65
[8]-Gingerol	>98 %	1143.1	10 mg	332,20
Ginkgolide A	>98 %	1145.1	20 mg	332,20
Ginkgolide B	>99 %	1146.1	20 mg	375,20
Ginkgolide C	>95 %	1147.1	20 mg	403,15
Ginkgolic acids RN	>90 %	1148.1	5 mg	321,45
Ginsenoside Rb1	≥98 %	7462.1	5 mg	176,85
Ginsenoside Rb2	≥94 %	7463.1	5 mg	310,70
Ginsenoside Rc	≥98 %	7465.1	5 mg	210,20
Ginsenoside Rd	≥98 %	7466.1	5 mg	182,25
Ginsenoside Re	≥98 %	7468.1	5 mg	130,65
Ginsenoside Rf	≥98 %	4552.1	5 mg	385,95
Ginsenoside Rg1	≥98 %	7467.1	5 mg	177,40
Glucotropaeolin	>99 %	1149.1	50 mg	461,20
18-β-Glycyrrhetinic acid	≥99 %	7469.2	20 mg	169,35
Hamamelitannin	>99 %	1151.1	20 mg	267,70
Harpagid	>99 %	1152.1	10 mg	310,70
Harpagoside	>98 %	7471.1	10 mg	102,05
Hederacoside C	≥99 %	7472.1	10 mg	125,70
α-Hederin	≥98 %	7486.1	10 mg	177,40
Hesperetin	≥99 %	7570.1	10 mg	160,20
Hesperidin	≥98 %	7577.1	10 mg	188,15
Homoeriodictyol	≥99 %	7585.1	10 mg	188,15
Homoorientin	≥99 %	6002.1	5 mg	241,90
4-Hydroxybenzoic acid ethyl ester	≥99 %	4746.1	1 g	31,10
4-Hydroxybenzoic acid methyl ester	≥99 %	4748.1	1 g	32,15
4-Hydroxybenzoic acid propyl ester	≥99 %	4749.1	1 g	31,10
Hydroxytyrosol	>98 %	1153.1	25 mg	274,15
Hydroxyvalerenic acid	>99 %	4481.1	25 mg	342,95
		4481.2	50 mg	568,70
		4481.3	100 mg	908,40
Hyperforin / Adhyperforin Dicyclohexylammonium salt, Mixture 4:1	≥95 %	6495.1	5 mg	338,65
Hypericin	≥98 %	L543.1	1 mg	127,95
Hypericin sodium salt	>98 %	1154.1	5 mg	375,20
Hyperoside	>99 %	7932.1	10 mg	110,65
Isoacteoside	>99 %	T896.1	20 mg	396,70
Isopimpinellin	≥99 %	8854.1	10 mg	188,15
Isoquercitrin	>99 %	7586.1	10 mg	121,40
Isorhamnetin	≥98 %	7589.1	10 mg	235,45
Isorhamnetin-3-rutinoside	≥99 %	9388.2	10 mg	256,95

Product	Purity (HPLC)	Art. No.	Pack Qty.	€
Isorhoifolin	≥98 %	**6989.1**	10 mg	396,70
Isosakuranetin	≥99 %	**7498.1**	10 mg	177,40
Isovitexin	≥99 %	**6412.1**	5 mg	235,45
Isoxanthohumol	≥99 %	**2824.1**	10 mg	235,45
Kaempferide	≥99 %	**7501.1**	10 mg	177,40
Kaempferol	>99 %	**7503.1**	10 mg	115,60
Kaempferol-3-glucoside	≥99 %	**9321.1**	5 mg	235,45
Kaempferol-3-rhamnosidoglucoside	≥98 %	**4526.1**	10 mg	461,20
Lanatoside C	>99 %	**7321.1**	50 mg	138,70
Leiocarposide	≥99 %	**2825.1**	5 mg	267,70
Loganin	≥99 %	**4162.1**	10 mg	188,15
Loganic acid	≥99 %	**4158.2**	20 mg	241,90
Lupeol	≥99 %	**8863.2**	20 mg	182,25
Luteolin	>99 %	**4546.1**	10 mg	138,70
Luteolin-7-glucoside	≥98 %	**4164.1**	10 mg	198,90
Lycopene	>90 %	**1180.1**	5 mg	267,70
(-)-Maackiain	≥98 %	**6496.1**	10 mg	284,90
Madecassoside	≥97 %	**6138.1**	10 mg	342,95
Manassantin A	≥98 %	**6497.1**	10 mg	413,90
Manassantin B	≥98 %	**6684.1**	10 mg	364,45
Marein	≥99 %	**4171.1**	5 mg	289,20
Maritimein	≥98 %	**4172.1**	5 mg	413,90
Myricetin	≥99 %	**4187.2**	20 mg	235,45
Myricitrin	≥99 %	**9391.1**	10 mg	198,90
Narciclasine	≥97 %	**6689.1**	10 mg	428,95
Naringenin	>98 %	**1186.1**	50 mg	456,90
Naringenin-7-glucoside	≥99 %	**8865.1**	10 mg	177,40
Naringin	≥99 %	**4200.2**	20 mg	155,90
Neoeriocitrin	≥99 %	**4206.1**	10 mg	342,95
Neohesperidin	≥99 %	**6767.1**	10 mg	263,40
Oleanolic acid	≥99 %	**7402.2**	20 mg	160,20
Oleuropein	>98 %	**1191.1**	20 mg	284,90
Ononin	≥99 %	**9411.2**	10 mg	299,95
Orientin	≥99 %	**6151.1**	5 mg	267,70
Peltatoside	≥99 %	**7406.1**	10 mg	321,45
Phloretin	≥99 %	**7051.4**	50 mg	310,70
Picrosid II	>98 %	**1197.1**	20 mg	252,65
Poncirin	≥97 %	**7413.1**	10 mg	246,20
Primulaverin	>99 %	**1201.1**	10 mg	295,65
Primverin	>99 %	**1203.1**	10 mg	295,65
Protopine	≥98 %	**6690.1**	10 mg	267,70
Pseudohypericin	≥97 %	**2846.1**	5 mg	536,45
Psoralen	≥98,5 %	**7415.1**	10 mg	170,95
Quercetin dihydrate	>99 %	**7417.1**	10 mg	107,40
Quercitrin	≥99 %	**9417.1**	10 mg	206,95
Rhamnetin	≥99 %	**7418.1**	10 mg	233,85
Rhein	≥99 %	**7419.2**	20 mg	224,70
Rhoifolin	≥99 %	**7420.2**	20 mg	289,20
Robinetin	≥99 %	**7421.1**	10 mg	228,90
Rosmarinic acid	≥99 %	**N816.1**	10 mg	166,65
Rutin trihydrate	≥99 %	**7422.2**	50 mg	188,15
Saponarin	≥98 %	**6413.1**	5 mg	206,95
Sciadopitysin	≥99 %	**9410.2**	10 mg	278,45
Sennoside A	>98 %	**7423.1**	10 mg	132,15
Sennoside A1	≥95 %	**6693.1**	10 mg	299,95
Sennoside B	≥98 %	**7424.1**	10 mg	206,95
Silybin	>98 %	**1215.1**	50 mg	424,65
α-Solanine	≥98 %	**2826.1**	10 mg	263,40
Spiraeoside	>98 %	**1216.1**	20 mg	385,95
Sulfuretin	≥99 %	**7569.1**	5 mg	295,65
Sutherlandioside B	≥97 %	**6695.1**	10 mg	321,45
Sutherlandioside D	≥95 %	**6696.1**	10 mg	338,65
Syringetin-3-glucoside	≥99 %	**9432.1**	5 mg	349,40
Tamarixetin	≥99 %	**7425.1**	10 mg	263,40
Tilirosid	≥98 %	**3268.1**	10 mg	364,45
Umckalin	≥99 %	**2827.1**	5 mg	267,70
Ursolic acid	≥99 %	**7429.1**	10 mg	166,65
Ursolic acid methyl ester	≥99 %	**7430.2**	10 mg	198,90
Uvaol	≥98 %	**7433.2**	10 mg	267,70
Valerenic acid	>99 %	**4488.1**	25 mg	385,95
		4488.2	50 mg	639,65
ε-Viniferin	≥98 %	**6697.1**	20 mg	514,95
Vitexin	≥99 %	**6418.1**	5 mg	213,95
Xanthohumol	≥99 %	**2828.1**	10 mg	209,65

For additional product data and safety information, see chapter Chemicals A-Z.

▶ More substances and package sizes on request. Please don't hesitate to contact us!

Reference Substances for TLC

ROTICHROM® TLC

ROTICHROM®TLC substances for comparison are supplied with a certificate of analysis and a description of the chromatography method used, enclosed in the outer package.

Product	Art. No.	Pack Qty.	€
Aloe-emodin	**3524.1**	100 mg	385,95
Aloin	**5555.1**	50 mg	61,20
Apigenin	**5611.1**	25 mg	44,65
Apigenin-7-glucoside	**5557.1**	100 mg	147,85
Bergamottin	**1217.1**	50 mg	310,70
Capsanthin	**5674.2**	5 mg	299,95
Chelidonine	**6235.1**	25 mg	170,95
Chlorogenic acid	**5558.1**	50 mg	41,85
β-Cryptoxanthin	**5675.1**	1 mg	315,55
Cyanin chloride	**5568.1**	25 mg	56,90
Cytisine	**5615.1**	25 mg	112,90
(-)-Epicatechin	**5798.1**	50 mg	54,75
Harmine	**9968.1**	500 mg	44,00
Hesperidin	**5800.1**	10 mg	59,05
Hyperoside	**4215.1**	25 mg	51,10
Isoquercitrin	**5573.1**	50 mg	75,15
Caffeic acid	**5574.1**	100 mg	36,45
Lutein	**5671.1**	5 mg	332,20
Lycopene	**5670.1**	5 mg	385,95
Physalien	**5673.1**	5 mg	241,90
Rhaponticin	**5804.1**	100 mg	59,05
Silybin	**5578.1**	100 mg	63,35
α-Solanine	**4180.1**	10 mg	228,90
Taurocholic acid sodium salt	**5817.1**	100 mg	54,75
Tomatin	**5676.1**	25 mg	52,70
Vitexin	**5579.1**	10 mg	41,40
Vitexin-2''-O-rhamnoside	**5819.1**	10 mg	88,05
Zeaxanthin	**5672.2**	5 mg	407,45

For additional product data and safety information, see chapter Chemicals A-Z.

Further Reference Substances

The substances are delivered **without** chromatogram.

Product	Art. No.	Pack Qty.	€
Acacetin	5010.1	25 mg	123,65
Ajmalicine	6192.1	250 mg	62,25
Aloin	4568.1	250 mg	53,65
Amygdalin	5500.1	10 g	34,30
Anethole	5131.1	25 ml	21,40
	5131.2	250 ml	61,20
Apocynin	7884.1	25 g	103,75
p-Arbutin	6115.1	10 g	53,25
	6115.2	50 g	166,55
Aristolochic acid sodium salt (I and II)	7268.1	500 mg	370,90
Aucubin	9149.1	250 mg	504,20
Azulen	3159.1	100 mg	53,25
Berberine chloride hydrate	3192.1	1 g	13,45
Bergaptene	8899.1	1 g	336,40
Betulin(ol)	8763.1 *	1 g	66,55
Boldine	8900.1	100 mg	131,05
Bromelain	5950.1	10 g	21,40
	5950.2	100 g	96,25
Caffeic acid	5869.1	10 g	32,80
	5869.2	50 g	122,45
Capsaicin	8804.1	100 mg	63,35
β-Carotene	5669.1	10 mg	234,25
Carvacrol	8808.1	10 ml	34,30
(+)-Catechin	6200.1	1 g	34,30
DL-Catechin hydrate	8822.1	1 g	117,20
(-)-α-Chaconine	4192.1	5 mg	256,95
Chlorophyll A	6360.1	1 mg	403,15
	6360.2	5 mg	1665,20
Chlorophyll B	6365.2	5 mg	1374,95
Chrysin	6475.1	500 mg	21,00
Cnicin	4560.1	10 mg	78,40
p-Coumaric acid	9906.1	1 g	21,00
Daphnetin	6618.1	10 mg	268,75
Digitonin	4005.1	100 mg	44,00
	4005.2	500 mg	147,85
	4005.3	1 g	266,10
	4005.4	5 g	1020,20
Digitoxin	7359.1	50 mg	39,70
Digoxin	7323.1	50 mg	73,00
Dihydroouabain	7197.1	50 mg	153,65
(+)-Dihydroquercetin	5797.2	100 mg	223,10
Dihydrorobinetin	6960.1	100 mg	66,55
6,7-Dihydroxyflavone	8066.1	10 mg	343,50
3,4-Dimethoxy cinnamic acid	9918.1	5 g	23,15
Emetine dihydrochloride	4116.1	1 g	163,95
Emodin	7272.1	100 mg	30,65
	7272.2	500 mg	107,00
(-)-Epicatechin	7293.1	500 mg	115,60
Esculin sesquihydrate	8704.1	5 g	21,40
	8704.2	25 g	88,05
	8704.3	50 g	152,55
	8704.4	100 g	263,40
Eucalyptol	7244.1	25 ml	28,50
Eugenol	7292.1	50 ml	18,85

Product	Art. No.	Pack Qty.	€
trans-Ferulic acid	9936.1	10 g	35,40
	9936.2	100 g	199,45
Fisetin	7383.1	250 mg	75,80
Fipronil	0925.1	100 mg	107,40
Frangulin (A+B)	7404.1	25 mg	41,85
Frangulin B	7655.1	10 mg	252,65
Fraxidin	9369.1	10 mg	171,90
Gallic acid monohydrate	7300.1	50 g	31,10
	7300.2	100 g	44,00
	7300.3	500 g	125,70
Gibberellic acid	7464.1	250 mg	16,05
	7464.2	1 g	28,50
Glycyrrhizic acid ammonium salt hydrate	6247.1	10 g	44,00
	6247.2	50 g	168,25
Guaiacol	7308.1	100 ml	41,40
Hederagenin	9141.2	250 mg	241,90
Helenien	4452.2	10 mg	310,70
Herniarin	7734.1	1 g	30,00
Hesperidin	7737.1	10 g	42,50
Hydrocotarnine hydrobromide	4268.1	100 mg	26,80
L-Hyoscyamine	8914.1	1 g	84,85
Isoquercitrin	6527.1	250 mg	209,65
Isorhamnetin	6528.1	100 mg	403,15
Isorhamnetin-3-glucoside	9386.2	10 mg	332,20
Isoscopoletin	5883.2	10 mg	181,70
Kaempferol	5859.1	500 mg	252,65
Kaempferol-7-neohesperidoside	9467.1	10 mg	155,90
Khellin	5911.1	10 g	47,85
	5911.2	50 g	185,45
Menthone	4226.1	50 ml	36,45
(-)-Menthone	6930.1	25 ml	89,15
Naringenin	8524.1	2,5 g	73,00
Naringin	6481.1	10 g	29,60
	6481.2	50 g	94,50
	6481.3	100 g	171,90
Oleuropein	7018.2	1 g	499,90
Pelargonidin chloride	6853.1	25 mg	95,70
Phlorizin dihydrate	4196.1	2,5 g	47,85
	4196.2	10 g	145,15
	4196.3	100 g	858,95
Picrotoxin	7093.1	1 g	121,40
Pilocarpin nitrate	7523.1	1 g	149,45
Piperine	7099.1	5 g	89,15
Quercetin dihydrate (C.I. 75670)	7138.1	25 g	52,15
	7138.2	100 g	164,40
	2629.1	25 g	40,35
	2629.2	50 g	73,00
	2629.3	100 g	134,30
Quercetin-3-O-glucose-6''-acetate	9419.1	10 mg	310,70
(-)-Quinic acid	8835.1	25 g	93,00
	8835.2	100 g	297,70
Quinidine sulphate dihydrate	3348.1	10 g	33,25
Quinine hydrochloride dihydrate	6225.1	25 g	44,00
Rauwolscine hydrochloride	7144.1	100 mg	18,20
Reserpic acid hydrochloride hemihydrate	4295.1	100 mg	46,15
Resveratrol	N811.1	500 mg	47,85
	N811.2	1 g	78,40
	N811.3	5 g	166,65
Rhaponticin	7152.1	1 g	46,15
Rhein	8868.1	50 mg	57,95
Rosmarinic acid	A558.1	100 mg	252,65
Rutin trihydrate	5154.1	25 g	28,50
	5154.2	100 g	87,65
D(-)-Salicin	7192.1	5 g	30,00
	7192.2	50 g	182,25
Scoparone	7494.1	500 mg	217,70
Scopoletin	7210.1	100 mg	138,70
	7210.2	1 g	1073,95
Sennidine A	7012.1	10 mg	213,95

Product	Art. No.	Pack Qty.	€
Sennidine B	**7016.1**	10 mg	278,45
Sennoside A	**9349.1**	100 mg	439,70
Shikimic acid	**7305.2**	250 mg	24,20
	7305.1	1 g	82,25
Sinapic acid	**5317.1**	1 g	75,15
	5317.2	10 g	536,45
Sinigrin monohydrate	**5319.1**	250 mg	96,65
Spiraeoside	**4564.1**	10 mg	99,90
Stachydrine hydrochloride	**9457.2**	20 mg	267,70
Stigmasterol	**9468.1**	1 g	26,80
K-Strophantoside	**4078.1**	50 mg	82,25
Strychnine	**4843.1**	10 g	18,20
Strychnine hydrochloride	**4845.1**	10 g	21,40
Strychnine N-oxide	**4277.1**	500 mg	48,95
Syringic acid	**5361.1**	10 g	67,20
4-Terpinenol	**6309.1**	1 g	103,10
Theobromine	**8963.1**	10 g	19,90
	8963.2	100 g	78,40
α+β-Thujone (isomers)	**9540.1**	5 g	21,00
	9540.2	50 g	141,40
Trifolirhizin	**4738.1**	25 mg	177,40
Umbelliferone	**5437.1**	10 g	37,55
	5437.2	100 g	218,15
(+)-Usnic acid	**4565.1**	10 g	103,10
Verbenalin	**9450.2**	10 mg	278,45
Vitexin	**4173.1**	10 mg	39,25

For additional product data and safety information, see chapter Chemicals A-Z.

Reference Substances for GC

ROTICHROM® GC

Roth offers an extensive range of reference substances for gas chromatography from the substance groups of alkanes, alcohols, ketones, esters, aromatic compounds, and many more. Their GC purity is generally around ≥98 %, which allows for accurate analysis.

The **ROTICHROM® GC** substances come with a certificate of analysis and a GC chromatogram enclosed in the outer packaging.

Product	Purity (GC)	Art. No.	Pack Qty.	€
Acetic acid L-bornyl ester	≥98 %	**9009.2**	100 mg	100,95
Acetic acid linalyl ester	≥95 %	**5199.2**	100 mg	87,65
Acetic acid (L)-menthyl ester	≥98 %	**5189.1**	1 g	85,50
β-Asarone	≥85 %	**9363.1**	1 g	84,85
Benzene	≥99 %	**4898.1**	1 g	31,10
(-)-Borneol	≥98 %	**8495.2**	100 mg	85,90
(+)-Borneol	≥96 %	**8903.1**	100 mg	142,90
1,4-Butanediol	≥96 %	**5077.1**	1 g	81,60
2-Butanon	≥99 %	**4899.1**	1 g	27,45
Butyric acid ethyl ester	≥98 %	**5572.1**	1 g	81,20
Butyric acid methyl ester	≥96 %	**5186.1**	1 g	80,55
Camphene	≥90 %	**5288.2**	100 mg	83,75
(+/-)-Camphor	≥95 %	**4329.1**	1 g	87,00
Capric acid isoamyl ester	≥93 %	**4420.1**	1 g	81,20
(+)-2-Carene	≥92 %	**4952.1**	1 g	81,20
δ-3-Carene	≥90 %	**3572.1**	1 g	40,75
(+)-Carvone	≥98 %	**6947.2**	100 mg	87,00
β-Caryophyllene	≥95 %	**7232.2**	100 mg	127,95
(-)-α-Cedrene	≥96 %	**8908.1**	100 mg	201,60
1,4-Cineole	≥98 %	**5833.2**	100 mg	128,50
Cinnamic acid ethyl ester	≥98 %	**3211.1**	1 g	87,00
Citral	≥95 %	**5292.1**	1 g	120,30
Coumarin	≥99 %	**5284.2**	50 mg	94,10

Product	Purity (GC)	Art. No.	Pack Qty.	€
Diphenyl	≥96 %	**9309.1**	1 g	81,20
Eucalyptol	≥98 %	**6938.2**	100 mg	83,75
Eugenol	≥99,0 %	**6941.1**	1 g	84,85
Eugenol methyl ether	≥95 %	**5073.1**	1 g	84,85
(-)-Fenchone	≥96 %	**9377.2**	100 mg	121,40
α-Humulene	≥95 %	**9385.1**	100 mg	188,15
Isoamyl alcohol	≥99 %	**4260.1**	1 g	81,20
Isomenthone	≥85 %	**6458.1**	1 g	84,40
Isopulegol	≥89 %	**8030.2**	100 mg	87,00
D-(+)-Limonene	≥98 %	**5198.2**	100 mg	126,35
Linalool	≥96,5 %	**5201.2**	100 mg	111,70
Linoleic acid	≥94 %	**5315.1**	1 g	63,35
Linoleic acid ethyl ester	≥98,5 %	**3198.1**	1 g	33,25
Linoleic acid methyl ester	≥99 %	**3199.1**	1 g	36,45
Linolenic acid	≥99 %	**5320.1**	1 g	198,90
Menthofuran	≥90 %	**5188.1**	1 g	85,90
(-)-Menthol	≥95 %	**9061.1**	1 g	84,40
Methylchavicol	≥97 %	**9413.2**	100 mg	85,90
n-Octadecane	≥98,5 %	**9059.1**	1 g	81,20
1-Octanol	≥98 %	**3182.1**	1 g	84,40
Oleic acid	≥99 %	**5362.1**	1 g	38,20
Oleic acid methyl ester	≥99 %	**3186.1**	1 g	34,30
1-Pentanol	≥99 %	**9077.1**	1 g	81,20
(-)-α-Pinene	≥95,0 %	**5170.2**	100 mg	85,90
(+)-α-Pinene	≥98 %	**3857.2**	100 mg	88,05
β-Pinene	≥90 %	**5172.1**	1 g	80,55
Piperitone	≥96 %	**5174.1**	1 g	83,75
(+)-Pulegone	≥98 %	**5168.2**	100 mg	122,45
Sabinene	≥98,5 %	**7188.2**	100 mg	145,15
Senecionine	≥96 %	**2261.1**	10 mg	117,75
Squalene	≥98 %	**3185.1**	1 g	26,80
γ-Terpinene	≥97,0 %	**8039.2**	100 mg	145,15
α-Terpinene	≥95 %	**8038.2**	100 mg	99,90
α-Terpineol	≥96 %	**5152.2**	100 mg	84,85
Terpinolene	≥89 %	**5166.2**	100 mg	87,00
Thymol	≥96 %	**3209.1**	1 g	84,85
Vanillin	≥96 %	**5108.1**	1 g	84,95

For additional product data and safety information, see chapter Chemicals A-Z.

Fatty Acid References

In the field of lipid analysis we provide an extensive collection of reference substances and reference mixtures at the analyst's disposal.

All reference mixtures are prepared from pure components which are carefully tested for purity by TLC and GC.

Precise weighing and a final check guarantee the precision of the mixture. A certificate comes with each product.

Free Fatty Acids

Product	Purity (GC)	Art. No.	Pack Qty.	€
Capric acid	≥99 %	**3164.1**	1 g	27,45
Caprylic acid	≥99 %	**3168.1**	1 g	41,85
Linolenic acid	≥99 %	**5320.1**	1 g	198,90
Linoleic acid	≥94 %	**5315.1**	1 g	63,35
Oleic acid	≥99 %	**5362.1**	1 g	38,20

For additional product data and safety information, see chapter Chemicals A-Z.

Free acid mixture

ROTICHROM® FA 1

Storage temp.: +4 °C

Danger H314-H335

8792.1	100 mg	plastic	188,05 €

Fatty Acid Methyl Ester Mixtures

Product	Purity (GC)	Art. No.	Pack Qty.	€
Butyric acid methyl ester	≥96 %	**5186.1**	1 g	80,55
Linoleic acid methyl ester	≥99 %	**3199.1**	1 g	36,45
Oleic acid methyl ester	≥99 %	**3186.1**	1 g	34,30

Fatty Acid Methyl Ester Mixtures

ROTICHROM®

Advantages:
- High purity
- Content of components >99 %
- Documentation via GC and TLC

Purity	Mixture	Art. No.	Pack Qty.	€
ME 11	saturated	**8632.1**	100 mg	166,55
ME 12	saturated	**8636.1**	100 mg	166,55
ME 13	saturated	**8642.1**	100 mg	166,55
ME 14	saturated	**8644.1**	100 mg	166,55
ME 15	saturated	**8650.1**	100 mg	166,55
ME 16	saturated	**8661.1**	100 mg	166,55
ME 17	saturated	**8666.1**	100 mg	166,55
ME 18	saturated	**8667.1**	100 mg	166,55
ME 19	saturated	**8669.1**	100 mg	166,55
ME 21	saturated	**8676.1**	100 mg	166,55
ME 22	saturated	**8677.1**	100 mg	166,55
ME 24	saturated	**8679.1**	100 mg	166,55
ME 26	saturated/unsaturated	**8685.1**	100 mg	166,55
ME 28	saturated/unsaturated	**8691.1**	100 mg	177,30
ME 29	unsaturated	**8692.1**	100 mg	177,30
ME 30	saturated/unsaturated	**8693.1**	100 mg	177,30
ME 32	saturated/unsaturated	**8697.1**	100 mg	166,55
ME 35	saturated/unsaturated	**8701.1**	100 mg	199,85
ME 36	saturated/unsaturated	**8702.1**	100 mg	199,85
ME 37	saturated/unsaturated	**8703.1**	100 mg	199,85
ME 38	saturated/unsaturated	**8705.1**	100 mg	199,85
ME 39	saturated/unsaturated	**8709.1**	100 mg	199,85
ME 46	saturated/unsaturated	**8730.1**	100 mg	177,30
ME 51	saturated/unsaturated	**8737.1**	100 mg	222,00

For additional product data and safety information, see chapter Chemicals A-Z.

Fatty Acid Methyl Ester Mixtures for Special Applications

ROTICHROM®

Purity	Application	Art. No.	Pack Qty.	€
FO 3	For testing of coconut, rape seed and mustard seed oils.	**8756.1**	100 mg	166,55
FO 4	For testing of olive and tea seed oils.	**8758.1**	100 mg	166,55
FO 5	For testing of coconut, palm kernel and babassu oils.	**8759.1**	100 mg	166,55
FO 7	For testing of rape seed oil.	**8761.1**	100 mg	177,30

FA-Glyceride Mixture

ROTICHROM®

Purity	Art. No.	Pack Qty.	€
TLC 8	**8823.1**	100 mg	177,30
TLC 10	**8827.1**	100 mg	199,85

▶ See chart for information on the composition of the individual mixtures.

Fatty Acid References

Narrow-spectrum fatty acid mixtures

Carbon number/percent by weight		ME 11	ME 18	ME 15	ME 19	ME 12	ME 26	ME 16	ME 13	ME 28	ME 46	ME 14	ME 30	ME 32	ME 17
	Art. No.	**8632.1**	**8667.1**	**8650.1**	**8669.1**	**8636.1**	**8685.1**	**8661.1**	**8642.1**	**8691.1**	**8730.1**	**8644.1**	**8693.1**	**8697.1**	**8666.1**
	6 : 0	20	20												
	7 : 0	20													
	8 : 0	20	20	20	20										
	9 : 0	20		20											
	10 : 0	20	20	20	20										
	11 : 0			20		20									
	12 : 0		20	20	20	20	20								
	13 : 0					20		20							
	14 : 0		20		20	20	20	20							
	14 : 1						20								
	15 : 0					20		20							
	16 : 0				20		20	20	20	20	10				
	16 : 1						20								
	17 : 0							20	20						
	18 : 0								20	20	5	20	20		
	18 : 1									20	30		20		
	18 : 2									20	50		20		
	18 : 3									20	5		20		
	19 : 0								20			20			
	20 : 0								20			20		20	20
	20 : 1													20	
	20 : 2													20	
	20 : 3													20	
	20 : 4												20	20	
	21 : 0											20			20
	22 : 0											20			20
	22 : 1														
	23 : 0														20
	24 : 0														20

Broad-spectrum fatty acid mixtures

Carbon number/percent by weight		ME 35	ME 36	ME 37	ME 38	ME 39	ME 22	ME 24	ME 21	ME 51	ME 29	FO 5	FO 3	FO 7	FO 4
	Art. No.	**8701.1**	**8702.1**	**8703.1**	**8705.1**	**8709.1**	**8677.1**	**8679.1**	**8676.1**	**8737.1**	**8692.1**	**8759.1**	**8756.1**	**8761.1**	**8758.1**
	4 : 0	4	4	7,7											
	5 : 0														
	6 : 0	3	2	7,7											
	7 : 0														
	8 : 0	2	1	7,7	2							7			
	9 : 0														
	10 : 0	3	3	7,7	3							5			
	11 : 0														
	12 : 0	3	4	7,7	4	2	20					48			
	13 : 0							20							
	14 : 0	12	10	7,7	8	2	20					15	1	1	
	14 : 1		2			1									
	15 : 0							20							
	16 : 0	30	25	7,7	10	22	20		20	4		7	4	4	11
	16 : 1		5			5					20				
	17 : 0					10		20							
	18 : 0	10	10	7,7	7	10	20		20	1		3	3	3	3
	18 : 1	30	25	7,7	8	32				58	20	12	45	60	80
	18 : 2	2	3	7,7	8	8				20		3	15	12	6
	18 : 3	1	4	7,7	10	4				10			3	5	
	19 : 0							20							
	20 : 0		2	7,7	8		20		20	1			3	3	
	20 : 1									2	20			1	
	20 : 2														
	20 : 3														
	20 : 4					4									
	21 : 0							20							
	22 : 0			7,7	10				20	1			3	3	
	22 : 1				10					2	20		20	5	
	23 : 0														
	24 : 0				12				20	1			3	3	
	24 : 1										20				

Oils and Greases

Roth oils and greases are carefully manufactured from selected raw materials. They are of high purity and extensively specified. Therefore, they are suitable for a broad range of applications.

Oils and Greases

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Avocado oil	refined	Oleum Perseae	**9341.1**	1 l	65,50
Castor oil	Ph.Eur., nativ, extra pure	Oleum Ricini	**4702.1**	1 l	30,00
			4702.3	2,5 l	53,65
			4702.4	5 l	88,70
			4702.2	10 l	166,65
Jojoba oil	natural pure		**7526.1**	100 ml	23,55
			7526.2	1 l	145,70
Lanolin	Ph.Eur., low in pesticides	Adeps Lanae anhydricum	**5314.2**	500 g	32,15
			5314.1	1 kg	51,50
	techn.		**5313.2**	500 g	23,55
			5313.1	1 kg	38,60
Linseed oil	native, cold pressed		**9338.2**	500 ml	27,85
			9338.1	1 l	42,50
			9338.3	2,5 l	77,95
Maize oil	Ph.Eur., refined	Oleum Maydis	**6212.1**	1 l	36,45
			6212.2	2,5 l	59,05
			6212.3	5 l	90,20
			6212.4	10 l	150,40
Oil of theobroma	pure, filtered twice	Oleum Cacao	**3515.2**	100 g	17,75
			3515.1	500 g	55,80
Oil of sweet almond	refined	Oleum Amygdalae dulcis	**9342.1**	1 l	40,75
			9342.3	2,5 l	84,40
			9342.2	10 l	278,45
Oil of evening primrose	refined	Oleum Oenotherae	**3691.1**	50 ml	15,60
			3691.2	500 ml	69,80
Olive oil	Ph.Eur., virgin	Oleum Olivarum	**8873.1**	500 ml	25,70
			8873.2	2,5 l	87,00
Peanut oil	refined		**9332.2**	500 ml	17,75
			9332.1	1 l	26,80
			9332.3	2,5 l	45,70
Rapeseed oil	refined, NEW extra pure	Oleum Rapae, Colza oil	**0754.1**	500 ml	13,90
			0754.2	1 l	20,35
			0754.3	2,5 l	38,60
			0754.4	10 l	91,30
	crude oil		**6964.1**	1 l	34,30
			6964.2	2,5 l	67,20
			6964.3	5 l	115,60
Soybean oil	refined, extra pure	Oleum Sojae	**3686.1**	1 l	23,15
			3686.3	2,5 l	40,35
			3686.4	5 l	60,10
			3686.2	10 l	109,15
Stearic oil	techn.		**9460.1**	1 l	30,65
Vaseline	Ph.Eur.		**5775.2**	500 g	18,20
			5775.1	1 kg	25,70
			5775.4	10 kg	127,40
Vaseline oil	techn., white		**9336.1**	1 l	24,20
			9336.2	2,5 l	41,85
			9336.3	5 l	67,65

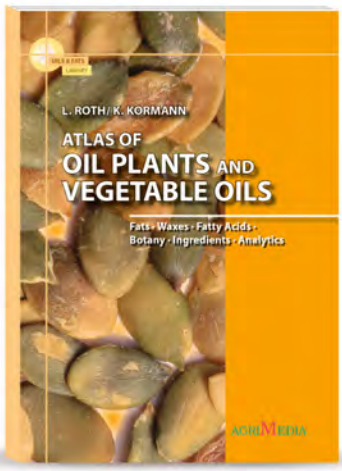
For additional product data and safety information, see chapter Chemicals A-Z.

Fatty Acids and Derivatives

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Arachidonic acid	>99 %		**4717.2**	10 mg	50,45
			4717.1	100 mg	114,50
			4717.1	100 mg	568,70
Arachidic acid	≥99 %, synth.	n-Eicosanoic acid	**8736.1**	1 g	53,65
Arachidic acid calcium salt	DAB	Calcium arachinate/-behenate	**9264.1**	500 g	32,15
			9264.2	1 kg	53,25
Azelaic acid	≥80 %	Nonanedioic acid	**5487.1**	25 g	22,05
			5487.2	100 g	54,75
5-Bromo-valeric acid	≥96 %	5-Bromo-pentanoic acid	**5466.1**	10 g	14,95
			5466.2	50 g	49,35
Butyric acid	≥99 %, for synthesis	Butanoic acide	**3277.1**	100 ml	16,70
			3277.2	1 l	64,40
Butyric acid ethyl ester	ROTICHROM® GC	Ethyl butyrate	**5572.1**	1 g	81,20
Butyric acid methyl ester	ROTICHROM® GC	Methyl butyrate	**5186.1**	1 g	80,55
Capric aldehyde	≥97 %, for synthesis	Decanal	**7547.1**	100 ml	116,00
Capric acid	≥98 %, for synthesis	Decanoic acid	**8797.1**	100 g	20,35
			8797.3	500 g	49,35
			8797.2	1 kg	85,50
	ROTICHROM® GC		**3164.1**	1 g	27,45
Capric acid isoamyl ester	ROTICHROM® GC	Isoamyl caprate	**4420.1**	1 g	81,20
Capric acid methyl ester	≥98 %, for synthesis	Decanoic acid methyl ester, Methyldecanoate	**3325.1**	100 ml	66,55
	ROTICHROM® GC		**6709.1**	1 g	85,90
Caproic aldehyde	≥98 %, for synthesis	Hexanal	**3327.1**	100 ml	39,70
Caproic acid	≥98 %, for synthesis	Hexanoic acid	**8799.1**	100 ml	18,85
			8799.3	500 ml	32,15
			8799.2	1 l	54,30
			8799.4	2,5 l	109,55
Caprylic acid	ROTICHROM® GC	n-Octanoic acid	**3168.1**	1 g	41,85
Caprylic acid methyl ester	≥99 %, for synthesis	Methyl caprylate, Octanoic acid methyl ester, Methyloctanoate	**3331.1**	10 ml	26,80
Cetyl alcohol	≥95 %	1-Hexadecanol, Alcohol C 16	**5762.1**	1 kg	52,15
Cetyl palmitate	synthetic	Spermaceti, Cetaceum	**9229.2**	100 g	18,20
			9229.1	1 kg	120,30
Cholesterol palmitate	≥97 %, pure		**3404.1**	5 g	48,95
Cholesterol stearate	≥97 %, pure		**3405.1**	5 g	34,30
Dodecyl aldehyde	≥98 %, for synthesis	Dodecanal, auraldehyde	**3754.1**	50 ml	50,00
Erucic acid	≥99 %	cis-13-Docosenoic acid	**7065.2**	250 mg	80,55
			7065.1	1 g	251,05
Erucic acid methyl ester	≥90 %	cis-13-Docosenoic acid methyl ester	**9431.1**	10 ml	68,70
			9431.2	50 ml	256,95
Glyceryl monostearate	pure		**3787.1**	500 g	21,40
Lanolin alcohols	Ph.Eur.	Lanae alcoholes	**5085.2**	500 g	93,00
			5085.1	1 kg	163,95
Lecithin	≥97 %, made from soybeans, GMO-free, for biochemistry	Phosphatidyl-choline	**AE81.1**	100 g	15,60
			AE81.2	250 g	25,70
			AE81.3	1 kg	66,15
	≥97 %, made from soybeans, for biochemistry		**9812.1**	250 g	21,40
			9812.3	1 kg	53,65
			9812.2	2,5 kg	120,30
	from eggs, for biochemistry		**7514.1**	25 g	42,90
			7514.2	100 g	118,80

Product	Purity	Synonym	Art. No.	Pack Qty.	€
Levulinic acid	≥98 %, for synthesis	4-Oxopentanoic acid, 3-Aceto-propionic acid	**3976.1**	50 g	14,95
			3976.2	500 g	81,60
Linolenic acid	~94 %	9,12,15-Octa-decatrienoic acid	**6039.1**	5 ml	95,60
	ROTICHROM® GC		**5320.1**	1 g	198,90
Linoleic acid	ROTICHROM® GC		**5315.1**	1 g	63,35
Linoleic acid ethyl ester	ROTICHROM® GC		**3198.1**	1 g	33,25
Linoleic acid methyl ester	≥99 %		**7217.1**	5 ml	50,00
			7217.2	50 ml	418,20
	ROTICHROM® GC		**3199.1**	1 g	36,45
Myristic acid	≥98 %, for biochemistry	Tetradecanoic acid	**6469.2**	100 g	12,80
			6469.3	500 g	32,15
			6469.1	1 kg	50,45
Myristic acid isopropyl ester	≥92 %, extra pure	Isopropyl myristate, IPM	**5527.1**	500 ml	35,40
Myristic acid methyl ester	≥99 %	Methyl myristate, Methyl tetra-decanoate	**3753.1**	50 ml	36,45
Oleic acid	≥99%, natural	cis-9-Octadece-noic acid	**7213.1**	5 ml	34,30
			7213.2	50 ml	238,55
	ROTICHROM® GC		**5362.1**	1 g	38,20
Oleic acid methyl ester	ROTICHROM® GC	Methyl oleate	**3186.1**	1 g	34,30
Oleic acid sodium salt	~90 %	Sodium oleate	**8856.1**	500 g	36,45
Palmitic acid	≥98 %, extra pure	Hexadecanoic acid	**5907.3**	500 g	21,00
			5907.1	1 kg	29,60
			5907.2	5 kg	103,75
Palmitic acid methyl ester	≥97 %	Methyl palmitate	**4459.1**	25 g	19,90
			4459.2	100 g	35,40
			4459.3	500 g	97,75
Pelargonic acid	≥97 %	Nonanoic acid	**7015.1**	50 ml	35,40
Pelargonic acid vanillylamide	≥97 %	Nonylvanylami-de, Nonivamide, so called synth. Capsaicin	**4462.1**	10 g	34,30
			4462.2	50 g	132,15
Pimelic acid	≥99 %	Heptanedioic acid	**5270.1**	25 g	31,10
			5270.2	50 g	45,70
Stearic acid	≥98 %	Octadecanoic acid	**9459.1**	1 kg	22,50
			9459.2	5 kg	88,05
Stearic acid butyl ester	for synthesis	Butyl stearate, Butyl octa-decanoate	**8150.2**	100 ml	13,90
			8150.1	1 l	40,75
			8150.3	2,5 l	78,40
Stearic acid lithium salt	pure	Lithium stearate, Lithium octa-decanoate	**8238.1**	500 g	30,00
Stearic acid methyl ester	for synthesis	Methyl stearate, Methyl octa-decanoate	**4704.1**	5 g	36,45
			4704.2	25 g	73,00
			4704.3	50 g	107,40
Stearic acid sodium salt	88-92 %	Sodium stearate, Sodium octa-decanoate	**8628.1**	1 kg	38,60
Stearyl alcohol	≥95 %	1-Octadecanol	**8663.2**	500 g	18,20
			8663.1	1 kg	26,80
Tributyrin	≥97 %, for biochemistry	Glyceryl tributyrate	**4813.1**	100 ml	82,70
Tricaprin	≥98 %	Glyceryl tricaproate	**7252.1**	10 g	128,50
Undecanoic acid methyl ester	≥98 %		**4866.1**	10 ml	66,55
n-Valeric acid	≥98 %	Pentanoic acid	**4874.1**	250 ml	31,75
n-Valeric acid methyl ester	≥98 %	Methyl-valerate	**4876.1**	100 ml	55,80
Zinc stearate	powder	Stearic acid zinc salt	**9295.1**	1 kg	41,85
			9295.5	25 kg	396,70

For additional product data and safety information, see chapter Chemicals A-Z.



ROTH BUCH

Atlas of oil plants and vegetable oils

L. Roth, K. Kormann
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This is a unique source of information on the world's over 50 individual oilseeds including major, minor, unexploited and non-edible oilcrops. Each crop is clearly presented in a portrait of the plant (botany, distribution, cultivation) including colour pictures, tabular data on nutritional composition and oil characteristics. The book discusses the composition, processing technologies and utilization in the processing of oilseeds into oil, protein products and other by-products.

Art. No.	Pack Qty.	Price incl. VAT. €
EP94.1	1	39,90

Essential oils

Essential oils are produced in the oil glands of plants and are stored in various plant tissues. They can be found in blossoms, leaves, seeds, husks, roots, resins and bark or in the wood of a plant. Essential oils are generally extracted from plant components by steam distillation.

Our essential oils are carefully manufactured from selected raw materials. Our **Natural oils** are composed of 80 % mother plant extracts. **Artificial oils** are manufactured from synthetic aromatic substances. The origin of the plant is specified via the country code.

Essential Oils

Product	Synonym	Purity	Art. No.	Pack Qty.	€
Oil of angelica roots	Oleum Angelicae e seminis	Hungarian, natural	**6587.1**	10 ml	69,80
Oil of aniseOil of anise	Oleum Anisi	natural	**7036.1**	100 ml	33,25
		artificial	**3278.2**	100 ml	15,60
			3278.1	500 ml	46,15
Oil of balm	Oleum Melissae indicum	natural	**6507.1**	100 ml	18,85
Oil of basil	Oleum Basilici	natural pure	**7039.1**	25 ml	47,20
Oil of bergamot	Oleum Bergamottae	natural	**6501.1**	50 ml	34,30
		artificial	**3282.2**	100 ml	23,55
			3282.1	250 ml	39,70
Oil of cajeput	Oleum Cajeput	natural	**6105.1**	100 ml	26,80
			6105.2	500 ml	67,20
Oil of camphor	Oleum Camphorae	light	**3357.1**	1 l	57,55
Oil of caraway	Oleum Carvi	natural	**7050.1**	25 ml	21,00
		artificial	**3307.1**	250 ml	37,10
Oil of cassia	Oleum Cassiae	natural, Chinese	**6593.1**	100 ml	40,75
Oil of cedar leaf	Oleum Foliorum cedri	pure	**6594.1**	100 ml	81,20
		artificial	**3291.2**	50 ml	20,35
			3291.1	250 ml	59,05
Oil of cedar wood	Oleum Ligni cedri	for microscopy	**5308.1**	100 ml	16,05
			5308.2	250 ml	24,20
			5308.3	500 ml	41,85
Oil of chamomile	Oleum Chamomillae	blue	**6504.1**	10 ml	68,70
	Oleum Chamomillae romanae	Roman, natural	**3354.1**	5 ml	40,35
	Oleum Chamomillae	artificial	**3305.1**	50 ml	56,45
Oil of cinnamon	Oleum Cinnamomi ceylanici	natural	**A432.2**	10 ml	17,75
			A432.1	50 ml	59,05
		artificial	**6512.1**	50 ml	29,60
Oil of citronella	Oleum Citronellae	natural	**6502.1**	250 ml	40,75
		artificial	**3292.1**	500 ml	34,30
Oil of clary-sage	Oleum Salviae sclareae	natural	**3355.1**	25 ml	44,65
Oil of cloves	Oleum Caryophyllorum	≥80 %, natural, rectified	**8662.1**	250 ml	38,60
			8662.2	1 l	121,40
Oil of celery	Apium graveoleus oil		**7040.2**	5 ml	23,55
			7040.1	25 ml	59,70
Oil of cembra pine	Oleum Cembrae	pure	**4208.2**	25 ml	17,75
			4208.1	100 ml	45,05
Oil of coriander	Oleum Coriandri	natural	**7052.1**	25 ml	22,50
Oil of cubeb	Litsea, Oleum Cubebarum	natural	**6608.1**	100 ml	26,80
Oil of cypress	Oleum Cupressi	French, natural	**6596.1**	100 ml	45,70
Oil of dill herb	Oleum Anethi e herba	natural pure	**6597.1**	100 ml	47,20
Oil of dill seed	Oleum Anethi e seminis	extra pure	**3352.1**	100 ml	44,65
Oil of estragon	Oleum Dracunculi	pure	**6602.1**	50 ml	77,30
Oil of eucalyptus	Oleum Eucalypti artificiale	nature identical	**3297.2**	500 ml	32,15
			3297.1	1 l	50,45

Essential Oils

Product	Synonym	Purity	Art. No.	Pack Qty.	€
Oil of fennel	Oleum Foeniculi	artificial	**3299.2**	100 ml	17,75
			3299.1	500 ml	45,70
Oil of fir needles	Oleum Pini	artificial	**3301.1**	500 ml	32,80
Oil of gardensage	Oleum Salviae	natural, Dalmatian	**7075.1**	50 ml	26,80
Oil of garlic	Oleum Allii sativi	natural	**3540.2**	50 ml	65,50
			3540.1	100 ml	120,95
Oil of geranium	Oleum Geranii	natural	**7054.1**	25 ml	23,55
Oil of grapefruit		natural	**6718.1**	250 ml	73,65
Hypericon oil	Oleum Hyperici	extra pure	**4501.1**	250 ml	31,10
	Hypericum perforatum	pure	**9404.1**	250 ml	26,80
Oil of juniper	Oleum Juniperi e baccis	pure	**7059.1**	25 ml	28,95
	Oleum Juniperi e ligno	natural	**7057.1**	25 ml	20,35
Oil of lavandin	Lavendula hybrida	French	**6603.1**	100 ml	30,65
Oil of lavender	Oleum Lavandulae	natural	**3367.1**	250 ml	50,45
Oil of lemon	Oleum Citri	natural	**5213.1**	100 ml	30,65
		Italian	**3797.2**	50 ml	54,30
			3797.1	100 ml	99,90
		low in terpenes	**6625.1**	50 ml	61,85
		artificial	**3346.1**	500 ml	44,65
Oil of lemon-grass	Cochin, Oleum Lemon-grass	natural pure	**6606.1**	100 ml	27,45
Oil of lovage	Oleum Levistici	pure	**6607.1**	10 ml	106,45
Oil of lime	Oleum Limettae, Lime oil	natural	**6721.1**	50 ml	25,70
Laurel oil	Oleum Lauri aetherum	essential, natural	**6609.1**	100 ml	66,15
	Oleum Lauri	artificial	**3314.1**	250 ml	48,30
Oil of mandarin	Oleum Mandarinae	Italian	**3796.1**	100 ml	47,85
Oil of mint	Oleum Menthae arvensis	Chinese, raw	**6730.2**	50 ml	17,75
			6730.1	250 ml	53,65
		Japanese, natural	**6731.2**	50 ml	20,35
			6731.1	250 ml	53,65
		rectified twice	**6732.1**	50 ml	23,55
			6732.2	250 ml	57,95
Musk oil		artificial	**3364.1**	100 ml	40,75
Oil of niaouli	Melaleuca viridiflora	natural	**6610.1**	100 ml	31,75
Oil of nutmeg	Oleum Myristicae aethereum	volatile	**7064.1**	50 ml	29,60
Oil of orange	Oleum Aurantii amari	bitter, Italian	**6509.1**	100 ml	38,60
	Oleum Aurantii	Brazilian	**3803.1**	100 ml	67,20
		Floridian	**6728.2**	250 ml	24,20
			6728.3	500 ml	40,35
			6728.1	1 l	65,05
	Oleum Aurantii dulcis	sweet, natural	**6611.1**	100 ml	46,15
Oil of orange flowers	Oleum Neroli	artificial	**3323.1**	50 ml	66,15
Oil of origanum	Oleum Origani cretici	natural	**6612.2**	25 ml	22,50
			6612.1	100 ml	58,60
Oil of palmarosa	Oleum Palmae rosae	East Indian	**6613.2**	25 ml	23,55
			6613.1	100 ml	46,15
Oil of parsley	Oleum Petroselini	French	**7072.1**	10 ml	23,55
Oil of patchouli	Oleum Patchouli	artificial	**6511.2**	25 ml	22,50
			6511.1	100 ml	57,95
Oil of petitgrain	Oleum Petitgrain americ.	South American	**6614.1**	100 ml	45,70
Oil of peppermint	Oleum Menthae piperitae	pure	**9318.1**	50 ml	24,20
		artificial	**3329.2**	100 ml	17,75
			3329.1	500 ml	45,70
Oil of peppermint Italian	Oleum Menthae piperitae	pure	**7063.1**	25 ml	28,95
Oil of pepper	Oleum Piperis	natural	**6616.2**	25 ml	33,25
			6616.1	100 ml	93,45
Oil of rose	Oleum Rosae	Bulgarian, natural	**5733.1**	1 ml	45,05
			5733.2	10 ml	321,45
		artificial	**4092.1**	10 ml	27,45
Oil of rosemary	Oleum Rosmarini	Spanish	**6514.1**	100 ml	28,95
		Morrocan	**3764.1**	100 ml	25,30
		artificial	**3336.2**	100 ml	17,10
			3336.1	500 ml	45,05
Oil of rose-wood	Oleum Ligni Rhodii	nature identical	**3275.2**	50 ml	36,05
			3275.1	100 ml	66,15
Oil of sandal-wood	Oleum Santali	West Indian	**6620.2**	25 ml	17,75
			6620.1	100 ml	45,05
	Oleum Ligni Santali artificiale	artificial	**3341.2**	50 ml	20,35
			3341.1	250 ml	53,65

Product	Synonym	Purity	Art. No.	Pack Qty.	€
Oil of Scotch pine needles	Oleum Pini silvestris	natural	**7073.1**	100 ml	31,10
		artificial	**3306.2**	250 ml	23,55
			3306.1	500 ml	44,00
Oil of silver fir	Oleum Abietis	artificial	**3295.1**	250 ml	30,65
Oil of silver fir cones	Oleum Templini	natural	**6598.1**	100 ml	52,60
Oil of silver fir needles	Oleum Abietis	natural	**3353.1**	100 ml	40,75
Oil of spike	Oleum Spicae	natural pure	**7079.1**	50 ml	27,85
Oil of tea tree	Melaleuca alternifolia aetheroleum	Australian, natural	**K032.1**	50 ml	26,80
Oil of tansy	Oleum Tanaceti	pure	**7081.2**	5 ml	17,10
			7081.1	25 ml	45,05
Oil of thyme	Oleum Thymi	natural	**K500.1**	50 ml	41,40
		natural/nature identical	**6513.1**	100 ml	22,50
Oil of valerian	Oleum Valerianae	natural pure	**6588.2**	10 ml	47,20
			6588.3	25 ml	102,70
			6588.1	50 ml	181,70
	Oleum Valerianae artificiale	artificial	**3279.1**	100 ml	33,25
Oil of vetiver	Oleum Vetiverae	natural	**6622.2**	10 ml	17,75
			6622.1	50 ml	45,05
Oil of wintergreen	Oleum Gaultheriae	artificial	**7053.1**	100 ml	32,80
Oil of wormwood	Oleum Absinthii	natural	**6909.1**	10 ml	21,40
Oil of ylang-ylang	Oleum Anonae	Comorian, natural	**6624.2**	25 ml	42,90
			6624.1	100 ml	153,65
		artificial	**3343.2**	50 ml	17,75
			3343.1	250 ml	59,05

For additional product data and safety information, see chapter Chemicals A-Z.

Sugar (Carbohydrates)

Carbohydrates or **Saccharides** make 50 % of the dry biomass of the earth and therefore are the most frequent class of biomolecules. Besides at least two hydroxy groups, they also have an aldehyde or a ketone group and can be subdivided according to the number of monomeric components in mono-, di-, oligo and polysaccharides.

Mono-, di- and oligosaccharides are soluble in water, taste sweet and hence are called sugar, whereas polysaccharides are hardly, if not at all, soluble in water and have a neutral taste.

Carbohydrates, together with fats and proteins make up a large percentage of nutrition. In addition to their central role as an energy source, they are also an important structural component especially in plants (e.g. cellulose). Ribose, a monosaccaride with five carbons ($C_5H_{10}O_5$) is an essential element of coenzymes (such as ATP, FAD and NAD) and a structural component of RNA. Desoxyribose (a ribose derivative) is a structural component of DNA.

Monosaccharides

Monosaccharides are the simplest carbohydrates that cannot be hydrolysed further. They consist of one sugar unit (monosaccharide). The general formula for unmodified monosaccharides is $C_n(H_2O)_m$. The most important representatives of monosaccharides are glucose and fructose.

Product	Purity	Art. No.	Pack Qty.	€
N-Acetyl-D-galactosamine	≥99 %, for biochemistry	**4114.1**	250 mg	33,25
		4114.2	1 g	101,60
N-Acetyl-D-glucosamine	≥98 %, for biochemistry	**8993.3**	5 g	16,05
		8993.2	25 g	41,40
		8993.1	50 g	72,60
		8993.4	100 g	113,45
N-Acetyl-D-mannosamine	≥98 %	**5525.1**	250 mg	15,60
		5525.2	1 g	46,15
		5525.3	5 g	150,00
N-Acetylneuraminic acid	≥99 %, for biochemistry	**7480.1**	100 mg	24,65
		7480.2	500 mg	72,60
		7480.3	1 g	118,80
		7480.4	5 g	360,15
D-Allose	≥99 %	**6010.2**	50 mg	31,10
		6010.1	100 mg	42,90
DL-Arabinose	≥99 %, for biochemistry	**8954.1**	10 g	32,80
		8954.2	50 g	94,10
L(+)-Arabinose	≥99 %, for biochemistry	**5118.1**	50 g	41,85
		5118.2	100 g	65,50
		5118.3	250 g	130,00
		5118.4	500 g	198,90
		5118.5	1 kg	299,95
D(+)-Arabitol	≥99 %, for biochemistry	**5510.3**	5 g	38,60
		5510.1	25 g	121,40
		5510.2	50 g	188,15
L(-)-Arabitol	for biochemistry	**7738.1**	1 g	22,50
		7738.2	5 g	60,10
α-Chloralose	(≤20 % β-Anomer)	**3363.2**	25 g	19,90
		3363.1	100 g	59,05
		3363.3	250 g	120,30
2-Deoxy-D-galactose	≥99 %, for biochemistry	**9916.1**	250 mg	24,65
		9916.2	1 g	48,95
		9916.3	5 g	177,40

Product	Purity	Art. No.	Pack Qty.	€
2-Deoxy-D-glucose	≥98 %, for biochemistry	**CN96.1**	50 mg	17,75
		CN96.2	1 g	40,75
		CN96.3	5 g	141,80
2-Deoxy-D-ribose	≥99 %, for biochemistry	**CN97.1**	5 g	42,90
		CN97.2	10 g	71,50
		CN97.3	25 g	153,65
Dulcitol	≥99 %, for biochemistry	**4944.2**	10 g	18,20
		4944.1	50 g	60,10
Esculin sesquihydrate	≥97,5 %, DAB, for biochemistry	**8704.1**	5 g	21,40
		8704.2	25 g	88,05
		8704.3	50 g	152,55
		8704.4	100 g	263,40
D(-)-Fructose	≥99,5%, for biochemistry	**4981.1**	500 g	16,70
		4981.4	1 kg	25,70
		4981.2	2,5 kg	53,65
		4981.5	5 kg	70,45
		4981.6	10 kg	92,35
		4981.3	25 kg	191,25
D-Fructose-1,6-diphosphate trisodium salt octahydrate	≥98 %, for biochemistry	**4982.1**	1 g	18,85
		4982.2	5 g	34,95
		4982.3	25 g	104,20
L(-)-Fucose	≥95 %, for biochemistry	**KK10.1**	1 g	31,10
		KK10.2	5 g	99,90
		KK10.3	25 g	418,20
D(+)-Galactose	CELLPURE® ≥99 %	**8878.1**	10 g	30,00
		8878.2	25 g	57,95
		8878.3	50 g	105,25
		8878.4	100 g	197,30
	≥98 %, for biochemistry	**4987.1**	100 g	27,45
		4987.2	500 g	93,45
		4987.3	1 kg	160,10
α-D-Galactose-1-phosphate dipotassium salt pentahydrate	≥99 %, for biochemistry	**5550.1**	25 mg	30,00
		5550.2	100 mg	101,60
D(+)-Glucose	p.a., ACS, anhydrous	**X997.1**	250 g	14,55
		X997.2	1 kg	33,90
		X997.3	2,5 kg	69,80
		X997.4	5 kg	121,40
		X997.5	25 kg	551,40
	CELLPURE® ≥99,5 %, anhydrous	**HN06.1**	250 g	13,90
		HN06.2	500 g	22,50
		HN06.3	1 kg	33,25
		HN06.4	5 kg	107,40

Product	Purity	Art. No.	Pack Qty.	€
L(-)-Glucose	≥98 %, for biochemistry	**7509.1**	100 mg	31,10
		7509.2	500 mg	74,75
		7509.3	1 g	124,20
D(+)-Glucose monohydrate	≥99,5 %, Ph.Eur.	**6780.1**	1 kg	19,90
		6780.2	5 kg	68,70
		6780.4	10 kg	113,45
		6780.3	50 kg	332,75
	for microbiology	**6887.1**	1 kg	19,25
		6887.2	2,5 kg	40,75
		6887.3	5 kg	65,50
		6887.5	25 kg	177,40
α-D-Glucose-1-phosphate disodium salt tetrahydrate	≥98 %, for biochemistry	**6119.1**	1 g	33,25
		6119.2	10 g	209,65
D-Glucose-6-phosphate monosodium salt	≥98 %, for biochemistry	**5544.1**	1 g	47,20
		5544.2	5 g	167,20
D-Glucose-6-phosphate disodium dihydrate	≥98 %, for biochemistry	**CN72.1**	1 g	31,75
		CN72.2	5 g	107,40
		CN72.3	10 g	192,45
D-Glucuronic acid	≥98 %, for biochemistry	**4124.1**	1 g	18,85
		4124.2	5 g	40,75
		4124.3	10 g	67,65
		4124.4	25 g	115,60
D-Glucuronic acid sodium salt monohydrate	≥99 %, for biochemistry	**4355.1**	10 g	42,90
		4355.2	25 g	74,10
3-Indoxyl-β-D-glucopyranoside	≥99 %, for biochemistry	**4243.1**	250 mg	57,95
		4243.2	500 mg	103,75
		4243.3	1 g	181,70
meso-Inositol	≥99 %, p.a.	**6329.2**	10 g	25,70
		6329.1	100 g	166,55
	≥99 %, for biochemistry	**4191.1**	50 g	25,70
		4191.2	100 g	40,35
		4191.3	250 g	84,85
D(-)-Mannitol	CELLPURE® ≥97 %	**8883.1**	100 g	25,70
		8883.3	250 g	52,15
		8883.2	500 g	92,35
	≥98 %, Ph.Eur., USP, BP, or biochemistry	**4175.1**	1 kg	71,50
		4175.2	5 kg	279,00
D(+)-Mannose	CELLPURE® ≥98 %	**8887.1**	10 g	28,95
		8887.2	25 g	56,90
		8887.3	50 g	99,90
		8887.4	100 g	181,70
	≥99,5 %, for biochemistry	**4220.1**	10 g	21,40
		4220.2	50 g	52,15
L(+)-Rhamnose monohydrate	≥98 %, for biochemistry	**4655.1**	5 g	31,75
		4655.2	25 g	85,90
D(-)-Ribose	≥98 %, for biochemistry	**7168.1**	10 g	20,35
		7168.3	25 g	40,35
		7168.2	100 g	103,75
D-Sorbitol	≥98 %, for biochemistry	**6213.1**	1 kg	25,70
		6213.2	5 kg	71,50
		6213.3	10 kg	130,00
L(-)-Sorbose	≥98 %, for biochemistry	**4028.2**	25 g	47,20
		4028.3	50 g	81,60
		4028.1	100 g	117,75
D-Tagatose	≥98,5 %, for biochemistry	**6161.1**	1 g	181,70
		6161.2	5 g	783,70
Xylitol	≥98,5 %, Ph.Eur., for biochemistry	**9711.1**	250 g	23,15
		9711.3	500 g	43,55
		9711.2	1 kg	84,85
		9711.4	2,5 kg	161,25
D(+)-Xylose	≥99 %, for biochemistry	**5537.1**	100 g	23,15
		5537.2	500 g	74,75
		5537.3	1 kg	113,85
L-Xylose	≥99 %, for biochemistry	**4061.3**	1 g	29,60
		4061.1	5 g	110,65
		4061.2	10 g	170,95

For additional product data and safety information, see chapter Chemicals A-Z.

Disaccharides

Disaccharides consist of two monosaccharide units. These are interlinked covalently via a glycosidic bond. The most familiar representatives are saccharose, lactose and maltose.

Product	Purity	Art. No.	Pack Qty.	€
D(+)-Cellobiose	≥98 %, for biochemistry	**5840.1**	5 g	18,85
		5840.3	25 g	57,55
		5840.2	100 g	204,80
α-D-Cellobiose octaacetate	≥98 %, for biochemistry	**5463.1**	5 g	28,95
		5463.2	25 g	98,80
β-D-Gentiobiose	≥98 %, for biochemistry	**4123.4**	100 mg	38,60
		4123.1	250 mg	87,00
		4123.2	500 mg	155,90
		4123.3	1 g	278,45
Isomaltulose	≥99 %, for biochemistry	**8400.1**	25 g	30,00
		8400.2	100 g	84,85
Lactobionic acid	≥98 %	**9242.1**	10 g	36,45
α-Lactose monohydrate	Ph.Eur., for biochemistry	**8921.1**	1 kg	22,50
		8921.2	5 kg	81,20
		8921.3	10 kg	138,70
		8921.5	25 kg	321,45
	for microbiology	**6868.1**	1 kg	25,70
		6868.2	5 kg	88,05
		6868.4	10 kg	148,25
		6868.3	50 kg	557,95
Lactulose	≥98 %, for biochemistry	**CN98.1**	10 g	26,35
		CN98.2	25 g	51,50
		CN98.3	50 g	92,35
D(+)-Maltose monohydrate	CELLPURE® ≥97 %	**8882.1**	25 g	24,20
		8882.2	100 g	54,30
		8882.3	250 g	91,30
		8882.4	500 g	160,75
	≥92 %, for biochemistry	**8951.1**	100 g	22,05
		8951.2	250 g	37,55
		8951.3	500 g	67,65
		8951.4	1 kg	101,60
D(+)-Melibiose monohydrate	≥99 %, for biochemistry	**4223.1**	2,5 g	30,65
		4223.3	10 g	76,25
		4223.2	50 g	267,70
D(+)-Saccharose	CELLPURE®	**8890.1**	50 g	17,75
		8890.2	100 g	26,80
		8890.3	250 g	50,00
		8890.4	500 g	93,45
	≥99,5 %, p.a.	**4621.1**	1 kg	20,35
		4621.2	5 kg	86,55
		4621.3	10 kg	109,55
		4621.5	25 kg	198,90
	≥99,5 %, Ph.Eur.	**4661.1**	1 kg	19,90
		4661.2	5 kg	82,25
		4661.4	10 kg	100,95
		4661.3	50 kg	317,15
	≥99,7 %, powdered	**9286.1**	1 kg	18,85
		9286.2	5 kg	67,20
	≥99,5 %, RNase/ DNase free	**9097.1**	1 kg	37,55
		9097.2	5 kg	160,20
D(+)-Trehalose dihydrate	CELLPURE® ≥98 %	**8897.1**	10 g	30,00
		8897.2	25 g	51,10
		8897.3	50 g	81,60
		8897.4	100 g	145,05
	≥99 %, for biochemistry	**5151.1**	5 g	13,90
		5151.2	25 g	38,60
		5151.4	50 g	65,05
		5151.3	250 g	300,50

Oligo- and Polysaccharides

Oligosaccharides consist of three to nine monosaccharide units.

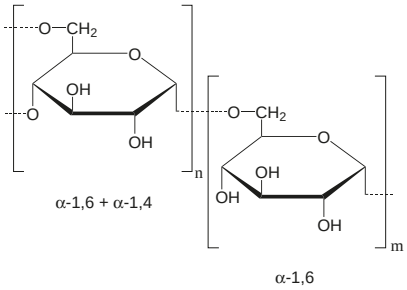
Polysaccharides are macromolecular substances that consist of ≥10 monosaccharide units. A distinction is made between homoglycans, which are made up of only one type of monosaccharides (e.g. starch) and heteroglycans, which consist of at least two different monomeric components (e.g. xanthan).

Product	Purity	Art. No.	Pack Qty.	€
Alginic acid	≥98 %, for biochemistry	**8696.1**	250 g	31,10
		8696.3	1 kg	96,25
		8696.2	2,5 kg	214,50
Alginic acid ammonium salt	for biochemistry	**7317.1**	250 g	33,25
		7317.2	1 kg	92,35
Alginic acid sodium salt	for biochemistry	**9180.1**	250 g	30,00
		9180.2	1 kg	81,60
Amylopectin	for biochemistry	**8545.1**	500 g	26,80
		8545.2	1 kg	35,40
		8545.3	2,5 kg	57,95
Cellulose	for column chromatography	**5873.3**	100 g	15,90
		5873.1	500 g	38,50
		5873.2	1 kg	60,90
Cellulose acetate	pure	**4458.1**	250 g	30,00
Chitin	from crab shells	**8845.1**	100 g	40,75
		8845.2	1 kg	298,75
Chitosan	for biochemistry	**5375.1**	10 g	35,40
α-Cyclodextrin	≥98 %, for biochemistry	**4122.1**	5 g	22,05
		4122.2	25 g	71,95
		4122.3	50 g	117,75
Dextrin	white, extra pure	**6778.3**	500 g	17,75
		6778.1	1 kg	27,45
		6778.4	2,5 kg	55,80
		6778.2	5 kg	103,10
	yellow, extra pure	**6777.3**	500 g	12,40
		6777.1	1 kg	17,75
		6777.4	2,5 kg	34,30
		6777.2	5 kg	62,25
	for microbiology	**3488.2**	100 g	21,40
		3488.1	250 g	36,05

Product	Purity	Art. No.	Pack Qty.	€
Glycogen	lyophilised, from oysters	**HP51.1**	1 g	25,70
		HP51.2	5 g	99,90
		HP51.3	10 g	171,50
		HP51.4	25 g	365,00
Heparin sodium salt	≥180 I.U./mg, Ph.Eur., from porcine intestine mucosa	**7692.1**	1 g	74,10
		7692.2	5 g	321,45
		7692.3	25 g	1424,40
Maltodextrin 4,0-7,0 NEW	for biochemistry	**2260.2**	100 g	38,60
		2260.1	25 g	16,05
		2260.3	250 g	73,00
Maltodextrin 16,5-19,5 NEW	for biochemistry	**2270.3**	250 g	107,40
		2270.2	100 g	32,15
		2270.1	25 g	14,95
D(+)-Melezitose monohydrate	≥99 %, for biochemistry	**4222.1**	2,5 g	22,50
		4222.2	25 g	84,85
		4222.3	50 g	155,90
		4222.4	100 g	289,20
D(+)-Raffinose pentahydrate	≥98 %, for biochemistry	**5241.1**	10 g	22,50
		5241.4	25 g	42,50
		5241.2	50 g	73,00
		5241.3	100 g	117,75
Starch from potatoes, soluble	p.a., ACS	**2045.1**	100 g	22,50
		2045.2	250 g	37,55
		2045.3	1 kg	124,60
Starch, soluble	soluble	**4701.1**	1 kg	24,65
		4701.2	5 kg	82,25
Starch from potatoes	extra pure	**9441.1**	1 kg	19,25
		9441.2	5 kg	59,05
Starch from corn	extra pure	**9444.1**	1 kg	21,40
		9444.2	5 kg	75,15
Starch from rice	extra pure	**9368.1**	1 kg	27,45
		9368.2	5 kg	100,95
Starch from wheat	extra pure	**9447.1**	1 kg	24,20
		9447.2	5 kg	74,10
Xanthan	extra pure	**3557.2**	100 g	22,05
		3557.1	500 g	66,55
Xylan	from beechwood	**4414.2**	10 g	27,85
		4414.1	50 g	59,05
		4414.3	100 g	100,95
		4414.4	250 g	209,65
	≥95 % xylooligosaccharides, from corncob	**8659.2**	10 g	15,60
		8659.1	50 g	36,45
		8659.3	250 g	144,60

For additional product data and safety information, see chapter Chemicals A-Z.

Dextrans



Dextrans are highly branched macromolecular biopolysaccharides. They consist exclusively of glucose monomers and belong to the homoglycans. Natural dextrans have molecular masses between 10 and 50,000 kg/mol.

Dextrans are soluble in water, whereby the solubility depends on the molecular mass. Here, highly viscous, gel-like liquids are formed. Due to the very broad molecular mass distribution of the various dextrans and the associated differences in terms of solubility in water, dextrans have numerous applications.

Thanks to their special properties, dextrans play an important role in many areas. For instance, dextrans are used in chromatography, both as a carrier in affinity chromatography and (in a modified form) for Gel Permeation Chromatography (GPC). Furthermore, they are used as a measurement standard in membrane technology and in adhesives as well as coatings, or as an auxiliary material for paper and textile manufacture.

Product	Purity	Art. No.	Pack Qty.	€
Dextran 2,5	for biochemistry	**8718.1**	10 g	30,00
		8718.2	100 g	115,60
		8718.3	500 g	439,70
Dextran 6	for biochemistry	**7615.1**	10 g	16,05
		7615.2	100 g	57,95
		7615.3	500 g	239,20
Dextran 10	for biochemistry	**7616.1**	10 g	16,05
		7616.2	100 g	57,95
		7616.3	500 g	239,20
Dextran 20	for biochemistry	**7617.1**	10 g	16,05
		7617.2	100 g	57,95
		7617.3	500 g	239,20
Dextran 35	for biochemistry	**8943.2**	10 g	16,05
		8943.1	50 g	46,15
		8943.3	100 g	75,15
Dextran 40	for biochemistry	**7626.1**	10 g	11,75
		7626.2	100 g	36,45
		7626.3	250 g	75,15
		7626.4	500 g	132,15
	extra pure	**9227.3**	10 g	16,05
		9227.1	100 g	42,50
		9227.4	250 g	85,50
		9227.2	500 g	142,90
Dextran 60 NEW	for biochemistry	**2247.1**	10 g	15,60
		2247.2	100 g	53,65
		2247.3	250 g	75,15
		2247.4	500 g	128,90
Dextran 70	extra pure	**9228.3**	10 g	17,75
		9228.1	100 g	63,35
		9228.4	250 g	125,70
		9228.2	500 g	232,10
Dextran 100	for biochemistry	**7618.1**	10 g	16,05
		7618.2	100 g	57,95
		7618.3	500 g	239,20
Dextran 150	for biochemistry	**7619.1**	10 g	16,05
		7619.2	100 g	57,95
		7619.3	500 g	239,20

Product	Purity	Art. No.	Pack Qty.	€
Dextran 250	for biochemistry	**9233.3**	10 g	35,40
		9233.1	100 g	178,35
		9233.2	500 g	762,20
Dextran 500	for biochemistry	**9219.3**	10 g	25,30
		9219.1	100 g	84,40
		9219.2	500 g	353,70
Dextran sulphate 8 sodium salt	for biochemistry	**7610.1**	10 g	31,10
		7610.2	25 g	57,95
		7610.3	50 g	102,05
		7610.4	100 g	188,05
Dextran sulphate 40 sodium salt	for biochemistry	**7612.1**	10 g	31,10
		7612.2	25 g	57,95
		7612.3	50 g	102,05
		7612.4	100 g	188,05
Dextran sulphate 500 sodium salt	for biochemistry and molecular biology	**5956.5**	10 g	31,10
		5956.3	25 g	60,10
		5956.4	50 g	103,10
		5956.1	100 g	196,20
		5956.2	500 g	858,95

For additional product data and safety information, see chapter Chemicals A-Z.

DEAE Dextran

for biochemistry

Transfection reagent
Diethylaminoethyldextran
M ~500000 g/mol

Guarantee analysis:

Appearance. ..... white to off-white powder
Loss on drying. ..... ≤10 %
pH value (5 % in water). 5,0-7,0
Nitrogen content (N). ..... 3,0-3,8 %
Sulphated ash. ..... ≤2 %
Free DEAE-Cl. ..... ≤0,002 %

4198.1	25 g	plastic	57,95 €
4198.2	100 g	plastic	183,30 €

Vitamins

Vitamins are involved in many metabolic reactions. We can supply a range of high-purity substances suitable for biochemical applications in research and development.

Product	Purity	Synonym	Art. No.	Pack Qty.	€
4-Aminobenzoic acid	≥98,5 %, for synthesis	PABA, p-Aminobenzoic acid, Vitamin B_{10}	**0979.1**	50 g	17,10
			0979.2	250 g	34,30
			0979.3	1 kg	91,95
L(+)-Ascorbic acid	≥99 %, p.a.	Vitamin C	**3525.1**	100 g	12,80
			3525.2	250 g	18,20
			3525.3	500 g	28,50
	≥99 %, Ph.Eur., USP, BP		**6288.1**	100 g	13,45
			6288.2	250 g	21,00
			6288.3	1 kg	64,40
L(+)-Ascorbic acid sodium salt	≥99 %, USP, for biochemistry	Sodium L(+)-ascorbate	**3149.1**	100 g	25,30
			3149.2	500 g	75,15
D(+)-Biotin	≥98,5 %, Ph.Eur., for biochemistry	Vitamin H	**3822.2**	500 mg	32,15
			3822.1	1 g	57,95
			3822.3	5 g	170,95
			3822.4	10 g	289,20
			3822.5	25 g	536,45
Calcium D(+)-pantothenate	≥98 %, Ph.Eur., for biochemistry	D(+)-Pantothenic acid calcium salt, Vitamin B_5 calcium salt	**3812.2**	100 g	27,85
			3812.1	250 g	49,35
Folic acid	≥96 %, for biochemistry	Vitamin B_9, Pteroyl glutamic acid	**T912.1**	25 g	43,55
			T912.2	50 g	76,90
Nicotinic acid	≥99,5 %, for biochemistry	3-Pyridinecarboxylic acid, Niacin, Vitamin B_3	**3815.1**	100 g	32,80
			3815.2	250 g	66,55
Pyridoxine hydrochloride	≥99 %, for biochemistry	Vitamin B_6-hydrochloride, Adermine hydrochloride	**T914.1**	50 g	30,00
			T914.2	100 g	51,50
Riboflavine	≥97 %, Ph.Eur., for biochemistry	Lactoflavine, Vitamin B_2	**9607.1**	25 g	31,10
			9607.2	50 g	51,50
			9607.3	100 g	89,15
			9607.4	250 g	160,20
Thiamine hydrochloride	≥98,5 %, for biochemistry	Thiamine chloride hydrochloride, Vitamin B_1 hydrochloride, Aneurine	**T911.1**	25 g	22,05
			T911.2	100 g	55,80
			T911.3	250 g	122,45
DL-α-Tocopherol	≥96 %, Ph.Eur., oily	Vitamin E	**3806.2**	25 g	32,15
			3806.1	100 g	83,75
			3806.3	250 g	170,95
DL-α-Tocopherol acetate	≥96,5 %, Ph.Eur., oily	Vitamin E acetate	**3805.2**	25 g	28,95
			3805.1	100 g	75,15
			3805.3	250 g	177,40
Vitamin B_{12}	≥96 %, for biochemistry	Cyanocobalamin	**T915.1**	500 mg	44,00
			T915.2	1 g	74,75
			T915.3	2,5 g	160,20
Vitamin K_1	≥97 %, for biochemistry	Phytomenadione, Phylloquinone	**3804.1**	1 g	30,00
			3804.3	5 g	97,30
			3804.2	10 g	169,35

For additional product data and safety information, see chapter Chemicals A-Z.

Chromatography

Gas Chromatography
GC Capillary Columns 1622
GC Septa 1627
Derivatisation Reagents 1628
GC Ultra Grade Solvents 1629
Pestilyse® plus Solvents 1630
Pestilyse® Solvents 1631
Headspace Grade Solvents 1632

Thin Layer Chromatography
TLC Plates 1633
Silica Gels for TLC 1634
TLC Spray Solutions 1639
Detection Reagents 1640
Solvents for TLC 1641
Accessories 1642

Paper Chromatography 1643

Ion Chromatography
Standards for IC 1644

Liquid Chromatography
Columns for HPLC 1646
Ion Pair Reagents 1647
Ultra LC-MS Solvents 1648
LC-MS Grade Solvents 1649
HPLC Solvents 1650
LC-MS Eluent Mixtures 1653

Sample Preparation
Sorbents 1654
Silica Gels 1655
Further Sorbents 1656
Flash Chromatography 1658
Solid Phase Extraction (SPE) 1660
QuEChERS Products 1669

ROTI®CAP High Performance Capillary Columns

Made in Germany

The ROTH series of high performance capillary columns for gas chromatography, ROTI® CAP are well established and set standards:

Low column bleed
Modern manufacturing processes offer capillaries with lower bleed levels, which are especially suitable for GC-MS. Less column bleed yields increased sensitivity and accuracy through a better signal to noise ratio for any kind of detector. Further reduced column bleed improves detectability of analytes in qualitative and quantitative GC-MS analysis.

High thermal stability
Due to high temperature stability ROTI®CAP capillary columns can be operated at about 40 °C higher temperatures compared to standard phases. Thanks to these elevated working temperatures, high-boiling components, which exhibit very long retention times and wide peaks on standard phases, elute earlier and show a better peak shape.

High inert columns due to optimised deactivation
Polar compounds are often difficult to analyse, because they are prone to tailing.
Advances in deactivation technology for the ROTI®CAP capillary columns result in an excellent chromatographic performance yielding improved peak shapes of polar compounds combined with improved efficiency and sensitivity.

In order to guarantee best industry standard capillaries with highest reproducibility from column to column ROTI®CAP capillary columns have to meet high specifications.
Within the **quality control** the following parameters are determined:
- **Separation Efficiency** by measuring the separation number (acc. to Kaiser) in a temperature programme
- **Polarity** by measuring retention indices
- **Bleeding** in a temperature programme with a test mixture including high-boiling hydrocarbons
- **Inertness** by measuring the peak height ratio for decylamine/C-12 (for non-polar to medium polar phases)

Overview ROTI®CAP capillary columns:

GC capillary columns by ROTH	Configuration of the column	USP phase	Similar phases	Polarity
ROTI®CAP-1	100 % dimethylpolysiloxane	G1/G2/G38	OV-1, DB-1, SE-30, HP-1, SPB®-1, CP-Sil 5 CB, Rtx®-1, 007-1, BP1, MDN-1, AT™-1, ZB 1, OV 101	lowest
ROTI®CAP-1 MS	100 % dimethylpolysiloxane	G1/G2/G38	Ultra 1, DB-1 MS, Rtx®-1 MS, HP-1 MS, Equity®-1, AT™-1 MS, VF-1 MS, CP-Sil 5 CBMS	
ROTI®CAP-5	5 % phenyl - 95 % methylpolysiloxane	G27/G36	SE-54, SE-52, HP-5, SPB®-5, CP-Sil 8, Rtx®-5, 007-5, BP5, MDN-5, AT™-5, ZB-5	
ROTI®CAP-5 MS	5 % phenyl - 95 % dimethylpolysiloxane		DB-5, B-5 MS, HP-5 MS, Ultra-2, Equity®-5, CP-Sil 8CB low bleed/MS, Rtx®-5SIL-MS, Rtx®-5 MS, 007-5 MS, BPX-5, MDN-5S, AT™-5 MS, VF-5MS	
ROTI®CAP-5 MS Ultra	silarylene phase with selectivity similar to 5 % phenyl - 95 % methylpolysiloxane	G27/G36		
ROTI®CAP-5 HT	silarylene phase with selectivity similar to 5 % phenyl - 95 % methylpolysiloxane	G27/G36	DB-5 HT, VF-5 HT, HT-5, XTI-5HT, ZB-5HT	
ROTI®CAP-624	6 % cyanopropyl-phenyl - 94 % dimethylpolysiloxane	G43	HP-624, HP-VOC, DB-624, DB-VRX, SPB-624, CP-624, Rtx®-624, Rtx®-Volatiles, 007-624, BP624, VOCOL	
ROTI®CAP-1701	14 % cyanopropyl-phenyl - 86 % dimethylpolysiloxane	G46	OV-1701, DB-1701, CP Sil 19 CB, HP-1701, Rtx®-1701, SPB®-1701, 007-1701, BP10, ZB-1701	
ROTI®CAP-1701 MS	silylarylene phase with selectivity similar to 14 % cyanopropyl-phenyl - 86 % dimethylpolysiloxane	G46	VF-1701ms, TG-1701MS, OV-1701, DB-1701, HP-1701, Rtx®-1701, SPB®-1701, CP-Sil 19 CB, 007-1701, BP10, ZB-1701	
ROTI®CAP-35 MS	silylarylene phase with selectivity similar to 35 % phenyl - 65 % methylpolysiloxane	G42/G28/ G32	DB-35 MS, HP-35, SPB®-35, Rtx®-35, 007-35, BPX-35, MDN-35, AT™-35 MS, ZB-35, OV-11, VF-35 MS	
ROTI®CAP-WAX	polyethylene glycol 20000 dalton	G16	DB-Wax, Supelcowax®, HP-Wax, HP-INNOWax, Rtx®-Wax, Stabilwax®, CP-Wax 52 CB, 007-CW, BP20, AT™-Wax, ZB-Wax	
ROTI®CAP-FFAP	polyethylene glycol-2-nitroterephthalate	G35/G25	DB-FFAP, HP-FFAP, CP-Wax 58 FFAP CB, 007-FAP, CP-FFAP CB, Nukol, AT 1000, SPB®-1000, BP 21, OV-351	highest

GC capillary column ROTI®CAP-1

100 % Dimethylpolysiloxane

- **Non-polar**
- Solvent rinsing applicable
- **Working temperature limits:**
  for columns with 0,10 - 0,32 mm inner diameter and films <3 µm:
  340 °C for isothermal operation
  360 °C for short isotherms in a temperatur programme
  for columns with 0,53 mm inner diameter and films <3 µm:
  320 °C for isothermal operation
  340 °C for short isotherms in a temperature programme
  for thick film columns with films >3 µm:
  300 °C for isothermal operation
  320 °C for short isotherms in a temperature programme
- **Application areas:** Excellent column for routine applications.

- **Similar phases:** OV-1, DB-1, SE-30, HP-1, SPB®-1, CP-SIL 5 CB, Rtx®-1, 007-1, BP1, MDN-1, AT™-1, ZB-1, OV-101
- Equivalent to USP phases G1/G2/G38

Length (m)	Innner ∅ (mm)	Film thickness (µm)	Art. No.	Pack Qty.	€
10	0,10	0,10	**6077.1**	1	289,00
10	0,25	0,10	**6079.1**	1	239,00
10	0,25	0,25	**6081.1**	1	239,00
10	0,25	0,50	**6085.1**	1	239,00
10	0,32	0,10	**6086.1**	1	255,00
10	0,32	0,25	**6087.1**	1	255,00
10	0,32	0,50	**6088.1**	1	255,00
10	0,32	1,00	**6095.1**	1	255,00
10	0,32	5,00	**6097.1**	1	255,00
10	0,53	1,00	**6099.1**	1	299,00
10	0,53	2,00	**6100.1**	1	299,00
10	0,53	5,00	**6101.1**	1	299,00
12	0,20	0,20	**6103.1**	1	269,00
12	0,20	0,35	**6106.1**	1	269,00
15	0,32	0,25	**6074.1**	1	329,00
15	0,25	0,10	**6107.1**	1	325,00
15	0,25	0,25	**6112.1**	1	325,00
15	0,32	1,00	**6113.1**	1	329,00
15	0,53	1,00	**2849.1**	1	359,00
20	0,10	0,10	**6125.1**	1	479,00
20	0,10	0,40	**6126.1**	1	479,00
25	0,20	0,10	**6127.1**	1	519,00
25	0,20	0,20	**6129.1**	1	519,00
25	0,20	0,35	**6130.1**	1	519,00
25	0,25	0,10	**6131.1**	1	519,00
25	0,25	0,25	**6135.1**	1	519,00
25	0,25	0,50	**6137.1**	1	519,00
25	0,25	1,00	**6141.1**	1	519,00
25	0,32	0,10	**6143.1**	1	559,00
25	0,32	0,25	**6148.1**	1	559,00
25	0,32	0,35	**6152.1**	1	559,00
25	0,32	0,50	**6154.1**	1	559,00
25	0,32	1,00	**6156.1**	1	559,00
25	0,32	3,00	**6157.1**	1	559,00
25	0,32	5,00	**6158.1**	1	559,00
25	0,53	0,50	**6164.1**	1	649,00
25	0,53	1,00	**6165.1**	1	649,00
25	0,53	2,00	**6168.1**	1	649,00
25	0,53	5,00	**6172.1**	1	649,00
30	0,25	0,10	**1358.1**	1	519,00
30	0,25	0,25	**CN10.1**	1	519,00
30	0,25	0,50	**1362.1**	1	519,00
30	0,25	1,00	**1363.1**	1	519,00
30	0,32	0,10	**1370.1**	1	559,00
30	0,32	0,25	**1220.1**	1	559,00
30	0,32	0,35	**1371.1**	1	559,00
30	0,32	0,50	**1372.1**	1	559,00
30	0,32	1,00	**1373.1**	1	559,00
30	0,32	3,00	**1374.1**	1	559,00
30	0,32	5,00	**1375.1**	1	559,00
30	0,53	0,50	**6180.1**	1	649,00
30	0,53	1,00	**6182.1**	1	649,00
30	0,53	2,00	**1376.1**	1	649,00
30	0,53	5,00	**1377.1**	1	649,00
50	0,20	0,20	**6184.1**	1	859,00
50	0,20	0,35	**6185.1**	1	859,00
50	0,20	0,50	**6199.1**	1	859,00
50	0,25	0,25	**6202.1**	1	859,00
50	0,25	0,50	**6204.1**	1	859,00
50	0,25	1,00	**6206.1**	1	859,00
50	0,32	0,10	**6208.1**	1	929,00
50	0,32	0,25	**6209.1**	1	929,00
50	0,32	0,35	**6211.1**	1	929,00
50	0,32	0,50	**6214.1**	1	929,00
50	0,32	1,00	**6216.1**	1	929,00
50	0,32	3,00	**6218.1**	1	929,00
50	0,32	5,00	**6221.1**	1	929,00
50	0,53	5,00	**6222.1**	1	989,00
60	0,25	0,25	**1378.1**	1	899,00
60	0,25	0,10	**6223.1**	1	899,00
60	0,25	0,50	**6224.1**	1	899,00
60	0,25	1,00	**6226.1**	1	899,00
60	0,32	0,10	**6227.1**	1	989,00
60	0,32	0,25	**1379.1**	1	989,00
60	0,32	0,35	**6228.1**	1	989,00
60	0,32	0,50	**6234.1**	1	989,00
60	0,32	1,00	**6236.1**	1	989,00
60	0,32	3,00	**6237.1**	1	989,00

GC capillary column ROTI®CAP-1 MS

100 % Dimethylpolysiloxane

- **Non-polar**
- Low column bleed
- Selectivity identical to ROTI®CAP 1
- **Working temperature limits:**
  340 °C for isothermic operation
  360 °C for short isothermes in a temperature programme
- **Application areas:** Ideal for GC-MS- and ECD-applications and general analysis at trace level

- **Similar phases:** Ultra 1, DB-1 MS, Rtx®-1 MS, HP-1 MS, Equity®-1, AT™-1 MS, VF-1 MS, CP-Sil 5 CB MS
- Equivalent to USP phases G1/G2/G38

Length (m)	Innner ∅ (mm)	Film thickness (µm)	Art. No.	Pack Qty.	€
12	0,20	0,35	**6242.1**	1	309,00
15	0,25	0,25	**6243.1**	1	369,00
25	0,20	0,20	**6244.1**	1	599,00
30	0,25	0,25	**CN14.1**	1	599,00
30	0,32	0,25	**1381.1**	1	639,00
50	0,20	0,20	**6246.1**	1	979,00
60	0,25	0,25	**1382.1**	1	1029,00
60	0,32	0,25	**6250.1**	1	1139,00

Each column is individually tested and supplied with a test certificate and a test chromatogramm. Columns have fused ends or are sealed with septa, to protect them from atmospheric oxygen. Ferrules or fittings are not included.

GC capillary column ROTI®CAP-5

5 % Phenyl - 95 % Methylpolysiloxane

- **Non-polar**
- Solvent rinsing applicable
- **Working temperature limits:**
  for columns with 0,10 - 0,32 mm inner diameter and films <3 µm:
  340 °C for isothermal operation
  360 °C for short isotherms in a temperatur programme
  for columns with 0,53 mm inner diameter and films <3 µm:
  320 °C for isothermal operation
  340 °C for short isotherms in a temperature programme
  for thick film columns with films ≥3 µm:
  300 °C for isothermal operation
  320 °C for short isotherms in a temperature programme
- **Application areas:** standard phase with large range of applications

- **Similar phases:** SE-54, SE-52, HP-5, SPB®-5, CP-SIL 8, Rtx®-5, 007-5, BP5, MDN-5, AT™-5, ZB-5
- Equivalent to USP phases G27/G36

Length (m)	Innner ∅ (mm)	Film thickness (µm)	Art. No.	Pack Qty.	€
10	0,10	0,10	**6252.1**	1	289,00
10	0,25	0,25	**6253.1**	1	239,00
10	0,32	0,10	**6254.1**	1	255,00
10	0,53	0,50	**6260.1**	1	299,00
10	0,53	1,00	**6266.1**	1	299,00
10	0,53	2,00	**6267.1**	1	299,00
10	0,53	5,00	**6268.1**	1	299,00
15	0,25	0,25	**6270.1**	1	319,00
15	0,32	0,10	**6271.1**	1	329,00
15	0,32	0,25	**6273.1**	1	329,00
15	0,32	1,00	**6274.1**	1	329,00
15	0,32	5,00	**6275.1**	1	329,00
15	0,53	0,50	**6075.1**	1	355,00
15	0,53	1,00	**1231.1**	1	359,00
25	0,20	0,10	**6277.1**	1	519,00
25	0,20	0,20	**6281.1**	1	519,00
25	0,20	0,35	**6282.1**	1	519,00
25	0,20	0,50	**6283.1**	1	519,00
25	0,25	0,10	**6284.1**	1	519,00
25	0,25	0,25	**6285.1**	1	519,00
25	0,25	0,50	**6291.1**	1	519,00
25	0,25	1,00	**6292.1**	1	519,00
25	0,32	0,10	**6293.1**	1	559,00
25	0,32	0,25	**6295.1**	1	559,00
25	0,32	0,35	**6296.1**	1	559,00
25	0,32	0,50	**6297.1**	1	559,00
25	0,32	1,00	**6298.1**	1	559,00
25	0,32	3,00	**6299.1**	1	559,00
25	0,32	5,00	**6302.1**	1	559,00
25	0,53	0,50	**6289.1**	1	649,00
25	0,53	1,00	**6303.1**	1	649,00
25	0,53	2,00	**6304.1**	1	649,00
25	0,53	5,00	**6305.1**	1	649,00
30	0,25	0,10	**1383.1**	1	519,00
30	0,25	0,25	**CN11.1**	1	519,00
30	0,25	0,35	**1384.1**	1	519,00
30	0,25	0,50	**1385.1**	1	519,00
30	0,25	1,00	**1386.1**	1	519,00
30	0,32	0,10	**1387.1**	1	559,00
30	0,32	0,25	**1227.1**	1	559,00
30	0,32	0,35	**1388.1**	1	559,00
30	0,32	0,50	**1389.1**	1	559,00
30	0,32	1,00	**1390.1**	1	559,00
30	0,32	3,00	**1402.1**	1	559,00
30	0,32	5,00	**1403.1**	1	559,00
30	0,53	0,50	**6306.1**	1	649,00
30	0,53	1,00	**1406.1**	1	649,00
30	0,53	2,00	**1434.1**	1	649,00
30	0,53	5,00	**1435.1**	1	649,00
50	0,20	0,20	**6307.1**	1	859,00
50	0,20	0,35	**6308.1**	1	859,00
50	0,20	0,50	**6312.1**	1	859,00
50	0,25	0,10	**6313.1**	1	859,00
50	0,25	0,25	**6314.1**	1	859,00
50	0,25	0,35	**6316.1**	1	859,00
50	0,25	0,50	**6318.1**	1	859,00
50	0,25	1,00	**6319.1**	1	859,00
50	0,32	0,10	**6320.1**	1	929,00
50	0,32	0,25	**6321.1**	1	929,00
50	0,32	0,35	**6322.1**	1	929,00
50	0,32	0,50	**6323.1**	1	929,00
50	0,32	1,00	**6324.1**	1	929,00
50	0,32	3,00	**6325.1**	1	929,00
50	0,32	5,00	**6326.1**	1	929,00
50	0,53	2,00	**6328.1**	1	1009,00
50	0,53	5,00	**6339.1**	1	999,00
60	0,25	0,10	**6341.1**	1	899,00
60	0,25	0,25	**1436.1**	1	899,00
60	0,25	0,35	**6343.1**	1	899,00
60	0,25	0,50	**6345.1**	1	899,00
60	0,25	1,00	**6346.1**	1	899,00
60	0,32	0,10	**6347.1**	1	999,00
60	0,32	0,25	**1437.1**	1	999,00
60	0,32	0,35	**6349.1**	1	999,00
60	0,32	0,50	**6353.1**	1	999,00
60	0,32	1,00	**6354.1**	1	999,00
60	0,32	3,00	**6355.1**	1	999,00
60	0,53	2,00	**6357.1**	1	1099,00

GC capillary column ROTI®CAP-5 MS

5 % Diphenyl - 95 % Dimethylpolysiloxane

- **Non-polar**
- Low column bleed
- Selectivity identical to ROTI®CAP 5
- **Working temperature limits:**
  340 °C for isothermal operation
  360 °C for short isothermes in a temperature programme
- **Application areas:** ideal for GC-MS- and ECD-applications and general analysis at trace level

- **Similar phases:** DB-5, DB-5 MS, HP-5 MS, Ultra-2, Equity™-5, CP-SIL 8 CB low bleed/MS, Rtx®-5SIL-MS, Rtx®-5 MS, Rxi®-5 MS, 007-5 MS, BPX™5, MDN-5S, AT™-5 MS, VF-5 MS
- Equivalent to USP phases G27/G36

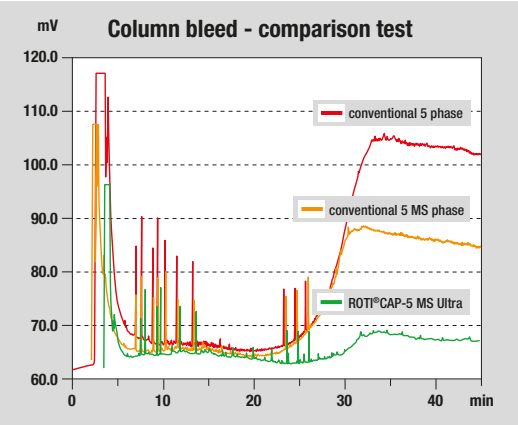
Length (m)	Innner ∅ (mm)	Film thickness (µm)	Art. No.	Pack Qty.	€
12	0,20	0,20	**6362.1**	1	309,00
12	0,20	0,35	**6363.1**	1	309,00
15	0,25	0,25	**6364.1**	1	369,00
25	0,20	0,20	**6369.1**	1	599,00
25	0,20	0,35	**6371.1**	1	599,00
25	0,32	1,00	**6372.1**	1	639,00
30	0,25	0,25	**CN15.1**	1	599,00
30	0,25	0,50	**1438.1**	1	599,00
30	0,25	1,00	**1439.1**	1	599,00
30	0,32	0,25	**1478.1**	1	639,00
30	0,32	0,50	**1492.1**	1	639,00
50	0,20	0,20	**6373.1**	1	989,00
50	0,20	0,35	**6380.1**	1	989,00
50	0,32	1,00	**6381.1**	1	1069,00
60	0,25	0,25	**1509.1**	1	1039,00
60	0,25	0,50	**1519.1**	1	1039,00
60	0,25	1,00	**6727.1**	1	1039,00
60	0,32	1,00	**6384.1**	1	1149,00

GC capillary column ROTI®CAP-5 MS Ultra

Silarylene Phase

- **Non-polar**
- Polarity similar to a **5 % diphenyl - 95 % dimethylpolypropylene phase**
- **Extremely low column bleed**
- Solvent rinsing applicable for removing impurities
- **Working temperature limits:**
  340 °C for isothermal runs
  360 °C for short isothermal runs in a temperature programme
  for columns with film thickness >0,5 µm:
  320 °C for isothermal runs
  340 °C for short isothermal runs in a temerature programme
- **Application areas:** all-round phase for environmental analysis, trace analysis, EPA methods, pesticides, PCBs, food and drug analysis. Ideal for ion-trap and quadrupol detectors

- **Similar phases:** DB-5 MS, HP-5 MS, Ultra-2, Equity™-5, CP-SIL 8 CB low bleed/MS, Rtx®-5SIL-MS, Rtx®-5 MS, Rxi®-5 MS, 007-5 MS, BPX-5, MDN-5S, AT™-5 MS, VF-5 MS
- Equivalent to USP phases G27/G36



The bleed comparison test of the **ROTI®CAP-5 MS Ultra** with a conventional 5 phase and 5-MS phase shows the outstanding performance of the silarylene phase.

Length (m)	Innner ∅ (mm)	Film thickness (µm)	Art. No.	Pack Qty.	€
12	0,20	0,35	**6455.1**	1	419,00
15	0,25	0,25	**6456.1**	1	499,00
25	0,20	0,20	**6457.1**	1	745,00
25	0,32	1,00	**6460.1**	1	799,00
30	0,25	0,25	**2959.1**	1	739,00
30	0,25	0,50	**2960.1**	1	739,00
30	0,25	1,00	**2961.1**	1	739,00
30	0,32	0,25	**2962.1**	1	799,00
30	0,32	0,50	**2963.1**	1	799,00
50	0,20	0,20	**6462.1**	1	1249,00
50	0,20	0,35	**6463.1**	1	1249,00
60	0,25	0,25	**2969.1**	1	1329,00
60	0,25	0,50	**6466.1**	1	1329,00
60	0,25	1,00	**6467.1**	1	1329,00
60	0,32	0,25	**6468.1**	1	1475,00
60	0,32	1,00	**6470.1**	1	1475,00

▶ ROTISOLV® GC Ultra Grade solvents
see page 1629

GC capillary column ROTI®CAP-5 HT

Silarylene Phase

- **Non-polar**
- Selectivity similar to a **5 % phenyl - 95 % methylpolysiloxane phase**
- Low column bleed
- Solvent rinsing applicable
- **Working temperature limits:**
  380 °C for isothermal operation
  400 °C for short isothermal operation in a temperature programme
- **Application areas:** simulated distillation, hydrocarbon, fuel, oil analysis, high boiling analytes, ideal for MS detectors

- **Similar phases:** DB-5HT, VF-5HT, HT-5, XTI-5HT, ZB-5HT
- Equivalent to USP phases G27/G36

Length (m)	Innner ∅ (mm)	Film thickness (µm)	Art. No.	Pack Qty.	€
15	0,25	0,1	**3883.1**	1	369,00
15	0,25	0,25	**3885.1**	1	369,00
15	0,32	0,1	**3884.1**	1	379,00
15	0,32	0,25	**3888.1**	1	379,00
30	0,25	0,1	**3889.1**	1	599,00
30	0,25	0,25	**3891.1**	1	599,00
30	0,32	0,1	**3890.1**	1	639,00
30	0,32	0,25	**3892.1**	1	639,00

Pre-columns available on request

GC capillary column ROTI®CAP-624

6 % Cyanopropylphenyl - 94 % Dimethylpolysiloxane

- **Medium polar**
- **Working temperature limits:**
  280 °C for isothermal operations
  300 °C for short isotherms in a temperature programme
- **Application areas:** recommended for environmental analysis

- **Similar phases:** HP-624, HP-VOC, DB-624, DB-VRX, SPB®-624, CP-624, Rtx®-624, Rtx®-Volatiles, 007-624, BP624, VOCOL®
- Equivalent to USP phase G43

Length (m)	Innner ∅ (mm)	Film thickness (µm)	Art. No.	Pack Qty.	€
25	0,20	1,10	**6393.1**	1	519,00
25	0,25	1,40	**6398.1**	1	519,00
25	0,32	1,80	**6400.1**	1	559,00
25	0,53	3,00	**6401.1**	1	639,00
30	0,25	1,40	**1872.1**	1	519,00
30	0,32	1,80	**CN16.1**	1	559,00
30	0,53	3,00	**1874.1**	1	639,00
50	0,25	1,40	**6403.1**	1	859,00
50	0,32	1,80	**6404.1**	1	929,00
60	0,25	1,40	**1875.1**	1	899,00
60	0,32	1,80	**1876.1**	1	989,00

Each column is individually tested and supplied with a test certificate and a test chromatogramm. Columns have fused ends or are sealed with septa, to protect them from atmospheric oxygen. Ferrules or fittings are not included.

GC capillary column ROTI®CAP-1701

14 % Cyanopropylphenyl - 86 % Dimethylpolysiloxane

- **Medium-polar**
- **Working temperature limits:**
  280 °C for isothermal runs
  300 °C for short isothermal runs in a temperature programme
- **Application areas:** reference column for structure determination, e.g. in combination with ROTI®CAP-5; columns with film thickness ≥1 µm are used for solvent analysis

- **Similar phases:** OV-1701, DB-1701, CP Sil 19 CB, HP-1701, Rtx®-1701, SPB®-1701, 007-1701, BP10, ZB-1701
- Equivalent to USP phase G46

Length (m)	Inner ∅ (mm)	Film thickness (µm)	Art. No.	Pack Qty.	€
10	0,25	0,25	**6406.1**	1	245,00
10	0,32	0,25	**6407.1**	1	255,00
10	0,53	1,00	**6408.1**	1	299,00
15	0,25	0,25	**6409.1**	1	325,00
15	0,32	0,25	**6411.1**	1	329,00
15	0,53	1,00	**3698.1**	1	359,00
15	0,53	2,00	**6415.1**	1	359,00
25	0,20	0,20	**6417.1**	1	519,00
25	0,25	0,25	**6419.1**	1	519,00
25	0,32	0,25	**6433.1**	1	559,00
25	0,32	0,35	**6434.1**	1	559,00
25	0,32	0,50	**6435.1**	1	559,00
25	0,32	1,00	**6436.1**	1	559,00
25	0,53	1,00	**6438.1**	1	639,00
25	0,53	2,00	**6440.1**	1	639,00
30	0,25	0,25	**3700.1**	1	519,00
30	0,25	0,50	**3703.1**	1	519,00
30	0,25	1,00	**3706.1**	1	519,00
30	0,32	0,25	**3708.1**	1	559,00
30	0,32	0,35	**3709.1**	1	559,00
30	0,32	0,50	**3714.1**	1	559,00
30	0,32	1,00	**3715.1**	1	559,00
30	0,53	1,00	**3716.1**	1	639,00
30	0,53	2,00	**3717.1**	1	639,00
50	0,20	0,20	**6441.1**	1	859,00
50	0,25	0,25	**6442.1**	1	859,00
50	0,32	0,25	**6443.1**	1	929,00
50	0,32	0,35	**6444.1**	1	929,00
50	0,32	0,50	**6446.1**	1	929,00
50	0,32	1,00	**6447.1**	1	929,00
50	0,53	2,00	**6449.1**	1	999,00
60	0,25	0,25	**3724.1**	1	899,00
60	0,25	0,50	**6450.1**	1	899,00
60	0,32	0,25	**3725.1**	1	989,00
60	0,32	0,35	**6452.1**	1	989,00
60	0,32	0,50	**6453.1**	1	989,00
60	0,32	1,00	**6454.1**	1	989,00

GC capillary column ROTI®CAP-1701 MS

Silarylene Phase

- **Medium polar**
- Silarylene phase with selectivity analogue to a **14 % cyanopropylphenyl - 86 % dimethyl polysiloxane**
- **Very low column bleed**
- **Working temperature limits:**
  280 °C for isothermal runs
  300 °C for short isothermal runs in a temperature programme
- **Application areas:** Reference column for structure identification, e.g., in combination with ROTI®CAP-5 MS; suitable for environmental analysis (e.g., PAHs, PCBs, pesticides)

- **Similar phases:** VF-1701ms, TG-1701MS, OV-1701, DB-1701, HP-1701, Rtx®-1701, SPB®-1701, CP-Sil 19 CB, 007-1701, BP10, ZB-1701
- Equivalent to USP phase G46

Length (m)	Innner ∅ (mm)	Film thickness (µm)	Art. No.	Pack Qty.	€
30	0,25	0,25	**8047.1**	1	599,00
30	0,25	0,50	**8050.1**	1	599,00
30	0,32	0,25	**8052.1**	1	639,00
30	0,32	0,50	**8053.1**	1	639,00
60	0,25	0,25	**8067.1**	1	1029,00
60	0,25	0,50	**8068.1**	1	1029,00
60	0,32	0,25	**8078.1**	1	1139,00
60	0,32	0,50	**8080.1**	1	1139,00

GC capillary column ROTI®CAP-35 MS

Silarylene Phase

- **Medium polar**
- Selectivity analogue to **35 % phenyl - 65 % methylpolysiloxane**
- **Very low column bleeding**
- **Working temperature limits:**
  360 °C for isothermal runs
  370 °C for short isothermal runs in a temperature programme
- **Application areas:** Reference column in combination with a 1 MS or 5 MS (e.g. ROTI®CAP-1 MS or ROTI®CAP-5 MS) column; all-round phase for environmental analysis, ultra-trace analysis, EPA methods, pesticides, PCBs, food and drug analysis

- **Similar Phases:** DB-35 MS, HP-35, SPB®-35, Rtx®-35, 007-35, BPX-35, MDN-35, AT™-35 MS, ZB-35, OV-11, VF-35 MS
- Equivalent to USP phase G42, close equivalent to USP phases G28/G32

Length (m)	Innner ∅ (mm)	Film thickness (µm)	Art. No.	Pack Qty.	€
30	0,25	0,25	**4794.1**	1	599,00
30	0,32	0,25	**4800.1**	1	639,00
60	0,25	0,25	**4801.1**	1	1029,00
60	0,32	0,25	**4802.1**	1	1159,00

Each column is individually tested and supplied with a test certificate and a test chromatogramm. Columns have fused ends or are sealed with septa, to protect them from atmospheric oxygen. Ferrules or fittings are not included.

GC capillary column ROTI®CAP-WAX

Polyethylene glycol 20000 dalton

- **Polar**
- **Working temperature limits:**
  for columns with 0,25 - 0,32 mm inner diameter:
  240 °C for isothermal operation
  250 °C for short isotherms in a temperatur programme
  for columns with 0,53 mm inner diameter:
  220 °C for isothermal operation
  240 °C for short isotherms in a temperature programme
- **Application areas:** recommended for solvent analysis and alcohols suitable for aqueous solutions

- **Similar phases:** DB-Wax, Supelcowax®, HP-Wax, HP-INNOWAX, Rtx®-Wax, CP-Wax 52 CB, Stabilwax®, 007-CW, BP20, AT™-Wax, ZB-Wax
- Equivalent to USP phase G16

Length (m)	Innner ∅ (mm)	Film thickness (µm)	Art. No.	Pack Qty.	€
25	0,25	0,25	**1531.1**	1	519,00
25	0,32	0,25	**1545.1**	1	559,00
25	0,32	0,50	**1546.1**	1	559,00
25	0,53	1,00	**6386.1**	1	639,00
30	0,25	0,25	**CN12.1**	1	519,00
30	0,32	0,25	**1618.1**	1	559,00
30	0,32	0,50	**1228.1**	1	559,00
30	0,53	1,00	**1651.1**	1	639,00
30	0,53	2,00	**1877.1**	1	639,00
50	0,25	0,25	**1882.1**	1	859,00
50	0,32	0,25	**1918.1**	1	929,00
50	0,32	0,50	**6387.1**	1	929,00
60	0,25	0,25	**1925.1**	1	899,00
60	0,32	0,25	**1945.1**	1	989,00
60	0,32	0,50	**6388.1**	1	989,00

GC capillary column ROTI®CAP-FFAP

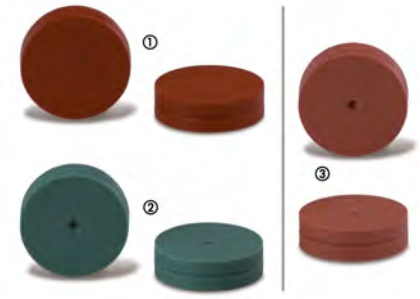
Polyethylene glycol 2-nitroterephthalate

- **Polar**
- **Working temperature limits:**
  for columns with 0,10 - 0,32 mm inner diameter:
  250 °C for isothermal operation
  260 °C for short isotherms in a temperatur programme
  for columns with 0,53 mm inner diameter:
  220 °C for isothermal operation
  240 °C for short isotherms in a temperature programme
- **Application areas:** recommended for FAMEs, free carboxylic acids

- **Similar phases:** DB-FFAP, HP-FFAP, CP-Wax 58 FFAP CB, 007-FFAP, CP-FFAP CB, Nukol™,AT™ 1000, SPB®-1000, BP 21, OV-351
- Equivalent to USP phase G35, close equivalent to G25

Length (m)	Innner ∅ (mm)	Film thickness (µm)	Art. No.	Pack Qty.	€
10	0,10	0,10	**6390.1**	1	289,00
25	0,25	0,25	**1828.1**	1	519,00
25	0,32	0,25	**6391.1**	1	559,00
25	0,32	0,50	**1830.1**	1	559,00
25	0,53	1,00	**1836.1**	1	649,00
30	0,25	0,25	**CN13.1**	1	519,00
30	0,32	0,25	**1229.1**	1	559,00
30	0,32	0,50	**1854.1**	1	559,00
30	0,53	0,50	**1856.1**	1	649,00
50	0,25	0,25	**1858.1**	1	859,00
50	0,32	0,25	**1860.1**	1	929,00
50	0,32	0,50	**6392.1**	1	929,00
60	0,25	0,25	**1864.1**	1	899,00
60	0,32	0,25	**1866.1**	1	989,00

Injection Port Septa



Advantages:
- Produced individually using injection moulding procedure
- CenterGuideTM for centred needle guidance and thus perfect fit
- Temperature stability up to 400 °C, Shimadzu plug septa up to 300 °C
- Precision indentations for perfect seat
- Special coating for easy replacement without fixed jaw on the injector
- Septa thickness: 3 mm
- Blister pack for clean and immediately usable septa

Features

BTO Septa ①	AG3 Septa ②	Marathon Septa ③
for highest demand in GC and GC-MS	with higher durability than BTO	with extreme durability for >400 injections
soft	pierced, hard	pierced
CenterGuide™	CenterGuide™	CenterGuide™

Selection guide for CenterGuide™ Septa

Manufacturer	GC instrument	Injector Type	Diameter of Septa
Agilent (HP)	5850, 5880A, 5890, 6850, 6890, 7890, PTV		11 mm
Thermo Scientific	TRACE GC Ultra and Focus, 8000 series	Large Volume Splitless Injector	11 mm
		Purged Packed Column Injector	11 mm
		Packed Column Injector	11 mm
Shimadzu	all instruments		Shimadzu Plug
Tracor	540		11,5 mm
Bruker, Varian	1177		9 mm
	1093, 1075, 1077, SPI, 1078, 1079		11,5 mm

Product	∅ (mm)	Art. No.	VE (Blister pack)	€
BTO Septa N 9, CenterGuide™	9	**9528.1**	25 pieces	42,90
BTO Septa N 11, CenterGuide™	11	**9529.1**	25 pieces	42,90
BTO Septa N 11,5, CenterGuide™	11,5	**9530.1**	25 pieces	42,90
BTO Septa Shimadzu Plug, CenterGuide™	Shimadzu Plug	**9532.1**	25 pieces	42,90
AG3 Septa N 9, CenterGuide™	9	**9535.1**	25 pieces	37,90
AG3 Septa N 11, CenterGuide™	11	**9537.1**	25 pieces	37,90
AG3 Septa N 11,5, CenterGuide™	11,5	**9539.1**	25 pieces	37,90
AG3 Septa Shimadzu Plug, CenterGuide™	Shimadzu Plug	**9542.1**	25 pieces	37,90
Marathon Septa N 9, CenterGuide™	9	**9873.1**	25 pieces	53,90
Marathon Septa N 11, CenterGuide™	11	**9876.1**	25 pieces	53,90
Marathon Septa N 11,5, CenterGuide™	11,5	**9877.1**	25 pieces	53,90
Marathon Septa Shimadzu Plug, CenterGuide™	Shimadzu Plug	**9879.1**	25 pieces	53,90

Derivatisation Reagents for GC

Derivatization reagents are mainly used in gas chromatography when adequate volatility or stability of the substances to be separated is required. Detection sensitivity can also be increased through derivatisation.

Our range of derivatisation reagents is ideal for acylation, alkylation and silylation of reagents.

Reagents for Silylation

Product	Purity	Art. No.	Pack Qty.	€
3-Aminopropyltriethoxysilane / APTES	≥98 %, for GC	**2328.1**	25 g	21,40
		2328.2	100 g	62,25
N,O-Bis(trimethylsilyl) acetamide / BSA	≥98 %, for GC	**2330.1**	25 g	67,65
N,O-Bis(trimethylsilyl)-trifluoroacetamide / BSTFA	≥98 %, for GC	**2331.1**	10 g	38,60
N,O-Bis(trimethylsilyl)-trifluoroacetamide with 1 % trimethylchlorosilane / Silyl 991	for GC	**9935.1**	10 ml (Septum bottle)	81,90
1,1,1,3,3,3-Hexamethyldisilazane / HMDS TIP	≥98 %, for GC	**3840.3**	10 ml	13,90
		3840.1	50 ml	18,20
		3840.2	250 ml	36,45
		3840.5	500 ml	50,45
		3840.4	1 l	88,05
N-Methyl-N-(trimethylsilyl)-trifluoroacetamide / MSTFA	≥99 %, for GC	**9933.1**	10 ml (Septum bottle)	94,50
	≥97 %, for GC	**8007.1**	5 g	54,75
Trimethylchlorosilane / TMCS	≥99 %, for GC	**2338.1**	25 g	49,35
N-(Trimethylsilyl)-diethylamine / TMSDEA	≥98 %, for GC	**0013.1**	25 g	137,10
N-(Trimethylsilyl)-imidazole / TSIM	≥97 %, for GC	**0012.1**	10 g	43,55

Reagents for Acylation

Product	Purity	Art. No.	Pack Qty.	€
Heptafluorobutyric acid anhydride	≥98 %, for GC	**0026.1**	5 g	93,00
Trifluoroacetic anhydride	≥99 %, for GC	**0027.1**	100 g	96,65

Reagents for Alkylation/Methylation

Product	Purity	Art. No.	Pack Qty.	€
N,N-Dimethylformamide dimethyl acetal/DMF-DMA	≥98 %, for GC	**6870.1**	5 ml	24,65
		6870.2	25 ml	36,45
		6870.3	100 ml	121,40
		6870.4	500 ml	450,45
Trimethylsulfonium hydroxide in methanol	~0,2 M, for GC	**9934.1**	10 ml (Septum bottle)	124,90

For additional product data and safety information, see chapter Chemicals A-Z.

Septum bottle: Aluminium seal with PTFE-lined rubber disc (septum). The pierced septum is no longer absolutely air-tight, therefore we suggest to use up the content as quickly as possible and keep the vial standing upright. Otherwise the reagents come in contact with the rubber which results in their contamination to the point of making them useless.

ROTISOLV® GC Ultra Grade Solvents

for gaschromatographic and residue analysis

In order to monitor and analyse environmentally relevant substances such as pesticides, dioxins, furans, PAHs, PCBs etc. in trace analysis, solvents with exceedingly high purity specifications are required. ROTH's ROTISOLV® GC Ultra Grade solvents have been developed specially for this application area and are produced with the most sophisticated production processes. Extensive quality checks guarantee the same high-grade quality from batch to batch.

Features:

- Highest purity
- Very low water content
- Non-volatile matter: less than 2 ppm
- Quality control by means of ECD and PND
- PAH-test
- Filtered through 0,2 µm membrane
- Bottled under protective gas

Acetic acid ethyl ester

ROTISOLV® ≥99,9 %, GC Ultra Grade
For gaschromatographic residue analysis.
Ethyl acetate, Acetic ester
$C_4H_8O_2$
M 88,11 g/mol

Danger H225-H319-H336-EUH066

KK42.1	2,5 l	glass	70,85 €
Original pack 4 x 2,5 l			67,31/2,5 l

Acetone

ROTISOLV® ≥99,9 %, GC Ultra Grade
For gaschromatographic residue analysis.
2-Propanone, Dimethyl ketone
C_3H_6O
M 58,08 g/mol

Danger H225-H319-H336-EUH066

KK40.1	2,5 l	glass	63,35 €
Original pack 4 x 2,5 l			60,18/2,5 l

Cyclohexane

ROTISOLV® ≥99,9 %, GC Ultra Grade
For gaschromatographic residue analysis.
Hexahydrobenzene
C_6H_{12}
M 84,16 g/mol

Danger H225-H304-H400-H410-H315-H336

KK41.1	2,5 l	glass	90,20 €
Original pack 4 x 2,5 l			85,69/2,5 l

Dichloromethane

ROTISOLV® ≥99,9 %, GC Ultra Grade
For gaschromatographic residue analysis.
Methylene chloride, DCM
CH_2Cl_2
M 84,93 g/mol

Warning H315-H319-H336-H351

KK47.1	2,5 l	glass	69,35 €
Original pack 4 x 2,5 l			65,88/2,5 l

n-Hexane

ROTISOLV® ≥95 %, GC Ultra Grade
For gaschromatographic residue analysis.
1-Methylpentane
C_6H_{14}
M 86,18 g/mol

Danger H225-H315-H304-H336-H361f-H373-H411

KK48.1	2,5 l	glass	103,75 €
Original pack 4 x 2,5 l			98,56/2,5 l

Methanol

ROTISOLV® ≥99,9 %, GC Ultra Grade
For gaschromatographic residue analysis.
Methyl alcohol, Carbinol
CH_3OH
M 32,04 g/mol

Danger H225-H301+H311+H331-H370

KK44.1	2,5 l	glass	49,35 €
Original pack 4 x 2,5 l			46,88/2,5 l

n-Pentane

ROTISOLV® ≥99 %, GC Ultra Grade
For gaschromatographic residue analysis.
1,3-Dimethylpropane, Diethylmethane
C_5H_{12}
M 72,15 g/mol

Danger H225-H304-H336-H411-EUH066

KK45.1	2,5 l	glass	209,10 €
Original pack 4 x 2,5 l			198,65/2,5 l

Toluene

ROTISOLV® ≥99,8 %, GC Ultra Grade
For gaschromatographic residue analysis.
Methylbenzene
C_7H_8
M 92,14 g/mol

Danger H225-H304-H361d-H373-H315-H336

KK46.1	2,5 l	glass	75,80 €
Original pack 4 x 2,5 l			72,01/2,5 l

▶ Detailed specifications see chapter Chemicals A-Z.

ROTISOLV®
Pestilyse® plus Solvents

for determination of dioxines, furanes, PCBs, pesticides, hydrocarbons and further pollutants.

ROTH created this product line (ROTISOLV® Pestilyse® plus) especially to address the growing requirements in residue analysis. Several relevant parameters are specified for these solvents which allow the use in various applications. With this product line, ROTH sets the benchmark for residue analysis solvents in terms of purity and quality.

Features:
- Highest purity
- Controlled by FID, ECD and PND
- PAH tested
- Tested for hydrocarbons (C_{14}-C_{40})
- Tested for fluorescence
- Volatile impurities: max. 5 ppm
- Non-volatile impurities: max. 5 ppm

Example specification:

2-Propanol
ROTISOLV® ≥99,9 %, Pestilyse® plus
For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.
Isopropanol, Isopropyl alcohol, Dimethyl carbinol, IPA, 2-Hydroxypropane
C_3H_8O
M 60,10 g/mol

Danger H225-H319-H336

Guarantee analysis:

Assay (GC)	≥99,9 %
Colour (APHA)	≤10
Water (KF)	≤0,03 %
Free acid (as CH_3COOH)	≤0,001 %
Free alkali (as NH_3)	≤0,0001 %
Evaporation residue	≤0,0003 %
GC/ECD suitability (as heptachloro epoxide)	≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane)	≤5 ng/l
GC/ECD pesticides (as lindane)	≤5 ng/l
GC/NPD pesticides (as parathion)	≤10 ng/l
PAH-test (less than 2 ppb, HPLC)	complies
Oil index (any hydrocarbon C_{10}-C_{40})	≤0,1 mg/l
Fluorescence (as quinine):	
254 nm	≤1 ppb
365 nm	≤1 ppb
Transmission:	
220 nm	≥80 %

ROTISOLV® Pestilyse® plus Solvents

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Acetic acid ethyl ester	≥99,9 %, Pestilyse® plus	**7565.1**	2,5 l	glass	67,65
Acetone	≥99,9 %, Pestilyse® plus	**7535.1**	2,5 l	glass	56,90
Cyclohexane	≥99,9 %, Pestilyse® plus	**7542.1**	2,5 l	glass	83,35
Dichloromethane	≥99,9 %, Pestilyse® plus	**7562.1**	2,5 l	glass	68,70
n-Heptane	≥99 %, Pestilyse® plus	**7566.1**	2,5 l	glass	104,85
n-Hexane	≥99 %, Pestilyse® plus	**7573.1**	2,5 l	glass	122,05
		7567.1	2,5 l	glass	98,40
Isohexane	≥96 %, Pestilyse® plus	**7576.1**	2,5 l	glass	93,00
Isooctane	≥99,7 %, Pestilyse® plus	**7580.1**	2,5 l	glass	110,20
Methanol	≥99,9 %, Pestilyse® plus	**7583.1**	2,5 l	glass	44,65
n-Pentane	≥99 %, Pestilyse® plus	**7587.1**	2,5 l	glass	122,45
Petroleum ether 40-60 °C	Pestilyse® plus	**7588.1**	2,5 l	glass	71,95
2-Propanol	≥99,9 %, Pestilyse® plus	**7590.1**	2,5 l	glass	54,30
Toluene	≥99,8 %, Pestilyse® plus	**7591.1**	2,5 l	glass	64,00
Trichloromethane/ Chloroform	≥99,9 %, Pestilyse® plus	**7554.1**	2,5 l	glass	75,15

For additional product data and safety information, see chapter Chemicals A-Z.

ROTISOLV®
Pestilyse® Solvents

for residue and environmental analysis

Field of application: 'residue analysis of pesticide' (via ECD, PND detection) in sectors environment, foodstuffs, water, etc.
ROTISOLV® Pestilyse® solvents are ideal as extraction agents and for sample preparation.

Advantage:
- Highest purity
- Quality control via ECD and PND
- Non-volatile impurities: 5 ppm or less
- Specially purified for application in pesticide residue analysis

Example specification:

Petroleum ether 40-60 °C
ROTISOLV® Pestilyse®
For residue and environmental analysis.
Petroleum benzine

Danger H225-H304-H315-H336-H411

Guarantee analysis:

Boiling range	40-60 °C
Water (KF)	≤0,02 %
Acidity	≤0,0005 meq/g
Evaporation residue	≤0,0001 %
GC/ECD (individual signal as lindane)	≤5 ng/l
GC/PND (individual signal as ethylparathion)	≤10 ng/l

ROTISOLV® Pestilyse® Solvents

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Acetic acid ethyl ester	≥99,8 %, Pestilyse®	**T164.2**	1 l	glass	31,10
		T164.1	2,5 l	glass	66,55
		T164.3	4 l	glass	93,00
Acetone	≥99,8 %, Pestilyse®	**T161.2**	1 l	glass	27,85
		T161.1	2,5 l	glass	54,30
		T161.3	4 l	glass	76,25
Acetonitrile	≥99,9 %, Pestilyse®	**T168.2**		glass	34,65
		T168.1	2,5 l	glass	76,25
		T168.3	4 l	glass	110,65
Cyclohexane	≥99,5 %, Pestilyse®	**T163.2**	1 l	glass	37,10
		T163.1	2,5 l	glass	82,25
		T163.3	4 l	glass	109,15
Dichloromethane	≥99,8 %, Pestilyse®	**T162.2**	1 l	glass	33,25
		T162.1	2,5 l	glass	67,65
		T162.3	4 l	glass	83,35
Diethyl ether	≥99,8 %, Pestilyse®, stab.	**T900.1**	2,5 l	glass	85,90
n-Heptane	≥99 %, Pestilyse®	**X878.1**	2,5 l	glass	103,10
n-Hexane	≥99 %, Pestilyse®	**T861.2**	1 l	glass	52,15
		T861.1	2,5 l	glass	121,40
	≥97,5 %, Pestilyse®	**T165.2**	1 l	glass	44,65
		T165.1	2,5 l	glass	102,05
		T165.3	4 l	glass	119,25
Isohexane	≥99 %, Pestilyse®	**T904.1**	2,5 l	glass	90,20
Isooctane	≥99,5 %, Pestilyse®	**T167.1**	2,5 l	glass	106,35
Methanol	≥99,9 %, Pestilyse®	**T169.2**	1 l	glass	24,20
		T169.1	2,5 l	glass	34,30
		T169.3	4 l	glass	50,00
n-Pentane	≥99 %, Pestilyse®	**T903.2**	1 l	glass	53,25
		T903.1	2,5 l	glass	104,85
Petroleum ether 40-60 °C	Pestilyse®	**T170.2**	1 l	glass	34,95
		T170.1	2,5 l	glass	71,95
		T170.3	4 l	glass	99,45
2-Propanol	≥99,8 %, Pestilyse®	**T902.1**	2,5 l	glass	53,25
Toluene	≥99,8 %, Pestilyse®	**T166.2**	1 l	glass	34,30
		T166.1	2,5 l	glass	62,25
		T166.3	4 l	glass	96,65
Trichloromethane/ Chloroform	≥99,8 %, Pestilyse®	**T901.1**	2,5 l	glass	74,10
Water	Pestilyse®	**T905.1**	2,5 l	glass	48,30

For additional product data and safety information, see chapter Chemicals A-Z.

Safety data sheets
can be found on the Internet next to the product description.

ROTISOLV® Headspace Grade Solvents

for analysis of organic volatile impurities (O.V.I.)

Headspace gas chromatography is a major quality control procedure particularly in the pharmaceutical and food industry. The regulations for this method can be found both in the European as well as the American Pharmacopoeia.
High-boiling solvents of excellent purity, which show no background due to organic volatile impurities on the GC-columns, are required for determining solvent residue.

Advantage:
- Highest purity (mostly ≥99,99 %)
- High boiling point
- Non volatile matter: ≤0,001 %
- Tested for headspace suitability
- Bottled under protective gas
- Microfiltered

N,N-Dimethylacetamide (DMA)
ROTISOLV® ≥99,99 %, Headspace Grade
For determination of solvent residues (O.V.I.)
DMA, Acetic acid dimethylamide
C_4H_9NO
M 87,12 g/mol

Danger H360D-H312+H332-H319

HN45.1	1 l	glass	252,65 €
Original pack 6 x 1 l			240,02/1 l

N,N-Dimethylformamide (DMF)
ROTISOLV® ≥99,99 %, Headspace Grade
For determination of solvent residues (O.V.I.)
DMF
C_3H_7NO
M 73,10 g/mol

Danger H226-H360D-H312+H332-H319

HN46.1	1 l	glass	233,20 €
Original pack 6 x 1 l			221,54/1 l

1,3-Dimethyl-2-imidazolidinone (DMI)
ROTISOLV® ≥99,5 %, Headspace Grade
For determination of solvent residues (O.V.I.)
DMEU, N,N'-Dimethylethylene urea, DMI
$C_5H_{10}N_2O$
M 114,15 g/mol

Danger H302-H318-H373

HN48.1	500 ml	glass	923,45 €

Dimethyl sulphoxide (DMSO)
ROTISOLV® ≥99,99 %, Headspace Grade
For determination of solvent residues (O.V.I.)
DMSO
C_2H_6OS
M 78,13 g/mol

HN47.1	1 l	glass	242,45 €
Original pack 6 x 1 l			230,33/1 l

Example specification:

Dimethyl sulphoxide (DMSO)
ROTISOLV® ≥99,99 %, Headspace Grade
For determination of solvent residues (O.V.I.)
DMSO
C_2H_6OS
M 78,13 g/mol

Guarantee analysis:

Assay (GC)	≥99,99 %
Colour (APHA)	≤5
Water (KF)	≤0,03 %
Free acid (as CH_3COOH)	≤0,002 %
Free alkali (as NH_3)	≤0,0005 %
Refractive index (20 °C)	1,477-1,480
Non volatile matter	≤0,001 %
Melting point	≥18 °C
UV-Cutoff	190-265 nm
Transmission:	
400 nm	≥98 %
350 nm	≥95 %
300 nm	≥85 %
275 nm	≥60 %
268 nm	≥30 %
Headspace suitability test for O.V.I.	complies

▶ Rotilabo®-crimps neck headspace vials ND 20 and Headspace-caps with bore hole see page 70

Thin-Layer Chromatography

Although the principle of thin-layer chromatography (TLC) is more than a century old, it did not make its breakthrough as an analytical method until about 50 years ago.
Thanks to the development of new sorbents and supports, as well as increasing instrumentation and automation, TLC has become a versatile separation method. It is used for both qualitative and quantitative analysis.
Applications range from simple manual separation processes in classic TLC to automated processes in HPTLC (high performance thin-layer chromatography).

Advantages of thin layer chromatography:
- Higher sample throughput in less time
- Suitable for screening tests
- The ready-to-use TLC layer functions as a data storage device for separation results
- Pilot process for HPLC
- The separated substances can later be used for further analysis (e.g. IR, MS)
- By switching the mobile and the stationary phases, the separation process can be optimised quickly and cost-efficient

Ready-to-use layers for TLC at a glance

Code	Layer
Standard silica	
ADAMANT	silica 60 with improved binder system and optimised particle size distribution
SIL G	silica 60, standard grade
Unmodified silica for HPTLC	
Nano-SIL	nano silica 60, particle size 2-10 µm, standard grade
Modified silica for TLC/HPTLC	
Nano-SIL DIOL	diol-modified nano silica
Nano-SIL NH_2	amino-modified nano silica
Nano-SIL CN	cyano-modified nano silica
RP-2 / UV_{254}	silanised silica = dimethyl-modified silica 60
R-18 W/UV_{254}	nano silica with partial octadecyl modification, wetable with water
Aluminium oxide	
ALOX N	aluminium oxide
Cellulose	
CEL 300	native fibrous cellulose MN 300
CEL 400	microcrystalline cellulose MN 400 (AVICEL®)

Supports for ready-to-use TLC layers:

Physical/chemical properties	Glass plates	POLYGRAM® Polyester foils	ALUGRAM®/ ALUGRAM® XTRA Aluminium foils
Thickness	~1,3 mm	~0,2 mm	~0,15 mm
Torsional stability	ideal	low	relatively high
Temperature stability	high	max. 185 °C	high
Can be cut with scissors	no	yes	yes
Resistance to solvents	high	high	high
Resistance to mineral acids and concentrated ammonia	high	high	low
Suitable for aqueous tracing reagents	depending on phase	ideally suited	ALUGRAM®: limited ALUGRAM®Xtra: ideally suited

ADAMANT TLC Plates with Standard Silica Gel

Silica gel 60
With improved binder system and optimised grain distribution.

- Spec. surface: approx. 500 m^2/g
- Medium pore width: 60 Å
- Spec. pore volume: 0,75 ml/g
- Particle size: 5-17 µm

Adamant TLC plates are unique for their:
- Outstanding hardness and abrasion resistance due to an optimised binder system
- Increased separation efficiency due to an optimised particle size distribution
- High suitability for trace analysis resulting from a UV indicator with increased brilliance and a low-noise background of the layer

TLC-ready-to-use layers, ADAMANT
Glass plate, silica gel 60 layer

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 10 cm	0,25 mm	**N086.1**	50	116,00
10 x 10 cm	0,25 mm	**N087.1**	25	65,00
20 x 20 cm	0,25 mm	**N088.1**	25	151,00

TLC-ready-to-use layers, ADAMANT UV_{254}
Glass plate, silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness		Art. No.	Pack Qty.	€
5 x 10 cm	0,25 mm		**N089.1**	50	116,00
5 x 10 cm	0,25 mm	BIG PACK	**N089.2**	200 (4 x 50)	253,00
5 x 20 cm	0,25 mm		**N090.1**	100	194,00
10 x 10 cm	0,25 mm		**N091.1**	25	65,00
10 x 20 cm	0,25 mm		**N092.1**	50	171,00
20 x 20 cm	0,25 mm		**N093.1**	25	151,00

TLC Plates with Standard Silica Gel

- Spec. surface: approx. 500 m^2/g
- Medium pore width: 60 Å
- Spec. pore volume: 0,75 ml/g
- Particle size: 5-17 µm

TLC-ready-to-use layers SIL G-25

Glass plate, silica gel 60 layer

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 10 cm	0,25 mm	**K795.1**	50	116,00
5 x 20 cm	0,25 mm	**K796.1**	100	194,00
10 x 20 cm	0,25 mm	**K797.1**	50	171,00
20 x 20 cm	0,25 mm	**K798.1**	25	151,00

TLC-ready-to-use layers SIL G-25 / UV_{254}

Glass plate, silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 10 cm	0,25 mm	**K799.1**	50	116,00
5 x 20 cm	0,25 mm	**K800.1**	100	194,00
10 x 10 cm	0,25 mm	**K801.1**	25	65,00
10 x 20 cm	0,25 mm	**K802.1**	50	171,00
20 x 20 cm	0,25 mm	**K803.1**	25	151,00

TLC-ready-to-use foil ALUGRAM® SIL G

Aluminium foil, silica gel 60 layer

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 10 cm	0,2 mm	**N726.1**	50	49,90
5 x 20 cm	0,2 mm	**N727.1**	50	66,00
20 x 20 cm	0,2 mm	**N728.1**	25	119,00

TLC-ready-to-use foil ALUGRAM® SIL G / UV_{254}

Aluminium foil, silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
4 x 8 cm	0,2 mm	**N729.1**	50	32,90
4 x 8 cm	0,2 mm BIG PACK	**N729.2**	200 (4 x 50)	129,00
5 x 7,5 cm	0,2 mm	**1334.1**	20	21,60
5 x 10 cm	0,2 mm	**N730.1**	50	49,90
10 x 20 cm	0,2 mm	**N731.1**	20	57,90
20 x 20 cm	0,2 mm	**N732.1**	25	119,00

TLC-ready-to-use foil POLYGRAM® SIL G

Polyester foil, silica gel 60 layer

Plate format	Layer thickness	Art. No.	Pack Qty.	€
4 x 8 cm	0,2 mm	**N733.1**	50	32,90
5 x 20 cm	0,2 mm	**N734.1**	50	66,00
20 x 20 cm	0,2 mm	**N735.1**	25	119,00

TLC-ready-to-use foil POLYGRAM® SIL G / UV_{254}

Polyester foil, silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
4 x 8 cm	0,2 mm	**0816.1**	50	32,90
4 x 8 cm	0,2 mm BIG PACK	**0816.2**	200 (4 x 50)	120,00
5 x 20 cm	0,2 mm	**N736.1**	50	66,00
20 x 20 cm	0,2 mm	**N737.1**	25	119,00

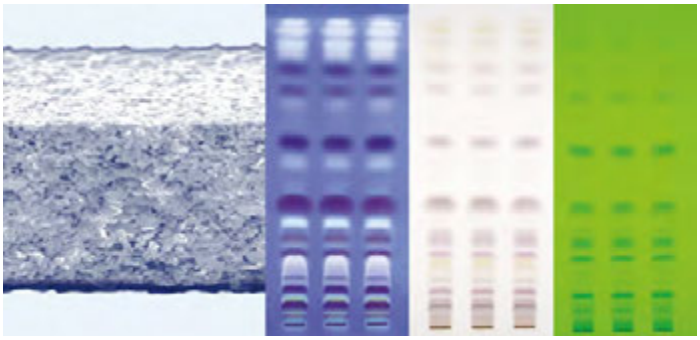
ALUGRAM® Xtra SIL G TLC ready-to-use Foils with Standard Silica Gels

Silica gel 60
Improved binder system for enhanced cutting and wettability.

- Spec. surface: approx. 500 m^2/g
- Medium pore width: 60 Å
- Spec. pore volume: 0,75 ml/g
- Particle size: 5-17 µm

The ready-to-use foils are produced with a special, highly polymeric binder, which is resistant towards almost all organic solvents and aggressive visualisation reagents. It is also completely stable in pure aqueous eluents.

- Easy cutting of foils, **no flaking of silica**
- Outstanding wettability, precise colourisation even with 100 % aqueous eluents
- Excellent separation efficiency and reproducibility from lot to lot



TLC ready-to-use Foil ALUGRAM® Xtra SIL G

Aluminium foil, silica gel 60 layer

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 7,5 cm	0,2 mm	**3868.1**	20	21,60
5 x 10 cm	0,2 mm	**3869.1**	50	49,90
5 x 20 cm	0,2 mm	**3871.1**	50	66,00
20 x 20 cm	0,2 mm	**3873.1**	25	119,00

TLC ready-to-use Foil ALUGRAM® Xtra SIL G / UV_{254}

Aluminium foil, silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
4 x 8 cm	0,2 mm	**3874.1**	50	32,90
5 x 7,5 cm	0,2 mm	**3875.1**	20	21,60
5 x 10 cm	0,2 mm	**3876.1**	50	49,90
5 x 20 cm	0,2 mm	**3877.1**	50	66,00
10 x 20 cm	0,2 mm	**3878.1**	20	57,90
20 x 20 cm	0,2 mm	**3879.1**	25	119,00

TLC Plates for Preparative Applications

These TLC-plates are particularly suitable for separating larger sample amounts due to the layer thickness of 1 mm and 2 mm respectively.

Standard Silica Gel:
- Spec. surface: approx. 500 m^2/g
- Medium pore width: 60 Å
- Spec. pore volume: 0,75 ml/g
- Particle size: 5-17 µm

TLC ready-to-use layers SIL G-100
Glass plates, silica gel layer 60

Plate format	Layer thickness	Art. No.	Pack Qty.	€
20 x 20 cm	1,00 mm	**3375.1**	15	209,00

TLC ready-to-use layers SIL G-100 / UV_{254}
Glass plates, silica gel layer 60, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
20 x 20 cm	1,00 mm	**3377.1**	15	209,00

TLC ready-to-use layers SIL G-200
Glass plates, silica gel layer 60

Plate format	Layer thickness	Art. No.	Pack Qty.	€
20 x 20 cm	2,00 mm	**CN40.1**	12	227,00

TLC ready-to-use layers SIL G-200 / UV_{254}
Glass plates, silica gel layer 60, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
20 x 20 cm	2,00 mm	**CN41.1**	12	227,00

HPTLC-ready-to-use layers RP-18 W / UV_{254}
Glass plate, modified silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
20 x 20 cm	1,00 mm	**1886.1**	15	525,00

▶ Silica gel-60 - for preparing TLC-plates see page 1639

HPTLC Plates with Nano Silica Gel

High Performance Thin-Layer Chromatography Plates

Nano silica gel
- Spec. surface: approx. 500 m^2/g
- Medium pore width: 60 Å
- Spec. pore volume: 0,75 ml/g
- Particle size: 2-10 µm

Advantages compared to standard plates:
- Higher separation effect
- Shorter separation times and distances
- Smaller sample amounts of 0,01-0,1 µl (10-100 nanolitre)
- Lower diffusion due to extremely small amounts
- Higher detection sensitivity

HPTLC-ready-to-use layers Nano-SIL-20
Glass plate, nano silica gel 60 layer

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 5 cm	0,2 mm	**N080.1**	100	202,00
10 x 10 cm	0,2 mm	**N081.1**	25	154,00
10 x 20 cm	0,2 mm	**N082.1**	50	365,00

HPTLC-ready-to-use layers Nano-SIL-20 / UV_{254}
Glass plate, nano silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 5 cm	0,2 mm	**N083.1**	100	202,00
10 x 10 cm	0,2 mm	**N084.1**	25	154,00
10 x 20 cm	0,2 mm	**N085.1**	50	365,00

HPTLC-ready-to-use foil ALUGRAM® Nano-SIL G
Aluminium foil, nano silica gel 60 layer

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 20 cm	0,2 mm	**AE82.1**	50	130,00
20 x 20 cm	0,2 mm	**AE83.1**	25	221,00

HPTLC-ready-to-use foil ALUGRAM® Nano-SIL G / UV_{254}
Aluminium foil, nano silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 20 cm	0,2 mm	**AE84.1**	50	130,00
20 x 20 cm	0,2 mm	**AE85.1**	25	221,00

HPTLC-ready-to-use foil ALUGRAM® Xtra Nano-SIL G
Aluminium foil, nano silica gel 60 layer

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 20 cm	0,2 mm	**3863.1**	50	130,00
20 x 20 cm	0,2 mm	**3895.1**	25	221,00

HPTLC-ready-to-use foil ALUGRAM® Xtra Nano-SIL G / UV_{254}
Aluminium foil, nano silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 20 cm	0,2 mm	**3952.1**	50	130,00
20 x 20 cm	0,2 mm	**3988.1**	25	221,00

Diol-modified HPTLC Silica Layers

Diol modification, carbon content 5,5 %
- pH stability 2-8
- Layer can be equally well wetted by pure water and organic solvents, respectively.

Order of polarity:
Silica > **DIOL** > NH_2 > CN > RP-2 > RP-18 W

Recommended application: steroids, pesticides and plant constituents; for critical separations an alternative to silica, since it is less sensitive to the water content of the environment; leads to more reproducible results compared to silica.

HPTLC-ready-to-use Nano-SIL DIOL / UV_{254}
Glass plate, diol modified silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
10 x 10 cm	0,20 mm	**4699.1**	25	309,00

Amino-modified HPTLC Silica Layers

Aminopropyl modification, carbon content 3,5 %
- pH stability: 2-8
- Layer can be equally well wetted by pure water and organic solvents, respectively.

Order of polarity:
Silica > DIOL > **NH_2** > CN > RP-2 > RP-18 W

Recommended application: vitamins, sugars, steroids, purine derivatives, xanthines, phenols, nucleotides and pesticides.

HPTLC-ready-to-use Nano-SIL NH_2
Glass plate, amino modified silica gel 60 layer

Plate format	Layer thickness	Art. No.	Pack Qty.	€
10 x 10 cm	0,20 mm	**3500.1**	25	309,00

HPTLC-ready-to-use Nano-SIL NH_2 / UV_{254}
Glass plate, amino modified silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
10 x 10 cm	0,20 mm	**3652.1**	25	309,00
10 x 20 cm	0,20 mm	**3660.1**	25	470,00

HPTLC-ready-to-use foil ALUGRAM® Nano-SIL NH_2 / UV_{254}
Aluminium foil, amino modified silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
4 x 8 cm	0,15 mm	**3723.1**	50	173,00
20 x 20 cm	0,15 mm	**3767.1**	25	470,00

Cyano-modified HPTLC Silica Layers

Cyanopropyl modification, carbon content 5,5 %
- pH stability 2-8
- Normal phase or reversed phase separation modes depending on the polarity of the developing solvent

Order of polarity:
Silica > DIOL > NH_2 > **CN** > RP-2 > RP-18 W

Recommended application: steroid hormones, phenols, preservatives

HPTLC-ready-to-use Nano-SIL CN / UV_{254}
Glass plate, cyano modified silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
10 x 10 cm	0,20 mm	**4554.1**	25	309,00
10 x 20 cm	0,20 mm	**4569.1**	25	470,00

HPTLC-ready-to-use foil ALUGRAM® Nano-SIL CN / UV_{254}
Aluminium foil, cyano modified silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
4 x 8 cm	0,15 mm	**4598.1**	50	173,00

Dimethyl-modified TLC Silica Layers

Silanized silica 60 with dimethylmodification, carbon content 4 %

- specific surface: approx. 500 m^2/g
- mean pore size: 60 Å
- specific pore volume: 0,75 ml/g
- particle size 5-17 µm
- pH stability: 2-10

Order of polarity:
Silica > DIOL > NH_2 > CN > **RP-2** > RP-18 W

Recommended application:
active plant constituents, steroids

TLC-ready-to-use layers RP-2 / UV_{254}
Glass plate, dimethyl modified silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
10 x 10 cm	0,25 mm	**3496.1**	25	157,00
10 x 20 cm	0,25 mm	**3498.1**	50	332,00
20 x 20 cm	0,25 mm	**3499.1**	25	245,00

TLC-ready-to-use foil ALUGRAM® RP-2 / UV_{254}
Aluminium foil, dimethyl modified silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
4 x 8 cm	0,15 mm	**3590.1**	50	102,90
20 x 20 cm	0,15 mm	**3591.1**	25	230,00

Octadecyl-modified HPTLC Silica Layers

Reversed Phase (RP)-plates
- Partial octadecyl (C_{18}) modification
- wettable with water
- carbon content 7,5 %

Order of polarity:
Silica > DIOL > NH_2 > CN > RP-2 > **RP-18 W**

Recommended application: aminophenols, barbiturates, preservatives, nucleobases, PAHs, steroids, tetracyclines, plasticizers (phthalates)

HPTLC-ready-to-use layers RP-18 W / UV_{254}
Glass plate, modified silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 20 cm	0,25 mm	**CP23.1**	50	294,00
10 x 10 cm	0,25 mm	**3380.1**	25	222,00
10 x 20 cm	0,25 mm	**3383.1**	50	515,00
20 x 20 cm	0,25 mm	**3399.1**	25	410,00
20 x 20 cm	1,00 mm	**1886.1**	15	525,00

HPTLC-ready-to-use foil ALUGRAM® RP-18 W / UV_{254}
Aluminium foil, modified silica gel 60 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
4 x 8 cm	0,15 mm	**CP24.1**	50	106,00
5 x 10 cm	0,15 mm	**3434.1**	50	128,00
5 x 20 cm	0,15 mm	**CP25.1**	50	237,00
10 x 10 cm	0,15 mm	**3436.1**	25	124,00
20 x 20 cm	0,15 mm	**3487.1**	25	314,00

TLC Plates with Aluminium Oxide

Aluminium oxide
- Spec. surface: approx. 200 m^2/g
- Indicator: manganese-activated zinc silicate
- Mean pore width: 60 Å
- Inert organic binder
- **Tip:** We recommend to activate aluminium oxide layers before use by heating at 120 °C for 10 minutes.

Recommended application: terpenes, alkaloids, steroids, aliphatic and aromatic compounds

TLC-ready-to-use foil ALUGRAM® ALOX N / UV_{254}
Aluminium foil, aluminium oxide layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 20 cm	0,2 mm	**N738.1**	50	83,30
20 x 20 cm	0,2 mm	**N739.1**	25	124,00

TLC-ready-to-use foil POLYGRAM® ALOX N / UV_{254}
Polyester foil, aluminium oxide layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
4 x 8 cm	0,2 mm	**0817.1**	50	35,70
5 x 20 cm	0,2 mm	**N740.1**	50	83,30
20 x 20 cm	0,2 mm	**N741.1**	25	124,00

▶ Reference substances for TLC see page 1605

TLC Plates with Cellulose MN 300

Native fibrous cellulose

- Fibre length (95 %): 2-20 µm
- Average degree of polymerisation: 400-500
- Specific surface acc. to Blaine: 15000 cm^2/g

Recommended application: partition chromatography of polar substances such as amino acids, carboxylic acids or carbohydrates

TLC-ready-to-use layers CEL 300

Glass plate, cellulose MN 300 layer

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 20 cm	0,1 mm	**1320.1**	100	285,00
10 x 20 cm	0,1 mm	**1321.1**	50	235,00
20 x 20 cm	0,1 mm	**1322.1**	25	154,00

TLC-ready-to-use layers CEL 300 / UV_{254}

Glass plate, cellulose MN 300 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 20 cm	0,1 mm	**1323.1**	100	285,00
10 x 20 cm	0,1 mm	**1324.1**	50	235,00
20 x 20 cm	0,1 mm	**1325.1**	25	154,00

TLC-ready-to-use foil POLYGRAM® CEL 300

Polyester foil, cellulose MN 300 layer

Plate format	Layer thickness	Art. No.	Pack Qty.	€
4 x 8 cm	0,1 mm	**0818.1**	50	35,00

TLC-ready-to-use foil POLYGRAM® CEL 300 / UV_{254}

Polyester foil, cellulose MN 300 layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 20 cm	0,1 mm	**N742.1**	50	86,30
20 x 20 cm	0,1 mm	**N743.1**	25	134,00

TLC Plates with Cellulose MN 400 (AVICEL®)

Microcrystalline cellulose

- Prepared by hydrolysis of high puritiy cellulose with HCl
- Mean degree of polymerisation: 40-200

Recommended application: carboxylic acids, lower alcohols, urea and purine derivatives

TLC-ready-to-use layers CEL 400

Glass plate, cellulose MN 400 (AVICEL®) layer

Plate format	Layer thickness	Art. No.	Pack Qty.	€
10 x 20 cm	0,1 mm	**1326.1**	50	215,00
20 x 20 cm	0,1 mm	**1327.1**	25	154,00

TLC-ready-to-use layers CEL 400 / UV_{254}

Glass plate, cellulose MN 400 (AVICEL®) layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
10 x 20 cm	0,1 mm	**1328.1**	50	235,00
20 x 20 cm	0,1 mm	**1329.1**	25	154,00

TLC-ready-to-use foil POLYGRAM® CEL 400

Polyester foil, cellulose MN 400 (AVICEL®) layer

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 20 cm	0,1 mm	**1330.1**	50	86,30
20 x 20 cm	0,1 mm	**1331.1**	25	134,00

TLC-ready-to-use foil POLYGRAM® CEL 400 / UV_{254}

Polyester foil, cellulose MN 400 (AVICEL®) layer, with fluorescence indicator

Plate format	Layer thickness	Art. No.	Pack Qty.	€
5 x 20 cm	0,1 mm	**1332.1**	50	86,30
20 x 20 cm	0,1 mm	**1333.1**	25	134,00

Silica Gel 60 for TLC

Silica gels are the most important base material for thin-layer chromatography. Therefore, we offer a range of specially selected silica gels 60 for preparing your own TLC-plates. Our program ranges from G-types (with gypsum) to a P-type (for preparative applications).

- Spec. surface: ~400-500 m^2/g
- Mean pore diameter: 60 Å
- Pore volume: ~0,8 ml/g
- Particle size: 0-20 µm or 0-40 µm (preparative)
- Loss on drying: <9 %
- pH-value (5 % suspension): ~7

Silica Gel 60

Product	Purity	Application	Art. No.	Pack Qty.	€
Silica gel 60 G	for TLC (with gypsum)	for preparation of TLC plates.	**CN44.3**	250 g	30,90
			CN44.1	500 g	54,90
			CN44.2	1 kg	91,90
Silica gel 60 G/F_{254}			**CN45.3**	250 g	32,90
			CN45.1	500 g	61,90
			CN45.2	1 kg	113,50
Silica gel 60 P/F_{254}	for preparative TLC		**CN47.3**	250 g	32,50
			CN47.1	500 g	55,90
			CN47.2	1 kg	93,90

For additional product data and safety information, see chapter Chemicals A-Z.

Coating of DC-Plates with Silica Gel G: TIP

Suspend 25 g Silica Gel G in 50 ml of distilled water under frequent agitation. The fluid suspension will harden after a short time, due to the amount of gypsum, and can immediately be applied to a glass plate that is free of grease.
The plates should be rested for about 10 minutes until the surface is completely dim. Afterwards, preferably after predrying the plates exposed to air overnight, the plates are dried (activated) for 30 minutes at 105 - 110 °C in a drying cabinet.

The plates should be stored in a desiccator above a desiccant like Silica Gel Orange (Art. No. P077) until usage .

TLC Spray Solutions

ROTH's ready-to-use spray solutions make thin-layer chromatography operations considerably easier.
In case of these ready-to-use spray solutions the staining/derivative reagent was dissolved in ethanol, 2-propanol or water.

Aniline phthalate spray solution
for TLC

Ready-to-use spray solution for detection of reducing sugars.
0,9 ml Anilin and 1,66 g phthalic acid dissolved in 100 ml ethanol / 2-propanol (1/1 v/v).

Danger H225-H373-H319-H336-EUH208

CP35.1	100 ml	glass	38,50 €

2',7'-Dichlorofluorescein spray solution
for TLC

Ready-to-use spray solution for detection of saturated and unsaturated lipids. 0,2 g 2',7'- Dichlorofluorescein dissolved in 100 ml 2-propanol.

Danger H225-H319-H336

CP36.1	100 ml	glass	38,50 €

4-(Dimethylamino) benzaldehyde spray solution
for TLC

Ready-to-use spray solution for detection of terpenes, sugars and steroids.
0,5 g 4-(Dimethylamino)-benzaldehyde dissolved in 100 ml 2-propanol.

Danger H225-H319-H336

CP38.1	100 ml	glass	38,50 €

Dragendorff-Munier spray solution
for TLC

Ready-to-use spray solution for detection of nitrogen compounds and alkaloids.
1 % basic bismuth nitrate, 16,5 % tartaric acid, 20 % potassium iodide dissolved in water.

Warning H319

CP33.1	100 ml	glass	38,50 €

Iron(III) chloride spray solution
for TLC

Ready-to-use spray solution for detection of acetylsalicylic acid and paracetamol. 2 g Iron(III) chloride dissolved in 100 ml water.

Warning H290-H317-H319

Type analysis:
TLC-application. .....complies

CP34.1	100 ml	glass	38,50 €

Molybdatophosphoric acid spray solution
for TLC

Ready-to-use spray solution for detection of reducing compound lipids, fatty acids and steroids. 4 g Molybdatophosphoric acid dissolved in 100 ml ethanol.

Danger H225-H315-H318

CP31.1	100 ml	glass	38,90 €

Ninhydrin spray solution
for TLC

Ready-to-use spray solution for detection of amino acids, amines and amino sugars. 0,5 g Ninhydrin dissolved in 100 ml ethanol.

Danger H225

CP30.1	100 ml	glass	38,50 €

Rhodamine B-spray solution
for TLC

Ready-to-use spray solution for detection of lipids. 0,1 g Rhodamine B dissolved in 100 ml ethanol.

Danger H225-H319

CP37.1	100 ml	glass	38,50 €

Rubeanic acid spray solution
for TLC

Ready-to-use spray solution for detection of heavy metal ions. 0,2 g Rubeanic acid dissolved in 100 ml ethanol.

Danger H225

CP32.1	100 ml	glass	38,50 €

Detection Reagents for TLC

Staining and derivatisation reagents for preparing your own spray solutions, e.g. for tracing organic acids, lipids, steroids, terpenes, flavonoids, amino acids, peptides.

Detection reagents

Product	Purity	Art. No.	Pack Qty.	€
Ammonium heptamolybdate tetrahydrate	≥99 %, p.a.	**3666.1**	250 g	89,80
		3666.2	500 g	160,75
		3666.3	1 kg	287,60
	NEW	**3666.7**	25 kg	2999,25
Bismuth(III) nitrate	≥71 % Bi, p.a., alkaline	**4447.1**	50 g	45,05
		4447.2	100 g	71,50
Bromocresol Green	ACS	**T115.1**	1 g	17,10
		T115.2	5 g	27,45
		T115.3	10 g	46,80
		T115.4	25 g	89,15
2',7'-Dichlorofluorescein	p.a., ACS	**X866.2**	1 g	20,35
		X866.1	5 g	34,30
		X866.3	25 g	92,35
		X866.4	50 g	150,00
4-(Dimethylamino)-benzaldehyde	≥98 %, p.a., ACS	**X867.1**	25 g	45,05
		X867.2	100 g	113,45
Molybdatophosphoric acid hydrate	≥99,0 %, p.a., ACS	**4440.1**	25 g	38,60
		4440.2	50 g	60,10
		4440.3	100 g	107,00
	NEW	**4440.7**	1 kg	944,95
Natural product reagent A	≥98 %, p.a.	**9920.1**	5 g	58,60
		9920.2	25 g	158,60
		9920.3	50 g	275,10
Ninhydrin	≥99 %, p.a., ACS	**4378.1**	25 g	40,35
		4378.2	100 g	104,20
		4378.3	500 g	375,20
Rhodamine B (C.I. 45170)	for microscopy	**T130.1**	25 g	34,30
	NEW	**T130.7**	50 g	55,80
2,3,5-Triphenyltetrazolium chloride	≥98 %, p.a.	**KK13.1**	10 g	53,25
		KK13.2	50 g	220,30

For additional product data and safety information, see chapter Chemicals A-Z.

Ammonium molybdate spray reagent:
for detecting hydroxycarboxylic acids. Mix 2 ml **ammonium molybdate solution** 25 % + 2 ml ascorbic acid 10 % + 2 ml sulphuric acid 29,5 % and add 4 ml H_2O.

Dragendorff's spray reagent:
for detecting tertiary amines and nitrogen heterocycles. Mix 0,85 g **bismuth(III) nitrate basic** + 40 ml H_2O + 10 ml acetic acid with 20 ml KI-solution (40 %).

Bromcresol green spray reagent:
for detecting hydroxycarboxylic acids. Dilute 25 mg **bromcresol green** + 0,36 ml 0,1 N NaOH + 10 ml ethanol 96 % to 50 ml with H_2O.

Ehrlich's spray reagent:
for detecting sulphonamides and primary aromatic amines. Mix 0,5 g **4-(dimethylamino)-benzaldehyde** + 25 ml hydrochloric acid 36 % + 25 ml ethanol 96 %.

Natural product reagent A as a spray reagent:
According to Wagner natural product reagent A is an excellent reagent for fluorometry in quantitative analysis of thin-layer chomatograms.

Application:
Natural product-polyethylene glycol reagent (NST/PEG).
Spray a 1 % methanol solution of natural product reagent A and a 5 % ethanol PEG 4000 solution, one after the other onto the TLC-plate (approx. 10 ml and 8 ml). Intensive fluorescent colours will appear immediately or after 15 min in UV-365 nm. Adding PEG will lead to an increase in detection sensitivity (from 10 µg to 2,5 µg). The fluorescence behaviour depends on the constitution. The reagent must be freshly prepared before use (1 % in methanol). Spray under the fume hood!

Ninhydrin spray reagent:
for detecting amino acids and primary aliphatic amines. 0,15 g **ninhydrin** + 47,5 ml 2-propanol + 2,5 ml acetic acid 96 %.

Solvents for TLC

ROTISOLV® UV/IR-Grade solvents

for chromatography and spectroscopy

ROTISOLV® UV/IR-Grade solvents are specially adapted for spectrophotometric processes and other chromatographic applications which require high spectroscopic purity.

- High chemical purity
- Spectroscopically tested for UV and IR
- High UV-permeability
- Low fluorescence

Example specification:

n-Hexane
ROTISOLV® ≥99 %, UV/IR-Grade
For chromatography and spectroscopy.
1-Methylpentane
C_6H_{14}
M 86,18 g/mol
Danger H225-H315-H304-H336-H361f-H373-H411

Guarantee analysis:

Assay (GC)	≥99 %
Water (KF)	≤0,005 %
Acidity	≤0,005 meq/g
Evaporation residue	≤0,005 %
Fluorescence (as quinine):	
254 nm	≤1,0 ppb
365 nm	≤1,0 ppb
Transmission:	
245 nm	≥98 %
225 nm	≥90 %
217 nm	≥80 %
210 nm	≥50 %
195 nm	≥10 %

Solvents for TLC

Product	Purity	Max. permeability at	Art. No.	Pack Qty.	€
Acetic acid ethyl ester	≥99,8 %, UV/IR-Grade	280 nm	**4442.1**	2,5 l	58,60
Acetone	≥99,9 %, UV/IR-Grade	350 nm	**T906.1**	2,5 l	53,65
Acetonitrile	≥99,9 %, UV/IR-Grade	230 nm	**T907.1**	2,5 l	94,10
1-Butanol	≥99,8 %, UV/IR-Grade	270 nm	**4431.1**	2,5 l	93,00
Cyclohexane	≥99,9 %, UV/IR-Grade	250 nm	**CP81.1**	2,5 l	90,20
Dichloromethane	≥99,8 %, UV/IR-Grade	260 nm	**4433.1**	2,5 l	43,55
N,N-Dimethylformamide	≥99,9 %, UV/IR-Grade	330 nm	**CP79.1**	2,5 l	97,30
n-Heptane	≥99 %, UV/IR-Grade	245 nm	**CP78.1**	2,5 l	110,65
n-Hexane	≥99 %, UV/IR-Grade	245 nm	**T908.1**	2,5 l	109,55
Isooctane	≥99,8 %, UV/IR-Grade	255 nm	**CP80.1**	2,5 l	110,65
Methanol	≥99,9 %, UV/IR-Grade	260 nm	**T909.1**	2,5 l	35,40
n-Pentane	≥99 %, UV/IR-Grade	240 nm	**4443.1**	2,5 l	111,70
2-Propanol	≥99,9 %, UV/IR-Grade	260 nm	**T910.1**	2,5 l	72,60
Tetrahydrofuran	≥99,9 %, UV/IR-Grade	305 nm	**CP83.1**	2,5 l	84,40
Tetrahydrofuran	≥99,9 %, UV/IR-Grade	310 nm	**CP82.1**	2,5 l	97,30
Toluene	≥99,8 %, UV/IR-Grade	350 nm	**4445.1**	2,5 l	60,10
Trichloromethane/Chloroform	≥99,8 %, UV/IR-Grade	280 nm	**4432.1**	2,5 l	64,40

For additional product data and safety information, see chapter Chemicals A-Z.

Accessories for TLC

Spotting guides for TLC plates

For the easy sample application. Size: 4 x 6 cm. Marks for 4 spots with a distance of 8 mm and 3 spots with a distance of 10 mm, respectively.

Art. No.	Pack Qty.	€
3661.1	2	22,40

A 121 °C

TLC separation chamber

Made of borosilicate glass 3.3. For immersing pre-treated TLC ready-to-use 8 x 4 cm foils in solvents. Cylindrical glass beakers with loose glass lid. Inner height 100, ∅ 60 mm.

Art. No.	Pack Qty.	€
0823.1	1	39,60

Developing chambers for TLC

Simultaneous developing chambers made of glass.

Type 1: for 5 plates up to size 20 x 20 cm
Type 2: for 2 plates up to size 10 x 10 cm

Type	Art. No.	Pack Qty.	€
1	**3133.1**	1	359,00
2	**3134.1**	1	165,00

▶ Glass Plate Racks see page 1244

TLC sprayer

Versatile sprayer with gas cartridge for spraying reagents and other liquids. Spray pressure: constant 4,4 bar. Eco-friendly propellant mixture of dimethyl ether, propane and isobutane. Sufficient for approx. 500 ml of liquid.
Easy to clean: unscrew cartridge, immerse uptake into vessel containing cleaning fluid and spray until the spray is free of residues.

Propellants: dimethyl ether, isobutane, propane.

Delivery incl. propellant cartridge (55 g or 94 ml), 170 ml glass reservoir bottle, suction tube and screw cap.

Art. No.	Pack Qty.	€
YC44.1	1	14,95

Accessories:

Replacement cartridges with spray nozzle and suction tube	**YC45.1**	5	45,80
Replacement 170 ml glass bottle	**YC46.1**	1	7,35

A 121 °C
Material DURAN®

TLC atomizers

Made of DURAN®. NS 19/26, volume 100 ml. Overall height 160 mm. Autoclavable without rubber tube.
Delivery incl. Erlenmeyer flasks, wire joint clamps, rubber ball incl. rubber tube 25 cm.

Type	Art. No.	Pack Qty.	€
TLC atomizers complete	**0707.1**	1	64,40

Accessories:

Spare spray nozzle	**H451.1**	1	38,25
Spare rubber bulb, incl. tube, length 20 cm	**5914.1**	1	13,85

▶ UV lamps see page 802

Paper Chromatography

Paper chromatography is the oldest chromatographic technique. Like other chromatographic applications, separation is based upon the partition of the material mixture, which is to be separated, between two immiscible phases.
While the chromatographic paper is, strictly speaking, only the carrier for the liquid mobile phase, the properties of the paper do, in fact, have considerable influence on the quality of the separation.
The most important characteristics of chromatographic papers are the **weight** (g/m²), the **thickness** (mm) and the **migration distance.**
When specifying the migration distance, it is common practice in the paper industry to apply the Klemm method. This method indicates the extent of dampness of a 15 cm wide paper strip (dipped in 20 °C dist. water) after 10 minutes. You will, however, frequently find the migration distance of chromatographic paper specified in mm/30 min.

Smooth papers

Model	Thick-ness (mm)	Weight (g/m²)	Flow rate (mm/min.)	Size (cm)	Art. No.	Pack Qty. (sheets)	€
MN 261	0,18	90	90-100/30	58 x 60	**1236.1**	100	185,00
MN 260	0,20	90	120-130/30	58 x 60	**1238.1**	100	185,00
MN 260	0,20	90	120-130/30	7,5 x 17	**2940.1***	100	29,20
MN 214	0,28	140	90-100/30	58 x 60	**1239.1**	100	269,00
MN 218	0,36	180	90-100/30	58 x 60	**1246.1**	100	341,00

* suitable for chamber saturation in thin-layer chromatography

Defatted paper

Degreased paper
This paper is extracted with organic solvents.

Model	Thick-ness (mm)	Weight (g/m²)	Flow rate (mm/min.)	Size (cm)	Art. No.	Pack Qty. (sheets)	€
MN 214 ff	0,28	140	90-100/30	56 x 58	**1254.1**	100	610,00

Soft cartons

Model	Thick-ness (mm)	Weight (g/m²)	Flow rate (mm/min.)	Size (cm)	Art. No.	Pack Qty. (sheets)	€
MN 827	0,70	270	130-140/10	58 x 60	**1265.1**	100	378,00
MN 866	1,70	650	100-120/10	38 x 38	**1273.1**	100	316,00

Whatman® Chromatography Papers

Whatman® chromatography papers for blotting, chromatography and filtration. Made from specially selected cellulose.

Thickness 0,18 mm (Whatman® 1 CHR), flow rate 130 mm/30 min.
Also available in convenient rolls!

Dimensions	Art. No.	Pack Qty.	€
100 x 300 mm	**CL37.1**	100	46,50
200 x 200 mm	**CL38.1**	100	52,80
250 x 250 mm	**CL39.1**	100	82,00
460 x 570 mm	**CL40.1**	100	175,00
580 x 680 mm	**CL41.1**	100	274,00
20 mm x 100 m (roll)	**7606.1**	1	29,50
30 mm x 100 m (roll)	**CL42.1**	1	39,50
40 mm x 100 m (roll)	**CL43.1**	1	44,50
50 mm x 100 m (roll)	**7607.1**	1	53,00
100 mm x 100 m (roll)	**CL44.1**	1	99,50
150 mm x 100 m (roll)	**7608.1**	1	126,00

Thickness 0,36 mm (Whatman® 3 CHR), flow rate 130 mm/30 min.
For general applications with medium/heavy solute loadings.

Dimensions	Art. No.	Pack Qty.	€
460 x 570 mm	**7604.1**	100	349,00

Thickness 0,92 mm (Whatman® 17 CHR), flow rate 190 mm/30 min.
For the heaviest solute loadings.

Dimensions	Art. No.	Pack Qty.	€
70 x 90 mm	**7600.1**	100	68,50
25 x 220 mm	**7601.1**	100	69,90
460 x 570 mm	**7602.1**	25	261,00
460 x 570 mm	**7603.1**	100	968,00

Application instructions:
Chromatography paper and cardboard must always be handled carefully. Your fingers should not touch the paper as the separation process will be disrupted by skin excretion, such as salt, grease and amino acids. Please avoid folding or creasing the paper as this will impair the capillary action.

Ion chromatography (IC)

ROTI®STAR Standards for IC

ROTH has an extensive range of products which meets the highest standards of quality in the field of ion standards.

The solutions and mixtures are made using materials of the highest purity, and therefore meet the requirements for instrumental analysis by IC. All solutions are certified and can be traced to NIST or BAM standard reference solutions. Solutions are produced according to **ISO Guide 34** in an accredited environment. The solutions are tested in a laboratory accredited to **ISO/IEC 17025** and supplied with a detailed, batch-specific certificate of analysis.

Ion Standards for IC

Each standard solution is made of high-purity starting materials, and its content is determined gravimetrically and by ion chromatography. Comprehensive certificates of analysis with ion chromatogram included.

- Single and multi-element-standards
- Anion and cation multi-element-standards
- Container sizes: 100 ml and 500 ml

Anionic Standards for IC 1000 mg/l (1 g/l) - ready-to-use

Product	Ion	Matrix	Art. No.	Pack Qty.	€
Acetate IC Standard Solution	CH_3COO^-	H_2O	**1989.1**	100 ml	41,40
			1989.2	500 ml	85,50
Benzoate IC Standard Solution	$C_6H_5COO^-$	H_2O	**8168.1**	100 ml	41,40
			8168.2	500 ml	85,50
Bromate IC Standard Solution	BrO_3^-	H_2O	**8170.1**	100 ml	41,40
			8170.2	500 ml	85,50
Bromide IC Standard Solution	Br^-	H_2O	**2655.1**	100 ml	39,70
			2655.2	500 ml	77,30
Chlorate IC Standard Solution	ClO_3^-	H_2O	**8171.1**	100 ml	40,75
			8171.2	500 ml	85,50
Chloride IC Standard Solution	Cl^-	H_2O	**2656.1**	100 ml	39,70
			2656.2	500 ml	77,30
Chlorite IC Standard Solution	ClO_2^-	H_2O	**8172.1**	100 ml	39,70
Chromate IC Standard Solution	CrO_4^{2-}	H_2O	**2657.1**	100 ml	39,70
			2657.2	500 ml	77,30
Citrate IC Standard Solution	$C_3H_4(OH)(COO)_3^{3-}$	H_2O	**8173.1**	100 ml	41,40
			8173.2	500 ml	85,50
Cyanide IC Standard Solution	CN^-	0,1% KOH	**2658.1**	100 ml	39,70
			2658.2	500 ml	77,30
Fluoride IC Standard Solution	F^-	H_2O	**2659.1**	100 ml	39,70
			2659.2	500 ml	77,30
Formate IC Standard Solution	$HCOO^-$	H_2O	**1999.1**	100 ml	41,40
			1999.2	500 ml	85,50
Iodate IC Standard Solution	IO_3^-	H_2O	**8174.1**	100 ml	39,70
			8174.2	500 ml	77,30
Iodide IC Standard Solution	I^-	H_2O	**2660.1**	100 ml	39,70
			2660.2	500 ml	77,30

Product	Ion	Matrix	Art. No.	Pack Qty.	€
Lactate IC Standard Solution	$C_2H_4(OH)COO^-$	H_2O	**8176.1**	100 ml	40,75
			8176.2	500 ml	85,50
Maleate IC Standard Solution	$C_2H_2(COO)_2^{2-}$	H_2O	**8181.1**	100 ml	41,40
			8181.2	500 ml	85,50
Nitrate IC Standard Solution	NO_3^-	H_2O	**2661.1**	100 ml	39,70
			2661.2	500 ml	77,30
Nitrite IC Standard Solution	NO_2^-	H_2O	**2664.1**	100 ml	41,40
			2664.2	500 ml	77,30
Oxalate IC Standard Solution	$C_2O_4^{2-}$	H_2O	**2008.1**	100 ml	41,85
			2008.2	500 ml	85,50
Perchlorate IC Standard Solution	ClO_4^-	H_2O	**8186.1**	100 ml	41,40
			8186.2	500 ml	85,50
Phosphate IC Standard Solution	PO_4^{3-}	H_2O	**2665.1**	100 ml	39,70
			2665.2	500 ml	77,30
Propionate IC Standard Solution	$C_2H_5COO^-$	H_2O	**8183.1**	100 ml	41,40
			8183.2	500 ml	85,90
Succinate IC Standard Solution	$C_2H_4(COO)_2^{2-}$	H_2O	**8187.1**	100 ml	41,40
			8187.2	500 ml	85,50
Sulphate IC Standard Solution	SO_4^{2-}	H_2O	**2666.1**	100 ml	39,70
			2666.2	500 ml	77,30
Sulphite IC Standard Solution	SO_3^{2-}	H_2O	**8192.1**	100 ml	41,40
			8192.2	500 ml	85,50
Tartrate IC Standard Solution	$C_2H_4O_2(COO)_2^{2-}$	H_2O	**8201.1**	100 ml	41,40
			8201.2	500 ml	85,50
Thiocyanate IC Standard Solution	SCN^-	H_2O	**8205.1**	100 ml	41,40
			8205.2	500 ml	85,50
Thiosulphate IC Standard Solution	$S_2O_3^{2-}$	0,1 % Pentanol	**8207.1**	100 ml	41,40
			8207.2	500 ml	85,50

For additional product data and safety information, see chapter Chemicals A-Z.

Cationic Standards for IC 1000 mg/l (1 g/l) - ready-to-use

ready-to-use

Product	Ion	Matrix	Art. No.	Pack Qty.	€
Ammonium IC Standard Solution	NH_4^+	H_2O	**2654.1**	100 ml	39,70
			2654.2	500 ml	77,30
Barium IC Standard Solution	Ba^{2+}	H_2O	**8167.1**	100 ml	39,70
			8167.2	500 ml	77,30
Caesium IC Standard Solution	Cs^+	H_2O	**8166.1**	100 ml	39,70
Calcium IC Standard Solution	Ca^{2+}	H_2O	**1986.1**	100 ml	39,70
			1986.2	500 ml	77,30
Potassium IC Standard Solution	K^+	H_2O	**1985.1**	100 ml	39,70
			1985.2	500 ml	77,30
Lithium IC Standard Solution	Li^+	H_2O	**8158.1**	100 ml	39,70
			8158.2	500 ml	77,30
Magnesium IC Standard Solution	Mg^{2+}	H_2O	**1987.1**	100 ml	39,70
			1987.2	500 ml	77,30
Sodium IC Standard Solution	Na^+	H_2O	**1984.1**	100 ml	39,70
			1984.2	500 ml	77,30
Strontium IC Standard Solution	Sr^{2+}	H_2O	**1988.1**	100 ml	39,70
			1988.2	500 ml	77,30

For additional product data and safety information, see chapter Chemicals A-Z.

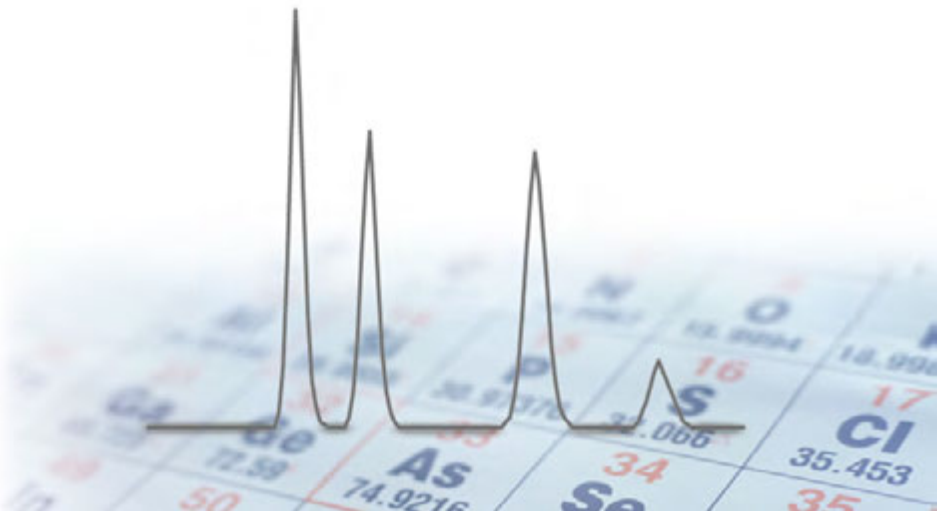
Ion Multi-Element Standards for IC - ready-to-use

ready-to-use

Designation	Elements	Composition	Matrix	Art. No.	Pack Qty.	€
Anion Multi-Element Standard I, 1000 mg/l	3	Cl^-, NO_3^-, SO_4^{2-}	H_2O	**2026.1**	100 ml	135,35
				2026.2	500 ml	256,95
Anion Multi-Element Standard II, 1000 mg/l	3	F^-, Br^-, PO_4^{3-}	H_2O	**2029.1**	100 ml	142,90
				2029.2	500 ml	276,85
Anion Multi-Element Standard, 10 mg/l	6	F^-, Cl^-, Br^-, NO_3^-, PO_4^{3-}, SO_4^{2-}	H_2O	**2030.1**	100 ml	102,05
				2030.2	500 ml	196,20
Anion Multi-Element Standard (concentration in mg/l)	7	F^- (5), Cl^- (10), NO_2^- (15), Br^- (25), NO_3^- (25), PO_4^{3-} (40), SO_4^{2-} (30)	H_2O	**2668.1**	100 ml	78,40
				2668.2	500 ml	160,20
Cation Multi-Element Standard, 10 mg/l	4	Na^+, K^+, Mg^{2+}, Ca^{2+}	H_2O	**2032.1**	100 ml	89,80
				2032.2	500 ml	170,95
Cation Multi-Element Standard (concentration in mg/l)	6	NH_4^+ (40), Ca^{2+} (40), K^+ (20), Li^+ (10), Mg^{2+} (20), Na^+ (20)	0,1 % HNO_3	**2669.1**	100 ml	78,40
				2669.2	500 ml	160,20

For additional product data and safety information, see chapter Chemicals A-Z.

- Ultra pure acids, alkaline solutions and water for IC see page 1728
- High-purity salts for preparing eluent mixtures, see page 1672



NUCLEODUR®
Columns for HPLC

NUCLEODUR® as a state-of-the-art silica is the ideal base material for modern HPLC phases.
We offer you two phases **NUCLEODUR® C18 Gravitiy** which is ideal for sophisticated analytical separations and **NUCLEODUR® C18 ec** suitable for routine HPLC analysis.

NUCLEODUR® C_{18} Gravity

The ideal phase for overall sophisticated analytical separations

- Especially suitable for LC-MS applications due to low bleeding properties
- Ideal for method development
- Superior base deactivation

Properties:
Octadecyl phase, multi-endcapped
Carbon content: 18,0 %
Pore size: 110 Å
pH stability: 1-11
Eluent on column: acetonitrile/water

Applications:
Pharmaceuticals, e.g. analgesics, antiinflammatory drugs, antidepressants, herbicides, immunosuppressants

Similar phases:
Zorbax® Extend C_{18}, Synergi™ 4 µm Max RP, Phenomenex Luna® C_{18} (2), Waters Xterra® RP_{18} / MS $C_{18,}$ Inertsil® ODS III, Purospher® RP-18, Star RP-18, USP L1

NUCLEODUR® C_{18} Gravity, particle size 3 µm

Innner ∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
4	250	**KK86.1**	1	680,00
4,6	150	**KK87.1**	1	655,00
4,6	250	**KK88.1**	1	720,00

NUCLEODUR® C_{18} Gravity, particle size 5 µm

Innner ∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
4	250	**KK89.1**	1	545,00
4,6	150	**KK90.1**	1	525,00
4,6	250	**KK91.1**	1	580,00

NUCLEODUR® C_{18} ec

The ideal standard RP phase for routine HPLC analysis

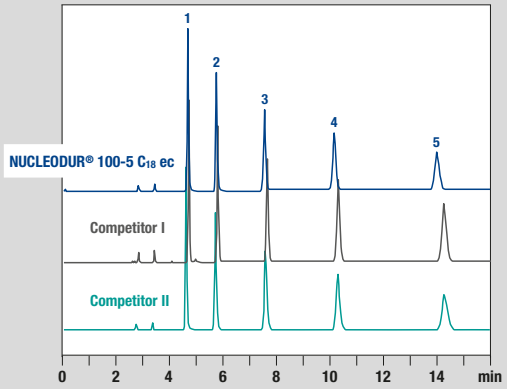
- Cost-effective and reliable
- Long-life columns
- For all standard routine applications in modern RP-chromatography

Properties:
Octadecyl phase, endcapped
Carbon content: 17,5 %
Pore size: 110 Å
pH stability: 1-9
Eluent on column: acetonitrile/water

Applications:
Basic, neutral or acidic pharmaceuticals, derivatised amino acids, pesticides, aldehydes and ketones, fat-soluble vitamins, phenolic compounds, USP L1

Similar phases:
For many applicatons the following phases can be replaced with identical or even better results: NUCLEOSIL® C_{18}, Spherisorb® ODS I and II, Hypersil® ODS, Waters Symmetry® $C_{18,}$ Inertsil® ODS II, Kromasil® $C_{18,}$ LiChrospher® RP_{18} and RP C_{18} ec.

Separation of Aromatic Hydrocarbons



Conditions:
Eluent: acetonitril/water (75/25, v/v)
Flow: 1,3 ml/min
Temperature: 30 °C
Detection: UV 254 nm
Legend:
1. Toluene, 2. Ethylbenzene, 3. Propylbenzene, 4. Butylbenzene, 5. Pentylbenzene

NUCLEODUR® 100-3 C_{18} ec, particle size 3 µm

Innner ∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
4	250	**KK80.1**	1	464,00
4,6	150	**KK81.1**	1	426,00
4,6	250	**KK82.1**	1	489,00

NUCLEODUR® 100-5 C_{18} ec, particle size 5 µm

Innner ∅ (mm)	Length (mm)	Art. No.	Pack Qty.	€
4	250	**KK83.1**	1	343,00
4,6	150	**KK84.1**	1	297,00
4,6	250	**KK85.1**	1	363,00

▶ Guard columns UNIVERSAL see page 1647

Guard Columns Systems

Column Protection System

Innovative and universal screw-on guard column holder system
Suitable for all analytical HPLC columns with 1/16" fittings

Features
- Ideal protection for your analytical main column → significant increase in column lifetime
- Minimised void volume → suitable also for ultra fast HPLC
- Special ferrules → pressure stability up to 1 300 bar (18 850 psi)
- Visual contamination check → in-time changing of the guard column
- Guard column length 4 mm, ID 2 mm (for main columns with 2 mm ID) or ID 3 mm (for main columns with 3, 4 and 4,6 mm ID)
- UNIVERSAL RP guard columns suitable for all HPLC columns under RP conditions

Content of the column protection system
- Cartridge holder (1 piece)
- Capillaries (2 pieces)
- Ferrules (3 pieces)
- Wrenches (2 pieces)
- Manual

Art. No.	Pack Qty.	€
6041.1	1 Kit	139,90

Guard columns UNIVERSAL

Designation	Art. No.	Pack Qty.	€
Guard column EC 4/2 UNIVERSAL RP for main columns with 2 mm ID	**6049.1**	3	116,00
Guard column EC 4/3 UNIVERSAL RP for main columns with 3, 4 and 4,6 mm ID	**6050.1**	3	116,00

Replacement parts for Protection System

Designation	Art. No.	Pack Qty.	€
Replacement ferrules	**6042.1**	5	33,70
Replacement connector including O-ring	**6043.1**	1	21,10
Replacement capillary tubes, nuts and metal ferrules	**6045.1**	3	47,40

Ion Pair Reagents

Ion pair reagents are strongly hydrophobic ions which form neutral ion pairs with oppositely charched sample molecules. In this way, the simultaneous separation of charged and non-charged molecules is possible.

Advantages:
- High purity
- High UV-permeability
- Broad range of products
- Excellent price/performance ratio

Ion pair reagents

Product	Purity	Art. No.	Pack Qty.	€
Butane-1-sulphonic acid sodium salt	≥99 %	**KK50.1**	10 g	50,45
		KK50.2	25 g	95,60
		KK50.3	100 g	289,75
Decane-1-sulphonic acid sodium salt	≥99 %	**KK51.1**	10 g	52,15
		KK51.2	25 g	102,05
		KK51.3	100 g	314,45
Dodecane-1-sulphonic acid sodium salt	≥99 %	**KK52.1**	10 g	55,80
		KK52.2	25 g	109,55
		KK52.3	100 g	360,15
Heptane-1-sulphonic acid sodium salt	≥98 %	**KK53.1**	10 g	47,20
		KK53.2	25 g	91,30
		KK53.3	100 g	272,55
Hexane-1-sulphonic acid sodium salt	≥98 %	**KK54.1**	10 g	47,20
		KK54.2	25 g	91,30
		KK54.3	100 g	272,55
Octane-1-sulphonic acid sodium salt	≥98 %	**KK55.1**	10 g	47,20
		KK55.2	25 g	91,30
		KK55.3	100 g	272,55
Pentane-1-sulphonic acid sodium salt	≥98 %	**KK56.1**	10 g	47,20
		KK56.2	25 g	91,30
		KK56.3	100 g	272,55
Propane-1-sulphonic acid sodium salt	≥98 %	**KK57.1**	10 g	53,65
		KK57.2	25 g	107,40
		KK57.3	100 g	332,20

For additional product data and safety information, see chapter Chemicals A-Z.

ROTISOLV®
Ultra LC-MS Solvents

Short analysis times in ultra-fast HPLC as well as systems coupled to a mass spectrometer require solvents which offer utmost reliability, sensitivity and reproducibility. Our **ROTISOLV® Ultra LC-MS solvents** are specially suited for meeting these demands and have undergone extremely intensive production and quality controls.

Properties:

- Filtered through **0,1 µm** membrane
- Extra high purity (≥99,98 %)
- Bottled under protective gas
- High UV-permeability
- Low fluorescence
- LC-MS suitability tested
- Solid residue from evaporation max. 1 ppm
- Metal trace impurities max. 100 ppb

Example specification:

Acetonitrile

ROTISOLV® ≥99,98 %, Ultra LC-MS
Methyl cyanide, Cyanomethane
C_2H_3N
M 41,05 g/mol

Danger H225-H302+H312+H332-H319

Guarantee analysis:

Assay (GC)	≥99,98 %
Colour (APHA)	≤5
Water (KF)	≤0,01 %
Free acid (as CH_3COOH)	≤0,001 %
Free alkali (as NH_3)	≤0,0001 %
Non volatile matter	≤0,0001 %
Transmission:	
230 nm	≥99 %
215 nm	≥98 %
200 nm	≥97 %
195 nm	≥85 %
191 nm	≥30 %
Gradient test:	
UV-absorption of the greatest eluated peak.	
210 nm	≤0,001 AU
254 nm	≤0,0003 AU
Fluorescence (as quinine):	
254 nm	≤0,25 ppb
365 nm	≤0,25 ppb
Trace impurities:	
Aluminium (Al)	≤20 ppb
Calcium (Ca)	≤50 ppb
Iron (Fe)	≤20 ppb
Potassium (K)	≤50 ppb
Magnesium (Mg)	≤20 ppb
Sodium (Na)	≤100 ppb

Filtered through 0,1 µm membrane and filled under protective gas.

Acetonitrile

ROTISOLV® ≥99,98 %, Ultra LC-MS
Methyl cyanide, Cyanomethane
C_2H_3N
M 41,05 g/mol

Danger H225-H302+H312+H332-H319

HN40.1	1 l	glass	83,35 €
Original pack 6 x 1 l			79,18/1 l
HN40.2	2,5 l	glass	155,80 €
Original pack 4 x 2,5 l			148,01/2,5 l

Methanol

ROTISOLV® ≥99,98 %, Ultra LC-MS
Methyl alcohol, Carbinol
CH_3OH
M 32,04 g/mol

Danger H225-H301+H311+H331-H370

HN41.1	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l
HN41.2	2,5 l	glass	77,30 €
Original pack 4 x 2,5 l			73,44/2,5 l

2-Propanol

ROTISOLV® ≥99,95 %, Ultra LC-MS
Isopropanol, Isopropyl alcohol, Dimethyl carbinol, IPA, 2-Hydroxypropane
C_3H_8O
M 60,10 g/mol

Danger H225-H319-H336

0733.1	1 l	glass	55,80 €
Original pack 6 x 1 l			53,01/1 l
0733.2	2,5 l	glass	99,90 €
Original pack 4 x 2,5 l			94,91/2,5 l

Tetrahydrofuran

ROTISOLV® ≥99,9 %, Ultra LC-MS, not stabilised
THF, Oxolane
C_4H_8O
M 72,11 g/mol

Danger H225-H302-H319-H335-H351-EUH019

0739.1	1 l	glass	122,45 €
Original pack 6 x 1 l			116,33/1 l

Water

ROTISOLV® Ultra LC-MS
H_2O
M 18,02 g/mol

HN43.1	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
HN43.2	2,5 l	glass	80,10 €
Original pack 4 x 2,5 l			76,10/2,5 l

▶ Vials for automatic samplers and accessories see chapter Labware - Labware & Aids page 64

Safety data sheets
can be found on the Internet next to the product description.

ROTISOLV®
LC-MS Grade Solvents

Modern analysis methods such as LC-MS (combination of liquid chromatography and mass spectrometry) call for a special solvent quality which has the required purity and which has been tested under application-oriented conditions.
Very high purity and very low metal concentrations are features of these products which allow exact interpretations of the mass spectra.

- High chemical purity (≥99,95 %)
- High UV-permeability
- Low fluorescence
- Superior gradient baseline
- Metal trace impurities (≤0,05 ppm)
- Test for LC-MS suitability
- Filtered through 0,2 µm membrane
- Bottled under inert gas

Example specification:

Acetonitrile
ROTISOLV® ≥99,95 %, LC-MS Grade
Methyl cyanide, Cyanomethane
C_2H_3N
M 41,05 g/mol

Danger H225-H302+H312+H332-H319

Guarantee analysis:

Assay (GC)	≥99,95 %
Colour (APHA)	≤5
Water (KF)	≤0,01 %
Free acid (as CH_3COOH)	≤0,001 %
Free alkali (as NH_3)	≤0,0001 %
Non volatile matter	≤0,0001 %
Transmission:	
240 nm	≥99 %
220 nm	≥98 %
200 nm	≥95 %
195 nm	≥78 %
Gradient test:	
UV absorption of the greatest eluated peak	
210 nm	≤0,005 AU
254 nm	≤0,002 AU
Fluorescence (as quinine):	
254 nm	≤0,2 ppb
365 nm	≤0,2 ppb
Trace impurities:	
Aluminium (Al)	≤0,05 ppm
Calcium (Ca)	≤0,05 ppm
Iron (Fe)	≤0,05 ppm
Potassium (K)	≤0,05 ppm
Magnesium (Mg)	≤0,05 ppm
Sodium (Na)	≤0,05 ppm
LC-MS suitability test	complies

Filtered through 0,2 µm membrane and filled under protective gas.

Acetic acid ethyl ester
ROTISOLV® ≥99,9 %, LC-MS Grade
Ethyl acetate, Acetic ester
$C_4H_8O_2$
M 88,11 g/mol

Danger H225-H319-H336-EUH066

AE69.1	1 l	glass	50,00 €
Original pack 6 x 1 l			47,50/1 l
AE69.2	2,5 l	glass	103,10 €
Original pack 4 x 2,5 l			97,95/2,5 l

Acetonitrile
ROTISOLV® ≥99,95 %, LC-MS Grade
Methyl cyanide, Cyanomethane
C_2H_3N
M 41,05 g/mol

Danger H225-H302+H312+H332-H319

AE70.1	1 l	glass	76,90 €
Original pack 6 x 1 l			73,06/1 l
AE70.2	2,5 l	glass	125,70 €
Original pack 4 x 2,5 l			119,42/2,5 l

Methanol
ROTISOLV® ≥99,95 %, LC-MS Grade
Methyl alcohol, Carbinol
CH_3OH
M 32,04 g/mol

Danger H225-H301+H311+H331-H370

AE71.1	1 l	glass	29,60 €
Original pack 6 x 1 l			28,12/1 l
AE71.2	2,5 l	glass	64,00 €
Original pack 4 x 2,5 l			60,80/2,5 l

2-Propanol
ROTISOLV® ≥99,95 %, LC-MS Grade
Isopropanol, Isopropyl alcohol, Dimethyl carbinol, IPA, 2-Hydroxypropane
C_3H_8O
M 60,10 g/mol

Danger H225-H319-H336

AE73.1	1 l	glass	39,70 €
Original pack 6 x 1 l			37,72/1 l
AE73.2	2,5 l	glass	77,95 €
Original pack 4 x 2,5 l			74,05/2,5 l

Water
ROTISOLV® LC-MS Grade
H_2O
M 18,02 g/mol

AE72.1	1 l	plastic	30,00 €
Original pack 6 x 1 l			28,50/1 l
AE72.3	2,5 l	glass	73,65 €
Original pack 4 x 2,5 l			69,97/2,5 l
AE72.2	5 l	plastic	135,35 €
Original pack 2 x 5 l			128,58/5 l

Assortment ROTISOLV® HPLC Solvents

for liquid chromatography

Available in different quality grades:
- **HPLC Grade**
- **HPLC Gradient Grade**
- **HPLC Ultra Gradient Grade**

ROTISOLV® HPLC solvents meet all the requirements in high-performance liquid chromatography (HPLC). Their application ranges from routine applications (HPLC Grade) to specific analytic tasks (HPLC Ultra Gradient Grade).

- High chemical purity
- High UV-permeability
- Low fluorescence
- Low residue from evaporation
- Low water and acid content
- Filtered through 0,2 µm membrane
- Bottled under inert gas

Example specification:

Acetonitrile

ROTISOLV® HPLC Gradient Grade
Methyl cyanide, Cyanomethane
C_2H_3N
M 41,05 g/mol

Danger H225-H302+H312+H332-H319

Guarantee analysis:

Assay (GC)	≥99,9 %
Water (KF)	≤0,02 %
Free acid	≤0,001 %
Non volatile matter	≤0,0002 %
Transmission:	
> 220 nm	≥99 %
220 nm	≥98 %
200 nm	≥96 %
195 nm	≥85 %
192 nm	≥50 %
190 nm	≥10 %
Gradient test:	
UV absorption of the greatest eluated peak	
210 nm	≤1,0 mAU
254 nm	≤0,5 mAU
Fluorescence (as quinine):	
254 nm	≤1,0 ppb
365 nm	≤0,5 ppb

Filtered through 0,2 µm membrane and filled under protective gas.

ROTISOLV® HPLC Solvents

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Acetone	HPLC	**7328.1**	1 l	glass	30,00
		7328.2	2,5 l	glass	53,25
Acetonitrile	HPLC Ultra Gradient Grade	**T195.1**	1 l	glass	72,60
		T195.2	2,5 l	glass	121,40
	HPLC Gradient Grade	**8825.1**	1 l	glass	46,15
		8825.2	2,5 l	glass	96,25
	HPLC Gradient	**HN44.1**	1 l	glass	40,75
		HN44.2	2,5 l	glass	77,95
	HPLC	**7330.1**	1 l	glass	40,35
		7330.2	2,5 l	glass	74,20
	HPLC, isocratic	**CN20.1**	1 l	glass	39,70
		CN20.2	2,5 l	glass	75,15
	≥99,8 %, for preparative HPLC	**6827.1**	2,5 l	glass	59,70
		6827.2	25 l	tinplate	424,65
1-Butanol	HPLC	**T178.1**	2,5 l	glass	99,90
tert-Butyl methyl ether	HPLC	**T175.2**	1 l	glass	45,05
		T175.1	2,5 l	glass	101,60
Cyclohexane	HPLC	**7333.2**	1 l	glass	48,30
		7333.1	2,5 l	glass	87,00
Dichloromethane	HPLC	**7334.2**	1 l	glass	38,20
		7334.1	2,5 l	glass	59,05
N,N-Dimethyl-formamide (DMF)	HPLC	**0702.1**	2,5 l	glass	93,00
Dimethyl sulphoxide (DMSO)	HPLC	**0728.1**	2,5 l	glass	154,30
1,4-Dioxane	HPLC, not stabilised	**X949.1**	1 l	glass	64,40
		X949.2	2,5 l	glass	147,20
Acetic acid ethyl ester	HPLC	**7336.2**	1 l	glass	37,55
		7336.1	2,5 l	glass	73,00
Ethanol	HPLC Gradient Grade	**P076.1**	1 l	glass	95,60
		P076.2	2,5 l	glass	193,40
n-Heptanen-Heptane	≥99 %, HPLC	**6828.1**	2,5 l	glass	110,65
	≥95 %, HPLC	**7337.2**	1 l	glass	48,30
		7337.1	2,5 l	glass	105,90
n-Hexane	HPLC	**7339.2**	1 l	glass	40,75
		7339.1	2,5 l	glass	84,40
Isohexane	HPLC	**T176.2**	1 l	glass	53,65
		T176.1	2,5 l	glass	107,40
Isooctane	HPLC	**7340.1**	2,5 l	glass	107,40
Methanol	HPLC Ultra Gradient Grade	**X948.1**	1 l	glass	25,30
		X948.2	2,5 l	glass	45,70
	HPLC Gradient Grade	**7342.2**	1 l	glass	22,05
		7342.1	2,5 l	glass	38,60
	HPLC Gradient	**KK39.2**	2,5 l	glass	30,65
	HPLC	**P717.2**	1 l	glass	19,25
		P717.1	2,5 l	glass	30,65
n-Pentane	HPLC	**CN99.1**	1 l	glass	66,15
		CN99.2	2,5 l	glass	139,65
Petroleum ether 40-60 °C	HPLC	**0731.1**	2,5 l	glass	66,55
1-Propanol	HPLC	**T177.1**	2,5 l	glass	121,40
2-Propanol	HPLC	**7343.2**	1 l	glass	33,25
		7343.1	2,5 l	glass	69,80
Tetrahydrofuran	HPLC, not stabilised	**7344.1**	1 l	glass	52,15
		7344.2	2,5 l	glass	107,40
Toluene	HPLC	**7346.2**	1 l	glass	37,55
		7346.1	2,5 l	glass	77,95
Trichloromethane/ Chloroform	HPLC	**7331.2**	1 l	glass	39,70
		7331.1	2,5 l	glass	83,35
Water	HPLC, Gradient Grade	**A511.1**	1 l	glass	18,20
		A511.2	2,5 l	glass	32,80
		A511.3	5 l	plastic	61,20
	NEW	**A511.7**	20 l	plastic	209,65

For additional product data and safety information, see chapter Chemicals A-Z.

ROTISOLV®Acetonitriles

Overview of ROTISOLV® acetonitriles

We supply you with the ideal acetonitrile for any LC application, from our proven HPLC grade acetonitriles for simple, routine tasks and preparative separations to our premium grade for efficient and super-fast Ultra LC-MS applications.

Specification	ROTISOLV® Ultra LC-MS	ROTISOLV® LC-MS Grade	ROTISOLV® HPLC Ultra Gradient Grade	ROTISOLV® HPLC Gradient Grade	ROTISOLV® HPLC Gradient	ROTISOLV® HPLC	ROTISOLV® HPLC, isocratic	ROTISOLV® for preparative HPLC
Assay	≥99,98 %	≥99,95 %	≥99,95 %	≥99,9 %	≥99,9 %	≥99,9 %	≥99,9 %	≥99,8 %
Water (KF)	≤0,01 %	≤0,01 %	≤0,01 %	≤0,02 %	≤0,02 %	≤0,03 %	≤0,015 %	≤0,05 %
free acid (as CH_3COOH)/acidity	≤0,001 %	≤0,001 %	≤0,001 %	≤0,001 %	≤0,002 %	≤0,002 %		≤0,005 %
free alkali (as NH_3)/alkalinity	≤0,0001 %	≤0,0001 %	≤0,0001 %		≤0,0002 %			≤0,0005 %
Non volatile matter	≤0,0001 %	≤0,0001 %	≤0,0001 %	≤0,0002 %	≤0,0002 %	≤0,0003 %	≤0,0005 %	
UV transmission:								
254 nm					≥99 %			
≥240 nm							≥99 %	
240 nm		≥99 %						
>230 nm						≥99 %		
230 nm	≥99 %		≥99 %				≥96 %	≥96 %
≥220 nm				≥99 %				
220 nm		≥98 %		≥98 %	≥98 %			≥90 %
215 nm	≥98 %		≥98 %			≥95 %		
200 nm	≥97 %	≥95 %	≥96 %	≥96 %	≥95 %		≥80 %	
195 nm	≥85 %	≥78 %	≥85 %	≥85 %	≥80 %	≥80 %		
193 nm					≥60 %			
192 nm				≥50 %				
191 nm	≥30 %		≥25 %					
190 nm				≥10 %				
Gradient test: UV absorption of the greatest eluated peak								
210 nm	≤0,001 AU	≤0,005 AU	≤1,0 mAU	≤1,0 mAU	≤2,0 mAU			
254 nm	≤0,0003 AU	≤0,002 AU	≤0,2 mAU	≤0,5 mAU				
Fluorescence (as quinine):								
254 nm	≤0,25 ppb	≤0,2 ppb	≤0,2 ppb	≤1,0 ppb	≤0,5 ppb			
365 nm	≤0,25 ppb	≤0,2 ppb	≤0,2 ppb	≤0,5 ppb	≤0,5 ppb			
PAH-test (<2 ppb, HPLC)			complies					
Trace elements:								
Aluminium (Al)	≤20 ppb	≤0,05 ppm						
Calcium (Ca)	≤50 ppb	≤0,05 ppm						
Iron (Fe)	≤20 ppb	≤0,05 ppm						
Potassium (K)	≤50 ppb	≤0,05 ppm						
Magnesium (Mg)	≤20 ppb	≤0,05 ppm						
Sodium (Na)	≤100 ppb	≤0,05 ppm						
Particle filtration through membrane	0,1 µm	0,2 µm	0,2 µm	0,2 µm	0,2 µm	0,2 µm	0,2 µm	0,2 µm
Pack quantities and order numbers:								
1 l (glass)	HN40.1	AE70.1	T195.1	8825.1	HN44.1	7330.1	CN20.1	–
2,5 l (glass)	HN40.2	AE70.2	T195.2	8825.2	HN44.2	7330.2	CN20.2	6827.1
25 l (tinplate)	–	–	–	–	–	–	–	6827.2

Physical Data of ROTISOLV® HPLC Solvents

Sorted according to the polarity parameter P(1)

	P	X_e	X_d	X_n	Group
n-Hexane	0,1				
Isooctane	0,1				
n-Heptane	0,2				
Cyclohexane	0,2				
Tetrachloromethane	1,6				
Toluene	2,4	0,25	0,28	0,47	VII
Benzene	2,7	0,23	0,32	0,45	VII
Dichloromethane	3,1	0,29	0,18	0,53	V
Isopropanol	3,9	0,55	0,19	0,27	II
Tetrahydrofuran	4,0	0,38	0,20	0,42	III
Trichloromethane	4,1	0,25	0,41	0,33	VIII
Ethyl acetate	4,4	0,34	0,23	0,43	VI
Acetone	5,1	0,35	0,23	0,42	VI
Methanol	5,1	0,48	0,22	0,31	II
Acetonitrile	5,8	0,31	0,27	0,42	VI

(1) L.R. Snyder J. Chromatogr. Sci 16, 223 (1978)

P = Polarity index acc. to Snyder
X = Selectivity parameter
X_e = Index for proton acceptor effect
X_d = Index for proton donator effect
X_n = Index for dipole-dipole interaction

Sorted according to solvent strength(1)

	A	B	C	D	E	F	G
n-Hexane	0,01		1,88	0,30	1,3751	69	
n-Heptane	0,01		1,92	0,40	1,3878	98,4	
Isooctane	0,01		1,94	0,47	1,3915	99,2	
Cyclohexane	0,04		2,02	0,90	1,4266	80,7	
Tetrachloromethane	0,18		2,24	0,90	1,4601	76,5	0
Toluene	0,29		0,55	0,55	1,4961	110,6	0,36
Benzene	0,32		2,3	0,60	1,5011	80,1	0
Trichloromethane	0,40		4,8	0,53	1,4459	61,7	1,01
Dichloromethane	0,42		8,9	0,41	1,4242	40	1,6
Acetone	0,56	3,4	21,4	0,30	1,3588	56,2	2,88
Tetrahydrofurane	0,57	4,4	7,6	0,46	1,4050	67	1,63
Ethyl acetate	0,58		6,0	0,43	1,3723	77,1	1,78
Acetonitrile	0,65	3,1	37,5	0,34	1,3442	81,6	3,92
2-Propanol	0,82	4,2	20,3	1,9	1,3776	82,4	1,66
Methanol	0,95	3,0	32,7	0,54	1,3288	65	1,7
Water		0,0	80	0,89	1,333	100	1,82

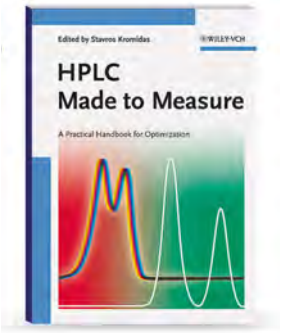
(1) L.R. Snyder and J.J. Kirkland: Introduction to Modern Liquid Chromatography, 2nd Ed. (Wiley-Interscience, New York, 1979)
(2) aluminium oxide as stationary phase
(3) RP-silica gel as stationary phase
(4) L.R. Snyder, J.W. Dolan and J.R. Gant: J. Chromatogr. 165, 3 (1979)
(5) Handbook of Chemistry and Physics 65th 1983 CRC Press, Boca Raton, Florida

A = ε_o(A)(2)
B = ε_o(RP)(3,4)
C = relative permittivity(1) ε (20 °C)
D = viscosity h in cp (25 °C)
E = refractive index(5) n_D^{20}
F = boiling point(5) bp in °C
G = dipole moment

UV Cut-off and miscibility of some HPLC solvents

UV cut-off (nm)	Solvents	Acetone	Acetonitrile	1-Butanol	tert.-Butyl methyl ether	Cyclohexane	Dichloromethane	1,4-Dioxane	Esthyl actetate	Ethanol	n-Heptane	n-Hexane	Isooctane	Methanol	n-Pentane	2-Propanol	Tetrahydrofuran	Toluene	Trichloromethane	Water
330	**Acetone**																			
190	**Acetonitrile**					■					■	■	■		■					
215	**1-Butanol**																			■
210	**tert.-Butyl methyl ether**																			■
200	**Cyclohexane**		■											■						■
233	**Dichloromethane**																			■
215	**1,4-Dioxane**																			
256	**Ethyl acetate**																			■
210	**Ethanol**																			
200	**n-Heptane**		■											■						■
195	**n-Hexane**		■											■						■
215	**Isooctane**		■											■						■
206	**Methanol**					■					■	■	■		■					
190	**n-Pentane**		■											■						■
205	**2-Propanol**																			
212	**Tetrahydrofuran**																			
284	**Toluene**																			■
245	**Trichloromethane**																			■
190	**Water**			■	■	■	■		■		■	■	■		■			■	■	

miscible
not miscible



HPLC Made to Measure

A Practical Handbook for Optimization.
Kromidas, Stavros (Ed.)
1st Edition - May 2006, 753 pages, hardcover
ISBN 978-3-527-31377-8

Short description:
The only topical book to focus on optimization, this volume addresses the needs of users wishing to improve their methods in particular in terms of throughput, accuracy and cost-effectiveness. Written by bestseller authors and scientists working for major international companies.

Titel	Art. No.	Pack Qty.	Price incl. VAT. €
HPLC Made to Measure	**HX93.1**	1	179,00

ROTISOLV®
LC-MS Eluent Mixtures

ready-to-use

Features:
- Ready-to-use solvent blends for easy handling
- High chemical purity of the used raw material: HPLC solvents (≥99,9 %) and acids (≥99,9 %)
- High accuracy of the ratio of ingredients
- High UV-permeability
- Trace elements: ≤0,05 ppm per element
- LC-MS suitability tested
- Filtered through 0,2 µm membrane
- Bottled under inert gas

Acetonitrile with 0,1 % acetic acid
ROTISOLV® ≥99,9 %, LC-MS Grade
Eluent mixture for high performance liquid chromatography.
Acetonitrile mixture
C_2H_3N
M 41,05 g/mol

Danger H225-H302+H312+H332-H319

CP01.1	1 l	glass	84,40 €
Original pack 6 x 1 l			80,18/1 l
CP01.2	2,5 l	glass	187,60 €
Original pack 4 x 2,5 l			178,22/2,5 l

Acetonitrile with 0,1 % formic acid
ROTISOLV® ≥99,9 %, LC-MS Grade
Eluent mixture for high performance liquid chromatography.
Acetonitrile mixture
C_2H_3N
M 41,05 g/mol

Danger H225-H302+H312+H332-H319

CP00.1	1 l	glass	84,40 €
Original pack 6 x 1 l			80,18/1 l
CP00.2	2,5 l	glass	187,60 €
Original pack 4 x 2,5 l			178,22/2,5 l

Acetonitrile with 0,1 % trifluoroacetic acid
ROTISOLV® ≥99,9 %, LC-MS Grade
Eluent mixture for high performance liquid chromatography.
Acetonitrile mixture
C_2H_3N
M 41,05 g/mol

Danger H225-H302+H312+H332-H319

CP02.1	1 l	glass	84,40 €
Original pack 6 x 1 l			80,18/1 l
CP02.2	2,5 l	glass	187,60 €
Original pack 4 x 2,5 l			178,22/2,5 l

Methanol with 0,1 % trifluoroacetic acid
ROTISOLV® ≥99,95 %, LC-MS Grade
Eluent mixture for high performance liquid chromatography.
Methanol mixture
CH_3OH
M 32,04 g/mol

Danger H225-H370-H301+H311+H331

CP06.1	1 l	glass	45,05 €
Original pack 6 x 1 l			42,80/1 l

Water with 0,1 % formic acid
ROTISOLV® LC-MS Grade
Eluent mixture for high performance liquid chromatography.
Water mixture
H_2O
M 18,01 g/mol

CP03.1	1 l	glass	44,65 €
Original pack 6 x 1 l			42,42/1 l
CP03.2	2,5 l	glass	81,20 €
Original pack 4 x 2,5 l			77,14/2,5 l

Water with 0,1 % acetic acid
ROTISOLV® LC-MS Grade
Eluent mixture for high performance liquid chromatography.
Water mixture
H_2O
M 18,01 g/mol

CP04.2	2,5 l	glass	91,30 €
Original pack 4 x 2,5 l			86,74/2,5 l

Water with 0,1 % trifluoroacetic acid
ROTISOLV® LC-MS Grade
Eluent mixture for high performance liquid chromatography.
Water mixture
H_2O
M 18,01 g/mol

CP05.2	2,5 l	glass	88,05 €
Original pack 4 x 2,5 l			83,65/2,5 l

▶ More details on specifications see chapter Chemicals A-Z.

Starting material for eluent mixtures

TIP

For the preperation of individual eluent mixtures we offer acids and salts of highest purity:

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Acetic acid 100 %	100 %, p.a.	**3738.4**	1 l	plastic	23,15
		3738.1	1 l	glass	25,30
		3738.2	2,5 l	glass	53,65
		3738.5	2,5 l	plastic	51,50
		3738.3	10 l	plastic	128,90
Ammonium acetate	≥97 %, p.a., ACS	**7869.2**	500 g	plastic	28,95
		7869.1	1 kg	plastic	40,75
		7869.3	2,5 kg	plastic	69,80
Formic acid 98 %	≥98 %, p.a., ACS	**4724.3**	500 ml	glass	21,40
		4724.1	1 l	glass	35,40
		4724.2	2,5 l	glass	75,15
Trifluoroacetic acid (TFA)	≥99,9 %, for (peptide) synthesis	**P088.1**	100 ml	glass	64,00
		P088.2	500 ml	glass	184,40
		P088.3	1 l	glass	321,45

For additional product data and safety information, see chapter Chemicals A-Z.

Sorbents for Column Chromatography

We offer a wide range of sorbents for conventional column chromatography. A variety of different particle sizes and modifications means that the right filling material is available for all your separation applications.

Silica Gels

Silica gels are the most important sorbents in the purification and separation processes used in column chromatography. Our extensive range of silica gels with various different pore and particle sizes means that we always have the right material for any separation procedure. In addition to standard **60 Å** silica gel, our range includes silica gels with pore sizes between **150 Å** and **1000 Å,** as well **22 Å** and **35 Å** for separating particularly small molecules. A selection of modified silica gel 60 grades completes the range.

Advantages:
- Extensive range
- Stringent quality control of the source materials and the end products
- High purity; optimised to meet the needs of chromatography applications
- Large surface area for a high loading capacity
- Tight particle size distribution for optimal efficiency and low pressure variations

Applications

Pore size	35-150 Å			250-4500 Å
Fields	Pharmacy	Foods and Cosmetics	Chemistry	Biotechnology
Applications	Vitamins Antibiotics Vaccines Organic synthesis Lubricants Functional Food	Oils and Fats Natural Products Stripping Agents Chemical Synthesis	Pesticides Lipids	Vaccines DNA Enzymes Carriers Biomolecules

3 Steps to the appropriate silica gel

Step 1: The pore size is selected based on the molar mass of the sample.

Molar mass (g/mol)	Pore size (Å)
<350	35
<800	60
<15 000	150
<100 000	250
<250 000	500
>250 000	1000-4500

Step 2: The grain size is selected with respect to the pressure within the system.

Pressure (bar)	Grain size (mm)
65	0,01
20	0,016-0,024
15	0,02-0,045
5	0,04-0,063
2	0,07-0,2
<1	>0,2

Step 3: The surface functionality is adapted to the solubility of the sample and the required degree of separation. Polarity series: Silica gel > Diol > Amino > Cyano > C18.

Mobile phase	Stationary phase
Nonpolar to medium polar solvents (normal phase)	Silica gel
Nonpolar to polar solvents (normal phase, reversed phase)	Diol
	Amino
	Cyano
Polar solvents (reversed phase)	C18

Silica Gel, unmodified

Product	Purity	Art. No.	Pack Qty.	€
Silica gel 22	Grade 12 0,07-0,21 mm (200-70 mesh)	**9698.1**	250 g	51,50
		9698.2	500 g	77,30
		9698.3	1 kg	137,10
		9698.4	2,5 kg	266,10
Silica gel 35	0,01-0,014 mm	**0380.1**	250 g	44,00
		0380.2	500 g	73,65
		0380.3	1 kg	132,80
		0380.4	2,5 kg	278,45
	0,04-0,063 mm (400-230 mesh)	**5400.1**	250 g	41,85
		5400.2	500 g	72,60
		5400.3	1 kg	117,75
		5400.4	2,5 kg	233,85
Silica gel 60	0,006-0,035 mm	**9779.1**	250 g	33,25
		9779.2	500 g	54,75
		9779.3	1 kg	97,75
		9779.4	2,5 kg	171,50
	0,010-0,014 mm	**9859.1**	25 g	46,15
		9859.2	50 g	81,20
		9859.3	100 g	148,90
	0,016-0,024 mm	**9817.1**	250 g	70,45
		9817.2	500 g	127,95
		9817.3	1 kg	232,75
		9817.4	2,5 kg	524,10
	0,02-0,045 mm	**0712.1**	250 g	28,50
		0712.2	500 g	42,90
		0712.4	1 kg	73,65
		0712.3	2,5 kg	165,05
	0,03-0,2 mm	**P090.1**	500 g	34,30
		P090.2	1 kg	60,10
		P090.3	2,5 kg	143,55
		P090.4	5 kg	217,70
		P090.5	25 kg	633,20
	0,035-0,07 mm (400-220 mesh)	**5401.1**	250 g	28,95
		5401.2	500 g	46,15
		5401.3	1 kg	75,80
		5401.4	2,5 kg	171,50
	0,04-0,063 mm (400-230 mesh)	**P091.1**	250 g	30,65
		P091.2	1 kg	85,50
		P091.3	2,5 kg	195,15
		P091.4	5 kg	287,60
		P091.5	25 kg	959,45
	0,07-0,2 mm	**9820.1**	250 g	27,85
		9820.2	500 g	46,15
		9820.3	1 kg	69,80
		9820.4	2,5 kg	114,95
	0,09-0,13 mm	**0399.1**	250 g	38,60
		0399.2	500 g	66,55
		0399.3	1 kg	121,40
		0399.4	2,5 kg	244,60
	0,2-0,5 mm	**CN18.1**	500 g	40,75
		CN18.2	1 kg	68,70
		CN18.3	2,5 kg	155,35
	0,8-1,2 mm	**9828.1**	250 g	30,00
		9828.2	500 g	53,25
		9828.3	1 kg	81,20
		9828.4	2,5 kg	137,10
	1,0-3,0 mm	**9833.1**	250 g	37,55
		9833.2	500 g	69,80
		9833.3	1 kg	120,30
		9833.4	2,5 kg	217,70
Silica gel 150	0,01-0,014 mm	**0405.1**	100 g	27,85
		0405.2	250 g	50,00
		0405.3	500 g	89,15
		0405.4	1 kg	155,35
		0405.5	2,5 kg	310,70

Product	Purity	Art. No.	Pack Qty.	€
Silica gel 150	0,016-0,024 mm	**0430.1**	100 g	33,25
		0430.2	250 g	61,20
		0430.3	500 g	107,40
		0430.4	1 kg	199,85
	0,03-0,2 mm	**0448.1**	250 g	26,80
		0448.2	500 g	38,60
		0448.3	1 kg	66,55
		0448.4	2,5 kg	132,80
	0,035-0,07 mm (400-220 mesh)	**5402.1**	250 g	28,50
		5402.2	500 g	42,90
		5402.3	1 kg	67,65
		5402.4	2,5 kg	146,10
	0,07-0,2 mm (220-70 mesh)	**5403.1**	250 g	28,50
		5403.2	500 g	42,90
		5403.3	1 kg	67,65
		5403.4	2,5 kg	146,10
	0,1-0,3 mm	**0473.1**	250 g	33,25
		0473.2	500 g	61,20
		0473.3	1 kg	107,40
		0473.4	2,5 kg	199,85
	0,315-0,5 mm	**0485.1**	250 g	33,25
		0485.2	500 g	61,20
		0485.3	1 kg	107,40
		0485.4	2,5 kg	199,85
	0,6-1,4 mm	**9856.1**	250 g	30,00
		9856.2	500 g	53,25
		9856.3	1 kg	87,00
		9856.4	2,5 kg	160,75
Silica gel 250	0,04-0,063 mm (400-230 mesh)	**5405.1**	250 g	51,10
		5405.2	500 g	95,60
		5405.3	1 kg	178,35
		5405.4	2,5 kg	418,20
	0,07-0,2 mm	**0493.1**	100 g	27,85
		0493.2	250 g	50,00
		0493.3	500 g	89,15
		0493.4	1 kg	166,55
	0,09-0,13 mm	**0501.1**	100 g	33,25
		0501.2	250 g	66,55
		0501.3	500 g	115,60
		0501.4	1 kg	209,65
Silica gel 500	0,035-0,07 mm (400-220 mesh)	**5407.5**	100 g	103,10
		5407.1	250 g	209,65
		5407.2	500 g	385,95
		5407.3	1 kg	686,95
		5407.4	2,5 kg	1611,45
	0,09-0,13 mm	**0512.1**	50 g	55,80
		0512.2	100 g	89,15
		0512.3	250 g	188,15
		0512.4	500 g	342,95
	0,1-0,3 mm	**0524.1**	50 g	54,75
		0524.2	100 g	89,15
		0524.3	250 g	188,15
		0524.4	500 g	342,95
Silica gel 1000	0,016-0,024 mm	**0533.1**	10 g	28,95
		0533.2	50 g	73,65
		0533.3	100 g	128,50
		0533.4	250 g	255,35
	0,035-0,07 mm (400-220 mesh)	**5409.5**	100 g	92,35
		5409.1	250 g	196,65
		5409.2	500 g	364,45
		5409.3	1 kg	665,45
		5409.4	2,5 kg	1536,20
	0,09-0,13 mm	**0153.1**	10 g	22,05
		0153.2	50 g	55,80
		0153.3	100 g	89,15
		0153.4	250 g	199,85

For additional product data and safety information, see chapter Chemicals A-Z.

Product	Purity	Art. No.	Pack Qty.	€
Silica gel 1500	0,016-0,024 mm	**0559.1**	10 g	27,45
		0559.2	50 g	66,55
		0559.3	100 g	121,40
		0559.4	250 g	241,90
	0,09-0,13 mm	**0171.1**	10 g	27,85
		0171.2	50 g	77,95
		0171.3	100 g	132,15
		0171.4	250 g	332,20
Silica gel 2500	0,09-0,13 mm	**0177.1**	10 g	27,85
		0177.2	50 g	77,95
		0177.3	100 g	132,15
Silica gel 4500	0,1-0,3 mm	**0186.1**	10 g	32,15
		0186.2	50 g	99,90
		0186.3	100 g	177,40

For additional product data and safety information, see chapter Chemicals A-Z.

Silica Gel 60, modified

Product	Purity	Art. No.	Pack Qty.	€
Silica gel 60 amino	0,010-0,014 mm	**0600.1**	10 g	44,65
		0600.2	50 g	155,35
		0600.3	100 g	278,45
	0,035-0,07 mm (400-220 mesh)	**5475.1**	50 g	155,35
		5475.2	100 g	278,45
		5475.3	250 g	611,70
Silica gel C_{18}	0,01-0,014 mm	**5509.1**	50 g	142,90
		5509.2	100 g	267,70
		5509.3	250 g	568,70
	0,035-0,07 mm (400-220 mesh)	**5504.1**	50 g	110,65
		5504.2	100 g	209,65
		5504.3	250 g	439,70
Silica gel cyano	0,01-0,014 mm	**5531.1**	50 g	177,30
		5531.2	100 g	310,70
		5531.3	250 g	676,20
	0,035-0,07 mm (400-220 mesh)	**5499.1**	50 g	160,75
		5499.2	100 g	289,20
		5499.3	250 g	643,95
Silica gel diol	0,010-0,014 mm	**0567.1**	10 g	44,00
		0567.2	50 g	155,35
		0567.3	100 g	276,85
	0,035-0,07 mm (400-220 mesh)	**5458.1**	50 g	156,85
		5458.2	100 g	289,20
		5458.3	250 g	622,45

For additional product data and safety information, see chapter Chemicals A-Z.

▶ **Carl Roth and Grace:**
Strategic partnership for an extended silica gel range!
For more information see www.carlroth.com

Silica Gel 60 for special applications

Product	Purity	Application	Art. No.	Pack Qty.	€
Silica gel 60 C_{18} ec	0,02-0,05 mm	For SPE and QuEChERS method	**6070.1**	10 g	58,90
			6070.2	25 g	119,50
Silica gel 60 diamino	0,045 mm	For the QuEChERS method.	**4878.1**	10 g	81,90
			4878.2	25 g	175,50
Silica gel 60 G	for TLC (with gypsum)	For preparation of TLC plates.	**CN44.3**	250 g	30,90
			CN44.1	500 g	54,90
			CN44.2	1 kg	91,90
Silica gel 60 G/ F_{254}			**CN45.3**	250 g	32,90
			CN45.1	500 g	61,90
			CN45.2	1 kg	113,50
Silica gel 60 P/ F_{254}	for preparative TLC		**CN47.3**	250 g	32,50
			CN47.1	500 g	55,90
			CN47.2	1 kg	93,90

For additional product data and safety information, see chapter Chemicals A-Z.

Aluminium Oxide

Our range of aluminium oxides (neutral - alkaline - acidic) for conventional column chromatography most certainly includes the right one for you!

All aluminium oxides are available in activity grade I. Activity grades II to V can be set up by adding water:

- Activity grade I - 0 % water
- Activity grade II - 3 % water
- Activity grade III - 6 % water
- Activity grade IV - 10 % water
- Activity grade V - 15 % water

Aluminium Oxide

Product	Art. No.	Pack Qty.	€
Aluminium oxide 90 neutral	**P092.1**	500 g	65,50
	P092.2	1 kg	117,75
	P092.3	2,5 kg	252,65
Aluminium oxide 90 acidic	**X909.1**	500 g	65,50
	X909.2	1 kg	117,75
	X909.3	2,5 kg	256,95
Aluminium oxide 90 basic	**X908.1**	500 g	65,50
	X908.2	1 kg	117,75
	X908.3	2,5 kg	252,65

For additional product data and safety information, see chapter Chemicals A-Z.

Cellulose

Cellulose powders are used mainly for qualitative and preparative separation and purification in column chromatography.

Cellulose
for column chromatography
Fibre length 0,02-0,1 mm

5873.3	100 g	plastic	15,90 €
5873.1	500 g	plastic	38,50 €
Original pack 6 x 500 g			36,58/500 g
5873.2	1 kg	plastic	60,90 €
Original pack 6 x 1 kg			57,86/1 kg

▶ Our range of **coupled agarose beads and protein columns** using affinity chromatography, see page 1351

Celite® - Silicate Basis

Prepared and standardised celite is used as a filtering aid or as adsorbent in column chromatography.

Composition:
approx. 90 % SiO_2, 2-5 % Al_2O_3, 1-4 % Fe_2O_3 and various other oxides in low concentrations, that is why the Celites® may be slightly tinted.

The complete Celite® range at a glance

Product	Permeability (Darcy)	Art. No.	Pack Qty.	€
Celite® 503	1,27-2,4	**0007.2**	1 kg	26,80
		0007.1	2,5 kg	53,65
Celite® 512	0,28-0,76	**0050.2**	1 kg	23,55
		0050.1	2,5 kg	46,15
Celite® 535	1,8-3,9	**0009.2**	1 kg	20,35
		0009.1	2,5 kg	41,85
Celite® 545	3,5-5,5	**0011.3**	250 g	12,05
		0011.2	1 kg	22,50
		0011.1	2,5 kg	33,90
		0011.4	10 kg	99,45
		0011.5	25 kg	185,90
Celite® Hyflo Super Cel®	0,73-1,64	**0005.2**	1 kg	25,70
		0005.1	2,5 kg	47,85
Celite® Standard Super Cel®	0,16-0,36	**0003.2**	1 kg	22,50
		0003.1	2,5 kg	42,90

For additional product data and safety information, see chapter Chemicals A-Z.

Florisil®

Highly selective magnesium silicate adsorbent for preparative and analytical chromatography. Ideal for sample preparation, column chromatography, clean-up methods and isolating, purifying and separating samples.

Florisil®

Product	Purity	Art. No.	Pack Qty.	€
Florisil®	for Hydrocarbon Index analysis, 60-100 mesh	**CN39.1**	100 g	42,50
		CN39.3	500 g	142,45
		CN39.2	1 kg	224,70
		CN39.4	2,5 kg	461,20
Florisil® PR	for (pesticides) residue analysis, 60-100 mesh	**T201.1**	100 g	45,05
		T201.2	500 g	160,20
		T201.3	1 kg	289,20
Florisil®	for chromatography, 60-100 mesh	**0101.1**	100 g	42,50
		0101.2	500 g	139,25
		0101.3	1 kg	216,65
	for chromatography, 100-200 mesh	**0102.1**	100 g	42,50
		0102.2	500 g	139,25
		0102.3	1 kg	216,65

Polyamide

Polyamide 6 (ε-aminopolycaprolactam) is used in conventional column chromatography for separating, purifying and isolating samples.

Polyamide
for column chromatography
Excellent for purification of plant extracts.
Polyamide 6

9620.2	100 g	plastic	61,90 €
9620.1	250 g	plastic	131,50 €

Flash Chromatography

Flash chromatography is, on account of its superior properties, replacing column chromatography in many laboratories for chemical synthesis, pharmacokinetics and combinatorial chemistry. Flash chromatography can be used to clean samples inexpensively and quickly on a preparative scale up to approximately 100 g. A key factor here is the automation capacity of flash chromatography and the reduced solvent consumption compared to column chromatography.
Thin-layer chromatography is often used for the development of a selective and reproducible method. In this way, it is possible to determine the optimal combination of various eluents and sorbents within a short space of time. Our TLC plates and sheets are coated with the same base silica, which is used in our CHROMABOND® Flash cartridges. An advantage of the Roth products is, that our TLC plates and foils are coated with the same basic silica gel, that is also used in the CHROMABOND® Flash columns. Therefore, developed methods can be optimally transferred to flash chromatography.

CHROMABOND® Flash RS Cartridges

Heavy-duty polypropylene cartridges designed for ISCO® Companion® and other Teledyne Isco CombiFlash® systems.

Increased analytical safety: Organic solvent resistant, low bleed cartridges, thick column walls, one piece body, sophisticated length-to-diameter ratio for high plate numbers and excellent separation efficiencies. Distribution of eluent stream via highly porous frits.
High pressure stability: up to 21 bar for cartridges <40 g, up to 15 bar for 80 g and 120 g cartridges, up to 12 bar for cartridges >200 g)
High quality standard: All flash cartridges and adsorbents undergo particulary intensive production and quality control to ensure that the products comply to the specification.
Adsorbent weights: 15 g to 330 g.

Loadability:

	Average loadability per cartridge (g)	
SiOH cartridge	Difficult separation	Easy separation
RS 15	0,15	1,5
RS 25	0,25	2,5
RS 40	0,4	4
RS 80	0,8	8
RS 120	1,2	12
RS 200	2	20
RS 330	3,3	33

CHROMABOND® Flash RS cartridges SiOH

CHROMABOND® Flash RS for Isco® Flash instruments
- Female Luer lock inlet and male Luer outlet
- Adsorbent: standard silica, unmodified (SiOH)
- Particle size 40-63 µm, specific surface 500 m^2/g
- pH stability 2-8

ready-to-use

Product	Column length (cm)	Innner ∅ (mm)	Adsorbent weight (g)	Art. No.	Pack Qty.	€
CHROMABOND® Flash RS 15 SiOH	11,6	21,2	15	**8664.1**	20 pieces	179,00
CHROMABOND® Flash RS 25 SiOH	16,5	21,2	25	**8670.1**	15 pieces	179,00
CHROMABOND® Flash RS 40 SiOH	17,1	26,4	40	**8674.1**	15 pieces	232,00
CHROMABOND® Flash RS 80 SiOH	24,0	30,8	80	**8675.1**	12 pieces	297,00
CHROMABOND® Flash RS 120 SiOH	25,2	36,0	120	**8681.1**	10 pieces	296,00
CHROMABOND® Flash RS 200 SiOH	20,0	60,0	200	**8708.1**	6 pieces	427,00
CHROMABOND® Flash RS 330 SiOH	27,0	60,0	330	**8714.1**	4 pieces	492,00

CHROMABOND® Flash DL empty cartridges

- Suitable as solid injection system or for self-filling and packaging of flash cartridges
- Female Luer lock inlet and male Luer outlet
- Each cartridge comes with 3 filter elements: one already inserted, two more filters aside

Product	Column length (cm)	Innner ∅ (mm)	For filling quantity SiOH (g)	For filling quantity kieselgur (g)	Volume (ml)	Art. No.	Pack Qty.	€
CHROMABOND® Flash DL 4	9,8	12,4	4	3	8	**8909.1**	50 pieces	153,00
CHROMABOND® Flash DL 15	11,6	21,2	15	10	30	**8910.1**	50 pieces	306,00
CHROMABOND® Flash DL 25	16,5	21,2	25	15	45	**8912.1**	50 pieces	459,00
CHROMABOND® Flash DL 40	17,1	26,4	40	30	75	**8917.1**	20 pieces	233,00
CHROMABOND® Flash DL 80	24,0	30,8	80	60	160	**8920.1**	20 pieces	459,00
CHROMABOND® Flash DL 120	25,2	36,0	120	80	220	**8924.1**	20 pieces	615,00
CHROMABOND® Flash DL 200	20,0	60,0	200	150	410	**8928.1**	10 pieces	386,00
CHROMABOND® Flash DL 330	27,0	60,0	330	250	600	**8932.1**	10 pieces	610,00

▶ Sorbents for filling the columns, page 1655
▶ Products for affinity chromatography, page 1341

SPE (Solid Phase Extraction)

A fast, effective and inexpensive system for sample preparation. SPE-columns enable samples to be analysed for HPLC, GC, TLC, UV/IR spectroscopy, etc.

Fields of application:
- Food analysis
- Environmental analysis
- Organic chemistry
- Pharmaceutical analysis
- Biochemical analysis

Our range of phases for SPE:

Code	Matrix	Modification / Application	Similar phases **
Reversed phases			
C18 ec	Silica	Octadecyl, endcapped	Strata® C18-E, Sep-Pak® tC18, Bond Elut C18, Discovery® DSC-18(Lt); Supelclean™ ENVI-18, LC-18, CLEAN-UP® C18, Bakerbond™ Octadecyl, Isolute® C18(EC), LiChrolut® RP-18 E
C18 hydra	Silica	Octadecyl, not endcapped / for polar analytes	-
Easy	PS/DVB*	Polar, bifunctional	Strata™-X, Oasis® HLB, Sep-Pak®, Porapak™ RDX, Bond Elut PPL, Styre Screen® DVB, Bakerbond™ H_2O philic DVB, Isolute® ENV+
HR-P	PS/DVB*		Strata® SDB-L, Bond Elut ENV, Bond Elut LMS, Bakerbond™ H_2O-phobic DVB, Isolute® 101, LiChrolut® EN
HR-X	PS/DVB*		Supelclean™ ENVI-Chrom P, Strata™-X, Oasis® HLB, Bond Elut Nexus
Normal phases			
SiOH	Silica	unmodified	Strata® Si-1, Bond Elut silica, Discovery® DSC-Si, Supelclean™ LC-Si, CLEAN-UP® silica, Bakerbond™ silica gel, Isolute® silica, LiChrolut® Si
NH_2	Silica	Aminopropyl	Strata® NH_2, Sep-Pak® NH_2, Bond Elut NH_2, Discovery® DSC-NH_2, LC-NH_2, CLEAN-UP® aminopropyl, Bakerbond™ amino, Isolute® NH_2, LiChrolut® NH_2
Florisil®	Magnesium-silicate		Strata® FL-PR Florisil®, Sep-Pak® Florisil®, Bond Elut® Florisil®, Supelclean™ NVI-Florisil®, Supelclean™ LC- Florisil®, CLEAN-UP® Florisil®, Bakerbond™ Florisil®, Isolute® FL, LiChrolut® Florisil®
Ion exchangers			
SA	Silica	Benzene sulfonic acid cation exchanger (SCX)	Strata® SCX, Bond Elut SCX, Discovery® DSC-SCX, Supelclean™ LC-SCX, CLEAN-UP® Benzenesulfonic Acid, Bakerbond™ Aromatic Sulfonic Acid, Isolute® SCX, LiChrolut® SCX
SB	Silica	Qauternary ammonium anion exchanger (SAX)	Strata® SAX, Sep-Pak® SAX, Bond Elut SAX, Discovery® DSC-SAX, Supelclean™ LC-SAX, CLEAN-UP® Quaternary Amine, Bakerbond™ Quarternary Amine, Isolute® SAX, LiChrolut® SAX
HR-XA	PS/DVB*	Strong mixed mode anion exchanger for acidic analytes (MAX)	Oasis® MAX, HyperSep™ Retain AX, Styre Screen® QAX, Strata™-X-A
HR-XAW	PS/DVB*	Weak basic mixed mode anion exchanger	Oasis® WAX, Strata™-X-AW
HR-XC	PS/DVB*	Strong mixed mode - cation exchanger for basic analytes (MCX)	Oasis® MCX, Strata™-X-C, Styre Screen® DBX, HyperSep™ Retain™-CX
HR-XCW	PS/DVB*	Weak acidic mixed mode cation exchanger	Oasis® WCX, Strata™-X-CW
Phasen for special applications			
Na_2SO_4/Florisil®	-	Combination phase for extraction of hydrocarbons for water (DIN H 53 / ISO DIS 9377-4)	-
SA/SiOH	Silica	Combination phase for enrichment of PCBs from waste oil	Bakerbond™ PCB-N
NAN	Silica / $AgNO_3$ + Na_2SO_4	Special combination phase for SPE analysis of PCBs from sludge	-
SiOH-H_2SO_4/SA	Silica	combination phase used together with SiOH for enrichment of PCBs from oil	-
CN/SiOH	Silica	Combination phase for enrichment of PAHs from soil	-
C_{18} PAH	Silica	Octadecyl silica for for enrichment of PAH from water	Bakerbond™ Octadecyl Lightload
NH_2/C_{18}	Silica	Combination phase for SPE analysis of PAHs from water containing humic acid	-
HR-P-AOX	PS/DVB*	For extraction of AOX from water (DIN 38409 - H22)	-
Drug	Silica	Bifunctional C8/SA, for enrichment of drugs form urine	Strata® Screen-C, Bond Elut Certify I, Discovery® DSC-MCAX, Clean Screen® DAU, Bakerbond™ Narc-2, Isolute® HCX, LiChrolut® TSC, HyperSep™ Verify CX
Drug II	Silica	Bifunctional C8/SB, for extraction of THC and derivatives as well as acidic analytes from biological fluids	Strata® Screen-A, Bond Elut Certify II, Clean Screen® THC, Bakerbond™ Narc-1, Isolute® HAX, HyperSep™ Verify AX
ABC 18	Silica	Octydecyl, with ion exchange character, for acrylamide analysis	Isolute® M-M (Multimode)

* polystyrene/divinylbenzene

** phases which provide a similar selectivity based on chemical or physical properties (list not complete)

Selection schematic for SPE phases and solvents:

Matrix / solubility of sample	Polarity of sample	Solubility of analytes	Polarity of sample	For the adsorption of recommended phases	For the elution recommended solvents ROTISOLV® Pestilyse®, Pestilyse® plus and GC Ultra Grade
aqueous	non-ionic	aqueous	non-polar	HR-X, Easy, HR-P, C18 ec, C18 Hydra	Hexane Dichloromethane Acetonitrile Alcohols
			medium polar	SiOH, NH_2	Ethyl acetate Alcohols
			polar	NH_2	Ethyl acetate Alcohols
	ionic	aqueous	cationic	HR-XC, HR-XCW, SA	Acids, saline solutions, buffers
			anionic	HR-XA, HR-XAW, SB, NH_2	Acids, saline solutions, buffers
organic		aqueous	non-polar	HR-X, Easy, HR-P, C18 ec, C18 Hydra	Hexane Dichloromethane Acetonitrile Alcohols
		organic	medium polar	SiOH, NH_2	Ethyl acetate Alcohols
		organic	polar	NH_2	Chloroform Dichloromethane Ethyl acetate Alcohols

CHROMABOND® HR-Xpert

The professional concept of innovative SPE phases

The CHROMABOND® HR-Xpert concept comprises 5 polymer-based RP and mixed-mode ion exchange phases. Depending on the character of the analytes it offers suitable adsorbents and optimal methods for sample preparation, cleaning and concentration.

State-of-the-art spherical polymer:
- Particle size: 85 µm
- Broad spectrum of application with special suitability for enrichment of pharmaceuticals from biological matrices
- Ideal flow properties due to low content of particulate matter

Optimised pore structure and high specific surface:
- High loadability and outstanding elution properties in RP as well as mixed mode
- Low solvent consumption
- Rapid, cost-effective analysis

High purity adsorber material
- Allows high reproducibility with extremely low blank values
- Reliable analysis at ultra trace level
- No method adaptation for new batches necessary

HR-Xpert phase	Properties	Application areas
CHROMABOND® HR-X	hydrophobic PS/DVB copolymer	neutral and polar active ingredients and analytes such as pesticides, drugs, phenols, PAHs, PCBs
CHROMABOND® HR-XC	strong acidic mixed-mode benzenesulfonic acid cation exchanger	basic active ingredients and analytes such as amines (melamine), . . . bases with pKa 2-10
CHROMABOND® HR-XA	strong basic mixed-mode quaternary ammonium anion exchanger	acidic active ingredients and analytes such as herbicides, . . . acids with pKa 2-8
CHROMABOND® HR-XCW	weak acidic mixed-mode carboxylic acid cation exchanger	strongly basic active ingredients and analytes such as quaternary amines, . . . bases with pKa > 10
CHROMABOND® HR-XAW	weak basic mixed-mode secondary/ tertiary ammonium anion exchanger	strongly acidic active ingredients and analytes such as sulfonic acids, perfluorinated surfactants, . . . acids with pKa < 1

▶ CHROMABOND® HR-X*pert* columns see next page.

CHROMABOND® HR-X*pert* phases

SPE-polypropylene columns CHROMABOND® HR-X

Spherical, hydrophobic polystyrene/divinylbenzene copolymer

Pore size: 55-60 Å, particle size: 85 µm
Spec. surface: **1000 m²/g**, pH stability: 1-14
RP-capacity: 390 mg/g (caffeine in water)
Please note: high-purity material with homogenous surface and optimised pore structure - due to optimised production process - enables lowest blanks, outstanding recovery rates and highest reproducibility.
Especially for the enrichment of pharmaceuticals and active ingredients.

Recommended applications: pharmaceuticals/active ingredients from tablets, creams and water/waste water, drugs and pharmaceuticals from urine, blood, serum and plasma, trace analysis of pesticides, herbicides, phenols, PAHs and PCBs from water

Similar phases: Supelclean™ ENVI-Chrom P, Strata™-X, Oasis® HLB, Bond Elut Nexus

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
1	30	**3079.1**	30	63,00
3	200	**3081.1**	30	98,00
	BIG PACK	**3081.2**	250 (5x50)	645,00
6	200	**3086.1**	30	132,00
	BIG PACK	**3086.2**	250 (5x50)	880,00
	500	**3087.1**	30	201,00

SPE-polypropylene columns CHROMABOND® HR-XA

Quat. ammonium modified spherical polystryrene/divinylbenzene copolymer, strong anion exchanger (mixed-mode)

Pore size: 55-65 Å, particle size: 85 µm
Spec. surface: **850 m²/g**, pH-stability: 1-14
Pore volume: 1,4 cm^3/g
Exchange capacity: approx. 0,25 meq/g
RP-capacity: 350 mg/g (caffeine in water)

Please note: high-purity material with homogenous surface and optimised pore structure - due to optimised production process - enables lowest blanks, outstanding recovery rates and highest reproducibility. Especially for the enrichment of acidic analytes.

Recommended applications: acidic active ingredients from strongly matrix contaminated samples like e.g. urine, plasma, serum, phenolic acids, acidic herbicides

Similar phases: Oasis® MAX, HyperSep™ Retain AX, Styre Screen® QAX, Strata™-X-A

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
3	60	**3069.1**	30	95,00
	200	**3071.1**	30	105,00
6	500	**3072.1**	30	222,00

SPE-polypropylene columns CHROMABOND® HR-XC

Benzenesulphonic acid modified spherical polystyrene/ divinylbenzene copolymer, cation exchanger (mixed-mode)

Pore size: 65-75 Å, particle size: 85 µm
Spec. surface: **800 m²/g**, pH-stability: 1-14
Pore volume: 1,4 cm^3/g
Exchange capacity: 1,0 meq/g
RP-capacity: 300 mg/g (caffeine in water)
Please note: high-purity material with homogenous surface and optimised pore structure - due to optimised production process - enables lowest blanks, outstanding recovery rates and highest reproducibility. Especially for the enrichment of basic analytes.

Recommended applications: Basic active ingredients from strongly matrix contaminated samples like urine, plasma, serum, fungicides from food, basic analytes like e.g. amines, bases with pKa 2-10

Similar phases: Oasis® MCX, Strata™-X-C, Styre Screen® DBX, Hyper Sept™ Retain

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
3	60	**3090.1**	30	95,00
	200	**3092.1**	30	105,00
6	500	**3095.1**	30	222,00

SPE-polypropylene columns CHROMABOND® HR-XAW

Sec./tert. ammonium modified spherical polystyrene/divinylbenzene copoloymer, weak basic anion exchanger (mixed-mode)

Pore size: 55-65 Å, particle size: 85 µm
Spec. surface: **850 m²/g**, pH stability: 1-14
Pore volume: 1,2-1,4 cm^3/g
Exchange capacity: >0,5 meq/g
RP capacity: 350 mg/g (caffeine in water)
Please note: high-purity material with homogenous surface and optimised pore structure - due to optimised production process - enables lowest blanks, outstanding recovery rates and highest reproducibility.
Especially for the enrichment of strongly acidic analytes.

Recommended applications: perfluorinated surfactants, acidic active ingredients from strongly matrix contaminated samples like e.g. urine, plasma, serum, strong acids with pKa <1

Similar phases: Oasis® WAX, Strata™-X-AW

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
3	60	**3905.1**	30	95,00
	200	**3911.1**	30	105,00
	500	**3912.1**	30	155,00

SPE-polypropylene columns CHROMABOND® HR-XCW

Carboxylic acid modified spherical polystyrene/divinylbenzene copolymer, weak acidic cation exchanger (mixed-mode)

Pore size: 50-60 Å, particle size: 85 µm
Spec. surface: **850 m²/g**, pH stability: 1-14
Pore volume: 1,2-1,4 cm^3/g
Exchange capacity: >0,7 meq/g
RP capacity: 350 mg/g (caffeine in water)
Please note: high-purity material with homogenous surface and optimised pore structure - due to optimised production process - enables lowest blanks, outstanding recovery rates and highest reproducibility. Especially for the enrichment of basic analytes.

Recommended applications: Basic active ingredients from strongly matrix contaminated samples like e.g. urine, plasma, serum, strong bases with pKa >10

Similar phases: Oasis® WCX, Strata™-X-CW

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
3	60	**3917.1**	30	95,00
	200	**3919.1**	30	105,00
	500	**3924.1**	30	155,00

Further CHROMABOND® RP Phases

SPE-polypropylene columns CHROMABOND® Easy

Polar modified polystyrene/divinylbenzene copolymer with a weak ion exchanger
Pore size: 50 Å, particle size: 80 µm
Spec. surface: **650-700 m²/g,** pH-stability: 1-14

Please note: Due to its bifunctional modification it is much more hydrophilic than conventional polystyrene/divinylbenzene polymers and thus easily wettable with water.

Recommended applications: Drug analysis from urine, blood, serum, plasma, pharmaceuticals/active ingredients from tablets, creams, polar herbicides/pesticides from water (acidic, neutral, basic), polar phenols from water, PAHs, PCBs

Similar phases: Strata™-X, Oasis® HLB, Sep-Pak® Porapak RDX, Nexus, Bond Elut® PPL, Styre Screen® DVB, Bakerbond™ H_2O philic DVB, Isolute® ENV+

Volume (ml)	Adsorbent weight (mg)		Art. No.	Pack Qty.	€
3	60		**1335.1**	30	93,00
	200200		**1336.1**	30	98,00
		BIG PACK	**1336.2**	250 (5x50)	645,00
	500		**1337.1**	30	140,00
6	200200		**1338.1**	30	132,00
		BIG PACK	**1338.2**	250 (5x50)	880,00
	500		**1339.1**	30	201,00

SPE-polypropylene columns CHROMABOND® HR-P

Highly porous polystyrene/divinylbenezene copolymer
Particle size: 50-100 µm
Spec. surface: **1200 m²/g**

Recommended applications: Aromatic compounds, phenols from water, nitroaromatic compounds from water, pesticides from water, PAHs from oil

Similar phases: Strata® SDB-L, Bond Elut ENV, Bond Elut LMS, Bakerbond™ H_2O-phobic DVB, Isolute® 101, LiChrolut® EN

Volume (ml)	Adsorbent weight (mg)		Art. No.	Pack Qty.	€
3	200200		**N760.1**	30	98,00
		BIG PACK	**N760.2**	250 (5x50)	645,00
	500		**N761.1**	30	116,00
6	500		**N762.1**	30	144,00
	1000		**N763.1**	30	205,00

SPE-glass columns CHROMABOND® C18 ec Ideal for determining phthalate concentration

Octadecyl-modified silica gel, endcapped
Pore size: 60 Å, particle size: 45 µm
Spec. surface: **500 m²/g,** pH stability: 2-8

Please note: Extremely non-polar, hydrophobic interaction with many organic compounds.

Recommended applications: non-polar compounds
preservatives, fatty acids, PAHs, pesticides, PCBs, heavy metals, vitamins, aflatoxins, amphetamines, antibiotics, antiepileptics, barbituates, caffeine, nicotine, drugs, etc. Ideal for the determination of phthalates. Also suitable for desalting samples.

Similar phases: Strata® C18-E, Sep-Pak® tC18, Bond Elut C18, Discovery® DSC-18(Lt), Supelclean™ ENVI-18, Supelclean™ LC-18, CLEAN-UP® C18, Bakerbond™ Octadecyl, Isolute® C18(EC), LiChrolut® RP-18 E

SPE-glass columns

Ideal for determining phthalate concentration

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
3	200	**9617.1**	50	247,00
	500	**9618.1**	50	261,00
6	500	**9619.1**	30	198,00
	1000	**9623.1**	30	218,00

SPE-polypropylene columns

Volume (ml)	Adsorbent weight (mg)		Art. No.	Pack Qty.	€
1	100		**N745.1**	100	171,00
3	200		**N746.1**	50	131,00
	500500		**N747.1**	50	146,00
		BIG PACK	**N747.2**	250 (5x50)	575,00
6	500500		**N748.1**	30	98,00
		BIG PACK	**N748.2**	250 (5x50)	645,00
	10001000		**N749.1**	30	127,00
		BIG PACK	**N749.2**	250 (5x50)	850,00

SPE-polypropylene columns CHROMABOND® C18 Hydra

Octadecyl-silica gel, not endcapped
Pore width: 60 Å, particle size: 45 µm
Spec. surface: **500 m²/g,** pH stability: 2-8

Recommended applications: polar compounds
pesticides and their polar degradation products, phenols, phenoxycarboxylic acids, nitroaromatic compounds, pharmaceuticals

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
1	100	**N750.1**	100	171,00
3	200	**N751.1**	50	131,00
	500	**N752.1**	50	146,00
6	500	**N753.1**	30	98,00
	1000	**N754.1**	30	127,00

Normal phases

SPE-polypropylene columns CHROMABOND® SiOH

Unmodified, slightly acidic silica gel

Pore width: 60 Å, particle size: 45 µm
Spec. surface: 500 m^2/g, pH stability: 2-8

Please note: Extremely polar! Adsorbs air humidity. Should be kept well closed and dried if necessary prior to use. Due to its high affinity for polar compounds it should not be conditioned with polar (e.g. methanol) or water containing solvents.

Recommended applications: aflatoxines, chloramphenicol, pesticides, steroides, vitamines

Similar phases: Strata® Si-1, Bond Elut silica, Discovery® DSC-Si, Supelclean™ LC-Si, CLEAN-UP® silica, Bakerbond™ silica gel, Isolute® silica, LiChrolut® Si

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
1	100	**N755.1**	100	147,00
3	200	**N756.1**	50	123,00
	500500 BIG PACK	**N757.1**	50	134,00
		N757.2	250 (5x50)	540,00
6	500	**N758.1**	30	92,00
	10001000 BIG PACK	**N759.1**	30	102,00
		N759.2	250 (5x50)	670,00

SPE-polypropylene columns CHROMABOND® NH_2

Aminopropyl modified silica gel

Pore size: 60 Å, particle size: 45 µm
Spec. surface: 500 m^2/g, pH stability: 2-8
Aminopropyl phase, carbon content 3,5 %
Polar weak anion exchanger

Recommended applications: Trace elements, lipids

Similar phases: Strata® NH_2, Sep-Pak® NH_2, Bond Elut NH_2, Discovery® DSC-NH_2, Supelclean™ LC-NH_2, CLEAN-UP® aminopropyl, BakerbondTM amino, Isolute® NH_2, LiChrolut® NH_2

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
1	100	**1340.1**	100	214,00
3	200	**1341.1**	50	164,00
	500500 BIG PACK	**1342.1**	50	184,00
		1342.2	250 (5x50)	919,00
6	500	**1343.1**	30	122,00
	1000	**1344.1**	30	179,00

SPE-polypropylene columns CHROMABOND® Florisil®

Magnesium silicate, high-purity

MgO - SiOH (15:85)
Particle size: 150-250 µm

Recommended applications: PCBs, PAHs, aliphatic carboxylic acids, organic tin compounds

Similar phases: Strata® FL-PR Florisil®, Sep-Pak® Florisil®, Bond Elut Florisil®, Supelclean™ ENVI-Florisil®, Supelclean™ LC- Florisil®, CLEAN-UP® Florisil®, Bakerbond™ Florisil®, Isolute® FL, LiChrolut® Florisil®

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
3	200	**N764.1**	50	123,00
	500	**N765.1**	50	134,00
6	1000 BIG PACK	**1291.1**	30	102,00
		1291.2	250 (5x50)	670,00

SPE-polypropylene columns CHROMABOND® SB (SAX)

Quat. ammonium modified silica gel, strongly basic anion exchanger

Pore size: 60 Å, particle size: 45 µm
Spec. surface: 500 m^2/g, pH stability: 2-8
Silica gel modified with quat. ammonium
Exchange Capacity: approx. 0,3 meq/g

Please note: Not suitable for very strong anions such as sulphonic acids, because these are difficult to elute.

Recommended applications: Organic acids, caffeine, saccharin

Similar phases: Strata® SAX, Sep-Pak® SAX, Bond Elut SAX, Discovery® DSC-SAX, Supelclean™ LC-SAX, CLEAN-UP® Quaternary Amine, Bakerbond™ Quarternary Amine, Isolute® SAX, LiChrolut® SAX

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
1	100	**1346.1**	100	214,00
3	200	**1350.1**	50	164,00
	500500 BIG PACK	**1351.1**	50	184,00
		1351.2	250 (5x50)	735,00
6	500	**1352.1**	30	122,00
	1000	**1353.1**	30	179,00

SPE-polypropylene columns CHROMABOND® SA (SCX)

Benzenesulphonic acid modified silica gel, strongly acidic cation exchanger

Pore size: 60 Å, particle size: 45 µm
Spec. surface: 500 m^2/g, pH stability: 2-8
Exchange capacity: approx. 0,5 meq/g

Please note: Adsorbent with hydrophobic and π-π-interactions (benzene ring); Ion exchange of organic compounds from aqueous matrix; Elution of interesting compounds with solvent systems, which compensate the ionic and nonpolar interactions, e.g. methanolic HCl.

Recommended applications: Amino acids, chlorophyll, Amines, PCBs

Similar phases: Strata® SCX, Bond Elut SCX, Discovery® DSC-SCX, Supelclean™ LC-SCX, CLEAN-UP® Benzenesulfonic Acid, Bakerbond™ Aromatic Sulfonic Acid, Isolute® SCX, LiChrolut® SCX

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
1	100	**1293.1**	100	214,00
3	500 BIG PACK	**1295.1**	50	184,00
		1295.2	250 (5x50)	735,00
6	1000	**1297.1**	30	179,00

Phases for environmental analysis

SPE-glass column CHROMABOND® Na_2SO_4/Florisil®

Extraction of hydrocarbons from water according to DIN H53 / ISO DIS 9377-4

Special combination phase of sodium sulphate and Florisil®

Recommended applications: Hydrocarbons from drinking, surface and waste water

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
6	2000/2000	**N744.1**	30	196,00
	BIG PACK	**N744.2**	250 (5x50)	1305,00

Recommended chemicals

TIP

for method H53 with SPE-glass columns CHROMABOND® Na_2SO_4/Florisil®.

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Acetone	≥99,9 %, Pestilyse® plus	**7535.1**	2,5 l	glass	56,90
n-Hexane	≥96 %, Pestilyse® plus	**7567.1**	2,5 l	glass	98,40
Magnesium sulphate heptahydrate	≥99 %, p.a., ACS	**P027.1**	500 g	plastic	24,65
		P027.2	1 kg	plastic	39,70
		P027.3	2,5 kg	plastic	74,10
Sodium sulphate	≥99 %, p.a., ACS, ISO, powdered, anhydrous	**8560.3**	500 g	plastic	25,70
		8560.1	1 kg	plastic	36,05
		8560.2	5 kg	plastic	147,85
		8560.5	25 kg	plastic	525,70
Petroleum ether 40-60 °C	Pestilyse® plus	**7588.1**	2,5 l	glass	71,95

SPE Polypropylene column CHROMABOND®HR-P-AOX

AOX from water containing high salt loads

Special PS/DVB (polystyrene/divinylbenzene) phase.
Recommended applications: extraction of AOX from waters containing high salt loads / organic pollutants in accordance with DIN 38409 - H22.

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
6	500	**CN43.1**	30	177,00

SPE-polypropylene columns CHROMABOND® C_{18} PAH

Enrichment of PAHs from water

Special octadecyl modified silica, not endcapped
Pore size: 60 Å, particle size: 45 µm,
specific surface: 500 m^2/g, pH stability: 2-8
carbon content: 14 %

Recommended application: PAHs from water

Similar phases: Bakerbond™ Octadecyl Lightload

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
6	2000	**4713.1**	30	246,00

SPE-polypropylene columns CHROMABOND® NH_2/C_{18}

Enrichment of PAHs from water containing humic acid

Special combination phase:
NH_2: aminopropyl phase for removal of interfering humic acids
C_{18}: octadecyl phase for enrichment of PAHs

Recommended application: PAHs from water containing humic acids

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
6	500/500	**4783.1**	30	196,00
	500/1000	**4785.1**	30	240,00

SPE-polypropylene columns CHROMABOND® CN/SiOH

Enrichment of PAHs from soil

Special combination phase:
CN: Cyanopropyl phase for selective adsorption of polycyclic aromatics via π-π interactions
SiOH: Unmodified silica phase for removal of polar components

Recommended application: extraction of the 16 PAHs according to EPA from soil samples

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
3	500/1000	**2992.1**	50	392,00
6	500/1000	**2995.1**	30	240,00
	BIG PACK	**2995.2**	250 (5x50)	1595,00

Recommended chemicals

TIP

for analysis of PAHs from soil samples with SPE-Polypropylen columns CHROMABOND® CN/SiOH.

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Acetonitrile	≥99,9 %, Pestilyse®	**T168.1**	2,5 l	glass	76,25
		T168.3	4 l	glass	110,65
Petroleum ether 40-60 °C	Pestilyse® plus	**7588.1**	2,5 l	glass	71,95
	Pestilyse®	**T170.2**	1 l	glass	34,95
		T170.1	2,5 l	glass	71,95
		T170.3	4 l	glass	99,45
Sodium sulphate	≥99 %, p.a., ACS, ISO, powdered, anhydrous	**8560.3**	500 g	plastic	25,70
		8560.1	1 kg	plastic	36,05
		8560.2	5 kg	plastic	147,85
		8560.5	25 kg	plastic	525,70
Toluene	≥99,8 %, Pestilyse® plus	**7591.1**	2,5 l	glass	64,00
	≥99,8 %, Pestilyse®	**T166.2**	1 l	glass	34,30
		T166.1	2,5 l	glass	62,25
		T166.3	4 l	glass	96,65

For additional product data and safety information, see chapter Chemicals A-Z.

SPE-polypropylene columns CHROMABOND® SiOH-H_2SO_4/SA

Enrichment of PCBs from oil

Special combination phase:
SA: strongly acidic cation exchanger based on silica with benzenesulphonic acid modification for removal of ionic and sulphur-containing compounds
SiOH-H_2SO_4: H_2SO_4-impregnated silica phase for oxidation of accompanying compounds to ionic and/or polar compounds
Recommended applications: extraction of PCBs from oil with reference to German industrial standard DIN 51527, part 1. This combination column is used together with a SiOH column.

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
3	500/500	**4792.1**	50	292,00
	BIG PACK	**4792.2**	250 (5x50)	1160,00

Kombi-Kit

For Extraction of PCBs from oil with reference to DIN 51527, part 1

Content	Art. No.	Pack Qty.	€
CHROMABOND® SiOH-H_2SO_4/SA / CHROMABOND® SiOH	**4793.1**	25 / 25	220,00

SPE Polypropylene column CHROMABOND® SA/SiOH

Extraction of PCBs from waste oil.
Special combination phase:
SA: strongly acidic cation exchanger based on silica with benzenesulphonic acid modification
SiOH: unmodified silica for removal of polar compounds
Recommended application: extraction of PCBs from waste oil (hexane extract)
Similar phases: Bakerbond™ PCB-N

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
3	500/500	**CN42.1**	50	240,00
	BIG PACK	**CN42.2**	250 (5x50)	955,00

SPE-polypropylene columns CHROMABOND® NAN

Enrichment of PCBs from sludge

Special combination phase:
N: sodium sulphate for removal of trace water
A: SiOH/$AgNO_3$ phase for removal of sulphur, sulphur-containing and polar compounds
Recommended application: extraction of PCBs from sludge

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
3	400/1400/400	**4786.1**	50	403,00
6	700/2000/700	**4789.1**	30	319,00
	BIG PACK	**4789.2**	250 (5x50)	2125,00

SPE phases for pharmaceutical applications

SPE-polypropylene columns CHROMABOND® Drug

Drug analysis

Special silica gel phase:
Bifunctional modification - C_8 / SA
(strong cation exchanger - benzene sulphonic acid)
Pore size: 60 Å, particel size: 45 µm,
specific surface: 500 m^2/g, pH stability: 2-8
Recommended applications: enrichment of acidic, neutral and basic drugs from urine or plasma.
Similar phases: Strata® Screen-C, Bond Elut Certify I, Discovery® DSC-MCAX, Clean Screen® DAU, Bakerbond™ Narc-2, Isolute® HCX, LiChrolut® TSC, HyperSep™ Verify CX

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
1	100	**1354.1**	100	198,00
3	200	**1355.1**	50	160,00
	BIG PACK	**1355.2**	250 (5x50)	635,00
3	500	**1356.1**	50	179,00
6	500	**1357.1**	30	120,00

SPE-polypropylene columns CHROMABOND® Drug II

Extraction of THC and derivatives, acidic analytes from biological fluids (urine, blood ...)

Special silica gel phase:
Bifunctional modification - C_8 / SB
(strong anion exchanger - quaternary amine)
Pore size: 60 Å, particle size: 45 µm,
specific surface: 500 m^2/g, pH stability: 2-8
Recommended applications: extraction of THC and derivatives from urine, blood, serum, plasma
Acidic analytes from biological fluids
Similar phases: Strata® Screen-A, Bond Elut Certify II, Clean Screen® THC, Bakerbond™ Narc-1, Isolute® HAX, HyperSep™ Verify AX

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
3	200	**3063.1**	50	160,00
6	500	**3064.1**	30	120,00

SPE phase for food analysis

SPE-polypropylene columns CHROMABOND® ABC18

For determination of acrylamide in food

Special phase:

Octadecyl silica phase with ion exchange character

Recommended application: Clean-up of acrylamide from ultra-heated starch-containing food, such as potato chips, french fries, crispbread and cereals

Important note:

Minimum concentration of acrylamide should be 70 µg/kg.
The procedure includes no concentration step.

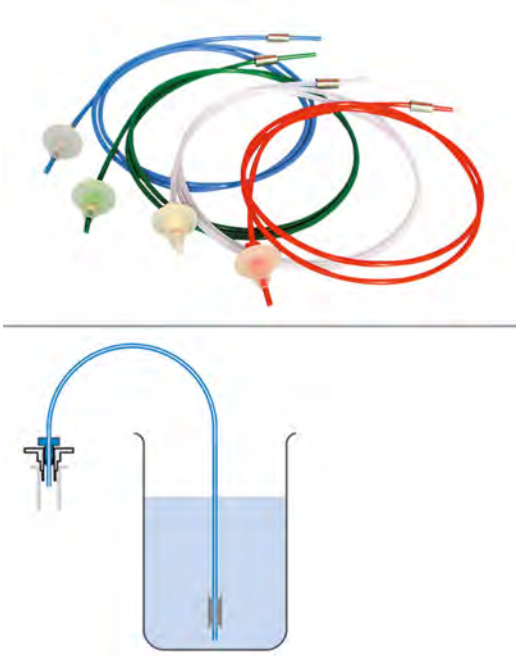
Similar phases: Isolute® M-M (Multimode)

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
6	500	**2991.1**	30	120,00

Solvents ROTISOLV® GC Ultra Grade, Pestilyse® plus and Pestilyse® for SPE

Polarity	Solvent	Art. No.	Water miscibility
polar	n-Heptane	X878, 7566	no
	n-Hexane	T165, KK48, 7573	no
	n-Pentane	T903, KK45, 7587	no
	Isooctane	T167, 7580	no
	Petroleum ether 40-60 °C	T170, 7588	no
	Cyclohexane	T163, KK41, 7542	no
	Toluene	KK46, T166, 7591	no
	Diethyl ether	T900	no
	2-Propanol	T902, 7590	yes
	Trichloromethane/Chloroform	T901, 7554	no
	Acetic acid ethyl ester	T164, KK42, 7565	weak
	Methanol	KK44, T169, 7583	yes
	Acetone	T161, KK40, 7535	yes
	Acetonitrile	T168	yes
	Dichloromethane	KK47, 7562	no
unpolar	Water	T905	yes

Accessories for SPE



Tube adapters

For feeding large sample volumes to **1, 3 and 6 ml columns**.
Figure: application of the CHROMABOND® tube adapter.

Material: PTFE, tube length: approx. 1 m

For glass columns

Art. No.	Pack Qty.	€
N866.1	4	211,00

For polypropylene columns

Art. No.	Pack Qty.	€
N867.1	4	135,00

Adapter

For coupling of several CHROMABOND® columns of the same or different sizes or for coupling of disposable syringes with CHROMABOND® columns.

Art. No.	Pack Qty.	€
2996.1	4	38,50
2996.2	10	80,20

SPE columns

Made of **PP**. Can be used with vacuum block (H676.1ff) and other vacuum systems. Excellent chemical resistance. Column outlet: Luer (male).
Delivery without PE frits (please order separately).

Volume (ml)	Outside ∅ (mm)	Art. No.	Pack Qty.	€
1	8	**PX07.1**	100	49,40
3	11	**PX08.1**	100	49,40

Frits for SPE columns

Made of **PE**. Pore size 20 µm.

Type	∅ (mm)	Art. No.	Pack Qty.	€
For 1 ml PP column	6	**PX10.1**	100	18,65
For 3 ml PP column	9	**PX11.1**	100	18,65

Accessories: Luer caps

Made of **PP**. To fit standard Luer (male) outlets, and for all column and cartridge sizes.

Art. No.	Pack Qty.	€
PX15.1	100	18,65

▶ Empty columns and cartriges for protein isolation, page 1351

Liquid-Liquid Extraction

Polypropylene columns CHROMABOND® XTR

Kieselguhr phase for liquid-liquid extraction

Features:
- Base material coarse-grained kieselguhr (also known as diatomaceous earth, hydromatrix, celite)
- Large pore size, high pore volume, constantly high batch-to-batch quality
- pH working range 1-13

Application:
- Liquid-liquid extraction of highly viscous aqueous solutions such as physiological fluids (blood, plasma, and serum), dyes in textiles, environmental and food analysis without use of a separation funnel
- High water loadability without breakthrough of water during elution with organic solvents
- Also suitable for removing small amounts of water from solvents which are not miscible with water

Advantages:
- Fast, reproducible and cost-effective
- Simultaneous preparation of several samples
- No problems with phase separation, no formation of emulsions
- High recovery rates
- Time and solvent saving
- Organic solutions do not need to be dried after separation

General column parameters:

Volume	Amount of absorbant	Max. volume capacity of aq. solution	Waiting period before elution	Elution volume
6 ml	1 g	1 ml	5-10 min	8 ml
30 ml	4,5 g	5 ml	5-10 min	16 ml
70 ml	14,5 g	20 ml	10-15 min	40 ml

Depending on the concentration of the analytes eluates can be analysed immediately, or the organic solvent is evaporated. The pH value of the aqueous solution can be altered on the column, which enables elution of different compounds of a sample under optimised conditions. Under certain circumstances, acidic, neutral, and basic compounds can be fractionated in this way.

Solvents applicable for elution:
Diethyl ether (T900)
tert-Butyl methyl ether (T175)
Ethyl acetate (T164)
n-Hexane (T165)
Cyclohexane (T163)
Toluene (T166)
Dichloromethane (T162)
Trichloromethane (chloroform) (T901)
Trichloromethane / methanol (90/10, v/v) (T901/T909)
Trichloromethane / methanol (85/15, v/v)
Diethyl ether / ethanol (90/10, v/v) (T900/9065)
Diethyl ether / ethanol (80/20, v/v)
Dichloromethane / 2-propanol (90/10, v/v) (T162/T902)
Dichloromethane / 2-propanol (85/15, v/v)

Eluents with higher alcohol contents cause an increase in volume of the aqueous phase on the CHROMABOND® XTR. In such case, the column might be overloaded which leads to a displacement of the aqueous phase from the column. Therefore a greater capacity column should be used.
Similar phases: EXtrelut®, Chem Elut™, Isolute® SLE+

Volume (ml)	Adsorbent weight (g)		Art. No.	Pack Qty.	€
6	1		**3677.1**	30	63,00
6	1	BIG PACK	**3677.2**	250 (5x50)	419,00
30	4,5		**3678.1**	30	81,00
70	14,5		**3679.1**	30	165,00
70	14,5	BIG PACK	**3679.2**	100 (5x20)	436,00

① Sample application
② Spreading of the sample
③ Sample elution

Extraction of analytes form an aqueous to an organic phase: TIP

Column conditioning: Not required

Sample application: Aqueous solutions are applied to the dry CHROMABOND® XTR adsorbent. They are soaked up by the solid within a few minutes and spread over the surface of the kieselguhr material as a thin film.

Elution: Lipophilic analytes are eluted with water-immiscible organic solvents; the aqueous phase remains on the CHROMABOND® XTR adsorbent.
Polar, water-soluble analytes, which remain in the aqueous phase on the XTR adsorbent, can be eluted e.g. with saturated NaCl.

Warning: Never exceed the volume capacities listed for each column size!

QuEChERS Products

For pesticide residue analysis in food

Within a few years after its development the QuEChERS method has gained a leading position for determination of pesticide residues in food samples by GC-MS or LC-MS, allowing rapid and cheap clean-up of highly matrix-contaminated samples.
For optimising the extraction of pH-dependent compounds, for minimizing decomposition of sensitive substances, and for broadening the matrix spectrum, different modifications of the QuEChERS method have been elaborated.
In addition to the required adsorbent Silica gel 60 diamino a number of individually weighed and premixed buffer and extraction mixtures are offered, specially composed for different sample matrices.
For extraction, the European standard EN 15662 recommends a citrate extraction mix (Mix I), while AOAC standard 2007.1 uses an acetate extraction mix (Mix II).
For clean-up, the Diamino phase (PSA) removes, e.g. sugars and organic acids. Magnesium sulphate removes water, C_{18} ec removes nonpolar interferences such as fats and the carbon phase removes pigments, sterols, and nonpolar interferences.
For selection of the proper clean-up mix see table below.

Standard clean-up in food samples:
10 g sample are homogenised with 10 ml acetonitrile. After adding the internal standard the sample is shaken with 4 g magnesium sulphate and 1 g sodium chloride and afterwards centrifuged. 1 ml of the supernatant is spiked with 25 mg CHROMABOND® Diamino and 150 mg magnesium sulphate and shaken again. After centrifugation the supernatant is injected to GC-MS.

For selection of the proper clean-up mix see table below.

Sample property	**Low fat content** (e.g. apples, strawberries)	**Moderate content of chlorophyll and carotinoids** (e.g. carrots, lettuce)	**High content of chlorophyll and carotinoids** (e.g. bell peppers, spinach	**High fat content** (e.g. avocado)
Extraction	**Mix I or Mix II** Citrate or acetate extraction	**Mix I or Mix II** Citrate or acetate extraction	**Mix I** Citrate extraction	**Mix I** Citrate extraction
Clean up	**Mix III** Diamino clean-up	**Mix IV** Diamino/Carbon clean-up	**Mix V** Diamino/Carbon clean-up (higher carbon content)	**Mix VI** Diamino/C_{18} ec clean-up

Extraction mixes

Product	Type	Composition	Art. No.	Pack Qty.	€
QuEChERS Extraction Mix I	CHROMABOND® Citrate mix	Magnesium sulphate, anhydrous 4 g / Sodium chloride 1 g / di-Sodium hydrogen citrate1,5-hydrate: 0,5 g / tri-Sodium citrate dihydrate 1 g	**4867.1**	50 x 15 ml	152,50
QuEChERS Extraction Mix II	CHROMABOND® Acetate mix	Magnesium sulphate, anhydrous 6 g / Sodium acetate 1,5 g	**4868.1**	50 x 15 ml	152,50

Clean-up mixes

Product	Type	Composition	Art. No.	Pack Qty.	€
QuEChERS Clean-up Mix III	CHROMABOND® Diamino mix	Magnesium sulphate, anhydrous 0,9 g / CHROMABOND® Diamino 0,15 g	**4870.1**	50 x 15 ml	104,50
QuEChERS Clean-up Mix IV	CHROMABOND® Diamino/ Carbon mix	Magnesium sulphate, anhydrous 0,9 g / CHROMABOND® Diamino 0,15 g / CHROMABOND® Carbon 0,015 g	**4871.1**	50 x 15 ml	104,50
QuEChERS Clean-up Mix V	CHROMABOND® Diamino/ Carbon mix	Magnesium sulphate, anhydrous 0,9 g / CHROMABOND® Diamino 0,15 g / CHROMABOND® Carbon 0,045 g	**4875.1**	50 x 15 ml	104,50
QuEChERS Clean-up Mix VI	CHROMABOND® Diamino/ C18ec mix	Magnesium sulphate, anhydrous 0,9 g / CHROMABOND® Diamino 0,15 g / CHROMABOND® C_{18} ec 0,15 g	**4877.1**	50 x 15 ml	104,50

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Products for preparation of individual QuECHERS mixes see following page.

Products for preparation of individual QuEChERS mixes:

Product	Purity	Art. No.	Pack Qty.	€
Acetonitrile	≥99,9 %, Pestilyse®	**T168.1**	2,5 l	76,25
		T168.3	4 l	110,65
Magnesium sulphate anhydrous	≥99 %, p.a., anhydrous	**0682.1**	100 g	18,85
		0682.2	500 g	41,85
		0682.3	1 kg	71,95
Silica gel 60 C_{18} ec	0,02-0,05 mm	**6070.1**	10 g	58,90
		6070.2	25 g	119,50
Silica gel 60 diamino / PSA	0,045 mm	**4878.1**	10 g	81,90
		4878.2	25 g	175,50
Sodium acetate	≥99 %, p.a., ACS, anhydrous	**6773.1**	250 g	25,70
		6773.2	1 kg	66,55
		6773.3	2,5 kg	139,25
		6773.5	25 kg	962,15
Sodium chloride	≥99,5 %, p.a., ACS, ISO	**3957.3**	500 g	16,05
		3957.1	1 kg	18,20
		3957.2	5 kg	66,55
		3957.4	10 kg	102,05
		3957.5	25 kg	198,90
tri-Sodium citrate dihydrate	≥99 %, p.a., ACS	**3580.4**	250 g	21,00
		3580.3	500 g	27,85
		3580.1	1 kg	44,65
		3580.2	5 kg	188,15
		3580.5	25 kg	439,70
di-Sodium hydrogen citrate 1,5-hydrate	≥99 %, cryst.	**2611.1**	250 g	21,00
		2611.2	500 g	27,45
		2611.3	1 kg	43,55

For additional product data and safety information, see chapter Chemicals A-Z. * No Grace DAVISIL® products

▶ Centrifuge tubes see Chapter vessels and glass bottles

For further information see www.quechers.com

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Salts for Analysis

Our salts for analysis are manufactured under strict production guidelines. Analytical purity and best quality reliably characterize each batch.
Salts in p.a. quality made by Roth meet the high requirements for reproducible results. Most of our salts are additionally specified according to international standards like ACS and ISO.

Definition:
p.a.: pro analysi (for Analysis)
ACS: American Chemical Society
ISO: International Standard Organisation

Aluminium salts, Al

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Aluminium ammonium sulphate dodecahydrate	≥99 %, p.a., ACS	**X862.1**	500 g	plastic	31,10
		X862.2	1 kg	plastic	51,10
		X862.3	2,5 kg	plastic	104,20
Aluminium nitrate nonahydrate	≥98 %, p.a.	**CN85.1**	500 g	plastic	20,65
		CN85.2	1 kg	plastic	31,10
		CN85.3	2,5 kg	plastic	61,20
Aluminium sulphate hexadecahydrate	≥98 %, p.a., ACS	**5340.2**	100 g	plastic	17,10
		5340.1	500 g	plastic	40,75
		5340.3	1 kg	plastic	69,80
Potassium aluminium sulphate dodecahydrate	≥98 %, p.a., ACS	**P724.2**	500 g	plastic	26,80
		P724.1	1 kg	plastic	47,20
		P724.3	2,5 kg	plastic	99,90

Ammonium salts, NH_4^+

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Ammonium acetate	≥97 %, p.a., ACS	**7869.2**	500 g	plastic	28,95
		7869.1	1 kg	plastic	40,75
		7869.3	2,5 kg	plastic	69,80
Ammonium bromide	≥99 %, p.a., ACS	**HN14.1**	500 g	plastic	32,15
		HN14.2	1 kg	plastic	50,45
		HN14.3	2,5 kg	plastic	110,65
Ammonium carbonate	≥30 %, NH_3, p.a., ACS	**CP98.1**	500 g	plastic	19,90
		CP98.2	1 kg	plastic	30,00
		CP98.4	2,5 kg	plastic	54,75
		CP98.3	5 kg	plastic	96,65

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Ammonium cerium(IV) sulphate dihydrate	≥99 %, p.a.	**4386.1**	100 g	plastic	46,15
		4386.2	250 g	plastic	102,70
		4386.3	500 g	plastic	162,90
Ammonium chloride	≥99,7 %, p.a., ultra quality	**K298.1**	500 g	plastic	23,15
		K298.2	1 kg	plastic	38,60
		K298.3	2,5 kg	plastic	60,10
		K298.4	5 kg	plastic	80,55
		K298.6	10 kg	plastic	136,45
		K298.5	25 kg	plastic	267,70
Ammonium dihydrogen phosphate	≥99 %, p.a., ACS	**P727.1**	500 g	plastic	42,90
		P727.2	1 kg	plastic	77,30
		P727.3	2,5 kg	plastic	166,10
Ammonium fluoride	≥98 %, p.a., ACS	**6549.1**	250 g	plastic	60,10
		6549.2	500 g	plastic	103,10
		6549.3	1 kg	plastic	183,30
Ammonium heptamolybdate tetrahydrate	≥99 %, p.a.	**3666.1**	250 g	plastic	89,80
		3666.2	500 g	plastic	160,75
		3666.3	1 kg	plastic	287,60
	NEW	**3666.7**	25 kg	plastic	2999,25
Ammonium hydrogen carbonate	≥99 %, p.a.	**T871.1**	500 g	plastic	22,50
		T871.2	1 kg	plastic	33,25
		T871.3	2,5 kg	plastic	53,65
		T871.4	5 kg	plastic	90,85
		T871.5	25 kg	plastic	310,70
di-Ammonium hydrogen citrate	≥98 %, p.a., ACS	**P735.1**	500 g	plastic	49,35
		P735.2	1 kg	plastic	89,15
		P735.3	2,5 kg	plastic	180,10
di-Ammonium hydrogen phosphate	≥98 %, p.a., ACS	**P736.1**	500 g	plastic	53,65
		P736.2	1 kg	plastic	85,90
		P736.3	2,5 kg	plastic	194,50
Ammonium hydrogen sulphate	≥98,5 %, p.a.	**5485.2**	250 g	plastic	26,80
		5485.1	500 g	plastic	44,00
		5485.3	1 kg	plastic	79,45
Ammonium iodide	≥99 %, p.a., ACS	**9818.1**	100 g	glass	53,25
		9818.2	250 g	glass	118,15
		9818.3	500 g	glass	221,35
Ammonium iron(II) sulphate hexahydrate	≥99 %, p.a., ISO	**P728.1**	500 g	plastic	28,50
		P728.2	1 kg	plastic	47,85
		P728.3	2,5 kg	plastic	107,40
Ammonium iron(III) sulphate dodecahydrate	≥98,5 %, p.a., ACS, ISO	**P734.1**	500 g	plastic	31,10
		P734.2	1 kg	plastic	53,65
		P734.3	2,5 kg	plastic	111,70
Ammonium monovanadate	≥99,8 %, p.a.	**4232.1**	50 g	plastic	25,30
		4232.2	100 g	plastic	36,45
		4232.3	250 g	plastic	74,10
		4232.4	1 kg	plastic	239,20
Ammonium nitrate	≥98 %, p.a., ACS	**K299.1**	500 g	plastic	31,10
		K299.2	1 kg	plastic	50,45
		K299.3	2,5 kg	plastic	107,40
di-Ammonium oxalate monohydrate	≥99,5 %, p.a., ACS	**P737.1**	500 g	plastic	57,95
		P737.2	1 kg	plastic	96,65
		P737.3	2,5 kg	plastic	213,95
Ammonium peroxydisulphate	≥98 %, p.a., ACS	**9592.3**	50 g	plastic	10,25
		9592.2	100 g	plastic	13,90
		9592.1	1 kg	plastic	38,60
		9592.4	2,5 kg	plastic	73,00
Ammonium sulphate	≥99,5 %, p.a., ACS, ISO	**3746.2**	250 g	plastic	13,45
		3746.1	1 kg	plastic	30,00
		3746.3	2,5 kg	plastic	54,30
		3746.4	5 kg	plastic	95,60
		3746.6	10 kg	plastic	153,65
		3746.5	25 kg	plastic	332,20
Ammonium thiocyanate	≥99 %, p.a., ACS, ISO	**4477.1**	100 g	plastic	16,70
		4477.2	250 g	plastic	23,15
		4477.3	500 g	plastic	34,30
		4477.4	1 kg	plastic	54,75
	NEW	**4477.7**	25 kg	plastic	854,65

For additional product data and safety information, see chapter Chemicals A-Z.

Antimony salts, Sb

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Antimony(III) chloride	≥99 %, p.a., ACS	**9819.1**	100 g	plastic	28,95
		9819.2	500 g	plastic	92,35
		9819.3	1 kg	plastic	156,85
Antimony(III) oxide	≥99 %, p.a.	**9826.1**	100 g	plastic	19,25
		9826.2	500 g	plastic	64,40
		9826.3	1 kg	plastic	116,00

Barium salts, Ba

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Barium acetate	≥99 %, p.a., ACS	**2553.1**	250 g	plastic	38,60
		2553.2	500 g	plastic	61,85
		2553.3	1 kg	plastic	103,10
Barium carbonate	≥99 %, p.a., ACS	**P008.2**	25 g	plastic	13,45
		P008.3	100 g	plastic	25,70
		P008.1	500 g	plastic	94,50
Barium chloride dihydrate	≥99 %, p.a., ACS, ISO	**4453.1**	250 g	plastic	16,05
		4453.2	500 g	plastic	23,55
		4453.3	1 kg	plastic	39,70
		4453.4	2,5 kg	plastic	84,85
		4453.5	25 kg	plastic	686,95
Barium hydroxide octahydrate	≥98 %, p.a., ISO	**P009.2**	250 g	plastic	26,80
		P009.1	500 g	plastic	41,40
		P009.3	1 kg	plastic	64,40
Barium nitrate	≥99 %, p.a., ACS	**4387.1**	250 g	plastic	27,45
		4387.2	500 g	plastic	42,90

Bismuth salts, Bi

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Bismuth(III) nitrate	≥71 % Bi, p.a., alkaline	**4447.1**	50 g	plastic	45,05
		4447.2	100 g	plastic	71,50
Bismuth(III) nitrate pentahydrate	≥98 %, p.a., ACS	**2554.1**	250 g	plastic	47,85
		2554.2	500 g	plastic	87,00
		2554.3	1 kg	plastic	153,65
Bismuth(III) oxide	≥99,5 %, p.a.	**6555.1**	50 g	plastic	37,55
		6555.2	100 g	plastic	51,50
		6555.3	500 g	plastic	161,15
Sodium bismuthate	≥85 %, p.a.	**4401.1**	50 g	plastic	47,85
		4401.2	100 g	plastic	88,70
		4401.3	250 g	plastic	192,45

Bor salts, B

Product	Purity	Art. No.	Pack Qty.	Pack.	€
di-Sodium tetraborate decahydrate	≥99,5 %, p.a., ACS, ISO	**T880.1**	500 g	plastic	32,15
		T880.2	1 kg	plastic	48,30
		T880.3	2,5 kg	plastic	94,10
Sodium tetraphenyl borate	≥99,5 %, p.a., ACS	**4385.1**	10 g	plastic	42,50
		4385.2	25 g	plastic	92,35
		4385.3	100 g	plastic	289,20

Cadmium salts, Cd

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Cadmium acetate dihydrate	≥99 %, p.a.	**KK06.1**	100 g	plastic	32,80
		KK06.2	250 g	plastic	68,70
Cadmium sulphate hydrate	≥99 %, p.a., ACS	**4482.2**	25 g	plastic	18,85
		4482.1	100 g	plastic	57,95
		4482.3	250 g	plastic	96,65
		4482.4	500 g	plastic	147,20
		4482.5	1 kg	plastic	274,15

Caesium salts, Cs

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Caesium carbonate	≥99,9 %, p.a.	**6873.1**	5 g	plastic	17,10
		6873.2	25 g	plastic	37,55
		6873.3	100 g	plastic	119,25
		6873.4	500 g	plastic	385,95
Caesium chloride	≥99,999 %, p.a., ultra quality	**8627.3**	50 g	plastic	50,00
		8627.1	100 g	plastic	83,35
		8627.2	1 kg	plastic	551,40
Caesium sulphate	≥99,99 %, p.a.	**9355.3**	25 g	plastic	42,50
		9355.1	100 g	plastic	134,30
		9355.2	1 kg	plastic	923,45

Calcium salts, Ca

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Calcium acetate monohydrate	≥99 %, p.a., ACS	**P011.1**	500 g	plastic	49,35
		P011.2	1 kg	plastic	88,05
Calcium carbonate	≥99 %, p.a., precipitated	**P012.1**	500 g	plastic	70,45
		P012.2	1 kg	plastic	123,10
		P012.3	2,5 kg	plastic	241,90
Calcium chloride dihydrate	≥99 %, p.a., ACS	**5239.2**	500 g	plastic	18,20
		5239.1	1 kg	plastic	25,30
		5239.3	2,5 kg	plastic	53,65
Calcium chloride hexahydrate	≥98 %, p.a.	**T886.2**	500 g	plastic	31,10
		T886.1	1 kg	plastic	52,15
		T886.3	2,5 kg	plastic	103,10
Calcium hydroxide	≥96 %, p.a.	**CN87.1**	500 g	plastic	41,85
		CN87.2	1 kg	plastic	68,70
		CN87.3	2,5 kg	plastic	142,45
Calcium nitrate tetrahydrate	≥99 %, p.a., ACS	**P740.1**	500 g	plastic	24,65
		P740.2	1 kg	plastic	38,60
		P740.3	2,5 kg	plastic	83,75
Calcium sulphate dihydrate	≥98 %, p.a., ACS	**P741.1**	500 g	plastic	53,25
		P741.2	1 kg	plastic	92,35
		P741.3	2,5 kg	plastic	197,30

Cerium salts, Ce

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Ammonium cerium(IV) sulphate dihydrate	≥99 %, p.a.	**4386.1**	100 g	plastic	46,15
		4386.2	250 g	plastic	102,70
		4386.3	500 g	plastic	162,90
Cerium(IV) ammonium nitrate	≥99,5 %, p.a.	**HN28.1**	50 g	plastic	46,15
		HN28.2	100 g	plastic	84,40
		HN28.3	250 g	plastic	153,65
Cerium(III) nitrate hexahydrate	≥99,5 %, p.a.	**HN18.1**	100 g	plastic	78,40
		HN18.2	500 g	plastic	299,95
Cerium(IV) oxide	≥99,9 %, p.a.	**9837.1**	100 g	plastic	34,30
		9837.2	500 g	plastic	102,05
		9837.3	1 kg	plastic	160,20
Cerium(IV) sulphate tetrahydrate	≥98 %, p.a.	**P014.2**	50 g	plastic	67,65
		P014.1	100 g	plastic	116,00

Chromium salts, Cr

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Chromium(III) chloride hexahydrate	≥97 %, p.a.	**9832.1**	100 g	plastic	17,10
		9832.2	500 g	plastic	46,15
		9832.3	1 kg	plastic	75,15
Chromium(III) potassium sulphate dodecahydrate	≥98 %, p.a., ACS	**4389.1**	250 g	plastic	28,95
		4389.2	500 g	plastic	44,00
		4389.3	1 kg	plastic	84,40
Potassium chromate	≥99 %, p.a., ACS	**HN33.1**	100 g	plastic	37,55
		HN33.2	250 g	plastic	70,85
		HN33.3	500 g	plastic	124,60
		HN33.4	1 kg	plastic	214,50
Potassium dichromate	≥99,5 %, p.a., ACS, ISO	**P744.3**	100 g	plastic	27,45
		P744.1	500 g	plastic	98,80
		P744.2	1 kg	plastic	167,60
Reinecke salt monohydrate	≥93%, p.a., ACS	**6629.1**	25 g	glass	60,10
		6629.2	100 g	glass	176,85

For additional product data and safety information, see chapter Chemicals A-Z.

Cobalt salts, Co

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Cobalt(II) acetate tetrahydrate	≥98 %, p.a., ACS	**HN29.1**	50 g	plastic	27,45
		HN29.2	100 g	plastic	42,50
		HN29.3	250 g	plastic	89,15
Cobalt(II) chloride hexahydrate	≥99 %, p.a., ACS, ISO	**T889.2**	50 g	plastic	62,25
		T889.3	100 g	plastic	95,60
		T889.1	250 g	plastic	182,25
Cobalt(II) nitrate hexahydrate	≥98 %, p.a., ACS	**HN16.1**	50 g	plastic	29,60
		HN16.2	100 g	plastic	48,30
		HN16.3	250 g	plastic	99,90
Cobalt(II,III) oxide	≥71 % Co, p.a.	**9834.1**	25 g	plastic	17,10
		9834.2	100 g	plastic	46,15
		9834.3	500 g	plastic	192,45
Cobalt(II) sulphate heptahydrate	≥97 %, p.a.	**4390.1**	100 g	plastic	36,45
		4390.2	250 g	plastic	79,05
		4390.3	500 g	plastic	142,90
Sodium hexanitrocobaltate(III)	p.a., ACS	**4409.1**	25 g	plastic	19,90
		4409.2	100 g	plastic	54,75
		4409.3	250 g	plastic	110,65

Copper salts, Cu

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Copper(II) acetate monohydrate	≥99 %, p.a., ACS	**HN30.1**	50 g	plastic	22,05
		HN30.2	100 g	plastic	33,25
		HN30.3	250 g	plastic	68,70
Copper(I) chloride	≥98 %, p.a., ACS	**4391.1**	100 g	plastic	19,90
		4391.2	250 g	plastic	38,60
		4391.3	500 g	plastic	68,70
		4391.4	1 kg	plastic	121,40
Copper(II) chloride dihydrate	≥99 %, p.a.	**CN82.1**	250 g	plastic	27,85
		CN82.2	500 g	plastic	44,65
		CN82.3	1 kg	plastic	80,55
	NEW	**CN82.7**	25 kg	plastic	1596,40
Copper(II) nitrate trihydrate	≥99,5 %, p.a., ACS	**P754.1**	500 g	plastic	63,35
		P754.2	1 kg	plastic	166,55
Copper(II) oxide	p.a., ACS, as wire	**4467.2**	25 g	plastic	21,40
		4467.1	100 g	plastic	67,65
		4467.3	250 g	plastic	145,05
Copper(II) sulphate	≥98 %, p.a., anhydrous	**P023.1**	250 g	plastic	35,40
		P023.2	1 kg	plastic	105,25
		P023.3	2,5 kg	plastic	231,15
Copper(II) sulphate pentahydrate	≥99,5 %, p.a., ACS, ISO	**P024.1**	500 g	plastic	28,95
		P024.2	1 kg	plastic	49,35
		P024.3	2,5 kg	plastic	93,00

Gold salts, Au

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Tetrachloroauric(III) acid trihydrate	≥99,9 %, p.a., ultra quality	**0689.1**	500 mg	glass	96,65
		0689.2	1 g	glass	153,65
		0689.3	5 g	glass	590,20
Tetrachloroauric(III) acid trihydrate	≥99,5 %, p.a.	**3867.1**	1 g	glass	139,25
		3867.2	5 g	glass	557,95

Indium salts, In

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Indium(III) chloride	≥99,9 %, p.a.	**0307.1**	5 g	plastic	27,85
		0307.2	10 g	plastic	44,65
		0307.3	25 g	plastic	88,05
		0307.4	50 g	plastic	153,65
Indium(III) sulphate	≥99,99 %, p.a.	**0314.1**	5 g	plastic	27,45
		0314.2	10 g	plastic	44,00
		0314.3	25 g	plastic	77,95
		0314.4	50 g	plastic	143,95

Iron salts, Fe

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Ammonium iron(II) sulphate hexahydrate	≥99 %, p.a., ISO	**P728.1**	500 g	plastic	28,50
		P728.2	1 kg	plastic	47,85
		P728.3	2,5 kg	plastic	107,40
Ammonium iron(III) sulphate dodecahydrate	≥98,5 %, p.a., ACS, ISO	**P734.1**	500 g	plastic	31,10
		P734.2	1 kg	plastic	53,65
		P734.3	2,5 kg	plastic	111,70
Iron(III) chloride hexahydrate	≥99 %, p.a.	**P742.1**	250 g	plastic	28,95
		P742.2	1 kg	plastic	90,20
		P742.5	25 kg	plastic	858,95
Iron(II) sulphate heptahydrate	≥99 %, p.a., ACS	**P015.1**	500 g	plastic	24,65
		P015.2	1 kg	plastic	36,45
		P015.3	2,5 kg	plastic	78,40
	NEW	**P015.4**	5 kg	plastic	138,70
		P015.6	10 kg	plastic	252,55
		P015.5	25 kg	plastic	514,95
Potassium hexacyano-ferrate(II) trihydrate	≥99 %, p.a., ACS, ISO	**P745.1**	500 g	plastic	93,00
		P745.2	1 kg	plastic	167,60
		P745.3	2,5 kg	plastic	364,45
Potassium hexacyano-ferrate(III)	≥99 %, p.a., ACS	**P746.3**	100 g	plastic	22,50
		P746.1	500 g	plastic	71,95
		P746.2	1 kg	plastic	130,65
Sodium nitroprusside dihydrate	≥99 %, p.a., ACS	**HN34.1**	25 g	plastic	28,50
		HN34.2	100 g	plastic	75,15
		HN34.3	500 g	plastic	292,95

Lanthanum salts, La

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Lanthanum(III) nitrate hexahydrate	≥99,99 %, p.a.	**8358.1**	100 g	plastic	94,50
Lanthanum(III) oxide	≥99,99 %, p.a.	**8373.1**	100 g	plastic	53,65

Lead salts, Pb

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Lead(II) acetate, basic	≥33 % PbO, p.a., ACS	**2559.1**	500 g	plastic	38,60
		2559.2	1 kg	plastic	57,55
Lead(II) acetate trihydrate	≥99,5 %, p.a., ACS, ISO	**P739.1**	500 g	plastic	80,55
		P739.2	1 kg	plastic	137,50
		P739.3	2,5 kg	plastic	287,60
Lead(II) carbonate	≥98 %, p.a., ACS	**2558.1**	100 g	plastic	39,25
		2558.2	250 g	plastic	59,70
		2558.3	500 g	plastic	95,15
Lead(II) nitrate	≥99 %, p.a., ACS	**HN32.1**	100 g	plastic	18,85
		HN32.2	250 g	plastic	36,45

For additional product data and safety information, see chapter Chemicals A-Z.

Lithium salts, Li

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Lithium carbonate	≥99 %, p.a., ACS	**3995.1**	250 g	plastic	68,70
		3995.2	500 g	plastic	121,40
Lithium chloride	≥99,5 %, p.a., ultra quality	**3739.1**	250 g	plastic	51,10
		3739.2	1 kg	plastic	147,85
Lithium chloride	≥99 %, p.a., ACS	**6698.1**	50 g	plastic	19,25
		6698.2	100 g	plastic	27,85
		6698.3	500 g	plastic	102,05
		6698.4	1 kg	plastic	181,70
Lithium fluoride	≥99 %, p.a.	**6715.1**	25 g	plastic	19,90
		6715.2	100 g	plastic	35,40
		6715.3	250 g	plastic	67,65
Lithium metaborate	≥98 %, p.a., ACS, anhydrous	**9840.1**	50 g	plastic	48,30
		9840.2	100 g	plastic	83,75
Lithium sulphate monohydrate	≥99 %, p.a.	**4393.1**	250 g	plastic	44,00
		4393.2	500 g	plastic	76,90
		4393.3	1 kg	plastic	131,70

Magnesium salts, Mg

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Magnesium acetate tetrahydrate	≥99,5 %, p.a., ACS	**P026.1**	500 g	plastic	54,30
		P026.2	1 kg	plastic	91,30
Magnesium chloride hexahydrate	≥99 %, p.a., ACS	**2189.2**	250 g	plastic	16,05
		2189.1	1 kg	plastic	31,10
		2189.3	2,5 kg	plastic	57,55
		2189.5	25 kg	plastic	450,45
Magnesium nitrate hexahydrate	≥98 %, p.a., ACS	**HN31.1**	500 g	plastic	36,45
		HN31.2	1 kg	plastic	63,35
		HN31.3	2,5 kg	plastic	139,25
Magnesium sulphate	≥99 %, p.a., anhydrous	**0682.1**	100 g	glass	18,85
		0682.2	500 g	glass	41,85
		0682.3	1 kg	glass	71,95
Magnesium sulphate heptahydrate	≥99 %, p.a., ACS	**P027.1**	500 g	plastic	24,65
		P027.2	1 kg	plastic	39,70
		P027.3	2,5 kg	plastic	74,10

For additional product data and safety information, see chapter Chemicals A-Z.

Manganese salts, Mn

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Manganese(II) carbonate	≥44 % Mn, p.a.	**9927.1**	250 g	plastic	21,40
		9927.2	500 g	plastic	34,30
		9927.3	1 kg	plastic	56,90
		9927.4	2,5 kg	plastic	116,00
Manganese(II) chloride monohydrate	≥99 %, p.a	**4320.1**	100 g	plastic	14,55
		4320.2	500 g	plastic	29,60
		4320.3	1 kg	plastic	47,20
		4320.4	2,5 kg	plastic	93,45
Manganese(II) chloride tetrahydrate	≥99 %, p.a.	**T881.3**	100 g	plastic	16,70
		T881.1	500 g	plastic	39,70
		T881.2	1 kg	plastic	63,35
Manganese(II) nitrate tetrahydrate	≥98 %, p.a.	**HN26.1**	250 g	plastic	24,20
		HN26.2	500 g	plastic	39,70
		HN26.3	1 kg	plastic	70,45
		HN26.4	2,5 kg	plastic	150,00
Manganese(II) sulphate monohydrate	≥99 %, p.a., ACS	**4487.1**	250 g	plastic	32,15
		4487.2	500 g	plastic	56,90
Potassium permanganate	≥99 %, p.a., ACS, max. 0,005 ppm Hg	**KK08.1**	500 g	plastic	44,00
		KK08.2	1 kg	plastic	66,55
	≥99 %, p.a., ACS	**P752.1**	500 g	plastic	40,75
		P752.2	1 kg	plastic	61,20
		P752.3	2,5 kg	plastic	109,15

Mercury salts, Hg

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Mercury(II) acetate	≥99 %, p.a., ACS	**KK05.1**	50 g	glass	58,60
		KK05.2	100 g	glass	105,90
Mercury(II) bromide	≥98 %, p.a., ACS	**6581.1**	50 g	plastic	54,75
		6581.2	250 g	plastic	212,35
Mercury(I) chloride	≥99,5 %, p.a., ACS	**6601.1**	50 g	glass	56,45
		6601.2	100 g	glass	92,35
		6601.3	500 g	glass	357,90
Mercury(II) chloride	≥99,5 %, p.a., ACS	**KK04.1**	50 g	glass	47,20
		KK04.2	100 g	glass	85,90
Mercury(II) iodide	≥99 %, p.a., ACS, red	**6590.1**	50 g	plastic	52,60
		6590.2	100 g	plastic	87,00
		6590.3	500 g	plastic	332,20
Mercury(I) nitrate dihydrate	≥97 %, p.a.	**6605.1**	50 g	plastic	40,75
		6605.2	100 g	plastic	67,20
		6605.3	500 g	plastic	295,65
Mercury(II) nitrate monohydrate	≥98 %, p.a., ACS	**6595.1**	50 g	plastic	41,40
		6595.2	250 g	plastic	145,05
		6595.3	1 kg	plastic	525,70
Mercury(II) oxide	≥99 %, p.a., red	**4470.2**	25 g	plastic	44,65
		4470.1	50 g	plastic	80,55
Mercury(II) sulphate	≥98 %, p.a., ACS	**T112.1**	100 g	plastic	77,30
		T112.2	500 g	plastic	274,15
Mercury(II) thiocyanate	≥99%, p.a.	**6600.1**	25 g	plastic	35,40
		6600.2	100 g	plastic	107,40
		6600.3	500 g	plastic	461,20

Molybdenum salts, Mo

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Ammonium heptamolybdate tetrahydrate	≥99 %, p.a.	**3666.1**	250 g	plastic	89,80
		3666.2	500 g	plastic	160,75
		3666.3	1 kg	plastic	287,60
	NEW	**3666.7**	25 kg	plastic	2999,25
Molybdenum(VI) oxide	≥99,5 %, p.a.	**0142.1**	50 g	plastic	17,75
		0142.2	250 g	plastic	44,65
		0142.3	500 g	plastic	77,95
		0142.4	1 kg	plastic	142,90
Sodium molybdate dihydrate	≥99,5 %, p.a.	**0274.1**	50 g	plastic	18,85
		0274.2	100 g	plastic	27,45
		0274.3	250 g	plastic	49,35
		0274.4	1 kg	plastic	177,40

Nickel salts, Ni

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Nickel(II) chloride hexahydrate	≥98 %, p.a.	**4489.1**	100 g	plastic	45,70
		4489.2	250 g	plastic	95,60
Nickel(II) nitrate hexahydrate	≥99 %, p.a.	**4395.1**	100 g	plastic	27,85
		4395.2	250 g	plastic	57,95
		4395.3	500 g	plastic	105,25
Nickel(II) oxide	≥78 % Ni, p.a., green, 325 mesh	**9996.1**	100 g	plastic	22,50
		9996.2	500 g	plastic	67,20
		9996.3	1 kg	plastic	110,65
	≥75 % Ni, p.a., black, 400 mesh	**9925.1**	100 g	plastic	22,05
		9925.2	500 g	plastic	67,20
		9925.3	1 kg	plastic	110,65
Nickel(II) sulphate hexahydrate	≥99 %, p.a., ACS	**T111.1**	250 g	plastic	69,35
		T111.2	1 kg	plastic	240,30

Osmium salts, Os

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Osmium tetraoxide	≥99,95 %, p.a., for electron microscopy	**8371.1**	100 mg	glass	42,50
		8371.2	500 mg	glass	103,10
		8371.3	1 g	glass	160,10

For additional product data and safety information, see chapter Chemicals A-Z.

Potassium salts, K

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Potassium acetate	≥99 %, p.a.	**T874.1**	500 g	plastic	35,40
		T874.2	1 kg	plastic	54,75
		T874.3	2,5 kg	plastic	105,25
		T874.5	25 kg	plastic	719,20
Potassium aluminium sulphate dodecahydrate	≥98 %, p.a., ACS	**P724.2**	500 g	plastic	26,80
		P724.1	1 kg	plastic	47,20
		P724.3	2,5 kg	plastic	99,90
Potassium bromate	≥99,8%, p.a., ACS, ISO	**4396.1**	100 g	plastic	47,85
		4396.2	250 g	plastic	107,00
		4396.3	500 g	plastic	193,00
Potassium bromide	≥99 %, p.a., ACS	**A137.1**	100 g	plastic	21,40
		A137.2	500 g	plastic	40,75
		A137.3	1 kg	plastic	71,95
Potassium carbonate	≥99 %, p.a., ACS	**P743.1**	500 g	plastic	27,45
		P743.2	1 kg	plastic	42,50
		P743.3	2,5 kg	plastic	91,95
Potassium chlorate	≥99 %, p.a., ACS	**HN27.1**	100 g	plastic	16,05
		HN27.2	250 g	plastic	24,20
		HN27.3	500 g	plastic	36,45
Potassium chloride	≥99,5 %, p.a., ACS, ISO	**6781.3**	500 g	plastic	18,85
		6781.1	1 kg	plastic	26,35
		6781.2	5 kg	plastic	104,20
		6781.5	25 kg	plastic	396,70
Potassium chromate	≥99 %, p.a., ACS	**HN33.1**	100 g	plastic	37,55
		HN33.2	250 g	plastic	70,85
		HN33.3	500 g	plastic	124,60
		HN33.4	1 kg	plastic	214,50
Potassium dichromate	≥99,5 %, p.a., ACS, ISO	**P744.3**	100 g	plastic	27,45
		P744.1	500 g	plastic	98,80
		P744.2	1 kg	plastic	167,60
Potassium dihydrogen phosphate	≥99 %, p.a., ACS	**3904.2**	250 g	plastic	18,85
		3904.1	1 kg	plastic	54,75
		3904.3	5 kg	plastic	219,20
		3904.5	25 kg	plastic	955,70
Potassium disulphite	≥96 %, p.a.	**P019.1**	500 g	plastic	24,65
		P019.2	1 kg	plastic	36,45
		P019.3	5 kg	plastic	144,60
Potassium fluoride	≥99 %, p.a.	**CN83.1**	100 g	plastic	17,75
		CN83.2	250 g	plastic	29,60
		CN83.3	500 g	plastic	54,30
		CN83.4	1 kg	plastic	92,35
Potassium hexacyano-ferrate(II) trihydrate	≥99 %, p.a., ACS, ISO	**P745.1**	500 g	plastic	93,00
		P745.2	1 kg	plastic	167,60
		P745.3	2,5 kg	plastic	364,45
Potassium hexacyano-ferrate(III)	≥99 %, p.a., ACS	**P746.3**	100 g	plastic	22,50
		P746.1	500 g	plastic	71,95
		P746.2	1 kg	plastic	130,65
Potassium hydrogen carbonate	≥99,5 %, p.a.	**P748.1**	500 g	plastic	30,00
		P748.2	1 kg	plastic	51,10
		P748.3	2,5 kg	plastic	114,95
di-Potassium hydrogen phosphate	≥99 %, p.a., anhydrous	**P749.1**	500 g	plastic	28,95
		P749.2	1 kg	plastic	52,15
		P749.3	2,5 kg	plastic	105,25
		P749.5	25 kg	plastic	848,20
di-Potassium hydrogen phosphate trihydrate	≥99 %, p.a.	**6878.2**	250 g	plastic	20,35
		6878.1	1 kg	plastic	48,30
		6878.3	2,5 kg	plastic	97,75
Potassium hydrogen phthalate	≥99,5 %, p.a., ISO	**P750.1**	500 g	plastic	51,50
		P750.2	1 kg	plastic	90,20
		P750.3	2,5 kg	plastic	193,00
Potassium hydrogen sulphate	≥98 %, p.a.	**P020.1**	500 g	plastic	30,65
		P020.2	1 kg	plastic	53,65
		P020.3	2,5 kg	plastic	115,60
Potassium iodate	≥99,4 %, p.a., ACS	**P751.1**	100 g	plastic	38,60
		P751.2	250 g	plastic	82,70
Potassium iodide	≥99,5 %, p.a., ISO	**6750.1**	250 g	glass	83,75
		6750.3	500 g	glass	145,15
		6750.2	1 kg	glass	263,40
Potassium sodium tartrate tetrahydrate	≥99 %, p.a., ACS, ISO	**8087.2**	500 g	plastic	40,75
		8087.1	1 kg	plastic	67,20
		8087.3	2,5 kg	plastic	147,85
Potassium nitrate	≥99 %, p.a., ISO	**P021.1**	500 g	plastic	22,50
		P021.2	1 kg	plastic	35,40
		P021.3	2,5 kg	plastic	69,80
di-Potassium oxalate monohydrate	≥98,5 %, p.a., ACS	**HN38.1**	250 g	plastic	29,60
		HN38.2	500 g	plastic	48,30
		HN38.3	1 kg	plastic	86,55
Potassium periodate	≥99,8 %, p.a., ACS	**2588.1**	25 g	plastic	28,50
		2588.2	100 g	plastic	66,55
		2588.3	500 g	plastic	248,90
Potassium permanganate	≥99 %, p.a., ACS, max. 0,005 ppm Hg	**KK08.1**	500 g	plastic	44,00
		KK08.2	1 kg	plastic	66,55
	≥99 %, p.a., ACS	**P752.1**	500 g	plastic	40,75
		P752.2	1 kg	plastic	61,20
		P752.3	2,5 kg	plastic	109,15
Potassium sulphate	≥99 %, p.a., ACS, ISO	**P022.1**	500 g	plastic	39,70
		P022.2	1 kg	plastic	66,55
		P022.3	2,5 kg	plastic	150,00
Potassium thiocyanate	≥98,5 %, p.a., ACS	**P753.1**	500 g	plastic	79,45
		P753.2	1 kg	plastic	139,65
		P753.3	2,5 kg	plastic	320,90

Rubidium salts, Rb

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Rubidium chloride	≥99,5 %, p.a.	**4471.2**	5 g	plastic	37,55
		4471.1	10 g	plastic	65,05
		4471.3	25 g	plastic	137,10
		4471.4	50 g	plastic	252,65

Silver salts, Ag

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Silver nitrate	≥99,9 %, p.a., ultra quality	**6874.1**	10 g	plastic	38,60
		6874.2	50 g	plastic	147,85
		6874.3	250 g	plastic	536,45
	≥99,9 %, p.a.	**7908.1**	50 g	plastic	117,20
		7908.2	250 g	plastic	489,15
		7908.3	1 kg	plastic	1714,65
Silver oxide	≥99 %, p.a.	**5309.1**	10 g	glass	53,65
		5309.2	50 g	glass	184,40
Silver sulphate	≥99 %, p.a.	**6791.1**	25 g	plastic	120,30
		6791.2	100 g	plastic	427,85

Sodium salts, Na

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Potassium sodium tartrate tetrahydrate	≥99 %, p.a., ACS, ISO	**8087.2**	500 g	plastic	40,75
		8087.1	1 kg	plastic	67,20
		8087.3	2,5 kg	plastic	147,85
Sodium acetate	≥99 %, p.a., ACS, anhydrous	**6773.1**	250 g	plastic	25,70
		6773.2	1 kg	plastic	66,55
		6773.3	2,5 kg	plastic	139,25
		6773.5	25 kg	plastic	962,15
Sodium acetate trihydrate	≥99,5 %, p.a., ACS, ISO	**6779.2**	500 g	plastic	18,85
		6779.1	1 kg	plastic	34,30
		6779.3	5 kg	plastic	107,40
		6779.5	25 kg	plastic	429,50
Sodium ammonium hydrogen phosphate tetrahydrate	≥99 %, p.a.	**T882.1**	500 g	plastic	66,55
		T882.2	1 kg	plastic	98,40
		T882.3	2,5 kg	plastic	220,40
Sodium azide	≥99 %, p.a.	**K305.1**	100 g	plastic	44,00
		K305.2	250 g	plastic	79,45
		K305.3	500 g	plastic	142,90
		K305.4	1 kg	plastic	221,35
Sodium bismuthate	≥85 %, p.a.	**4401.1**	50 g	plastic	47,85
		4401.2	100 g	plastic	88,70
		4401.3	250 g	plastic	192,45

For additional product data and safety information, see chapter Chemicals A-Z.

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Sodium bromide	≥99 %, p.a., ACS	**HN15.1**	250 g	plastic	16,05
		HN15.2	1 kg	plastic	40,35
		HN15.3	2,5 kg	plastic	83,35
	NEW	**HN15.7**	25 kg	plastic	665,45
Sodium carbonate	≥99,5 %, p.a., ACS, anhydrous	**A135.1**	500 g	plastic	20,35
		A135.2	1 kg	plastic	35,40
		A135.3	5 kg	plastic	138,70
Sodium carbonate monohydrate	≥99,5 %, p.a., ACS	**2597.1**	100 g	plastic	17,10
		2597.2	500 g	plastic	30,00
Sodium carbonate decahydrate	≥99 %, p.a., ISO	**K303.2**	500 g	plastic	23,55
		K303.1	1 kg	plastic	38,60
		K303.3	2,5 kg	plastic	80,55
Sodium chloride	≥99,5 %, p.a., ACS, ISO	**3957.3**	500 g	plastic	16,05
		3957.1	1 kg	plastic	18,20
		3957.2	5 kg	plastic	66,55
		3957.5	25 kg	plastic	198,90
tri-Sodium citrate dihydrate	≥99 %, p.a., ACS	**3580.4**	250 g	plastic	21,00
		3580.3	500 g	plastic	27,85
		3580.1	1 kg	plastic	44,65
		3580.2	5 kg	plastic	188,15
		3580.5	25 kg	plastic	439,70
Sodium dihydrogen phosphate monohydrate	≥98 %, p.a., ACS	**K300.1**	500 g	plastic	27,85
		K300.2	1 kg	plastic	40,75
		K300.3	2,5 kg	plastic	82,70
		K300.5	25 kg	plastic	579,45
Sodium dihydrogen phosphate dihydrate	≥99 %, p.a.	**T879.1**	500 g	plastic	23,55
		T879.2	1 kg	plastic	35,40
		T879.3	2,5 kg	plastic	75,15
		T879.5	25 kg	plastic	622,45
tetra-Sodium diphosphate decahydrate	≥99 %, p.a.	**T883.1**	500 g	plastic	31,10
		T883.2	1 kg	plastic	44,00
		T883.3	2,5 kg	plastic	80,55
Sodium metabisulphite	≥97 %, p.a., ACS	**P755.1**	500 g	plastic	20,35
		P755.2	1 kg	plastic	31,10
		P755.3	2,5 kg	plastic	57,55
		P755.4	5 kg	plastic	100,95
		P755.5	25 kg	plastic	332,20
Sodium fluoride	≥99 %, p.a., ACS, ISO	**P756.1**	500 g	plastic	52,15
		P756.2	1 kg	plastic	92,35
		P756.3	2,5 kg	plastic	199,85
Sodium formate	≥99 %, p.a., ACS	**4404.1**	250 g	plastic	27,45
		4404.2	500 g	plastic	47,20
		4404.3	1 kg	plastic	82,25
Sodium hexanitrocobaltate(III)	p.a., ACS	**4409.1**	25 g	plastic	19,90
		4409.2	100 g	plastic	54,75
		4409.3	250 g	plastic	110,65
Sodium hydrogen carbonate	≥99,5 %, p.a., ACS, ISO	**6885.2**	500 g	plastic	16,05
		6885.1	1 kg	plastic	24,20
		6885.3	5 kg	plastic	85,90
		6885.5	25 kg	plastic	353,70
di-Sodium hydrogen phosphate	≥99 %, p.a., ACS, anhydrous	**P030.1**	500 g	plastic	32,15
		P030.2	1 kg	plastic	52,15
		P030.3	2,5 kg	plastic	98,40
di-Sodium hydrogen phosphate dihydrate	≥99,5 %, p.a.	**4984.2**	500 g	plastic	27,45
		4984.1	1 kg	plastic	45,70
		4984.3	2,5 kg	plastic	98,40
	NEW	**4984.7**	25 kg	plastic	396,70
di-Sodium hydrogen phosphate heptahydrate	≥98 %, p.a., ACS	**X987.1**	500 g	plastic	22,50
		X987.2	1 kg	plastic	35,40
		X987.3	2,5 kg	plastic	72,60
di-Sodium hydrogen phosphate dodecahydrate	≥99 %, p.a., ISO	**T106.1**	500 g	plastic	21,00
		T106.2	1 kg	plastic	35,40
		T106.3	2,5 kg	plastic	75,15
Sodium iodate	≥99 %, p.a.	**HN17.1**	50 g	plastic	41,85
		HN17.2	100 g	plastic	73,65
Sodium iodide	≥99,5 %, p.a., ACS	**A134.3**	100 g	plastic	89,15
		A134.1	250 g	plastic	198,90
		A134.2	1 kg	plastic	740,70

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Sodium molybdate dihydrate	≥99,5 %, p.a.	**0274.1**	50 g	plastic	18,85
		0274.2	100 g	plastic	27,45
		0274.3	250 g	plastic	49,35
		0274.4	1 kg	plastic	177,40
Sodium nitrate	≥99 %, p.a., ACS, ISO	**A136.1**	500 g	plastic	30,00
		A136.2	1 kg	plastic	47,20
		A136.3	2,5 kg	plastic	103,75
Sodium nitrite	≥98 %, p.a., ACS	**4411.1**	100 g	plastic	12,40
		4411.2	500 g	plastic	27,45
		4411.3	1 kg	plastic	42,90
		4411.4	2,5 kg	plastic	89,15
di-Sodium oxalate	≥99,5 %, p.a., ACS	**HN39.1**	100 g	plastic	26,35
		HN39.2	250 g	plastic	51,50
		HN39.3	500 g	plastic	89,15
Sodium periodate	≥99,8 %, p.a., ACS	**2603.1**	50 g	plastic	42,90
		2603.2	250 g	plastic	150,00
		2603.3	500 g	plastic	267,70
Sodium peroxide	≥95 %, p.a., ACS, granulated	**4412.1**	100 g	plastic	60,10
		4412.2	250 g	plastic	136,00
		4412.3	500 g	plastic	244,60
tri-Sodium phosphate dodecahydrate	≥98 %, p.a., ACS	**T107.2**	500 g	plastic	24,20
		T107.1	1 kg	plastic	38,60
		T107.3	2,5 kg	plastic	87,00
	NEW	**T107.7**	25 kg	plastic	665,45
Sodium salicylate	≥99 %, p.a.	**CP39.1**	250 g	plastic	27,45
		CP39.2	1 kg	plastic	82,25
Sodium sulphate	≥99 %, p.a., ACS, ISO, powdered, anhydrous	**8560.3**	500 g	plastic	25,70
		8560.1	1 kg	plastic	36,05
		8560.2	5 kg	plastic	147,85
		8560.5	25 kg	plastic	525,70
	≥99 %, p.a., ACS, granules, anhydrous	**0966.1**	500 g	plastic	21,40
		0966.2	1 kg	plastic	31,10
		0966.3	5 kg	plastic	127,95
Sodium sulphate decahydrate	≥99 %, p.a., ACS	**T108.2**	500 g	plastic	18,85
		T108.1	1 kg	plastic	28,50
		T108.3	2,5 kg	plastic	57,95
Sodium sulphite	≥98 %, p.a., ACS, anhydrous	**P033.1**	500 g	plastic	19,25
		P033.2	1 kg	plastic	28,95
		P033.3	2,5 kg	plastic	51,50
di-Sodium tartrate dihydrate	≥99 %, p.a.	**T110.1**	500 g	plastic	54,30
		T110.2	1 kg	plastic	96,25
		T110.3	2,5 kg	plastic	221,35
		T110.5	25 kg	plastic	1858,70
di-Sodium tetraborate decahydrate	≥99,5 %, p.a., ACS, ISO	**T880.1**	500 g	plastic	32,15
		T880.2	1 kg	plastic	48,30
		T880.3	2,5 kg	plastic	94,10
Sodium tetraphenyl borate	≥99,5 %, p.a., ACS	**4385.1**	10 g	plastic	42,50
		4385.2	25 g	plastic	92,35
		4385.3	100 g	plastic	289,20
Sodium thiocyanate	≥98 %, p.a., ACS	**2724.1**	100 g	plastic	17,75
		2724.2	500 g	plastic	41,85
		2724.3	1 kg	plastic	68,70
Sodium thiosulphate	≥99 %, p.a., anhydrous	**HN25.1**	250 g	plastic	21,40
		HN25.2	500 g	plastic	31,75
		HN25.3	1 kg	plastic	56,45
		HN25.4	2,5 kg	plastic	117,20
Sodium thiosulphate pentahydrate	≥99,5 %, p.a., ACS	**P034.1**	500 g	plastic	21,00
		P034.2	1 kg	plastic	32,80
		P034.3	2,5 kg	plastic	65,50
		P034.5	25 kg	plastic	450,45
Sodium tungstate dihydrate	≥99 %, p.a., ACS	**2604.1**	100 g	plastic	41,40
		2604.2	250 g	plastic	80,55
		2604.3	500 g	plastic	145,05

For additional product data and safety information, see chapter Chemicals A-Z.

Strontium salts, Sr

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Strontium chloride hexahydrate	≥99 %, p.a.	**4473.1**	100 g	plastic	22,50
		4473.2	500 g	plastic	56,90
		4473.3	1 kg	plastic	95,60
Strontium nitrate	≥99 %, p.a., ACS	**4413.1**	100 g	plastic	25,70
		4413.2	250 g	plastic	48,30
		4413.3	500 g	plastic	90,85

Tellurium

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Tellurium(IV) oxide	≥99,9 %, p.a.	**0321.1**	10 g	plastic	33,25
		0321.2	25 g	plastic	67,20
		0321.3	50 g	plastic	122,45

Tin salts, Sn

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Tin(II) chloride dihydrate	≥98 %, p.a., max. 0,005 ppm Hg	**KK07.1**	100 g	glass	48,30
		KK07.2	250 g	glass	107,00
Tin(II) chloride dihydrate	≥98 %, p.a., ACS	**4977.3**	100 g	glass	31,10
		4977.1	250 g	glass	68,70
		4977.2	1 kg	glass	220,40
Tin(IV) oxide	≥99,5 %, p.a.	**9929.1**	100 g	plastic	22,05
		9929.2	500 g	plastic	63,35
		9929.3	1 kg	plastic	107,40
Tin(II) sulphate	≥99 %, p.a.	**4382.1**	100 g	plastic	34,30
		4382.2	250 g	plastic	63,35
		4382.3	1 kg	plastic	196,20

Tungsten salts, W

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Ammonium metatungstate hydrate	≥90 % WO_3, p.a.	**0742.2**	100 g	plastic	60,75
		0742.1	25 g	plastic	33,25
		0742.3	500 g	plastic	219,20
Sodium tungstate dihydrate	≥99 %, p.a., ACS	**2604.1**	100 g	plastic	41,40
		2604.2	250 g	plastic	80,55
		2604.3	500 g	plastic	145,05
Tungsten(VI) oxide	≥99,5 %, p.a.	**0760.1**	50 g	plastic	31,10
		0760.2	100 g	plastic	44,65
		0760.3	500 g	plastic	177,40
Tungstic acid	≥99 %, p.a.	**0747.1**	25 g	plastic	27,85
		0747.2	100 g	plastic	44,65
		0747.3	500 g	plastic	155,90

Vanadium salts, V

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Ammonium monovanadate	≥99,8 %, p.a.	**4232.1**	50 g	plastic	25,30
		4232.2	100 g	plastic	36,45
		4232.3	250 g	plastic	74,10
		4232.4	1 kg	plastic	239,20

Zinc salts, Zn

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Zinc acetate dihydrate	≥99,5 %, p.a., ACS	**P035.1**	500 g	plastic	45,70
		P035.2	1 kg	plastic	75,15
Zinc chloride	≥97 %, p.a.	**T887.1**	500 g	plastic	54,75
		T887.2	1 kg	plastic	82,70
Zinc iodide	≥99 %, p.a.	**9839.1**	50 g	glass	35,40
		9839.2	100 g	glass	67,20
		9839.3	250 g	glass	127,95
Zinc nitrate hexahydrate	≥99 %, p.a.	**6634.1**	100 g	plastic	20,35
		6634.2	500 g	plastic	42,50
		6634.3	1 kg	plastic	64,40
Zinc oxide	≥99 %, p.a., ACS	**T114.1**	500 g	plastic	67,20
		T114.2	1 kg	plastic	96,65
Zinc sulphate heptahydrate	≥99,5 %, p.a., ACS	**K301.1**	500 g	plastic	25,30
		K301.2	1 kg	plastic	44,00
		K301.3	2,5 kg	plastic	80,55
		K301.5	25 kg	plastic	665,45

For additional product data and safety information, see chapter Chemicals A-Z.

▶ For more qualities please see Chapter Chemicals A-Z

Complexometry

Salts for Complexometry

Product	Purity	Art. No.	Pack Qty.	€
CDTA · H_2O	≥99 %, p.a., ACS	**1412.1**	25 g	32,80
		1412.2	100 g	96,65
		1412.3	250 g	214,50
		1412.4	500 g	396,70
	≥99 %, for synthesis	**1411.1**	100 g	71,95
		1411.2	250 g	168,25
		1411.3	500 g	295,10
		1411.4	1 kg	547,20
DTPA	≥99 %, for synthesis	**1407.1**	100 g	18,85
		1407.2	250 g	32,80
		1407.3	500 g	52,60
		1407.4	1 kg	92,35
EDTA	≥99 %, p.a., ACS	**8040.1**	100 g	16,05
		8040.3	500 g	36,45
		8040.2	1 kg	54,75
		8040.4	2,5 kg	109,55
		8040.5	25 kg	854,65
	≥99 % NEW	**CN06.1**	250 g	17,10
		CN06.2	500 g	28,50
		CN06.3	1 kg	46,15
		CN06.5	2,5 kg	93,45
		CN06.4	5 kg	178,35
		CN06.6	10 kg	300,90
EDTA-$CaNa_2$ · 2 H_2O	≥98 %, Ph.Eur., USP	**6506.1**	250 g	45,70
		6506.2	500 g	84,85
		6506.3	1 kg	154,30
EDTA-$CuNa_2$ · 2 H_2O	≥99 %, for synthesis	**6499.1**	250 g	41,85
		6499.2	500 g	74,10
		6499.3	1 kg	136,45
EDTA-FeNa · 3 H_2O	≥98 %, for synthesis	**6498.1**	250 g	37,55
		6498.2	500 g	68,30
		6498.3	1 kg	114,50

Product	Purity	Art. No.	Pack Qty.	€
EDTA-K_2 · 2 H_2O	≥99 %, p.a.	**3053.1**	100 g	24,20
		3053.2	250 g	46,80
		3053.3	500 g	80,55
		3053.4	1 kg	142,45
		3053.5	5 kg	568,70
	≥99 %, for synthesis	**1408.1**	250 g	25,70
		1408.2	500 g	44,65
		1408.3	1 kg	80,10
		1408.4	5 kg	342,95
EDTA-K_3 · 2 H_2O	≥99 %	**1409.1**	100 g	30,00
		1409.2	250 g	55,40
		1409.3	1 kg	166,10
		1409.4	5 kg	654,70
EDTA-$MgNa_2$ · 2 H_2O	≥90 %, for synthesis	**6508.1**	250 g	33,25
		6508.2	500 g	61,20
		6508.3	1 kg	107,00
EDTA-$MnNa_2$ · 2 H_2O	≥93 %, for synthesis	**6510.1**	250 g	42,90
		6510.2	500 g	75,80
		6510.3	1 kg	137,10
EDTA-Na_2 · 2 H_2O	≥99 %, p.a., ACS	**8043.3**	100 g	22,05
		8043.1	250 g	35,40
		8043.2	1 kg	103,75
		8043.6	2,5 kg	198,35
		8043.4	5 kg	375,20
		8043.5	25 kg	858,95
	≥99 %, USP	**X986.1**	250 g	19,90
		X986.2	1 kg	51,10
		X986.4	2,5 kg	109,55
		X986.3	5 kg	208,45
		X986.5	25 kg	848,20
EDTA-Na_4	86-88 % NEW	**3619.2**	500 g	22,50
		3619.1	1 kg	31,10
		3619.4	2,5 kg	59,05
		3619.3	5 kg	109,15
EDTA-Na_4 · 2 H_2O	≥99 %	**1410.1**	250 g	21,40
		1410.2	500 g	36,45
		1410.3	1 kg	65,50
		1410.4	5 kg	276,85
EDTA-Na_4 · 4 H_2O	≥99 %, p.a.	**CP87.1**	250 g	19,90
		CP87.2	500 g	30,65
		CP87.3	1 kg	52,15
		CP87.4	5 kg	212,75
EDTA-$ZnNa_2$ · 2 H_2O	≥96 %, for synthesis	**6518.1**	250 g	42,90
		6518.2	500 g	76,90
		6518.3	1 kg	138,70
EGTA	≥99 %, p.a.	**3054.1**	10 g	35,40
		3054.2	50 g	139,65
		3054.3	100 g	241,80
NTA	≥99 %, p.a., ACS	**4384.1**	100 g	69,35
	≥99 %, extra pure	**8653.1**	100 g	22,05
		8653.2	500 g	69,35
		8653.3	1 kg	128,90
NTA-Na_3 · H_2O	≥99 %, extra pure	**8242.1**	100 g	20,35
		8242.2	500 g	57,95
		8242.3	1 kg	93,00
		8242.4	2,5 kg	212,35

For additional product data and safety information, see chapter Chemicals A-Z.

Complexing Agents

Product	Purity	Art. No.	Pack Qty.	€
Acetyl acetone	≥98 %, for synthesis	**6716.1**	100 ml	14,55
		6716.2	500 ml	30,00
		6716.3	1 l	50,45
		6716.4	2,5 l	107,40
2-(2-Aminoethyl-amino)ethanol	≥98 %, for synthesis	**6717.1**	100 ml	15,60
		6717.2	500 ml	26,35
		6717.3	1 l	41,85
		6717.4	2,5 l	89,80
Citric acid	≥99,5 %, p.a., ACS, anhydrous	**X863.1**	500 g	20,35
		X863.2	1 kg	31,10
		X863.3	2,5 kg	62,25
		X863.4	5 kg	97,75
		X863.6	10 kg	177,30
		X863.5	25 kg	375,20
	≥99,5 %, Ph.Eur., anhydrous	**6490.3**	500 g	14,95
		6490.1	1 kg	24,20
		6490.4	2,5 kg	46,15
		6490.2	5 kg	84,85
		6490.6	10 kg	142,90
		6490.5	25 kg	252,55
Citric acid monohydrate	≥99,5 %, p.a., ACS, ISO	**3958.2**	500 g	19,25
		3958.1	1 kg	31,10
		3958.3	2,5 kg	57,55
		3958.4	5 kg	105,90
		3958.6	10 kg	177,40
		3958.5	25 kg	375,20
	≥99,5 %, Ph.Eur.	**5110.3**	500 g	14,55
		5110.1	1 kg	23,15
		5110.4	2,5 kg	39,70
		5110.2	5 kg	62,25
		5110.6	10 kg	95,15
		5110.5	25 kg	188,15
Diethylene triamine	≥98 %, for synthesis	**6723.1**	100 ml	13,90
		6723.2	500 ml	28,95
		6723.3	1 l	41,85
		6723.4	2,5 l	81,60
Dimethylglyoxim	≥99 %, p.a., ACS	**2677.1**	50 g	42,90
		2677.2	100 g	67,65
		2677.3	500 g	254,70
Dimethylglyoxime disodium salt octahydrate	≥98 %, p.a.	**KK24.1**	25 g	38,60
		KK24.2	50 g	64,40
2,2'-Dipyridyl	≥95 %, for biochemistry	**4153.1**	5 g	15,60
		4153.2	25 g	40,35
Ethylenediamine	≥99,5 %, p.a., anhydrous	**3049.1**	250 ml	55,40
	≥99,5 %, for synthesis	**4218.1**	100 ml	13,45
		4218.2	500 ml	17,75
		4218.3	1 l	27,85
		4218.4	2,5 l	54,75
		4218.5	10 l	182,65

Product	Purity	Art. No.	Pack Qty.	€
8-Hydroxyquinoline	≥99,5 %, p.a., ACS	**2557.1**	50 g	30,00
		2557.2	100 g	42,50
		2557.3	250 g	77,30
Oxalic acid dihydrate	≥99,5 %, p.a., ACS, ISO	**T113.1**	500 g	32,15
		T113.2	1 kg	53,65
		T113.3	2,5 kg	122,45
	≥99 %, cryst.	**8879.1**	1 kg	21,00
		8879.3	5 kg	69,80
		8879.2	10 kg	131,70
1,10-Phenanthroline monohydrate	≥99 %, p.a., ACS	**9113.2**	5 g	28,95
		9113.3	25 g	103,10
		9113.1	50 g	192,45
1,10-Phenanthroline hydrochloride monohydrate	≥99 %, p.a.	**KK21.1**	5 g	27,45
		KK21.2	10 g	46,80
		KK21.3	50 g	198,90
Potassium hydrogen tartrate	≥99,5 %, extra pure	**8645.1**	100 g	12,80
		8645.2	500 g	30,00
		8645.3	1 kg	48,30
Potassium sodium tartrate tetrahydrate	≥99 %, p.a., ACS, ISO	**8087.2**	500 g	40,75
		8087.1	1 kg	67,20
		8087.3	2,5 kg	147,85
	≥99 %, USP	**7998.3**	500 g	30,00
		7998.1	1 kg	53,65
		7998.2	5 kg	184,40
di-Sodium tartrate dihydrate	≥99 %, p.a.	**T110.1**	500 g	54,30
		T110.2	1 kg	96,25
		T110.3	2,5 kg	221,35
		T110.5	25 kg	1858,70
	≥99 %, extra pure	**0254.1**	500 g	33,25
		0254.2	1 kg	57,55
		0254.3	5 kg	244,60
D(-)-Tartaric acid	≥99 %, for biochemistry	**5529.1**	25 g	51,50
DL-Tartaric acid	≥99,5 %, anhydrous	**4891.2**	25 g	14,95
		4891.1	100 g	26,35
		4891.3	500 g	77,95
L(+)-Tartaric acid	≥99,5 %, p.a., ACS, ISO	**K302.1**	250 g	25,70
		K302.2	1 kg	75,80
		K302.5	25 kg	1256,70
	≥99 %, for biochemistry	**4890.3**	500 g	23,55
		4890.1	1 kg	40,75
		4890.2	5 kg	149,45
		4890.5	25 kg	579,45

For additional product data and safety information, see chapter Chemicals A-Z.

Volumetric standard solutions

A standard solution is a solution containing a precisely known concentration of a substance. The concentration of a standard solution is determined using a primary standard, which is accurately weighed and dissolved to make a specific volume. Standard solutions are made using reagent-grade (p.a.) substances as source materials.

Volumetric standard solutions, ready-to-use

ready-to-use

The advantages of this over making them yourself are:

- Manufactured and tested using modern manufacturing and analytical methods
- Ready-to-use solutions
- High accuracy for precise analyses
- Application of NIST-certified reference substances for checking
- Connection to standard titrators is possible

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Acetic acid	1 mol/l - 1 N	**KK62.1**	1 l	plastic	28,95
	2 mol/l - 2 N	**9883.1**	500 ml	plastic	33,25
		9883.2	1 l	plastic	49,35
Ammonia solution	4 mol/l - 4 N	**9897.1**	500 ml	plastic	23,55
		9897.2	1 l	plastic	38,60
Ammonium iron(II) sulphate solution	0,12 mol/l - 0,12 N for determination of COD	**KK60.1**	1 l	plastic	47,10
Ammonium thiocyanate solution	0,1 mol/l - 0,1 N	**P718.1**	1 l	plastic	21,40
Barium chloride solution	0,05 mol/l - 0,1 N	**0468.1**	500 ml	plastic	19,90
Barium hydroxyde solution	0,05 mol/l - 0,1 N	**N054.1**	1 l	plastic	37,10
Bariumperchlorate solution	0,005 mol/l - 0,005 N in 2-propanol/water	**KK61.1**	1 l	glass	28,95
Benzethonium chloride solution	0,004 mol/l - 0,004 M	**9217.1**	1 l	plastic	25,30
Bromide bromate solution	0,05 mol Br_2/l - 0,1 N	**8131.1**	1 l	plastic	32,15
CDTA disodium salt solution	0,1 mol/l - 0,1 N	**0243.1**	1 l	plastic	203,20

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Cerium(IV) sulphate solution	0,1 mol/l - 0,1 N NEW	**P719.1**	1 l	glass	69,35
		P719.7	5 l	plastic	244,60
Copper(II) sulphate solution	0,1 mol/l - 0,1 N	**9948.1**	1 l	plastic	36,45
EDTA disodium salt solution	0,01 mol/l - 0,01 N	**CN34.1**	1 l	plastic	24,65
		CN34.2	5 l	ROTI®CUBE	75,15
		CN34.3	10 l	ROTI®CUBE	132,80
	0,05 mol/l - 0,05 N	**KK75.1**	1 l	plastic	22,05
		KK75.2	5 l	plastic	67,65
		KK75.3	5 l	ROTI®CUBE	71,95
	0,1 mol/l - 0,1 N	**K714.1**	1 l	glass	22,50
		K714.2	5 l	plastic	68,70
		K714.3	5 l	ROTI®CUBE	74,75
		K714.4	10 l	ROTI®CUBE	132,15
	0,2 mol/l - 0,2 N	**8084.1**	1 l	plastic	25,30
		8084.2	5 l	ROTI®CUBE	74,10
EDTA disodium salt solution A	0,1 mol/l - 0,1 N	**T136.1**	1 l	glass	30,65
EDTA disodium salt solution B	0,01783 mol/l - 0,01783 N	**T137.1**	1 l	glass	24,65
		T137.2	5 l	ROTI®CUBE	75,15
		T137.3	10 l	ROTI®CUBE	132,80
Hanus solution	0,1 mol lBr/l - 0,2 N	**KK63.1**	1 l	glass	49,35
Hydrochloric acid	0,01 mol/l - 0,01 N	**N075.1**	1 l	plastic	19,90
	0,05 mol/l - 0,05 N	**8085.1**	1 l	plastic	19,90
		8085.2	2,5 l	plastic	35,40
		8085.3	5 l	ROTI®CUBE	63,35
	0,1 mol/l - 0,1 N	**K024.5**	500 ml	plastic	15,60
		K024.1	1 l	plastic	19,90
		K024.2	5 l	plastic	58,60
		K024.3	5 l	ROTI®CUBE	63,35
		K024.4	10 l	ROTI®CUBE	93,45
	NEW	**K024.7**	25 l	plastic	153,65
	0,2 mol/l - 0,2 N	**4120.1**	1 l	plastic	18,85
	0,5 mol/l - 0,5 N	**P708.1**	1 l	plastic	19,90
		P708.2	5 l	plastic	58,60
		P708.3	5 l	ROTI®CUBE	63,35
		P708.4	10 l	ROTI®CUBE	93,45
	1 mol/l - 1 N	**K025.1**	1 l	plastic	19,90
		K025.2	5 l	plastic	58,60
		K025.3	5 l	ROTI®CUBE	63,35
		K025.4	10 l	ROTI®CUBE	93,45
	2 mol/l - 2 N	**T134.1**	1 l	plastic	20,35
		T134.2	5 l	plastic	60,10
		T134.3	5 l	ROTI®CUBE	64,40
	4 mol/l - 4 N	**N076.1**	1 l	plastic	32,15
	6 mol/l - 6 N	**0281.1**	1 l	plastic	32,15
	10 mol/l - 10 N	**0226.1**	1 l	plastic	106,35
Iodid-iodate solutiin	1/128 mol I_2/l - 1/64 N	**KK65.1**	1 l	plastic	30,65
	0,05 mol I_2/l - 0,1 N	**0228.1**	1 l	plastic	30,65
Iodine solution	0,05 mol I_2/l - 0,1 N	**K016.1**	1 l	glass	34,30
		K016.2	2,5 l	glass	71,50
	0,5 mol I_2/l - 1 N	**X868.1**	1 l	glass	107,40
Mercury(II) nitrate solution	0,05 mol/l - 0,1 N	**KK72.1**	1 l	plastic	41,85
Mercury(II) sulphate solution 80 g/l	in sulphuric acid potassium dichromate standard solution. 0,02 mol/l for determination of COD	**X871.1**	1 l	glass	89,15
		X871.2	2,5 l	glass	178,35
Nitric acid	0,1 mol/l - 0,1 N	**KK73.1**	1 l	plastic	19,25
	1 mol/l - 1 N	**N070.1**	1 l	glass	22,05
	2 mol/l - 2 N	**9887.1**	500 ml	plastic	26,80
		9887.2	1 l	plastic	38,60
Oxalic acid solution NEW	0,05 mol/l - 0,1 N	**CN35.1**	1 l	plastic	24,20
	0,1 mol/l - 0,2 N	**0764.1**	1 l	plastic	45,05
Perchloric acid	0,1 mol/l - 0,1 N	**K023.1**	1 l	glass	81,60
ortho-Phosphoric acid	0,1 mol/l - 0,3 N	**8089.1**	1 l	plastic	54,75
	1/6 mol/l - 0,5 N	**8091.1**	1 l	plastic	51,50
	1 mol/l - 3 N	**8141.1**	1 l	plastic	51,50

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Potassium bromide solution	0,1 mol/l - 0,1 N	**8130.1**	1 l	plastic	72,60
Potassium chloride solution	0,2 mol/l - 0,2 N	**4117.1**	1 l	plastic	26,80
	3 mol/l - 3 N	**T138.1**	250 ml	glass	19,25
Potassium chloride solution with AgCl	3 mol/l - 3 N, saturated with AgCl	**9880.1**	250 ml	plastic	23,15
		9880.2	1 l	plastic	39,70
Potassium dichromate solution	1/60 mol/l - 0,1 N	**P722.1**	1 l	glass	27,45
	0,02 mol/l - 0,12 N, for determination of COD	**P720.1**	1 l	plastic	26,35
	1/24 mol/l - 0,25 N for determination of COD	**P721.1**	1 l	glass	31,10
Potassium hydroxide solution	0,1 mol/l - 0,1 N	**K018.1**	1 l	plastic	22,50
		K018.2	5 l	plastic	61,20
		K018.3	5 l	ROTI®CUBE	64,40
	0,5 mol/l - 0,5 N	**N071.1**	1 l	plastic	22,50
		N071.2	5 l	plastic	61,20
		N071.3	5 l	ROTI®CUBE	64,40
	1 mol/l - 1 N	**K017.1**	1 l	plastic	22,50
		K017.2	5 l	plastic	61,20
		K017.3	5 l	ROTI®CUBE	64,40
NEW **Potassium hydroxide solution in ethanol**	0,05 mol/l - 0,05 N	**0765.1**	1 l	plastic	56,90
	0,1 mol/l - 0,1 N	**P706.1**	1 l	glass	40,75
	0,5 mol/l - 0,5 N	**P707.1**	1 l	glass	58,60
Potassium hydroxide solution in isopropanol	0,1 mol/l - 0,1 N	**KK68.1**	1 l	glass	52,60
Potassium hydroxide solution in methanol	0,1 mol/l - 0,1 N	**KK66.1**	1 l	glass	32,80
	0,5 mol/l - 0,5 N	**KK67.1**	1 l	glass	30,65
Potassium nitrate solution	1 mol/l - 1 N	**9898.1**	500 ml	plastic	32,15
		9898.2	1 l	plastic	56,90
Potassium permanganate solution	0,02 mol/l - 0,1 N	**K019.1**	1 l	glass	24,20
	0,1 mol/l - 0,5 N	**KK69.1**	1 l	glass	28,50
Potassium thiocyanate solution	1 mol/l - 1 N	**9899.1**	1 l	plastic	47,20
Silver nitrate solution	0,01 mol/l - 0,01 N	**6838.1**	250 ml	plastic	16,05
		6838.2	500 ml	plastic	21,40
		6838.3	1 l	plastic	31,10
		6838.4	2,5 l	plastic	62,25
	0,05 mol/l - 0,05 N	**6835.1**	250 ml	plastic	34,30
		6835.2	500 ml	plastic	40,75
		6835.3	1 l	plastic	59,05
		6835.4	2,5 l	plastic	105,25
	0,1 mol/l - 0,1 N	**K713.2**	250 ml	plastic	35,40
		K713.4	500 ml	plastic	46,15
		K713.1	1 l	plastic	77,30
		K713.3	2,5 l	plastic	118,15
	0,5 mol/l - 0,5 N	**6839.1**	250 ml	plastic	59,70
		6839.2	500 ml	plastic	95,60
		6839.3	1 l	plastic	181,70
	1 mol/l - 1 N	**6841.1**	250 ml	plastic	107,40
		6841.2	500 ml	plastic	160,20
		6841.3	1 l	plastic	306,40
Silver sulphate solution	10 g/l in sulphuric acid, for determination of COD	**X870.1**	1 l	glass	67,20
		X870.2	2,5 l	glass	149,45
Sodium acetate solution	0,1 mol/l - 0,1 N in acetic acid	**0151.1**	1 l	plastic	40,35
Sodium carbonate solution	0,05 mol/l - 0,1 N	**0187.1**	1 l	plastic	104,20
	0,5 mol/l - 1 N	**0211.1**	1 l	plastic	104,20
Sodium chloride solution	1 mol/l - 1 N	**8115.1**	1 l	plastic	27,85
NEW **Sodium hydroxide solution**	0,01 mol/l - 0,01 N	**N073.1**	1 l	plastic	19,90
	0,02 mol/l - 0,02 N	**0763.1**	1 l	plastic	20,35
	0,05 mol/l - 0,05 N	**0224.1**	1 l	plastic	21,00
	0,1 mol/l - 0,1 N	**K020.1**	1 l	plastic	19,90
		K020.2	5 l	plastic	59,05
		K020.3	5 l	ROTI®CUBE	61,20
		K020.4	10 l	ROTI®CUBE	91,95

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Sodium hydroxide solution	0,2 mol/l - 0,2 N	**N074.1**	1 l	plastic	19,90
		N074.2	5 l	ROTI®CUBE	61,20
		N074.3	10 l	ROTI®CUBE	91,95
	0,25 mol/l - 0,25 N	**P711.1**	1 l	plastic	19,90
		P711.2	5 l	ROTI®CUBE	61,20
		P711.3	10 l	ROTI®CUBE	91,95
NEW	0,33 mol/l - 0,33 N	**0755.1**	1 l	plastic	28,50
	0,5 mol/l - 0,5 N	**P710.1**	1 l	plastic	19,90
		P710.2	5 l	plastic	59,05
		P710.3	5 l	ROTI®CUBE	61,20
		P710.4	10 l	ROTI®CUBE	91,95
	1 mol/l - 1 N	**K021.1**	1 l	plastic	19,90
		K021.2	5 l	plastic	59,05
		K021.3	5 l	ROTI®CUBE	61,20
		K021.4	10 l	ROTI®CUBE	91,95
	2 mol/l - 2 N	**T135.1**	1 l	plastic	20,35
		T135.2	5 l	plastic	66,15
		T135.3	5 l	ROTI®CUBE	71,50
	4 mol/l - 4 N	**T198.1**	1 l	plastic	37,55
	5 mol/l - 5 N	**KK71.1**	1 l	plastic	29,60
	6 mol/l - 6 N	**0214.1**	1 l	plastic	101,60
Sodium thiosulphate solution	0,01 mol/l - 0,01 N	**X869.1**	1 l	glass	24,20
	0,1 mol/l - 0,1 N	**K022.1**	1 l	glass	18,85
		K022.2	5 l	plastic	50,45
		K022.3	5 l	ROTI®CUBE	56,45
		K022.4	10 l	ROTI®CUBE	87,00
	1 mol/l - 1 N	**9900.1**	1 l	plastic	34,30
Sulphuric acid	0,01 mol/l - 0,02 N	**X872.1**	1 l	plastic	25,30
	0,05 mol/l - 0,1 N	**K026.1**	1 l	plastic	19,90
		K026.2	5 l	plastic	58,60
		K026.3	5 l	ROTI®CUBE	63,35
		K026.4	10 l	ROTI®CUBE	93,45
NEW		**K026.7**	25 l	plastic	153,65
	0,1 mol/l - 0,2 N	**N072.1**	1 l	plastic	19,90
		N072.2	5 l	plastic	58,60
	0,25 mol/l - 0,5 N	**P709.1**	1 l	plastic	19,90
		P709.2	5 l	ROTI®CUBE	63,35
		P709.3	10 l	ROTI®CUBE	93,45
	0,5 mol/l - 1 N	**K027.1**	1 l	plastic	19,90
		K027.2	5 l	plastic	58,60
		K027.3	5 l	ROTI®CUBE	63,35
		K027.4	10 l	ROTI®CUBE	93,45
	1 mol/l - 2 N	**X873.1**	1 l	plastic	25,30
	2 mol/l - 4 N	**9896.1**	500 ml	plastic	26,80
		9896.2	1 l	plastic	41,85
	2,5 mol/l - 5 N	**KK74.1**	1 l	plastic	27,85
Wijs-solution	0,1 mol ICl/l - 0,2 N	**CN36.1**	1 l	glass	78,40
Zinc chloride solution	0,1 mol/l - 0,1 N	**9901.1**	500 ml	plastic	92,35
Zinc sulphate solution	0,1 mol/l - 0,1 M	**P723.1**	1 l	plastic	27,45

For additional product data and safety information, see chapter Chemicals A-Z.

Titer details:
Many of our standard solutions also provide the corresponding titer details on the certificate of analysis, in addition to the amount of substance concentrations. If this is not the case, you can assume that the titer is as follows:
1 ± variation from specification.
Example: Amount of substance concentration 0.1 mol/l ±0.2 %
It follows that the titer is 1 ±0.2 %, i.e. 0.998-1.002
We recommend the regular checking of the titer prior to application for opened products.

Volumetric standard solutions, ready-to-use, Reag. Ph.Eur.

Solutions are produced and tested according to chapter 4.2 of the european pharmacopoeia. Traceable to SRM from NIST.

ready-to-use

Product	Purity	Art. No.	Pack Qty.	Packaging	€
EDTA disodium salt solution	0,1 mol/l - 0,1 N, Reag. Ph.Eur.	**6764.1**	1 l	plastic	32,15
Hydrochloric acid	0,1 mol/l - 0,1 N, Reag. Ph.Eur.	**6789.1**	1 l	plastic	22,50
	1 mol/l - 1 N, Reag. Ph.Eur.	**6792.1**	1 l	plastic	22,50
Iodine solution	0,05 mol I_2/l - 0,1 N, Reag. Ph.Eur.	**6765.1**	1 l	glass	42,90
Perchloric acid	0,1 mol/l - 0,1 N, Reag. Ph.Eur.	**9525.1**	1 l	glass	83,75
Potassium hydroxide solution	1 mol/l - 1 N, Reag. Ph.Eur.	**9522.1**	1 l	plastic	45,05
Potassium permanganate solution	0,02 mol/l - 0,1 N, Reag. Ph.Eur.	**9523.1**	1 l	glass	44,00
Silver nitrate solution	0,1 mol/l - 0,1 N, Reag. Ph.Eur.	**9526.1**	1 l	plastic	102,05
Sodium hydroxide solution	0,1 mol/l - 0,1 N, Reag. Ph.Eur.	**6783.1**	1 l	plastic	22,50
	1 mol/l - 1 N, Reag. Ph.Eur.	**6785.1**	1 l	plastic	22,50
Sodium thiosulphate solution	0,1 mol/l - 0,1 N, Reag. Ph.Eur.	**6782.1**	1 l	plastic	32,15
Sulphuric acid	0,05 mol/l - 0,1 N, Reag. Ph.Eur.	**6793.1**	1 l	plastic	24,65
	0,5 mol/l - 1 N, Reag. Ph.Eur.	**6794.1**	1 l	plastic	24,65

ROTI®VOLUM, volumetric solutions in ampoules

- Concentrated standard solutions packaged in practical and low-cost ampoules
- Designed for flexible and easy handling, and as a space-saving alternative to ready-to-use custom solutions
- Standard solutions are prepared through dilution to a final volume of exactly one litre.
- Exactly defined molar concentration (±0.2 %) according to the preparation
- High accuracy for precise analyses

Product	Purity	Art. No.	Pack Qty.	€
Ammonium thiocyanate solution	0,1 mol/l - 0,1 N	**CN50.1**	1 piece	17,10
EDTA disodium salt solution	0,1 mol/l - 0,1 N	**CN51.1**	1 piece	28,50
Hydrochloric acid	0,1 mol/l - 0,1 N	**CN61.1**	1 piece	19,90
	0,5 mol/l - 0,5 N	**CN62.1**	1 piece	19,90
	1 mol/l - 1 N	**CN63.1**	1 piece	19,90
Oxalic acid solution	0,05 mol/l - 0,1 N	**CN59.1**	1 piece	19,90
Potassium hydroxide solution	0,1 mol/l - 0,1 N	**CN53.1**	1 piece	19,90
Silver nitrate solution	0,1 mol/l - 0,1 N	**CN66.1**	1 piece	64,00
Sodium chloride solution	0,1 mol/l - 0,1 N	**CN67.1**	1 piece	19,90
Sodium thiosulfate solution	0,1 mol/l - 0,1 N	**CN55.1**	1 piece	19,90
Sodium hydroxide solution	0,1 mol/l - 0,1 N	**CN56.1**	1 piece	19,90
	0,5 mol/l - 0,5 N	**CN57.1**	1 piece	19,90
	1 mol/l - 1 N	**CN58.1**	1 piece	19,90
Sulfuric acid	0,05 mol/l - 0,1 N	**CN64.1**	1 piece	19,90
	0,5 mol/l - 1 N	**CN65.1**	1 piece	23,15

For additional product data and safety information, see chapter Chemicals A-Z.

Indicators and Dyes

Roth offers many indicators and dyes of high purity, which can be used in special applications.

Indicator Solutions – ready to use ready-to-use

Product	Purity	Art. No.	Pack Qty.	€
Bromocresol green indicator solution	0,1 % in ethanol denatured	**9949.1**	100 ml	23,15
Bromocresol purple indicator solution	0,1 % in water	**9955.1**	100 ml	43,55
Bromophenol blue indicator solution	0,1 % in ethanol denatured	**9952.1**	100 ml	23,55
Bromophenol red indicator solution	0,1 % in ethanol denatured	**9956.1**	100 ml	32,15
Bromothymol blue indicator solution	0,04 % in water	**9947.1**	100 ml	38,20
Ferroin indicator solution	for sewage analysis, for determination of COD	**T131.1**	100 ml	32,15
Ferroin solution	1/40 mol/l (1/40 M) Redox indicator	**T132.1**	100 ml	40,75
Methylene blue indicator solution	0,01 mol/l in water	**9953.1**	100 ml	26,80
Methyl orange indicator solution	0,1 % in water	**T119.1**	500 ml	19,90
Methyl red indicator solution	0,1 % in ethanol, denatured	**T121.1**	250 ml	27,45
Mixed indicator 5	for ammonia titration	**T125.1**	250 ml	57,95
Phenolphthalein indicator solution	0,1 % in ethanol 90 %, denatured	**8145.1**	250 ml	20,35
		8145.2	500 ml	27,85
	1 % in ethanol 90 %, denatured	**K034.1**	250 ml	21,40
		K034.2	500 ml	28,95
		K034.3	1 l	38,60
Starch 1 % indicator solution	in water, stabilized	**T133.1**	500 ml	25,30
Tashiro's indicator solution	in ethanol, denatured	**2624.1** *	250 ml	17,75
Thymol blue indicator solution	0,1 % in ethanol denatured	**9954.1**	250 ml	44,65
Thymolphthalein indicator solution	0,1 % in ethanol denatured	**8152.1**	500 ml	36,45

For additional product data and safety information, see chapter Chemicals A-Z.

Unisol Indicator solutions

By Macherey-Nagel. For pH measurement in weak buffered solutions, in pure water, in surface water and in highly diluted acids or alkalis. Droplets of an indicator solution are added to the sample and the reaction colour is compared to a colour chart.

Delivery incl. 100 ml dropper bottle containing reagent (sufficient for approx. 500 pH measurements), colour chart and 1 type 13/72 measuring cuvette.

Products in this group can contain substances that must be labelled. Safety data sheet available on request.

Danger H225

Type	pH graduation	Art. No.	Pack Qty.	€
UNISOL 410	4.0-4.5-5.0-5.5-6.0-6.5-7.0-7.5-8.0-8.5-9.0-9.5-10.0	**TK45.1**	1	28,60
UNISOL 113	1-2-3-4-5-6-7-8-9-10-11-12-13	**TK46.1**	1	29,15

Accessories:

Replacement rectangular measuring cuvettes, made of PMMA, type 13/72	**TK47.1**	5	32,45

Indicator buffer tablets

for determination of water hardness with EDTA

Warning H317

Dissolve one tablet in 50 ml water sample and bring to pH 11 with approx. 1 ml ammonia solution 30 % (art. CP17). Titrate with EDTA disodium salt volumetric solution (art. T136 or T137) from red to green.

Type analysis:

Suitability as indicator. .....complies
Disintegration time (25 °C)..... 100 s

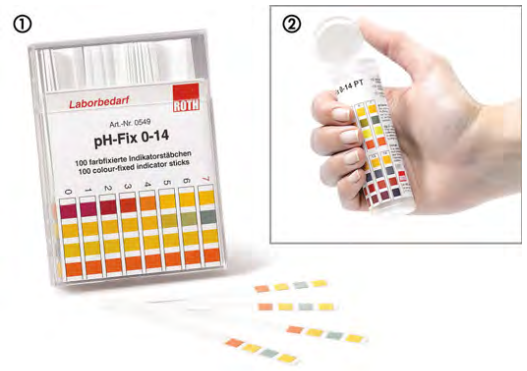
7649.1	100 pieces	20,35 €
7649.2	500 pieces	49,35 €

Universal indicator paper pH 1-11 and pH 1-14

Plastic rotating container with colour scale. Contains 1 roll, 5 m long and 7 mm wide. 1.0 pH intervals. Rolls individually packaged in refill pack.

Products in this group can contain substances that must be labelled. Safety data sheet available on request.

Type	Art. No.	Pack Qty.	€
Tin pH 1-11 (pH graduation 1-2-3-4-5-6-7-8-9-10-11)	**L861.1**	1	12,00
Refill pack pH 1-11 of 3 rolls	**L862.1**	1	17,90
Tin pH 1-14 (pH graduation 1-2-3-5-6-7-8-9-10-12-14)	**N360.1**	1	11,80
Refill pack pH 1-14 of 3 rolls	**N361.1**	1	17,10



Universal indicator sticks pH-Fix

Test field made of colour-impregnated cellulose. Colour scale with colour grading included. Reliable, **non-bleeding**. Pack contains 100 sticks (L 85 x W 6 mm).

Products in this group can contain substances that must be labelled. Safety data sheet available on request.

① In square plastic box

pH-measuring range	pH graduation	Art. No.	Pack Qty.	€
0-14	1,0	**0549.2**	100	12,50
0,0-6,0	0,5	**C730.2**	100	12,40
2,0-9,0	0,5	**H913.2**	100	12,40
4,5-10,0	0,5	**C731.2**	100	12,40
7,0-14,0	0,5	**C732.2**	100	12,40
0,3-2,3	0,3/0,4	**H914.2**	100	12,40
1,7-3,8	0,3	**H915.2**	100	12,40
3,6-6,1	0,3/0,5	**H916.2**	100	12,40
5,1-7,2	0,3	**H917.2**	100	12,40
6,0-7,7	0,3/0,4	**H918.2**	100	12,40
7,5-9,5	0,2/0,4	**H919.2**	100	12,40

② In round plastic box with snap-on lid

Single-handed opening and closing of lid with thumb.

pH-measuring range	pH graduation	Art. No.	Pack Qty.	€
0-14	1,0	**KH69.1**	100	12,90
3,6-6,1	0,3/0,5	**LH91.1**	100	12,95

Rotilabo®-universal indicator papers type Eco

For fast and exact measurment of coloured or cloudy and aqueous solutions. Plastic tin with colour scale. On rolls, 5 m long, 7 mm wide.

Products in this group can contain substances that must be labelled. Safety data sheet available on request.

pH-measuring range	pH graduation	Art. No.	Pack Qty.	€
0,0-10,0	1,0	**AP99.1**	1	6,25
1,0-11,0	1,0	**AX00.1**	1	6,25
1,0-14,0	1,0/2,0	**AX01.1**	1	6,25
0,5-5,0	0,5	**AX02.1**	1	6,25
5,0-9,0	0,5	**AX03.1**	1	6,25
6,5-10,0	0,5	**AX04.1**	1	6,25
9,0-13,0	0,5	**AX05.1**	1	6,25

pH indicators

Product	Purity	Transition range pH	Colour change	Application	Art. No.	Pack Qty.	€
Crystal violet (C.I. 42555)	p.a., ACS	0,0 - 2,0	yellow - blue violet	0,1 g in 100 ml ethanol (70 %)	**T123.2**	5 g	17,75
					T123.1	25 g	27,85
					T123.3	100 g	71,95
Malachite green hydrochloride	p.a.	0,0 - 2,0 11,6 - 14,0	yellow - green green - colorless	0,1 g in 100 ml water	**7710.1**	5 g	14,55
					7710.2	25 g	25,30
					7710.3	100 g	49,35
Malachite green oxalate (C.I. 42000)	for microscopy	0,0 - 2,0 11,6 - 14,0	yellow - green green - colorless	0,1 g in 100 ml water	**5895.2**	25 g	16,70
					5895.1	100 g	33,25
					5895.3	250 g	47,85
Brilliant green (C.I. 42040)	for microscopy	0,0 - 2,6	yellow - green	0,1 g in 100 ml water	**0324.1**	25 g	18,20
					0324.2	100 g	40,75
Eosin Y (C.I. 45380)	for microscopy	0,0 - 3,0	yellow - red	0,5 - 2,0 % in water or ethanol	**7089.1**	50 g	33,90
					7089.2	100 g	57,55
					7089.3	500 g	182,65
Ethyl violet (C.I. 42600)	extra pure	0,0 - 3,5	yellow - blue	0,1 g in 100 ml ethanol (50 %)	**7680.1**	5 g	14,95
					7680.2	25 g	25,70
					7680.3	100 g	50,45
Methyl green (C.I. 42590)	for microscopy	0,1 - 2,3	yellow - green blue	0,1 g in 100 ml water	**5159.1**	5 g	22,50
					5159.2	10 g	35,40
					5159.3	25 g	69,80
Methyl violet 2B (C.I. 42535)	for microscopy	0,15 - 3,2	yellow - violet	0,1 g in 100 ml ethanol (96 %)	**7715.1**	5 g	14,55
					7715.2	25 g	25,30
					7715.3	100 g	49,35
o-Cresol red	p.a.	0,2 - 1,8 7,0 - 8,8	red - yellow orange - purple	Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 1,05 ml NaOH 0,1 mol/l and fill up with water to 100 ml	**KK15.1**	5 g	19,25
					KK15.2	10 g	31,10
					KK15.3	25 g	62,25
Cresol red sodium salt	p.a.	0,2 - 1,8 7,0 - 8,8	red - yellow orange - purple	0,1 g in 100 ml water	**5534.1**	5 g	26,80
					5534.2	25 g	104,20
Fuchsine basic (C.I. 42510)	for microscopy	1,0 - 3,1	black violet - violet pink	0,4 g in 100 ml water	**3256.2**	25 g	34,30
					3256.1	50 g	62,25
					3256.3	100 g	82,70
Metanil yellow (C.I. 13065)	p.a.	1,2 - 2,3	violet red - yellow	0,1 g in 100 ml water	**7714.1**	5 g	14,55
					7714.2	25 g	25,30
					7714.3	100 g	49,35
4-(Phenylazo) diphenylamine	≥97 %, p.a.	1,2 - 2,5	red - yellow	insoluble in water	**4538.1**	5 g	33,25
					4538.2	25 g	89,80
m-Cresol purple	p.a.	1,2 - 2,8 7,4 - 9,0	red - yellow yellow - purple	Dissolve 0,04 g in 100 ml ethanol (20 %) or 0,04 g in 1,05 ml NaOH 0,1 mol/l and fill up with water to 100 ml	**5160.1**	1 g	13,45
					5160.2	5 g	36,45
					5160.3	10 g	63,35
Thymol blue	p.a., ACS	1,2 - 2,8 8,0 - 9,6	red - yellow yellow - blue	Dissolve 0,04 g in 100 ml ethanol (20 %) or 0,04 g in 0,86 ml NaOH 0,1 mol/l and fill up with water to 100 ml	**KK16.1**	5 g	17,75
					KK16.2	10 g	25,70
					KK16.3	25 g	52,15
Thymol blue sodium salt	p.a., ACS	1,2 - 2,8 8,0 - 9,6	red - yellow yellow - blue	0,1 g in 100 ml water	**2606.1**	5 g	21,00
					2606.2	25 g	54,30
Xylenolblue	p.a.	1,2 - 2,8 8,0 - 9,8	red - yellow yellow - violet	0,1 g in 100 ml ethanol (50 %)	**7746.1**	1 g	14,95
					7746.2	5 g	36,45
					7746.3	10 g	62,25
Orange IV sodium salt (C.I. 13080)	for microscopy	1,4 - 2,6	red - yellow	0,1 g in 100 ml water	**7731.1**	5 g	14,55
					7731.2	25 g	25,70
					7731.3	100 g	61,20
Eosin B (C.I. 45400)	for microscopy	1,7 - 1,8	colorless - pink fluorescent	0,5 - 2,0 % in water or ethanol	**0306.1**	10 g	17,75
					0306.2	25 g	28,50
					0306.3	50 g	44,65
Martius yellow (C.I. 10315)	extra pure	2,0 - 3,2	colorless - yellow	0,1 g in 100 ml water or ethanol	**7713.1**	5 g	19,25
					7713.2	25 g	36,45
					7713.3	100 g	87,00
Dimethyl yellow (C.I. 11020)	pure	2,9 - 4,0	red - yellow	0,1 g in 100 ml ethanol (96 %)	**9982.1**	10 g	56,90
Bromophenol blue	ACS, for microscopy	3,0 - 4,6	yellow - blue	Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 0,74 ml NaOH 0,1 mol/l and fill up with water to 100 ml	**T116.1**	5 g	22,50
					T116.2	10 g	30,00
					T116.3	25 g	47,20
Bromophenol blue sodium salt	for electrophoresis	3,0 - 4,6	yellow - blue	0,1 g in 100 ml water	**A512.2**	5 g	22,50
					A512.1	10 g	42,90
					A512.3	25 g	71,95
Congo red (C.I. 22120)	for microscopy	3,0 - 5,0	blue - red	0,2 g in 100 ml water	**0322.1**	5 g	16,05
					0322.2	25 g	29,60
					0322.3	100 g	59,05

pH indicators

Product	Purity	Transition range pH	Colour change	Application	Art. No.	Pack Qty.	€
Methyl orange (C.I. 13025)	ACS, for microscopy	3,2 - 4,4	pink - yellow	0,04 g in 100 ml ethanol (20 %) or 0,4 g in 100 ml water	**T118.1**	50 g	26,80
					T118.2	100 g	39,70
					T118.3	250 g	60,10
Bromochlorophenol blue sodium salt	p.a.	3,2 - 4,8	yellow - purple	0,1 g in 100 ml water	**6558.1**	1 g	42,90
					6558.2	5 g	102,15
Ethyl orange sodium salt	p.a.	3,4 - 4,8	pink - yellow	0,1 g in 100 ml water	**7667.1**	5 g	19,25
					7667.2	25 g	36,45
					7667.3	100 g	75,15
Bromocresol green	ACS	3,8 - 5,4	yellow - blue	Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 0,58 ml NaOH 0,1 mol/l and fill up with water to 100 ml	**T115.1**	1 g	17,10
					T115.2	5 g	27,45
					T115.3	10 g	46,80
					T115.4	25 g	89,15
Bromocresol green sodium salt	ACS	3,8 - 5,4	yellow - blue	0,04 g in 100 ml water	**KK18.1**	1 g	12,80
					KK18.2	5 g	34,30
					KK18.3	25 g	117,75
Methyl red (C.I. 13020)	p.a., ACS	4,2 - 6,2	pink - yellow	0,1 g in 100 ml ethanol (96 %)	**T120.1**	10 g	15,60
					T120.2	25 g	25,70
Methyl red hydrochloride (C.I. 13020)	p.a.	4,2 - 6,2	red - yellow	0,1 g in 100 ml ethanol (96 %)	**2562.1**	25 g	26,80
					2562.2	100 g	62,25
Methyl red sodium salt (C.I. 13020)	p.a., soluble in water	4,2 - 6,2	red - yellow	0,1 g in 100 ml water	**5003.1**	25 g	24,20
					5003.2	100 g	71,50
Alizarin red S (C.I. 58005)	-	4,3 - 6,3 9,4 - 12,0	yellow - red violet brown orange - violet	0,1 g in 100 ml ethanol (96 %)	**0348.1**	10 g	19,90
					0348.2	25 g	31,10
					0348.3	100 g	96,25
Ethyl red	p.a.	4,5 - 6,5	red - yellow	0,1 g in 100 ml ethanol (96 %)	**7677.1**	5 g	19,90
					7677.2	25 g	45,05
					7677.3	100 g	121,40
Litmus (C.I. 1242)	p.a.	4,5 - 8,3	red - blue	4 g in 100 ml water	**0248.1**	5 g	13,45
					0248.2	25 g	34,30
Chlorophenol red	p.a.	4,8 - 6,4	yellow - red violet	Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 0,94 ml NaOH 0,1 mol/l and fill up with water to 100 ml	**0347.1**	5 g	31,10
					0347.2	10 g	50,45
					0347.3	25 g	107,40
Bromocresol purple	p.a., ACS	5,2 - 6,8	yellow - purple	Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 0,74 ml NaOH 0,1 mol/l and fill up with water to 100 ml	**0317.1**	5 g	21,40
					0317.2	25 g	66,55
Bromocresol purple sodium salt	p.a., ACS	5,2 - 6,8	yellow - violet	0,1 g in 100 ml water	**2555.1**	5 g	19,90
					2555.2	25 g	50,45
Bromophenol red free acid	p.a.	5,2 - 7,0	yellow red - purple	0,1 g in 100 ml ethanol (20 %)	**6573.1**	1 g	21,00
					6573.2	5 g	40,75
					6573.3	50 g	192,45
Bromophenol red sodium salt	p.a.	5,2 - 7,0	yellow red - purple	0,1 g in 100 ml water	**6579.1**	1 g	19,90
					6579.2	5 g	38,20
					6579.3	50 g	170,95
Alizarin (C.I. 58000)	p.a.	5,5 - 6,8 10,1 - 12,1	yellow - violet rviolet - purple	0,5 g in 100 ml ethanol (96 %)	**4476.2**	25 g	23,55
					4476.1	50 g	35,40
					4476.3	100 g	47,85
Nitrazine yellow (C.I. 14890)	p.a.	6,0 - 7,2	yellow - blue	0,1 g in 100 ml water	**7727.1**	1 g	16,70
					7727.2	5 g	60,10
					7727.3	10 g	107,40
Bromothymol blue	p.a., ACS	6,0 - 7,6	yellow - blue	Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 0,64 ml NaOH 0,1 mol/l and fill up with water to 100 ml NEW	**T117.1**	5 g	24,65
					T117.2	25 g	59,70
					T117.3	50 g	99,90
					T117.7	100 g	175,80
Bromothymol blue sodium salt	p.a.	6,0 - 7,6	yellow - blue	0,04 g in 100 ml water	**KK19.1**	5 g	21,00
					KK19.2	10 g	32,80
					KK19.3	25 g	59,70
Bromoxylenol blue	p.a.	6,0 - 7,6	yellow - blue	0,1 g in 100 ml ethanol (96 %)	**KK27.1**	1 g	14,20
					KK27.2	5 g	38,60
					KK27.3	10 g	64,40
Brilliant yellow (C.I. 24890)	p.a.	6,4 - 8,0	yellow - red orange	0,1 g in 100 ml water	**7645.1**	5 g	21,00
					7645.2	25 g	32,80
					7645.3	100 g	75,15
Xylenol orange tetrasodium salt	p.a., ACS	6,4 - 10,4	yellow - orange red	0,1 g in 100 ml water	**2727.1**	1 g	28,95
					2727.2	5 g	66,15
					2727.3	10 g	106,35
					2727.4	50 g	375,20
Neutral red (C.I. 50040)	p.a.	6,8 - 8,0	red - orange yellow	0,3 g in 100 ml ethanol (70 %)	**T122.2**	1 g	22,05
					T122.1	10 g	55,80
					T122.3	25 g	110,65

pH indicators

Product	Purity	Transition range pH	Colour change	Application	Art. No.	Pack Qty.	€
Phenol red	p.a., ACS	6,5 - 8,2	yellow - red	Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 1,13 ml NaOH 0,1 mol/l and fill up with water to 100 ml	**T127.1**	5 g	15,60
					T127.2	25 g	35,40
					T127.3	100 g	96,65
Phenol red sodium salt	p.a., ACS	6,8 - 8,2	yellow - red	0,1 g in 100 ml water	**2566.1**	5 g	21,40
					2566.2	25 g	49,35
Orange II sodium salt (C.I. 15510)	for microscopy	7,4 - 8,6 10,2 - 11,8	amber - orange orange - red	0,1 g in 100 ml water	**7729.1**	5 g	14,55
					7729.2	25 g	25,70
					7729.3	100 g	61,20
Curcumin	≥90 %, nat., powdered, oil-soluble	7,8 - 9,2	yellow - maroon	0,1 g in 100 ml ethanol (96 %)	**9469.1**	10 g	26,80
					9469.2	25 g	47,85
					9469.3	50 g	78,40
Phenolphthalein (C.I. 764)	≥99 %, p.a.	8,0 - 10,0	colorless - purple	0,1 g in 100 ml ethanol (96 %)	**T126.2**	50 g	17,75
					T126.1	100 g	24,20
					T126.3	500 g	64,40
Thymolphthalein	p.a., ACS	8,8 - 10,5	colorless - blue	0,1 g in 100 ml ethanol (50 %)	**HN97.1**	5 g	19,90
					HN97.2	10 g	33,25
					HN97.3	50 g	120,95
Nile blue chloride (C.I. 51180)	extra pure	9,4 - 11,0	blue - red	0,1 g in ethanol or water	**7723.1**	5 g	25,70
					7723.2	25 g	75,15
					7723.3	100 g	182,25
Alkali blue 6B (C.I. 42750)	p.a.	9,4 - 14,0	violet - pink	0,1 g in 100 ml ethanol (96 %)	**5155.1**	10 g	21,00
					5155.2	25 g	41,40
					5155.3	100 g	121,40
Resorcinol yellow (C.I. 14270)	extra pure	11,0 - 12,7	yellow - orange	0,1 g in 100 ml water or ethanol	**7741.1**	5 g	14,55
					7741.2	25 g	25,30
					7741.3	100 g	62,25
4-(4-Nitrophenylazo)-resorcinol	p.a.	11,0 - 13,0	yellow - violet	0,1 g in dil. NaOH	**2563.1**	10 g	26,80
					2563.2	25 g	40,35
Titan yellow (C.I. 19540)	extra pure	11,0 - 13,0	yellow - red	0,1 g in 100 ml ethanol (20 %)	**7739.1**	5 g	12,40
					7739.2	25 g	25,70
					7739.3	100 g	62,25
Indigo carmine (C.I. 73015)	≥80 %, p.a.	11,5 - 14,0	blue - yellow	0,25 g in 100 ml ethanol (50 %) or 1 g in 100 ml water	**2700.1**	25 g	24,65
					2700.2	100 g	68,70
Indigo carmine (C.I. 73015)	for microscopy	11,5 - 14,0	blue - yellow	0,25 g in 100 ml ethanol (50 %) or 1 g in 100 ml water	**5156.1**	10 g	14,95
					5156.2	25 g	22,05
					5156.3	100 g	64,40

For additional product data and safety information, see chapter Chemicals A-Z.

Redox indicators

Product	Purity	Redox potential E_0[V] at pH=0 and 20 °C	Ox colour	Red colour	Application	Art. No.	Pack Qty.	€
Amido black 10 B (C.I. 20470)	p.a.	+0,57	yellow-brown	blue	0,2 g in 100 ml water	**9590.1**	25 g	39,25
Barium diphenylamine sulfonate	p.a., ACS	+0,84 in 1 M sulphuric acid	red-violet	colourless	0,2 g in 100 ml water	**2674.1**	5 g	30,65
						2674.2	25 g	82,25
Brilliant cresyl blue (C.I. 51010)	p.a.	+0,58	blue	colourless	0,5 g in 100 ml water or ethanol (96 %)	**5162.1**	5 g	23,55
						5162.2	10 g	35,40
2,6-Dichlorophenol-indophenol sodium salt hydrate	p.a., ACS	+0,67	blue	colourless	0,02 g in 100 ml water	**HN79.1**	1 g	17,10
						HN79.2	5 g	37,55
						HN79.3	25 g	153,65
Diphenylamine	≥99 %, p.a., ACS	+0,76	blue-violet	colourless	1,0 g in 100 ml 96 % sulphuric acid	**9865.1**	25 g	17,10
						9865.2	100 g	40,75
						9865.3	500 g	114,50
Diphenylamine-4-sulphonic acid sodium salt	p.a., ACS	+0,84 in 1 M sulphuric acid	red-violet	colourless	0,2 g in 100 ml water	**2602.3**	1 g	17,75
						2602.1	10 g	78,40
						2602.2	25 g	142,90
1,5-Diphenylcarbazide	≥97 %, p.a., ACS	-	colourless	violet	1 g 1,5-diphenylcarbazide (DPC) in 100 ml acetone and acidify with a drop of glacial acetic acid.	**2696.1**	10 g	24,20
						2696.2	25 g	39,70
						2696.3	100 g	115,60
2,2'-Dipyridyl	≥95 %, for biochemistry	+1,03	pale blue	red	0,695 g $FeSO_4 \cdot 7\ H_2O$ and 1,171 g 2,2'-dipyridylamine in 100 ml water	**4153.1**	5 g	15,60
						4153.2	25 g	40,35
Indigo carmine (C.I. 73015)	for microscopy	+0,29	blue	yellowish	0,25 g in 100 ml ethanol (50 %) or 1 g in 100 ml water	**5156.1**	10 g	14,95
						5156.2	25 g	22,05
						5156.3	100 g	64,40

Redox indicators

Product	Purity	Redox potential E_0[V] at pH=0 and 20 °C	Ox colour	Red colour	Application	Art. No.	Pack Qty.	€
Methylene blue (C.I. 52015)	-	+0,53 (30 °C)	blue	colourless	0,1 - 0,5 g in 100 ml water	**A514.1**	10 g	20,35
						A514.2	50 g	48,30
						A514.3	100 g	78,40
Neutral red (C.I. 50040)	p.a.	+0,25	violet-red	colourless	0,3 g in 100 ml ethanol (70 %)	**T122.2**	1 g	22,05
						T122.1	10 g	55,80
						T122.3	25 g	110,65
Nile blue A (C.I. 51180)	~80 %	+0,41	blue-red	colourless	0,1 g in 100 ml water	**4377.2**	5 g	17,75
						4377.1	10 g	30,00
						4377.3	25 g	47,85
1,10-Phenanthroline monohydrate	≥99 %, p.a., ACS	+1,14	pale blue	red	0,695 g $FeSO_4 \cdot 7\ H_2O$ and 1,487 g 1,10-phenanthroline n 100 ml water	**9113.2**	5 g	28,95
						9113.3	25 g	103,10
						9113.1	50 g	192,45
N-Phenylanthranilic acid	≥97 %, p.a.	+0,89	purple-red	colourless	Dissolve 0,1 g in 5 ml 0,1 M sodium hydroxide and top up with water to 100 ml. Alternatively: Dissolve 0,107 g in 20 ml sodium carbonate solution (5%) and top up to 100 ml with water.	**9858.1**	25 g	23,15
						9858.2	50 g	40,35
						9858.3	100 g	69,35
Safranin O (C.I. 50240)	for microscopy	+0,24	blue-violet (acid); brown (alkaline)	colourless	0,05 g in 100 ml water	**T129.1**	10 g	42,50
Xylene cyanole (C.I. 42135)	for histology and electrophoresis	+1,00	yellow	pink	0,2 g in 100 ml water	**A513.2**	5 g	25,70
						A513.1	10 g	41,40
						A513.3	25 g	75,80
						A513.4	50 g	121,40

For additional product data and safety information, see chapter Chemicals A-Z.

Metal indicators

Product	Determination of	Application	Art. No.	Pack Qty.	€
Alizarin red S (C.I. 58005)	Al, B, Ce, Cr, Hf, La, Mo, Zr, Sc, Th, Y	0,1 g in 100 ml ethanol (96 %)	**0348.1**	10 g	19,90
			0348.2	25 g	31,10
Arsenazo III	Ca	0,1 g in 100 ml water	**KK22.1**	1 g	52,60
			KK22.2	5 g	192,45
Aurin tricarboxylic acid ammonium salt	Al, Ca, Fe(III), Mg	0,2 g in 100 ml water	**2670.1**	10 g	18,85
			2670.2	25 g	27,45
			2670.3	100 g	65,50
Calcein	Mg, Ba, Ca, Cr, Sr, SO_4^{2-}	Trituration with KNO_3 (1:99)	**7688.1**	5 g	36,45
			7688.2	25 g	110,65
			7688.3	100 g	303,70
Calconcarboxylic acid	Ca	Trituration with Na_2SO_4 (1:99)	**2676.1**	5 g	26,80
			2676.2	10 g	39,25
			2676.3	50 g	103,10
Chromotrope® 2B (C.I. 16575)	Boric acid	0,005 g in conc. H_2SO_4	**7647.1**	5 g	14,55
			7647.2	25 g	24,65
			7647.3	100 g	61,85
Dimethylglyoxim	Ni	0,1 g in 100 ml water	**2677.1**	50 g	42,90
			2677.2	100 g	67,65
			2677.3	500 g	254,70
Dimethylglyoxime disodium salt octahydrate	Ni	0,1 g in 100 ml water	**KK24.1**	25 g	38,60
			KK24.2	50 g	64,40
1,5-Diphenylcarbazide	Cr(VI), Fe, Cd, Hg, Mg	1 g 1,5-diphenylcarbazide (DPC) in 100 ml acetone and acidify with a drop of glacial acetic acid.	**2696.1**	10 g	24,20
			2696.2	25 g	39,70
			2696.3	100 g	115,60
Diphenylcarbazone	Cd, Hg, In, Mn, Ni, Pb, V	0,2 g in 100 ml ethanol (96 %)	**2678.1**	10 g	62,25
			2678.2	25 g	121,40
			2678.3	50 g	210,20
Dithizone	Heavy metal ions	0,025 - 0,05 g in 100 ml methanol	**2697.1**	5 g	33,25
			2697.2	25 g	107,40
			2697.3	50 g	171,90
Eriochrome® blue black B (C.I. 14640)	Ca, Cd, Mg, U(IV), Zn, Zr	0,2 - 0,4 g in 100 ml methanol	**7661.1**	5 g	14,95
			7661.2	25 g	25,70
			7661.3	100 g	50,45
Eriochrome® blue black R (C.I. 15705)	Al, Ca, Cu, Fe, Ga, Zr	0,4 g in 100 ml methanol or ethanol	**7663.1**	5 g	14,95
			7663.2	25 g	25,70
			7663.3	100 g	50,45

Metal indicators

Product	Determination of	Application	Art. No.	Pack Qty.	€
Eriochrome® black T (C.I. 14645)	Ba, Cd, In, Mg, Mn, Pb, Sc, Sr, Zn, Zr, rare earth metals	0,1 g in water	**0112.1**	25 g	16,05
			0112.2	50 g	27,85
			0112.3	100 g	50,45
Eriochrome® black T (C.I. 14645), trituration	Ba, Cd, In, Mg, Mn, Pb, Sc, Sr, Zn, Zr, rare earth metals	Trituration with NaCl (1:99), ready to use	**K860.2**	25 g	21,00
			K860.1	50 g	30,00
			K860.3	100 g	53,65
Fast sulphon black F (C.I. 26990)	Cu	0,1 % in water	**7685.1**	5 g	14,55
			7685.2	25 g	25,30
			7685.3	100 g	68,70
8-Hydroxyquinoline	Mg	0,1 g in 100 ml ethanol	**2557.1**	50 g	30,00
			2557.2	100 g	42,50
			2557.3	250 g	77,30
Hydroxy naphthol blue disodium salt	Ca	0,1 g in 100 ml water	**2556.1**	5 g	19,90
			2556.2	25 g	39,70
Metal phthaleine	Ba, Ca, Cd, Mg, Sr	0,1 g in dil. NH_3	**4231.1**	1 g	24,20
			4231.2	5 g	48,30
Methylthymol blue sodium salt	Ba, Bi, Ca, Cd, Cu, Fe(II), Hg, In, Mg, Mn, Pb, rare earth metals, Se, Sn(II), Th, Tl(II), Zn, Zr	Trituration with KNO_3 (1:99)	**KK17.1**	1 g	15,60
			KK17.2	5 g	44,65
Morin hydrate	Al, Be, B, Ga, In, Mo, Nb, Sc, Ta, Th, Ti, W, Sn, Zr	0,1 g in 100 ml methanol	**6459.1**	5 g	107,40
			6459.2	50 g	891,20
Murexide (C.I. 56085)	Ag, Ca, Co, Cu, Mn, Ni, Sc, Th, Zn	freshly made saturated solution in water	**T124.1**	5 g	25,70
			T124.2	25 g	60,10
			T124.3	50 g	98,80
4-(4-Nitrophenylazo)-resorcinol	Mg	0,1 g in dil. NaOH	**2563.1**	10 g	26,80
			2563.2	25 g	40,35
1-(2-Pyridylazo)-2-naphthol	Al, Ba, Bi, Ca, Cd, Co, Cu, Fe, Ga, Hg, In, Mg, Mn, Ni, Pb, Sc, Th, Tl, V, Zn	0,01 - 0,1 g in 100 ml ethanol (96 %)	**KK12.1**	1 g	19,25
			KK12.2	5 g	66,55
4-(2'-Pyridylazo)-resorcinol	Al, Ba, Bi, Cd, Cu, Fe, Hg, In, Mn, Ni, Pb, Sr, Th, Tl(III), Zn, rare earth metals	0,1 g in 100 ml water	**2564.1**	5 g	81,60
			2564.2	25 g	289,75
4-(2'-Pyridylazo)-resorcinol monosodium salt	Mg	0,1 g in dil. NaOH	**2565.1**	5 g	89,15
			2565.2	25 g	332,75
Pyrogallol red	Bi, Co, Ni, Pb	0,05 g in ethanol 96 %	**0287.1**	1 g	25,70
			0287.2	5 g	50,00
Silver diethyldithiocarbamate	As	0,5 % in pyridine	**KK25.1**	5 g	45,70
			KK25.2	10 g	81,60
Sodium diethyldithiocarbamate trihydrate	Cu	0,1 g in 100 ml water	**2601.1**	25 g	22,50
			2601.2	100 g	40,75
			2601.3	500 g	137,10
Sodium nitroprusside dihydrate	Zn	0,1 g in 100 ml water or ethanol	**HN34.1**	25 g	28,50
			HN34.2	100 g	75,15
			HN34.3	500 g	292,95
5-Sulphosalicylic acid dihydrate	Fe(III)	1,0 - 5,0 g in 100 ml water	**4119.1**	100 g	18,85
			4119.2	500 g	52,60
		NEW	**4119.7**	1 kg	89,15
Thorin	Bi, Th, U(IV), Sc, Y(III)	0,5 g in 100 ml water	**KK34.1**	5 g	160,20
			KK34.2	10 g	299,95
Tiron	Fe(III)	2 g in 100 ml water	**7302.1**	10 g	19,90
			7302.2	25 g	27,45
			7302.3	100 g	67,20
Titan yellow (C.I. 19540)	Mg	0,1 g in 100 ml ethanol (20 %)	**7739.1**	5 g	12,40
			7739.2	25 g	25,70
			7739.3	100 g	62,25
Xylenol orange tetrasodium salt	Bi, Cd, Co, Cu, Fe, Hg, In, Pb, Sc, Th, Tl(III), V(V), Zn, Zr, rare earth metals	0,1 g in 100 ml water	**2727.1**	1 g	28,95
			2727.2	5 g	66,15
			2727.3	10 g	106,35
			2727.4	50 g	375,20
Xylidyl blue sodium salt	Mg	0,1 g in 100 ml water	**KK35.1**	1 g	40,75
			KK35.2	5 g	171,50
Zincon	Cu, Zn	0,1 g in 100 ml ethanol (96 %)	**5563.1**	1 g	38,60
			5563.2	5 g	130,00

For additional product data and safety information, see chapter Chemicals A-Z.

Dyes

Product	Soluble in	Art. No.	Pack Qty.	€
Acid blue 93 (C.I. 42780)	water	**4002.1**	10 g	77,30
		4002.2	25 g	167,60
Brilliant black BN (C.I. 28440)	water	**7643.1**	5 g	19,90
		7643.2	25 g	37,10
		7643.3	100 g	100,55
Brilliant yellow (C.I. 24890)	water	**7645.1**	5 g	21,00
		7645.2	25 g	32,80
		7645.3	100 g	75,15
Chromotrope® FB (C.I. 14720)	water	**7648.1**	5 g	14,55
		7648.2	25 g	24,65
		7648.3	100 g	61,85
Cotton blue (C.I. 42780)	water	**5750.1**	10 g	19,90
Crocein orange G (C.I. 15970)	water	**7652.1**	5 g	14,55
		7652.2	25 g	24,65
		7652.3	100 g	61,85
Curcumin	ethanol, acetic acid, DMSO	**9469.1**	10 g	26,80
		9469.2	25 g	47,85
		9469.3	50 g	78,40
Fat brown RR (C.I. 11285)	fat/oil	**7687.1**	5 g	13,90
		7687.2	25 g	24,20
		7687.3	100 g	62,25
Fluorescein disodium salt (C.I. 45350)	ethanol, water	**5283.3**	25 g	21,40
		5283.1	100 g	34,95
		5283.2	500 g	110,65
Indigo (C.I. 73000)	acetic acid	**3903.1**	50 g	39,70
		3903.3	100 g	62,25
		3903.2	500 g	256,95
Lissamine green B (C.I. 44090)	water	**7707.1**	5 g	14,55
		7707.2	25 g	25,30
		7707.3	100 g	62,25
Nigrosin, soluble in alcohol (C.I. 50415)	ethanol	**7716.1**	5 g	14,55
		7716.2	25 g	25,70
		7716.3	100 g	51,10
Nigrosin, water soluble (C.I. 50420)	water	**7718.1**	25 g	14,55
		7718.2	100 g	36,45
Nile blue A (C.I. 51180)	fat/oil	**4377.2**	5 g	17,75
		4377.1	10 g	30,00
		4377.3	25 g	47,85
Quercetin dihydrate (C.I. 75670)	acetic acid, hot ethanol	**7138.1**	25 g	52,15
		7138.2	100 g	164,40
Sudan II (C.I. 12140)	fat/oil	**7732.1**	5 g	12,40
		7732.2	25 g	25,70
		7732.3	100 g	60,10
Sudan III (C.I. 26100)	fat/oil	**4711.2**	50 g	24,20
		4711.1	100 g	45,70
Sudan IV (C.I. 26105)	fat/oil	**0327.1**	25 g	23,55
		0327.2	50 g	33,25
Sudan black B (C.I. 26150)	fat/oil	**0292.1**	10 g	23,55
		0292.2	25 g	33,25
		0292.3	50 g	52,60
Sudan orange G (C.I. 11920)	chloroform	**7733.1**	5 g	12,40
		7733.2	25 g	25,70
		7733.3	100 g	60,10

For additional product data and safety information, see chapter Chemicals A-Z.

Further detection reagents

Product	Application	Purity	Art. No.	Pack Qty.	€
Alizarin complexone dihydrate	Detection reagent for fluoride	≥97 %, p.a.	**7634.1**	1 g	32,15
			7634.2	5 g	99,90
			7634.3	10 g	166,55
4'-Aminoacetophenone	For determination of nicotinic acid and vitamin B.	≥99 %	**3973.2**	10 g	13,90
			3973.1	25 g	21,00
4-Aminoantipyrine	Reagent for phenol detection	≥98 %, p.a., ACS	**2671.1**	10 g	23,55
			2671.2	25 g	36,05
			2671.3	100 g	62,90
1-Amino-2-hydroxy-4-naphthalenesulfonic acid	For determination of phosphate	≥97 %, p.a., ACS	**2672.1**	25 g	40,75
			2672.2	100 g	102,70
Ammonium benzoate	For precipitation of aluminium and iron.	≥98 %, extra pure	**9836.1**	100 g	17,10
			9836.2	500 g	45,70
			9836.3	1 kg	80,55
Azomethine H hydrate	Reagent for the determination of boron.	≥95 %, p.a.	**CP99.1**	5 g	103,10
Bathocuproine sulphonate disodium salt hydrate	Reagent for copper.	≥98 %	**KK28.1**	250 mg	35,40
			KK28.2	1 g	111,70
Chromotropic acid disodium salt dihydrate	Reagents for silver, boron, chrome, mercury, titanium, chromate, formaldehyde, nitrile and nitrate.	≥98,5 %, p.a., ACS	**KK30.1**	10 g	36,05
			KK30.2	25 g	77,30
1,8-Dihydroxy-2-(4-sulfophenylazo)-naphthalene-3,6-disulfonic acid trisodium salt	Reagent for fluoride.	p.a., ACS	**2605.1**	10 g	26,80
			2605.2	25 g	46,80
4-(Dimethylamino)-benzaldehyde	Reagent for the detection of nitrogen containing compounds.	≥98 %, p.a., ACS	**X867.1**	25 g	45,05
			X867.2	100 g	113,45
5-(4-Dimethylaminobenzylidene)rhodanine	Analytical reagent for silver.	p.a.	**KK23.1**	5 g	26,35
			KK23.2	10 g	40,75
			KK23.3	50 g	160,75
5,5'-Dithio-bis-(2-nitrobenzoic acid)	For determination of thiol groups	≥98 %, p.a.	**6334.1**	1 g	20,35
			6334.2	5 g	57,95
			6334.3	25 g	210,60
Hydrazinium sulphate	Reagent for separation of Po and Te.	≥99 %, p.a., ACS	**HN96.1**	100 g	19,90
			HN96.2	500 g	54,30
Isatin	Reagent for the spectrophotometric determination of thiophene and proline.	≥98 %, for biochemistry	**4155.1**	25 g	12,80
			4155.2	100 g	35,40
3-Methyl-2-benzothiazolinone hydrazone hydrochloride	Analytical reagent for the qualitative determination of aldehydes.	≥98 %, p.a.	**8413.1**	10 g	147,85
1-Naphthol	Reagent for carbohydrates.	≥99,5 %, p.a.	**KK14.1**	50 g	40,75
			KK14.2	100 g	63,35
N-(1-Naphthyl)ethylenediamine dihydrochloride	For the detection of sulphonamide and the determination of nitrite.	≥99 %, p.a.	**4342.2**	10 g	35,40
			4342.1	25 g	84,85
			4342.3	50 g	143,95
Ninhydrin	For the detection of amino acids.	≥99 %, p.a., ACS	**4378.1**	25 g	40,35
			4378.2	100 g	104,20
			4378.3	500 g	375,20
Phenylhydrazine hydrochloride	Reagent for detection of sugar.	≥99 %, p.a.	**KK20.1**	25 g	19,90
			KK20.2	100 g	53,25
			KK20.3	250 g	117,75
meta-Phosphoric acid	Reagent for protein, vitamines, urea and glucose.	p.a., pieces (hyaline)	**CN91.1**	100 g	31,10
			CN91.2	250 g	61,20
			CN91.3	500 g	111,70
			CN91.4	1 kg	201,60
Potassium hexacyanoferrate(II) trihydrate	Reagent for the determination of Fe, Cu, Zn, protein. Preparation of Berlin blue.	≥99 %, p.a., ACS, ISO	**P745.1**	500 g	93,00
			P745.2	1 kg	167,60
			P745.3	2,5 kg	364,45
Potassium hexacyanoferrate(III)	Oxidizing agent in organic synthesis. Reagent for the determination to Co, Zn and alkaloids.	≥99 %, p.a., ACS	**P746.3**	100 g	22,50
			P746.1	500 g	71,95
			P746.2	1 kg	130,65
Potassium hydrogen sulphate	For disintegration of ores and silicates, detection of acetate. Cleaning of Pt crucibles.	≥98 %, p.a.	**P020.1**	500 g	30,65
			P020.2	1 kg	53,65
			P020.3	2,5 kg	115,60
di-Potassium oxalate monohydrate	For determination of Manganese.	≥98,5 %, p.a., ACS	**HN38.1**	250 g	29,60
			HN38.2	500 g	48,30
			HN38.3	1 kg	86,55
Resorcinol	Reagent on alkaloids, aldehydes and invert sugar.	≥99 %, for biochemistry	**5727.1**	100 g	21,40
			5727.2	500 g	55,80
			5727.3	1 kg	96,25
			5727.4	2,5 kg	207,40
Semicarbazide hydrochloride	Reagent for aldehydes and ketones.	≥98 %, p.a.	**4681.1**	100 g	33,25
			4681.2	500 g	117,75

Further detection reagents

Product	Application	Purity	Art. No.	Pack Qty.	€
Silver diethyldithiocarbamate	Reagent for arsenic.	≥97 %, p.a.	**KK25.1**	5 g	45,70
			KK25.2	10 g	81,60
Silver nitrate	For detection of halogenides.	≥99,9 %, p.a.	**7908.1**	50 g	117,20
			7908.2	250 g	489,15
			7908.3	1 kg	1714,65
Sodium ammonium hydrogen phosphate tetrahydrate	Reagent for Mg; phosphorus salt bead	≥99 %, p.a.	**T882.1**	500 g	66,55
			T882.2	1 kg	98,40
			T882.3	2,5 kg	220,40
Sodium bismuthate	Oxidation reagent, determination of manganese in iron and steel.	≥85 %, p.a.	**4401.1**	50 g	47,85
			4401.2	100 g	88,70
			4401.3	250 g	192,45
Sodium diethyldithiocarbamate trihydrate	Reagent for copper	p.a., ACS	**2601.1**	25 g	22,50
			2601.2	100 g	40,75
			2601.3	500 g	137,10
Sodium hexanitrocobaltate(III)	Determination of potassium	p.a., ACS	**4409.1**	25 g	19,90
			4409.2	100 g	54,75
			4409.3	250 g	110,65
di-Sodium hydrogen phosphate	Reagent for the detection of Mg, Li, Pb and uric acid.	≥99 %, p.a., ACS, anhydrous	**P030.1**	500 g	32,15
			P030.2	1 kg	52,15
			P030.3	2,5 kg	98,40
Sodium molybdate dihydrate	Reagent for alkaloids and for biochemical purposes.	≥99,5 %, p.a.	**0274.1** *	50 g	18,85
			0274.2	100 g	27,45
			0274.3	250 g	49,35
			0274.4	1 kg	177,40
Sodium salicylate	Preservative; for determination of glucose at urine.	≥99 %, p.a.	**CP39.1**	250 g	27,45
			CP39.2	1 kg	82,25
Sodium sulphite	For removal of chlorine and dissolution of cellulose, reagent for detection of iodate in the presence of chlorate and bromate, for absorption of NO_x in gas analysis.	≥98 %, p.a., ACS, anhydrous	**P033.1**	500 g	19,25
			P033.2	1 kg	28,95
			P033.3	2,5 kg	51,50
Sodium tetraphenyl borate	Reagent for K, Pb, Cs, NH_4 and Alkaloids.	≥99,5 %, p.a., ACS	**4385.1**	10 g	42,50
			4385.2	25 g	92,35
			4385.3	100 g	289,20
Sodium thiosulphate pentahydrate	For detection of hydrocyanic acid, quinine, chlorate hydrate and cobalt.	≥99,5 %, p.a., ACS	**P034.1**	500 g	21,00
			P034.2	1 kg	32,80
			P034.3	2,5 kg	65,50
			P034.5	25 kg	450,45
Sodium nitroprusside dihydrate	Reagent for Zn, SO_2, aldehydes	≥99 %, p.a., ACS	**HN34.1**	25 g	28,50
			HN34.2	100 g	75,15
			HN34.3	500 g	292,95

For additional product data and safety information, see chapter Chemicals A-Z.

Karl Fischer Reagents Roti®hydroquant

There are two established Karl Fischer methods of calculating the water content of a substance: Volumetric analysis and coulometric analysis.

Which method is chosen depends primarily on the water content that the sample is expected to have. Making the right choice is vital for obtaining reliable and reproducible results. ROTH offers compatible reagents for both of these methods.

Volumetric reagents

Karl Fischer volumetric analysis is recommended if the water content of a sample ought to be between 0,1% and 100%. Volumetric analysis is performed by measuring the amount of Karl Fischer reagent that needs to be added to a substance until the end point of the titration has been reached. In alcoholic solutions, water reacts 1:1 with iodine in the presence of sulphur dioxide. Methanol and sulphur dioxide form an acid ester that is neutralised by the base (e.g. imidazole, hereafter referred to as "RN" for simplicity).

$CH_3OH + SO_2 + RN \rightarrow [RNH]SO_3CH_3$

In the titration process, iodine is added which reacts with water to be reduced to colourless iodide:

$[RNH]SO_3CH_3 + H_2O + I_2 + 2\ RN \rightarrow [RNH]SO_4CH_3 + 2\ [RNH]I$

This reaction continues until there is no water left. The end point is determined by a change in colour due to a surplus of iodine and measured using a potentiometer.

Single-component reagents

Single-component reagents contain all the substances required for the Karl Fischer reaction in a single solution. They are easy to use and provide for a high level of flexibility when choosing a solvent for the sample type. The high reactivity of the components means that the titre for single-component reagents must always be determined before titration is carried out.
Reactions with standard reagents containing methanol are not possible for samples that contain aldehydes or ketones, as the methanol will react with them to produce extra water in a secondary reaction. ROTH offers methanol-free reagents that are suitable for substances containing aldehydes and ketones.

Product	Purity	Application	Art. No.	Pack Qty.	Packaging	€
Karl Fischer Roti®hydroquant Working Medium K	for KF titration for aldehydes and ketones	Solvent component	**5215.1**	1 l	glass	71,95
Karl Fischer Roti®hydroquant C2	2 mg H_2O/ml, free of pyridine	Single-component reagent	**T194.1**	1 l	glass	100,55
Karl Fischer Roti®hydroquant C5	5 mg H_2O/ml, free of pyridine	Single-component reagent	**T190.1**	1 l	glass	107,40
Karl Fischer Roti®hydroquant C5 K	5 mg H_2O/ml, for aldehydes and ketones	Single-component reagent	**5211.1**	1 l	glass	113,85
Karl Fischer methanol Roti®hydroquant D	dry, for KF titration	Solvent component	**T193.1**	1 l	glass	27,45
			T193.2	2,5 l	glass	51,10

Two-components reagents

In two-component systems, the substances crucial for the reaction are separated, with some in the solvent component and some in the titration component. Separating the substances gives the system a longer shelf life and means that the titre needs to be determined less frequently.

Product	Purity	Application	Art. No.	Pack Qty.	Packaging	€
Karl Fischer Roti®hydroquant S	for KF titration	Solvent component	**T192.1**	1 l	glass	46,15
Karl Fischer Roti®hydroquant S CM	for KF titration	Solvent component	**5218.1**	1 l	glass	38,60
Karl Fischer Roti®hydroquant T2	2 mg H_2O/ml, free of pyridine	Titrant component Two-components reagent	**X947.1**	1 l	glass	53,25
Karl Fischer Roti®hydroquant T5	5 mg H_2O/ml, free of pyridine	Titrant component Two-components reagent	**T191.1**	1 l	glass	47,85

For additional product data and safety information, see chapter Chemicals A-Z.

The volumetric Karl Fischer reagents are suitable for water contents between 0,1 % and 100 %. Free water and water of hydration can be determined, respectively.
Our solutions are based on methanol and free of pyridine.

Using single-component reagents:
Add Methanol to the reaction vessel and titrate to dryness with the C-component. Then add the sample and titrate again to dryness.

Using two-component reagents:
Add solvent S to the reaction vessel and titrate to dryness with the T-component. Then add the sample and titrate again to dryness.

Table illustrating the uses of Karl-Fischer Roti®hydroquant volumetric reagents

		Solvent components			
		Methanol (T193)	Working medium K (5215)	S (T192)	S CM (5218)
Titration components	C2 (T194)	X			
	C5 (T190)	X			
	C5 K (5211)		X		
	T2 (X947)			X	X
	T5 (T191)			X	X

Standards

Water standards with a defined water content are required to determine the titre for the reagents used (C or T components). Either a solid or a liquid standard can be chosen.

Karl Fischer Roti®hydroquant standard sodium tartrate dihydrate

≥99 %, for KF titration
Primary standard substance for Karl Fischer titration
$C_4H_4Na_2O_6 \cdot 2\ H_2O$
M 230,08 g/mol

Guarantee analysis:
Assay (perchloric acidim). ..... 99,0-101,0 %
Loss on drying (150 °C). ..... 15,66 ±0,05 %

5229.1	100 g	glass	38,60 €

Karl Fischer Roti®hydroquant water standard 10.0

10 mg H_2O/g
Water standard

Danger H226-H315-H318-H335-H336

Guarantee analysis:
Water content. ..... 10,0 ±0,1 mg H_2O/g

5219.1	10 x 10 ml	glass	61,20 €

Karl Fischer Roti®hydroquant water standard 1.0

1 mg H_2O/g
Water standard for KF coulometry

Warning H226

Guarantee analysis:
Water content. ..... 1,0 ±0,03 mg H_2O/g

9971.1	10 x 4 ml	glass	50,45 €

Coulometric reagents

Karl Fischer coulometric titration is suitable for substances with a low water content (i.e. <0,1%) and, for example, for expensive substances that can only be examined in small quantities.

In the coulometric titration process, the iodine required is produced directly in situ at the electrode in the reaction vessel through the anodic oxidation of iodide. Hydrogen is produced at the cathode. The measuring cell contains an anode and cathode chamber, which can be separated by a diaphragm. This means that the titration cell can be equipped with diaphragms or be diaphragm-free.

ROTH offers suitable reagents for both models.

For cells with diaphragms:

Anolyte:

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Karl Fischer Roti®hydroquant coulo A	for coulometric KF titration	**9957.1**	500 ml	glass	77,95
Karl Fischer Roti®hydroquant coulo Oil	for coulometric KF titration	**9960.1**	100 ml	glass	27,85

Catholyte:

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Karl Fischer Roti®hydroquant coulo CG	for coulometric KF titration	**9861.1**	100 ml	glass	77,95

For cells without diaphragms:

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Karl Fischer Roti®hydroquant coulo AG	for coulometric KF titration	**9854.1**	500 ml	glass	77,95

Table illustrating the uses of Karl Fischer Roti®hydroquant coulometric reagents:

	coulo CG (9861)
coulo A (9957)	✔ for cells with diaphragms.
coulo Oil (9960)	✔ for cells with diaphragms.
coulo AG (9854)	Can be used without additional reagents. For cells without diaphragms.

Water analysis

Roth offers the essential reagents for your water analysis.
On the following pages you find
- determination of water hardness
- determination of adsorbable organic halogen compounds (AOX)
- determination of chemical oxygen demand (COD)
- determination of biological oxygen demand (BOD)
- potassium permanganate index
- determination of surfactants
- hydrocarbon index

Determination of water hardness

Water contains a whole host of salts and other compounds in addition to the gases dissolved in it (oxygen, nitrogen, carbon dioxide). Its most important constituents are magnesium and calcium in the form of their chlorides, sulphates and bicarbonates. These dissolved salts are known as hardeners. The bicarbonates precipitate in the heat (during boiling) as carbonates and are known as carbonate hardness (KH) or temporary hardness. The sulphate and chloride compounds are known as permanent hardness or non-carbonate hardness (NKH).Total hardness (GH) describes the concentration of alkaline earth metal ions in water.The unit of measurement for water hardness used to be 1 °dH (German degrees of hardness), which corresponds to 10,00 mg CaO or 7,19 mg MgO in one litre of water. Today we use millimoles per litre (mmol/l), whereby 1 °dH corresponds to 0,18 mmol/l of earth metal ions and 1 mmol/l corresponds to 5,6 °dH.

Product	Purity	Art. No.	Pack Qty.	Packaging	€
EDTA disodium salt solution	0,01 mol/l - 0,01 N	**CN34.1**	1 l	plastic	24,65
		CN34.2	5 l	ROTI®CUBE	75,15
		CN34.3	10 l	ROTI®CUBE	132,80
	0,1 mol/l - 0,1 N	**K714.1**	1 l	glass	22,50
		K714.2	5 l	plastic	68,70
		K714.3	5 l	ROTI®CUBE	74,75
		K714.4	10 l	ROTI®CUBE	132,15
EDTA disodium salt solution A	0,1 mol/l - 0,1 N	**T136.1**	1 l	glass	30,65
EDTA disodium salt solution B	0,01783 mol/l - 0,01783 N	**T137.1**	1 l	glass	24,65
		T137.2	5 l	ROTI®CUBE	75,15
		T137.3	10 l	ROTI®CUBE	132,80
Eriochrome® black T (C.I. 14645)	p.a.	**0112.1**	25 g	glass	16,05
		0112.2	50 g	glass	27,85
		0112.3	100 g	glass	50,45
Eriochrome® black T (C.I. 14645), trituration	Indicator 1 % in NaCl, trituration	**K860.2**	25 g	plastic	21,00
		K860.1	50 g	plastic	30,00
		K860.3	100 g	plastic	53,65

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Murexide (C.I. 56085)	ACS, for complexometry	**T124.1**	5 g	glass	25,70
		T124.2	25 g	glass	60,10
		T124.3	50 g	glass	98,80
Buffer solution pH 10,00 for complexometry	buffer solution, ready to use	**T188.1**	1 l	plastic	25,30
Hydrochloric acid	NEW 0,1 mol/l - 0,1 N	**K024.5**	500 ml	plastic	15,60
		K024.1	1 l	plastic	19,90
		K024.2	5 l	plastic	58,60
		K024.3	5 l	ROTI®CUBE	63,35
		K024.4	10 l	ROTI®CUBE	93,45
	NEW	**K024.7**	25 l	plastic	153,65
	1 mol/l - 1 N	**K025.1**	1 l	plastic	19,90
		K025.2	5 l	plastic	58,60
		K025.3	5 l	ROTI®CUBE	63,35
		K025.4	10 l	ROTI®CUBE	93,45

For additional product data and safety information, see chapter Chemicals A-Z.

Indicator buffer tablets

for determination of water hardness with EDTA

Warning H317

Dissolve one tablet in 50 ml water sample and bring to pH 11 with approx. 1 ml ammonia solution 30 % (art. CP17). Titrate with EDTA disodium salt volumetric solution (art. T136 or T137) from red to green.

Type analysis:

Suitability as indicator. ..... complies
Disintegration time (25 °C)..... 100 s

7649.1	100 pieces	20,35 €
7649.2	500 pieces	49,35 €

Water hardness kit

Testing reagent is added drop by drop to 5 ml water sample until colour changes. Each drop equals 1 °dH. Pack with 2 x 15 ml reagent. Test reagent in dropping bottle.

Warning H226-H319-H336

0519.1	2 x 15 ml	19,90 €

Determination of adsorbable organic halogen compounds (AOX)

AOX (adsorbable organic halogens, where X = Cl, Br, I) is a sum parameter that describes the amount of organic halogen compounds in substances such as water, soil and sewage sludge. This parameter is used primarily in waste water analysis. The method for calculating AOX levels is set out in DIN EN ISO 9562. The quantity of organically bound halogens in a water sample is measured using either the shaking method or the column method. In the shaking method, the AOX in a sample are bound to activated carbon by shaking. In the column method, the AOX in a sample are bound to activated carbon by the action of flushing the sample through a glass column filled with activated carbon. The quantity of activated carbon, which is defined precisely in each case, is then burned in an oxygen chamber and the hydrogen halide released is measured by means of argentometry. The amount of fluoroorganic compounds present cannot be measured argentometrically.

Charcoal
for the determination of AOX (column method)

Type analysis:
Iodine value. .....≥1050 mg/g
Chloride (Cl). .....≤0,0005 %
Particle size. .....~50-150 µm

1299.1	10 g	glass	80,10 €

Charcoal
for the determination of AOX (shaking method)

Type analysis:
Iodine value. .....≥1050 mg/g
Chloride (Cl). .....≤0,0005 %
Particle size. .....≤50 µm

1319.1	10 g	glass	75,15 €

4-Chlorophenol solution
200 mg AOX/l
For determination of AOX acc. to EN ISO 9562:2004, DEV H14

2495.1	100 ml	glass	61,20 €

Hydrochloric acid (0,01 N)
0,01 mol/l - 0,01 N volumetric standard solution

N075.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l

Nitric acid 65 %
ROTIPURAN® ≥65 %, p.a., ISO
Danger H272-H290-H314-H331-EUH071

4989.3	250 ml	glass	19,25 €
4989.1	1 l	glass	30,65 €
Original pack 6 x 1 l			29,12/1 l
4989.2	2,5 l	glass	60,10 €
Original pack 4 x 2,5 l			57,10/2,5 l

Potassium iodide
≥99,5 %, p.a., ISO
Reagent used in iodometry and for the preparation of iodine-starch paper.

Danger H372

6750.1	250 g	glass	83,75 €
6750.3	500 g	glass	145,15 €
Original pack 6 x 500 g			137,89/500 g
6750.2	1 kg	glass	263,40 €
Original pack 6 x 1 kg			250,23/1 kg

Sodium nitrate
≥99 %, p.a., ACS, ISO
Oxidizing dissolving agent

Warning H272-H319

A136.1	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
A136.2	1 kg	plastic	47,20 €
Original pack 6 x 1 kg			44,84/1 kg
A136.3	2,5 kg	plastic	103,75 €

Sodium sulphite
≥98 %, p.a., ACS, anhydrous
For removal of chlorine and dissolution of cellulose, reagent for detection of iodate in the presence of chlorate and bromate, for absorption of NO_x in gas analysis.

P033.1	500 g	plastic	19,25 €
Original pack 6 x 500 g			18,29/500 g
P033.2	1 kg	plastic	28,95 €
Original pack 6 x 1 kg			27,50/1 kg
P033.3	2,5 kg	plastic	51,50 €

Sulphuric acid 96 %
ROTIPURAN® 96 %, p.a., ISO

Danger H290-H314

4623.3	250 ml	glass	19,25 €
4623.1	1 l	glass	31,75 €
Original pack 6 x 1 l			30,16/1 l
4623.4	1 l	plastic	28,95 €
Original pack 6 x 1 l			27,50/1 l
4623.2	2,5 l	glass	63,35 €
Original pack 4 x 2,5 l			60,18/2,5 l
4623.5	2,5 l	plastic	66,55 €
Original pack 4 x 2,5 l			63,22/2,5 l
4623.6	10 l	plastic	122,05 €

Starch 1 % indicator solution
in water, stabilized

T133.1	500 ml	plastic	25,30 €

Determination of chemical oxygen demand (COD)

COD (chemical oxygen demand) is a measure of all the oxidisable components in water under specific conditions. The water sample is mixed with sulphuric acid and heated together with a defined quantity of potassium dichromate, with silver sulphate added as the catalyst. Chloride must be removed beforehand or masked with mercury sulphate. The remaining potassium dichromate is measured by means of titration, using an ammonium iron(II) sulphate solution and ferroin as the indicator. The equivalent amount of oxygen can then be calculated from the amount of potassium dichromate that is used up.

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Ammonium iron(II) sulphate solution	0,12 mol/l - 0,12 N volumetric solution, for determination of COD	**KK60.1**	1 l	plastic	47,10
Ferroin indicator solution	for sewage analysis, for determination of COD	**T131.1**	100 ml	glass	32,15
Mercury(II) sulphate solution 80 g/l	in sulphuric acid potassium dichromate standard solution. 0,02 mol/l volumetric solution, for determination of COD	**X871.1**	1 l	glass	89,15
		X871.2	2,5 l	glass	178,35
Potassium dichromate solution	0,02 mol/l - 0,12 N volumetric standard solution, for determination of COD	**P720.1**	1 l	plastic	26,35
	1/24 mol/l - 0,25 N volumetric standard solution for determination of COD	**P721.1**	1 l	glass	31,10
Silver sulphate solution	10 g/l in sulphuric acid, for determination of COD NEW	**X870.1**	1 l	glass	67,20
		X870.2	2,5 l	glass	149,45

Determination of biological oxygen demand (BOD)

BOD (biochemical oxygen demand) is a measure of the amount of oxygen that microorganisms need to break down the organic material in a water sample over a specific period of time. It is important to calculate the oxygen concentration at the start and end of the measuring time, which is usually five days and is expressed as an index (BOD_5). Chemical, electrochemical or physical methods are used for this calculation.

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Manganese(II) chloride tetrahydrate	≥99 %, p.a.	**T881.3**	100 g	plastic	16,70
		T881.1	500 g	plastic	39,70
		T881.2	1 kg	plastic	63,35
Manganese(II) sulphate monohydrate	≥99 %, p.a., ACS	**4487.1**	250 g	plastic	32,15
		4487.2	500 g	plastic	56,90
Sodium azide	≥99 %, p.a.	**K305.1**	100 g	plastic	44,00
		K305.2	250 g	plastic	79,45
		K305.3	500 g	plastic	142,90
Sodium hydroxide	≥98 %, p.a., ISO, in pellets	**6771.3**	500 g	plastic	17,75
		6771.1	1 kg	plastic	26,80
		6771.2	5 kg	plastic	96,65
		6771.5	25 kg	plastic	364,45
Sodium thiosulphate pentahydrate	≥99,5 %, p.a., ACS	**P034.1**	500 g	plastic	21,00
		P034.2	1 kg	plastic	32,80
		P034.3	2,5 kg	plastic	65,50
		P034.5	25 kg	plastic	450,45
Starch 1 % indicator solution	in water, stabilized	**T133.1**	500 ml	plastic	25,30
Sulphuric acid	96 %, p.a., ISO	**4623.3**	250 ml	glass	19,25
		4623.1 *	1 l	glass	31,75
		4623.4	1 l	plastic	28,95
		4623.2	2,5 l	glass	63,35
		4623.5	2,5 l	plastic	66,55
		4623.6	10 l	plastic	122,05
Zinc iodide	≥98 %, powder	**2730.1**	25 g	glass	24,20

For additional product data and safety information, see chapter Chemicals A-Z.

Potassium permanganate index

The permanganate index measuring method is carried out in the same way as the COD method, only with potassium permanganate instead of potassium dichromate. This technique is used in drinking water analysis.

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Oxalic acid dihydrate	≥99,5 %, p.a., ACS, ISO	**T113.1**	500 g	plastic	32,15
		T113.2	1 kg	plastic	53,65
		T113.3	2,5 kg	plastic	122,45
Potassium permanganate solution	0,02 mol/l - 0,1 N volumetric standard solution	**K019.1**	1 l	glass	24,20
	0,1 mol/l - 0,5 N volumetric standard solution	**KK69.1**	1 l	glass	28,50
Sulphuric acid	96 %, p.a., ISO	**4623.3**	250 ml	glass	19,25
		4623.1	1 l	glass	31,75
		4623.4	1 l	plastic	28,95
		4623.2	2,5 l	glass	63,35
		4623.5	2,5 l	plastic	66,55
		4623.6	10 l	plastic	122,05

For additional product data and safety information, see chapter Chemicals A-Z.

Determination of surfactants

Benzethonium chloride solution is used to measure anionic detergents. In this method, the anionic detergent and the cationic detergent form a 1:1 salt in dichloromethane. The end point of the titration is indicated by methylene blue.

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Benzethonium chloride solution	0,004 mol/l - 0,004 M volumetric standard solution	**9217.1**	1 l	plastic	25,30
Dichloromethane	≥99,5 %, p.a., ACS, ISO	**6053.3**	100 ml	glass	16,05
		6053.1	1 l	glass	36,45
		6053.2	2,5 l	glass	66,55
		6053.4	10 l	tinplate	166,55
		6053.5	25 l	tinplate	317,15
Dimidium bromide	≥95 %, for biochemistry	**2217.1**	500 mg	glass	96,25
Methylene blue (C.I. 52015)	-	**A514.1**	10 g	glass	20,35
		A514.2	50 g	glass	48,30
		A514.3	100 g	glass	78,40

Determination of the hydrocarbon index

The hydrocarbon index is defined as the total of all organic substances that can be extracted with hexane, but cannot be adsorbed in Florisil® (magnesium silicate). On a covalent GC column, these elute between n-decane and n-tetracontane and have a boiling range of 175-525 °C. These include heating oils, diesel fuels, kerosene, lubricants and transmission fluids. Petrols are not detected using this method. ROTH offers an extensive range of products for the determination of the hydrocarbon index in accordance with EN ISO 9377-2-Mod. (DIN H53).

Standards

Acc. to ISO 9377-2-Mod. (DIN H53).

- Manufactured in accordance with **ISO Guide 34** in an accredited environment
- Tested in a laboratory accredited to **ISO/IEC 17025**
- Ideal for calibration of GC-FID, GC-TCD, GC-ECD, GC-MS, GC-MS-MS, LC-UV, LC-MS and LC-MS-MS

Product	Purity	Art. No.	Pack Qty.	Packaging	€
n-Alkane standard solution (C10-C40, all even)	16 components (each 50 mg/l) in n-hexane	**1772.1**	1 ml	glass ampoule	107,40
		1772.2	5 ml	glass ampoule	160,20
	16 components (each 100 mg/l) in n-hexane/petroleum ether (1/1)	**9331.1**	5 ml	glass ampoule	206,95
n-Alkane standard solution (C7, C8, C9, C10-C40, all even)	19 components (each 50 mg/l) in isooctane	**9629.1**	5 ml	glass ampoule	184,40
Extraction solvent stock solution	20 µl/l n-decane and 20 mg/l n-tetracontane in n-hexane	**1750.2**	10 ml	glass ampoule	90,20
Florisil® quality control standard	1000 mg/l mineral oil and 1000 mg/l diesel in n-hexane	**9334.1**	5 ml	glass ampoule	65,50
Standard mixture of mineral oils	500 mg/l mineral oil and 500 mg/l diesel in acetone	**1774.2**	5 ml	glass ampoule	103,10
Standard mixture of mineral oils	5000 mg/l mineral oil and 5000 mg/l diesel in n-hexane	**1773.2**	5 ml	glass ampoule	90,20
Stearyl stearate test solution	2000 mg/l in n-hexane	**1760.2**	10 ml	glass ampoule	121,40

Additional chemicals for determination of the hydrocarbon index

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Acetone	≥99,9 %, Pestilyse® plus	**7535.1**	2,5 l	glass	56,90
Florisil®	for Hydrocarbon Index analysis, 60-100 mesh	**CN39.1**	100 g	plastic	42,50
		CN39.3	500 g	plastic	142,45
		CN39.2	1 kg	plastic	224,70
		CN39.4	2,5 kg	plastic	461,20
n-Hexane	≥95 %, GC Ultra Grade	**KK48.1**	2,5 l	glass	103,75
	≥97,5 %, Pestilyse®	**T165.2**	1 l	glass	44,65
		T165.1	2,5 l	glass	102,05
		T165.3	4 l	glass	119,25
	≥96 %, Pestilyse® plus	**7567.1**	2,5 l	glass	98,40
Hydrochloric acid	≥25 %, p.a., ISO	**6331.1**	1 l	glass	18,85
		6331.3	1 l	plastic	16,70
		6331.2	2,5 l	glass	31,10
		6331.4	2,5 l	plastic	28,95
	NEW	**6331.7**	25 l	plastic	192,45
Magnesium sulphate heptahydrate	≥99 %, p.a., ACS	**P027.1**	500 g	plastic	24,65
		P027.2	1 kg	plastic	39,70
		P027.3	2,5 kg	plastic	74,10
Sodium sulphate	≥99 %, p.a., ACS, granules, anhydrous	**0966.1**	500 g	plastic	21,40
		0966.2	1 kg	plastic	31,10
		0966.3	5 kg	plastic	127,95
Petroleum ether 40-60 °C	Pestilyse® plus	**7588.1**	2,5 l	glass	71,95
	Pestilyse®	**T170.2**	1 l	glass	34,95
		T170.1	2,5 l	glass	71,95
		T170.3	4 l	glass	99,45

For additional product data and safety information, see chapter Chemicals A-Z.

SPE-glass column CHROMABOND® Na_2SO_4/Florisil®

Extraction of hydrocarbons from water according to DIN H53 / ISO DIS 9377-4

Special combination phase of sodium sulphate and Florisil®

Recommended appllication: Hydrocarbons from drinking, surface and waste water

Volume (ml)	Adsorbent weight (mg)	Art. No.	Pack Qty.	€
6	2000/2000	**N744.1**	30	196,00
6	2000/2000 BIG PACK	**N744.2**	250 (5x50)	1305,00

▶ GC capillary columns ROTI®CAP-1, ROTI®CAP-5 and ROTI®CAP-5HT see page 1623

Analysis of Food

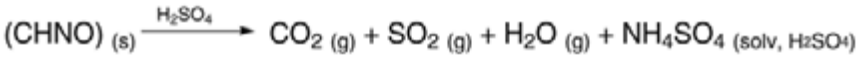
ROTH also offers reagents suitable for food analysis.
On the following pages, you will find the determination of
- Nitrogen according to Kjeldahl
- Sugar
- Mercury
- Trichinae
- Fat

and the determination of the
- Iodine value
- Acid value
- Peroxide value
- Saponification value

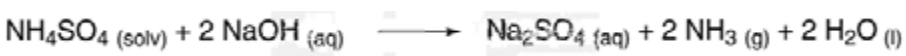
as well as other determining factors such as
- viscosity
- density
- hydroxyl value
- fluoride ions

Determination of nitrogen according to Kjeldahl

The most common technique for measuring the amount of nitrogen in organic matter is the Kjeldahl method, which is used in a wide range of sectors such as environmental analysis, food analysis, water analysis and agricultural analysis, as well as in the pharmaceutical and chemical industries. In this traditional method, a precisely weighed sample is broken down using concentrated sulphuric acid, a process which digests its organic contents and reacts nitrogen to form ammonium sulphate.

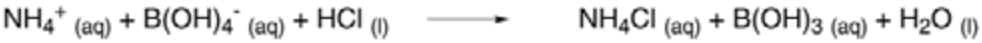


A catalyst or catalyst mixture consisting of copper, selenium, mercury and/or titanium is added to speed up the reaction. Sodium or potassium sulphate is used to give the sulphuric acid a higher boiling point. If the nitrogen is contained in a nitro, nitroso or azo compound, however, the mixture must be reduced with zinc before digestion takes place.
The nitrogen is now present in the sulphuric acid as ammonium sulphate. Adding a strong base (such as NaOH) neutralises the sulphuric acid and liberates ammonia from the solution.



The ammonia is led into an acid (such as boric acid) by means of steam distillation.

The resulting strong base (borate ion) is back-titrated with a strong acid (hydrochloric acid or sulphuric acid). The excess weak boric acid is not captured in the process. A Tashiro's indicator that changes colour in the acid is used for titration. The amount of acid that has been used up can then be converted into the amount of nitrogen in the sample.



To calculate the protein content of the sample, the varying nitrogen content of the amino acids must be checked and the relevant conversion factors applied. The nitrogen contained in food derives mainly from proteins, but different samples may also contain other sources of nitrogen.

Kjeldahl tablets

Product	Purity	Art. No.	Pack Qty.	€
Kjeldahl tablets (free of mercury and selenium)	Tablet 5 g	**HN19.1**	250 pieces	133,85
		HN19.2	1000 pieces	467,65
	Tablet 2,5 g	**HN20.1**	250 pieces	102,70
		HN20.2	1000 pieces	322,00
Kjeldahl tablets (Wieninger catalyst)	Tablet 2,5 g	**HN21.1**	250 pieces	104,85
		HN21.2	1000 pieces	342,95
Kjeldahl tablets (Missouri catalyst)	Tablet 2,5 g	**HN22.1**	250 pieces	92,35
		HN22.2	1000 pieces	306,40
Kjeldahl tablets antifoam	Tablet 1 g	**8225.1**	250 pieces	90,85
		8225.2	1000 pieces	299,95
Kjeldahl tablets C	Tablet 5,1 g	**8241.1**	250 pieces	114,95
		8241.2	1000 pieces	342,95
Kjeldahl tablets CK	Tablet 3,9 g	**8243.1**	250 pieces	114,95
		8243.2	1000 pieces	342,95
Kjeldahl tablets CT	Tablet 5,3 g	**9637.1**	250 pieces	114,95
		9637.2	1000 pieces	342,95
Kjeldahl tablets CX	Tablet 5,5 g	**8236.1**	250 pieces	114,95
		8236.2	1000 pieces	342,95
Kjeldahl tablets ST	Tablet 3,5 g	**9693.1**	250 pieces	114,95
		9693.2	1000 pieces	342,95
Kjeldahl tablets TCT	Tablet 3,71 g	**9763.1**	250 pieces	114,95
		9763.2	1000 pieces	342,95

- ▶ Kjeldahl flasks see page 136
- ▶ Weighing boats see page 193

Composition of the Kjeldahl tablets:

			Typical composition						
Art. No.	**Designation**	**Weight of tablet (g)**	**K_2SO_4**	**Na_2SO_4**	**$CuSO_4$**	**$CuSO_4 \cdot 5\ H2O$**	**TiO_2**	**Se**	**Anti-foam**
HN19	Kjeldahl tablets (mercury and selenium-free)	5	23,10 %	69,30 %	1,80 %	-	2,80 %	-	-
HN20	Kjeldahl tablets (mercury and selenium-free)	2,5	23,10 %	69,30 %	1,80 %	-	2,80 %	-	-
HN21	Kjeldahl tablets (Wieninger catalyst)	2,5	-	96,25 %	1,50 %	-	-	1,50 %	-
HN22	Kjeldahl tablets (Missouri catalyst)	2,5	48,40 %	48,30 %	0,30 %	-	-	-	-
8225	Kjeldahl tablets, anti-foam	1	-	97,00 %	-	-	-	-	3,00 %
8236	Kjeldahl tablets CX	5,5	90,91%	-	-	9,09 %	-	-	-
8241	Kjeldahl tablets C	5,1	98,04 %	-	-	1,96 %	-	-	-
8243	Kjeldahl tablets CK	3,9	89,74 %	-	-	10,26 %	-	-	-
9637	Kjeldahl tablets CT	5,3	94,34 %	-	-	2,83 %	2,83 %	-	-
9693	Kjeldahl tablets ST	3,5	99,90 %	-	-	-	-	0,10 %	-
9763	Kjeldahl tablets TCT	3,71	94,34 %	-	-	2,83 %	2,83 %	-	-

Note: 8225 Kjeldahl anti-foam tablets do not contain a catalyst.
Please use additional Kjeldahl tablet with catalyst.

Reagents for the determination of nitrogen acc. to Kjeldahl

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Ammonium sulphate	≥99,5 %, p.a., ACS, ISO	**3746.2**	250 g	plastic	13,45
		3746.1	1 kg	plastic	30,00
		3746.3	2,5 kg	plastic	54,30
		3746.4	5 kg	plastic	95,60
		3746.6	10 kg	plastic	153,65
		3746.5	25 kg	plastic	332,20
Boric acid	≥99,8 %, p.a., ACS, ISO	**6943.2**	250 g	plastic	20,35
		6943.1	1 kg	plastic	36,45
		6943.3	5 kg	plastic	147,20
		6943.5	25 kg	plastic	676,20
Boric acid solution	4 %, p.a.	**HN24.1**	1 l	plastic	18,20
		HN24.2	5 l	plastic	40,75
		HN24.3	10 l	plastic	66,55
Bromocresol green	ACS	**T115.1**	1 g	glass	17,10
		T115.2	5 g	glass	27,45
		T115.3	10 g	glass	46,80
		T115.4	25 g	glass	89,15
Copper(II) sulphate pentahydrate	≥99,5 %, p.a., ACS, ISO	**P024.1**	500 g	plastic	28,95
		P024.2	1 kg	plastic	49,35
		P024.3	2,5 kg	plastic	93,00
Hydrochloric acid (0,1 N)	0,1 mol/l - 0,1 N volumetric standard solution	NEW **K024.5**	500 ml	plastic	15,60
		K024.1	1 l	plastic	19,90
		K024.2	5 l	plastic	58,60
		K024.3	5 l	ROTI®CUBE	63,35
		K024.4	10 l	ROTI®CUBE	93,45
		K024.7	25 l	plastic	153,65
L-Lysine hydrochloride	≥98,5 %, Ph.Eur., USP, JP, for biochemistry	**9357.1**	100 g	plastic	18,20
		9357.2	1 kg	plastic	115,60
Methyl red (C.I. 13020)	p.a., ACS	**T120.1**	10 g	glass	15,60
		T120.2	25 g	glass	25,70
Mixed indicator 5	for ammonia titration	**T125.1**	250 ml	glass	57,95
Potassium sulphate	≥99 %, p.a., ACS, ISO	**P022.1**	500 g	plastic	39,70
		P022.2	1 kg	plastic	66,55
		P022.3	2,5 kg	plastic	150,00
D(+)-Saccharose	≥99,5 %, Ph.Eur.	**4661.1**	1 kg	plastic	19,90
		4661.2	5 kg	plastic	82,25
		4661.3	50 kg	cardboard	317,15
Sodium hydroxide	≥98 %, p.a., ISO, in pellets	**6771.3**	500 g	plastic	17,75
		6771.1	1 kg	plastic	26,80
		6771.2	5 kg	plastic	96,65
		6771.5	25 kg	plastic	364,45
Sodium hydroxide solution	≥32 %, p.a.	**T196.1**	1 l	plastic	30,00
		T196.2	2,5 l	plastic	57,95
		T196.3	5 l	plastic	91,30
Sulphuric acid	98 %, for determination of nitrogen	**X945.1**	1 l	glass	28,95
		X945.2	2,5 l	glass	59,05
	0,05 mol/l - 0,1 N volumetric standard solution	**K026.1**	1 l	plastic	19,90
		K026.2	5 l	plastic	58,60
		K026.3	5 l	ROTI®CUBE	63,35
		K026.4	10 l	ROTI®CUBE	93,45
		NEW **K026.7**	25 l	plastic	153,65
	0,1 mol/l - 0,2 N volumetric standard solution	**N072.1**	1 l	plastic	19,90
		N072.2	5 l	plastic	58,60
Tashiro's indicator solution	in ethanol, denatured	**2624.1**	250 ml	plastic	17,75
L-Tryptophan	≥98,5 %, Ph.Eur., for biochemistry	**4858.1**	10 g	glass	14,95
		4858.2	100 g	plastic	75,15
		4858.3	1 kg	plastic	611,70
Water	p.a., ACS	**T172.1**	1 l	plastic	11,30
		T172.2	2,5 l	plastic	22,50
		T172.3	5 l	plastic	32,15
		T172.5	30 l	plastic	121,40

For additional product data and safety information, see chapter Chemicals A-Z.

Kjeldahl method for determining the nitrogen content of milk NEW

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Ammonium sulphate	≥99,5 %, p.a., ACS, ISO	**3746.2**	250 g	plastic	13,45
		3746.1	1 kg	plastic	30,00
		3746.3	2,5 kg	plastic	54,30
		3746.4	5 kg	plastic	95,60
		3746.6	10 kg	plastic	153,65
		3746.5	25 kg	plastic	332,20
Boric acid solution	4 %, p.a.	**HN24.1**	1 l	plastic	18,20
		HN24.4	2,5 l	plastic	28,95
		HN24.2	5 l	plastic	40,75
		HN24.3	10 l	plastic	66,55
Bromocresol green	ACS	**T115.1**	1 g	glass	17,10
		T115.2	5 g	glass	27,45
		T115.3	10 g	glass	46,80
		T115.4	25 g	glass	89,15
Copper(II) sulphate pentahydrate	≥99,5 %, p.a., ACS, ISO	**P024.1**	500 g	plastic	28,95
		P024.2	1 kg	plastic	49,35
		P024.3	2,5 kg	plastic	93,00
Ethanol 96 % denatured	≥96 %	**T171.5**	1 l	plastic	12,80
		T171.1	2,5 l	glass	24,65
		T171.3	2,5 l	plastic	22,50
		T171.4	5 l	plastic	41,85
		T171.6	10 l	tinplate	73,65
		T171.2	25 l	tinplate	124,60
Hydrochloric acid	0,1 mol/l - 0,1 N volumetric standard solution	**K024.5**	500 ml	plastic	15,60
		K024.1	1 l	plastic	19,90
		K024.2	5 l	plastic	58,60
		K024.3	5 l	ROTI®CUBE	63,35
		K024.4	10 l	ROTI®CUBE	93,45
		K024.7	25 l	plastic	153,65
L-Lysine hydrochloride	≥98,5 %, Ph.Eur., USP, JP, for biochemistry	**9357.1**	100 g	plastic	18,20
		9357.3	250 g	plastic	37,55
		9357.4	500 g	plastic	64,40
		9357.2	1 kg	plastic	115,60
Methyl red (C.I. 13020)	p.a., ACS	**T120.1**	10 g	glass	15,60
		T120.2	25 g	glass	25,70
Potassium sulphate	≥99 %, p.a., ACS, ISO	**P022.1**	500 g	plastic	39,70
		P022.2	1 kg	plastic	66,55
		P022.3	2,5 kg	plastic	150,00
Sodium hydroxide	≥98 %, p.a., ISO, in pellets	**6771.3**	500 g	plastic	17,75
		6771.1	1 kg	plastic	26,80
		6771.2	5 kg	plastic	96,65
		6771.5	25 kg	plastic	364,45
D(+)-Saccharose	≥99,5 %, Ph.Eur.	**4661.1**	1 kg	plastic	19,90
		4661.2	5 kg	plastic	82,25
		4661.4	10 kg	plastic	100,95
		4661.3	50 kg	cardboard	317,15
Sulphuric acid (0,1 N)	0,05 mol/l - 0,1 N volumetric standard solution	**K026.1**	1 l	plastic	19,90
		K026.2	5 l	plastic	58,60
		K026.3	5 l	ROTI®CUBE	63,35
		K026.4	10 l	ROTI®CUBE	93,45
		K026.7	25 l	plastic	153,65
L-Tryptophan	≥98,5 %, Ph.Eur., for biochemistry	**4858.1**	10 g	glass	14,95
		4858.2	100 g	plastic	75,15
		4858.4	250 g	plastic	170,95
		4858.3	1 kg	plastic	611,70

Determining the nitrogen content of sludge, biowaste and soil

NEW

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Boric acid	≥99,8 %, p.a., ACS, ISO	**6943.2**	250 g	plastic	20,35
		6943.4	500 g	plastic	25,70
		6943.1	1 kg	plastic	36,45
		6943.6	2,5 kg	plastic	76,25
		6943.3	5 kg	plastic	147,20
		6943.5	25 kg	plastic	676,20
Bromocresol green	ACS	**T115.1**	1 g	glass	17,10
		T115.2	5 g	glass	27,45
		T115.3	10 g	glass	46,80
		T115.4	25 g	glass	89,15
Ethanol 96 % denatured	≥96 %	**T171.5**	1 l	plastic	12,80
		T171.1	2,5 l	glass	24,65
		T171.3	2,5 l	plastic	22,50
		T171.4	5 l	plastic	41,85
		T171.6	10 l	tinplate	73,65
		T171.2	25 l	tinplate	124,60
Hydrochloric acid	0,1 mol/l - 0,1 N volumetric standard solution	**K024.5**	500 ml	plastic	15,60
		K024.1	1 l	plastic	19,90
		K024.2	5 l	plastic	58,60
		K024.3	5 l	ROTI®CUBE	63,35
		K024.4	10 l	ROTI®CUBE	93,45
		K024.7	25 l	plastic	153,65
Kjeldahl tablets (free of mercury and selenium)	Tablet 5 g	**HN19.1**	250 pieces	plastic	133,85
		HN19.2	1000 pieces	plastic	467,65
		HN20.1	250 pieces	plastic	102,70
		HN20.2	1000 pieces	plastic	322,00
Methyl red (C.I. 13020)	p.a., ACS	**T120.1**	10 g	glass	15,60
		T120.2	25 g	glass	25,70
Sulphuric acid (0,1 N)	0,05 mol/l - 0,1 N volumetric standard solution	**K026.1**	1 l	plastic	19,90
		K026.2	5 l	plastic	58,60
		K026.3	5 l	ROTI®CUBE	63,35
		K026.4	10 l	ROTI®CUBE	93,45
		K026.7	25 l	plastic	153,65
		N072.1	1 l	plastic	19,90
		N072.2	5 l	plastic	58,60
Water	p.a., ACS	**T172.1**	1 l	plastic	11,30
		T172.2	2,5 l	plastic	22,50
		T172.3	5 l	plastic	32,15
		T172.5	30 l	plastic	121,40

Determination of Sugar

Fehling's test:

Fehling's test is used to identify reducing agents, such as aldehydes and reducing sugars. Combining the two separate solutions (Fehling's I and Fehling's II) produces a deep-blue tartrate-copper(II) complex.
Adding a reducing sample then causes a red pigment consisting mainly of copper(I) oxide to precipitate out of the mixture. This change in colour does not happen in the presence of sucrose or ketones.

Fehling's solution I

for sugar determination, reag. Ph.Eur.
Cupric sulphate solution, Copper(II) sulphate solution

Danger H318-H410

N055.1	1 l	plastic	32,15 €
Original pack 6 x 1 l			30,54/1 l

Fehling's solution II

for sugar determination, reag. Ph.Eur.
Alkaline potassium sodium tartrate solution
Potassium sodium tartrate solution

Danger H290-H314

N056.1	1 l	plastic	45,70 €
Original pack 6 x 1 l			43,42/1 l

Benedict reagent

As variant for Fehling's test, also for verification of reduced sugars. Due to the different composition, the Benedict reagent is less alkaline and more stable (due to the citrate) than the Fehling solutions.

Benedict's reagent

for sugar determination

Warning H319-H411

Type analysis:
Appearance. ..... blue solution
Density (20 °C). ..... 1,15-1,19 g/cm³
Formulation: Sodium carbonate anhydrous, tri-Sodium citrate dihydrate, Copper(II) sulphate pentahydrate, water

0010.1	100 ml	dropp. bottle	19,25 €

Luff-Schoorl method:

This method can be used to calculate the amount of reducing sugars, such as D-glucose, D-fructose, D-lactose and D-maltose, that a sample contains. In this method, the copper(II) ions in an alkaline solution are reduced by the sugar and determined by means of back-titration of the excess reagent added. Non-reducing sugars, such as D-sucrose, are not captured by this method. To determine the amount of this sugar present, it must first be broken down into reducing monosaccharides via acid hydrolysis.

Luff-Schoorl's solution

for sugar determination

Warning H319-H411

X874.1	1 l	plastic	32,80 €
Original pack 6 x 1 l			31,16/1 l

Carrez clarification:

The Carrez clarification technique is used primarily in sugar analysis to eliminate turbidity.
Two solutions in equal parts are added to the solution to be clarified, which removes any disruptive colloids.

Carrez solution I

for determination of sugars and starch
Zinc acetate and acetic acid solution

H411

9944.1	500 ml	plastic	36,05 €

Carrez solution II

for determination of sugars and starch
Potassium hexacyanoferrate(II) solution

9950.1	500 ml	plastic	36,05 €

Selivanov's test: NEW

Selivanov's test involves acidifying a sugar solution with concentrated hydrochloric acid, adding an ethanolic resorcinol solution and heating. Ketoses react quickly to form a red-coloured dye, while aldoses do not react at all, or only react slowly.
The following products are required to produce the reagent:

Ethanol
ROTIPURAN® ≥99,8 %, p.a.

Danger H225-H319

9065.1	1 l	glass	83,75 €
Original pack 6 x 1 l			79,56/1 l
9065.3	1 l	plastic	82,70 €
Original pack 6 x 1 l			78,57/1 l
9065.2	2,5 l	glass	169,35 €
Original pack 4 x 2,5 l			160,88/2,5 l
9065.4	2,5 l	plastic	167,20 €
Original pack 4 x 2,5 l			158,84/2,5 l
9065.5	5 l	plastic	300,50 €
Original pack 2 x 5 l			285,48/5 l
9065.6	25 l	tinplate	1048,15 €

Resorcinol
≥99 %, for biochemistry

Warning H400-H302-H315-H319

5727.1	100 g	plastic	21,40 €
5727.2	500 g	plastic	55,80 €
Original pack 6 x 500 g			53,01/500 g
5727.3	1 kg	plastic	96,25 €
Original pack 6 x 1 kg			91,44/1 kg
5727.4	2,5 kg	plastic	207,40 €

Hydrochloric acid fuming 37 %
ROTIPURAN® 37 %, p.a., ACS, ISO

Danger H290-H314-H335

4625.1	1 l	glass	21,00 €
Original pack 6 x 1 l			19,95/1 l
4625.2	2,5 l	glass	33,25 €
Original pack 4 x 2,5 l			31,59/2,5 l
4625.3	10 l	plastic	82,70 €

Barfoed's test: NEW

Barfoed's test is used to distinguish monosaccharides from disaccharides, oligosaccharides and polysaccharides. Barfoed's reagent is added to the sugar solution, which is then heated for a few minutes in a water bath. Monosaccharides turn a reddish colour, while disaccharides only react after they have been boiled for a longer period.
The following products are required to produce the reagent:

Copper(II) acetate monohydrate
≥99 %, p.a., ACS

Danger H302-H318-H410

HN30.1	50 g	plastic	22,05 €
HN30.2	100 g	plastic	33,25 €
HN30.3	250 g	plastic	68,70 €

Sodium acetate
≥99 %, p.a., ACS, anhydrous

6773.1	250 g	plastic	25,70 €
6773.2	1 kg	plastic	66,55 €
Original pack 6 x 1 kg			63,22/1 kg
6773.3	2,5 kg	plastic	139,25 €
6773.5	25 kg	plastic	962,15 €

Acetic acid 100 %
ROTIPURAN® 100 %, p.a.

Danger H314-H226

3738.1	1 l	glass	25,30 €
Original pack 6 x 1 l			24,04/1 l
3738.4	1 l	plastic	23,15 €
Original pack 6 x 1 l			21,99/1 l
3738.2	2,5 l	glass	53,65 €
Original pack 4 x 2,5 l			50,97/2,5 l
3738.5	2,5 l	plastic	51,50 €
Original pack 4 x 2,5 l			48,93/2,5 l
3738.6	5 l	plastic	76,25 €
Original pack 2 x 5 l			72,44/5 l
3738.3	10 l	plastic	128,90 €

Molisch's test: NEW

Molisch's reagent is added to a diluted sample of monosaccharide and concentrated sulphuric acid is added down the sides of the test tube to form a layer beneath the solution. A purple ring forms at the interface between the layers. Since nucleic acids and glycoproteins also contain monosaccharides, they may react as well.
The following products are required to produce the reagent:

1-Naphthol

≥99,5 %, p.a.

Danger H318-H302+H311-H335-H315

KK14.1	50 g	glass	40,75 €
KK14.2	100 g	glass	63,35 €

Ethanol

ROTIPURAN® ≥99,8 %, p.a.

Danger H225-H319

9065.1	1 l	glass	83,75 €
Original pack 6 x 1 l			79,56/1 l
9065.3	1 l	plastic	82,70 €
Original pack 6 x 1 l			78,57/1 l
9065.2	2,5 l	glass	169,35 €
Original pack 4 x 2,5 l			160,88/2,5 l
9065.4	2,5 l	plastic	167,20 €
Original pack 4 x 2,5 l			158,84/2,5 l
9065.5	5 l	plastic	300,50 €
Original pack 2 x 5 l			285,48/5 l
9065.6	25 l	tinplate	1048,15 €

Sulphuric acid 96 %

ROTIPURAN® 96 %, p.a., ISO

Danger H290-H314

4623.3	250 ml	glass	19,25 €
4623.1	1 l	glass	31,75 €
Original pack 6 x 1 l			30,16/1 l
4623.4	1 l	plastic	28,95 €
Original pack 6 x 1 l			27,50/1 l
4623.2	2,5 l	glass	63,35 €
Original pack 4 x 2,5 l			60,18/2,5 l
4623.5	2,5 l	plastic	66,55 €
Original pack 4 x 2,5 l			63,22/2,5 l
4623.6	10 l	plastic	122,05 €

Tollens' test or silver-mirror test: NEW

Some ammoniacal silver nitrate solution is added to an aqueous test solution, which is then heated for several minutes. If reducing substances are present, elemental silver deposits on the glass wall, resulting in the mirror effect.
The following products are required to produce the reagent:

Silver nitrate

≥99,9 %, p.a.

Danger H272-H314-H410

7908.1	50 g	plastic	117,20 €
7908.2	250 g	plastic	489,15 €
7908.3	1 kg	plastic	1714,65 €
Original pack 6 x 1 kg			1628,92/1 kg

Ammonia solution 30 %

ROTIPURAN® 30 %, p.a., ACS

Danger H290-H314-H400-H335

CP17.1	1 l	glass	21,00 €
Original pack 6 x 1 l			19,95/1 l
CP17.2	2,5 l	glass	33,90 €
Original pack 4 x 2,5 l			32,21/2,5 l
CP17.3	5 l	PE/steel	64,40 €
Original pack 2 x 5 l			61,18/5 l
CP17.4	10 l	PE/steel	107,40 €
CP17.5	25 l	PE/steel	177,40 €

Determination of sucrose and glucose content using the enzymatic method in accordance with DIN 10326

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Adenosin-5'-triphosphate disodium salt (ATP)	≥98 %, for biochemistry	**HN35.1**	5 g	glass	24,20
		HN35.2	10 g	glass	34,30
		HN35.3	25 g	glass	64,00
		HN35.4	100 g	glass	209,65
Citric acid monohydrate	≥99,5 %, p.a., ACS, ISO	**3958.2**	500 g	plastic	19,25
		3958.1	1 kg	plastic	31,10
		3958.3	2,5 kg	plastic	57,55
		3958.4	5 kg	plastic	105,90
		3958.5	25 kg	plastic	375,20
Magnesium sulphate heptahydrate	≥99 %, p.a., ACS	**P027.1**	500 g	plastic	24,65
		P027.2	1 kg	plastic	39,70
		P027.3	2,5 kg	plastic	74,10
NADP disodium salt	≥97 %, for biochemistry	**AE13.1**	250 mg	glass	37,10
		AE13.2	500 mg	glass	66,55
		AE13.3	1 g	glass	124,60
Potassium hexacyanoferrate(II) trihydrate	≥99 %, p.a., ACS, ISO	**P745.1**	500 g	plastic	93,00
		P745.2	1 kg	plastic	167,60
		P745.3	2,5 kg	plastic	364,45
tri-Sodium citrate dihydrate	≥99 %, Ph.Eur.	**4088.3**	500 g	plastic	13,90
		4088.1	1 kg	plastic	23,15
		4088.2	5 kg	plastic	90,85
		4088.5	25 kg	plastic	252,65
Sodium hydrogen carbonate	≥99,5 %, p.a., ACS, ISO	**6885.2**	500 g	plastic	16,05
		6885.1	1 kg	plastic	24,20
		6885.3	5 kg	plastic	85,90
		6885.5	25 kg	plastic	353,70
Sodium hydroxide solution (2 N)	2 mol/l - 2 N volumetric standard solution	**T135.1**	1 l	plastic	20,35
		T135.2	5 l	plastic	66,15
		T135.3	5 l	ROTI®CUBE	71,50
Triethanolamine hydrochloride	≥99 %, for biochemistry	**4804.1**	100 g	plastic	60,10
Water	p.a., ACS	**T172.1**	1 l	plastic	11,30
		T172.2	2,5 l	plastic	22,50
		T172.3	5 l	plastic	32,15
		T172.5	30 l	plastic	121,40
Zinc sulphate heptahydrate	≥99,5 %, p.a., ACS	**K301.1**	500 g	plastic	25,30
		K301.2	1 kg	plastic	44,00
		K301.3	2,5 kg	plastic	80,55
		K301.5	25 kg	plastic	665,45

For additional product data and safety information, see chapter Chemicals A-Z.

Horne method of sugar analysis

Anthrone

p.a., ACS

Reagent for carbohydrates

2673.1	10 g	plastic	26,35 €
2673.2	25 g	plastic	40,75 €
2673.3	100 g	plastic	110,65 €

Lead(II) acetate, basic

≥33 % PbO, p.a., ACS

For the analysis of sugar acc. Horne.

Danger H351-H360Df-H373-H410

2559.3	25 g	plastic	14,95 €
2559.1	500 g	plastic	38,60 €
Original pack 6 x 500 g			36,67/500 g
2559.2	1 kg	plastic	57,55 €
Original pack 6 x 1 kg			54,67/1 kg

Determination of mercury

Mercury has been used in technical applications since ancient times. Its high mobility means that it is particularly prevalent in the environment. Yet huge amounts of it are continuously being released into the atmosphere, for example through combustion reactions. Mercury forms organic compounds that are fat-soluble, which enables them to enter the food chain. The two most commonly used standard methods for analysing mercury are the AAS (atomic absorption spectroscopy) procedure and the ICP (inductively coupled plasma) technique. It goes without saying that the reagents used to prepare samples must not contain mercury. ROTH offers these reagents with a mercury content of less than 0,005 ppm.

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Hydrochloric acid fuming 37 %	37 %, p.a., ISO, max. 0,005 ppm Hg	**X942.1**	1 l	glass	25,30
		X942.2	2,5 l	glass	33,90
Nitric acid 65 %	65 %, p.a., ISO, max. 0,005 ppm Hg	**X943.1**	1 l	glass	31,75
		X943.2	2,5 l	glass	62,25
Potassium permanganate	≥99 %, p.a., ACS, max. 0,005 ppm Hg	**KK08.1**	500 g	plastic	44,00
		KK08.2	1 kg	plastic	66,55
Sulphuric acid 95-98 %	95-98 %, p.a., ISO, max. 0,005 ppm Hg	**X944.1**	1 l	glass	35,40
		X944.2	2,5 l	glass	66,55
Tin(II) chloride dihydrate	≥98 %, p.a., max. 0,005 ppm Hg	**KK07.1**	100 g	glass	48,30
		KK07.2	250 g	glass	107,00

Determination of trichina

Trichina (*Trichinella*, ssp.) are small roundworms approximately 1 mm long that live as parasites in the skeletal muscles of mammals, birds and reptiles. They can be transferred to a new host (human or animal) through the consumption of raw meat containing infectious larvae in the muscle tissue. Meat intended for human consumption must be inspected in accordance with Regulation (EU) No. 2075/2005. ROTH offers reagents suitable for this purpose.

Hydrochloric acid 25 %

ROTIPURAN® ≥25 %, p.a., ISO

Hydrogen chloride

HCl

M 36,46 g/mol

Danger H314-H290-H335

6331.1	1 l	glass	18,85 €
Original pack 6 x 1 l			17,91/1 l
6331.3	1 l	plastic	16,70 €
Original pack 6 x 1 l			15,87/1 l
6331.2	2,5 l	glass	31,10 €
Original pack 4 x 2,5 l			29,55/2,5 l
6331.4	2,5 l	plastic	28,95 €
Original pack 4 x 2,5 l			27,50/2,5 l
6331.7	25 l	plastic	192,45 €

Potassium hydroxide

≥85 %, p.a., pellets

Reagent for the preparation of potassium hydroxide solution. Filled under protective gas.

KOH

M 56,11 g/mol

Danger H314-H290-H302

6751.3	250 g	plastic	16,70 €
6751.1	1 kg	plastic	27,45 €
Original pack 6 x 1 kg			26,08/1 kg
6751.2	5 kg	plastic	94,10 €
6751.5	25 kg	plastic	289,20 €

Pepsin

≥2000 FIP-U/g, for biochemistry

From porcine gastric mucosa. For detection of trichina in meat.

M 35000 g/mol

Storage temp.: +4 °C

Danger H334-H335-H315-H319

Acidic endopeptidase, the inactive precursor of which, pepsinogen, is produced in the stomach mucosa. Pepsin cleaves proteins preferentially at carboxylic groups of aromatic amino acids such as phenylalanine and tyrosine. Highly active pepsine is preferably used for detection of trichina in pre-digested muscle meat of animals.
1 FIP unit (≈Ph. Eur. unit) of Pepsin activity will, during incubation at 25±0.1 °C for one minute, cause decomposition of haemoglobin to an extent comparable with the colour caused by reaction of 1 micromole of tyrosine with the same dye. 2 000 FIP-Units correspond to 1: 10 000 NF-U and 1: 12 500 BP-U.

Application:
Well soluble in water, stable in aqueous solutions of pH up to 5.5, unstable above pH 6.0. Irreversible inactivated in alkaline medium. Solution is stable in temperatures of up to 60 °C, and also in higher concentrations of urea and guanidine.
pH optimum: 1-2
Isoelectric point: 1.0

KK38.1	50 g	plastic	59,05 €
KK38.2	100 g	plastic	94,50 €
KK38.3	250 g	plastic	193,00 €
KK38.4	1 kg	plastic	697,70 €
Original pack 6 x 1 kg			662,82/1 kg

Rotilabo®-aluminium foils

Ideal for covering up, wrapping and insulating. Approved for food handling. Al-content over 99.0 %. In cutter box (articles 0192.1 and 1770.2 refill rollers without cutter box).

Thickness (µm)	Width (mm)	Length (m)	Art. No.	Pack Qty. (roll)	€
12	295	150	**1399.1**	1	24,70
13	300	20	**0192.1**	6	28,50
15	300	150	**AA76.1**	1	24,65
15	450	150	**AA77.1**	1	40,35
16	300	100	**1770.1**	1	22,05
			1770.2	4	89,90
18	440	150	**1502.1**	1	48,40
20	450	150	**0954.1**	1	56,95
30	500	100	**2596.1**	1	62,35

Determination of fat

Fat analysis is used to determine the fat content and fat composition of foodstuffs. Individual components or total fats levels can be calculated depending on the purpose of testing. Different components are subject to different procedures by law, such as the Gerber method or the Van Gulik technique.

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Diethyl ether	≥99,5 %, p.a., stab.	**3942.1**	1 l	glass	46,15
		3942.6	2,5 l	glass	81,60
		3942.4	5 l	aluminium	155,35
		3942.5	25 l	tinplate	450,45
Isoamyl alcohol	≥98,5 %, p.a., ACS	**T870.1**	500 ml	glass	41,85
		T870.2	1 l	glass	79,45
		T870.3	2,5 l	glass	175,15
Petroleum ether 40-60 °C	p.a., ACS, ISO	**T173.1**	1 l	glass	34,30
		T173.2	2,5 l	glass	64,40
		T173.3	5 l	aluminium	107,40
		T173.5	25 l	tinplate	342,95
Sulphuric acid	90-91 %, for determination of fat	**X946.1**	1 l	plastic	22,05
		X946.2	2,5 l	plastic	40,75
	62 %, p.a., for determination of fat in cheese (d 1,52) acc to van Gulik	**CN89.1**	1 l	plastic	25,70
		CN89.2	2,5 l	plastic	42,50
		CN89.3	5 l	plastic	69,35
		CN89.4	10 l	plastic	114,50
		CN89.5	25 l	plastic	246,20

For additional product data and safety information, see chapter Chemicals A-Z.

Fat- and protein-containing samples should be cleared using Carrez reagents:

- Add sample to 60 ml water
- Subsequently add, while mixing after each step:
  a) 5 ml Carrez-I-solution, Art. No. 9944
  (or 7,2 g zinc sulphate heptahydrate, Art. No. K301 add 100 ml)
  b) 5 ml Carrez-II-solution, Art. No. 9950
  (or 3,6 g potassium hexacyanoferrate(II), Art. No. P745 add 100 ml)
- Adjust pH to 7,5 - 8,5 by adding NaOH (0,1 M)
- Fill volumetric flask up to mark, mix, and filter

Iodine value determination

The iodine value is a measure of the unsaturated fatty acids in glycerides. The more olefinic double bonds there are in the fat, the higher the iodine value.

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Acetic acid	100 %, p.a.	**3738.1**	1 l	glass	25,30
		3738.4	1 l	plastic	23,15
		3738.2	2,5 l	glass	53,65
		3738.5	2,5 l	plastic	51,50
		3738.6	5 l	plastic	76,25
		3738.3	10 l	plastic	128,90
Cyclohexane	≥99,5 %, p.a., ACS, ISO	**6886.1**	1 l	glass	51,50
		6886.2	2,5 l	glass	98,80
Iodine	≥99,8 %, p.a., ACS, resublimated	**X864.1**	100 g	glass	67,20
		X864.2	250 g	glass	122,05
		X864.3	1 kg	glass	428,95
Iodine solution	0,05 mol I_2/l - 0,1 N	**K016.1**	1 l	glass	34,30
		K016.2	2,5 l	glass	71,50
	0,5 mol I_2/l - 1 N	**X868.1**	1 l	glass	107,40
Mercury(II) acetate	≥99 %, p.a., ACS	**KK05.1**	50 g	glass	58,60
		KK05.2	100 g	glass	105,90
Potassium iodide solution	10 %, p.a.	**8121.1**	1 l	plastic	48,30
Sodium thiosulphate solution	0,1 mol/l - 0,1 N	**K022.1**	1 l	glass	18,85
		K022.2	5 l	plastic	50,45
		K022.3	5 l	ROTI®CUBE	56,45
		K022.4	10 l	ROTI®CUBE	87,00
Starch 1 % indicator solution	in water, stabilized	**T133.1**	500 ml	plastic	25,30
Trichloromethane/ Chloroform	≥99 %, p.a.	**3313.4**	100 ml	glass	16,70
		3313.1	1 l	glass	42,50
		3313.2	2,5 l	glass	88,70
		3313.5	25 l	tinplate	461,20
Wijs-solution	0,1 mol ICl/l - 0,2 N	**CN36.1**	1 l	glass	78,40

For additional product data and safety information, see chapter Chemicals A-Z.

Acid value determination

The acid value expresses the acidic components of fats. To calculate this value, a sample is dissolved in a solvent and titrated with a solution of potassium hydroxide with phenolphthalein as the colour indicator. Only the free fatty acids are captured; the fatty acids bound in the glycerides are not.

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Alkali blue 6B (C.I. 42750)	p.a.	**5155.1**	10 g	glass	21,00
		5155.2	25 g	glass	41,40
		5155.3	100 g	glass	121,40
tert-Butyl methyl ether	≥99,5 %, p.a.	**8462.1**	1 l	glass	39,25
		8462.2	2,5 l	glass	79,05
		8462.3	10 l	tinplate	260,70
		8462.4	25 l	tinplate	579,45
Diethyl ether	≥99,5 %, p.a., stab.	**3942.1**	1 l	glass	46,15
		3942.6	2,5 l	glass	81,60
		3942.4	5 l	aluminium	155,35
		3942.5	25 l	tinplate	450,45
Ethanol	96 %, Ph.Eur., extra pure	**P075.1**	1 l	glass	73,00
		P075.3	1 l	plastic	71,95
		P075.2	2,5 l	glass	153,65
		P075.4	2,5 l	plastic	150,40
		P075.5	5 l	plastic	282,65
		P075.6	10 l	tinplate	450,45
Methanol	≥99,9 %, p.a., ACS, ISO	**4627.1**	1 l	glass	26,35
		4627.4	1 l	plastic	24,65
		4627.2	2,5 l	glass	45,70
		4627.5	2,5 l	plastic	42,50
		4627.6	5 l	plastic	77,95
		4627.3	25 l	tinplate	166,10
Petroleum ether 40-60 °C	p.a., ACS, ISO	**T173.1**	1 l	glass	34,30
		T173.2	2,5 l	glass	64,40
		T173.3	5 l	aluminium	107,40
		T173.5	25 l	tinplate	342,95
Phenolphthalein indicator solution	1 % in ethanol 90 %, denatured	**K034.1**	250 ml	glass	21,40
		K034.2	500 ml	glass	28,95
		K034.3	1 l	glass	38,60
Potassium hydroxide solution in ethanol	0,1 mol/l - 0,1 N	**P706.1**	1 l	glass	40,75
	0,5 mol/l - 0,5 N	**P707.1**	1 l	glass	58,60
Potassium hydroxide solution in methanol	0,1 mol/l - 0,1 N	**KK66.1**	1 l	glass	32,80
	0,5 mol/l - 0,5 N	**KK67.1**	1 l	glass	30,65
2-Propanol	≥99,8 %, p.a., ACS, ISO	**6752.1**	1 l	glass	25,30
		6752.3	1 l	plastic	24,20
		6752.2	2,5 l	glass	56,90
		6752.4	2,5 l	plastic	54,75
		6752.5	5 l	plastic	84,85
	NEW	**6752.7**	10 l	tinplate	138,70
		6752.6	25 l	tinplate	246,75
Thymolphthalein	p.a., ACS	**HN97.1**	5 g	glass	19,90
		HN97.2	10 g	glass	33,25
		HN97.3	50 g	glass	120,95
Toluene	≥99,5 %, p.a., ACS, ISO	**7115.1**	1 l	glass	38,20
		7115.2	2,5 l	glass	75,15
		7115.3	5 l	aluminium	105,90
		7115.4	25 l	tinplate	299,95
Water	p.a., ACS	**T172.1**	1 l	plastic	11,30
		T172.2	2,5 l	plastic	22,50
		T172.3	5 l	plastic	32,15
		T172.5	30 l	plastic	121,40

Peroxide value determination

The peroxide value of a substance denotes how much peroxide it contains. In a mixture of glacial acetic acid and chloroform, the peroxide oxidises the iodide into elementary iodine. The resulting quantity of iodine is then back-titrated using a thiosulphate solution (where a starch solution is used as the indicator). The blank solution tested in parallel is used to calculate the results.

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Acetic acid	100 %, p.a.	**3738.1**	1 l	glass	25,30
		3738.4	1 l	plastic	23,15
		3738.2	2,5 l	glass	53,65
		3738.5	2,5 l	plastic	51,50
		3738.6	5 l	plastic	76,25
		3738.3	10 l	plastic	128,90
Potassium iodide solution	10 %, p.a.	**8121.1**	1 l	plastic	48,30
Sodium thiosulphate solution	0,1 mol/l - 0,1 N volumetric standard solution	**K022.1**	1 l	glass	18,85
		K022.2	5 l	plastic	50,45
		K022.3	5 l	ROTI®CUBE	56,45
		K022.4	10 l	ROTI®CUBE	87,00
Starch 1 % indicator solution	in water, stabilized	**T133.1**	500 ml	plastic	25,30
Trichloromethane/ Chloroform	≥99 %, p.a.	**3313.4**	100 ml	glass	16,70
		3313.1	1 l	glass	42,50
		3313.2	2,5 l	glass	88,70
		3313.5	25 l	tinplate	461,20

For additional product data and safety information, see chapter Chemicals A-Z.

Saponification value

The saponification value denotes the amount of potassium hydroxide required to neutralise free fatty acids and saponify bound fatty acids. The lower the average molar mass of the fat, the higher the saponification value. The sample is heated under reflux in a defined quantity of ethanolic potassium hydroxide solution and the non-used alkaline solution is titrated with hydrochloric acid.

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Alkali blue 6B (C.I. 42750)	p.a.	**5155.1**	10 g	glass	21,00
		5155.2	25 g	glass	41,40
		5155.3	100 g	glass	121,40
Ethanol	96 %, Ph.Eur., extra pure	**P075.1**	1 l	glass	73,00
		P075.3	1 l	plastic	71,95
		P075.2	2,5 l	glass	153,65
		P075.4	2,5 l	plastic	150,40
		P075.5	5 l	plastic	282,65
		P075.6	10 l	tinplate	450,45
Hydrochloric acid	0,5 mol/l - 0,5 N volumetric standard solution	**P708.1**	1 l	plastic	19,90
		P708.2	5 l	plastic	58,60
		P708.3	5 l	ROTI®CUBE	63,35
		P708.4	10 l	ROTI®CUBE	93,45
Phenolphthalein indicator solution	0,1 % in ethanol 90 %, denatured	**8145.1**	250 ml	glass	20,35
		8145.2	500 ml	glass	27,85
Potassium hydroxide solution in ethanol	0,5 mol/l - 0,5 N volumetric standard solution	**P707.1**	1 l	glass	58,60

Further deteminations

Determination of viscosity

Viscosity is the measure of a fluid's resistance to flow. The lower a liquid's viscosity, the thinner it is and the more easy it is to pour; the higher a liquid's viscosity, the thicker it is and the harder it is to pour. The particles in viscous liquids are less mobile as they have to overcome the van der Waals forces and the bonds between the particles in them are stronger.

Determination of viscosity

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Acetone	≥99,5 %, for synthesis	**5025.1**	1 l	glass	18,85
		5025.2	2,5 l	glass	41,40
		5025.5	2,5 l	plastic	39,25
		5025.6	5 l	plastic	53,65
		5025.3	10 l	tinplate	95,60
		5025.4	25 l	tinplate	203,20
Formic acid	≥98 %, p.a., ACS	**4724.3**	500 ml	glass	21,40
		4724.1	1 l	glass	35,40
		4724.2	2,5 l	glass	75,15
m-Cresol	≥99 %, for synthesis NEW	**9269.1**	250 g	glass	40,75
		9269.7	1 l	glass	111,70
Phenol	≥99,5 %, p.a., detached crystals	**0040.1**	250 g	plastic	31,10
		0040.2	1 kg	plastic	90,20
ortho-Phosphoric acid	≥85 %, p.a., ISO	**6366.1**	1 l	plastic	64,40
		6366.2	2,5 l	plastic	131,70
Sulphuric acid	NEW for determination of viscosity acc. to DIN EN ISO 307	**4363.5**	500 ml	glass	27,85
		4363.1	1 l	glass	38,20
		4363.2	2,5 l	glass	77,95
		4363.3	5 l	plastic	146,10
		4363.4	10 l	plastic	249,95

For additional product data and safety information, see chapter Chemicals A-Z.

Density determination

Sodium polytungstate (SPT) is perfect for preparation of heavy liquids. ROTH offers an environmentally friendly alternative to using zinc chloride and mercury saline solutions or highly toxic halogenated hydrocarbons to conduct the sink or swim analyses required for density determination.

Properties:
- Highly water soluble
- pH-neutral solution adjustable
- Maximum achievable density of the solution is 3,1 g/cm³ at 25 °C

Advantages:
- Non-toxic
- Non-flammable
- Odourless
- Low viscosity
- Easy to use
- Extremely easy to clean the sinks and floats with water
- Environmentally friendly

Manufacture of aqueous sodium polytungstate solutions with the following densities and consequent viscosities at 25 °C

Mass of SPT used [g]	Mass of H_2O [g]	End volume of solution [ml]	Concentration c in [wt.-%]	Density ρ [g/cm³]	Viscosity η [mPa•s]
5,00	48,80	50	9,3	1,08	0,99
10,00	47,66	50	17,3	1,15	1,05
15,08	46,63	50	24,4	1,23	1,13
20,00	45,87	50	30,4	1,32	1,19
25,02	44,98	50	35,7	1,40	1,29
35,01	42,94	50	44,9	1,56	1,51
45,15	41,10	50	52,3	1,73	1,83
55,01	38,93	50	58,6	1,88	2,27
65,17	36,99	50	63,8	2,04	2,90
75,00	34,68	50	68,4	2,19	3,93
85,00	32,54	50	72,3	2,35	5,15
95,00	30,10	50	75,9	2,50	8,19
105,01	28,42	50	78,7	2,67	12,18
115,17	25,92	50	81,6	2,82	20,55
125,12	23,72	50	84,1	2,98	36,65
133,00	22,00	50	85,8	3,10	59,52

Sodium polytungstate hydrate

≥99,9 %

For the preparation of heavy liquid.

Sodium metatungstate

$3\ Na_2WO_4 \cdot 9\ WO_3 \cdot H_2O$

M 2986,01 g/mol

Danger H302-H318-H412

8828.1	50 g	plastic	48,30 €
8828.2	250 g	plastic	177,40 €
8828.3	1 kg	plastic	633,20 €
Original pack 6 x 1 kg			601,54/1 kg

Sodium polytungstate solution

3,00 g/cm³

Heavy liquid for separation of minerals.

Danger H302-H318-H412

0741.1	100 ml	plastic	221,35 €
0741.2	500 ml	plastic	880,45 €

Hydroxyl value

The hydroxyl value is a measure of the hydroxy group content of organic materials such as paints, resins, polystyrenes, solvents and lipids. It represents the amount in milligrams of potassium hydroxide required to neutralise the quantity of acetic acid that combines on acetylation of one gram of the substance being tested.

Hydroxylzahl

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Acetic acid anhydride	≥99 %, p.a., ACS, ISO	**CP28.1**	1 l	glass	44,00
		CP28.2	2,5 l	glass	85,50
		CP28.3	5 l	plastic	136,00
		CP28.4	10 l	plastic	252,65
		CP28.5	25 l	plastic	536,45
Alkali blue 6B (C.I. 42750)	p.a.	**5155.1**	10 g	glass	21,00
		5155.2	25 g	glass	41,40
		5155.3	100 g	glass	121,40
Ethanol	96 %, Ph.Eur., extra pure	**P075.1**	1 l	glass	73,00
		P075.3	1 l	plastic	71,95
		P075.2	2,5 l	glass	153,65
		P075.4	2,5 l	plastic	150,40
		P075.5	5 l	plastic	282,65
		P075.6	10 l	tinplate	450,45
Phenolphthalein indicator solution	1 % in ethanol 90 %, denatured	**K034.1**	250 ml	glass	21,40
		K034.2	500 ml	glass	28,95
		K034.3	1 l	glass	38,60
Potassium hydroxide solution in ethanol	0,1 mol/l - 0,1 N volumetric standard solution	**P706.1**	1 l	glass	40,75
	0,5 mol/l - 0,5 N volumetric standard solution	**P707.1**	1 l	glass	58,60
Pyridine	≥99,5 %, p.a., ACS	**9729.3**	500 ml	glass	65,50
		9729.1	1 l	glass	121,40
		9729.2	2,5 l	glass	257,90

Fluoride value determination

In quantitative assays, TISABs (total ionic strength adjustment buffers) are used to set the ionic strength of a solution to a stable level using ion-selective electrodes. The ionic strength must be kept stable during the measuring process in order to prevent the potential from changing regardless of the molar concentration. The measurement of fluoride ions is highly susceptible to error; high pH values or aluminium(III) and iron(III) ions will falsify the results.

TISAB solution I

for determination of fluoride

Total ionic strength adjustment buffer.

Formulation: Acetic acid, Sodium chloride, tri-Sodium citrate dihydrate, Water

0252.1	500 ml	plastic	45,70 €

TISAB solution II

for determination of fluoride

Total ionic strength adjustment buffer

Type analysis:

pH value. 5,0-5,5

Formulation: Sodium chloride, tri-Sodium citrate dihydrate, Acetic acid, Water

9945.1	1 l	plastic	57,95 €
Original pack 6 x 1 l			55,05/1 l

TISAB solution III

for determination of fluoride

Total ionic strength adjustment buffer

Warning H319

Type analysis:

pH value (20 °C). 5,0-5,5

Formulation: Ammonium chloride, CDTA, Water, Cresol red sodium salt

0259.1	500 ml	plastic	103,10 €

TISAB solution IV

for determination of fluoride

Total ionic strength adjustment buffer

Warning H315-H319

Formulation: Hydrochloric acid, Tris-(hydroxymethyl)-aminomethane, Tartaric acid, Sodium hydroxide, Water

9951.1	1 l	plastic	150,00 €
Original pack 6 x 1 l			142,50/1 l

Acids and bases for analysis (p.a.)

Roth provides suitable acids and bases for different requirements!

- high purity
- high batch consistancy
- detailed specifications
- good price-performance ratio

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Acetic acid	100 %, p.a.	**3738.1**	1 l	glass	25,30
		3738.4	1 l	plastic	23,15
		3738.2	2,5 l	glass	53,65
		3738.5	2,5 l	plastic	51,50
		3738.6	5 l	plastic	76,25
		3738.3	10 l	plastic	128,90
	≥95,9 %, p.a.	**T179.1**	1 l	plastic	22,05
		T179.2	2,5 l	plastic	45,05
		T179.4	5 l	plastic	66,15
		T179.3	10 l	plastic	110,65
Ammonia solution	30 %, p.a., ACS	**CP17.1**	1 l	glass	21,00
		CP17.2	2,5 l	glass	33,90
		CP17.3	5 l	PE/steel	64,40
		CP17.4	10 l	PE/steel	107,40
		CP17.5	25 l	PE/steel	177,40
	≥25 %, p.a.	**6774.1**	1 l	glass	22,05
		6774.2	2,5 l	glass	34,30
		6774.3	5 l	plastic	51,10
Boric acid solution	p.a.	**HN24.1**	1 l	plastic	18,20
		HN24.2	5 l	plastic	40,75
		HN24.3	10 l	plastic	66,55
Formic acid	≥98 %, p.a., ACS	**4724.3**	500 ml	glass	21,40
		4724.1	1 l	glass	35,40
		4724.2	2,5 l	glass	75,15
	≥85 %, p.a.	**CP16.1**	500 ml	glass	21,40
		CP16.2	1 l	glass	35,40
		CP16.3	2,5 l	glass	75,15
		CP16.4	10 l	plastic	232,10
Hydrochloric acid fuming	37 %, p.a., ACS, ISO	**4625.1**	1 l	glass	21,00
		4625.2	2,5 l	glass	33,25
	≥32 %, p.a., ISO	**P074.1**	1 l	glass	18,20
		P074.3	1 l	plastic	16,05
		P074.2	2,5 l	glass	31,75
		P074.4	2,5 l	plastic	29,60
	≥25 %, p.a., ISO	**6331.1**	1 l	glass	18,85
		6331.3	1 l	plastic	16,70
		6331.2	2,5 l	glass	31,10
		6331.4	2,5 l	plastic	28,95
	NEW	**6331.7**	25 l	plastic	192,45

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Molybdatophosphoric acid hydrate	≥99,0 %, p.a., ACS NEW	**4440.1**	25 g	glass	38,60
		4440.2	50 g	plastic	60,10
		4440.3	100 g	plastic	107,00
		4440.7	1 kg	plastic	944,95
Nitric acid	≥65 %, p.a., ISO	**4989.3**	250 ml	glass	19,25
		4989.1	1 l	glass	30,65
		4989.2	2,5 l	glass	60,10
Perchloric acid	70 %, p.a.	**9216.1**	500 ml	glass	69,80
		9216.2	1 l	glass	114,95
Periodic acid	≥99 %, p.a.	**3257.1**	100 g	glass	70,85
		3257.2	500 g	glass	241,90
meta-Phosphoric acid	p.a., pieces (hyaline)	**CN91.1**	100 g	plastic	31,10
		CN91.2	250 g	plastic	61,20
		CN91.3	500 g	plastic	111,70
		CN91.4	1 kg	plastic	201,60
ortho-Phosphoric acid	≥85 %, p.a., ISO	**6366.1**	1 l	plastic	64,40
		6366.2	2,5 l	plastic	131,70
Potassium hydroxide	≥85 %, p.a., pellets	**6751.3**	250 g	plastic	16,70
		6751.1	1 kg	plastic	27,45
		6751.2	5 kg	plastic	94,10
		6751.5	25 kg	plastic	289,20
Sodium hydroxide	≥98 %, p.a., ISO, in pellets	**6771.3**	500 g	plastic	17,75
		6771.1	1 kg	plastic	26,80
		6771.2	5 kg	plastic	96,65
		6771.5	25 kg	plastic	364,45
Sodium hydroxide solution	≥32 %, p.a.	**T196.1**	1 l	plastic	30,00
		T196.2	2,5 l	plastic	57,95
		T196.3	5 l	plastic	91,30
		T196.7	25 l	plastic	353,70
Sulphuric acid	96 %, p.a., ISO	**4623.3**	250 ml	glass	19,25
		4623.1	1 l	glass	31,75
		4623.4	1 l	plastic	28,95
		4623.2	2,5 l	glass	63,35
		4623.5	2,5 l	plastic	66,55
		4623.6	10 l	plastic	122,05

For additional product data and safety information, see chapter Chemicals A-Z.

Products in VLSI quality

ROTH's VLSI (Very Large Scale Integration) product line offers solvents and acids for cleaning and etching wafers for the semi-conductor industry. Both processes are essential for chip manufacture. ROTH offers a selected range of products.

Solvents

Properties:

- High purity
- Trace metal content generally between 10-50 ppb
- Particle-filtered, maximum 250 particles/ml

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Acetone	≥99,5 %, VLSI Grade	**9780.1**	2,5 l	plastic	69,80
			5 l	plastic	115,60
2-Butanone	≥99,5 %, VLSI Grade	**0051.1**	2,5 l	plastic	97,75
Isobutyl methylketone	≥99,5 %, VLSI Grade	**0061.1**	2,5 l	plastic	76,90
L(-)-Lactic acid ethyl ester	≥97 %, VLSI Grade	**0036.1**	2,5 l	plastic	111,70
Methanol	≥99,5 %, VLSI Grade	**9785.1**	2,5 l	plastic	56,90
		9785.2	5 l	plastic	102,70
N-Methyl-2-pyrrolidone (NMP)	≥99,8 %, VLSI Grade	**9786.1**	2,5 l	plastic	90,20
		9786.2	5 l	plastic	157,95
2-Propanol	≥99,9 %, VLSI Grade	**9781.1**	2,5 l	plastic	69,35
		9781.2	5 l	plastic	112,90

Acids

Properties

- High purity
- Trace metal content usually below 100 ppb
- Particle-filtered, maximum 250 particles/ml

Product	Purity	Art. No.	Pack Qty.	Pack.	€
ortho-Phosphoric acid	85 %, VLSI Grade	**9788.1**	2,5 l	plastic	146,10
Hydrochloric acid	37 %, VLSI Grade	**9787.1**	2,5 l	plastic	45,70
Sulphuric acid	96 %, VLSI Grade	**9789.1**	2,5 l	plastic	81,20
Hydrogen peroxide	30 %, VLSI Grade	**9790.1**	2,5 l	plastic	80,10

VLSI or Very Large Scale Integration means that a large number of transistors (now several 100 million.) are located on one chip. Since the gaps are very small, roughly 3 µm, the solvents and acids must be of a correspondingly high purity and be particle-filtered. For VLSI, the number of particles is limited to 250 p/ml.

Sample specification:

Acetone

≥99,5 %, VLSI Grade

2-Propanone, Dimethyl ketone

C_3H_6O

M 58,08 g/mol

Danger H225-H319-H336-EUH066

Guarantee analysis:

Assay	≥99,5 %
Bead number (≤0,5 µm)	≤250 p/ml
Water	≤0,5 %
Alkalinity	0,5 µeq/g
Acidity	0,2 µeq/g
Colour (APHA)	≤10
Chloride (Cl)	≤0,00001 %
Phosphate (PO_4)	≤0,00005 %
Ash content	≤0,0005 %
Aluminium (Al)	≤50 ppb
Antimony (Sb)	≤10 ppb
Arsenic (As)	≤10 ppb
Barium (Ba)	≤20 ppb
Beryllium (Be)	≤10 ppb
Bismuth (Bi)	≤10 ppb
Lead (Pb)	≤10 ppb
Boron (B)	≤20 ppb
Cadmium (Cd)	≤10 ppb
Calcium (Ca)	≤50 ppb
Chromium (Cr)	≤10 ppb
Iron (Fe)	≤50 ppb
Gallium (Ga)	≤10 ppb
Gold (Au)	≤10 ppb
Potassium (K)	≤20 ppb
Cobalt (Co)	≤10 ppb
Copper (Cu)	≤30 ppb
Lithium (Li)	≤10 ppb
Magnesium (Mg)	≤20 ppb
Manganese (Mn)	≤10 ppb
Molybdenum (Mo)	≤10 ppb
Sodium (Na)	≤50 ppb
Nickel (Ni)	≤10 ppb
Silver (Ag)	≤10 ppb
Strontium (Sr)	≤10 ppb
Titanium (Ti)	≤10 ppb
Vanadium (V)	≤10 ppb
Zinc (Zn)	≤20 ppb
Tin (Sn)	≤10 ppb
Zirconium (Zr)	≤10 ppb

ROTI®CALIPURE standards for your calibration needs

ROTH offers an extensive range of calibration standards. These products are manufactured from highly pure starting material and are specially tested for each application. The corresponding batch-specific certificate of analysis is available online. Each product series offers excellent value for money.

Melting point standards

The melting point of a substance is the temperature at which the transition from a solid phase to a liquid phase occurs. The determination of melting point is a quick and easy method of determining the basic purity of substances. As the melting point is a characteristic variable for pure substances, it is also used for the identification of organic compounds. ROTH offers a selected range of melting point standards. To allow easy handling and ensure maximum safety, the standards are filled in small quantities protected from light and are ready to use straight away.

Features:

ready-to-use

- Suitable for checking purity
- Suitable for use independent of instrument type
- Ready-to-use

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Anthraquinone	Melting point standard 283-286 °C	**9754.1**	1 g	glass	32,15
Benzoic acid	Melting point standard 121-123 °C	**9722.1**	1 g	glass	31,10
Benzophenone	Melting point standard 47-49 °C	**9709.1**	1 g	glass	31,10
Carbazole	Melting point standard 243-247 °C	**9752.1**	1 g	glass	31,10
Caffeine	Melting point standard 235-238 °C, anhydrous	**9739.1**	1 g	glass	31,10
p-Nitrotoluene	Melting point standard 52-54 °C	**9712.1**	1 g	glass	31,10
Phenacetin	Melting point standard 133-135 °C	**9728.1**	1 g	glass	31,10
Salicylic acid	Melting point standard 158-160 °C	**9731.1**	1 g	glass	31,10
Sulphanil-amide	Melting point standard 164-166 °C	**9734.1**	1 g	glass	31,10
Vanillin	Melting point standard 81-83 °C	**9714.1**	1 g	glass	31,10

ready-to-use

Conductivity standards ROTI®CALIPURE

Our conductivity standard solutions are made from high-quality reagents and therefore ensure maximum precision during calibration. They are ready for use and come supplied with a batch-specific certificate of analysis.

- 10 conductivity standards
- Variation in conductivity ±1 % (25 °C)
- Traceable to SRM from NIST
- waterbased solution

Type		Art. No.	Pack Qty.	€
Conductivity standard 5 µS/cm		**2462.1**	500 ml	170,95
Conductivity Standard 10 µS/cm	NEW	**0810.1**	250 ml	117,20
		0810.2	500 ml	170,95
Conductivity Standard 20 µS/cm	NEW	**0811.1**	500 ml	62,25
Conductivity Standard 50 µS/cm	NEW	**0812.1**	500 ml	62,25
Conductivity standard 84 µS/cm		**2432.1**	500 ml	28,95
		2432.2	1 l	37,55
Conductivity standard 100 µS/cm		**2463.1**	500 ml	66,15
Conductivity standard 147 µS/cm		**2433.1**	500 ml	28,95
		2433.2	1 l	37,55
Conductivity standard 500 µS/cm		**2464.1**	500 ml	66,15
Conductivity standard 1 000 µS/cm		**2465.1**	500 ml	66,15
Conductivity standard 1413 µS/cm		**2434.1**	500 ml	28,95
		2434.2	1 l	37,55
Conductivity Standard 5000 µS/cm	NEW	**0814.1**	500 ml	62,25
Conductivity standard 10 000 µS/cm		**2466.1**	500 ml	66,15
Conductivity standard 12 880 µS/cm		**2435.1**	500 ml	28,95
		2435.2	1 l	37,55
Conductivity Standard 20000 µS/cm	NEW	**0822.1**	500 ml	62,25
Conductivity Standard 50000 µS/cm		**0831.1**	500 ml	62,25
Conductivity Standard 100000 µS/cm	NEW	**0832.1**	500 ml	62,25
Conductivity standard 500 000 µS/cm		**2467.1**	500 ml	66,15

ready-to-use

ROTI®CALIPURE pH-Buffer Solutions, ready-to-use

- Manufactured from high purity buffer substances
- No need for time-consuming drying and weighing of reagents
- The buffer solutions are adjusted to their respective pH values by comparison with standard buffer solutions (according to DIN 19266 and based on primary reference materials of the PTB and/or NIST)
- Quick and precise calibration of measuring equipment
- Stabilised against algae and bacterial action

pH value	Design	Art. No.	Pack Qty.	Pack.	€
1,00 ±0,05 (20 °C)	colourless	**T180.2**	500 ml	plastic	17,75
		T180.1	1 l	plastic	25,30
1,679 ±0,03 (25 °C)	colourless	**8112.1**	1 l	plastic	42,90
2,00 ±0,02 (20 °C)	colourless	**P715.2**	500 ml	plastic	17,75
		P715.1	1 l	plastic	25,30
3,00 ±0,02 (20 °C)	colourless	**T181.2**	500 ml	plastic	17,75
		T181.1	1 l	plastic	25,30
3,776 ±0,012 (25 °C)	colourless	**4280.1**	500 ml	plastic	18,20
		4280.2	1 l	plastic	27,45
4,00 ±0,02 (20 °C)	colourless	**P712.3**	500 ml	plastic	17,75
		P712.1	1 l	plastic	25,30
		P712.2	10 l	plastic	160,20
4,00 ±0,02 (20 °C)	tinted red	**A517.3**	250 ml	twin neck bottle	14,95
		A517.2	500 ml	plastic	17,75
		A517.4	500 ml	twin neck bottle	19,25
		A517.1	1 l	plastic	25,30
		A517.5	10 l	plastic	160,20
4,005 ±0,02 (25 °C)	colourless	**4281.1**	500 ml	plastic	18,20
		4281.2	1 l	plastic	27,45
4,62 ±0,02 (20 °C)	colourless	**T182.1**	1 l	plastic	27,45
5,00 ±0,02 (20 °C)	colourless	**T183.2**	500 ml	plastic	17,75
		T183.1	1 l	plastic	25,30
6,00 ±0,02 (20 °C)	colourless	**T184.2**	500 ml	plastic	17,75
		T184.1	1 l	plastic	25,30
6,865 ±0,02 (25 °C)	colourless	**4284.1**	500 ml	plastic	18,20
		4284.2	1 l	plastic	27,45
6,88 ±0,02 (20 °C)	colourless	**T185.1**	1 l	plastic	25,30
7,00 ±0,02 (20 °C)	colourless	**A518.3**	500 ml	plastic	17,75
		A518.1	1 l	plastic	25,30
		A518.2	10 l	plastic	160,20
7,00 ±0,02 (20 °C)	tinted green	**P713.3**	250 ml	twin neck bottle	14,95
		P713.2	500 ml	plastic	17,75
		P713.4	500 ml	twin neck bottle	19,25
		P713.1	1 l	plastic	25,30
		P713.5	10 l	plastic	160,20
7,413 ±0,02 (25 °C)	colourless	**4285.1**	500 ml	plastic	18,20
		4285.2	1 l	plastic	27,45
8,00 ±0,02 (20 °C)	colourless	**T186.2**	500 ml	plastic	17,75
		T186.1	1 l	plastic	25,30
9,00 ±0,02 (20 °C)	colourless	**A519.3**	500 ml	plastic	17,75
		A519.1	1 l	plastic	25,30
9,00 ±0,02 (20 °C)	tinted blue	**P714.3**	250 ml	twin neck bottle	14,95
		P714.2	500 ml	plastic	17,75
		P714.1	1 l	plastic	25,30
9,180 ±0,02 (25 °C)	colourless	**4294.1**	500 ml	plastic	18,20
		4294.2	1 l	plastic	27,45
9,22 ±0,02 (20 °C)	colourless	**0466.1**	500 ml	plastic	22,50
10,00 ±0,02 (20 °C)	colourless	**P716.2**	500 ml	plastic	17,75
		P716.1	1 l	plastic	25,30
10,00 ±0,02 (20 °C)	tinted blue	**8086.1**	250 ml	twin neck bottle	16,70
		8086.2	500 ml	plastic	18,85
		8086.3	500 ml	twin neck bottle	19,90
		8086.4	1 l	plastic	26,35
		8086.5	10 l	plastic	188,15
10,00 (20 °C)	for complexo-metric titration	**T188.1**	1 l	plastic	25,30
11,00 ±0,05 (20 °C)	colourless	**T187.2**	500 ml	plastic	17,75
		T187.1	1 l	plastic	25,30
12,00 ±0,05 (20 °C)	colourless	**T189.2**	500 ml	plastic	17,75
		T189.1	1 l	plastic	25,30
13,00 ±0,05 (20 °C) NEW	colourless	**0762.1**	500 ml	plastic	19,25

For additional product data and safety information, see chapter Chemicals A-Z.

ROTI®STAR pH-buffer solutions

- Tested in an accredited laboratory in accordance with **ISO 17025**
- Can be traced back to standard reference materials by NIST
- Certificate of analysis complete with information on measuring accuracy available online
- Produced according to a special recipe for maximum shelf life

Buffer solution pH 4,00 ±0,01 (20 °C)

ROTI®STAR

Potassium hydrogen phthalate

Type analysis:

pH value (20 °C). ..... 4,00 ±0,01
Tested in an accredited laboratory acc. to ISO 17025.

9974.1	500 ml	plastic	18,85 €

Buffer solution pH 7,00 ±0,01 (20 °C)

ROTI®STAR

Potassium dihydrogen phosphate/di-Sodium hydrogen phosphate

Type analysis:

pH value (20 °C). ..... 7,00 ±0,01
Tested in an accredited laboratory acc. to ISO 17025.

9977.1	500 ml	plastic	18,85 €

Buffer solution pH 10,00 ±0,01 (20 °C)

ROTI®STAR

di-Sodium tetraborate/sodium hydroxide

Type analysis:

pH value (20 °C). ..... 10,00 ±0,01
Tested in an accredited laboratory acc. to ISO 17025.

9983.1	500 ml	plastic	18,85 €

NEW

Rotilabo® pH buffer solutions

The quantity of reagent contained in a sachet (25 ml) is sufficient for a single calibration.

- Traceable thanks to comparison with standard references from the National Institute of Standards and Technology (NIST) and the National Metrology Institute of Germany (PTB)
- With certificate of analysis for documenting the quality, traceability and accuracy

Type	Accuracy	Art. No.	Pack Qty.	€
pH 4.01	±0.01	**KAY0.1**	20	32,20
pH 7.00	±0.01	**KAY1.1**	20	32,20
pH 10.01	±0.02	**KAY2.1**	20	32,20

AL10 hand-held pH meter

By Aqualytic.

- Splash-proof membrane keyboard
- Manual single-point or double-point calibration via trimmer

Technical specifications:

Measuring range/resolution	0.01 to 14.00 pH
Accuracy	±0.1 (pH 4.0-10.0) ±0.2 (pH 1.1-3.9 and pH 10.1-13.0) ±0.3 (pH 0.1-1.0 and pH 13.1-14.0)
Dimensions (L x W x H)	208 x 110 x 34 mm

Delivery incl. pH plastic electrodes with gel electrolyte and BNC connector, pH buffer solutions (pH 4.01 and pH 7.00, each 90 ml), protective cover for measuring in difficult conditions, case and E-type block 9 V battery.

Art. No.	Pack Qty.	€
YP68.1	1	179,55

Accessories:

Spare pH plastic electrodes	**YP69.1**	1 piece	75,25
E-Block 9 V battery	**1025.1**	1 piece	4,85

▶ Further pH meters on page 861

pH buffer tablets

For pH tester. Accuracy ±0.05 pH.
Dissolve one pH buffer tablet in 20 ml of deionised/distilled water.

pH value	Art. No.	Pack Qty.	€
4	**YT50.1**	100	21,45
7	**YT51.1**	100	21,45
10	**YT52.1**	100	21,45

ROTI®STAR Standards for AAS and ICP

ROTH has an extensive range of products which meets the highest standards of quality in the field of element standards and ion standards. The solutions and mixtures are made using materials of the highest purity, and therefore meet the requirements for instrumental analysis by AAS and ICP. All solutions are certified and can be traced to NIST standard reference materials. Solutions are produced according to **ISO Guide 34** in an accredited environment. The solutions are tested in a laboratory accredited to **ISO/IEC 17025** and supplied with a detailed, batch-specific certificate of analysis.

Single Element Standards for AAS

ready-to-use

(Atomic Absorption Spectroscopy)

AAS standard solutions are made from high-quality reagents, and therefore ensure maximum precision during calibration. Accuracy and precision for reliable measurement results.

- 42 single element standards
- Concentration 1000 mg/l (1 g/l)
- Container sizes: 100 ml and 500 ml
- 24 months shelf life for unopened bottle & 12 months after the bottle has been opened

Single Element Standards for AAS 1000 mg/l (1 g/l) - ready to use

Element		Matrix	Art. No.	Pack Qty. (ml)	€
Aluminium	Al	2 % HNO_3	**2212.1**	100	18,85
			2212.2	500	29,60
Antimony	Sb	20 % HCl	**2223.1**	100	18,85
			2223.2	500	29,60
Arsenic	As	2 % HNO_3	**2224.1**	100	18,85
			2224.2	500	29,60
Barium	Ba	1 % HNO_3	**2225.1**	100	18,85
			2225.2	500	29,60
Beryllium	Be	2 % HNO_3/ 0,5 % HF	**2226.1**	100	89,15
			2226.2	500	176,85
Bismuth	Bi	3 % HNO_3	**2227.1**	100	18,85
			2227.2	500	29,60
Boron	B	H_2O	**2237.1**	100	18,85
			2237.2	500	29,60
Cadmium	Cd	2 % HNO_3	**2238.1**	100	18,85
			2238.2	500	29,60
Caesium	Cs	2 % HNO_3	**2239.1**	100	31,10
			2239.2	500	50,45
Calcium	Ca	2 % HNO_3	**2240.1**	100	18,85
			2240.2	500	29,60
Chromium	Cr	2 % HNO_3	**2250.1**	100	18,85
			2250.2	500	29,60
Cobalt	Co	2 % HNO_3	**2251.1**	100	18,85
			2251.2	500	29,60
Copper	Cu	2 % HNO_3	**2329.1**	100	18,85
			2329.2	500	29,60
Gold	Au	2 % HCl	**2258.1**	100	78,40
			2258.2	500	214,50
Indium	In	2 % HNO_3	**2284.1**	100	37,55
Iron	Fe	2 % HNO_3	**2252.1**	100	18,85
			2252.2	500	29,60
Lead	Pb	2 % HNO_3	**2228.1**	100	18,85
			2228.2	500	29,60
Lithium	Li	2 % HNO_3	**2332.1**	100	18,85
			2332.2	500	29,60
Magnesium	Mg	2 % HNO_3	**2333.1**	100	18,85
			2333.2	500	29,60
Manganese	Mn	2 % HNO_3	**2334.1**	100	18,85
			2334.2	500	29,60
Mercury	Hg	10 % HNO_3	**2346.1**	100	18,85
			2346.2	500	29,60
Molybdenum	Mo	4 % NH_3	**2335.1**	100	18,85
			2335.2	500	29,60

Element		Matrix	Art. No.	Pack Qty. (ml)	€
Nickel	Ni	2 % HNO_3	**2339.1**	100	18,85
			2339.2	500	29,60
Palladium	Pd	3 % HNO_3	**2340.1**	100	123,55
Phosphorus	P	H_2O	**2599.1**	100	18,85
			2599.2	500	29,60
Platinum	Pt	10 % HCl	**2341.1**	100	134,95
			2341.2	500	482,70
Potassium	K	2 % HNO_3	**2327.1**	100	18,85
			2327.2	500	29,60
Scandium	Sc	2 % HNO_3	**2347.1**	100	79,05
			2347.2	500	235,45
Selenium	Se	2 % HNO_3	**2348.1**	100	18,85
			2348.2	500	29,60
Silver	Ag	2 % HNO_3	**2349.1**	100	18,85
			2349.2	500	29,60
Silicon	Si	H_2O	**2350.1**	100	18,85
			2350.2	500	29,60
Silicon	Si	0,5 % NaOH	**2351.1**	100	18,85
Sodium	Na	2 % HNO_3	**2337.1**	100	18,85
			2337.2	500	29,60
Strontium	Sr	2 % HNO_3	**2352.1**	100	18,85
			2352.2	500	29,60
Tellurium	Te	2 % HNO_3	**2353.1**	100	27,45
			2353.2	500	48,30
Thallium	Tl	2 % HNO_3	**2354.1**	100	27,45
			2354.2	500	48,30
Tin	Sn	10 % HCl	**2384.1**	100	18,85
			2384.2	500	29,60
Titanium	Ti	2 % HNO_3/ 0,1 % HF	**2355.1**	100	18,85
			2355.2	500	29,60
Tungsten	W	4 % NH_3	**2361.1**	100	27,45
			2361.2	500	48,30
Vanadium	V	2 % HNO_3	**2360.1**	100	18,85
			2360.2	500	29,60
Yttrium	Y	2 % HNO_3	**2371.1**	100	27,45
			2371.2	500	48,30
Zinc	Zn	2 % HNO_3	**2383.1**	100	18,85
			2383.2	500	29,60
Zircon	Zr	5 % HCl/ 0,5 % HF	**2396.1**	100	27,45
			2396.2	500	48,30

For additional product data and safety information, see chapter Chemicals A-Z.

Multi-Element Standards for Graphite Furnace AAS

ready-to-use

This multi-element standard is produced from ultra-pure raw materials and in accordance with strict quality guidelines. The traceability and standard reference material of the NIST is documented on the comprehensive certificate of analysis. The standard is suitable for the calibration of graphite furnace AAS units.

Product	Elements	Composition	Matrix	Art. No.	Pack Qty. (ml)	€
GF AAS Multi-Element Standard Solution XVIII	16	Ag (10), Al (100), As (100), Ba (50), Be (5), Cd (5), Co (50), Cr (20), Cu (50), Fe (20), Mn (20), Ni (50), Pb (100), Sb (100), Se (100), Tl (100)	5 % HNO_3	**9778.1**	100	184,40

Matrix Modifer Solutions for Graphite Furnace AAS

Matrix modifier solutions by ROTH are made from high purity starting materials (≥99,999 %) and delivered with a detailed batch specific certificate of analysis. The solutions can be used either diluted or as mixtures, and are suitable for eliminating matrix effects in graphite furnace AAS.

- Up to 70 measured trace impurities in ppm range and lower
- Guaranteed accuracy: ±1 %
- Container size: 50 ml

Compound	Matrix	Concentration	Art. No.	Pack Qty. (ml)	€
Ammonium dihydrogene phosphate	1 % HNO_3	20 g/l	**5150.1**	50	68,70
		100 g/l	**5148.1**	50	130,65
Ammonium nitrate	H_2O	50 g/l	**5145.1**	50	124,60
Magnesium nitrate	H_2O	10 g/l	**5140.1**	50	75,15
		20 g/l	**5142.1**	50	122,45
Nickel nitrate	1 % HNO_3	10 g/l	**5146.1**	50	75,15
Palladium nitrate & Magnesium nitrate	1 % HNO_3	2 g/l & 10 g/l	**5139.1**	50	168,25
Palladium nitrate	1 % HNO_3	2 g/l	**5143.1**	50	124,20
		5 g/l	**5144.1**	50	168,25
		10 g/l	**4842.1**	50	278,45

For additional product data and safety information, see chapter Chemicals A-Z.

Single Element Standards for ICP-OES

ready-to-use

(Inductively Coupled Plasma – Optical Emission Spectrometry)

The solutions and mixtures are made using materials of the highest purity, and therefore meet the requirements for by AAS and ICP. All solutions are certified and can be traced to NIST standard reference solutions. Solutions are produced according to **ISO Guide 34** in an accredited environment. The solutions are tested in a laboratory accredited to **ISO/IEC 17025** and supplied with a detailed, batch-specific certificate of analysis.
Each standard solution is made of high purity starting materials (mostly ≥99,999 %), and its content is determined gravimetrically and by ICP. High quality acids (purified by subboiling distillation) and water are used for production of the solutions. This gives you first-class reference materials of the highest purity and quality.

- 68 single element standards
- Concentration 1000 mg/l (1 g/l) and 10 000 mg/l (10 g/l)
- Up to 70 measured trace impurities in the ppt range
- 24 months shelf life for unopened bottle & 12 months after the bottle has been opened

Element		Matrix	1000 mg/l (1 g/l)			10000 mg/l (10 g/l)		
			Art. No.	Pack Qty. (ml)	€	Art. No.	Pack Qty. (ml)	€
Aluminium	Al	2 % HNO_3	**2397.1**	100	51,50	**2488.1**	100	91,95
			2397.2	500	111,70	-	-	
Antimony	Sb	20 % HCl	**2398.1**	100	51,50	**2489.1**	100	91,95
Arsenic		2 % HNO_3	**2399.2**	30	37,55	**2491.1**	100	91,95
			2399.1	100	51,50	-	-	
Barium	Ba	1 % HNO_3	**2400.1**	100	51,50	**2492.1**	100	91,95
			2400.2	500	111,70	**2492.2**	500	200,95
Beryllium	Be	2-5 % HNO_3 / 0,5 % HF	**2401.1**	100	94,10	**2496.1**	100	353,70
Bismuth	Bi	3 % HNO_3	**2402.1**	100	51,50	**2497.1**	100	91,95
Boron	B	H_2O	**2404.1**	100	51,50	**2500.1**	100	91,95
			2404.2	500	111,70	**2500.2**	500	200,95
Cadmium	Cd	2 % HNO_3	**2405.1**	100	51,50	**2501.1**	100	91,95
Caesium	Cs	2 % HNO_3	**2406.1**	100	51,50	**2502.1**	100	95,60
Calcium	Ca	2 % HNO_3	**2407.1**	100	51,50	**2503.1**	100	92,35
			2407.2	500	111,70	**2503.2**	500	200,95
Cerium	Ce	2-3 % HNO_3	**2408.1**	100	51,50	**2504.1**	100	101,60
Chromium	Cr	2-3 % HNO_3	**2409.1**	100	51,50	**2505.1**	100	91,95
			2409.2	500	111,70	**2505.2**	500	200,95
Cobalt	Co	2-3 % HNO_3	**2410.1**	100	51,50	**2506.1**	100	91,95
Copper	Cu	2-3 % HNO_3	**2426.1**	100	51,50	**2520.1**	100	91,95
Dysprosium	Dy	2-3 % HNO_3	**2411.1**	100	54,75	**2507.1**	100	106,35
Erbium	Er	2-3 % HNO_3	**2413.1**	100	54,75	**2509.1**	100	101,60
Europium	Eu	2 % HNO_3	**2414.1**	100	54,75	**2510.1**	100	120,95
Gadolinium	Gd	2-3 % HNO_3	**2416.1**	100	54,75	**2511.1**	100	109,55
Gallium	Ga	2-3 % HNO_3	**2418.1**	100	54,75	**2512.1**	100	109,55
Germanium	Ge	2 % HNO_3 / 0,5 % HF	**2419.1**	100	54,75	**2513.1**	100	120,95
Gold	Au	2-5 % HCl	**2420.1**	100	160,75	**2514.1**	100	568,70
Hafnium	Hf	2 % HCl / 0,5 % HF or 5 % HNO_3 / 0,5 % HF	**2421.1**	100	170,95	**2515.1**	100	622,45
Holmium	Ho	2-3 % HNO_3	**2422.1**	100	70,85	**2516.1**	100	109,55
Indium	In	2-3 % HNO_3	**2423.1**	100	54,75	**2517.1**	100	109,55
Iridium	Ir	10 % HCl	**2424.1***	100	203,20	**2518.1***	100	858,95
Iron	Fe	2-4 % HNO_3	**2412.1**	100	51,50	**2508.1**	100	91,95
			2412.2	500	111,70	**2508.2**	500	200,95
Lanthanum	La	2-3 % HNO_3	**2427.1**	100	51,50	**2521.1**	100	91,95
Lead	Pb	2-3 % HNO_3	**2403.1**	100	51,50	**2499.1**	100	91,95
Lithium	Li	2-3 % HNO_3	**2428.1**	100	51,50	**2522.1**	100	93,45
Luthetium	Lu	2-3 % HNO_3	**2429.1**	100	147,20	**2523.1**	100	514,95
Magnesium	Mg	2 % HNO_3	**2430.1**	100	51,50	**2524.1**	100	91,95
			2430.2	500	111,70	**2524.2**	500	200,95
Manganese	Mn	2-3 % HNO_3	**2437.1**	100	51,50	**2525.1**	100	91,95
			2437.2	500	111,70	**2525.2**	500	200,95
Mercury	Hg	10 % HNO_3	**2453.1**	100	51,50	**2537.1**	100	91,95

Element		Matrix	1000 mg/l (1 g/l)			10000 mg/l (10 g/l)		
			Art. No.	Pack Qty. (ml)	€	Art. No.	Pack Qty. (ml)	€
Molybdenum	Mo	4 % NH_3	**2438.1**	100	51,50	**2526.1**	100	91,95
Neodymium	Nd	2-3 % HNO_3	**2443.1**	100	54,75	**2528.1**	100	120,95
Nickel	Ni	2-3 % HNO_3	**2444.1**	100	51,50	**2529.1**	100	91,95
Niobium	Nb	2-5 % HNO_3 / 0,5 % HF	**2445.1**	100	51,50	**2531.1**	100	91,95
Osmium	Os	2 % HCl	**2446.2***	30	158,60	-	-	
			2446.1*	100	294,05	-	-	
Palladium	Pd	3-4 % HNO_3	**2447.1**	100	165,05	**2532.1**	100	590,20
Phosphorus	P	H_2O	**2451.1**	100	51,50	**2534.1**	100	91,95
Platinum	Pt	10 % HCl	**2448.1**	100	198,90	**2533.1**	100	998,70
Potassium	K	2 % HNO_3	**2425.1**	100	51,50	**2519.1**	100	91,95
			2425.2	500	111,70	**2519.2**	500	200,95
Praseodymium	Pr	2-3 % HNO_3	**2452.1**	100	54,75	**2536.1**	100	101,60
Rhenium	Re	2 % HNO_3	**2454.1**	100	124,60	**2538.1**	100	450,45
Rhodium		5 % HCl	**2455.2**	30	241,90	-	-	
			2455.1	100	403,15	-	-	
Rubidium	Rb	2 % HNO_3	**2456.1**	100	51,50	**2539.1**	100	256,95
Ruthenium	Ru	5-10 % HCl	**2457.1***	100	209,65	**2540.1***	100	450,45
Samarium	Sm	2 % HNO_3	**2458.1**	100	54,75	**2541.1**	100	115,60
Scandium	Sc	2 % HNO_3	**2459.1**	100	107,40	-	-	
Selenium	Se	2-3 % HNO_3	**2461.1**	100	51,50	**2543.1**	100	91,95
Silver	Ag	2-4 % HNO_3	**2468.1**	100	51,50	**2544.1**	100	91,95
Silicon	Si	H_2O	**2469.1**	100	51,50	**2546.1**	100	91,95
Sodium	Na	2 % HNO_3	**2439.1**	100	51,10	**2527.1**	100	91,95
			2439.2	500	111,70	**2527.2**	500	200,95
Strontium	Sr	2 % HNO_3	**2470.1**	100	51,50	**2547.1**	100	91,95
			2470.2	500	111,70	**2547.2**	500	200,95
Sulphur	S	H_2O	**2460.1**	100	51,50	**2542.1**	100	91,95
Tantalum	Ta	1 % HNO_3 / 0,5 % HF	**2471.1**	100	54,75	**2548.1**	100	101,60
Tellurium	Te	2 % HNO_3	**2472.1**	100	54,75	**2549.1**	100	101,60
Terbium	Tb	2-3 % HNO_3	**2476.1**	100	107,40	**2550.1**	100	224,70
Thallium	Tl	2-5 % HNO_3	**2477.1**	100	51,50	**2552.1**	100	91,95
Thulium	Tm	2-5 % HNO_3	**2478.1**	100	135,35	-	-	
Tin	Sn	10 % HCl	**2486.1**	100	51,50	**2583.1**	100	91,95
Titanium	Ti	2 % HNO_3 / 0,1 % HF	**2479.1**	100	51,50	**2561.1**	100	91,95
Tungsten	W	4-10 % NH_3	**2482.1**	100	54,75	**2571.1**	100	91,95
Vanadium	V	2-3 % HNO_3	**2480.1**	100	51,50	**2567.1**	100	91,95
Ytterbium	Yb	2-3 % HNO_3	**2483.1**	100	54,75	**2572.1**	100	164,40
Yttrium	Y	2-3 % HNO_3	**2484.1**	100	54,75	**2574.1**	100	101,60
Zinc	Zn	2-3 % HNO_3	**2485.1**	100	54,75	**2576.1**	100	101,60
			2485.2	500	111,70	**2576.2**	500	200,95
Zircon	Zr	5 % HCl / 0,5 % HF	**2487.1**	100	54,75	**2584.1**	100	110,65

For additional product data and safety information, see chapter Chemicals A-Z.

* Cannot be traced back to NIST SRM

Multi Element Standards for ICP-OES

ready-to-use

(Inductively Coupled Plasma – Optical Emission Spectrometry)

The solutions and mixtures are made using materials of the highest purity, and therefore meet the requirements for instrumental analysis by AAS and ICP. All solutions are certified and can be traced to NIST standard reference solutions. Solutions are produced according to **ISO Guide 34** in an accredited environment. The solutions are tested in a laboratory accredited to **ISO/IEC 17025** and supplied with a detailed, batch-specific certificate of analysis. A series of mixtures of different element combinations and concentrations for standard environmental analyses.

- 16 different multi element standards
- Quality control standards
- Surface water analysis ①
- Sewage sludge analysis ②
- 12 months shelf life for unopened bottle & 6 months after the bottle has been opened

Product	Elements	Composition	Matrix	Art. No.	Pack Qty. (ml)	€
ICP Multi-Element Standard Solution I (concentration in mg/l)	19	Ag (50), Al (100), B (15), Ba (5), Be (1), Bi (200), Cd (20), Co (20), Cr (25), Cu (20), Fe (15), Ga 150), In (200), Mn (5), Ni (50), Pb (200), Sr (1), Tl (400), Zn (20)	5 % HNO_3	**2636.1**	100	145,70
ICP Multi-Element Standard Solution III (1000 mg/l)	4	Ba, Ca, Mg, Sr	2 % HNO_3	**2637.1**	100	113,85
ICP Multi-Element Standard Solution IV (1000 mg/l)	23	Ag, Al, B, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, In, K, Li, Mg, Mn, Na, Ni, Pb, Sr, Tl, Zn	2 % HNO_3	**2638.1**	100	271,45
ICP Multi-Element Standard Solution VIII (100 mg/l)	24	Al, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, K, Li, Mg, Mn, Na, Ni, Pb, Se, Sr, Te, Tl, Zn	2 % HNO_3	**2639.1**	100	271,45
ICP Multi-Element Standard Solution IX (100 mg/l)	9	As, Be, Pb, Cd, Cr, Ni, Hg, Se, Tl	2 % HNO_3	**2640.1**	100	145,70
ICP Multi-Element Standard Solution X ① (concentration in mg/l)	23	Ca (35000), Mg (15000), Na (8000), K (3000), B (100), Fe (100), Mo (100), Sr (100), As (50), Ba (50), Ni (50), V (50), Zn (50), Mn (30), Co (25), Pb (25), Be (20), Cd (20), Cr (20), Cu (20), Bi (10), Se (10), Tl (10)	2 % HNO_3	**2642.1**	100	246,20
ICP Multi-Element Standard Solution XI ② (concentration in mg/l)	7	Cd (10), Cr (900), Cu (800), Hg (8), Ni (200), Pb (900), Zn (2500)	2 % HNO_3	**2643.1**	100	145,70
ICP Multi-Element Standard Solution XIII (concentration in mg/l)	15	Al (500), As (100), Be (100), Cd (25,0), Co (100), Cr (100), Cu (100), Fe (100), Hg (5,0), Mn (100), Ni (100), Pb (100), Se (25,0), V (250), Zn (100)	2 % HNO_3	**2644.1**	100	289,20
ICP Multi-Element Standard Solution XVI (100 mg/l)	21	As, Be, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn	2 % HNO_3	**2645.1**	100	246,20
ICP Multi-Element Standard Solution XVII (100 mg/l)	7	Hf, Ir, Sb, Sn, Ta, Ti, Zr	15 % HCl	**2646.1**	100	169,35
ICP Multi-Element Standard Solution A (concentration in mg/l)	24	Al (1000), As (100), Ba (500), B (500), Ca (1000), Cd (100), Co (500), Cr (500), Cu (500), Fe (1000), Hg (10), K (1000), Li (100), Mg (1000), Mn (500), Na (1000), Ni (500), Pb (500), Rb (500), Sr (500), Te (500), Ti (500), V (500), Zn (500)	5 % HNO_3	**8248.1**	100	461,20
ICP Multi-Element Standard Solution B (concentration in mg/l)	25	Al (200), As (5), Ba (50), B (20), Ca (500), Cd (5), Co (20), Cr (40), Cu (20), Fe (100), Hg (0,5), K (100), Li (10), Mg (500), Mn (10), Na (100), Ni (40), P (40), Pb (10), Rb (10), Sr (100), Te (10), Ti (10), V (40), Zn (50)	5 % HNO_3	**8249.1**	100	342,95
ICP Multi-Element Standard Solution (9 elements, 1000 mg/l)	9	As, Cd, Cr, Cu, Mo, Ni, Sb, Se, Zn	5 % HNO_3	**9987.1**	100	267,70
ICP Multi-Element Standard Solution (22 elements, 1 mg/l)	22	As, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn	5 % HNO_3	**2647.1**	100	65,50
ICP Multi-Element Standard Solution (22 elements, 100 mg/l)	22	As, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn	5 % HNO_3	**2648.1**	100	292,95
ICP Multi-Element Standard Solution (28 elements, 1 mg/l)	28	Al, Ag, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn	5 % HNO_3	**2649.1**	100	80,55
ICP Multi-Element Standard Solution (28 elements, 100 mg/l)	28	Al, Ag, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn	5 % HNO_3	**2650.1**	100	292,95

For additional product data and safety information, see chapter Chemicals A-Z.

▶ For the exact composition, safety information and additional data, see chapter Chemicals A-Z.

Multi-element standards for the ICP-MS ready-to-use

(Inductively Coupled Plasma - Mass spectrometry)

The standard solutions are manufactured from high-purity starting material (as a rule ≥99,999%) under clean room conditions. Acids (purified by means of sub-boiling distillation) and water of highest quality are used to manufacture the solutions.

The solutions are certified and can be traced to NIST standard reference solutions. Solutions are produced according to **ISO Guide 34** in an accredited environment. The solutions are tested in a laboratory accredited to **ISO/IEC 17025** and supplied with a detailed, batch-specific certificate of analysis.

The range encompasses 18 different multi-element standards in various compositions for tuning, calibration and interference tests.

Product	Elements	Composition	Matrix	Art. No.	Pack Qty. (ml)	€
ICP-MS Multi-Element Standard Solution (concentration in mg/l)	3	Cr (4), Fe (20), Sr (4)	2 % HNO_3	**0381.1**	100	99,90
				0381.2	500	180,50
ICP-MS Multi-Element Standard Solution (1000 mg/l)	4	Ca, K, Mg, Na	2 % HNO_3	**6803.1**	100	87,00
ICP-MS Multi-Element Standard Solution (10 mg/l)	4	Mo, Sb, Sn, Ti	2 % HNO_3 / 0,1 % HF	**6807.1**	100	89,80
				6807.2	500	170,95
ICP-MS Calibration Standard Solution (1000 mg/l)	5	Ca, Fe, K, Mg, Na	2 % HNO_3	**0409.1**	100	107,40
				0409.2	500	210,20
ICP-MS Tuning Solution (10 mg/l)	5	Ce, Co, Li, Tl, Y	2 % HNO_3	**6819.1**	100	90,20
ICP-MS Tuning Solution (1 µg/l)	6	Ce, Co, Li, Mg, Tl, Y	2 % HNO_3	**6806.1**	100	107,40
				6806.2	500	188,05
ICP-MS Tuning Solution A (concentration in µg/l)	6	Be (10), In (2), Bi (2), Ce (2), Co (5), Mn (5)	1 % HNO_3	**0900.2**	250	261,15
ICP-MS Tuning Solution B (concentration in µg/l)	6	Be (1000), In (200), Bi (200), Ce (200), Co (500), Mn (500)	1 % HNO_3	**0902.1**	100	203,20
ICP-MS-Mehrelementstandardlösung (concentration in mg/l)	8	As (2), Cd (2), Cr (3), Cu (10), Fe (4), Ni (2), Pb (5), Zn (10)	2 % HNO_3	**6814.1**	100	123,55
				6814.2	500	231,15
ICP-MS Calibration Standard Solution (10 mg/l)	8	Ge, Hf, Mo, Sb, Sn, Te, W, Zr	2 % HNO_3 / 0,1 % HF	**6816.1**	100	107,40
				6816.2	500	193,40
ICP-MS Multi-Element Standard Solution (10 mg/l)	10	Au, Hf, Ir, Pd, Pt, Rh, Ru, Sb, Sn, Te	10 % HCl / 1 % HNO_3	**0429.1**	100	111,70
ICP-MS-Mehrelementstandardlösung (concentration in mg/l)	10	Mo (50), Pb (40), Pt (40), Rh (40), Sb (80), Si (40), Sn (80), Te (40), W (40), Zr (40)	2 % HCl	**6815.1**	100	263,40
				6815.2	500	499,90
ICP-MS Interference Check Solution A - 6020 (concentration in µg/l)	12	Cl^- (20000), Ca (3000), Fe (2500), Na (2500), C (2000), Al (1000), Mg (1000), P (1000), K (1000), S (1000), Mo (20), Ti (20)	5 % HNO_3	**6808.1**	100	258,55
				6808.2	500	499,90
ICP-MS-Mehrelementstandardlösung (concentration in mg/l)	12	As (2,5), Ba (2,5), Cd (0,5), Cr (5), Cu (5), Hg (0,2), Mo (3), Ni (5), Pb(5), Sb (0,5), Se (0,7), Zn (5)	2 % HNO_3	**6810.1**	100	155,90
				6810.2	500	275,75
ICP-MS Multi-Element Standard Solution (10 mg/l)	16	As, Be, Co, Cr, Cs, Cu, Li, Mn, Ni, Pb, Rb, Sc, Se, Sr, V, Zn	5 % HNO_3	**0416.1**	100	160,20
				0416.2	500	306,40
ICP-MS Multi-Element Standard Solution (100 mg/l)	21	Al, Ag, As, Ba, Be, Cd, Co, Cr, Cu, Fe, K, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn	5 % HNO_3	**6811.1**	100	236,00
ICP-MS-Mehrelementstandardlösung (concentration in mg/l)	22	Ag (5), Al (30), As (10), B (30), Ba (10), Be (3), Cd (3), Co (5), Cr (10), Cu (10), Mn (5), Mo (3), Ni (10), Pb (5), Se (5), Sn (10), Sr (100), Te (10), Ti (3), Tl (2), V (10), Zn (100)	2 % HNO_3	**0383.1**	100	310,70
				0383.2	500	568,70
ICP-MS-Mehrelementstandardlösung (concentration in mg/l)	27	Ag (50), Al (80), As (80), B (40), Ba (50), Be (40), Ca (80), Cd (40), Co (50), Cr (50), Cu (50), Fe (50), In (40), K (80), Li (40), Mg (80), Mn (50), Na (80), Ni (50), P (200), Pb (80), Se (40), Sr (50), Ti (40), Tl (40), V (50), Zn (50)	2 % HNO_3	**6813.1**	100	346,70
				6813.2	500	611,70
ICP-MS Multi-Element Standard Solution (10 mg/l)	28	Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cs, Cu, Fe, Ga, In, K, Li, Mg, Mn, Na, Ni, Pb, Rb, Se, Sr, Tl, V, Zn	5 % HNO_3	**6802.1**	100	446,15

Single Element Standards for ICP-MS

Mercury ICP-MS Standard Solution (10 mg/l)

10 mg/l Hg

Danger H290-H314-EUH071

Type analysis:

c (Hg) in 5 % HNO_3 ..... 10 mg/l

Traceable to SRM from NIST.

5017.1	100 ml	HDPE	48,95 €

ROTIPURAN® ULTRA / SUPRA

Acids, Alkaline Solutions and Water for trace analysis via ICP-OES, ICP-MS, AAS and IC

ROTH provides two high quality product lines, **ROTIPURAN® Ultra & Supra** specially for research, trace analysis and electronics.
These ultrapure reagents are produced using a technologically complex distillation process (subboiling distillation) and are filled only into specially selected, suitable containers under clean room conditions. Very extensive production and quality controls guarantee extremely high quality.

Analysenzertifikat
CERTIFICATE OF ANALYSIS

ROTIPURAN® Ultra

This ultrapure product line is characterised for its especially high purity **(in ppt-quality)** and fulfils the highest purity requirements. The metal content of these products is below 100 ppt [parts per trillion=10^{-12}] while key metals are under 10 ppt. These products are used in ultra trace analysis (via ICP-OES, ICP-MS, AAS, IC) and for applications in the electronics industry. The reagents are bottled and offered in high class fluoropolymer plastic bottles (PFA and FEP).

Features:
- Specified metal content: less than 100 ppt
- Preponderant metals are under 10 ppt
- More than 65 analysed metals
- Produced and bottled under clean room conditions
- Continuous process control for highest product purity
- Bottled exclusively in purified fluoropolymer bottles
- Highest purity and maximum product safety

ROTIPURAN® Supra

This supra quality line **(in ppb-quality)** is perfectly suitable for sample preparation in trace analysis (e.g. via ICP-OES, AAS, IC, etc.). Over 60 elements are specified and their content is below 1 ppb [parts per billion =10^{-9}]. Bottled and delivered in special plastic bottles.

Features:
- Maximum metal contamination: <1 ppb
- 60 specified metals
- Produced and filled under clean room conditions
- Bottled in special lightweight bottles for greater safety and easier handling. 2,5 liter bottles have got a handle
- HF is delivered with additional drop spout for safe handling
- Extremely economical purity for most analytic applications

ROTIPURAN® Low Organic:
TOC (Total Organic Carbon) - content: <20 ppb

ROTIPURAN® Ultra products at a glance

Product	Trade Marks	Purity	Thread	Art. No.	Pack Qty.	Packaging	€
Acetic acid	ROTIPURAN® Ultra	100 %	38 - 430	**HN65.2**	250 ml	plastic (FEP)	384,35
				HN65.1	500 ml	plastic (FEP)	547,20
				HN65.3	1 l	plastic (FEP)	858,95
Ammonia solution	ROTIPURAN® Ultra	20 %	38 - 430	**HN66.2**	250 ml	HDPE	235,45
				HN66.1	500 ml	HDPE	400,45
				HN66.3	1 l	HDPE	661,15
Hydrobromic acid	ROTIPURAN® Ultra	48 %	38 - 430	**HN67.3**	250 ml	plastic (FEP)	596,65
				HN67.1	500 ml	plastic (FEP)	811,65
				HN67.2	1 l	plastic (FEP)	1278,20
				HN67.4	2 l	plastic (FEP)	1858,70
Hydrochloric acid	ROTIPURAN® Ultra	34 %	38 - 430	**HN63.1**	250 ml	plastic (PFA)	364,45
				HN63.2	500 ml	plastic (PFA)	547,20
				HN63.3	1 l	plastic (PFA)	901,95
				HN63.4	2 l	plastic (PFA)	1321,20
Hydrofluoric acid	ROTIPURAN® Ultra	48 %	38 - 430	**HN64.2**	250 ml	plastic (PFA)	478,40
				HN64.1	500 ml	plastic (PFA)	719,20
				HN64.3	1 l	plastic (PFA)	1159,95
Hydrogen peroxide	ROTIPURAN® Ultra	31 %	38 - 430	**HN69.1**	500 ml	plastic (FEP)	532,15
Nitric acid	ROTIPURAN® Ultra	69 %	38 - 430	**HN60.1**	250 ml	plastic (FEP)	385,95
				HN60.2	500 ml	plastic (FEP)	532,15
				HN60.3	1 l	plastic (FEP)	854,65
				HN60.4	2 l	plastic (FEP)	1310,45
Perchloric acid	ROTIPURAN® Ultra	70 %	38 - 430	**HN61.2**	250 ml	plastic (FEP)	471,95
				HN61.1	500 ml	plastic (FEP)	661,15
				HN61.3	1 l	plastic (FEP)	1073,95
				HN61.4	2 l	plastic (FEP)	1773,75
Sulphuric acid	ROTIPURAN® Ultra	95 %	38 - 430	**HN62.1**	250 ml	plastic (FEP)	407,45
				HN62.2	500 ml	plastic (FEP)	579,45
				HN62.3	1 l	plastic (FEP)	966,45
				HN62.4	2 l	plastic (FEP)	1643,70
Water	ROTIPURAN®	Ultra	38 - 430	**HN68.1**	500 ml	LDPE	54,30
				HN68.2	1 l	LDPE	80,55
				HN68.3	2 l	LDPE	152,15

ROTIPURAN® Supra products at a glance

Product	Trade Marks	Purity	Thread	Art. No.	Pack Qty.	Packaging	€
Acetic acid	ROTIPURAN® Supra	100 %	GL 45	**HN55.1**	500 ml	plastic	82,70
				HN55.3	1 l	plastic	125,70
				HN55.4	2,5 l	plastic	160,10
			38 - 430	**HN55.5**	4 l	plastic	246,20
Ammonia solution	ROTIPURAN® Supra	20 %	38 - 430	**HN56.1**	500 ml	plastic	70,45
				HN56.3	4 l	plastic	390,15
Hydrochloric acid	ROTIPURAN® Supra	35 %	GL 45	**HN53.1**	500 ml	plastic	76,90
				HN53.2	1 l	plastic	117,75
				HN53.3	2,5 l	plastic	132,15
			38 - 430	**HN53.4**	4 l	plastic	203,20
		30 %	GL 45	**NE57.2**	1 l	plastic	101,60
				NE57.3	2,5 l	plastic	121,40
Hydrofluoric acid	ROTIPURAN® Supra	48 %	38 - 430	**HN54.1**	500 ml	LDPE	143,95
Nitric acid	ROTIPURAN® Supra	69 %	GI 45	**HN50.1**	500 ml	plastic	78,40
				HN50.2	1 l	plastic	121,40
				HN50.3	2,5 l	plastic	143,95
Perchloric acid	ROTIPURAN® Supra	70 %	GL 45	**HN51.1**	500 ml	plastic	171,50
				HN51.3	1 l	plastic	274,15
				HN51.4	2,5 l	plastic	413,90
Sulphuric acid	ROTIPURAN® Supra	95 %	GL 45	**HN52.1**	500 ml	plastic	79,45
				HN52.2	1 l	plastic	132,15
				HN52.5	2,5 l	plastic	159,00

ROTIPURAN® Low organic

Product	Trade Marks	Purity	Thread	Art. No.	Pack Qty.	Packaging	€
Water	ROTIPURAN®	Low organic	38 - 430	**HN57.1**	1 l	glass	69,35
				HN57.2	4 l	glass	113,85

For additional product data and safety information, see chapter Chemicals A-Z.

▶ For safety information and product specification, see chapter Chemicals A-Z.

Ultra / Ultra HF dispenser

For dispensing highly pure acids and alkalis.
Suitable for use in ultra trace analysis.

Features:

- **Free of metals**
- Made of high quality and highly pure plastics (PTFE, TFM and PFA)
- Calibrated and mechanically tested for precision and accuracy
- 38-430 thread (fits ROTIPURAN® Ultra products)

Special features of Ultra dispenser:

- Acid cleansed
- Manufactured in cleanroom (class 100)

Special features of Ultra HF dispenser:

- Specially for dispensing hydrofluoric acids
- Also suitable for analytical acids

When using bottles with a GL45 thread, please order fastening for dispenser KK11.1 separately.

Model	Volume (ml)	Graduation (ml)	Tolerance (±ml)	Art. No.	Pack Qty.	€
Ultra	0,5-5	0,5	0,02	**KK97.1**	1 piece	2428,45
Ultra HF	0,5-5	0,5	0,02	**KK98.1**	1 piece	1998,45

Accessories for Ultra/Ultra HF dispenser

Bottle holder

Stabilises bottles when using a dispenser.
The four-screw system is suitable for both square bottles and round bottles. The bottle holder is designed for ROTIPURAN® Supra and Ultra bottles with capacities from 250 ml to 2 litres. Also suitable for bottles with a diameter from approx. 7,0 cm to 11,5 cm.

Product	Art. No.	Pack Qty.	€
Bottle holder	**KK99.1**	1 piece	103,10

Fastening for Ultra/Ultra HF dispenser to GL45

Made of PTFE. For bottles with GL45 thread, specially for the use of ROTIPURAN® Supra products with Ultra and Ultra HF dispensers.

Product	Art. No.	Pack Qty.	€
Fastening for ROTIPURAN® Supra (GL45)	**KK11.1**	1 piece	293,40

▶ Bottles made of PTFE
see chapter Labware page 120

▶ Beakers made of PTFE
see chapter Labware page 12

ROTI®METIC

(Metal Inorganic Compounds) Ultra Pure Metals and Inorganic Compounds

The ROTI®METIC product range comprises more than 130 high purity inorganic metals and metal compounds with purity levels ranging from 99,9 % (3N) to 99,9999 % (6N). Modern production technology as well as high quality and safety standards make it possible to achieve these high purity levels of metal traces from 100 ppm to 1 ppm.
Up to 60 trace metal compounds are analysed by HR-ICP, ICP-OES, AA, GD-MS and documented in the batch specific certificate of analysis supplied with the product.
Our ultra high purity metals and metal compounds are ideal for the following applications:

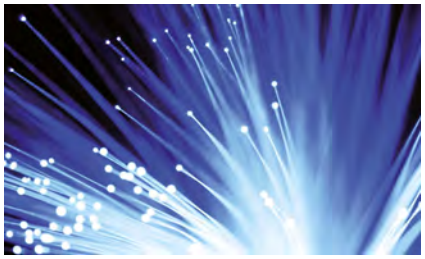
- Instrumental analytics
- Chemical analyses & syntheses
- Crystal growth technology
- Nanotechnology
- Photovoltaic technology
- Optical fibres
- Laser technology
- Photonics
- Fuel cells
- Catalysis

Our mission is to offer the quality and service you require in research & development and in production.

Excellent value for money and the option of ordering in semi-bulk are strong arguments in favour of the ROTI®METIC product range.

Product	Purity	CAS No.	Art. No.	Pack Qty. (g)	€
Aluminium granulate	99,995 % (4N5)	7429-90-5	**5577.1**	25	45,70
			5577.2	100	124,60
Aluminium chloride hexahydrate	99,9999 % (6N)	7784-13-6	**5368.1**	25	96,65
			5368.2	100	360,15
Aluminium fluoride	99,99 % (4N), anhydrous	7784-18-1	**5395.1**	10	84,95
			5395.2	50	299,95
Aluminium nitrate nonahydrate	99,999 % (5N)	7784-27-2	**5567.1**	10	40,75
			5567.2	50	118,15
Aluminium oxide	99,995 % (4N5)	1344-28-1	**5575.1**	5	40,75
			5575.2	25	111,30
Ammonium chloride	99,999 % (5N)	12125-02-9	**5050.1**	50	110,65
			5050.2	100	185,45
Ammonium dihydrogen phosphate	99,999 % (5N)	7722-76-1	**5580.1**	25	52,60
			5580.2	100	121,40
Ammonium hexachloro-osmate (IV)	99,99 % (4N)	12125-08-5	**5585.1**	1	181,70
Ammonium hexachloro-rhodate (III)	99,995 % (4N5)	15336-18-2	**5586.1**	1	514,95
Ammonium hexafluorosilicate	99,999 % (5N)	16919-19-0	**5587.1**	10	60,10
			5587.2	25	120,95
			5587.3	50	204,80
Ammonium hexafluoro-titanate(IV)	99,999 % (5N)	16962-40-6	**5589.1**	10	47,90
			5589.3	100	332,20
Ammonium hydrogen fluoride	99,999 % (5N)	1341-49-7	**5363.1**	25	112,35
di-Ammonium hydrogen phosphate	99,999 % (5N)	7783-28-0	**5596.1**	100	235,45
Ammonium molybdate(VI)	99,99 % (4N)	13106-76-8	**5591.1**	5	46,15
			5591.2	25	155,35
Ammonium monovanadate	99,995 % (4N5)	7803-55-6	**5590.3**	1	24,20
			5590.2	25	396,70
Ammonium sulphate	99,999 % (5N)	7783-20-2	**5606.1**	10	30,00
			5606.2	50	81,20
Ammonium tetra-borate tetrahydrate	99,999 % (5N)	12228-87-4	**5396.1**	25	101,60
Ammonium tetrathiomolybdate	99,99 % (4N)	15060-55-6	**5608.1**	1	40,35
			5608.2	5	78,40
Ammonium tetrathiotungstate	99,9 % (3N)	13862-78-7	**5397.1**	5	134,40
Antimony shot	99,999 % (5N)	7440-36-0	**4516.2**	50	196,65
Barium carbonate	99,999 % (5N)	513-77-9	**5321.1**	25	123,55
			5321.2	100	392,40
Barium chloride	99,999 % (5N), anhydrous	10361-37-2	**5051.1**	25	102,05
Barium chloride dihydrate	99,999 % (5N)	10326-27-9	**5115.1**	50	170,95
			5115.2	100	267,70
Barium fluoride	99,995% (4N5)	7787-32-8	**5055.1**	25	127,95
Barium hydroxide hydrate	99,995 % (4N5)	40226-30-0	**5609.1**	5	59,05
			5609.2	25	224,70
Barium nitrate	99,9995 % (5N5)	10022-31-8	**5138.1**	50	155,80
			5138.2	100	274,15
Beryllium acetate basic	99,999 % (5N)	19049-40-2	**5612.1**	5	64,00
			5612.2	25	224,70
Boric acid	99,999 % (5N)	10043-35-3	**5614.1**	25	53,25
			5614.2	100	131,70
Cadmium acetate	99,999 % (5N), anhydrous	543-90-8	**5247.1**	10	96,65
			5247.2	25	155,35
Caesium carbonate	99,995 % (4N5)	534-17-8	**5618.1**	5	35,40
Caesium carbonate	99,995 % (4N5)	534-17-8	**5618.2**	25	112,35
Caesium chloride	99,999 % (5N)	7647-17-8	**5061.1**	10	55,80
			5061.2	50	161,15
Caesium nitrate	99,999 % (5N)	7789-18-6	**4505.1**	10	97,30
			4505.2	50	353,70

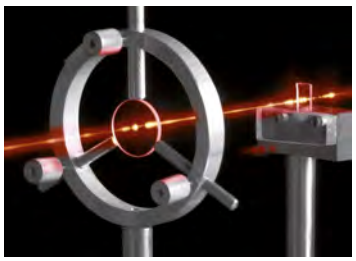
High purity

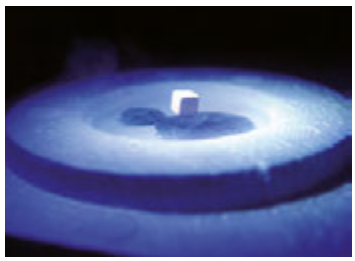


Product	Purity	CAS No.	Art. No.	Pack Qty. (g)	€
Calcium carbonate	99,999 % (5N)	471-34-1	**5616.1**	5	47,20
			5616.2	25	149,45
Calcium chloride hydrate	99,999 % (5N)	22691-02-7	**5056.1**	10	122,45
Calcium hydroxide	99,995 % (4N5)	1305-62-0	**5617.1**	5	53,65
			5617.2	25	181,70
Calcium nitrate hydrate	99,999 % (5N)	35054-52-5	**5058.1**	5	52,15
			5058.2	25	166,65
Cerium(III) nitrate hexahydrate	99,999 % (5N)	10294-41-4	**5312.1**	5	66,55
			5312.2	25	206,95
Cerium(III) acetate hydrate	99,999 % (5N)	17829-82-2	**5372.1**	10	82,25
			5372.2	50	322,00
Cerium(III) sulphate	99,99 % (4N), anhydrous	13454-94-9	**5603.1**	25	199,45
Cerium(III) sulphate octahydrate	99,995 % (4N5)	10450-59-6	**5601.1**	50	188,15
			5601.2	250	736,40
Chromium(III) nitrate nonahydrate	99,999 % (5N)	7789-02-8	**5619.1**	5	62,25
			5619.2	25	184,40
Chromium(III) oxide	99,9 % (3N)	1308-38-9	**4498.1**	5	36,45
			4498.2	25	149,45
Cobalt powder	99,999 % (5N)	7440-48-4	**5620.1**	5	88,70
			5620.2	25	284,90
Cobalt(II) nitrate hexahydrate	99,999 % (5N)	10026-22-9	**5291.1**	10	223,10
			5291.2	25	514,95
Cobalt(II) sulphate hydrate	99,999 % (5N)	60459-08-7	**5326.1**	10	76,25
Copper pellets	99,999 % (5N)	7440-50-8	**5621.1**	25	60,75
			5621.2	100	150,40
Copper powder	99,999 % (5N)	7440-50-8	**5386.1**	10	133,85
			5386.2	50	568,70
Copper(I) chloride	99,995 % (4N5)	7758-89-6	**5379.1**	10	78,40
			5379.2	50	256,95
Copper(I) iodide	99,995 % (4N5)	7681-65-4	**5300.2**	50	213,95
Europium(III) oxide	99,995 % (4N5)	1308-96-9	**5394.1**	5	285,45
Gallium	99,9999 % (6N)	7440-55-3	**4507.2**	25	267,70
Gallium(III) nitrate hydrate	99,9995 % (5N5)	69365-72-6	**5548.1**	25	274,15
Gallium(III) oxide	99,999 % (5N)	12024-21-4	**5377.1**	10	144,60
Gold shot	99,999 % (5N)	7440-57-5	**5622.1**	1	231,05
			5622.2	5	1095,45
Holmium(III) oxide	99,99 % (4N)	12055-62-8	**5338.1**	10	232,10
			5338.2	50	697,70
Hydrogen hexa-chloroplatinate(IV) hydrate	99,995 % (4N5)	26023-84-7	**5626.1**	1	176,20
			5626.2	5	815,95
Hydrogen tetra-chloroaurate(III) hydrate	99,999 % (5N)	27988-77-8	**5628.1**	1	167,60
Indium shot	99,999 % (5N)	7440-74-6	**5629.1**	5	55,80
			5629.2	25	188,15
Indium(III) bromide	99,999 % (5N)	13465-09-3	**5322.1**	5	44,65
			5322.2	25	173,65
Indium(III) nitrate pentahydrate	99,999 % (5N)	207398-97-8	**5384.1**	10	93,45
Indium(III) oxide	99,999 % (5N)	1312-43-2	**5630.1**	5	48,95
			5630.2	25	163,95

Product	Purity	CAS No.	Art. No.	Pack Qty. (g)	€
Iodine(V) oxide	99,99 % (4N)	12029-98-0	**5364.1**	5	41,40
			5364.2	25	155,90
Iron granules	99,99 % (4N)	7439-89-6	**5631.1**	5	42,90
			5631.2	25	138,70
Iron(III) nitrate nonahydrate	99,999 % (5N)	7782-61-8	**5632.1**	5	82,25
			5632.2	25	311,75
Iron(III) oxide	99,98 % (3N8)	1309-37-1	**5634.1**	5	36,45
			5634.2	25	116,00
Lanthanum(III) nitrate hexahydrate	99,995 % (4N5)	10277-43-7	**5366.1**	25	99,45
			5366.2	100	246,20
Lithium bromide	99,999 % (5N)	7550-35-8	**5062.1**	25	125,25
			5062.2	50	198,90
Lithium carbonate	99,999 % (5N)	554-13-2	**5635.1**	10	41,40
			5635.2	25	72,60
			5635.3	100	225,25
Lithium chloride	99,999 % (5N)	7447-41-8	**5079.1**	25	125,25
			5079.2	50	198,90
Lithium fluoride	99,99 % (4N)	7789-24-4	**5082.1**	5	55,80
			5082.2	25	176,20
Lithium nitrate	99,999 % (5N), anhydrous	7790-69-4	**5281.1**	10	75,80
			5281.2	25	149,45
Lutetium(III) oxide	99,995 % (4N5)	12032-20-1	**5296.1**	1	88,70
Magnesium chloride hexahydrate	99,999 % (5N)	7791-18-6	**5347.1**	25	198,90
			5347.2	100	590,20
Magnesium nitrate hexahydrate	99,999 % (5N)	13446-18-9	**5420.1**	10	50,45
			5420.2	50	104,85
Magnesium oxide	99,999 % (5N)	1309-48-4	**5639.1**	10	109,55
			5639.2	50	493,45
Manganese flakes	99,98 % (3N8)	7439-96-5	**4509.1**	25	91,30
			4509.2	50	133,20
Manganese(II) acetate tetrahydrate	99,999 % (5N)	6156-78-1	**5641.1**	5	56,90
			5641.2	25	157,50
Manganese(II) chloride tetrahydrate	99,995 % (4N5)	13446-34-9	**5304.1**	25	114,50
			5304.2	100	342,95
Manganese(II) nitrate hydrate	99,995 % (4N5)	15710-66-4	**5392.1**	10	99,45
			5392.2	25	209,65
Manganese(IV) oxide	99,995 % (4N5)	1313-13-9	**5383.1**	5	45,05
			5383.2	25	155,90
Molybdenum(VI) oxide	99,98 % (3N8)	1313-27-5	**4548.1**	5	50,00
			4548.2	10	82,70
Nickel powder	99,995 % (4N5)	7440-02-0	**5643.1**	25	78,40
			5643.2	100	246,20
Nickel(II) chloride hexahydrate	99,999 % (5N)	7791-20-0	**5373.1**	50	338,65
Nickel(II) nitrate hexahydrate	99,999 % (5N)	13478-00-7	**5387.1**	100	224,70
			5387.2	500	762,20
Nickel(II) oxide	99,999 % (5N)	1313-99-1	**5388.1**	50	231,15
			5388.2	100	428,95
Palladium powder	99,999 % (5N)	7440-05-3	**5648.1**	1	220,40
Palladium(II) chloride	99,999 % (5N)	7647-10-1	**5653.1**	1	134,40
			5653.2	5	568,70
Palladium(II) oxide	99,995 % (4N5)	1314-08-5	**5393.1**	1	166,65
			5393.2	5	618,15
Platinum powder	99,999 % (5N)	7440-06-4	**5654.1**	1	424,65

High purity





Product	Purity	CAS No.	Art. No.	Pack Qty. (g)	€
Potassium bromide	99,995 % (4N5)	7758-02-3	**5064.1**	10	107,40
			5064.2	50	364,45
Potassium carbonate	99,995 % (4N5)	584-08-7	**5335.1**	10	47,85
			5335.2	50	152,15
Potassium chloride	99,995 % (4N5)	7447-40-7	**5346.1**	25	76,90
			5346.2	100	223,10
Potassium fluoride	99,99 % (4N)	7789-23-3	**5656.1**	5	54,30
			5656.2	25	188,70
di-Potassium hydrogen phosphate	99,99 % (4N), anhydrous	7758-11-4	**5066.1**	25	166,55
Potassium hydroxide	99,98 % (3N8)	1310-58-3	**5658.1**	100	113,45
Potassium iodide	99,999 % (5N)	7681-11-0	**5067.1**	25	125,25
Potassium nitrate	99,999 % (5N)	7757-79-1	**5659.1**	10	54,75
			5659.2	50	167,60
Potassium sulphate	99,995 % (4N5)	7778-80-5	**5071.1**	10	92,35
Potassium tetra-chloroaurate(III)	99,995 % (4N5)	13682-61-6	**5114.1**	1	241,90
			5114.2	5	1020,20
Potassium tetra-chloroplatinate(II)	99,95 % (3N5)	10025-99-7	**5660.1**	1	241,90
Rhodium(III) chloride hydrate	99,95 % (3N5)	20765-98-4	**5668.1**	1	521,40
Rubidium chloride	99,98 % (3N8)	7791-11-9	**5679.1**	5	213,95
			5679.2	10	364,45
Rubidium nitrate	99,99 % (4N)	13126-12-0	**5293.1**	5	155,90
			5293.2	25	676,20
Ruthenium(III) chloride	99,9 % (3N), anhydrous	10049-08-8	**5686.1**	1	92,35
			5686.2	5	407,45
Scandium(III) oxide	99,995 % (4N5)	12060-08-1	**5735.1**	1	160,20
Selenium pellets	99,999 % (5N)	7782-49-2	**4547.1**	10	48,30
			4547.2	50	181,70
Selenium(IV) oxide	99,999 % (5N)	7446-08-4	**5324.1**	10	138,70
Silicon dioxide	99,998 % (4N8)	60676-86-0	**5738.1**	5	44,00
			5738.2	25	110,65
Silver bromide	99,999 % (5N)	7785-23-1	**5739.1**	5	62,25
			5739.2	25	228,45
Silver chloride	99,9999 % (6N)	7783-90-6	**5302.1**	1	47,20
			5302.2	5	84,40
			5302.3	25	332,20
Silver nitrate	99,9999 % (6N)	7761-88-8	**4500.1**	10	75,15
			4500.2	50	342,95
Silver nitrite	99,99 % (4N)	7783-99-5	**5065.1**	10	149,45
			5065.2	50	493,45
Sodium acetate	99,99 % (4N), anhydrous	127-09-3	**5380.1**	25	83,75
Sodium bromide	99,999 % (5N)	7647-15-6	**5086.1**	25	149,45
Sodium carbonate	99,999 % (5N), anhydrous	497-19-8	**5740.1**	5	45,70
			5740.2	25	155,90
Sodium chloride	99,999 % (5N)	7647-14-5	**5741.1**	5	38,60
			5741.2	25	76,25
			5741.3	100	267,70
Sodium fluoride	99,995 % (4N5)	7681-49-4	**4503.1**	10	56,90
			4503.2	50	177,40
Sodium nitrate	99,999 % (5N)	7631-99-4	**5742.1**	25	177,40
Sodium sulphate	99,999 % (5N)	7757-82-6	**5076.1**	10	79,05
			5076.2	25	162,90

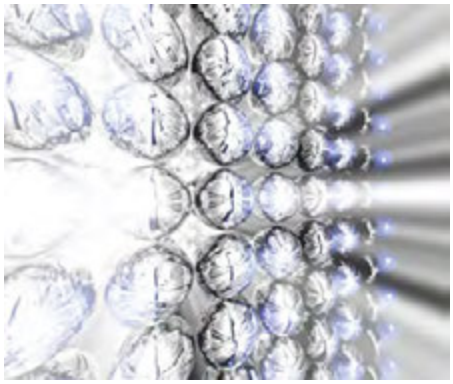
Product	Purity	CAS No.	Art. No.	Pack Qty. (g)	€
Strontium carbonate	99,998 % (4N8)	1633-05-2	**5376.1**	5	52,15
			5376.2	25	138,70
Strontium nitrate	99,999 % (5N)	10042-76-9	**5078.1**	25	155,90
Tellurium(IV) oxide	99,999 % (5N)	7446-07-3	**5745.1**	5	44,65
			5745.2	10	80,10
			5745.3	50	267,70
Tetraammine platinum(II) nitrate	99,995 % (4N5)	20634-12-2	**5746.1**	1	342,95
Tin shot	99,999 % (5N)	7440-31-5	**5097.1**	5	81,20
			5097.2	10	132,80
Titanium(IV) oxide	99,999 % (5N)	13463-67-7	**5747.1**	5	54,30
			5747.2	25	162,25
Tungsten(VI) oxide	99,995 % (4N5)	1314-35-8	**5399.1**	50	284,90
			5399.2	100	482,70
Vanadium(V) oxide	99,995 % (4N5)	1314-62-1	**5370.1**	5	78,40
			5370.2	25	310,70
Ytterbium(III) chloride hexahydrate	99,999 % (5N)	10035-01-5	**5749.1**	10	181,70
Ytterbium(III) oxide	99,999 % (5N)	1314-37-0	**5303.1**	5	84,95
			5303.2	25	289,20
Yttrium(III) oxide	99,999% (5N)	1314-36-9	**5751.1**	10	68,70
			5751.2	50	203,20
Zinc shot	99,999 % (5N)	7440-66-6	**5345.1**	25	46,15
			5345.2	100	145,15
Zinc oxide	99,999 % (5N)	1314-13-2	**5421.1**	25	121,40
			5421.2	100	403,15
Zirconyl chloride octahydrate	99,995 % (4N5)	13520-92-8	**4502.1**	10	62,25
Zirconyl nitrate hydrate	99,99 % (4N)	14985-18-3	**5415.1**	25	246,20
			5415.2	100	772,95

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Ultra pure acids, alkaline solutions and water see page 1729

ROTI®REMETIC

Rare **E**arth **Met**al **I**norganic **C**ompounds



Our **ultra high purity rare earth metal compounds** work excellent for:

- Instrumental analytics
- Chemical analyses & syntheses
- Crystal growth technology
- Catalysis
- Doping agents
- Luminescent & fluorescent compounds
- Glas fibre technology
- Laser technology
- Fuel cells
- Oxidizing agents
- Electronic industry
- Ceramic manufacturing

Our mission is to offer the quality and service you requirein research & development and in production. Excellent value for money and the option of ordering in semi-bulk are strong arguments in favour of the ROTI®REMETIC product range.

Ultra-high-purity metals compounds

Type	Purity	CAS No.	Art. No.	Pack Qty. (g)	€
Cerium(III) acetate hydrate	99,99 %	537-00-8	**7084.1**	10	68,70
Cerium(III) nitrate hexahydrate	99,9 %	10294-41-4	**7049.1**	5	41,85
			7049.2	25	71,95
Cerium(III) oxalate hydrate	99,9 %	15750-47-7	**7067.1**	10	68,70
			7067.2	50	235,45
Cerium(IV) oxide	99,99 %	1306-38-3	**7042.1**	10	48,30
			7042.2	50	125,25
Dysprosium(III) oxide	99,9 %	1308-87-8	**7145.1**	5	41,85
			7145.2	25	75,15
Erbium(III) oxide	99,9 %	12061-16-4	**7160.1**	5	38,60
			7160.2	25	88,70
Europium(III) oxide	99,99 %	1308-96-9	**7187.3**	50	665,45
Gadolinium(III) oxide	99,999 %	12064-62-9	**7189.1**	1	16,70
			7189.2	5	26,80
			7189.3	50	213,95
	99,99 %	12064-62-9	**7136.1**	1	32,15
			7136.2	5	46,15
			7136.3	25	114,50
			7136.4	100	299,95
Lanthanum(III) acetate hydrate	99,9 %	25721-92-0	**7031.1**	100	83,75
			7031.2	250	177,40
Lanthanum(III) carbonate hydrate	99,99 %	54451-24-0	**7182.2**	100	188,15
	99,9 %	54451-24-0	**7026.2**	250	127,95
Lanthanum(III) fluoride	99,9 %	13709-38-1	**7028.2**	50	177,40
Lanthanum(III) nitrate hexahydrate	99,999 %	10277-43-7	**7019.1**	25	56,90
			7019.2	100	155,35
	99,99 %	10277-43-7	**7180.1**	50	103,10
			7180.2	250	332,20
Lanthanum(III) oxalate	99,999 %	537-03-1	**7191.1**	25	50,45
			7191.2	100	144,60
Lanthanum(III) oxide	99,999 %	1312-81-8	**7410.1**	25	68,70
			7410.2	100	221,35
Lanthanum(III) phosphate hydrate	99,99 %	14913-14-5	**7203.2**	25	155,90
Lutetium(III) nitrate hydrate	99,99 %	100641-16-5	**7265.1**	1	78,40
Lutetium(III) oxide	99,99 %	12032-20-1	**7177.1**	1	75,15
			7177.2	5	310,70
Neodymium(III) acetate hydrate	99,9 %	6192-13-8	**7107.1**	50	95,70
			7107.2	100	163,30
Neodymium(III) nitrate hexahydrate	99,9 %	16454-60-7	**7097.1**	25	69,35
			7097.2	100	159,00
Neodymium(III) oxide	99,999 %	1313-97-9	**7092.1**	5	55,80
			7092.2	25	220,40
Praseodymium(III) carbonate octahydrate	99 %	14948-62-0	**7090.2**	25	133,85
Praseodymium(III,IV) oxide	99,99 %	12037-29-5	**7087.1**	1	22,40
			7087.2	5	90,20
Samarium(III) carbonate hydrate	99,98 %	38245-37-3	**7120.1**	10	85,90
			7120.2	50	289,20
Samarium(III) oxide	99,95 %	12060-58-1	**7108.1**	5	45,70
			7108.2	25	98,40
Scandium(III) oxide	99,999 %	12060-08-1	**7011.1**	1	127,95
			7011.2	5	364,45
Thulium(III) nitrate pentahydrate	99,9 %	36548-87-5	**7282.2**	5	144,60
Ytterbium(III) oxide	99,99 %	1314-37-0	**7353.1**	10	91,95
			7353.2	25	160,20
			7353.3	50	284,90
Yttrium(III) carbonate hydrate	99,99 %	38245-39-5	**7284.1**	25	112,35
			7284.2	50	203,20
Yttrium(III) oxide	99,99 %	1314-36-9	**7352.1**	25	61,20
			7352.2	100	155,90

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Ultra pure acids, alkaline solutions and water see page 1729

ROTI®nanoMETIC

Nanoparticles

Our nanoparticles are well suited for many applications and are supplied as a hydrophilic powder that can be easily suspended in aqueous solutions.

Product	Purity	Art. No.	Pack Qty. (g)	€
Aluminium oxide, nano	≥99,9 %, 40 nm	**8250.1**	10	22,05
		8250.2	50	83,75
		8250.3	100	137,50
Copper, nano	≥97 %, 40 nm	**8279.1**	5	34,30
		8279.2	25	132,15
		8279.3	100	478,40
Copper(II) oxide, nano	≥99 %, 15-50 nm	**8251.1**	10	21,40
		8251.2	50	81,20
		8251.3	100	132,15
Titanium(IV) oxide, nano	≥99,9 %, 4-8 nm	**8254.1**	10	57,95
		8254.2	50	235,45
Zinc oxide, nano	≥99,5 %, 25 nm	**8278.1**	10	30,00
		8278.2	50	115,60
		8278.3	100	209,65
Zirconium(IV) oxide, nano, hydrophilic	3 nm, hydrophilic NEW	**2097.2**	5	170,95
		2097.1	1	40,75
Zirconium(IV) oxide, nano, hydrophobic	3 nm, hydrophobic NEW	**1776.2**	5	203,20
		1776.1	1	48,30

For additional product data and safety information, see chapter Chemicals A-Z.

Phosphonic acids

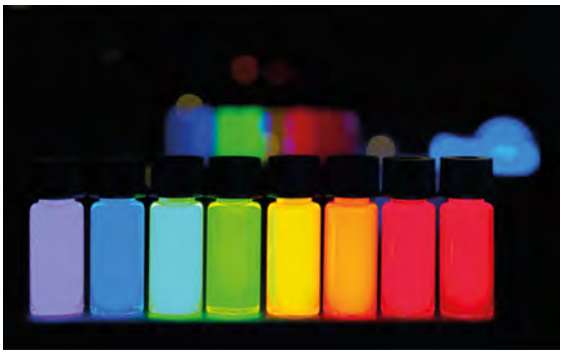
Alkylphosphonic acids are perfect hydrophobization ligands, owing to their classical bifunctional chemical structure. They contain an non-polar organic hydrophobic alkyl chain and an active hydrophilic phosphonic acid group. These molecules are capable to strongly bind to the surface of different inorganic materials (SiO_2, Al_2O_3, TiO_2, Fe_xO_y, ZrO_2, ZnS etc.) forming a selfassembled coating layer. Phosphonic acids can also be used as ligands for the synthesis of nanoparticles to control the size and hydrophobic properties of the particles. Further they are well soluble in non-polar and many polar solvents. The acids are also soluble in water (especially upon addition of alkali) at lower concentrations.

Phosphonic acids suitable for the production and modification of nanoparticles

Product	Art. No.	Pack Qty.	€
Hexadecylphosphonic acid	**8466.1**	1 g	38,60
	8466.2	5 g	145,05
Octadecylphosphonic acid	**8468.1**	1 g	39,70
	8468.2	5 g	143,95
Tetradecylphosphonic acid	**8465.1**	1 g	40,35
	8465.2	5 g	144,60

Quantum Dots (QD)

Quantum dots are fluorescent nanoparticles of certain semiconducting materials, whose electronic properties closely depend on the size of the particles.
The fluorescence wavelength shifts towards red for larger particles, and to blue for the smaller ones.
This allows coverage of the complete visible colour spectrum with quantum dots of different sizes and yet the same material. The possibility to control the size of the particles during their manufacturing, allows to precisely adjust their electronic and fluorescent properties. The inorganic nature of quantum dots makes them far more stable than organic fluorescent dyes. Moreover, the surface of quantum dot particles is modified with carboxylic groups, which makes them highly soluble in water and enables covalent conjugation with proteins and other molecules.



Quantum Dots, hydrophilic

Product	Purity	Art. No.	Pack Qty. (mg)	€
Cadmium telluride	λ max. 510 ±5 nm	**8256.1**	5	66,15
		8256.2	10	105,25
Cadmium telluride	λ max. 570 ±5 nm	**8257.1**	5	66,15
		8257.2	10	105,25
Cadmium telluride	λ max. 610 ±5 nm	**8258.1**	5	66,15
		8258.2	10	105,25
Cadmium telluride	λ max. 710 ±5 nm	**8260.1**	5	66,15
		8260.2	10	105,25
Cadmium telluride	λ max. 780 ±5 nm	**8261.1**	5	66,15
		8261.2	10	105,25

Quantum Dots, hydrophobic

Product	Purity	Art. No.	Pack Qty. (mg)	€
Zn-Cu-In-S/ZnS	Cd-free, λ max. 530 ±15 nm	**8609.1**	5	52,60
		8609.2	10	78,40
Zn-Cu-In-S/ZnS	Cd-free, λ max. 560 ±15 nm	**8610.1**	5	52,60
		8610.2	10	78,40
Zn-Cu-In-S/ZnS	Cd-free, λ max. 590 ±15 nm	**8618.1**	5	52,60
		8618.2	10	78,40
Zn-Cu-In-S/ZnS	Cd-free, λ max. 610 ±15 nm	**8614.1**	5	52,60
		8614.2	10	78,40
Zn-Cu-In-S/ZnS	Cd-free, λ max. 650 ±15 nm	**8616.1**	5	52,60
		8616.2	10	78,40
Zn-Cu-In-S/ZnS	Cd-free, λ max. 700 ±15 nm	**8615.1**	5	52,60
		8615.2	10	78,40

For additional product data and safety information, see chapter Chemicals A-Z.

Elements

Alloys

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Alloy acc. to Wood	used for metal heating baths	**1980.1**	250 g	plastic	36,45
		1980.2	1 kg	plastic	113,85
Nickel-aluminium alloy	50/50 % Ni/Al powder, for synthesis	**0663.1**	50 g	plastic	21,00
		0663.2	250 g	plastic	78,40
		0663.3	500 g	plastic	138,70

Al

Aluminium

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Aluminium granulate	≥99,5 %, gran., ~1-5 mm	**5280.1**	250 g	plastic	19,25
		5280.2	1 kg	plastic	35,40
Aluminium powder	≥99,5 %, powdered, <160 µm	**5285.1**	250 g	glass	28,50
		5285.2	1 kg	glass	72,60

Sb

Antimony

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Antimony	≥99,5 %, powder	**9258.1**	100 g	plastic	46,80
		9258.2	500 g	plastic	170,95

Bi

Bismuth

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Bismuth	≥99,5 %, powder	**2735.1**	50 g	glass	51,50
		2735.2	100 g	glass	87,00

Ca

Calcium

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Calcium	≥99,5 %, granules	**2729.1**	50 g	glass	71,95

Cr

Chromium

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Chromium shot NEW	99,95 %	**0886.1**	10 g	glass	32,15
		0886.2	25 g	glass	69,80
		0886.3	50 g	glass	127,95
		0886.4	100 g	glass	232,10

Cu

Copper

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Copper sheet	sheet 0,1 mm thick, 60 cm wide	**8540.1**	250 g	card board	36,45
		8540.2	1 kg	card board	77,95
Copper beads	≥99,9 %, beads	**2728.1**	100 g	glass	40,75
Copper powder	≥99,8 %, p.a., <63 µm	**CP21.1**	100 g	plastic	18,20
		CP21.2	500 g	plastic	55,40
Copper wool	~99 %	**9597.1**	100 g	plastic	17,75
		9597.2	250 g	plastic	32,15
		9597.3	500 g	plastic	56,90
		9597.4	1 kg	plastic	102,05

Ga

Gallium

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Gallium	99,9999 %	**3761.1**	5 g	glass	81,60

Au

Gold

Product	Purity	Art. No.	Pack Qty.		€
Sheets of gold	22 carat, block of 25 sheets 80 x 80 mm	**7605.1**	1 piece (25 sheets)		113,85
Gold shot NEW	99,99 %	**0882.1**	1 g	plastic	181,70
		0882.2	5 g	plastic	676,20

In

Indium

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Indium, foil	99,99 % (4N), foil	**9803.1**	10 g	plastic	267,70
Indium shot	>99,97 %, granulated	**3906.1**	10 g	glass	53,65

Iodine

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Iodine	≥99,8 %, p.a., ACS, resublimated	**X864.1**	100 g	glass	67,20
		X864.2	250 g	glass	122,05
		X864.3	1 kg	glass	428,95
	≥99,5 %, Ph.Eur., resublimated	**7935.3**	100 g	glass	50,00
		7935.1	250 g	glass	114,95
		7935.2	1 kg	glass	396,70
	≥99,5 %, resublimated	**7335.1**	250 g	glass	86,55
		7335.2	500 g	glass	152,55
		7335.3	1 kg	glass	289,20
		7335.4	2,5 kg	glass	579,45

Iron

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Iron	≥99,5 %, p.a., powdered	**3718.3**	100 g	plastic	18,85
		3718.1	250 g	plastic	34,30
		3718.4	1 kg	plastic	88,05
		3718.2	2,5 kg	plastic	182,65
Iron, reduced	≥96 %, powdered, extra pure	**9454.1**	250 g	plastic	17,75
		9454.2	1 kg	plastic	44,65
		9454.3	2,5 kg	plastic	84,40
Iron foil	99,99 % (4N), foil	**0540.1**	1 pieces	plastic	110,20
		0540.2	5 pieces	plastic	482,70
Iron wool	~97 %	**9588.1**	100 g	plastic	11,75
		9588.2	250 g	plastic	20,35

Lead

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Lead	≥99,9 %, granules	**2734.1**	50 g	plastic	41,85
		2734.2	100 g	plastic	70,85

Magnesium

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Magnesium ribbon	≥99,5 %, tape	**4468.1**	1 roll	box	104,20
Magnesium powder	≥99,8 %, <75 µm	**CP20.1**	100 g	plastic	13,90
		CP20.2	500 g	plastic	39,70
Magnesium filings	≥99,9 %, acc. to Grignard, for synthesis	**AE61.1**	250 g	tin	18,20
		AE61.2	500 g	tin	27,85
		AE61.3	1 kg	tin	45,05

Mercury

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Mercury	≥99,9995 %, p.a.	**8530.1**	100 g	glass	43,55
		8530.2	1 kg	plastic	212,35
	≥99,999 %	**7593.1**	100 g	glass	32,15
		7593.3	500 g	glass	117,20
		7593.2	1 kg	plastic	199,85
	≥99,9 %	**7594.2**	100 g	glass	28,50
		7594.1	1 kg	plastic	188,15

Nickel

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Nickel foil	99,99 % (4N), foil	**0529.1**	1 piece	plastic	94,50
		0529.2	5 pieces	plastic	428,95
Nickel powder	≥99 %, <63 µm	**CP22.1**	100 g	plastic	30,00

Platinum

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Platinum wire	≥99,95 %, Ø 0,2 mm	**0737.1**	25 cm	plastic	83,75
		0737.2	50 cm	plastic	153,65
		0737.3	1 m	plastic	289,20
	≥99,9 %, Ø 0,3 mm	**8415.1**	10 cm	plastic	75,15
		8415.2	50 cm	plastic	252,65
	≥99,95 %, Ø 0,5 mm	**0803.1**	5 cm	plastic	78,40
		0803.2	10 cm	plastic	138,70
		0803.3	25 cm	plastic	317,15
Platinum black	98,2-98,7 %	**8408.1**	250 mg	glass	44,65
		8408.2	1 g	glass	155,35

Silver

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Sheets of silver	thickness 4 µm, block of 25 sheets 95 x 95 mm	**9367.1**	1 piece (25 sheets)		38,60
Silver sheet	Sheet 100 x 100 x 0,1 mm	**8816.1**	1 sheet	card-board	75,15
Silver wire	≥99,9 %, wire ∅ 0,1 mm	**8819.1**	310 m	plastic	155,90
	≥99,9 %, wire ∅ 0,5 mm	**8821.1**	25 g	plastic	144,60
		8821.2	100 g	plastic	482,70
Silver pellets NEW	99,99 %	**0884.1**	10 g	glass	37,55
		0884.2	25 g	glass	69,80
		0884.3	50 g	glass	155,80
		0884.4	100 g	glass	289,20
Silver wool	≥99,9 %, for elementary analysis	**9373.1**	10 g	plastic	70,45

Sodium

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Sodium	≥99 %, rods, in paraffin oil	**4469.1**	250 g	plastic	159,00

Sulphur

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Sulphur	≥99,999%	**4669.1**	10 g	plastic	62,90
	≥99,5 %, ground	**9304.1**	1 kg	plastic	18,20
		9304.2	5 kg	card-board	56,90
		9304.5	25 kg	plastic	160,20

Tin

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Tin granules	≥99,8 %, p.a., granulated	**4016.2**	50 g	plastic	46,15
		4016.1	250 g	plastic	171,50
Tin beads	≥99,8 %, beads	**2731.1**	50 g	plastic	37,55
		2731.2	100 g	plastic	69,35
Tin foil	pure	**9296.1**	1 roll		63,45

Tungsten

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Tungsten	≥99 %, powder	**9835.1**	50 g	plastic	23,15
		9835.2	100 g	plastic	42,50
		9835.3	500 g	plastic	177,40

Zinc

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Zinc granule	≥99,99 %, p.a., particle size: 5-15 mm	**AE99.1**	250 g	plastic	32,15
		AE99.2	500 g	plastic	52,60
		AE99.3	1 kg	plastic	87,00
Zinc dust	≥98 %, particle size <63 µm, stab.	**9524.2**	500 g	glass	30,00
		9524.3	1 kg	glass	42,50
		9524.1	2,5 kg	glass	75,15

For additional product data and safety information, see chapter Chemicals A-Z.

Desiccants

Desiccants can absorb water and bind it chemically (reversibly or irreversibly) or physically.

The main desiccants can be subdivided into four categories:
- non-renewable chemical desiccants
- renewable chemical desiccants
- silica gels
- molecular sieves

Non-renewable desiccant

Dessicant	Suitable for	Not suitable for	Purity	Art. No.	Pack Qty.	Packaging	€
Aluminium	Alcohols	-	≥99,5 %, powdered, <160 µm	**5285.1**	250 g	glass	28,50
				5285.2	1 kg	glass	72,60
			≥99,5 %, gran., ~1-5 mm	**5280.1**	250 g	plastic	19,25
				5280.2	1 kg	plastic	35,40
Calcium	Alcohols	-	≥99,5 %, granules	**2729.1**	50 g	glass	71,95
Magnesium	Alcohols	-	≥99,5 %, tape	**4468.1**	1 roll	box	104,20
			≥99,8 %, <75 µm	**CP20.1**	100 g	plastic	13,90
				CP20.2	500 g	plastic	39,70
			≥99,9 %, acc. to Grignard, for synthesis	**AE61.1**	250 g	tin	18,20
				AE61.2	500 g	tin	27,85
				AE61.3	1 kg	tin	45,05
Phosphorous pentoxide	Neutral and acidic gases, saturated aliphatic and aromatic hydrocarbons, acetylene, anhydrides, nitriles, alkyl and aryl halides, hydrogen sulphide	Alcohols, amines, acids, ketones, ethers, hydrogen chloride, hydrogen fluoride	≥99 %, powdered	**9076.1**	500 g	plastic	24,65
				9076.2	1 kg	plastic	35,40
				9076.3	2,5 kg	plastic	78,40
Potassium hydroxide	Alkaline fluids (e.g. amines)	Acids, esters, amides, phenols	≥85 %, p.a., pellets	**6751.3**	250 g	plastic	16,70
				6751.1	1 kg	plastic	27,45
				6751.2	5 kg	plastic	94,10
				6751.5	25 kg	plastic	289,20
Sodium	Ethers, saturated aliphatic and aromatic hydrocarbons, tertiary amines	Acids, acid derivatives, alcohols, aldehydes, ketones, alkyl and aryl halides	≥99 %, rods, in paraffin oil	**4469.1**	250 g	plastic	159,00
Sodium hydroxide	Alkaline fluids (e.g. amines)	Acids, acid derivatives, phenols	≥98 %, p.a., ISO, in pellets	**6771.3**	500 g	plastic	17,75
				6771.1	1 kg	plastic	26,80
				6771.2	5 kg	plastic	96,65
				6771.5	25 kg	plastic	364,45
Sulphuric acid, concentrated	Inert neutral and acidic gases and in dessicators	Unsaturated and other organic compounds, hydrogen sulphide, hydrogen iodide	96 %, p.a., ISO	**4623.3**	250 ml	glass	19,25
				4623.1	1 l	glass	31,75
				4623.4	1 l	plastic	28,95
				4623.2	2,5 l	glass	63,35
				4623.5	2,5 l	plastic	66,55
				4623.6	10 l	plastic	122,05

For additional product data and safety information, see chapter Chemicals A-Z.

Renewable desiccants

Dessicant	Suitable for	Not suitable for	Regeneration at	Purity	Art. No.	Pack Qty.	Pack.	€
Calcium chloride	Saturated, olefin and aromatic hydrocarbons, alkyl halides, ethers, multiple esters, acetone	Ammonia, amines, alcohols, aldehydes, phenols, several esters, ketones	250 °C	≥98 %, dehydrated, powder	**CN93.1**	500 g	plastic	26,35
					CN93.2	1 kg	plastic	39,70
					CN93.3	2,5 kg	plastic	81,60
				≥96 %, dehydrated, granular material	**CN92.1**	500 g	plastic	25,70
					CN92.2	1 kg	plastic	38,20
					CN92.3	2,5 kg	plastic	80,10
				≥94 %, dehydrated	**A119.1**	1 kg	plastic	18,85
					A119.2	5 kg	plastic	50,00
					A119.5	25 kg	plastic	119,90
Calcium oxide	Ammonia, amines, alcohols, nitrous oxide, ether	Acids, acid derivatives, aldehydes, ketones, ester	1000 °C	≥96 %, powdered, extra pure	**CN88.1**	500 g	plastic	15,60
					CN88.2	1 kg	plastic	24,20
					CN88.3	5 kg	plastic	85,90
Potassium carbonate	Alkaline solvents (e.g. ammonia, amines), nitriles, chlorinated hydrocarbons, acetone	Acids	158 °C, finely powdered from as low as 100 °C	≥99 %, p.a., ACS	**P743.1**	500 g	plastic	27,45
					P743.2	1 kg	plastic	42,50
					P743.3	2,5 kg	plastic	91,95
Copper(II) sulphate	Low fatty acids, alcohols, ester	Amines, nitriles, ammonia	Above 50 °C under vacuum	≥98 %, p.a., anhydrous	**P023.1**	250 g	plastic	35,40
					P023.2	1 kg	plastic	105,25
					P023.3	2,5 kg	plastic	231,15
Magnesium oxide	Alkaline fluids, hydrocarbons, alcohols	Acidic compounds	800 °C	≥98 %, Ph.Eur., light	**8280.2**	500 g	plastic	21,00
					8280.1	1 kg	plastic	30,00
					8280.3	5 kg	plastic	126,35
Magnesium sulphate	Almost all compounds including acids, acid derivatives, aldehydes, esters, nitriles and ketones	-	First 200 °C, then red heat	≥99 %, dried, extra pure NEW	**0261.1**	500 g	plastic	15,60
					0261.2	1 kg	plastic	20,35
					0261.3	2,5 kg	plastic	36,45
					0261.7	25 kg	plastic	212,35
Sodium sulphate	Alkyl and aryl halides, fatty acids, ester, aldehydes, ketones	-	150 °C	≥99 %, p.a., ACS, ISO, powdered, anhydrous	**8560.3**	500 g	plastic	25,70
					8560.1	1 kg	plastic	36,05
					8560.2	5 kg	plastic	147,85
					8560.5	25 kg	plastic	525,70

For further product information and safety guidelines, refer to Chemicals A-Z.

Drying methods for solvents TIP

Solvent	Molecular sieve	Potassium carbonate	Calcium chloride	Phosphous pentoxide
Acetic acid	-	-	-	+
Acetic acid anhydride	-	-	+	-
Acetic acid ethyl ester	4 Å	+	-	+
Acetic acid methyl ester	4 Å	+	-	+
Acetone	3 Å	+	+	-
Acetonitrile	3 Å	+	+	+
Benzene	4 Å	-	+	-
1-Butanol	-	+	-	-
2-Butanol	-	+	-	-
1-Butanone	-	+	+	-
Chloroform	4 Å	-	+	+
Cyclohexane	4 Å	-	-	-
Dichloremethane	4 Å	-	-	-
Diethylether	4 Å	-	+	-
Diisopropyl ether	4 Å	-	+	-
Dimethyl formamide	4 Å	-	-	-
Dioxan	4 Å	-	+	-
Ethanol	3 Å	-	-	-
Ethyle formate	-	-	+	-
n-Hexane	4 Å	-	-	-
Methanol	3 Å	-	+	-
2-Propanol	3 Å	-	-	-
Pyridine	4 Å	-	-	-
Tetrahydrofurane	4 Å	-	+	-
Toluene	4 Å	-	+	-
Trichloroethylene	-	+	-	-
Xylene (Isomer compound)	4 Å	-	+	-

Silica Gels

Silica gels protect moisture sensitive goods or chemicals during storage and transport. They are suitable for drying virtually all gases and solids.

Silica gels have a broad spectrum of application in the laboratory and in technical and industrial sectors:

- Possible applications in the laboratory are in desiccators, drying towers and in absorption tubes
- In the industrial sector they are mainly used in drying plants and with various types of packaging
- Are not suitable for drying liquids and alkaline substances

Silica Gel Blue

Alternative product: economically priced and environmentally friendly silica gel.

- **Free of cobalt(II) chloride**
- Colour change from blue to fuchsia
- Regeneration in drying cabinet at approx. 80-100 °C for approx. 2-4 hours

Silica gel blue

2-4 mm, with colour inidicator, pearls

Drying agent

Drying pearls blue; colour change from blue to pink.Silica gel with a mixture of different indicators. Free of cobalt(II) chloride. Colour change form blue to fuchsia.

Type analysis:

Particle size. ..... 2-4 mm
Adsorption capacity:
20 % rel. humidity. ..... approx. 8 %
50 % rel. humidity. ..... approx. 20 %
Filled under protective gas. Change in colour from blue to fuchsia.
Regeneration at ~80-100 °C, approximately 2-4 hours.

2440.1	500 g	plastic	18,20 €
Original pack 6 x 500 g			17,29/500 g
2440.2	1 kg	plastic	28,50 €
Original pack 6 x 1 kg			27,08/1 kg
2440.3	2,5 kg	plastic	56,90 €
2440.4	10 kg	plastic	188,15 €

Silica Gel Orange

The environmentally friendly, alternative product to Blue Gel, used in the past.

Properties:

- Total adsorption capacity is similar to blue gel (Silica Gel Blue)
- Large surface (approx. 750 m^2/g), enables high absorption capacity of steam
- Adsorption capacity: approx. 40 wt% at 80 % relative humidity
- Patented humidity indicator - **heavy metal free**
- **Colour change from orange to colourless at approx. 6 wt% load**

Silica gel orange

2-5 mm, with colour indicator, pearls

Drying agent

Drying pearls orange; colour change from orange to colourless.

Type analysis:

Particle size. ..... 2-5 mm
BET-surface. ..... approx. 750 m^2/g
Adsorptive capacity:
10 % rel. humidity. ..... approx. 6,5 weight %
80 % rel. humidity. ..... approx. 42 weight %
Filled under protective gas. Colour change from orange to colourless at approx. 6 weight-% load. Regeneration at 130 °C, approx. 4 hours.

P077.4	500 g	plastic	26,35 €
Original pack 6 x 500 g			25,03/500 g
P077.1	1 kg	plastic	39,70 €
Original pack 6 x 1 kg			37,72/1 kg
P077.2	2,5 kg	plastic	77,30 €
P077.3	10 kg	plastic	234,25 €

Desiccant Sachets

Desiccant sachets protect valuable and sensitive goods against dampness.

Properties:
- Manufactured from white long fiber paper
- Filling: Silica Gel Orange (colour change from orange to colourless at 15-20 wt% shows the degree of saturation of the sachet)
- The different sized bags and different volumes enable multi-purpose application.

Application:
Used in packaging for storage and transport to protect sensitive electronic instruments, equipment, machine parts, chemical products and goods against dampness.

Regeneration:
Is not possible for the desiccant bags, as the long fiber paper is not temperature-stable.

Desiccant sachet Silica gel orange
10 g (4x9 cm), with indicator

Type analysis:
Adsorption capacity:
20 % rel. humidity. ..... approx. 10 %
40 % rel. humidity. ..... approx. 19 %
50 % rel. humidity. ..... approx. 23 %
Colour change from orange to colourless. Regeneration is not possible.

Packaging	Art. No.	Pack Qty.	€
10 g (4 x 9 cm)	**N077.2**	75 pieces/box	33,25
25 g (10 x 10 cm)	**N078.1**	30 pieces/box	28,50
50 g (9 x 12 cm)	**N079.1**	20 pieces/box	40,35

Silica Gel without colour indicator

- Non toxic
- Regeneration at 130-150 °C for approx. 4 hours
- Easy to handle
- Can be mixed with Silica Gel Orange/Blue
- Straightforward disposal

Drying Agent
Silica Gel
SiO_2

Silica gel industry grade
pearls, without indicator
Universal drying agent, drying of buildings.
Suitable, for example, for:
- drying buildings
- drying carpets and furniture
- and much more

Application:
- distributing approx. 6-8 kg/m². Caution! Standing water must be removed beforehand
- keep windows and doors closed. Turn off heating.
- depending on moisture level, the dry pearls can be removed after approx. 1-10 days
- checking for water absorption: dry 1 kg of moist product in oven for approx. 4 hours at 130-150 °C and weigh subsequently. If the weight difference (=water absorption) is approx. 360 g, the product should be replaced

Type analysis:
Appearance. ..... pearls, colourless to brown
Particle size. ..... 1-2,3 mm
BET-surface. ..... approx. 750 m²/g
Adsorption capacity:
10 % rel. humidity. ..... approx. 6 weight %
80 % rel. humidity. ..... approx. 45 weight %
Regeneration at 130-150 °C.

CN70.1	1 kg	plastic	40,75 €
Original pack 6 x 1 kg			38,71/1 kg
CN70.2	5 kg	plastic	147,85 €
CN70.3	10 kg	plastic	267,70 €
CN70.4	25 kg	plastic	611,70 €

Silica gel white
0,5-1 mm, granules

Type analysis:
Bulk density. ..... 650-770 g/l
Absorption capacity:
10 % rel. humidity. ..... ≥5 weight %
80 % rel. humidity. ..... ≥28 weight %
Regeneration at ~130 °C, approximately 4 hours.

9376.1	1 kg	plastic	34,30 €
Original pack 6 x 1 kg			32,59/1 kg
9376.2	5 kg	plastic	119,90 €

1-3 mm, granules
Absorption capacity:
10 % rel. humidity. ..... approx. 6 weight %
80 % rel. humidity. ..... approx. 32 weight %
Regeneration at ~130 °C, approximately 4 hours.

T858.1	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg
T858.2	5 kg	plastic	126,35 €

Silica gel water resistant

Properties:
- water resistant
- regeneration at 130-150 °C for approx. 4 hours
- can be mixed with other Silica gels
- protects other Silica gels from liquid water

Silica gel water resistant
2-5 mm, bead form

Type analysis:
Particle size. ..... 2-5 mm
BET-surface..... ca. 650 m²/g
Absorption capacity:
10 % rel. humidity. ..... approx. 4 %
80 % rel. humidity. ..... approx. 42 %
Regeneration at 130-150 °C.

8109.1	500 g	plastic	28,95 €
Original pack 6 x 500 g			27,50/500 g
8109.2	1 kg	plastic	42,90 €
Original pack 6 x 1 kg			40,76/1 kg
8109.3	2,5 kg	plastic	80,10 €
8109.4	10 kg	plastic	231,15 €

In order to achieve low residual water content over the silica gel, the capacity can only be utilised partially. The less silica gel is loaded with water the more intensively it dries. For example, to achieve a residual water content of 1 mg/l the loading must not be higher than 5,2 g water / 100 g silica gel.

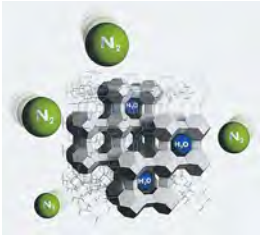
DURAN WHEATON KIMBLE
Material DURAN®

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

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

DN	approx. volume (l)	Height (mm)	Flange ID (mm)	Flange OD (mm)	Art. No.	Pack Qty.	€
100	0,7	187	118,5	153 ±2	**AHK8.1**	1	111,00
150	2,4	252	172	215 ±2	**AHK9.1**	1	131,00
200	5,8	209	222	270 ±2	**AHL0.1**	1	155,00
250	10,5	357	272	320 ±2	**AHL1.1**	1	243,00
300	18,5	433	332	380 ±2	**AHL2.1**	1	368,00

Molecular Sieves



For drying, cleaning or separating liquids and gases.

Properties:

- Spherical metal aluminium silicates
- Spheres ∅ 1,6-2,5 mm and 2,5-5,0 mm
- Active surface: 600-700 m^2/g
- Activated at 500-600 °C; we nevertheless recommend activating the molecular sieve again before using it for the first time

Typical application:

- In desiccators, drying tubes, columns
- For drying streaming gases
- For absoluting organic solvents
- For separating organic solvents

Regenerating:

- In drying cabinets at 200-300 °C
- Through pressure change or rinsing

Critical molecular diameter for frequently occurring molecules, in Å (1 angstrom = 10^{-10} m = 0.1 nm)

Molecule	Size [Å]
Acetylene	3.3
Ammoniac	2.9
Argon	3.8
Benzole/toluene	5.8
n-butanes and higher n-hydrocarbons	4.3
i-butane and higher i-hydrocarbons	5.1
i-butene	4.0
trans-2-butene	5.1
1.3 butadiene	5.8
Cyclohexane	6.0
Dimethylpropane	6.2
Ethane	4.2
Ethanol	4.2
Ethylene	3.9
Ethyl mercaptan	3.8
Helium	2.0
Carbon monoxide	3.7
Carbon dioxide	3.3

Molecule	Size [Å]
Methane	3.8
Propane	4.3
Methanol	3.6
Methyl mercaptan	3.8
Propane	4.3
Propylene	4.0
Oxygen	3.5
Hydrogen sulphide	3.6
Nitrogen	3.6
Carbon tetrachloride	5.9
Thiophene	5.3
Triethylamine	7.8
Trichlormethane/ Chloroform	6.9
Water	2.6
Hydrogen	2.4
o-Xylol	6.6
m-Xylol	6.3
p-Xylol	5.9

Molecular Sieves

Product	Purity	Globe diameter	Art. No.	Pack Qty.	Packaging	€
Molecular sieve 3 Å	activated, under argon	1,6-2,5 mm	**N893.1**	100 ml	glass	12,80
	0,3 nm, type 564, pearls	1,6-2,5 mm	**8487.1**	250 g	glass	28,50
			8487.2	750 g	glass	64,00
			8487.3	2,5 kg	plastic	166,65
		NEW	**8487.7**	5 kg	plastic	299,95
	0,3 nm, type 562 C, pearls	2,5-5,0 mm	**P729.1**	250 g	glass	28,50
			P729.2	750 g	glass	64,00
			P729.3	2,5 kg	plastic	166,65
Molecular sieve 4 Å	0,4 nm, type 514, pearls	1,6-2,5 mm	**8471.1**	250 g	glass	31,10
			8471.2	750 g	glass	65,50
			8471.3	2,5 kg	plastic	171,50
Molecular sieve 5 Å	0,5 nm, type 522, pearls	1,6-2,5 mm	**8475.1**	250 g	glass	31,10
			8475.2	750 g	glass	65,50
			8475.3	2,5 kg	plastic	171,50
Molecular sieve 10 Å	1,0 nm, type 544, pearls	1,6-2,5 mm	**8483.1**	250 g	glass	31,10
			8483.2	750 g	glass	65,50
			8483.3	2,5 kg	plastic	171,50

Ion Exchanger

The ion exchanger offered in our range differ depending on their application and requirements. Three different types are available:

- **Mixed bed ion exchanger**
- **Classical cation and anion exchanger**
- **Cation and anion exchanger for analytical purposes**

Typical applications:
- Water treatment
- Pharmaceutical industry and biochemistry
- Production and purifying of chemicals
- Classical laboratory analysis

Amberjet™ Mixed Bed Ion Exchanger

Amberjet™

mixed bed exchanger, highly pure

Mixed bed resin made of highly regenerated strongly acidic cation exchanger and strongly basic anion exchanger. Especially suited for all demanding applications, e.g. for disposable cartridges in systems with highly purified water in the electronics industry. Manufactured by a special process allowing the production of highly purified water as far as organic impurities and others are concerned. Contains stoichiometric amounts of cation and anion exchanger capacities.

Type analysis:

Delivery form. ..... H^+/OH^-
Blend ratio. 0,90-1,10
Particle size. ..... 0,3-1,2 mm

K306.1	100 g	plastic	29,60 €
K306.2	500 g	plastic	61,20 €
Original pack 6 x 500 g			58,14/500 g

Dowex® Ion Exchanger

- **Anion exchanger, highly basic**
  Ion exchanger on a microporous styrene DVB copolymerisate base. Active group: quaternary ammonium compound type I
- **Cation exchanger, highly acidic**
  Matrix: polystyrene - DVB
  Active group: sulphonate

DOWEX® Resin Properties

Description	DOWEX® 1 X	DOWEX® 50 WX
Type	Strongly basic anion exchanger	Strongly acid cation exchanger
Functional Group	Trimethyl ammonium	Sulphonic acid
Cross linkage (% DVB)	2 or 8	2, 4 or 8
Ion form	Cl^-	H^+
Volume charge (%)	Cl^- -> OH^- + 20 %	Na^+ -> H^+ + 8 %
Effective working range (pH)	0 - 14	0 - 14
Selectivity for ions	$I^- > NO_3^- > Br^- > Cl^- >$ $Acetat^- > OH^- > F^-$	$Ag^+ > Cs^+ > Rb^+ > K^+ >$ $NH_4^+ > Na^+ > Li^+ > Ba^{2+} >$ $Sn^{2+} > Ca^{2+} > Mg^{2+} > Be^{2+}$
Total exchange capacity (eq/l)	approx. 0,6 - 1,4	approx. 0,6 - 1,7
Thermal stability	OH^- form max. 50 °C Cl^- form max. 150 °C	Na^+ form max. 120 °C H^+ form max. 80 °C
Moisture (%)	39 - 80	40 - 82

Dowex® Anion exchanger

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Dowex® 1 X 2	50-100 mesh, Cl^--form	**0302.3**	50 g	plastic	69,80
		0302.1	100 g	plastic	114,50
		0302.4	250 g	plastic	219,85
		0302.2	1 kg	plastic	854,65
Dowex® 1 X 2	100-200 mesh, Cl^--form	**0303.3**	50 g	plastic	50,00
		0303.1	100 g	plastic	89,80
		0303.4	250 g	plastic	171,50
		0303.2	1 kg	plastic	585,90
Dowex® 1 X 2	200-400 mesh, Cl^--form	**0304.2**	50 g	plastic	52,60
		0304.1	100 g	plastic	91,95
		0304.3	250 g	plastic	180,50
		0304.4	1 kg	plastic	628,90
Dowex® 1 X 8	50-100 mesh, Cl^--form	**0310.3**	50 g	plastic	53,65
		0310.1	250 g	plastic	185,90
		0310.2	1 kg	plastic	650,40
Dowex® 1 X 8	100-200 mesh, Cl^--form	**0311.3**	50 g	plastic	55,80
		0311.1	100 g	plastic	103,75
		0311.4	250 g	plastic	196,20
		0311.2	1 kg	plastic	714,90
Dowex® 1 X 8	200-400 mesh, Cl^--form	**0312.3**	50 g	plastic	69,80
		0312.1	100 g	plastic	114,95
		0312.4	250 g	plastic	220,40
		0312.2	1 kg	plastic	848,20

Dowex® Cation exchanger

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Dowex® 50 W X 2	50-100 mesh, H^+-form	**6800.1**	50 g	plastic	47,85
		6800.2	250 g	plastic	160,75
		6800.3	1 kg	plastic	557,95
Dowex® 50 W X 2	100-200 mesh, H^+-form	**0334.2**	50 g	plastic	50,00
		0334.1	100 g	plastic	89,80
		0334.3	250 g	plastic	171,50
		0334.4	1 kg	plastic	590,20
Dowex® 50 W X 2	200-400 mesh, H^+-form	**N099.3**	50 g	plastic	47,85
		N099.1	100 g	plastic	88,05
		N099.4	250 g	plastic	160,75
		N099.2	1 kg	plastic	557,95
Dowex® 50 W X 4	200-400 mesh, H^+-form	**6821.1**	50 g	plastic	45,05
		6821.2	250 g	plastic	153,65
		6821.3	1 kg	plastic	525,70
Dowex® 50 W X 8	50-100 mesh, H^+-form	**0344.2**	50 g	plastic	53,65
		0344.1	250 g	plastic	185,90
		0344.3	1 kg	plastic	654,70
Dowex® 50 W X 8	100-200 mesh, H^+-form	**0345.2**	50 g	plastic	55,80
		0345.1	100 g	plastic	103,75
		0345.3	250 g	plastic	196,65
		0345.4	1 kg	plastic	714,90
Dowex® 50 W X 8	200-400 mesh, H^+-form	**0346.2**	50 g	plastic	53,65
		0346.1	100 g	plastic	92,35
		0346.3	250 g	plastic	185,90
		0346.4	1 kg	plastic	654,70

For additional product data and safety information, see chapter Chemicals A-Z.

Ion Exchanger Roti®change

Roth's product range Roti®change contains ion exchanger, which are particularly suitable for analytical purposes. The corresponding polystyrene based resins were specially purified to reduce extractable residues to less than 1 mg/g resin.

Cation exchange resins
Our cation exchange resins are available as 4 % and 8 % divinylbenzene (DVB) cross-linked polymers with sulphonate as active group. All cation exchange resins are provided in hydrogen (H^+) form.
Typical applications are: removal of ethidium bromide/propidium iodide from DNA samples; separation and preconcentration of amino acids, peptides and nucleotides; desalting (removal of cations) and separation of metal ions.

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Ion exchange resin Roti®change 50 W x 4	100-200 mesh, analytical grade, H^+-form	**6864.4**	25 g	plastic	50,45
		6864.1	100 g	plastic	177,40
		6864.2	250 g	plastic	370,90
		6864.3	500 g	plastic	686,95
Ion exchange resin Roti®change 50 W x 8	50-100 mesh, analytical grade, H^+-form	**6865.4**	25 g	plastic	64,40
		6865.1	100 g	plastic	246,20
		6865.2	250 g	plastic	529,45
		6865.3	500 g	plastic	977,20
Ion exchange resin Roti®change 50 W x 8	100-200 mesh, analytical grade, H^+-form	**6866.4**	25 g	plastic	55,80
		6866.1	100 g	plastic	209,65
		6866.2	250 g	plastic	450,45
		6866.3	500 g	plastic	837,45
Ion exchange resin Roti®change 50 W x 8	200-400 mesh, analytical grade, H^+-form	**6867.4**	25 g	plastic	127,95
		6867.1	100 g	plastic	493,45
		6867.2	250 g	plastic	1106,20
		6867.3	500 g	plastic	2031,75

Anion exchange resins
Our anion exchange resins are also available as 4 % and 8 % divinylbenzene (DVB) cross-linked polymers but with quaternary amines as active groups. All anion exchange resins are provided in chloride (Cl^-) form. Typical applications are: exchange of anions of salts; cyclic nucleotide assays and fractionation of organic acids.

Product	Purity	Art. No.	Pack Qty.	Packaging	€
Ion exchange resin Roti®change 1 x 4	50-100 mesh, analytical grade, Cl^--form	**6849.4**	25 g	Kunst.	44,00
		6849.1	100 g	plastic	155,90
		6849.2	250 g	plastic	321,45
		6849.3	500 g	plastic	590,20
Ion exchange resin Roti®change 1 x 4	100-200 mesh, analytical grade, Cl^--form	**6851.4**	25 g	plastic	55,80
		6851.1	100 g	plastic	209,65
		6851.2	250 g	plastic	450,45
		6851.3	500 g	plastic	837,45
Ion exchange resin Roti®change 1 x 8	20-50 mesh, analytical grade, Cl^--form	**6852.4**	25 g	plastic	27,85
		6852.1	100 g	plastic	84,85
		6852.2	250 g	plastic	177,40
		6852.3	500 g	plastic	325,65
Ion exchange resin Roti®change 1 x 8	50-100 mesh, analytical grade, Cl^--form	**6854.4**	25 g	plastic	50,45
		6854.1	100 g	plastic	177,40
		6854.2	250 g	plastic	370,90
		6854.3	500 g	plastic	686,95
Ion exchange resin Roti®change 1 x 8	100-200 mesh, analytical grade, Cl^--form	**6855.4**	25 g	plastic	50,45
		6855.1	100 g	plastic	177,40
		6855.2	250 g	plastic	370,90
		6855.3	500 g	plastic	686,95
Ion exchange resin Roti®change 1 x 8	200-400 mesh, analytical grade, Cl^--form	**6856.4**	25 g	plastic	53,65
		6856.1	100 g	plastic	198,90
		6856.2	250 g	plastic	411,20
		6856.3	500 g	plastic	768,65

For additional product data and safety information, see chapter Chemicals A-Z.

Filtering Agents and Extractants

Activated Charcoal

Activated charcoals are used in many areas within the chemical and pharmaceutical industry. The charcoal is available in powder or broken coal format and as extruded charcoal, depending on the application.

Activated carbon and its application

Qualities of activated carbon	Art. No.	Air purification	Gas purification	Water purification	Chemical industry	Pharmaceutical industry
Powder carbon	X865 5963	-	-	-	x	x
Carbon mould block	0998	x	x	-	-	-
Broken carbon	5966	-	x	x	x	-

Charcoal
p.a., powder, activated
Adsorbent
Analytic activated carbon with extensive trace analysis.

Methylene blue adsorption (0,15 % solution). ..... ≥100 ml/g

X865.1	250 g	plastic	24,20 €
X865.2	500 g	plastic	37,55 €
Original pack 6 x 500 g			35,67/500 g
X865.3	1 kg	plastic	68,30 €
Original pack 6 x 1 kg			64,89/1 kg

Charcoal
powder, for decolourisation, phosphoric activated
Activated by phosphoric acid activation.

Warning H252

Activated carbon with high absorption capacity and excellent filtering quality. Primarily used for the absorption of organic substances of high molecular weight, e.g. proteins and large colour molecules.

Methylene blue adsorption..... ≥25 g/100 g

5963.3	500 g	plastic	33,25 €
Original pack 6 x 500 g			31,59/500 g
5963.1	1 kg	plastic	51,50 €
Original pack 6 x 1 kg			48,93/1 kg
5963.4	2,5 kg	plastic	95,70 €
5963.2	5 kg	plastic	135,35 €
5963.5	10 kg	plastic	255,35 €

Charcoal
1-3 mm, made from peat, grey, steam activated
Fractured coal

Methylene blue adsorption. ..... 11 g/100 g

5966.1	1 kg	plastic	32,80 €
Original pack 6 x 1 kg			31,16/1 kg
5966.3	2,5 kg	plastic	73,65 €
5966.2	5 kg	plastic	126,35 €
5966.5	10 kg	plastic	233,85 €
5966.4	25 kg	plastic	482,70 €

Charcoal
~3 mm, steam activated
For gas cleaning. Extruded charcoal.

Butane adsorption (p/p_0=0,1). ..... 18-23 g/100 g

0998.1	500 g	plastic	40,35 €
Original pack 6 x 500 g			38,33/500 g
0998.2	1 kg	plastic	66,55 €
Original pack 6 x 1 kg			63,22/1 kg
0998.4	2,5 kg	plastic	136,45 €
0998.3	5 kg	plastic	241,90 €
0998.5	10 kg	plastic	407,45 €

Charcoal for determination of AOX

Charcoal
for the determination of AOX (shaking method)

Type analysis:
Iodine value. ..... ≥1050 mg/g
Chloride (Cl). ..... ≤0,0005 %
Particle size. ..... ≤50 µm

1319.1	10 g	glass	75,15 €

Charcoal
for the determination of AOX (column method)

Type analysis:
Iodine value. ..... ≥1050 mg/g
Chloride (Cl). ..... ≤0,0005 %
Particle size. ..... ~50-150 µm

1299.1	10 g	glass	80,10 €

Additional Filtration Agents

Product	Purity	Application	Art. No.	Pack Qty.	€
Glass wool	chemically resistant glass according to DIN 1259-1	Filter aid, for laboratory work.	**0691.1**	500 g	22,05
			0691.2	1 kg	36,45
	chemically resistant glass according to DIN 1259-1	Filter aid, for laboratory work.	**6574.1**	500 g	18,20
			6574.2	1 kg	31,10
	chemically resistant glass according to DIN 1259-1	Filter aid, for laboratory work.	**0700.1**	500 g	21,00
			0700.2	1 kg	33,25
Infusorial earth	natural	For filtration of organic solutions.	**8019.3**	1 kg	17,75
		NEW	**8019.4**	2,5 kg	27,85
			8019.1	5 kg	44,65
		NEW	**8019.5**	10 kg	75,80
			8019.2	20 kg	132,80
Quarz	>99 % powdered, <125 µm	Resistant to chemicals (except very strong alkalis)	**4651.2**	500 g	17,75
			4651.1	1 kg	24,20
			4651.3	5 kg	54,75
	fine, cryst., 0,4-0,8 mm	Filtration aids	**7897.1**	2,5 kg	19,90
			7897.2	20 kg	61,20
	fine, cryst., 0,4-0,8 mm	Filtration aids	**7898.1**	2,5 kg	21,40
			7898.2	20 kg	63,35
Quarz wool	chemically pure	Ideal for elementary analysis or as a final stopper in chromatography columns; filter aid.	**9208.1**	10 g	22,05
			9208.2	100 g	144,60
			9208.3	250 g	309,10
Sea sand	p.a., purified by acid and calcinated	Filtration aids	**4309.2**	500 g	53,65
			4309.1	1 kg	94,50
			4309.3	2,5 kg	162,90
			4309.4	5 kg	314,45
			4309.5	10 kg	579,45
	extra pure, purified by acid	Filtration aids	**8441.3**	500 g	30,00
			8441.1	1 kg	47,20
			8441.4	2,5 kg	96,65
			8441.2	5 kg	182,65
			8441.5	10 kg	342,95
			8441.6	25 kg	772,95
Silicic acid	for chromatography	Acc. to Ramsey and Patterson.	**0201.1**	250 g	21,40
			0201.2	1 kg	57,95

For additional product data and safety information, see chapter Chemicals A-Z.

Celite® - Silicate Basis

Prepared and standardized celite for application as a filtering aid or as carrier material in column chromatography.

Composition:
approx. 90 % SiO_2, 2-5 % Al_2O_3, 1-4 % Fe_2O_3 and various other oxides in a low concentration, that is why the Celite® may be slightly tinted.

Product	Permeability (Darcy)	Art. No.	Pack Qty.	€
Celite® 503	1,27-2,4	**0007.1**	2,5 kg	53,65
		0007.2	1 kg	26,80
Celite® 512	0,28-0,76	**0050.1**	2,5 kg	46,15
		0050.2	1 kg	23,55
Celite® 535	1,8-3,9	**0009.2**	1 kg	20,35
		0009.1	2,5 kg	41,85
Celite® 545	3,5-5,5	**0011.3**	250 g	12,05
		0011.2	1 kg	22,50
		0011.1	2,5 kg	33,90
		0011.4	10 kg	99,45
		0011.5	25 kg	185,90
Celite® Hyflo Super Cel®	0,73-1,64	**0005.1**	2,5 kg	47,85
		0005.2	1 kg	25,70
Celite® Standard Super Cel®	0,16-0,36	**0003.1**	2,5 kg	42,90
		0003.2	1 kg	22,50

For additional product data and safety information, see chapter Chemicals A-Z.

- ▶ Chromatography columns made of DURAN® see chapter Labware, page 164
- ▶ For further sorbents, see chapter Chromatography, page 1655

Preliminary tests for qualitative determination

Flame colouration

Platinum wire

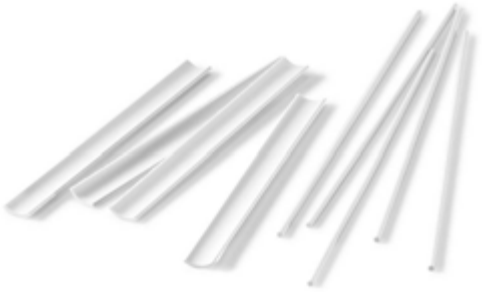
Product	Purity	Art. No.	Pack Qty.	€
Platinum wire	≥99,95 %, ∅ 0,2 mm	**0737.1**	25 cm	83,75
		0737.2	50 cm	153,65
		0737.3	1 m	289,20
	≥99,9 %, ∅ 0,3 mm	**8415.1**	10 cm	75,15
		8415.2	50 cm	252,65
	≥99,95 %, ∅ 0,5 mm	**0803.1**	5 cm	78,40
		0803.2	10 cm	138,70
		0803.3	25 cm	317,15

- ▶ Magnesia scoops and magnesia rods see page 1751

Flame colours of some metals

Metal	without glass	with glass
Barium (Ba)	yellow green	blue green
Calcium (Ca)	brick red	light green
Caesium (Cs)	blue	-
Potassium (K)	violet	crimson
Copper (Cu)	green	-
Lithium (Li)	red	-
Sodium (Na)	yellow	-
Rubidium (Rb)	violet	-
Strontium (Sr)	crimson	violet

Oxidizing melt



Magnesia scoops

For annealing and incineration of samples, as well as for the production of oxygen melts for the detection of chromium, manganese etc. and for bead tests.
W 9 x L 100 mm.

6537.1	25 pieces	cardboard	21,45 €

Potassium nitrate

≥99 %, p.a., ISO

Reagent for the oxidative disintegration of anorganic and organic samples.

KNO_3
M 101,11 g/mol

Danger H272

P021.1	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
P021.2	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
P021.3	2,5 kg	plastic	69,80 €

Potassium carbonate

≥99 %, p.a., ACS

Drying agent, disintegrating agent
Potash
K_2CO_3
M 138,21 g/mol

Warning H315-H319-H335

P743.1	500 g	plastic	27,45 €
Original pack 6 x 500 g			26,08/500 g
P743.2	1 kg	plastic	42,50 €
Original pack 6 x 1 kg			40,38/1 kg
P743.3	2,5 kg	plastic	91,95 €

Phosphorous salt bead/ borax bead

Magnesia rods

Ideal for flame analysis of sodium, etc.
For borax-bead analysis of cobalt. For bead tests.
∅ 1.5 x L 140 mm.

6543.1	25 pieces	cardboard	24,30 €

Sodium ammonium hydrogen phosphate tetrahydrate

≥99 %, p.a.

Reagent for Mg; phosphorus salt bead
Ammonium sodium phosphate, sec-Sodium ammonium phosphate
$NaNH_4HPO_4 \cdot 4\ H_2O$
M 209,07 g/mol

T882.1	500 g	plastic	66,55 €
Original pack 6 x 500 g			63,22/500 g
T882.2	1 kg	plastic	98,40 €
Original pack 6 x 1 kg			93,48/1 kg
T882.3	2,5 kg	plastic	220,40 €

di-Sodium tetraborate decahydrate

≥99,5 %, p.a., ACS, ISO

For qualitative analysis. Decomposition agent.
Borax
$Na_2B_4O_7 \cdot 10\ H_2O$
M 381,37 g/mol

Danger H360FD

T880.1	500 g	plastic	32,15 €
Original pack 6 x 500 g			30,54/500 g
T880.2	1 kg	plastic	48,30 €
Original pack 6 x 1 kg			45,89/1 kg
T880.3	2,5 kg	plastic	94,10 €

Other reagents

Hexamethylene tetramine

ROTIPURAN® ≥99 %, p.a., ACS
Urotropin, Methenamine, Hexamine
$C_6H_{12}N_4$
M 140,19 g/mol

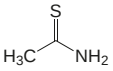
Warning H228-H317

4366.1	100 g	plastic	16,70 €
4366.2	500 g	plastic	29,60 €
Original pack 6 x 500 g			28,12/500 g
4366.3	1 kg	plastic	48,30 €
Original pack 6 x 1 kg			45,89/1 kg
4366.4	2,5 kg	plastic	96,25 €

≥99 %, extra pure

4484.1	500 g	plastic	26,35 €
Original pack 6 x 500 g			25,03/500 g
4484.2	1 kg	plastic	40,75 €
Original pack 6 x 1 kg			38,71/1 kg
4484.3	2,5 kg	plastic	82,25 €

Thioacetamide



≥99 %, p.a.
TAA, Thioacetimidic acid
C_2H_5NS
M 75,13 g/mol

Danger H302-H315-H319-H350-H412

8646.1	50 g	plastic	36,05 €
8646.2	100 g	plastic	60,75 €
8646.3	250 g	plastic	131,70 €
8646.4	500 g	plastic	231,15 €
Original pack 6 x 500 g			219,59/500 g

▶ Test sticks see page 852

① Rotilabo®-fermentation tube

Made of soda-lime glass. With 2 spheres and extension.
Overall length 200 mm, tube ∅ approx. 10-11 mm. Autoclavable.

Art. No.	Pack Qty.	€
CKY8.1	1	3,50

② Rotilabo®-fermentation tube

Made of borosilicate glass 3.3. With NS 29/32 ground glass joint.
Height 200 mm. Autoclavable.

Art. No.	Pack Qty.	€
ACL2.1	1	33,80

Anion detection

Carbonate CO_3^{2-}

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Barium hydroxide octahydrate	≥98 %, p.a., ISO	**P009.2**	250 g	plastic	26,80
		P009.1	500 g	plastic	41,40
		P009.3	1 kg	plastic	64,40

Chloride Cl^-

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Silver nitrate	≥99,9 %, p.a., ultra quality	**6874.1**	10 g	plastic	38,60
		6874.2	50 g	plastic	147,85
		6874.3	250 g	plastic	536,45
	≥99,9 %, p.a.	**7908.1**	50 g	plastic	117,20
		7908.2	250 g	plastic	489,15
		7908.3	1 kg	plastic	1714,65

Nitrate NO_3^-

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Sulphanilic acid	≥98 %, p.a., ACS	**4496.1**	100 g	plastic	31,75
		4496.2	500 g	plastic	122,45
Zinc granule	≥99,99 %, p.a., particle size: 5-15 mm	**AE99.1**	250 g	plastic	32,15
		AE99.2	500 g	plastic	52,60
		AE99.3	1 kg	plastic	87,00
Zinc dust	≥98 %, particle size <63 µm, stab.	**9524.2**	500 g	glass	30,00
		9524.3	1 kg	glass	42,50
		9524.1	2,5 kg	glass	75,15

Phosphate PO_4^{3-}

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Zirconyl nitrate hydrate	99,99 % (4N)	**5415.1**	25 g	plastic	246,20
		5415.2	100 g	plastic	772,95
Zirconyl chloride octahydrate	99,995 % (4N5)	**4502.1**	10 g	plastic	62,25

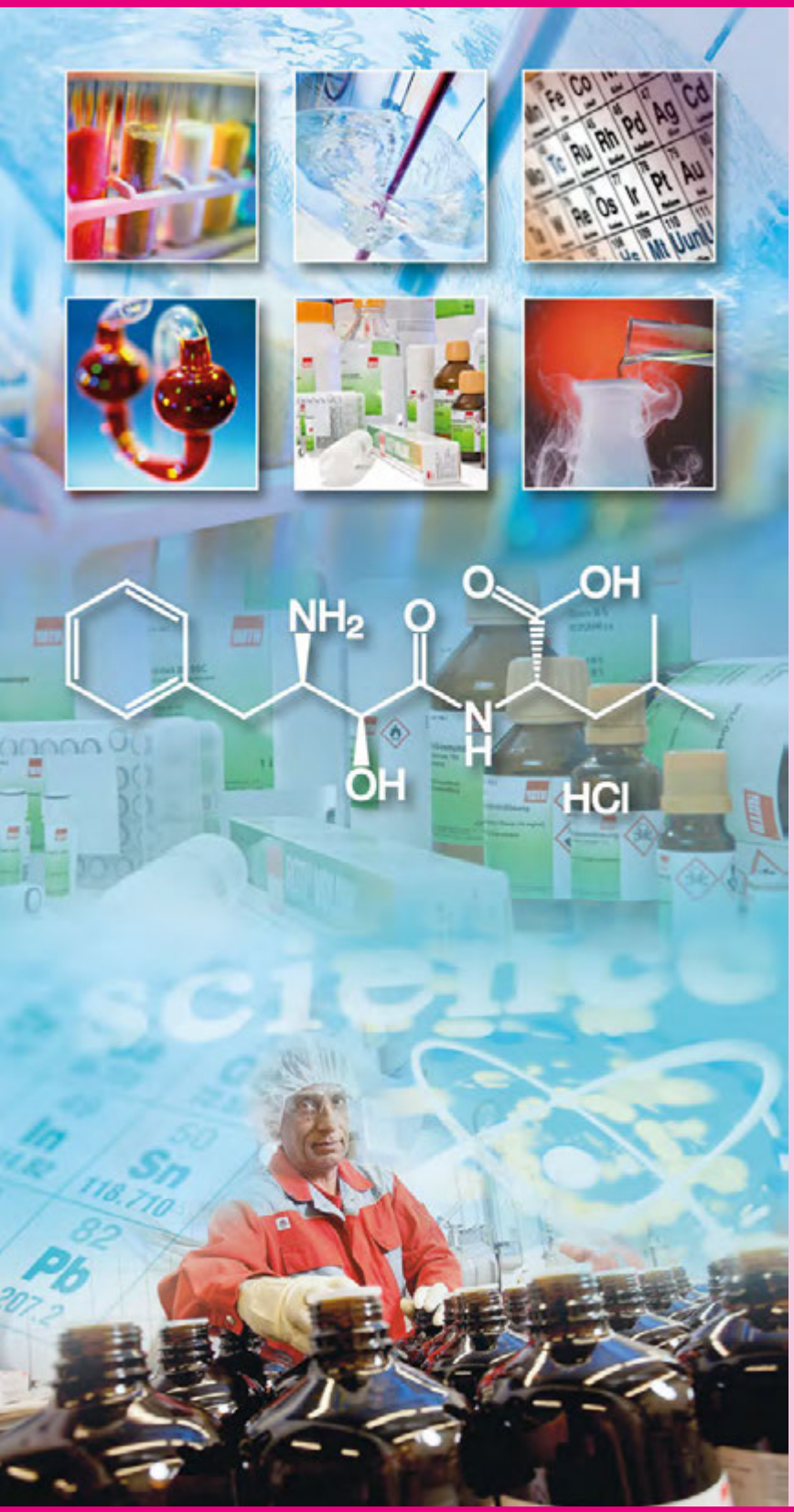
Sulphate SO_4^{2-}

Product	Purity	Art. No.	Pack Qty.	Pack.	€
Barium chloride dihydrate	≥99 %, p.a., ACS, ISO	**4453.1**	250 g	plastic	16,05
		4453.2	500 g	plastic	23,55
		4453.3	1 kg	plastic	39,70
		4453.4	2,5 kg	plastic	84,85
		4453.5	25 kg	plastic	686,95

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Cation detection and metal indicators see page 1689

▶ Acids p.a. see page 1717



Chemicals & Natural Reagents A-Z

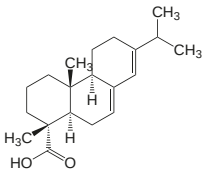
A 1754
B 1824
C 1865
D 1921
E 1963
F 1988
G 2009
H 2032
I 2062
J 2081
K 2082
L 2087
M 2109
N 2151
O 2170
P 2188
Q 2247
R 2251
S 2302
T 2392
U 2428
V 2432
W 2438
X 2442
Y 2446
Z 2448

Abbreviations and Symbols 2455
Labelling acc. to GHS 2457
CAS-Numerical Index 2463

AAS standards

▶ Standards for AAS (Atom Absorption Spectroscopy): Element Standards 1000 mg/l, ready to use see p. 2358

Abietic acid



Sylvic acid
$C_{20}H_{30}O_2$
M 302,46 g/mol
bp 250 °C
mp 175 °C
[514-10-3] • EC No. 208-178-3
UN No. 3077 • ADR 9 III • WGK 2

Warning H315-H319-H335-H410

Abietic acid

≥70 %

Type analysis:

Appearance. ..... yellow powder
Assay (GC). ..... ≥70,0 %

5008.1	25 g	plastic	42,90 €

Abietic acid

pure

Type analysis:

Appearance. ..... yellow pellets
Softening point. ..... 92-98 °C
Acid value. ..... ≤15

5005.2	500 g	plastic	26,35 €
Original pack 6 x 500 g			25,03/500 g
5005.1	1 kg	plastic	41,40 €
Original pack 6 x 1 kg			39,33/1 kg

Absinthon

▶ α+β-Thujone see p. 2406

Absorbents

Art. No.	Description	Page
3287	Basosorb	1827
X865	Charcoal	1889
5966	Charcoal	1889
0998	Charcoal	1889
5963	Charcoal	1889
2888	Chemicals absorbant fleece	721
E391	Industrial sorbent	721
AKX3	Laboratory emergency kit	721
9461	Mercurisorb-ROTH®	2127
CTC2	Oil binder Penta 99	721
A377	Oil sorbent	720
0411	Pyracidosorb-ROTH®	2245
T856	Sekuroka® Decon-Bags	2310
5128	Öcu-Sorb fleece-wipes T-33	721
8652	Soda lime	2330
9356	Sodium hydroxide	2341
EAA8	UNI-SAFE chemical and oil binder	720
1710	Universal absorber Rotisorb®	2429

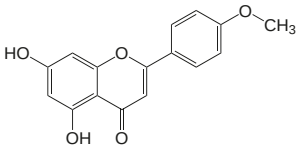
H-DL-Abu-OH

▶ DL-2-Aminobutyric acid see p. 1788

ACAC

▶ Acetyl acetone see p. 1765

Acacetin



5,7-Dihydroxy-4'-methoxyflavone, Linarigenin
$C_{16}H_{12}O_5$
M 284,26 g/mol
mp ~265 °C
Storage temp.: +4 °C
[480-44-4] • EC No. 207-552-3
WGK 1

Warning H315-H319-H335

Acacetin

ROTICHROM® HPLC

Reference substance for HPLC.

Type analysis:

Purity (HPLC). ..... ≥99 %

6531.1	10 mg	glass	213,95 €

Acacetin

ROTICHROM® ~CHR

5010.1	25 mg	glass	123,65 €

Acacia

▶ Gum arabic see p. 2032

ACC

▶ N-Acetyl-L-cysteine see p. 1766

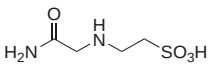
Accelerator DMP-30

▶ Glycidether Accelerator DMP-30 see p. 2025

Ac-Cys-OH

▶ N-Acetyl-L-cysteine see p. 1766

ACES



ACES

PUFFERAN® ≥99 %

N-(2-Acetamido)-2-aminoethanesulphonic acid
$C_4H_{10}N_2O_4S$
M 182,20 g/mol
mp 270-295 °C
Solubility: 40 g/l (H_2O, 20 °C)
[7365-82-4] • EC No. 230-908-4
WGK 1

Guarantee analysis:

Appearance. ..... white powder
Assay (titr.) ..... ≥99,0 %
Loss on drying ..... ≤1,0 %
pH value (1 % solution) 3,6-4,4
UV-absorption (5 % in H_2O):
260 nm ..... ≤0,05
280 nm ..... ≤0,05

9138.1	10 g	plastic	21,40 €
9138.2	100 g	plastic	160,20 €

For further information, please see page 1308

Acetaldehyde

Acetaldehyde

≥99,5 %, p.a.

Ethanal
C_2H_4O
M 44,05 g/mol
D 0,78 • bp 21 °C
mp -123 °C • flp -20 °C
Storage temp.: +4 °C
[75-07-0] • EC No. 200-836-8
UN No. 1089 • ADR 3 I • WGK 1

Danger

H224-H302-H319-H335-H351

Guarantee analysis:

Assay (GC). ..... ≥99,5 %
Aluminium (Al). ..... ≤0,00005 %
Barium (Ba). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,0001 %
Potassium (K). ..... ≤0,00005 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Lithium (Li). ..... ≤0,00001 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Molybdenum (Mo). ..... ≤0,00001 %
Sodium (Na). ..... ≤0,00005 %
Nickel (Ni). ..... ≤0,000002 %
Strontium (Sr). ..... ≤0,00001 %
Bismuth (Bi). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00001 %
Refractive index n_D^{20}. 1,331-1,333
Evaporation residue. ..... ≤0,002 %
Free acid (as CH_3COOH). ..... ≤0,5 %

3004.1	100 ml	glass	24,20 €

Acetamide Broth (Solution A)

Acetamide Broth (Solution A)

DEV, EN ISO 16266:2008, for microbiology

For confirmation of *Pseudomonas aeruginosa* in water samples.

Application: Use 3,4 g for 1 l broth. Solubilise in 900 ml, add freshly prepared solution B (sodium molybdate, Art. No. 0274.1, and iron sulfat, Art. No. P015.1) and adjust with water to 1 l.

Storage temp.: +20 °C
[60-35-5] • EC No. 200-473-5
WGK 1

Warning H351

Guarantee analysis:

Potassium dihydrogen phosphate ..... 1 g/l
Magnesium sulphate ($MgSO_4$) ..... 0,2 g/l
Acetamide ..... 2 g/l
Sodium chloride (NaCl) ..... 0,2 g/l
pH value ..... 7,0 ±0,5

CP61.1	500 g	plastic	185,45 €
Original pack 6 x 500 g			176,18/500 g

For further information, please see page 1435

N-(2-Acetamido)-2-amino-ethanesulphonic acid

▶ ACES see p. 1754

2-Acetamido-2-deoxy-D-galactose

▶ N-Acetyl-D-galactosamine see p. 1766

2-Acetamido-2-deoxy-D-glucopyranose

▶ N-Acetyl-D-glucosamine see p. 1767

2-Acetamido-2-deoxy-D-mannopyranose

▶ N-Acetyl-D-mannosamine see p. 1767

N-(2-Acetamido)-iminodiacetic acid

▶ ADA see p. 1771

Acetamidomalonic acid diethyl ester

▶ Diethyl acetamidomalonate see p. 1937

2-Acetamido-3-mercapto-propionic acid

▶ N-Acetyl-L-cysteine see p. 1766

L-α-Acetamido-β-mercapto-propionic acid

▶ N-Acetyl-L-cysteine see p. 1766

Acetanhydride

▶ Acetic acid anhydride see p. 1757

Acetate Standards

▶ Acetate IC Standard Solution see p. 2375

Acetic acid Ultra-quality

Acetic acid Ultra-quality

ROTIPURAN® Ultra 100 %

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis.

Glacial acetic acid, Methane carboxylic acid, Ethanoic acid

$C_2H_4O_2$
M 60,05 g/mol
D 1,05 • bp ~118 °C
mp ~17 °C • flp +40 °C
[64-19-7] • EC No. 200-580-7
UN No. 2789 • ADR 8 (3) II • WGK 1

Danger H314-H226

Guarantee analysis:

Assay (w/w)	≥99 %
Aluminium (Al)	≤50 ppt
Antimony (Sb)	≤50 ppt
Arsenic (As)	≤50 ppt
Barium (Ba)	≤10 ppt
Beryllium (Be)	≤10 ppt
Lead (Pb)	≤10 ppt
Cadmium (Cd)	≤10 ppt
Cesium (Cs)	≤10 ppt
Calcium (Ca)	≤50 ppt
Cerium (Ce)	≤10 ppt
Chromium (Cr)	≤10 ppt
Dysprosium (Dy)	≤1 ppt
Iron (Fe)	≤50 ppt
Erbium (Er)	≤1 ppt
Europium (Eu)	≤1 ppt
Gadolinium (Gd)	≤1 ppt
Gallium (Ga)	≤10 ppt
Germanium (Ge)	≤10 ppt
Hafnium (Hf)	≤10 ppt
Holmium (Ho)	≤1 ppt
Indium (In)	≤1 ppt
Potassium (K)	≤50 ppt
Cobalt (Co)	≤10 ppt
Copper (Cu)	≤10 ppt
Lanthanum (La)	≤1 ppt
Lithium (Li)	≤10 ppt
Lutetium (Lu)	≤10 ppt
Magnesium (Mg)	≤50 ppt
Manganese (Mn)	≤10 ppt
Molybdenum (Mo)	≤10 ppt
Sodium (Na)	≤100 ppt
Neodymium (Nd)	≤1 ppt
Nickel (Ni)	≤50 ppt
Platinum (Pt)	≤50 ppt
Praseodymium (Pr)	≤1 ppt
Rhenium (Re)	≤10 ppt
Rhodium (Rh)	≤50 ppt
Rubidium (Rb)	≤10 ppt
Ruthenium (Ru)	≤50 ppt
Samarium (Sm)	≤1 ppt
Scandium (Sc)	≤10 ppt
Silver (Ag)	≤50 ppt
Strontium (Sr)	≤10 ppt
Tellur (Te)	≤1 ppt
Terbium (Tb)	≤1 ppt
Thallium (Tl)	≤10 ppt
Thorium (Th)	≤1 ppt
Thulium (Tm)	≤1 ppt
Titanium (Ti)	≤10 ppt
Uranium (U)	≤1 ppt
Vanadium (V)	≤10 ppt
Bismuth (Bi)	≤10 ppt
Tungsten (W)	≤10 ppt
Ytterbium (Yb)	≤1 ppt
Yttrium (Y)	≤1 ppt
Zinc (Zn)	≤50 ppt
Tin (Sn)	≤50 ppt
Zirconium (Zr)	≤10 ppt

HN65.2	250 ml	plastic (FEP)	384,35 €
HN65.1	500 ml	plastic (FEP)	547,20 €
HN65.3	1 l	plastic (FEP)	858,95 €
Original pack 6 x 1 l			816,00/1 l

For further information, please see page 1729

Acetic acid Supra-quality

Acetic acid Supra-quality

ROTIPURAN® Supra 100 %

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

Glacial acetic acid, Methane carboxylic acid, Ethanoic acid

$C_2H_4O_2$
M 60,05 g/mol
D 1,05 • bp ~118 °C
mp ~17 °C • flp +40 °C
[64-19-7] • EC No. 200-580-7
UN No. 2789 • ADR 8 (3) II • WGK 1

Danger H314-H226

Guarantee analysis:

Assay (w/w)	≥99 %
Colour (APHA)	≤10
Chloride (Cl)	≤0,0001 %
Phosphate (PO_4)	≤0,0001 %
Sulphate (SO_4)	≤0,00005 %
Aluminium (Al)	≤1 ppb
Antimony (Sb)	≤0,5 ppb
Arsenic (As)	≤0,5 ppb
Barium (Ba)	≤0,5 ppb
Beryllium (Be)	≤0,1 ppb
Lead (Pb)	≤0,1 ppb
Cadmium (Cd)	≤0,5 ppb
Cesium (Cs)	≤0,1 ppb
Calcium (Ca)	≤1 ppb
Cerium (Ce)	≤0,1 ppb
Chromium (Cr)	≤1 ppb
Dysprosium (Dy)	≤0,1 ppb
Iron (Fe)	≤1 ppb
Erbium (Er)	≤0,1 ppb
Europium (Eu)	≤0,1 ppb
Gadolinium (Gd)	≤0,1 ppb
Gallium (Ga)	≤0,1 ppb
Germanium (Ge)	≤0,5 ppb
Hafnium (Hf)	≤0,1 ppb
Holmium (Ho)	≤0,1 ppb
Indium (In)	≤0,1 ppb
Potassium (K)	≤1 ppb
Cobalt (Co)	≤0,1 ppb
Copper (Cu)	≤0,5 ppb
Lanthanum (La)	≤0,1 ppb
Lithium (Li)	≤0,1 ppb
Lutetium (Lu)	≤0,1 ppb
Magnesium (Mg)	≤0,5 ppb
Manganese (Mn)	≤0,5 ppb
Molybdenum (Mo)	≤0,5 ppb
Sodium (Na)	≤1 ppb
Neodymium (Nd)	≤0,1 ppb
Nickel (Ni)	≤0,5 ppb
Platinum (Pt)	≤0,5 ppb
Praseodymium (Pr)	≤0,1 ppb
Mercury (Hg)	≤1 ppb
Rhenium (Re)	≤0,1 ppb
Rhodium (Rh)	≤0,5 ppb
Rubidium (Rb)	≤0,1 ppb
Ruthenium (Ru)	≤0,5 ppb
Samarium (Sm)	≤0,1 ppb
Scandium (Sc)	≤0,1 ppb
Selenium (Se)	≤1 ppb
Silver (Ag)	≤1 ppb
Strontium (Sr)	≤0,5 ppb
Tellur (Te)	≤0,5 ppb
Terbium (Tb)	≤0,1 ppb
Thallium (Tl)	≤0,1 ppb
Thorium (Th)	≤0,1 ppb
Thulium (Tm)	≤0,1 ppb
Titanium (Ti)	≤0,5 ppb
Uranium (U)	≤0,1 ppb
Vanadium (V)	≤0,5 ppb
Bismuth (Bi)	≤0,1 ppb
Tungsten (W)	≤0,5 ppb
Ytterbium (Yb)	≤0,1 ppb
Yttrium (Y)	≤0,1 ppb
Zinc (Zn)	≤1 ppb
Tin (Sn)	≤0,5 ppb
Zirconium (Zr)	≤0,1 ppb
$KMnO_4$ reducing substances	complies
$K_2Cr_2O_7$ reducing substances	complies

HN55.1	500 ml	plastic	82,70 €
HN55.3	1 l	plastic	125,70 €
Original pack 6 x 1 l			119,42/1 l
HN55.4	2,5 l	plastic	160,10 €
Original pack 4 x 2,5 l			152,10/2,5 l
HN55.5	4 l	plastic	246,20 €

For further information, please see page 1729

Acetic acid 100 %

Glacial acetic acid, Methane carboxylic acid, Ethanoic acid
$C_2H_4O_2$
M 60,05 g/mol
D 1,05 • bp 118 °C
mp 16,6 °C • flp +40 °C
[64-19-7] • EC No. 200-580-7
UN No. 2789 • ADR 8 (3) II • WGK 1

Danger H314-H226

Acetic acid 100 %

ROTIPURAN® 100 %, p.a.

Guarantee analysis:

Assay. ≥99,8 %
Colour (Hazen). ≤5
Aldehydes/acetaldehyde. ≤0,0002 %
Sulphate (SO_4). ≤0,0002 %
Chloride (Cl). ≤0,0001 %
Calcium (Ca). ≤0,00001 %
Sodium (Na). ≤0,00005 %
Potassium (K). ≤0,00005 %
Mercury (Hg). ≤0,000001 %
Aluminium (Al). ≤0,000005 %
Cadmium (Cd). ≤0,000001 %
Copper (Cu). ≤0,000001 %
Iron (Fe). ≤0,00001 %
Lead (Pb). ≤0,000001 %
$KMnO_4$ reducing substances. ≤0,000001 %
Evaporation residue. ≤0,0005 %
Solidification point. 16,5 °C

3738.1	1 l	glass	25,30 €
Original pack 6 x 1 l			24,04/1 l
3738.4	1 l	plastic	23,15 €
Original pack 6 x 1 l			21,99/1 l
3738.2	2,5 l	glass	53,65 €
Original pack 4 x 2,5 l			50,97/2,5 l
3738.5	2,5 l	plastic	51,50 €
Original pack 4 x 2,5 l			48,93/2,5 l
3738.6	5 l	plastic	76,25 €
Original pack 2 x 5 l			72,44/5 l
3738.3	10 l	plastic	128,90 €

Acetic acid 100 %

100 %, Ph.Eur., extra pure

Guarantee analysis:

Appearance. clear, colourless liquid
Assay. 99,8-100,5 %
Identity. complies
Colour (Hazen). ≤5
Formic acid. ≤0,01 %
Iron (Fe). ≤0,0005 %
Heavy metals (as Pb). ≤0,0005 %
Chloride (Cl). ≤0,0025 %
Sulphate (SO_4). ≤0,005 %
Aldehydes/acetaldehyde. ≤0,0002 %
Potassium dichromate stable. complies
Potassium permanganate red. matter. complies
Evaporation residue. ≤0,01 %
Solidification point. ≥14,8 °C

6755.1	1 l	glass	22,50 €
Original pack 6 x 1 l			21,38/1 l
6755.2	2,5 l	glass	45,70 €
Original pack 4 x 2,5 l			43,42/2,5 l
6755.3	5 l	plastic	71,50 €
Original pack 2 x 5 l			67,93/5 l
6755.4	10 l	plastic	114,95 €
6755.5	25 l	plastic	193,40 €

Acetic acid 99-100 %

≥99 %, for synthesis

Type analysis:

Assay. ≥99 %
Colour (Hazen). ≤5
Formic acid. ≤0,01 %

7332.1	1 l	plastic	18,85 €
Original pack 6 x 1 l			17,91/1 l
7332.4	2,5 l	plastic	37,55 €
Original pack 4 x 2,5 l			35,67/2,5 l
7332.2	5 l	plastic	68,30 €
Original pack 2 x 5 l			64,89/5 l
7332.3	10 l	plastic	102,70 €
7332.5	25 l	plastic	182,65 €

Acetic acid 96 %

Methane carboxylic acid, Ethanoic acid
$C_2H_4O_2$
M 60,05 g/mol
D 1,05 • bp 118 °C
mp 16,6 °C • flp +40 °C
[64-19-7] • EC No. 200-580-7
UN No. 2789 • ADR 8 (3) II • WGK 1

Danger H314-H226

Acetic acid 96 %

ROTIPURAN® ≥95,9 %, p.a.

Guarantee analysis:

Assay. ≥95,9 %
Colour (Hazen). ≤10
Aldehydes/acetaldehyde. ≤0,0002 %
Formic acid, formiate. ≤0,01 %
Chloride (Cl). ≤0,00005 %
Sulphate (SO_4). ≤0,00005 %
Aluminium (Al). ≤0,00001 %
Lead (Pb). ≤0,000005 %
Iron (Fe). ≤0,00001 %
Cadmium (Cd). ≤0,000005 %
Calcium (Ca). ≤0,00002 %
Potassium (K). ≤0,0001 %
Copper (Cu). ≤0,000001 %
Magnesium (Mg). ≤0,00001 %
Sodium (Na). ≤0,0001 %
Zinc (Zn). ≤0,000005 %
$KMnO_4$ reducing substances (as O). ≤0,002 %
$K_2Cr_2O_7$ reducing substances. ≤0,003 %
Non volatile matter. ≤0,0005 %

T179.1	1 l	plastic	22,05 €
Original pack 6 x 1 l			20,95/1 l
T179.2	2,5 l	plastic	45,05 €
Original pack 4 x 2,5 l			42,80/2,5 l
T179.4	5 l	plastic	66,15 €
Original pack 2 x 5 l			62,84/5 l
T179.3	10 l	plastic	110,65 €

Acetic acid 96 %

≥95,9 %, extra pure

Type analysis:

Assay. ≥95,9 %
Colour (Hazen). ≤10
Formic acid, formiate. ≤0,01 %
Chloride (Cl). ≤0,0001 %
Sulphate (SO_4). ≤0,0001 %
Iron (Fe). ≤0,0001 %
Copper (Cu). ≤0,00001 %
Non volatile matter. ≤0,0005 %

X895.1	1 l	plastic	18,85 €
Original pack 6 x 1 l			17,91/1 l
X895.2	2,5 l	plastic	36,45 €
Original pack 4 x 2,5 l			34,63/2,5 l
X895.4	5 l	plastic	53,65 €
Original pack 2 x 5 l			50,97/5 l
X895.3	10 l	plastic	87,00 €

Acetic acid 80 %

Acetic acid 80 %

80 %, pure

Methane carboxylic acid, Ethanoic acid
$C_2H_4O_2$
M 60,05 g/mol
D 1,07 • bp 104 °C • mp -8 °C
[64-19-7] • EC No. 200-580-7
UN No. 2790 • ADR 8 II • WGK 1

Danger H314

Type analysis:

Assay. 79,0-81,0 %
Colour (Hazen). ≤5
Formic acid. ≤0,05 %
Iron (Fe). ≤0,005 %

6740.1	1 l	plastic	17,75 €
Original pack 6 x 1 l			16,86/1 l
6740.2	2,5 l	plastic	32,80 €
Original pack 4 x 2,5 l			31,16/2,5 l
6740.3	5 l	plastic	41,40 €
Original pack 2 x 5 l			39,33/5 l
6740.4	10 l	plastic	60,10 €

Acetic acid 60 %

Acetic acid 60 %

60 %, pure

Methane carboxylic acid, Ethanoic acid
$C_2H_4O_2$
M 60,05 g/mol
D 1,06-1,07 • bp ~100 °C
[64-19-7] • EC No. 200-580-7
UN No. 2790 • ADR 8 II • WGK 1

Danger H314

Type analysis:

Assay. 59-61 %
Colour (APHA). ≤30
Density (20 °C). 1,062-1,080 g/cm³

7329.1	1 l	plastic	17,10 €
Original pack 6 x 1 l			16,25/1 l
7329.4	2,5 l	plastic	23,55 €
Original pack 4 x 2,5 l			22,37/2,5 l
7329.3	5 l	plastic	35,40 €
Original pack 2 x 5 l			33,63/5 l
7329.2	10 l	plastic	48,30 €
7329.5	25 l	plastic	93,00 €

Acetic acid 25 %

Acetic acid 25 %

25 %, pure

Methane carboxylic acid, Ethanoic acid
$C_2H_4O_2$
M 60,05 g/mol
D ~1,04
[64-19-7] • EC No. 200-580-7
UN No. 2790 • ADR 8 III • WGK 1

Danger H314

Type analysis:

Assay.....24,0-26,0 %

4340.1	1 l	plastic	16,70 €
Original pack 6 x 1 l			15,87/1 l
4340.5	2,5 l	plastic	22,50 €
Original pack 4 x 2,5 l			21,38/2,5 l
4340.2	5 l	plastic	34,95 €
Original pack 2 x 5 l			33,20/5 l
4340.3	10 l	plastic	45,05 €
4340.4	25 l	plastic	88,05 €

Acetic acid 10 %

Acetic acid 10 %

10 %, pure

Methane carboxylic acid, Ethanoic acid
$C_2H_4O_2$
M 60,05 g/mol
D ~1,02
[64-19-7] • EC No. 200-580-7
UN No. 2790 • ADR 8 III • WGK 1

Warning H315-H319

Type analysis:

Assay.....10-11 %
Density (20 °C).....1,013-1,015 g/cm³
Colour number (Hazen).....≤30

4341.1	1 l	plastic	15,60 €
Original pack 6 x 1 l			14,82/1 l
4341.5	2,5 l	plastic	21,40 €
Original pack 4 x 2,5 l			20,33/2,5 l
4341.2	5 l	plastic	34,30 €
Original pack 2 x 5 l			32,59/5 l
4341.3	10 l	plastic	40,75 €
4341.4	25 l	plastic	80,55 €

Acetic acid (1 N)

Acetic acid

1 mol/l - 1 N volumetric standard solution

Type analysis:

Amount-of-substance conc. (20 °C).....1 mol/l ±0,3 %
Titer.....0,997-1,003

KK62.1	1 l	plastic	28,95 €
Original pack 6 x 1 l			27,50/1 l

For further information, please see page 1681

Acetic acid (2 N)

Acetic acid

2 mol/l - 2 N volumetric standard solution

D 1,01
UN No. 2790 • ADR 8 III • WGK 1

Warning H315-H319

Type analysis:

Amount-of-substance conc. (20 °C).....2 mol/l ±0,2 %
Titer.....0,9980-1,0020

9883.1	500 ml	plastic	33,25 €
9883.2	1 l	plastic	49,35 €
Original pack 6 x 1 l			46,88/1 l

Acetic acid D1

Acetic acid D1

99 Atom%D

For nuclear magnetic resonance spectroscopy.
CH_3COOD
M 61,06 g/mol
D 1,06 • bp 116 °C
mp 16 °C • flp 40 °C
[758-12-3] • EC No. 212-059-1
UN No. 2789 • ADR 8 (3) II • WGK 2

Danger H226-H314

Type analysis:

Deuterising degree.....≥99,0 %
Water (KF, H_2O+D_2O).....≤1 %

9902.1	50 ml	glass	91,30 €

Acetic acid D4

Acetic acid D4

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.
$C_2D_4O_2$
M 64,08 g/mol
bp ~118 °C
mp 17 °C • flp 39 °C
[1186-52-3] • EC No. 214-693-4
UN No. 2789 • ADR 8 (3) II • WGK 1

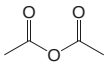
Danger H314-H226

Guarantee analysis:

Deuterising degree.....≥99,5 %
Water (KF, H_2O+D_2O).....≤0,1 %

HN83.1	10 ml	glass	85,90 €

Acetic acid anhydride



Acetic anhydride
$C_4H_6O_3$
M 102,09 g/mol
D 1,08 • bp 138-140 °C
mp -73 °C • flp 49 °C
[108-24-7] • EC No. 203-564-8
UN No. 1715 • ADR 8 (3) II • WGK 1

Danger H314-H226-H302+H332

Acetic acid anhydride

ROTIPURAN® ≥99 %, p.a., ACS, ISO

Acetylation reagent

Guarantee analysis:

Assay (GC).....≥99,0 %
Chloride (Cl).....≤0,0005 %
Sulphate (SO_4).....≤0,0005 %
Phosphate (PO_4).....≤0,001 %
Non volatile matter.....≤0,003 %
Heavy metals (as Pb).....≤0,0002 %
$KMnO_4$ reducing substances.....complies
Aluminium (Al).....≤0,00005 %
Boron (B).....≤0,00005 %
Barium (Ba).....≤0,00001 %
Bismuth (Bi).....≤0,000005 %
Cadmium (Cd).....≤0,000002 %
Cobalt (Co).....≤0,000002 %
Chromium (Cr).....≤0,000002 %
Copper (Cu).....≤0,000002 %
Iron (Fe).....≤0,00001 %
Magnesium (Mg).....≤0,00001 %
Manganese (Mn).....≤0,000002 %
Nickel (Ni).....≤0,000002 %
Lead (Pb).....≤0,00001 %
Sodium (Na).....≤0,00005 %
Tin (Sn).....≤0,000005 %
Strontium (Sr).....≤0,000005 %
Zinc (Zn).....≤0,00001 %

CP28.1	1 l	glass	44,00 €
Original pack 6 x 1 l			41,80/1 l
CP28.2	2,5 l	glass	85,50 €
Original pack 4 x 2,5 l			81,23/2,5 l
CP28.3	5 l	plastic	136,00 €
Original pack 2 x 5 l			129,20/5 l
CP28.4	10 l	plastic	252,65 €
CP28.5	25 l	plastic	536,45 €

Acetic acid anhydride

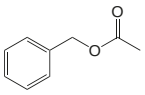
≥99 %, for synthesis

Type analysis:

Assay (GC).....≥99 %
Density (20 °C).....1,080-1,082
Refractive index (20 °C).....1,3890-1,3910

4483.1	1 l	glass	33,25 €
Original pack 6 x 1 l			31,59/1 l
4483.2	2,5 l	glass	53,25 €
Original pack 4 x 2,5 l			50,59/2,5 l
4483.3	5 l	plastic	71,95 €
Original pack 2 x 5 l			68,35/5 l
4483.4	10 l	plastic	122,45 €
4483.5	25 l	plastic	252,65 €

Acetic acid benzyl ester



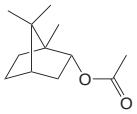
Acetic acid benzyl ester

≥99 %, for synthesis
Benzylacetate
$C_9H_{10}O_2$
M 150,18 g/mol
D 1,06 • bp 214 °C
mp -51 °C • flp 102 °C
Solubility: <1 g/l (H_2O, 23 °C)
[140-11-4] • EC No. 205-399-7
WGK 1
H412

Type analysis:
Assay (GC).....≥99 %
Density (d 20 °C/4 °C).....1,052-1,057

4368.1	100 ml	glass	17,10 €
4368.2	500 ml	glass	35,40 €
4368.3	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l
4368.4	2,5 l	glass	84,40 €
Original pack 4 x 2,5 l			80,18/2,5 l

Acetic acid L-bornyl ester



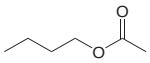
Acetic acid L-bornyl ester

ROTICHROM® GC
Reference substance for GC.
L-Bornyl acetate
$C_{12}H_{20}O_2$
M 196,28 g/mol
D 0,982 • bp 223-224 °C
flp 84 °C
Storage temp.: +4 °C
[5655-61-8] • EC No. 227-101-4
WGK 1

Type analysis:
Purity (GC).....≥98 %

9009.2	100 mg	glass	100,95 €

Acetic acid n-butyl ester



n-Butyl acetate
$C_6H_{12}O_2$
M 116,16 g/mol
D 0,88 • bp 124-128 °C
mp -76 °C • flp 25 °C
Solubility: 5 g/l (H_2O, 20 °C)
[123-86-4] • EC No. 204-658-1
UN No. 1123 • ADR 3 III • WGK 1
Warning H226-H336-EUH066

Acetic acid n-butyl ester

ROTIPURAN® ≥99 %, p.a.

Guarantee analysis:
Assay (GC).....≥99,0 %
Density (d 20 °C/4 °C).....0,880-0,882
Refractive index (20 °C).....1,394-1,396
Non volatile matter.....≤0,001 %
1-Butanol (GC).....≤0,5 %
n-Butyl formiate (GC).....≤0,1 %
n-Butyl propionate (GC).....≤0,1 %
Matter discoloured by H_2SO_4.....complies
Acidity.....≤0,0016 meq/g
Water.....≤0,1 %
Lead (Pb).....≤0,00001 %
Cadmium (Cd).....≤0,000005 %
Calcium (Ca).....≤0,00005 %
Chromium (Cr).....≤0,000002 %
Iron (Fe).....≤0,00001 %
Cobalt (Co).....≤0,000002 %
Copper (Cu).....≤0,000002 %
Magnesium (Mg).....≤0,00001 %
Manganese (Mn).....≤0,000002 %
Nickel (Ni).....≤0,000002 %
Zinc (Zn).....≤0,00001 %

P036.1	1 l	glass	46,15 €
Original pack 6 x 1 l			43,84/1 l
P036.2	2,5 l	glass	102,05 €
Original pack 4 x 2,5 l			96,95/2,5 l

For further information, please see page 1495

Acetic acid n-butyl ester

≥99 %, for synthesis

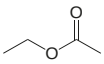
Type analysis:
Appearance.....clear, colourless liquid
Assay (GC).....≥99 %
Water.....≤0,1 %
Density (20 °C).....0,878-0,882
Refractive index n_D^{20}.....1,393-1,395

4600.1	1 l	glass	24,20 €
Original pack 6 x 1 l			22,99/1 l
4600.3	2,5 l	glass	36,45 €
Original pack 4 x 2,5 l			34,63/2,5 l
4600.5	5 l	aluminium	60,10 €
Original pack 2 x 5 l			57,10/5 l
4600.2	10 l	tinplate	107,40 €
4600.4	25 l	tinplate	209,65 €

Acetic acid dimethylamide

▶ N,N-Dimethylacetamide (DMA) see p. 1945

Acetic acid ethyl ester



Ethyl acetate, Acetic ester
$C_4H_8O_2$
M 88,11 g/mol
D 0,9 • bp 77-78 °C
mp -83 °C • flp -4 °C
Solubility: 85 g/l (H_2O, 20 °C)
[141-78-6] • EC No. 205-500-4
UN No. 1173 • ADR 3 II • WGK 1
Danger H225-H319-H336-EUH066

Acetic acid ethyl ester

ROTISOLV® ≥99,9 %, LC-MS-Grade

Guarantee analysis:
Assay (GC).....≥99,9 %
Colour (APHA).....≤5
Water (KF).....≤0,05 %
Free acid (as CH_3COOH).....≤0,001 %
Free alkali (as NH_3).....≤0,0005 %
Non volatile matter.....≤0,0001 %
Transmission:
275 nm.....≥98 %
260 nm.....≥75 %
Trace impurities:
Aluminium (Al).....≤0,05 ppm
Calcium (Ca).....≤0,05 ppm
Iron (Fe).....≤0,05 ppm
Potassium (K).....≤0,05 ppm
Magnesium (Mg).....≤0,05 ppm
Sodium (Na).....≤0,05 ppm
LC-MS suitability test.....complies
Filtered through 0,2 µm membrane and filled under protective gas.

AE69.1	1 l	glass	50,00 €
Original pack 6 x 1 l			47,50/1 l
AE69.2	2,5 l	glass	103,10 €
Original pack 4 x 2,5 l			97,95/2,5 l

Acetic acid ethyl ester

ROTISOLV® HPLC

Guarantee analysis:
Assay (GC).....≥99,9 %
Water (KF).....≤0,05 %
Free acid.....≤0,005 %
Non volatile matter.....≤0,0002 %
Transmission:
300 nm.....≥99 %
270 nm.....≥95 %
260 nm.....≥75 %
255 nm.....≥20 %
Filtered through 0,2 µm membrane and filled under protective gas.

7336.2	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
7336.1	2,5 l	glass	73,00 €
Original pack 4 x 2,5 l			69,35/2,5 l

For further information, please see page 1650

Acetic acid ethyl ester

ROTISOLV® ≥99,9 %, GC Ultra Grade

For gaschromatographic residue analysis.

Guarantee analysis:

Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,02 %
Free acid (as CH_3COOH). ≤0,005 %
Evaporation residue. ≤0,0002 %
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤5 ng/l
PAH-test (less than 2 ppb, HPLC). complies
Filtered through 0,2 µm membrane and filled under protective gas.

KK42.1	2,5 l	glass	70,85 €
Original pack 4 x 2,5 l			67,31/2,5 l

Acetic acid ethyl ester

ROTISOLV® ≥99,9 %, Pestilyse® plus

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:

Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,05 %
Free acid (as CH_3COOH). ≤0,003 %
Evaporation residue. ≤0,0001 %
GC/FID suitability (as 2-octanol). ≤15 ng/ml
GC/ECD suitability (as heptachloro epoxide). ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤5 ng/l
GC/ECD volatile impurities (as ethylene dibromide). ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC). complies
Fluorescence (as quinine):
254 nm. ≤1,5 ppb
365 nm. ≤1 ppb
Transmission:
260 nm. ≥75 %

7565.1	2,5 l	glass	67,65 €
Original pack 4 x 2,5 l			64,27/2,5 l

Acetic acid ethyl ester

ROTISOLV® ≥99,8 %, Pestilyse®

For residue and environmental analysis.

Guarantee analysis:

Assay (GC). ≥99,8 %
Water (KF). ≤0,05 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
GC/ECD (individual signal as lindane). ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l

T164.2	1 l	glass	31,10 €
Original pack 6 x 1 l			29,55/1 l
T164.1	2,5 l	glass	66,55 €
Original pack 4 x 2,5 l			63,22/2,5 l
T164.3	4 l	glass	93,00 €

Acetic acid ethyl ester

ROTISOLV® ≥99,8 %, UV/IR-Grade

For chromatography and spectroscopy.

Guarantee analysis:

Assay (GC). ≥99,8 %
Water (KF). ≤0,02 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
Transmission:
280 nm. ≥98 %
270 nm. ≥95 %
260 nm. ≥75 %

4442.1	2,5 l	glass	58,60 €
Original pack 4 x 2,5 l			55,67/2,5 l

For further information, please see page 1641

Acetic acid ethyl ester

ROTIDRY® ≥99,8 % (≤100 ppm H_2O)

Dried, for analysis and organic synthesis.

Guarantee analysis:

Assay (GC). ≥99,8 %
Water (KF). ≤0,01 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %

4424.1	1 l	glass	29,60 €
Original pack 6 x 1 l			28,12/1 l

Acetic acid ethyl ester

ROTIPURAN® ≥99,5 %, p.a., ACS, ISO

Guarantee analysis:

Assay (GC). ≥99,5 %
Colour (Hazen). ≤10
Water. ≤0,1 %
Acidity. ≤0,0008 meq/g
Density (d 20 °C/20 °C). 0,898-0,902
Matter discoloured by H_2SO_4. complies
Evaporation residue. ≤0,001 %
Ethanol (GC). ≤0,1 %
Methanol (GC). ≤0,1 %
Methyl acetate (GC). ≤0,1 %
Lead (Pb). ≤0,00001 %
Cadmium (Cd). ≤0,000005 %
Calcium (Ca). ≤0,00005 %
Chromium (Cr). ≤0,000002 %
Iron (Fe). ≤0,00001 %
Cobalt (Co). ≤0,000002 %
Copper (Cu). ≤0,000002 %
Magnesium (Mg). ≤0,00001 %
Manganese (Mn). ≤0,000002 %
Nickel (Ni). ≤0,000002 %
Zinc (Zn). ≤0,00001 %

6784.1	1 l	glass	33,90 €
Original pack 6 x 1 l			32,21/1 l
6784.3	1 l	plastic	32,80 €
Original pack 6 x 1 l			31,16/1 l
6784.2	2,5 l	glass	62,25 €
Original pack 4 x 2,5 l			59,14/2,5 l
6784.4	2,5 l	plastic	60,75 €
Original pack 4 x 2,5 l			57,71/2,5 l
6784.5	5 l	plastic	99,90 €
Original pack 2 x 5 l			94,91/5 l

Acetic acid ethyl ester

≥99,5 %, Ph.Eur., extra pure

Guarantee analysis:

Assay (GC). ≥99,5 %
Identity. complies
Appearance of solution. clear, colourless
Acid react. substances. complies
Density (d 20 °C/20 °C). 0,898-0,902
Refractive index n_D^{20}. 1,370-1,373
Related substances (GC). ≤0,2 %
Reaction with H_2SO_4. complies
Evaporation residue. ≤0,003 %
Water (KF). ≤0,1 %

CP42.1	1 l	glass	25,70 €
Original pack 6 x 1 l			24,42/1 l
CP42.2	2,5 l	glass	44,65 €
Original pack 4 x 2,5 l			42,42/2,5 l
CP42.3	2,5 l	plastic	41,85 €
Original pack 4 x 2,5 l			39,76/2,5 l
CP42.4	5 l	plastic	68,30 €
Original pack 2 x 5 l			64,89/5 l
CP42.5	10 l	tinplate	121,40 €
CP42.6	25 l	tinplate	262,20 €

Acetic acid ethyl ester

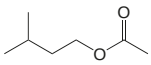
≥99,5 %, for synthesis

Type analysis:

Appearance. clear, colourless to slightly yellow
Assay (GC). ≥99,5 %
Water. <0,05 %
Density (20 °C). 0,899-0,903
Refractive index n_D^{20}. 1,371-1,374

7338.1	1 l	glass	23,55 €
Original pack 6 x 1 l			22,37/1 l
7338.3	2,5 l	glass	40,75 €
Original pack 4 x 2,5 l			38,71/2,5 l
7338.5	5 l	plastic	55,40 €
Original pack 2 x 5 l			52,63/5 l
7338.2	10 l	tinplate	90,85 €
7338.4	25 l	tinplate	182,65 €

Acetic acid isoamyl ester



Acetic acid isoamyl ester

≥98 %, extra pure

Isoamyl acetate, 3-Methylbutyl acetate
$C_7H_{14}O_2$
M 130,19 g/mol
D 0,87 • bp 142 °C
mp -78,5 °C • flp 25 °C
Solubility: 2,1 g/l (H_2O, 19 °C)
[123-92-2] • EC No. 204-662-3
UN No. 1104 • ADR 3 III • WGK 1

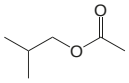
Warning H226-EUH066

Type analysis:

Appearance. clear, colourless to light yellowish liquid
Assay (GC). ≥98 %
Density (d 20 °C/4 °C). 0,866-0,880
Refractive index n_D^{20}. 1,398-1,404

7341.1	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l
7341.2	10 l	tinplate	299,95 €

Acetic acid isobutyl ester



Acetic acid isobutyl ester

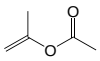
≥99 %, for synthesis
Isobutyl acetate
$C_6H_{12}O_2$
M 116,16 g/mol
D ~0,87 • bp ~117 °C
mp -99 °C • flp 18 °C
Solubility: 53 g/l (H_2O, 20 °C)
[110-19-0] • EC No. 203-745-1
UN No. 1213 • ADR 3 II • WGK 1

Danger H225-H336-EUH066

Type analysis:
Assay (GC). ..... ≥99,0 %
Density (20 °C). 0,868-0,873
Water. ..... ≤0,05 %

4370.1	100 ml	glass	13,45 €
4370.2	500 ml	glass	18,85 €
4370.3	1 l	glass	31,75 €
Original pack 6 x 1 l			30,16/1 l
4370.4	2,5 l	glass	53,65 €
Original pack 4 x 2,5 l			50,97/2,5 l

Acetic acid isopropenyl ester



Acetic acid isopropenyl ester

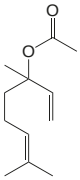
≥98 %, for synthesis
Acetonenol acetate, Isopropenyl acetate
$C_5H_8O_2$
M 100,11 g/mol
D 0,91 • bp 97 °C
mp -93 °C • flp 4 °C
Solubility: 34 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[108-22-5] • EC No. 203-562-7
UN No. 2403 • ADR 3 II • WGK 1

Danger H225-H335

Type analysis:
Assay (GC). ..... ≥98,0 %

3012.1	250 ml	glass	47,85 €

Acetic acid linalyl ester



Acetic acid linalyl ester

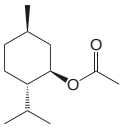
ROTICHROM® GC
Reference substance for GC.
Linalyl acetate, Bergamol
$C_{12}H_{20}O_2$
M 196,29 g/mol
D 0,895 • bp ~220 °C
flp 90 °C
Storage temp.: +4 °C
[115-95-7] • EC No. 204-116-4
WGK 1

Warning H315-H319-H412

Type analysis:
Purity (GC). ..... ≥95 %

5199.2	100 mg	glass	87,65 €

Acetic acid (L)-menthyl ester



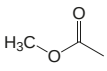
Acetic acid (L)-menthyl ester

ROTICHROM® GC
Reference substance for GC.
Menthyl acetate
$C_{12}H_{22}O_2$
M 198,31 g/mol
D 0,92 • bp 229-230 °C
flp 77 °C
Storage temp.: +4 °C
[2623-23-6] • EC No. 220-076-0
WGK 2

Type analysis:
Purity (GC). ..... ≥98 %

5189.1	1 g	plastic	85,50 €

Acetic acid methyl ester



Acetic acid methyl ester

≥99 %, for synthesis
Methyl acetate
$C_3H_6O_2$
M 74,08 g/mol
D 0,93 • bp 57 °C
mp -98 °C • flp -10 °C
Solubility: 320 g/l (H_2O, 20 °C)
[79-20-9] • EC No. 201-185-2
UN No. 1231 • ADR 3 II • WGK 1

Danger H225-H319-H336-EUH066

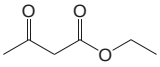
Type analysis:
Assay (GC). ..... ≥99 %
Refractive index n_D^{20} 1,360-1,363
Water (KF). ..... ≤0,3 %

3730.3	500 ml	glass	18,85 €
3730.1	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l
3730.2	2,5 l	glass	59,70 €
Original pack 4 x 2,5 l			56,72/2,5 l
3730.4	5 l	aluminium	81,20 €
Original pack 2 x 5 l			77,14/5 l

Acetic esther

▶ Acetic acid ethyl ester see p. 1758

Acetoacetic acid ethyl ester



Acetoacetic acid ethyl ester

≥98 %
Ethyl acetoacetate
$C_6H_{10}O_3$
M 130,14 g/mol
D 1,03 • bp 181 °C
mp -43 °C • flp 65 °C
Solubility: 116 g/l (H_2O, 20 °C)
[141-97-9] • EC No. 205-516-1
WGK 1

Warning H319

Type analysis:
Assay (GC). ..... ≥98,0 %

4474.1	500 ml	glass	43,55 €

Acetoacetophenone

▶ Benzoylacetone see p. 1833

Acetone

2-Propanone, Dimethyl ketone
C_3H_6O
M 58,08 g/mol
D ~0,79 • bp ~56 °C
mp -95 °C • flp -19 °C
[67-64-1] • EC No. 200-662-2
UN No. 1090 • ADR 3 II • WGK 1

Danger H225-H319-H336-EUH066

Acetone

ROTISOLV® HPLC

Guarantee analysis:
Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,2 %
Free acid. ..... ≤0,003 %
Non volatile matter. ..... ≤0,0002 %
Transmission:
350 nm. ..... ≥99 %
340 nm. ..... ≥80 %
335 nm. ..... ≥60 %
Filtered through 0,2 µm membrane and filled under protective gas.

7328.1	1 l	glass	30,00 €
Original pack 6 x 1 l			28,50/1 l
7328.2	2,5 l	glass	53,25 €
Original pack 4 x 2,5 l			50,59/2,5 l

For further information, please see page 1650

Acetone

ROTISOLV® ≥99,9 %, GC Ultra Grade

For gaschromatographic residue analysis.

Guarantee analysis:

Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,25 %
Free acid (as CH_3COOH). ≤0,002 %
Evaporation residue. ≤0,0002 %
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤5 ng/l
PAH-test (less than 2 ppb, HPLC). complies
Filtered through 0,2 µm membrane and filled under protective gas.

KK40.1	2,5 l	glass	63,35 €
Original pack 4 x 2,5 l			60,18/2,5 l

Acetone

ROTISOLV® ≥99,9 %, Pestilyse® plus

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:

Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,3 %
Free acid (as CH_3COOH). ≤0,002 %
Evaporation residue. ≤0,0003 %
GC/FID suitability (as 2-octanol). ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤10 ng/l
Oil index (any hydrocarbon C_{10}-C_{40}). ≤0,1 mg/l
GC/ECD volatile impurities (as ethylene dibromide). ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC). complies
Fluorescence (as quinine):
254 nm. ≤1 ppb
365 nm. ≤1 ppb

7535.1	2,5 l	glass	56,90 €
Original pack 4 x 2,5 l			54,06/2,5 l

Acetone

ROTISOLV® ≥99,8 %, Pestilyse®

For residue and environmental analysis.

Guarantee analysis:

Assay (GC). ≥99,8 %
Water (KF). ≤0,2 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
GC/ECD (individual signal as lindane). ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l

T161.2	1 l	glass	27,85 €
Original pack 6 x 1 l			26,46/1 l
T161.1	2,5 l	glass	54,30 €
Original pack 4 x 2,5 l			51,59/2,5 l
T161.3	4 l	glass	76,25 €

Acetone

ROTISOLV® ≥99,9 %, UV/IR-Grade

For chromatography and spectroscopy.

Guarantee analysis:

Assay (GC). ≥99,9 %
Water (KF). ≤0,2 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
Fluorescence (as quinine):
365 nm. ≤1,0 ppb
Transmission:
350 nm. ≥98 %
342 nm. ≥90 %
339 nm. ≥80 %
335 nm. ≥50 %
330 nm. ≥10 %

T906.1	2,5 l	glass	53,65 €
Original pack 4 x 2,5 l			50,97/2,5 l

Acetone

≥99,5 %, VLSI Grade

Guarantee analysis:

Assay. ≥99,5 %
Particle number (≥0,5 µm). ≤250 p/ml
Water. ≤0,5 %
Alkalinity. 0,5 µeq/g
Acidity. 0,2 µeq/g
Colour (APHA). ≤10
Chloride (Cl). ≤0,00001 %
Phosphate (PO_4). ≤0,00005 %
Ash content. ≤0,0005 %
Aluminium (Al). ≤50 ppb
Antimony (Sb). ≤10 ppb
Arsenic (As). ≤10 ppb
Barium (Ba). ≤20 ppb
Beryllium (Be). ≤10 ppb
Bismuth (Bi). ≤10 ppb
Lead (Pb). ≤10 ppb
Boron (B). ≤20 ppb
Cadmium (Cd). ≤10 ppb
Calcium (Ca). ≤50 ppb
Chromium (Cr). ≤10 ppb
Iron (Fe). ≤50 ppb
Gallium (Ga). ≤10 ppb
Gold (Au). ≤10 ppb
Potassium (K). ≤20 ppb
Cobalt (Co). ≤10 ppb
Copper (Cu). ≤30 ppb
Lithium (Li). ≤10 ppb
Magnesium (Mg). ≤20 ppb
Manganese (Mn). ≤10 ppb
Molybdenum (Mo). ≤10 ppb
Sodium (Na). ≤50 ppb
Nickel (Ni). ≤10 ppb
Silver (Ag). ≤10 ppb
Strontium (Sr). ≤10 ppb
Titanium (Ti). ≤10 ppb
Vanadium (V). ≤10 ppb
Zinc (Zn). ≤20 ppb
Tin (Sn). ≤10 ppb
Zirconium (Zr). ≤10 ppb

9780.1	2,5 l	plastic	69,80 €
Original pack 4 x 2,5 l			66,31/2,5 l
9780.2	5 l	plastic	115,60 €
Original pack 2 x 5 l			109,82/5 l

For further information, please see page 1718

Acetone

ROTIPURAN® ≥99,8 %, p.a., ACS, ISO

Guarantee analysis:

Assay (GC). ≥99,8 %
Colour (Hazen). ≤10
Density (d 20 °C). 0,790-0,793
Water . ≤0,05 %
Acidity. ≤0,0002 meq/g
Alkalinity. ≤0,0002 meq/g
Ethanol (GC). ≤0,01 %
Methanol (GC). ≤0,05 %
2-Propanol (GC). ≤0,05 %
Aldehydes (as CH_2O). <0,001 %
Aluminium (Al). ≤0,00005 %
Barium (Ba). ≤0,00001 %
Boron (B). ≤0,000002 %
Calcium (Ca). ≤0,00005 %
Iron (Fe). ≤0,00001 %
Copper (Cu). ≤0,000002 %
Manganese (Mn). ≤0,000002 %
Zinc (Zn). ≤0,00001 %
Tin (Sn). ≤0,00001 %
Cadmium (Cd). ≤0,000005 %
Cobalt (Co). ≤0,000002 %
Chromium (Cr). ≤0,000002 %
Magnesium (Mg). ≤0,00001 %
Nickel (Ni). ≤0,000002 %
Lead (Pb). ≤0,00001 %
Solubility in H_2O. complies
Evaporation residue. ≤0,0005 %
$KMnO_4$ reducing substances (as O). ≤0,00025 %

9372.1	1 l	glass	27,85 €
Original pack 6 x 1 l			26,46/1 l
9372.4	1 l	plastic	24,20 €
Original pack 6 x 1 l			22,99/1 l
9372.2	2,5 l	glass	57,95 €
Original pack 4 x 2,5 l			55,05/2,5 l
9372.5	2,5 l	plastic	52,60 €
Original pack 4 x 2,5 l			49,97/2,5 l
9372.6	5 l	plastic	90,20 €
Original pack 2 x 5 l			85,69/5 l
9372.7	10 l	tinplate	150,40 €
9372.3	25 l	tinplate	263,40 €

Acetone

≥99,7 %, Ph.Eur., extra pure

Guarantee analysis:

Assay (GC). ≥99,7 %
Identity. complies
Appearance of solution. complies
Acid or alkaline react. substances. complies
Relative density (20/20 °C). 0,790-0,793
Water. ≤0,3 %
Refractive index n_D^{20}. 1,358-1,361
In H_2O insoluble matter. complies
Reducing substances complies
Evaporation residue. ≤0,005 %
Related substances:
Methanol (GC). ≤0,05 %
Benzene (GC). ≤0,0002 %
2-Propanol (GC). ≤0,05 %
Related substances (GC). ≤0,05 %

CP40.1	1 l	glass	22,40 €
Original pack 6 x 1 l			21,28/1 l
CP40.2	2,5 l	glass	48,95 €
Original pack 4 x 2,5 l			46,50/2,5 l
CP40.3	2,5 l	plastic	44,65 €
Original pack 4 x 2,5 l			42,42/2,5 l
CP40.4	5 l	plastic	61,20 €
Original pack 2 x 5 l			58,14/5 l
CP40.5	10 l	tinplate	107,00 €
CP40.6	25 l	tinplate	212,35 €

Acetone

≥99,5 %, for synthesis

Type analysis:

Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99,5 %
Density (20 °C). ..... 0,789-0,793 g/cm³
Colour (Hazen). ..... ≤10
Water (KF). ..... ≤0,3 %
Acid value. ..... ≤0,003 %
Refractive index (20 °C) 1,358-1,360

5025.1	1 l	glass	18,85 €
Original pack 6 x 1 l			17,91/1 l
5025.2	2,5 l	glass	41,40 €
Original pack 4 x 2,5 l			39,33/2,5 l
5025.5	2,5 l	plastic	39,25 €
Original pack 4 x 2,5 l			37,29/2,5 l
5025.6	5 l	plastic	53,65 €
Original pack 2 x 5 l			50,97/5 l
5025.3	10 l	tinplate	95,60 €
5025.4	25 l	tinplate	203,20 €

Acetone D6

Hexadeuteroacetone
C_3D_6O
M 63,13 g/mol
D 0,88 • bp 55,5 °C
mp ~-93,8 °C • flp -20 °C
[666-52-4] • EC No. 211-563-9
UN No. 1090 • ADR 3 II • WGK 1

Danger H225-H319-H336-EUH066

Acetone D6

99,8 Atom%D

For nuclear magnetic resonance spectroscopy.

Guarantee analysis:

Deuterising degree. ..... ≥99,8 %
Water (KF, H_2O+D_2O). ..... ≤0,03 %

AE51.1	10 ml	glass	48,30 €
AE51.4	10 ml	septum bottle	51,50 €
AE51.2	50 ml	glass	213,95 €
AE51.3	10 x 0,75 ml	glass ampoule	52,60 €

Acetone D6

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.

Type analysis:

Deuterising degree. ..... ≥99,5 %
Water (KF, H_2O+D_2O). ..... ≤0,05 %

7909.1	10 ml	glass	47,20 €
7909.2	50 ml	glass	192,45 €

Acetonenol acetate

▶ Acetic acid isopropenyl ester see p. 1760

Acetonitrile

Methyl cyanide, Cyanomethane
C_2H_3N
M 41,05 g/mol
D 0,78 • bp 81 °C
mp -46 °C • flp 2 °C
[75-05-8] • EC No. 200-835-2
UN No. 1648 • ADR 3 II • WGK 2

Danger

H225-H302+H312+H332-H319

Acetonitrile

ROTISOLV® ≥99,98 %, Ultra LC-MS

Guarantee analysis:

Assay (GC). ..... ≥99,98 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,01 %
Free acid (as CH_3COOH). ..... ≤0,001 %
Free alkali (as NH_3). ..... ≤0,0001 %
Non volatile matter. ..... ≤0,0001 %
Transmission:
230 nm. ..... ≥99 %
215 nm. ..... ≥98 %
200 nm. ..... ≥97 %
195 nm. ..... ≥85 %
191 nm. ..... ≥30 %
Gradient test:
UV-absorption of the greatest eluated peak.
210 nm. ..... ≤0,001 AU
254 nm. ..... ≤0,0003 AU
Fluorescence (as quinine):
254 nm. ..... ≤0,25 ppb
365 nm. ..... ≤0,25 ppb
Trace impurities:
Aluminium (Al). ..... ≤20 ppb
Calcium (Ca). ..... ≤50 ppb
Iron (Fe). ..... ≤20 ppb
Potassium (K). ..... ≤50 ppb
Magnesium (Mg). ..... ≤20 ppb
Sodium (Na). ..... ≤100 ppb
Filtered through 0,1 µm membrane and filled under protective gas.

HN40.1	1 l	glass	83,35 €
Original pack 6 x 1 l			79,18/1 l
HN40.2	2,5 l	glass	155,80 €
Original pack 4 x 2,5 l			148,01/2,5 l

Acetonitrile

ROTISOLV® ≥99,95 %, LC-MS Grade

Guarantee analysis:

Assay (GC). ..... ≥99,95 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,01 %
Free acid (as CH_3COOH). ..... ≤0,001 %
Free alkali (as NH_3). ..... ≤0,0001 %
Non volatile matter. ..... ≤0,0001 %
Transmission:
240 nm. ..... ≥99 %
220 nm. ..... ≥98 %
200 nm. ..... ≥95 %
195 nm. ..... ≥78 %
Gradient test:
UV absorption of the greatest eluated peak
210 nm. ..... ≤0,005 AU
254 nm. ..... ≤0,002 AU
Fluorescence (as quinine):
254 nm. ..... ≤0,2 ppb
365 nm. ..... ≤0,2 ppb
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

AE70.1	1 l	glass	76,90 €
Original pack 6 x 1 l			73,06/1 l
AE70.2	2,5 l	glass	125,70 €
Original pack 4 x 2,5 l			119,42/2,5 l

Acetonitrile

ROTISOLV® HPLC Ultra Gradient Grade

Guarantee analysis:

Assay (GC). ..... ≥99,95 %
Colour (Hazen). ..... ≤5
Water (KF). ..... ≤0,01 %
Free acid (as CH_3COOH). ..... ≤0,001 %
Free alkali (as NH_3). ..... ≤0,0001 %
Non volatile matter. ..... ≤0,0001 %
Transmission:
230 nm. ..... ≥99 %
215 nm. ..... ≥98 %
200 nm. ..... ≥96 %
195 nm. ..... ≥85 %
191 nm. ..... ≥25 %
Gradient test:
UV absorption of the greatest eluated peak
210 nm. ..... ≤1,0 mAU
254 nm. ..... ≤0,2 mAU
Fluorescence (as quinine):
254 nm. ..... ≤0,2 ppb
365 nm. ..... ≤0,2 ppb
Fluorescence:
Em: 250-700 nm, Ex: 240-600 nm ..... ≤1 ppb (quinine standard)
Suitability for PAH analysis:
PAH-test (less than 2 ppb, HPLC). ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

T195.1	1 l	glass	72,60 €
Original pack 6 x 1 l			68,97/1 l
T195.2	2,5 l	glass	121,40 €
Original pack 4 x 2,5 l			115,33/2,5 l

For further information, please see page 1650

Acetonitrile

ROTISOLV® HPLC Gradient Grade

Guarantee analysis:

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,02 %
Free acid. ..... ≤0,001 %
Non volatile matter. ..... ≤0,0002 %
Transmission:
> 220 nm. ..... ≥99 %
220 nm. ..... ≥98 %
200 nm. ..... ≥96 %
195 nm. ..... ≥85 %
192 nm. ..... ≥50 %
190 nm. ..... ≥10 %
Gradient test:
UV absorption of the greatest eluated peak
210 nm. ..... ≤1,0 mAU
254 nm. ..... ≤0,5 mAU
Fluorescence (as quinine):
254 nm. ..... ≤1,0 ppb
365 nm. ..... ≤0,5 ppb
Filtered through 0,2 µm membrane and filled under protective gas.

8825.1	1 l	glass	46,15 €
Original pack 6 x 1 l			43,84/1 l
8825.2	2,5 l	glass	96,25 €
Original pack 4 x 2,5 l			91,44/2,5 l

For further information, please see page 1650

Acetonitrile
ROTISOLV® HPLC Gradient

Guarantee analysis:
Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,02 %
Free alkali (as NH_3). ≤0,0002 %
Free acid (as CH_3COOH). ≤0,002 %
Evaporation residue. ≤0,0002 %
Fluorescence (as quinine):
254 nm. ≤0,5 ppb
365 nm. ≤0,5 ppb
LC-gradient (at 210 nm). ≤2,0 mAU
UV-absorption:
254 nm. ≥99 %
220 nm. ≥98 %
200 nm. ≥95 %
195 nm. ≥80 %
193 nm. ≥60 %
Filtered through 0,2 µm membrane and filled under protective gas.

HN44.1	1 l	glass	40,75 €
Original pack 6 x 1 l			38,71/1 l
HN44.2	2,5 l	glass	77,95 €
Original pack 4 x 2,5 l			74,05/2,5 l

For further information, please see page 1650

Acetonitrile
ROTISOLV® HPLC

Guarantee analysis:
Assay (GC). ≥99,9 %
Water (KF). ≤0,03 %
Free acid. ≤0,002 %
Non volatile matter. ≤0,0003 %
Transmission:
> 230 nm. ≥99 %
215 nm. ≥95 %
195 nm. ≥80 %
Filtered through 0,2 µm membrane and filled under protective gas.

7330.1	1 l	glass	40,35 €
Original pack 6 x 1 l			38,33/1 l
7330.2	2,5 l	glass	74,20 €
Original pack 4 x 2,5 l			70,49/2,5 l

For further information, please see page 1650

Acetonitrile
ROTISOLV® HPLC, isocratic

Guarantee analysis:
Assay (GC). ≥99,9 %
Water (KF). ≤0,015 %
Transmission:
>240 nm. ≥99 %
230 nm. ≥96 %
200 nm. ≥80 %
Filtered through 0,2 µm membrane and filled under protective gas.

CN20.1	1 l	glass	39,70 €
Original pack 6 x 1 l			37,72/1 l
CN20.2	2,5 l	glass	75,15 €
Original pack 4 x 2,5 l			71,39/2,5 l

For further information, please see page 1650

Acetonitrile
ROTISOLV® ≥99,8 %, for preparative HPLC

Guarantee analysis:
Purity (GC). ≥99,8 %
Water (KF). ≤0,05 %
Acidity (as CH_3COOH). ≤0,005 %
Alkalinity (as NH_3). ≤0,0005 %
Transmission:
230 nm. ≥96 %
220 nm. ≥90 %
Filtered through 0,2 µm membrane and filled under protective gas.

6827.1	2,5 l	glass	59,70 €
Original pack 4 x 2,5 l			56,72/2,5 l
6827.2	25 l	tinplate	424,65 €

For further information, please see page 1650

Acetonitrile
ROTISOLV® ≥99,9 %, Pestilyse®
For residue and environmental analysis.

Guarantee analysis:
Assay (GC). ≥99,9 %
Water (KF). ≤0,2 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
GC/ECD (individual signal as lindane). ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l

T168.1	2,5 l	glass	76,25 €
Original pack 4 x 2,5 l			72,44/2,5 l
T168.3	4 l	glass	110,65 €

Acetonitrile
ROTISOLV® ≥99,9 %, UV/IR-Grade
For chromatography and spectroscopy.

Guarantee analysis:
Assay (GC). ≥99,9 %
Water (KF). ≤0,01 %
Acidity. ≤0,005 meq/g
Evaporation residue. ≤0,005 %
Fluorescence (as quinine):
254 nm. ≤1,0 ppb
365 nm. ≤1,0 ppb
Transmission:
230 nm. ≥98 %
215 nm. ≥90 %
200 nm. ≥80 %
195 nm. ≥50 %
190 nm. ≥10 %

T907.1	2,5 l	glass	94,10 €
Original pack 4 x 2,5 l			89,40/2,5 l

Acetonitrile
ROTIDRY®Sept ≥99,9 % (≤10 ppm H_2O)
Dried; in a septum bottle

Guarantee analysis:
Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,001 %
Acidity (as CH_3COOH). ≤0,002 %
Evaporation residue. ≤0,0003 %

5175.1	250 ml	glass	47,85 €

Acetonitrile
ROTIDRY® ≥99,9 % (≤10 ppm H_2O)
Dried; for DNA synthesis and analysis.

Guarantee analysis:
Assay (GC). ≥99,9 %
Colour (Hazen). ≤10
Water (KF). ≤0,001 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
Filtered through a membrane and filled under protective gas.

AE00.1	1 l	glass	36,45 €
Original pack 6 x 1 l			34,63/1 l
AE00.2	2,5 l	glass	75,15 €
Original pack 4 x 2,5 l			71,39/2,5 l
AE00.3	4 l	glass	112,35 €

Acetonitrile
ROTIPURAN® ≥99,5 %, p.a., ACS

Guarantee analysis:
Assay (GC). ≥99,5 %
Colour (Hazen). ≤10
Water . ≤0,1 %
Acidity. ≤0,008 meq/g
Alkalinity. ≤0,0006 meq/g
Aluminium (Al). ≤0,00005 %
Barium (Ba). ≤0,00001 %
Lead (Pb). ≤0,00001 %
Boron (B). ≤0,000002 %
Cadmium (Cd). ≤0,000005 %
Calcium (Ca). ≤0,00005 %
Chromium (Cr). ≤0,000002 %
Iron (Fe). ≤0,00001 %
Cobalt (Co). ≤0,000002 %
Copper (Cu). ≤0,000002 %
Magnesium (Mg). ≤0,00001 %
Manganese (Mn). ≤0,000002 %
Nickel (Ni). ≤0,000002 %
Zinc (Zn). ≤0,00001 %
Tin (Sn). ≤0,00001 %
Evaporation residue. ≤0,001 %

4722.1	1 l	glass	38,60 €
Original pack 6 x 1 l			36,67/1 l
4722.2	2,5 l	glass	88,05 €
Original pack 4 x 2,5 l			83,65/2,5 l

Acetonitrile
≥99,5 %, for synthesis

Type analysis:
Assay (GC). ≥99,5 %
Density (d 20 °C/20 °C). 0,780-0,785
Colour (APHA). ≤10
Water (KF). ≤0,1 %
Evaporation residue. ≤0,005 %

4380.1	1 l	glass	30,00 €
Original pack 6 x 1 l			28,50/1 l
4380.2	2,5 l	glass	63,35 €
Original pack 4 x 2,5 l			60,18/2,5 l
4380.3	10 l	tinplate	201,60 €
4380.4	25 l	tinplate	446,15 €

Acetonitrile

ROTISOLV® ≥99,9 %, for DNA synthesis

Water content ≤10 ppm

Guarantee analysis:

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,001 %
Non volatile matter. ..... ≤0,0001 %

8824.2	2,5 l	glass	107,00 €
Original pack 4 x 2,5 l			101,65/2,5 l

For further information, please see page 1552

Acetonitrile

ROTISOLV® ≥99,9 %, for DNA synthesis

Water content ≤30 ppm

Guarantee analysis:

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,003 %
Free acid. ..... ≤0,002 %
Non volatile matter. ..... ≤0,0003 %

2216.2	2,5 l	glass	84,85 €
Original pack 4 x 2,5 l			80,61/2,5 l

For further information, please see page 1552

Acetonitrile

ROTISOLV® ≥99,9 %, for DNA synthesis

Water content ≤30 ppm

Guarantee analysis:

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,003 %
Packed for Applied Biosystems and Biosearch DNA-Synthesizer.

3620.1	100 ml	septum bottle	27,85 €

For further information, please see page 1552

Acetonitrile D3

Methyl cyanide deuterated
CD_3CN
M 44,08 g/mol
D 0,84 • bp ~80,7 °C
mp -42 °C
[2206-26-0] • EC No. 218-616-5
UN No. 1648 • ADR 3 II • WGK 1

Danger

H225-H302+H312+H332-H319

Acetonitrile D3

99,8 Atom%D

For nuclear magnetic resonance spectroscopy.

Type analysis:

Deuterising degree. ..... ≥99,8 %
Water (KF, H_2O+D_2O). ..... ≤0,03 %

7911.1	10 ml	glass	75,80 €
7911.2	10 x 0,75 ml	glass ampoule	77,30 €

Acetonitrile D3

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.

Guarantee analysis:

Deuterising degree. ..... ≥99,5 %
Water (KF, H_2O+D_2O). ..... ≤0,05 %

AE52.1	10 ml	glass	72,60 €
AE52.3	10 ml	septum bottle	73,65 €
AE52.2	25 ml	glass	150,00 €

Acetonitrile with 0,1 % formic acid

Acetonitrile with 0,1 % formic acid

ROTISOLV® ≥99,9 %, LC-MS-Grade

Eluent mixture for high performance liquid chromatography.
Acetonitrile mixture
C_2H_3N
M 41,05 g/mol
UN No. 1648 • ADR 3 II • WGK 2

Danger

H225-H302+H312+H332-H319

Guarantee analysis:

Assay. ..... ≥99,9 %
Formic acid (v/v). ..... 0,095-0,105 %
Transmission:
254 nm. ..... ≥90 %
230 nm. ..... ≥15 %
210 nm. ..... ≥5 %
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

CP00.1	1 l	glass	84,40 €
Original pack 6 x 1 l			80,18/1 l
CP00.2	2,5 l	glass	187,60 €
Original pack 4 x 2,5 l			178,22/2,5 l

Acetonitrile with 0,1 % acetic acid

Acetonitrile with 0,1 % acetic acid

ROTISOLV® ≥99,9 %, LC-MS-Grade

Eluent mixture for high performance liquid chromatography.
Acetonitrile mixture
C_2H_3N
M 41,05 g/mol
UN No. 1648 • ADR 3 II • WGK 2

Danger

H225-H302+H312+H332-H319

Guarantee analysis:

Assay (GC). ..... ≥99,9 %
Acetic acid (v/v). ..... 0,095-0,105 %
Transmission:
254 nm. ..... ≥90 %
230 nm. ..... ≥50 %
210 nm. ..... ≥20 %
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

CP01.1	1 l	glass	84,40 €
Original pack 6 x 1 l			80,18/1 l
CP01.2	2,5 l	glass	187,60 €
Original pack 4 x 2,5 l			178,22/2,5 l

Acetonitrile with 0,1 % trifluoroacetic acid

Acetonitrile with 0,1 % trifluoroacetic acid

ROTISOLV® ≥99,9 %, LC-MS-Grade

Eluent mixture for high performance liquid chromatography.
Acetonitrile mixture
C_2H_3N
M 41,05 g/mol
UN No. 1648 • ADR 3 II • WGK 2

Danger

H225-H302+H312+H332-H319

Guarantee analysis:

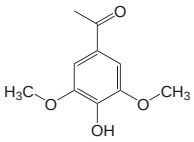
Assay (GC). ..... ≥99,9 %
Trifluoroacetic acid (v/v). ..... 0,095-0,105 %
Transmission:
254 nm. ..... ≥90 %
230 nm. ..... ≥50 %
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

CP02.1	1 l	glass	84,40 €
Original pack 6 x 1 l			80,18/1 l
CP02.2	2,5 l	glass	187,60 €
Original pack 4 x 2,5 l			178,22/2,5 l

3-Acetopropionic acid

▶ Levulinic acid see p. 2098

Acetosyringone



Acetosyringone

≥98 %
3,5-Dimethoxy-4-hydroxy-acetophenone
$C_{10}H_{12}O_4$
M 196,20 g/mol
mp ~125 °C
[2478-38-8] • EC No. 219-610-5
WGK 1

Warning H315-H319-H335

Type analysis:
Appearance. .....beige powder
Assay (GC). .....≥98,0 %

6003.1	500 mg	glass	27,45 €
6003.2	1 g	glass	42,90 €

Acetovanillon

▶ Apocynin see p. 1812

1-Acetoxy-2-butoxyethane

▶ 2-Butoxyethyl acetate see p. 1861

(3α,4β)-3-Acetoxy-olean-12-en-23-acid

▶ 3-Acetyl-α-boswellic acid see p. 1765

Acetoxyphenyl mercury

▶ Phenyl mercuric acetate see p. 2208

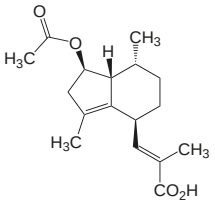
(3α,4β)-3-Acetoxy-urs-12-en-23-acid

▶ 3-Acetyl-β-boswellic acid see p. 1766

(3α,4β)-3-Acetoxy-urs-12-en-11-keto-23-acid

▶ 3-Acetyl-11-keto-β-boswellic acid see p. 1766

Acetoxyvalerenic acid



$C_{17}H_{24}O_4$
M 292,37 g/mol
Storage temp.: -20 °C
[81397-67-3]
UN No. 3082 • ADR 9 III • WGK 2

Warning H410

Acetoxyvalerenic acid

ROTI®STAR Primary Standard
Transport temp.: cooled

Type analysis:
Assay (HPLC)..... ≥90,0 %
Residual solvents (GC). ..... ≤3,0 %
Water (KF)..... ≤2,0 %
Assay (qNMR)..... ≥85 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE36.1	10 mg	glass	912,70 €

Acetoxyvalerenic acid

ROTICHROM® Working Standard
Transport temp.: cooled

Type analysis:
Assay (HPLC)..... ≥90,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC36.1	10 mg	glass	342,95 €

Acetoxyvalerenic acid

with analytical records
From *Valeriana officinalis*.
Transport temp.: room temp.

Type analysis:
Purity (HPLC). ..... ≥99,0 %
Analytical records: HPLC, TLC, ^{1}H-NMR, ^{13}C-NMR, UV, IR, MS.

T890.1	25 mg	glass	639,65 €

Acetoxyvalerenic acid

ROTICHROM® HPLC
Reference substance for HPLC.
From *Valeriana officinalis*.
Transport temp.: room temp.

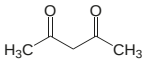
Type analysis:
Purity (HPLC). ..... >99 %

4446.1	25 mg	glass	499,90 €

Aceturic acid

▶ N-Acetylglycine see p. 1767

Acetyl acetone



Acetyl acetone

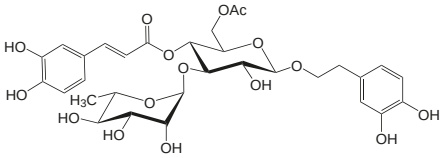
≥98 %, for synthesis
Pentane-2,4-dione, ACAC
$C_5H_8O_2$
M 100,12 g/mol
D 0,973 • bp 140 °C
mp -23 °C • flp 34 °C
Solubility: 200 g/l (H_2O, 20 °C)
[123-54-6] • EC No. 204-634-0
UN No. 2310 • ADR 3(6.1) III • WGK 1

Danger H226-H302-H311+H331

Type analysis:
Appearance. ..... clear colourless to light yellow liquid
Assay (GC). .....≥98,0 %
Density.....0,971-0,974
Refractive index n_D^{20}.....1,451-1,453

6716.1	100 ml	glass	14,55 €
6716.2	500 ml	glass	30,00 €
6716.3	1 l	glass	50,45 €
Original pack 6 x 1 l			47,93/1 l
6716.4	2,5 l	glass	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

6-O-Acetylacteoside



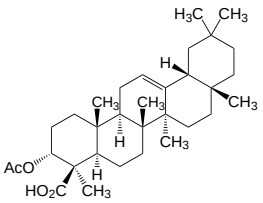
6-O-Acetylacteoside

ROTICHROM® HPLC
Reference substance for HPLC.
From *Harpagophytum procumbens.*
$C_{31}H_{38}O_{16}$
M 666,63 g/mol
Storage temp.: +4 °C
[441769-43-3]

Type analysis:
Purity (HPLC).....>99 %

1072.1	20 mg	glass	370,90 €

3-Acetyl-α-boswellic acid



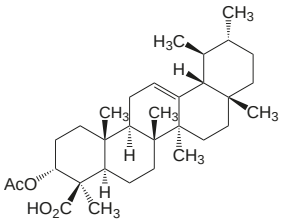
3-Acetyl-α-boswellic acid

ROTICHROM® HPLC
Reference substance for HPLC.
From *Boswellia serrata.*
(3α,4β)-3-Acetoxy-olean-12-en-23-acid
$C_{32}H_{50}O_4$
M 498,73 g/mol
Storage temp.: +4 °C
[89913-60-0]

Type analysis:
Purity (HPLC).....>99 %

1073.1	10 mg	glass	456,90 €

3-Acetyl-β-boswellic acid



3-Acetyl-β-boswellic acid

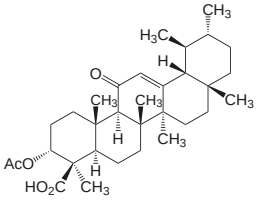
ROTICHROM® HPLC

Reference substance for HPLC.
From *Boswellia serrata.*
(3α,4β)-3α-Acetoxy-urs-12-en-23-acid
$C_{32}H_{50}O_4$
M 498,73 g/mol
Storage temp.: +4 °C
[5968-70-7]

Type analysis:
Purity (HPLC)..... >99 %

1074.1	10 mg	glass	439,70 €

3-Acetyl-11-keto-β-boswellic acid



3-Acetyl-11-keto-β-boswellic acid

ROTICHROM® HPLC

Reference substance for HPLC.
From *Boswellia serrata.*
(3α-4β)-3-Acetoxy-urs-12-en-11-keto-23-acid
$C_{32}H_{48}O_5$
M 512,73 g/mol
Storage temp.: +4 °C
[67416-61-9]

Type analysis:
Purity (HPLC)..... >99 %

1075.1	10 mg	glass	403,15 €

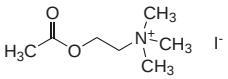
Acetyl-γ-boswellic acid

▶ 3-O-Acetyl-9-11-dehydro-β-boswellic acid see p. 1766

Acetylcellulose

▶ Cellulose acetate see p. 1886

Acetylcholine iodide



Acetylcholine iodide

≥98 %
ACh
$C_7H_{16}NO_2I$
M 273,12 g/mol
mp 162-168 °C
Storage temp.: +4 °C
[2260-50-6] • EC No. 218-862-3
WGK 1

Warning H315-H319-H335

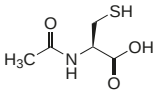
Guarantee analysis:
Assay (titr.)..... ≥98,0 %
Melting point..... 162-168 °C

5528.1	5 g	plastic	26,80 €
5528.2	25 g	plastic	106,45 €

N-Acetylchondrosamine

▶ N-Acetyl-D-galactosamine see p. 1766

N-Acetyl-L-cysteine



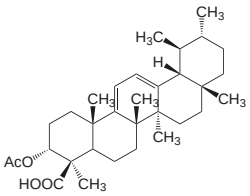
N-Acetyl-L-cysteine

≥98 %, for biochemistry
2-Acetamido-3-mercaptopropionic acid,
L-α-Acetamido-β-mercaptopropionic acid,
ACC, NAC, Ac-Cys-OH
$C_5H_9NO_3S$
M 163,20 g/mol
Storage temp.: +4 °C
[616-91-1] • EC No. 210-498-3
WGK 2

Type analysis:
Assay (titr.)..... ≥98 %
Solution (10 % in water)..... colourless
Loss on drying (70 °C, vacuum)..... ≤2,0 %
Specific rotation $[\alpha]_D^{20}$ (c=5 at pH 7).....+21° to +27°
pH value (c=1 in water)..... 2,0-2,8

4126.1	25 g	glass	24,20 €
4126.2	100 g	glass	77,30 €

3-O-Acetyl-9-11-dehydro-β-boswellic acid



3-O-Acetyl-9-11-dehydro-β-boswellic acid

ROTICHROM® HPLC

Reference substance for HPLC.
From *Boswellia serrata*.
Acetyl-γ-boswellic acid
$C_{32}H_{48}O_4$
M 496,71 g/mol
mp 258-263 °C
Storage temp.: +4 °C
[122651-20-1]
WGK 1

Type analysis:
Purity (HPLC)..... ≥98 %

6269.1	5 mg	glass	375,20 €

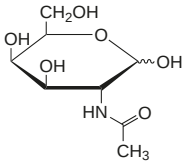
2-Acetyl-1,3-dihydroxybenzene

▶ 2,6-Dihydroxyacetophenone see p. 1941

Acetylene trichloride

▶ Trichloroethylene see p. 2415

N-Acetyl-D-galactosamine



N-Acetyl-D-galactosamine

≥99 %, for biochemistry
2-Acetamido-2-deoxy-D-galactose,
N-Acetylchondrosamine, D-GalNAc,
N-Acetyl-D-galactosaminide
$C_8H_{15}NO_6$
M 221,21 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.
[14215-68-0]

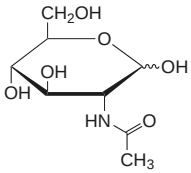
Type analysis:
Assay (HPLC)..... ≥99 %
Solution (5 % in water)..... colourless, clear
Water (KF)..... ≤7 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in water after 5 h)..... +80° to +90°
Methanol (GC)..... ≤0,1 %

4114.1	250 mg	glass	33,25 €
4114.2	1 g	glass	101,60 €

N-Acetyl-D-galactosaminide

▶ N-Acetyl-D-galactosamine see p. 1766

N-Acetyl-D-glucosamine



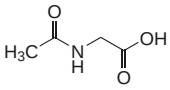
N-Acetyl-D-glucosamine

≥98 %, for biochemistry
2-Acetamido-2-deoxy-D-glucopyranose
$C_8H_{15}NO_6$
M 221,21 g/mol
mp 195-215 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[7512-17-6] • EC No. 231-368-2
WGK 1

Type analysis:
Appearance. ..... white to whitish cryst. powder
Assay (HPLC). ..... ≥98 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O). ..... +39° to +43°
Sulphated ash. ..... ≤0,1 %
Water (KF). ..... ≤1,0 %

8993.3	5 g	plastic	16,05 €
8993.2	25 g	glass	41,40 €
8993.1	50 g	plastic	72,60 €
8993.4	100 g	plastic	113,45 €

N-Acetylglycine



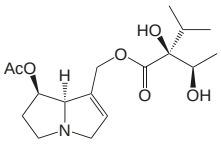
N-Acetylglycine

≥99 %, for biochemistry
Aceturic acid, Ac-Gly-OH
$C_4H_7NO_3$
M 117,11 g/mol
bp >300 °C
mp 205-211 °C
Solubility: 26 g/l (H_2O, 15 °C)
Storage temp.: +4 °C
[543-24-8] • EC No. 208-839-6
WGK 1

Type analysis:
Assay (titr.). ..... ≥99,0 %
Appearance of solution (1 % in H_2O). ..... colourless
Loss on drying. ..... ≤1,0 %
Melting point. ..... 205-211 °C

5526.1	25 g	plastic	17,10 €
5526.2	100 g	plastic	31,10 €
5526.3	500 g	plastic	113,85 €
Original pack 6 x 500 g			108,16/500 g

7-O-Acetylintermedine



7-O-Acetylintermedine

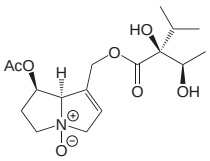
ROTICHROM® HPLC
Reference substance for HPLC.
From *Symphytum*.
$C_{17}H_{27}NO_6$
M 341,40 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[74243-01-9]
WGK 1

Warning H302

Type analysis:
Purity (HPLC). ..... ≥95 %

7975.1	5 mg	glass	385,95 €

7-O-Acetylintermedine N-oxide



7-O-Acetylintermedine N-oxide

ROTICHROM® HPLC
Reference substance for HPLC.
From *Symphytum officinale.*
$C_{17}H_{27}NO_7$
M 357,40 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
WGK 1

Warning H302

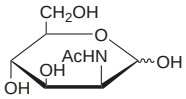
Type analysis:
Purity (HPLC). ..... ≥95 %

7980.1	5 mg	glass	385,95 €

Acetyl-Leu-Leu-Argininal

▶ Leupeptin hemisulphate see p. 2098

N-Acetyl-D-mannosamine



N-Acetyl-D-mannosamine

≥98 %
2-Acetamido-2-deoxy-D-mannopyranose,
N-Acetyl-D-mannosaminide, ManNAc
$C_8H_{15}NO_6$
M 221,21 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[7772-94-3]
WGK 1

Type analysis:
Assay (HPLC). ..... ≥98,0 %
Solution (1 % in H_2O). ..... colourless
Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O). ... +10,0° to +11,0°
Water (KF). ..... 6,5-8,5 %

5525.1	250 mg	glass	15,60 €
5525.2	1 g	glass	46,15 €
5525.3	5 g	plastic	150,00 €

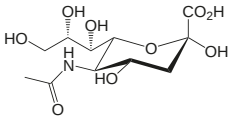
N-Acetyl-D-mannosaminide

▶ N-Acetyl-D-mannosamine see p. 1767

N-Acetyl-5-methoxytryptamine

▶ Melatonin see p. 2125

N-Acetylneuraminic acid



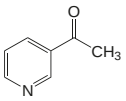
N-Acetylneuraminic acid

≥99 %, for biochemistry
Sialic acid
$C_{11}H_{19}NO_9$
M 309,27 g/mol
bp 185 °C (dec.)
Storage temp.: -20 °C
Transport temp.: room temp.
[131-48-6] • EC No. 205-023-1
WGK 2

Type analysis:
Appearance. ..... white to off-white solid
Assay (GC). ..... ≥99 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O). ..... -34° to -30°

7480.1	100 mg	glass	24,65 €
7480.2	500 mg	glass	72,60 €
7480.3	1 g	glass	118,80 €
7480.4	5 g	glass	360,15 €

3-Acetylpyridine



3-Acetylpyridine

≥99 %, for synthesis
Methyl 3-pyridyl ketone, 1-(3-Pyridinyl)-ethanone
C_7H_7NO
M 121,14 g/mol
D 1,1 • bp 220 °C
mp 11-13 °C • flp 104 °C
[350-03-8] • EC No. 206-496-7
UN No. 2810 • ADR 6.1 III • WGK 1

Danger H301-H315

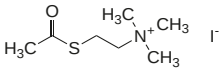
Type analysis:
Appearance. .....clear, colourless to light yellow liquid
Assay (GC). .....≥99,0 %
2-Acetylpyridine. .....≤0,5 %
4-Acetylpyridine. .....≤0,5 %
Water (KF). .....≤0,5 %

8740.1	10 g	glass	20,35 €
8740.2	50 g	glass	55,80 €
8740.3	100 g	glass	96,65 €

2-Acetylresorcinol

▶ 2,6-Dihydroxyacetophenone see p. 1941

Acetylthiocholine iodide



Acetylthiocholine iodide

≥99 %, for biochemistry
Substrate
S-Acetylthiocholine iodide
$C_7H_{16}NOSI$
M 289,18 g/mol
mp 206-210 °C
Storage temp.: +4 °C
[1866-15-5] • EC No. 217-474-1
UN No. 2811 • ADR 6.1 III • WGK 3

Danger H301+H311-H315-H319-H335

Type analysis:
Assay (arg.). .....≥99 %
Solution (10 % in H_2O). .....colourless
Water (KF). .....≤0,5 %
Sulphated ash. .....≤0,1 %
Thiocholine. .....≤0,1 %

4001.1	1 g	glass	25,30 €
4001.2	5 g	glass	75,80 €
4001.3	10 g	glass	134,30 €

Ac-Gly-OH

▶ N-Acetylglycine see p. 1767

ACh

▶ Acetylcholine iodide see p. 1766

Achromycin hydrochloride

▶ Tetracycline hydrochloride see p. 2399

Acid black 2

▶ Nigrosin, water soluble (C.I. 50420) see p. 2158

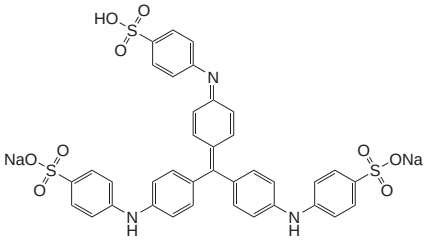
Acid black 32

▶ Fast sulphon black F (C.I. 26990) see p. 1989

Acid blue 110

▶ Alkali blue 6B (C.I. 42750) see p. 1781

Acid blue 93 (C.I. 42780)



Acid blue 93 (C.I. 42780)

p.a., water soluble
For staining of histological sections and for cytology.
Aniline blue water soluble, Methyl blue
$C_{37}H_{27}N_3O_9S_3Na_2$
M 799,81 g/mol
Solubility: 70 g/l (H_2O, 20 °C)
[28983-56-4] • EC No. 249-352-9
WGK 2

Guarantee analysis:
Appearance. .....brownish crystals
Solution (1 % in H_2O). .....clear, dark blue
Absorption max. (in H_2O). .....594-610 nm

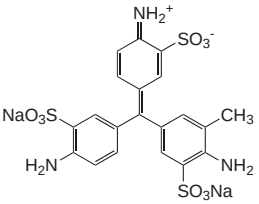
4002.1	10 g	glass	77,30 €
4002.2	25 g	glass	167,60 €

For further information, please see page 1520

Acid buffer pH 2.2

▶ Legionella Acid Buffer see p. 2096

Acid fuchsin (C.I. 42685)



Acid fuchsin (C.I. 42685)

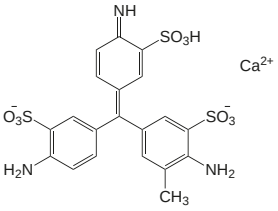
for microscopy
Fuchsine acidic
$C_{20}H_{17}N_3Na_2O_9S_3$
M 585,54 g/mol
mp >130 °C
Solubility: 200 g/l (H_2O, 20 °C)
[3244-88-0] • EC No. 221-816-5
WGK 2

Type analysis:
Absorption max. (HCl 0,005 mol/l). .....540-545 nm
Loss on drying (135 °C). .....≤10 %

T128.1	10 g	glass	60,10 €

For further information, please see page 1528

Acid fuchsin calcium salt (C.I. 42685)



Acid fuchsin calcium salt (C.I. 42685)

extra pure
$C_{20}H_{17}N_3O_9S_3Ca$
M 579,65 g/mol
mp 300 °C
[123334-10-1]
WGK 3

Type analysis:
Appearance. ..... green cryst. powder
Appearance of solution (H_2O). .....clear, violet

7690.1	5 g	glass	14,55 €
7690.2	25 g	glass	25,30 €
7690.3	100 g	glass	60,10 €

Acid green 1
▶ Naphthol green B (C.I. 10020) see p. 2153

Acid green 3
▶ Guinea green B (C.I. 42085) see p. 2032

Acid green 5
▶ Light green SF (C.I. 42095) see p. 2098

Acid green 50
▶ Lissamine green B (C.I. 44090) see p. 2100

Acid orange 7
▶ Orange II sodium salt (C.I. 15510) see p. 2185

Acid orange 10
▶ Orange G (C.I. 16230) see p. 2185

Acid orange 12
▶ Crocein orange G (C.I. 15970) see p. 1913

Acid red 14
▶ Chromotrope® FB (C.I. 14720) see p. 1898

Acid red 29
▶ Chromotrope® 2R (C.I. 16570) see p. 1897

Acid red 51
▶ Erythrosine B (C.I. 45430) see p. 1974

Acids in Ultra Quality

Art. No.	Description	Page
HN65	Acetic acid Ultra-quality	1755
HN67	Hydrobromic acid Ultra-quality	2047
HN63	Hydrochloric acid Ultra-quality	2047
HN64	Hydrofluoric acid Ultra-quality	2053
HN60	Nitric acid Ultra-quality	2159
HN61	Perchloric acid Ultra-quality	2199
HN62	Sulphuric acid Ultra-quality	2387

Acids in Supra Quality

Art. No.	Description	Page
HN55	Acetic acid Supra-quality	1755
HN53	Hydrochloric acid Supra-quality	2048
HN54	Hydrofluoric acid Supra-quality	2053
HN50	Nitric acid Supra-quality	2160
HN51	Perchloric acid Supra-quality	2199
HN52	Sulphuric acid Supra-quality	2388

Acids for Analysis

Art. No.	Description	Page
3738	Acetic acid 100 %	1756
T179	Acetic acid 96 %	1756
3525	L(+)-Ascorbic acid	1817
P738	Benzoic acid	1830
6943	Boric acid	1847
HN24	Boric acid solution 4 %	1848
X863	Citric acid	1900
3958	Citric acid monohydrate	1901
4724	Formic acid 98 %	2005
CP16	Formic acid 85 %	2006
X942	Hydrochloric acid fuming 37 %	2049
4625	Hydrochloric acid fuming 37 %	2049
P074	Hydrochloric acid 32 %	2049
6331	Hydrochloric acid 25 %	2050
4440	Molybdatophosphoric acid hydrate	2146
2722	Molybdic acid	2146
X943	Nitric acid 65 %	2160
4989	Nitric acid 65 %	2160
T113	Oxalic acid dihydrate	2187
9216	Perchloric acid 70 %	2199
3257	Periodic acid	2200
CN91	meta-Phosphoric acid	2209
6366	ortho-Phosphoric acid 85 %	2210
2635	Phosphotungstic acid hydrate	2211
2723	Salicylic acid	2304
2725	Succinic acid	2384
P725	Sulphamic acid	2386
4496	Sulphanilic acid	2386
4623	Sulphuric acid 96 %	2389
CN89	Sulphuric acid 62 %	2389
K302	L(+)-Tartaric acid	2394
8789	Trichloroacetic acid	2414
7437	Trichloroacetic acid solution 20 %	2415
9383	Trichloroacetic acid solution 10 %	2415
0747	Tungstic acid	2426

Acids in Pharmacopoeia Quality

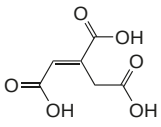
Art. No.	Description	Page
6755	Acetic acid 100 %	1756
P010	Boric acid	1847
6490	Citric acid	1900
5110	Citric acid monohydrate	1901
2607	Hydrochloric acid fuming 37 %	2049
2608	ortho-Phosphoric acid 85 %	2210
9370	Silver nitrate	2327
2609	Sulphuric acid 96 %	2389
3744	Trichloroacetic acid	2415

Acids in Standard Quality

Art. No.	Description	Page
7332	Acetic acid 99-100 %	1756
X895	Acetic acid 96 %	1756
6740	Acetic acid 80 %	1756
7329	Acetic acid 60 %	1756
4340	Acetic acid 25 %	1757
4341	Acetic acid 10 %	1757
4742	Formic acid 98 %	2006
5355	Formic acid 85 %	2006
6739	Formic acid 45 %	2006
9277	Hydrochloric acid 37 %	2049
7476	Hydrochloric acid 37 %	2049
X896	Hydrochloric acid 32 %	2050
9280	Hydrochloric acid 30 %	2050
X897	Hydrochloric acid 25 %	2050
0992	Hydrochloric acid 25 %	2050
4326	Hydrochloric acid 20 %	2050
4322	Hydrochloric acid 15 %	2050
0710	Hydrochloric acid 10 %	2050
4328	Hydrochloric acid 5 %	2051
2616	Nitric acid 68 %	2160
X898	Nitric acid 65 %	2160
6745	Nitric acid 60 %	2161
9274	Nitric acid 53 %	2161
6748	Nitric acid 40 %	2161
4339	Nitric acid 25 %	2161
4337	Nitric acid 20 %	2161
2612	Periodic acid	2200
9079	ortho-Phosphoric acid 85 %	2210
2614	ortho-Phosphoric acid 75 %	2210
4336	ortho-Phosphoric acid 50 %	2210
4334	ortho-Phosphoric acid 40 %	2210
4332	ortho-Phosphoric acid 25 %	2211
2620	Phosphorous acid	2211
9316	Sulphuric acid 96 %	2389
0971	Sulphuric acid 96 %	2389
4363	Sulphuric acid 96 %	2389
4319	Sulphuric acid 75 %	2389
4318	Sulphuric acid 50 %	2389
4316	Sulphuric acid 40 %	2390
4312	Sulphuric acid 37 %	2390
X876	Sulphuric acid 30 %	2390
0967	Sulphuric acid 25 %	2390
4300	Sulphuric acid 20 %	2390
9328	Sulphurous acid	2391
P088	Trifluoroacetic acid (TFA)	2417
6957	Trifluoroacetic acid (TFA)	2418

Acid yellow 36
▶ Metanil yellow (C.I. 13065) see p. 2130

trans-Aconitic acid

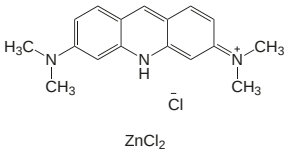


trans-Aconitic acid
≥98 %
trans-Propene-1,2,3-tricarboxylic acid,
1,2,3-Propenetricarboxylic acid
$C_6H_6O_6$
M 174,11 g/mol
D 0,56
mp 190 °C (dec.)
Storage temp.: +4 °C
[4023-65-8] • EC No. 223-688-6
WGK 1

Guarantee analysis:
Assay (HPLC). .....≥98,0 %
Solution (5 % in water). .... colourless to slightly yellow
Water (KF). .....≤1,0 %
Sulphated ash. .....≤0,5 %

5523.1	10 g	plastic	37,55 €
5523.2	25 g	plastic	74,75 €

Acridine orange (C.I. 46005)



$ZnCl_2$

Acridine orange (C.I. 46005)

for microscopy

Fluorescence indicator

Acridine orange zinc chloride double salt, Basic orange 14

$C_{17}H_{20}Cl_3N_3Zn$

M 438,09 g/mol

mp 165 °C

[10127-02-3] • EC No. 233-353-6

WGK 3

Warning H341

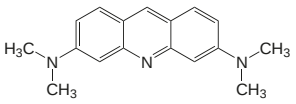
Type analysis:

Appearance. ..... orange to brownish powder
Loss on drying (110 °C). ..... ≤4 %

0249.1	10 g	glass	23,15 €
0249.2	25 g	glass	43,55 €

For further informations, please see page 1528

Acridine orange base (C.I. 46005)



Acridine orange base (C.I. 46005)

for microscopy

Fluorescence indicator

Basic orange 14

$C_{17}H_{19}N_3$

M 265,35 g/mol

mp 165 °C

[494-38-2]

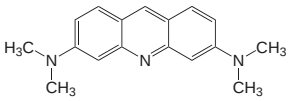
WGK 1

Type analysis:

Appearance. ..... brown to orange brown powder
Appearance of solution (0,1 % in 1 M HCl). ..... clear orange to orange red

7632.1	5 g	glass	18,20 €
7632.2	10 g	glass	27,85 €
7632.3	25 g	glass	58,60 €

Acridine orange hydrochloride hydrate (C.I. 46005)



HCl

Acridine orange hydrochloride hydrate (C.I. 46005)

for microscopy

$C_{17}H_{19}N_3 \cdot HCl \cdot x\ H_2O$

M 301,82 + x H_2O g/mol

mp 284-287 °C

[65-61-2]

WGK 1

Type analysis:

Appearance. ..... burnt orange to brick red powder
Appearance of solution (0,1 % in H_2O). ..... clear orange to orange red

7633.1	1 g	glass	24,65 €
7633.2	5 g	glass	50,00 €
7633.3	10 g	glass	80,10 €

Acridine orange zinc chloride double salt

▶ Acridine orange (C.I. 46005) see p. 1770

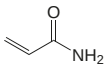
Acriflavinium chloride

▶ Trypaflavine see p. 2423

Acriflavinium hydrochloride

▶ Trypaflavine see p. 2423

Acrylamide



Propene amide, acrylic acid amide

C_3H_5NO

M 71,08 g/mol

D 1,13

mp 84-85 °C • flp 138 °C

[79-06-1] • EC No. 201-173-7

UN No. 2074 • ADR 6.1 III • WGK 3

Danger H301-H312+H332-H315-H319-H317-H340-H350-H361f-H372

Acrylamide, BioScience

≥99,9 %, BioScience Grade, 4x cryst.

For molecular biology

Type analysis:

Appearance. ..... white crystals
Assay. ..... ≥99,9 %
Conductivity (35 % in H_2O). ..... ≤5 µS/cm
pH (10 % in 0,1 M NaCl). 5,5-7,0
A (40 % in H_2O; 1 cm/410 nm). ..... ≤0,05
Water. ..... ≤0,3 %
Acrylic acid. ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,0001 %
Magnesium (Mg). ..... ≤0,0001 %

0189.1	100 g	plastic	42,90 €
0189.2	500 g	plastic	164,40 €

Original pack 6 x 500 g 156,18/500 g

For further information, please see page 1191

Acrylamide, 4x cryst.

≥99,9 %, p.a., 4x cryst.

For gel electrophoresis.

Type analysis:

Appearance. ..... white crystals
Assay. ..... ≥99,9 %
Water. ..... ≤0,5 %
Acrylic acid. ..... ≤0,001 %
pH (5 % in H_2O). ..... ~5
Solution (5 % in H_2O). ..... clear and colourless
A (5 % in water, 1 cm/290 nm). ..... <0,6

7906.1	100 g	plastic	35,40 €
7906.3	250 g	plastic	76,90 €
7906.4	500 g	plastic	131,70 €

Original pack 6 x 500 g 125,12/500 g

7906.2	1 kg	plastic	240,30 €

Original pack 6 x 1 kg 228,29/1 kg

For further information, please see page 1191

Acrylamide, 2x cryst.

≥98 %, 2x cryst., extra pure

For gel electrophoresis

Type analysis:

Appearance. ..... white crystals
Assay. ..... ≥98 %
Water. ..... ≤2,0 %
Acrylic acid. ..... ≤0,1 %
pH (5 % in H_2O). ..... ~6
Solution (5 % in H_2O). ..... clear and colourless
A (5 % in water, 1 cm/290 nm). ..... <0,7

7871.1	500 g	plastic	50,00 €

Original pack 6 x 500 g 47,50/500 g

7871.2	1 kg	plastic	65,50 €

Original pack 6 x 1 kg 62,23/1 kg

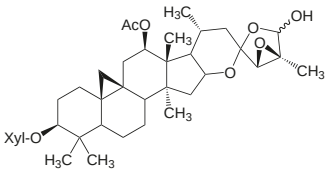
7871.3	2,5 kg	plastic	127,95 €
7871.4	5 kg	plastic	212,35 €

For further information, please see page 1191

Acrylamide- and bisacrylamide stock solutions

▶ Rotiphorese® gel solutions see p. 1189

Actein

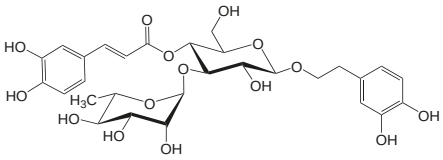


Actein
ROTICHROM® HPLC
Reference substance for HPLC.
From *Cimicifuga racemosa.*
$C_{37}H_{56}O_{11}$
M 676,84 g/mol
Storage temp.: +4 °C
[18642-44-9]

Type analysis:
Purity (HPLC)..... >99 %

1080.1	5 mg	glass	407,45 €

Acteoside



Verbascoside
$C_{29}H_{36}O_{15}$
M 624,60 g/mol
[61276-17-3]

Acteoside
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC)..... ≥90,0 %
Residual solvents (GC)..... ≤6,0 %
Water (KF)..... ≤9,0 %
Assay (qNMR)..... ≥80,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE33.1	10 mg	glass	837,45 €

Acteoside
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC)..... ≥80,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC33.2	25 mg	glass	407,45 €

Acteoside
with analytical records
From *Paulownia tormentosa*.
Storage temp.: +4 °C

Type analysis:
Purity (HPLC)..... >98 %
Analytical records: HPLC, TLC, ^{1}H-NMR, ^{13}C-NMR, UV, IR, MS.

T891.1	20 mg	glass	532,15 €

Acteoside
ROTICHROM® HPLC
Reference substance for HPLC.
From *Paulownia tormentosa*.
Storage temp.: +4 °C

Type analysis:
Purity (HPLC)..... >98 %

4451.1	20 mg	glass	428,95 €

Actidione

▶ Cycloheximide see p. 1918

Actinomycin D

Actinomycin D
≥95 %, for biochemistry
Peptide antibiotic. Pure actinomycin C_1.
Actinomycin IV, Actinomycin C_1, Dactinomycin
$C_{62}H_{86}N_{12}O_{16}$
M 1255,5 g/mol
mp 241-243 °C
Solubility: 40 g/l (H_2O, 10 °C)
Storage temp.: +4 °C
[50-76-0] • EC No. 200-063-6
UN No. 3462 • ADR 6.1 II • WGK 3
Danger H300

Type analysis:
Appearance..... red to orange powder
Assay (HPLC)..... ≥95,0 %

8969.1	5 mg	glass	81,60 €

For further information, please see page 1499

Activation reagent

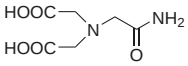
Activation reagent
for DNA synthesis with ABI™ and PolyGen® Synthesizer
Tetrazole/Acetonitrile
D 0,79
flp +2 °C
UN No. 1648 • ADR 3 II • WGK 2
Danger
H225-H302+H312+H332-H319

Type analysis:
Appearance..... clear, colourless solution
Assay (tetrazole)..... 0,43-0,46 mol/l
Water (KF)..... ≤0,003 %

2253.1	200 ml	glass	107,00 €
2253.2	450 ml	glass	209,65 €

For further information, please see page 1551

ADA



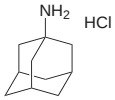
ADA
PUFFERAN® ≥99 %
N-(2-Acetamido)-iminodiacetic acid
$C_6H_{10}N_2O_5$
M 190,16 g/mol
mp 215 °C (dec.)
[26239-55-4] • EC No. 247-530-0

Guarantee analysis:
Appearance..... white powder
Assay (titr.)..... ≥99,0 %
Lead (Pb)..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Loss on drying..... ≤0,5 %

0250.1	50 g	plastic	22,50 €
0250.2	100 g	plastic	37,55 €
0250.3	500 g	plastic	133,20 €
Original pack 6 x 500 g			126,54/500 g

For further information, please see page 1308

1-Adamantanamine hydrochloride



1-Adamantanamine hydrochloride
≥99 %, for synthesis
Amantadine hydrochloride
$C_{10}H_{17}N \cdot HCl$
M 187,72 g/mol
mp >300 °C
[665-66-7] • EC No. 211-560-2
WGK 2
Warning H302

Type analysis:
Appearance..... white to off-white powder
Assay..... ≥99,0 %
Identity..... complies
pH value (20 % in H_2O)..... 3,0-5,5
Heavy metals (as Pb)..... ≤0,001 %
Residual solvent (Acetone)..... ≤0,5 %

7621.1	25 g	plastic	22,05 €
7621.2	100 g	plastic	52,60 €

Adamantane

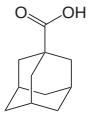
Adamantane

≥99 %, for synthesis
Tricyclo[3.3.1.1^{3,7}]decane
$C_{10}H_{16}$
M 136,24 g/mol
mp 266-268 °C
[281-23-2] • EC No. 206-001-4
UN No. 3077 • ADR 9 III • WGK 2
Warning H410

Type analysis:
Appearance. ..... white to beige cryst. powder
Assay (GC). ..... ≥99,0 %
Identity (IR). ..... complies
Water (KF). ..... ≤0,1 %

7620.1	25 g	glass	17,10 €
7620.2	100 g	glass	33,25 €

1-Adamantanecarboxylic acid



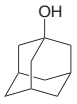
1-Adamantanecarboxylic acid

≥99 %, for synthesis
$C_{11}H_{16}O_2$
M 180,25 g/mol
mp 172-174 °C
[828-51-3] • EC No. 212-584-6
WGK 1

Type analysis:
Appearance. ..... white crystalline powder
Assay (titr.). ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

7622.1	25 g	plastic	22,50 €
7622.2	100 g	plastic	54,75 €

1-Adamantanol



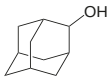
1-Adamantanol

≥98,5 %, for synthesis
1-Hydroxyadamantane
$C_{10}H_{16}O$
M 152,24 g/mol
mp 274-280 °C
[768-95-6] • EC No. 212-202-8
WGK 1

Type analysis:
Appearance. ..... white to off-white solid
Assay. ..... ≥98,5 %
Identity (IR). ..... complies
Sulphated ash. ..... ≤0,1 %

7745.1	10 g	glass	16,05 €
7745.2	50 g	glass	32,15 €
7745.3	250 g	glass	104,20 €

2-Adamantanol



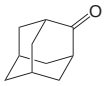
2-Adamantanol

≥98 %, for synthesis
2-Hydroxyadamantane
$C_{10}H_{16}O$
M 152,24 g/mol
mp 260-265 °C
[700-57-2] • EC No. 211-846-7
WGK 1

Type analysis:
Appearance. ..... white to yellow solid
Assay. ..... ≥98,0 %
Sulphated ash. ..... ≤0,1 %

7863.1	5 g	glass	24,65 €
7863.2	25 g	glass	67,65 €
7863.3	50 g	glass	109,55 €

2-Adamantanone



2-Adamantanone

≥99 %, for synthesis
$C_{10}H_{14}O$
M 150,22 g/mol
mp 270 °C
[700-58-3] • EC No. 211-847-2
WGK 1

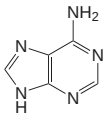
Type analysis:
Appearance. ..... white to off-white, cryst. powder
Assay (GC). ..... ≥99,0 %
Identity. ..... complies
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

8406.1	25 g	glass	24,65 €
8406.2	100 g	glass	77,30 €

ADCP

▶ 2-Amino-4,6-dichloropyrimidine see p. 1789

Adenine



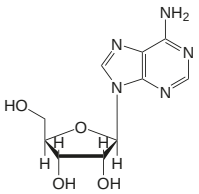
Adenine

≥98 %, for biochemistry
6-Aminopurin, 1H-Purin-6-amin
$C_5H_5N_5$
M 135,13 g/mol
mp >300 °C
[73-24-5] • EC No. 200-796-1
UN No. 2811 • ADR 6.1 III • WGK 1
Danger H301

Type analysis:
Appearance. ..... white, cryst. powder
Assay (HPLC). ..... ≥98 %
Heavy metals (as Pb). ..... ≤0,001 %
Ash content (800 °C). ..... ≤0,1 %

3025.1	5 g	glass	17,10 €
3025.2	25 g	glass	42,90 €

Adenosine



Adenosine

≥99 %, p.a.
9-β-D-Ribofuranosyladenine
$C_{10}H_{13}N_5O_4$
M 267,25 g/mol
mp 234-237 °C
Storage temp.: +4 °C
[58-61-7] • EC No. 200-389-9
WGK 1

Guarantee analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥99,0 %
Heavy metals. ..... ≤0,001 %

6122.1	5 g	plastic	16,70 €
6122.2	10 g	plastic	25,70 €
6122.3	25 g	plastic	51,50 €
6122.7	100 g	glass	177,40 €

Adenosine-BCE-phosphoramidite

Adenosine-BCE-phosphoramidite

for DNA synthesis

For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.

DMT-dA(N-Bz)P-(OCH_2CH_2CN)-N($iPr)_2$

$C_{47}H_{52}N_7O_7P$

M 857,7 g/mol

Storage temp.: +4 °C

K921.1	1 g	glass	35,40 €

For further information, please see page 1550

Adenosine-CPG-Support

Adenosine-CPG-Support

500 Å pore size

Support material for DNA-synthesis.

dA-lcaa-CPG

Storage temp.: +4 °C

Type analysis:

Purity (HPLC)..... ≥98,0 %
CPG loading. ..... 30-40 µmol/g
Coupling efficiency. ..... ≥99 %

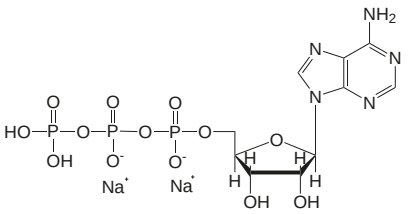
2318.3	1 g	plastic	59,05 €

For further information, please see page 1550

Adenosine-5-triphosphate

▶ ATP solution see p. 1819
▶ ATP see p. 1819

Adenosin-5'-triphosphate disodium salt (ATP)



Adenosin-5'-triphosphate disodium salt (ATP)

≥98 %, for biochemistry

Coenzyme of kinases.

ATP disodium salt

$C_{10}H_{14}N_5Na_2O_{13}P_3$

M 551,10 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

[987-65-5] • EC No. 213-579-1

WGK 1

Type analysis:

Assay..... ≥98 %
pH value. 2,5-3,5
Chloride (Cl). ..... ≤0,05 %
Heavy metals..... ≤0,002 %
Arsenic (As). ..... ≤0,0001 %
Loss on drying. ..... 6,0-12,0 %

HN35.1	5 g	glass	24,20 €
HN35.2	10 g	glass	34,30 €
HN35.3	25 g	glass	64,00 €
HN35.4	100 g	glass	209,65 €

For further information, please see page 1321

Adermine hydrochloride

▶ Pyridoxine hydrochloride see p. 2245

ADF solution (acidic detergent solution)

ADF solution (acidic detergent solution)

for determination of acidic detergent fibre (ADF)

acc. to VDLUFA method book, volume 3.

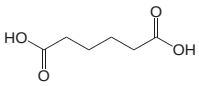
D 1,03

UN No. 1760 • ADR 8 III • WGK 2

Warning H290-H315-H319-H412

9942.1	1 l	plastic	77,30 €
Original pack 6 x 1 l			73,44/1 l

Adipic acid



Adipic acid

≥99,5 %, for biochemistry

1,6-Hexanedioic acid

$C_6H_{10}O_4$

M 146,14 g/mol

D 1,37 • bp ~330 °C

mp 151 °C • flp 196 °C

Solubility: 15 g/l (H_2O, 20 °C)

[124-04-9] • EC No. 204-673-3

WGK 1

Warning H319

Type analysis:

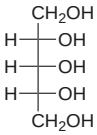
Assay (dry substance)..... ≥99,5 %
Water..... ≤0,2 %
Nitrate (NO_3). ..... ≤0,0004 %
Ash..... ≤0,0002 %
Iron (Fe)..... ≤0,0001 %

4475.2	100 g	plastic	11,75 €
4475.1	500 g	plastic	24,20 €
Original pack 6 x 500 g			22,99/500 g
4475.3	1 kg	plastic	40,75 €
Original pack 6 x 1 kg			38,71/1 kg

Adonite

▶ Adonitol see p. 1773

Adonitol



Adonitol

≥98 %, for biochemistry

Adonite, Ribitol

$C_5H_{12}O_5$

M 152,15 g/mol

mp 101-105 °C

Storage temp.: +4 °C

[488-81-3] • EC No. 207-685-7

WGK 1

Type analysis:

Assay (HPLC). ..... ≥98 %
Solution (10 % in water). ..... colourless
Water (KF). ..... ≤0,5 %
Melting point. ..... 101-105 °C
Heavy metals (as Pb)..... ≤0,001 %

5522.1	1 g	glass	17,10 €
5522.2	5 g	plastic	42,50 €

AEBSF hydrochloride

AEBSF hydrochloride

≥98 %, for biochemistry

Inhibitor of serine proteases

4-(2-Aminoethyl)benzenesulfonyl fluoride hydrochloride

$C_8H_{10}FNO_2S \cdot HCl$

M 239,69 g/mol

mp 175-177 °C

Storage temp.: -20 °C • Transport temp.: room temp.

[30827-99-7]

UN No. 3261 • ADR 8 III • WGK 1

Danger H314

Type analysis:

Assay (HPLC). ..... ≥98 %
No protected amines..... complies
Solubility (20 % in H_2O)..... clear, colourless

2931.1	25 mg	plastic	19,90 €
2931.2	100 mg	plastic	39,70 €
2931.3	500 mg	plastic	146,10 €

For further information, please see page 1324

Aerosil®

Aerosil®

≥99,8 %, powdered
hydrophilic type
Pyrogenous silicic acid
SiO_2
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

Type analysis:
Specific surface (BET).....200 ±25 m^2/g
pH value (4 % dispersion).....3,7-4,7
Loss on drying (2 h, 105 °C).....≤1,5 %

9235.2	500 g	plastic	53,25 €
Original pack 6 x 500 g			50,59/500 g
9235.1	1 kg	plastic	96,65 €
Original pack 6 x 1 kg			91,82/1 kg

Aerosporin

▶ Polymyxin B sulphate see p. 2219

Aesculetine

▶ Esculetin see p. 1974

Aesculin

▶ Esculin sesquihydrate see p. 1975

Affinity chromatography columns/protein A conjugated

▶ Roti®garose-Protein A MINI columns see p. 2283
▶ Roti®garose-Protein A MIDI columns see p. 2283
▶ Roti®garose-Protein A MAXI columns see p. 2283

Affinity chromatography columns with glutathione-agarose

▶ Roti®garose-Glu/GST Cartridges see p. 2281

Affinity chromatography colums/cobalt charged

▶ Roti®garose-His/Co Columns see p. 2281

Affinity chromatography colums/nickel charged

▶ Roti®garose-His/Ni Cartridges see p. 2281
▶ Roti®garose-His/Ni Columns see p. 2281
▶ Roti®garose-His/Ni NTA-Cartridges see p. 2282

Agar-Agar

D 0,55
Storage temp.: +20 °C
[9002-18-0] • EC No. 232-658-1

Agar-Agar, BioScience

BioScience-Grade, powdered
Agar of high purity for all culture media used in molecular- and microbiology. Recommended for plating in genetic engineering (GMOs).

Guarantee analysis:
Water content.....≤12 %
Ash.....≤5,0 %
Gel strength (1,5 % Nikan).....800-1100 g/cm^2
Gelling temperature (1,5 % gel).....35 ±3 °C
Melting temperature (1,5 % gel).....85 ±5 °C
Turbidity (1,5 % solution).....≤8 NTU
Absorption (450 nm).....≤0,300
pH (1,5 % gel) before autoclaving.....6,0-7,5

6494.1	250 g	plastic	59,05 €
6494.2	500 g	plastic	100,55 €
Original pack 6 x 500 g			95,52/500 g
6494.3	1 kg	plastic	179,00 €
Original pack 6 x 1 kg			170,05/1 kg
6494.4	2,5 kg	plastic	396,70 €

For further information, please see page 1496

Agar-Agar, BioScience, granulated

BioScience-Grade, granulated
Agar of high purity for all culture media used in molecular- and microbiology. Recommended for plating in genetic engineering (GMOs).

Guarantee analysis:
Water content.....≤12 %
Ash.....≤5,0 %
Gel strength (1,5 % Nikan).....800-1100 g/cm^2
Gelling temperature (1,5 % gel).....35 ±3 °C
Melting temperature (1,5 % gel).....85 ±5 °C
Turbidity (1,5 % solution).....≤8 NTU
Absorption (450 nm).....≤0,30
pH (1,5 % gel) before autoclaving.....6,0-7,5
Granulation.....complies

1347.1	250 g	plastic	70,85 €
1347.2	500 g	plastic	125,25 €
Original pack 6 x 500 g			118,99/500 g
1347.3	1 kg	plastic	231,15 €
Original pack 6 x 1 kg			219,59/1 kg
1347.4	2,5 kg	plastic	510,65 €

For further information, please see page 1496

Agar-Agar, bacteriological

for bacteriology, extremely pure quality
Ideal for immunodiffusion and electrophoresis and as a medium for tissue and cell cultures, bacteriology and mycology.

Guarantee analysis:
Electroendosmosis (EEO).....≤0,450
Water content.....≤12 %
Ash.....≤1,6 %
Gel strength (1,5 % Nikan).....500-1200 g/cm^2
Gelling temperature (1,5 % gel).....34-38 °C
Melting temperature (1,5 % gel).....85-90 °C
Turbidity (1,5 % solution).....≤10 NTU
Absorption (450 nm).....≤0,100
pH (1,5 % gel) before autoclaving.....5,0-7,0
Resistance (1 % suspension).....≥20000 Ohm

2266.1	250 g	plastic	110,65 €
2266.3	500 g	plastic	188,15 €
Original pack 6 x 500 g			178,74/500 g
2266.2	1 kg	plastic	342,95 €
Original pack 6 x 1 kg			325,80/1 kg
2266.4	2,5 kg	plastic	725,65 €

For further information, please see page 1497

Agar-Agar, Kobe I

Kobe I, powdered, for microbiology
Standard-Agar for application in culture media for molecular biology (e.g. LB medium) and microbiology.

Type analysis:
Gel strength (1,5 % gel).....≥1000 g/cm^2
Gelling temperature.....35-42 °C
Moisture.....≤22 %
pH value.....5,0-8,0
Ash.....≤1,5 %

5210.1	250 g	plastic	39,25 €
5210.3	500 g	plastic	66,55 €
Original pack 6 x 500 g			63,22/500 g
5210.2	1 kg	plastic	126,35 €
Original pack 6 x 1 kg			120,03/1 kg
5210.4	2,5 kg	plastic	263,40 €
5210.5	5 kg	plastic	461,20 €

For further information, please see page 1496

Agar-Agar, plant

Genetic engineering quality, for plants
For plant propagation and plant cell culture.

Guarantee analysis:
Water content.....≤16 %
Ash.....6,5 %
Gel strength (1,5 % Nikan).....≥900 g/cm^2
pH (1,5 % gel) before autoclaving.....6,0-7,5
pH (1,5 % gel) after autoclaving.....6,0-7,5
Gelling temperature.....36 ±2 °C
Melting temperature.....85-90 °C
Turbidity (1,5 % gel).....≤15 NTU

4807.1	250 g	plastic	83,75 €
4807.2	500 g	plastic	138,70 €
Original pack 6 x 500 g			131,77/500 g
4807.3	1 kg	plastic	241,80 €
Original pack 6 x 1 kg			229,71/1 kg
4807.4	2,5 kg	plastic	514,95 €

For further information, please see page 1497

Agar-Agar, danish

Agar-Agar, danish

Standardised Carrageenan mixture, sugar-containing, powdered

Mixture of highly pured Carrageen extracts. For gelling of watery liquids like, e.g. media for cultivation of plants, and for special microbiological applications. Saccharated.

D 0,55

Storage temp.: +20 °C

[9002-18-0] • EC No. 232-658-1

Type analysis:

Appearance. ..... cream-coloured powder
Moisture. ..... <12 %
Sulphate (as SO_4, dry substance). ..... 15-40 %
Gel strength (1,5 % sol.). ..... ~400-500 g/cm²
Viscosity (1,5 % sol., 75 °C). ..... ≥0,005 Pas
pH value (1,5 % sol.). 7,0-10,5
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0002 %
Mercury (Hg). ..... ≤0,0001 %
Methanol, ethanol, isopropanol. ..... ≤1 %
Ash insoluble in 1 % H_2SO_4 (dry substance). ..... ≤2 %
Standardized by mono- or disaccharides and KCl

4508.1	1 kg	plastic	76,25 €
Original pack 6 x 1 kg			72,44/1 kg
4508.2	5 kg	plastic	327,90 €

For further information, please see page 1497

Agar medium B

▶ CASO Agar see p. 1881
▶ CASO Agar, granulated see p. 1881

Agar medium C

▶ Sabouraud 4 % Glucose Agar see p. 2302

Agar medium F

▶ Violet Red Bile Agar with Dextrose and Lactose see p. 2435

Agar medium H

▶ MacConkey Agar see p. 2109
▶ MacConkey Agar, granulated see p. 2109

Agar medium J

▶ Deoxycholate Citrate Agar see p. 1926

Agar medium K

▶ XLD-Agar see p. 2443

Agar medium L

▶ Brilliant Green Lactose Sucrose Agar see p. 1850

Agar medium M

▶ Triple Sugar Iron Agar see p. 2420

Agar medium N

▶ Cetrimide Agar (Base) see p. 1888

Agar medium O

▶ Baird Parker Agar (Base) see p. 1825

Agar medium S

▶ R2A-Agar see p. 2251
▶ R2A-Agar, granulated see p. 2251

Agarose

[9012-36-6] • EC No. 232-731-8

Agarose Broad Range

Roti®garose BioScience-Grade

For gel electrophoresis, total size range (200 bp-40 kb).

Guarantee analysis:

Electroendosmosis (EEO). ..... ≤0,12
Ash content. ..... ≤0,25 %
Sulphate (SO_4). ..... ≤0,12 %
Turbidity (1,5 % solution). ..... ≤4 NTU
Loss on drying. ..... ≤7 %
Gel strength (1 % gel). ..... ≥1800 g/cm²
Gel strength (1,5 % gel). ..... ≥3200 g/cm²
Gelling temperature. ..... 34,5-37,5 °C
Melting temperature. ..... 86,5-89,5 °C
DNA-separation (≥1000 bp). ..... complies
DNases, RNases. ..... none detected

T846.1	10 g	plastic	25,30 €
T846.2	100 g	plastic	131,05 €
T846.3	500 g	plastic	553,65 €
Original pack 6 x 500 g			525,97/500 g

For further information, please see page 1196

Agarose GTQ

Roti®garose genetic engineering quality

Especially tested agarose for gel elution and biomolecular approaches (500 bp-20 kb).

Guarantee analysis:

Electroendosmosis (EEO). ..... ≤0,11
Water content. ..... ≤8 %
Ash. ..... ≤0,5 %
Sulphate (SO_4). ..... ≤0,1 %
Gel strength (1 % gel). ..... ≥1200 g/cm²
Gel strength (1,5 % gel). ..... ≥2300 g/cm²
Gelling temperature. ..... 36 ±2,0 °C
Melting temperature. ..... 92 ±2,0 °C
DNases, RNases. ..... none detected
DNA binding. ..... none detected

6352.1	10 g	plastic	26,35 €
6352.2	100 g	plastic	160,20 €
6352.4	500 g	plastic	661,15 €
Original pack 6 x 500 g			628,09/500 g

For further information, please see page 1195

Agarose HEEO ultra-quality

Roti®garose high electroendosmosis (EEO = 0,23-0,26)

Special agarose for protein separation and countercurrent electrophoresis.

Guarantee analysis:

Electroendosmosis (EEO). 0,23-0,26
Water content. ..... ≤10 %
Ash. ..... ≤1,0 %
Sulphate (SO_4). ..... ≤0,2 %
Gel strength (1 % gel). ..... ≥750 g/cm²
Gel strength (1,5 % gel). ..... ≥1200 g/cm²
Gelling temperature (1,5 % gel). ..... 36 ±1,5 °C
Melting temperature (1,5 % gel). ..... 88 ±1,5 °C
Turbidity (1,5 % solution). ..... ≤4 NTU

2269.1	10 g	plastic	22,50 €
2269.2	100 g	plastic	123,65 €
2269.3	1 kg	plastic	858,95 €
Original pack 6 x 1 kg			816,00/1 kg

For further information, please see page 1198

Agarose High Resolution

Roti®garose for small fragments

Special agarose for PCR gels and small DNA fragments (50 bp-1 kb).

Guarantee analysis:

Electroendosmosis (EEO). ..... ≤0,12
Water content. ..... ≤7 %
Ash. ..... ≤0,35 %
Sulphate (SO_4). ..... ≤0,11 %
Gel strength (1,5 % gel). ..... ≥600 g/cm²
Gel strength (3 % gel). ..... ≥1500 g/cm²
Gelling temperature (3 % gel). ..... ≤35,5 °C
Melting temperature (3 % gel). ..... ≤80 °C
Turbidity (1,5 % solution). ..... ≤5 NTU
DNases, RNases. ..... none detected

K297.1	10 g	plastic	55,80 €
K297.2	100 g	plastic	360,15 €
K297.3	500 g	plastic	1558,75 €
Original pack 6 x 500 g			1480,81/500 g

For further information, please see page 1197

Agarose HR-PLUS

Roti®garose for analytical gels

Special agarose for use in the main analytical range (100 bp-3 kb).

Guarantee analysis:

Electroendosmosis (EEO). ..... ≤0,12
Water content. ..... ≤7 %
Ash. ..... ≤4 %
Sulphate (SO_4). ..... ≤0,11 %
Gel strength (1,5 % gel). ..... ≥1500 g/cm²
Gelling temperature (1,5 % gel). ..... ~36 °C
Melting temperature (1,5 % gel). ..... ~88 °C
Turbidity (1,5 % solution). ..... ≤4 NTU
DNases, RNases. ..... none detected
DNA binding. ..... very low

HP30.1	10 g	plastic	46,80 €
HP30.2	100 g	plastic	289,20 €
HP30.3	500 g	plastic	1106,20 €
Original pack 6 x 500 g			1050,89/500 g

For further information, please see page 1197

Agarose MEEO ultra-quality

Roti®garose medium electroendosmosis (EEO = 0,16-0,19)

Special agarose for immuno, countercurrent, serum and antibody electrophoresis (500 bp-10 kb).

Guarantee analysis:

Electroendosmosis (EEO). 0,16-0,19
Water content. ..... ≤7 %
Ash. ..... ≤0,5 %
Sulphate (SO_4). ..... ≤0,14 %
Gel strength (1 % gel). ..... ≥1000 g/cm²
Gel strength (1,5 % gel). ..... ≥2200 g/cm²
Gelling temperature (1,5 % gel). ..... 36 ±1,5 °C
Melting temperature (1,5 % gel). ..... 88 ±1,5 °C
Turbidity (1,5 % solution). ..... ≤4 NTU

2268.1	10 g	plastic	21,20 €
2268.2	100 g	plastic	117,75 €
2268.4	500 g	plastic	489,15 €
Original pack 6 x 500 g			464,69/500 g
2268.3	1 kg	plastic	815,95 €
Original pack 6 x 1 kg			775,15/1 kg

For further information, please see page 1197

Agarose NEEO ultra-quality

Roti®garose low electroendosmosis (EEO = 0,05-0,13)

High-quality agarose for all general applications (500 bp-20 kb).

Guarantee analysis:

Electroendosmosis (EEO). ..... ≤0,12
Water content. ..... ≤8,5 %
Ash. ..... ≤0,6 %
Sulphate (SO_4). ..... ≤0,14 %
Gel strength (1 % gel). ..... ≥1200 g/cm²
Gelling temperature (1,5 % gel). ..... 36 ±2,0 °C
Melting temperature (1,5 % gel). ..... 90-95 °C
DNases, RNases. ..... none detected

2267.1	10 g	plastic	19,90 €
2267.2	100 g	plastic	95,15 €
2267.5	250 g	plastic	214,50 €
2267.4	500 g	plastic	407,45 €
Original pack 6 x 500 g			387,08/500 g
2267.3	1 kg	plastic	686,95 €
Original pack 6 x 1 kg			652,60/1 kg

For further information, please see page 1194

Agarose Pulsed-Field

Roti®garose for Pulsed Field electrophoresis, genetic engineering quality

Special agarose for separation of large fragments (20-50 kb).

Guarantee analysis:

Electroendosmosis (EEO). ..... ≤0,05
Sulphate (SO_4). ..... ≤0,10 %
Loss on drying. ..... ≤10 %
Gel strength (1 % gel). ..... ≥1800 g/cm²
Gelling temperature. ..... 36 ±1,5 °C
Melting temperature. ..... 90-95 °C
DNases, RNases. ..... none detected

3771.1	10 g	plastic	30,65 €
3771.2	25 g	plastic	55,80 €
3771.3	100 g	plastic	170,95 €
3771.4	250 g	plastic	349,40 €

For further information, please see page 1196

Agarose Standard

Roti®garose for DNA/RNA-electrophoresis

General agarose for routine gels, student's courses, and standard analyses (1 kb-20 kb).

Guarantee analysis:

Electroendosmosis (EEO). ..... ≤0,12
Sulphate (SO_4). ..... ≤0,15 %
Loss on drying. ..... ≤10 %
Ash. ..... ≤0,6 %
Gel strength (1 % gel). ..... ≥1100 g/cm²
Gelling temperature (1,5 % gel). ..... 36 ±2 °C
Melting temperature (1,5 % gel). ..... 90-95 °C
DNases, RNases. ..... none detected

3810.1	10 g	plastic	17,10 €
3810.2	100 g	plastic	69,35 €
3810.3	500 g	plastic	274,15 €
Original pack 6 x 500 g			260,44/500 g
3810.4	1 kg	plastic	439,70 €
Original pack 6 x 1 kg			417,72/1 kg

For further information, please see page 1194

Agarose-Tablets

Roti®garose 0,5 g agarose/tablet

Standard agarose with low EEO, for routine analyses (≥300 bp).

Guarantee analysis:

Electroendosmosis (EEO). 0,05-0,1
Water content. ..... <10 %
Sulphate (SO_4). ..... <0,2 %
Gel strength (1,5 % gel). ..... ≥1200 g/cm²
Gelling temperature. ..... 37 ±2,0 °C
Melting temperature. ..... 89 ±1,0 °C
DNases, RNases. ..... none detected

HP67.1	10 g	plastic	24,65 €
HP67.2	50 g	plastic	78,40 €
HP67.3	100 g	plastic	142,45 €
HP67.4	250 g	plastic	332,20 €
HP67.5	300 g	plastic	392,40 €

For further information, please see page 1195

Agarose Low Melt

Hydroxyethyl agarose
[39346-81-1]

Agarose LM/PCR

Roti®garose with low melting and gelling temperature, genetic engineering quality

Particularly for gel elution of small fragments (50 bp-1500 bp).

Guarantee analysis:

Electroendosmosis (EEO). ..... ≤0,13
Water content. ..... ≤7 %
Ash. ..... ≤0,45 %
Sulphate (SO_4). ..... ≤0,12 %
Gel strength (4 % gel). ..... ≥800 g/cm²
Gelling temperature (4 % gel). ..... ≤35 °C
Melting temperature (4 % gel). ..... ≤65 °C
Turbidity (4 % solution). ..... ≤6 NTU
DNases, RNases. ..... none detected
DNA binding. ..... none detected
In-gel-processing. ..... complies
Agarase digest. ..... complies

HP31.1	5 g	plastic	41,85 €
HP31.2	100 g	plastic	557,95 €
HP31.3	250 g	plastic	1084,70 €

For further information, please see page 1198

Agarose Low Melt

Roti®garose with low melting and gelling temperature

Particularly for gel elution and in-gel-application in a wide size range (500 bp-20kb).

Guarantee analysis:

Electroendosmosis (EEO). ..... ≤0,12
Water content. ..... ≤10 %
Ash. ..... ≤0,4 %
Sulphate (SO_4). ..... ≤0,12 %
Gel strength (1,5 % gel). ..... ≥500 g/cm²
Gelling temperature (1,5 % gel). ..... ≤28 °C
Melting temperature (1,5 % gel). ..... ≤65,5 °C
Turbidity (1,5 % solution). ..... ≤4 NTU
DNases, RNases. ..... none detected

6351.1	5 g	plastic	38,60 €
6351.5	25 g	plastic	158,60 €
6351.2	100 g	plastic	553,65 €
6351.4	500 g	plastic	2213,45 €
Original pack 6 x 500 g			2102,78/500 g

For further information, please see page 1198

Agarose Super LM

Roti®garose with particularly low melting and gelling temperature

Particularly for gel elution from melted agarose, capillary electrophoresis and in-gel processing (≥1000 bp).

Guarantee analysis:

Electroendosmosis (EEO). ..... ≤0,12
Water content. ..... ≤7 %
Ash. ..... ≤0,35 %
Sulphate (SO_4). ..... ≤0,14 %
Gel strength (1,5 % gel). ..... ≥300 g/cm²
Gelling temperature (1,5 % gel). ..... ≤20 °C
Melting temperature (1,5 % gel). ..... ≤62 °C
Turbidity (1,5 % solution). ..... ≤4 NTU
DNases, RNases. ..... none detected

HP45.1	5 g	plastic	40,75 €
HP45.2	100 g	plastic	568,70 €
HP45.3	250 g	plastic	1116,95 €

For further information, please see page 1199

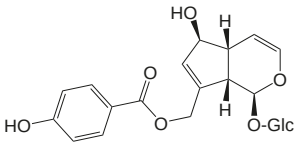
Agarose beads for affinity chromatography

- Roti®garose-His/Ni Beads see p. 2281
- Roti®garose-Protein A Beads see p. 2283
- Roti®garose-His/Co Beads see p. 2281
- Roti®garose-His/Ni NTA-Beads see p. 2282
- Roti®garose-Glu/GST Beads see p. 2280
- Roti®garose-Biotin Beads see p. 2280
- Roti®garose-Streptavidin Beads see p. 2283

Agarose beads "high pressure" for affinity chromatography

- Roti®garose-His/Ni NTA-HPBeads see p. 2282
- Roti®garose-His/Ni HPBeads plus see p. 2282
- Roti®garose-His/Ni HPBeads see p. 2282
- Roti®garose-His/Co HPBeads see p. 2281
- Roti®garose-His uncharged HPBeads see p. 2282
- Roti®garose-His/Ni NTA-Beads see p. 2282
- Roti®garose-Protein G HPBeads see p. 2283
- Roti®garose-Protein A/G HPBeads see p. 2283

Agnuside



Agnuside

ROTICHROM® HPLC

Reference substance for HPLC.
From *Vitex agnus castus.*

10-p-Hydroxybenzoylaucubin
$C_{22}H_{26}O_{11}$
M 466,44 g/mol
Storage temp.: +4 °C
[11027-63-7]

Type analysis:

Purity (HPLC)..... >98 %

1081.1	10 mg	glass	299,95 €

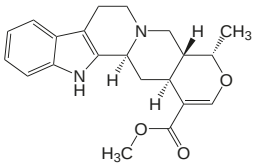
H-D-Aha-OH · HCl

▶ D-γ-Azidohomoalanine hydrochloride
see p. 1821

H-L-Aha-OH · HCl

▶ L-γ-Azidohomoalanine hydrochloride
see p. 1822

Ajmalicine



Ajmalicine

~98 %

Raubasine, δ-Yohimbine
$C_{21}H_{24}N_2O_3$
M 352,54 g/mol
mp 261-263 °C
[483-04-5] • EC No. 207-589-5
WGK 1

Warning H302

Type analysis:

Appearance..... white to yellow powder
Assay (titr.)..... ≥98 %
Loss on drying..... ≤0,5 %

6192.1	250 mg	glass	62,25 €

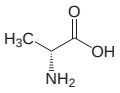
H-β-Ala-His-OH

▶ L-Carnosine see p. 1879

H-Ala(Me)-OH

▶ 2-Aminoisobutyric acid see p. 1790

D-Alanine



D-Alanine

≥99 %, for biochemistry

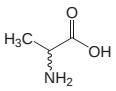
(R)-2-Aminopropionic acid, H-D-Ala-OH
$C_3H_7NO_2$
M 89,10 g/mol
Storage temp.: +4 °C
[338-69-2] • EC No. 206-418-1
WGK 1

Type analysis:

Appearance..... white to off-white powder
Assay..... 99,0-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in 1 N HCl)..... -15,0° to -13,0°
Loss on drying..... ≤0,5 %

7866.1	5 g	plastic	21,40 €
7866.2	25 g	plastic	66,15 €
7866.3	100 g	plastic	196,20 €

DL-Alanine



DL-Alanine

≥99 %, for biochemistry

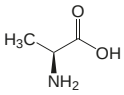
2-Aminopropionic acid
M 89,10 g/mol
mp 295-300 °C (dec.)
Solubility: ~167 g/l (H_2O, 25 °C)
[302-72-7] • EC No. 206-126-4
WGK 1

Type analysis:

Appearance..... white powder
Assay (titr.)..... ≥99 %
Heavy metals (as Pb)..... ≤0,001 %

9798.2	25 g	plastic	11,30 €
9798.1	100 g	plastic	23,15 €
9798.3	250 g	plastic	44,65 €

L-Alanine



L-Alanine

≥98,5 %, for biochemistry

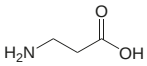
(S)-2-Aminopropionic acid, H-L-Ala-OH
$C_3H_7NO_2$
M 89,10 g/mol
Solubility: ~167 g/l (H_2O, 25 °C)
[56-41-7] • EC No. 200-273-8
WGK 1

Guarantee analysis:

Appearance..... white, cryst. powder
Assay (dry substance)..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$..... +13,5° to +15,5°
Ammonium (NH_4)..... ≤0,05 %
Iron (Fe)..... ≤0,001 %
Heavy metals (as Pb)..... ≤0,001 %
Chloride (Cl)..... ≤0,05 %
Sulphate (SO_4)..... ≤0,05 %
Loss on drying (105 °C, 3 h)..... ≤0,5 %
Loss on ignition..... ≤0,1 %

3076.1	25 g	plastic	20,65 €
3076.2	250 g	plastic	104,20 €

β-Alanine



β-Alanine

≥99 %, for biochemistry

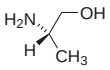
3-Aminopropionic acid
M 89,10 g/mol
D 1,44
mp 208 °C (dec.)
Solubility: ~545 g/l (H_2O, 20 °C)
[107-95-9] • EC No. 203-536-5

Type analysis:

Assay (perchloric acid titration)..... ≥99 %
Heavy metals..... ≤0,001 %

3078.2	50 g	plastic	25,70 €
3078.1	250 g	plastic	73,65 €

L-Alaninol



L-Alaninol

≥98 %, for biochemistry

S(+)-2-Amino-1-propanol
C_3H_9NO
M 75,11 g/mol
bp 173-176 °C
flp 62 °C
Storage temp.: +4 °C
[2749-11-3] • EC No. 220-388-7
UN No. 2735 • ADR 8 II • WGK 1

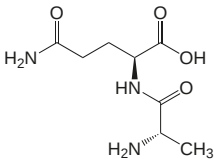
Danger H314

Type analysis:

Assay (titr.)..... ≥98 %
Solution (2 % in ethanol)..... clear, colourless
Specific rotation $[\alpha]_D^{20}$ (c=2 in ethanol)..... +20,0° to + 24,0°
Refractive index n_D^{20}..... 1,4493-1,4503
Water (KF)..... ≤2,0 %

5521.1	1 g	plastic	24,65 €
5521.2	5 g	glass	91,30 €
5521.3	10 g	glass	145,70 €

L-Alanyl-L-glutamine



$C_8H_{15}N_3O_4$
M 217,22 g/mol
mp 209 °C (dec.)
Solubility: 450 g/l (H_2O, 20 °C)
[39537-23-0]
WGK 1

L-Alanyl-L-glutamine
CELLPURE® ≥99 %

Type analysis:

Appearance	white, cryst. powder
Assay (dry substance)	≥99 %
Endotoxins	≤12,0 E.U./g
Specific rotation $[\alpha]_D^{20}$	+9,0° to +11,0°
Ammonium (NH_4)	≤0,02 %
Chloride (Cl)	≤0,02 %
Sulphate (SO_4)	≤0,02 %
Heavy metals (as Pb)	≤0,001 %
Arsenic (As_2O_3)	≤0,0001 %
Loss on drying	≤0,5 %
Ash content	≤0,1 %

6831.1	5 g	plastic	32,15 €
6831.2	10 g	plastic	45,05 €
6831.3	25 g	plastic	90,20 €
6831.4	100 g	plastic	306,40 €

L-Alanyl-L-glutamine
≥98 %, for biochemistry

Type analysis:

Assay (dry substance)	≥98 %
Specific rotation $[\alpha]_D^{20}$	+9,0° to +11,0°
Ammonium (NH_4)	≤0,05 %
Chloride (Cl)	≤0,05 %
Sulphate (SO_4)	≤0,05 %
Heavy metals (as Pb)	≤0,001 %
Loss on drying	≤1 %

6830.1	10 g	plastic	38,60 €
6830.2	50 g	plastic	135,35 €

Alanyl-L-glutamine solution
▶ Roti®-CELL Glutamine solution see p. 2269

N-β-Alanyl-L-histidine
▶ L-Carnosine see p. 1879

Albumin

BSA
M ~66 000 g/mol
Storage temp.: +4 °C
[9048-46-8] • EC No. 232-936-2
WGK 1

Albumin, fatty acid-free, US-Origin
≥98 %, fatty acid-free, for molecular biology
Suitable as blocking or stabilising reagent in all fatty acid-sensitive assays. Recommended if BSA with US-Origin is required.

Guarantee analysis:

Appearance	flakes
Colour	pale yellow to beige
Origin	USA
Assay	≥98 %
Protein	≥96 %
Water content	≤3 %
Heavy metals	≤2 ppm
pH value (10 % in H_2O)	6,0-7,5
IgG (COBAS)	none detected
Endotoxin content	≤5 E.U./mg
Total fatty acids	<0,01 %

9638.1	1 g	plastic	19,25 €
9638.2	10 g	plastic	99,90 €
9638.3	50 g	plastic	385,95 €
9638.4	100 g	plastic	607,40 €

For further information, please see page 1345

Albumin, IgG free
>98 %, IgG-free, for biochemistry and molecular biology
Recommended as blocking and stabilising reagent in all antibody-mediated detection systems.

Guarantee analysis:

Appearance	flakes
Colour	yellow to beige
Assay (HPLC)	>98 %
Dry extract	≥94 %
Iron (Fe)	<15 mg/g
Sodium (Na)	<10 mg/g
Chloride (Cl)	<0,5 %
Solution (2 % in H_2O)	soluble
pH value (2 % in H_2O)	6,5-7,5
IgG (HPLC)	none detected
Protease	none detected
DNAse	none detected
RNAse	none detected

3737.1	10 g	plastic	56,90 €
3737.2	50 g	plastic	155,90 €
3737.3	200 g	plastic	471,95 €
3737.4	500 g	plastic	962,15 €
Original pack 6 x 500 g			914,04/500 g

For further information, please see page 1345

Albumin Fraction V

BSA
M ~66 000 g/mol
Storage temp.: +4 °C
[90604-29-8] • EC No. 292-322-5
WGK 1

Albumin Fraction V
≥98 %, powdered, for molecular biology
Wide range of applications, e.g. as protein standard or blocking reagent.

Guarantee analysis:

Appearance	beige, fine powder
Assay (HPLC)	≥98 %
Solution (2 % in H_2O)	clear
pH value (2 % in H_2O)	6,5-7,5
Loss on drying	≤6 %
Sulphated ash	≤3 %
Nitrogen (N)	≥14 %
Fat	≤1 %

8076.1	10 g	plastic	27,85 €
8076.2	50 g	plastic	87,00 €
8076.4	200 g	plastic	298,35 €
8076.3	500 g	plastic	654,70 €
Original pack 6 x 500 g			621,97/500 g
8076.5	1 kg	plastic	1127,70 €
Original pack 6 x 1 kg			1071,32/1 kg

For further information, please see page 1343

Albumin Fraction V, biotin-free
≥98 %, biotin-free, for molecular biology
Excellent as blocking and stabilising reagent in all biotin/streptavidin-mediated detection systems.

Guarantee analysis:

Appearance	fine to coarse powder
Colour	beige
Assay	≥98 %
Solution (2 % in H_2O)	soluble
pH value (2 % in H_2O)	6,5-7,5
Loss on drying	≤6 %
Sulphated ash	≤3 %
Nitrogen (N)	≥14 %
Fat	≤1 %
Biotin	none detected

0163.1	10 g	plastic	34,30 €
0163.2	50 g	plastic	107,00 €
0163.4	200 g	plastic	370,90 €
0163.3	500 g	plastic	805,20 €
Original pack 6 x 500 g			764,94/500 g

For further information, please see page 1345

Albumin Fraction V, very low endotoxin

CELLPURE® >98 %, very low endotoxin

With extremely low endotoxin content. Recommended for the culture of primary cells and cell lines, as well as for sensitive cell culture assays.

Guarantee analysis:

Appearance. ..... light flakes
Colour. ..... pale yellow
Assay. ..... >98 %
Protein. ..... >920 mg/g
Water content. ..... <5,0 %
pH value (10 % in H_2O). 6,5-7,4
Endotoxin content. ..... <2 E.U./mg

CP77.1	10 g	plastic	142,90 €
CP77.2	50 g	plastic	547,20 €

For further information, please see page 1347

Albumin Fraction V, endotoxin-tested

CELLPURE® >98 %, low endotoxin

With low endotoxin content. Recommended for culturing of cell lines.

Guarantee analysis:

Appearance. ..... flakes
Colour. ..... pale yellow
Assay. ..... >98 %
Protein. ..... >92 %
Water content. ..... <5,0 %
pH value (10 % in H_2O). ..... 7,0 ±0,5
Endotoxin content. ..... <15 E.U./mg

CP84.1	10 g	plastic	35,40 €
CP84.2	50 g	plastic	110,65 €
CP84.3	500 g	plastic	858,95 €
Original pack 6 x 500 g			816,00/500 g

For further information, please see page 1346

Albumin Fraction V, fatty acid-free

≥98 %, fatty acid-free, for molecular biology

Excellent when working with membrane-associated proteins.

Guarantee analysis:

Appearance. ..... flakes
Colour. ..... pale yellow
Assay. ..... ≥98 %
Protein. ..... ≥97 %
Water content. ..... <3 %
pH value (10 % in water). 6,5-7,4
Total fatty acids. ..... <0,01 %

0052.1	1 g	glass	18,85 €
0052.2	10 g	plastic	98,40 €
0052.3	50 g	plastic	385,95 €

For further information, please see page 1345

Albumin Fraction V, pH 5,2

>97 %, powdered, for protein analysis

Non-neutralized albumin. Suitable as protein standard or hapten carrier, recommmended for use in ELISA and Western-Blotting.

Guarantee analysis:

Appearance. ..... flakes
Colour. ..... pale yellow to greenish
Assay. ..... >97 %
Protein. ..... >92 %
Dry extract. ..... >95 %
pH value (10 % solution). ..... 5,2 ±0,4

2834.1	10 g	plastic	40,75 €
2834.2	50 g	plastic	130,65 €
2834.3	200 g	plastic	407,45 €
2834.4	500 g	plastic	826,70 €
Original pack 6 x 500 g			785,37/500 g

For further information, please see page 1345

Albumin Fraction V, protease-free

≥98 %, protease-free, for molecular biology

For all sensitive enzymatic assays.

Guarantee analysis:

Appearance. ..... flakes
Colour. ..... yellow to beige
Assay. ..... ≥98 %
Protein. ..... ≥92 %
Loss on drying. ..... ≤5,0 %
pH value (10 % in water). 6,5-7,4
Protease (hemoglobine hydrolysis). ..... none detected

T844.1	10 g	plastic	55,80 €
T844.2	50 g	plastic	127,95 €
T844.4	200 g	plastic	418,20 €
T844.3	500 g	plastic	865,40 €
Original pack 6 x 500 g			822,13/500 g

For further information, please see page 1343

Albumin Fraction V, US-Origin

≥98 %, powdered, for molecular biology and biochemistry

Suitable as blocking or stabilising reagent in all general assays. Recommended if BSA with US-Origin is required.

Guarantee analysis:

Appearance. ..... powder to flakes
Colour. ..... off-white to beige
Origin. ..... USA
Assay. ..... ≥98,0 %
Protein. ..... ≥96,0 %
Dry extract. ..... ≥97,0 %
Sodium (Na). ..... ≤11,5 mg/g
Chloride (Cl). ..... ≤17,7 mg/g
Calcium (Ca). ..... ≤0,5 mg/g
Potassium (K). ..... ≤2 mg/g
Phosphorus (P). ..... ≤0,3 mg/g
Heavy metals. ..... ≤10 ppm
pH value (10 % solution). 6,0-7,5

3854.1	10 g	plastic	31,10 €
3854.2	50 g	plastic	94,10 €
3854.3	200 g	plastic	321,45 €
3854.4	500 g	plastic	693,40 €
Original pack 6 x 500 g			658,73/500 g
3854.5	1 kg	plastic	1159,95 €
Original pack 6 x 1 kg			1101,95/1 kg

For further information, please see page 1343

Albumin solutions

BSA solution
Storage temp.: +4 °C
Transport temp.: cooled
WGK 1

Albumin solution 20 % NEW

20 %, sterile, for biochemistry and cell biology

Wide range of applications, e.g. as protein standard or blocking reagent.

Guarantee analysis:

Appearance. ..... off-white to amber
Assay (HPLC). ..... >98 %
Calcium (Ca). ..... ≤0,025 mg/ml
Iron (Fe). ..... ≤0,5 µg/ml
pH (10 % solution). ..... 7 ±0,3
Conductivity. ..... ≤3000 µS
Sterility. ..... complies

9400.1	20 ml	plastic	10,75 €
9400.2	100 ml	plastic	43,00 €
9400.3	500 ml	plastic	177,40 €

For further information, please see page 1366

Albumin solution 30 % NEW

30 %, sterile, for biochemistry and cell biology

Albumin fraction V. Wide range of applications, e.g. as protein standard or blocking reagent.

Guarantee analysis:

Appearance. ..... off-white to amber
Assay (HPLC). ..... >98 %
Calcium (Ca). ..... ≤0,025 mg/ml
Iron (Fe). ..... ≤0,5 µg/ml
pH (10 % solution). ..... 7 ±0,3
Conductivity. ..... ≤3000 µS
Sterility. ..... complies

9401.1	20 ml	plastic	15,05 €
9401.2	100 ml	plastic	60,20 €
9401.3	500 ml	plastic	241,90 €

For further information, please see page 1366

Albumin solution 30 %, with azide, US-Origin NEW

30 %, with azide, US-Origin, for biochemistry

Suitable as blocking or stabilising reagent in all general assays. Recommended if BSA with US-Origin is required.

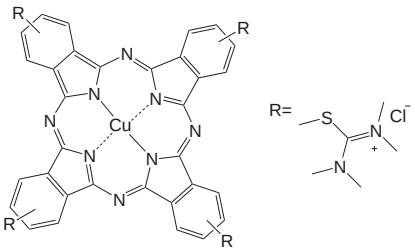
Guarantee analysis:

Appearance. ..... off-white to amber
Assay (HPLC). ..... >98 %
Calcium (Ca). ..... ≤0,05 mg/ml
Iron (Fe). ..... ≤0,5 µg/ml
pH (3 % solution). ..... 7 ±0,3
Azids. ..... ≥0,1 %

9414.1	100 ml	plastic	98,90 €
9414.2	500 ml	plastic	344,00 €

For further information, please see page 1366

Alcian blue 8 GS (C.I. 74240)



Alcian blue 8 GS (C.I. 74240)

for microscopy

Bacteriology and histology.
Alcian Blue 8 GX, Ingrain Blue 1
Solubility: 8 g/l (H_2O, 25 °C)
[33864-99-2] • EC No. 251-705-7
WGK 2

Type analysis:

Appearance. ..... dark blue powder
λ max. ..... 610-630 nm
Suitability for microscopy. ..... complies

3082.2	5 g	glass	36,45 €
3082.1	10 g	glass	62,25 €
3082.3	25 g	glass	137,10 €
3082.4	100 g	glass	418,20 €

For further information, please see page 1520

Alcian blue 1 % in acetic acid 3 %

Alcian blue 1 % in acetic acid 3 %

for microscopy

For selective staining of acidic mucins.
Storage temp.: +20 °C
WGK 1

Type analysis:

Appearance. ..... deep blue liquid
Odour. ..... of acetic acid

1431.1	500 ml	glass	155,80 €
1431.2	1 l	glass	235,45 €
Original pack 6 x 1 l			223,68/1 l

For further information, please see page 1516

Alcohol C 16

▶ Cetyl alcohol see p. 1888

Alcohols

Art. No.	Description	Page
0336	Benzyl alcohol	1833
4478	Benzyl alcohol	1833
6724	Bioethanol 96 %	1837
6726	Bioethanol 96 % denatured	1837
7473	1,3-Butanediol	1859
4211	1,4-Butanediol	1859
T178	1-Butanol	1859
7171	1-Butanol	1859
7724	1-Butanol	1859
KK02	2-Butanol	1860
AE16	tert-Butanol	1860
4323	tert-Butanol	1860
5762	Cetyl alcohol	1888
4104	4-Chloro-1-naphthol	1894
7756	Cyclohexanol	1917
4151	1-Decanol	1924
9853	1-Dodecanol	1959
P076	Ethanol	1975
9065	Ethanol	1976
0911	Ethanol denatured	1976
5054	Ethanol	1976
K928	Ethanol denatured	1976
P075	Ethanol 96 %	1976
T171	Ethanol 96 % denatured	1976
9474	Ethanol 80 % denatured	1977
T868	Ethanol 70 %	1977
7301	Ethanol 70 %	1977
T913	Ethanol 70 % denatured	1977
5127	2-Ethoxyethanol	1979
3827	1-Heptanol	2038
3847	1-Hexanol	2043
3756	trans-2-Hexen-1-ol	2043
6257	4-Hydroxybenzyl alcohol	2057
T870	Isoamyl alcohol	2076
8930	Isoamyl alcohol	2076
6029	Lignoceryl alcohol	2098
4227	2-Mercaptoethanol	2126
HN41	Methanol	2131
AE71	Methanol	2131
X948	Methanol	2131
7342	Methanol	2131
KK39	Methanol	2131
P717	Methanol	2131
KK44	Methanol	2131
7583	Methanol	2132
T169	Methanol	2132
T909	Methanol	2132
5181	Methanol	2132
AE01	Methanol	2132
0082	Methanol	2132
9785	Methanol	2132
4627	Methanol	2132
CP43	Methanol	2133
8388	Methanol	2133
9976	Methanol 60 %	2133
CP08	2-Methoxyethanol	2135
4379	2-Methyl-1-butanol	2136
6772	2-Methyl-1-propanol	2141
CP09	2-Methyl-1-propanol	2141
4439	1-Octanol	2171
3182	1-Octanol	2171
8949	1-Pentanol	2196
7135	(-)- Perillic alcohol	2200
4348	2-Phenoxyethanol	2205
4422	2-Phenylethanol	2207
T177	1-Propanol	2239
6776	1-Propanol	2239
9169	1-Propanol	2239
AE73	2-Propanol	2239
7343	2-Propanol	2239
7590	2-Propanol	2240
T902	2-Propanol	2240
T910	2-Propanol	2240
9781	2-Propanol	2240
6752	2-Propanol	2240
CP41	2-Propanol	2240
9866	2-Propanol	2240
CN09	2-Propanol 70 %	2240
8663	Stearyl alcohol	2381

sec. Alcoxy polyethylene glycol

▶ Tergitol™ 15-S-9 see p. 2396

Alginic acid

Alginic acid

≥98 %, for biochemistry

Norgine
$(C_6H_8O_6)_n$
M ~100 000 g/mol
Solubility: insoluble, (H_2O, 20 °C)
[9005-32-7] • EC No. 232-680-1

Type analysis:

Assay. ..... ≥98 %
Loss on drying. ..... ≤15 %
Heavy metals. ..... ≤0,004 %

8696.1	250 g	plastic	31,10 €
8696.3	1 kg	plastic	96,25 €
Original pack 6 x 1 kg			91,44/1 kg
8696.2	2,5 kg	plastic	214,50 €

Alginic acid ammonium salt

Alginic acid ammonium salt

for biochemistry

From seaweed.
Ammonium alginate
$(C_{18}H_{23}O_{19})_n NH_4$
[9005-34-9]
WGK 1

Type analysis:

Appearance. ..... beige powder
Loss on drying. ..... ≤15 %
Ash (800 °C). ..... ≤7,0 %
pH value (1 % solution). 5,5-7,5
Viscosity (1 % solution, 20 °C). ..... 100-150 mPas
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,002 %

7317.1	250 g	plastic	33,25 €
7317.2	1 kg	plastic	92,35 €
Original pack 6 x 1 kg			87,73/1 kg

Alginic acid sodium salt

Alginic acid sodium salt

for biochemistry

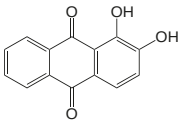
From brown algae.
Sodium alginate
[9005-38-3]
WGK 1

Type analysis:

Appearance. ..... fine white to cream-coloured powder
Loss on drying. ..... ≤15 %
pH value (1 % solution). 5,5-8,0
Viscosity (1 % solution, 20 °C). ..... 350-550 mPas
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0001 %
Mercury (Hg). ..... ≤0,0001 %

9180.1	250 g	plastic	30,00 €
9180.2	1 kg	plastic	81,60 €
Original pack 6 x 1 kg			77,52/1 kg

Alizarin (C.I. 58000)



Alizarin (C.I. 58000)

p.a.
Indicator pH 5,5-6,8 and 10,1-12,1
1,2-Dihydroxyantraquinone
$C_{14}H_8O_4$
M 240,21 g/mol
bp 430 °C
mp 290 °C
[72-48-0] • EC No. 200-782-5
WGK 1

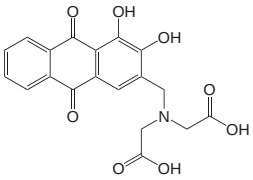
Type analysis:
Appearance. ..... orange powder
Loss on drying (105 °C). ..... ≤1,5 %
Sulphated ash..... ≤1 %
pH transition range. ..... 5,5 (yellow)-6,8 (violet)
pH-transition range. ..... 10,1 (violet)-12,1 (purple)

4476.2	25 g	glass	23,55 €
4476.1	50 g	glass	35,40 €
4476.3	100 g	glass	47,85 €

Alizarin carmine

▶ Alizarin red S (C.I. 58005) see p. 1781

Alizarin complexone dihydrate



Alizarin complexone dihydrate

≥97 %, p.a.
Detection reagent for fluoride
Alizarin-3-methyliminodiacetic acid,
Alizarin Fluorine Blue
$C_{19}H_{15}NO_8 \cdot 2\ H_2O$
M 421,36 g/mol
mp 190 °C
Solubility: 0,2 g/l (H_2O, 20 °C)
[3952-78-1]
WGK 1

Type analysis:
Appearance. ..... yellow to brown powder
Appearance of solution (1 % in 1 M NaOH). ..... blue to purple
Assay (dry substance). ..... ≥97 %
Water (KF). ..... ≤9,5 %
Sulphated ash..... ≤0,5 %

7634.1	1 g	glass	32,15 €
7634.2	5 g	glass	99,90 €
7634.3	10 g	glass	166,55 €

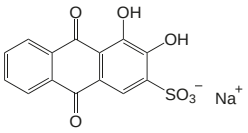
Alizarin fluorine blue

▶ Alizarin complexone dihydrate see p. 1781

Alizarin-3-methyliminodiacetic acid

▶ Alizarin complexone dihydrate see p. 1781

Alizarin red S (C.I. 58005)



Alizarin red S (C.I. 58005)

Indicator pH 4,3-6,3 and pH 9,4-12,0
Alizarin sulphonic acid sodium salt, Alizarin carmine
$C_{14}H_7NaO_7S$
M 342,26 g/mol
mp >250 °C
[130-22-3] • EC No. 204-981-8
WGK 1

Type analysis:
Absorption max. (in H_2O). ..... 550-560 nm
Loss on drying (110 °C)..... ≤5,0 %
pH-transition range..... 4,3 (yellow)-6,3 (red-violet)
pH-transition range..... 9,4 (brown orange)-12,0 (purple)
Suitability as indicator..... complies

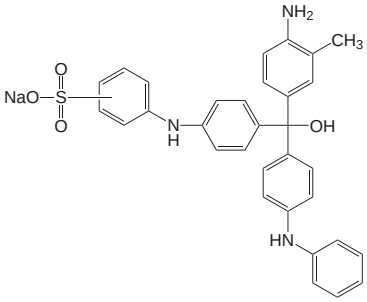
0348.1	10 g	glass	19,90 €
0348.2	25 g	glass	31,10 €
0348.3	100 g	glass	96,25 €

For further information, please see page 1528

Alizarin sulphonic acid sodium salt

▶ Alizarin red S (C.I. 58005) see p. 1781

Alkali blue 6B (C.I. 42750)



Alkali blue 6B (C.I. 42750)

p.a.
Indicator pH 9,4-14,0
Acid blue 110
$C_{32}H_{28}N_3NaO_4S$
M 573,65 g/mol
mp >250 °C
[30586-13-1] • EC No. 250-253-8
WGK 1

Warning H315-H319-H335

Type analysis:
Dye content. ..... ≥75 %
pH-transition range..... 9,4 (blue)-14,0 (red)

5155.1	10 g	glass	21,00 €
5155.2	25 g	glass	41,40 €
5155.3	100 g	glass	121,40 €

Alkaline phosphatase

Alkaline phosphatase

≥2000 Glycine U/mg protein
(approx. 6000 DEA U/mg protein)
From bovine intestinal mucosa. Solution in 50 % glycerol, 5 mM Tris/HCl, 5 mM $MgCl_2$ and 0,1 mM $ZnCl_2$, pH approx. 7,0.
Phosphatase, alkaline; ALP; AP
M ~120 000 g/mol
Storage temp.: +4 °C
[9001-78-9] • EC No. 232-631-4
WGK 1

Type analysis:
Activity. ..... ≥2000 glycine U/mg protein
Protein concentration. ..... 10-20 mg/ml

6024.1	10 KU	plastic	375,20 €

For further information, please see page 1316

Alkalis

Art. No.	Description	Page
HN66	Ammonia solution Ultra-quality	1792
HN56	Ammonia solution Supra-quality	1793
P093	Ammonia solution 32 %	1793
A990	Ammonia solution 32 %	1793
CP17	Ammonia solution 30 %	1793
6774	Ammonia solution 25 %	1794
5460	Ammonia solution 25 %	1794
6753	Ammonia solution 20 %	1794
4346	Ammonia solution 15 %	1794
6756	Ammonia solution 10 %	1794
5609	Barium hydroxide hydrate	1826
P009	Barium hydroxide octahydrate	1827
HN75	Barium hydroxide octahydrate	1827
5617	Calcium hydroxide	1871
CN87	Calcium hydroxide	1871
3529	Calcium hydroxide	1871
9864	Copper(II) hydroxide	1909
6705	Lithium hydroxide	2103
3997	Lithium hydroxide monohydrate	2103
A122	Piperidine	2213
0976	Piperidine	2214
5658	Potassium hydroxide	2229
6751	Potassium hydroxide	2229
7986	Potassium hydroxide	2229
7949	Potassium hydroxide solution 50 %	2229
0995	Potassium hydroxide solution 45 %	2229
4330	Potassium hydroxide solution 20 %	2230
6771	Sodium hydroxide	2340
9356	Sodium hydroxide	2341
8655	Sodium hydroxide solution 50 %	2341
0993	Sodium hydroxide solution 45 %	2341
4347	Sodium hydroxide solution 40 %	2341
T196	Sodium hydroxide solution 32 %	2341
T197	Sodium hydroxide solution 32 %	2341
4351	Sodium hydroxide solution 25 %	2341
4357	Sodium hydroxide solution 20 %	2341
4358	Sodium hydroxide solution 10 %	2342
4359	Sodium hydroxide solution 5 %	2342

Alkalis in Pharmacopoeia Quality

Art. No.	Description	Page
2610	Ammonia solution 25 %	1794
KK03	Calcium hydroxide	1871
9453	Magnesium hydroxide	2112
P747	Potassium hydroxide	2229
P031	Sodium hydroxide	2340

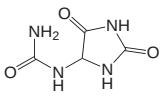
Alkaloids

Art. No.	Description	Page
7975	7-O-Acetylintermedine	1767
7980	7-O-Acetylintermedine N-oxide	1767
6192	Ajmalicine	1777
4602	Arecoline hydrobromide	1814
3192	Berberine chloride hydrate	1834
8900	Boldine	1847
4255	Brucine N-oxide	1856
N815	Caffeine	1867
7212	DL-Carnitinchloride	1879
4192	(-)-α-Chaconine	1888
6235	Chelidonine	1890
3406	Choline hydroxide	1896
8872	Cinchonidine	1899
8875	Cinchonine	1899
8884	Colchicine	1904
5615	Cytisine	1921
7992	Echimidine	1964
8011	Echimidine N-oxide	1964
4116	Emetine dihydrochloride	1969
1657	(Z)-Erucifoline	1974
1664	(Z)-Erucifoline N-oxide	1974
1676	Europine hydrochloride	1988
1687	Europine-N-oxide	1988
6571	Gelsemine hydrochloride	2013
9968	Harmine	2032
1929	Heliotrine	2034
1944	Heliotrine N-oxide	2035
7855	DL-Homatropine hydrobromide	2045
4268	Hydrocotarnine hydrobromide	2052
8914	L-Hyoscyamine	2061
6416	Hypoxanthine	2062
1960	Indicine hydrochloride	2065
1961	Indicine N-oxide	2065
1962	Intermedine	2069
8018	Intermedine N-oxide	2069
1963	Jacobine	2081
1970	Jacobine N-oxide	2082
2090	Lasiocarpine	2092
2202	Lasiocarpine N-oxide	2092
8997	Lobeline sulphate	2104
2208	Lycopsamine	2107
8022	Lycopsamine N-oxide	2107
2249	Monocrotaline N-oxide	2147
8746	(-)-Nicotine	2158
9113	1,10-Phenanthroline monohydrate	2204
7523	Pilocarpin nitrate	2213
7099	Piperine	2214
6690	Protopine	2243
3348	Quinidine sulphate dihydrate	2250
6225	Quinine hydrochloride dihydrate	2250
7144	Rauwolscine hydrochloride	2252
4295	Reserpic acid hydrochloride hemihydrate	2256
1213	Retrorsine	2257
6733	Retrorsine-N-oxide	2257
7153	Scopolamine hydrobromide trihydrate	2308
2261	Senecionine	2310
6734	Senecionine N-oxide	2311
1214	Seneciphylline	2311
6735	Seneciphylline N-oxide	2311
2209	Senecivernine	2311
2215	Senecivernine N-oxide	2311
4934	Senkirkine	2311
4696	Skatole	2329
2826	α-Solanine	2352
4180	α-Solanine	2352
4843	Strychnine	2383
4845	Strychnine hydrochloride	2383
4277	Strychnine N-oxide	2383
8963	Theobromine	2403
5676	Tomatin	2413
5413	Trigonelline hydrochloride	2418
4049	Tropine	2423

Alkane C30

▶ Squalane see p. 2357

Allantoin



Allantoin

≥99 %

Glyoxyldiureide, 5-Ureidohydantoin

$C_4H_6N_4O_3$

M 158,12 g/mol

mp 223-224 °C (dec.)

[97-59-6] • EC No. 202-592-8

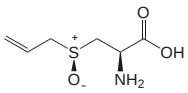
WGK 1

Type analysis:

Appearance.....white to off-white, cryst. powder
Assay. ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %
Melting point (dec.)..... 223-224 °C

6327.2	100 g	plastic	30,00 €
6327.1	250 g	plastic	62,25 €

Alliin



Alliin

ROTICHROM® HPLC

Reference substance for HPLC.

(S)-3-(Allylsulphinyl)-L-alanine

$C_6H_{11}NO_3S$

M 177,22 g/mol

Storage temp.: +4 °C

[556-27-4] • EC No. 209-118-9

Type analysis:

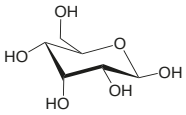
Purity (HPLC). ..... ≥98 %

K031.1	10 mg	plastic	284,90 €

β-D-Allopyranose

▶ D-Allose see p. 1782

D-Allose



D-Allose

≥99 %

D-Allopyranose

$C_6H_{12}O_6$

M 180,16 g/mol

mp 143-146 °C

[2595-97-3] • EC No. 219-994-4

Type analysis:

Appearance. .....white powder
Assay. .....≥99 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O). ..... 13,5° to 16,5°
Sulphated ash. .....≤0,05 %
Heavy metals. .....≤0,001 %

6010.2	50 mg	glass	31,10 €
6010.1	100 mg	glass	42,90 €

Alloy acc. to Wood

Alloy acc. to Wood

used for metal heating baths

Low melting point, Bi 50 %/ Cd 12,5 %/ Pb 25 %/ Sn 12,5 %. Can be used for manufacturing metal heating baths, for sealing and as a lead fuse.

Wood's metall

D ~8,6

mp ~70 °C

UN No. 2570 • ADR 6.1 II • WGK 3

Danger H302-H330-H341-H350-H360Df-H372-H410-EUH201

1980.1	250 g	plastic	36,45 €
1980.2	1 kg	plastic	113,85 €
Original pack 6 x 1 kg			108,16/1 kg

4-Allyl anisole

▶ Methylchavicol see p. 2137

4-Allyl-1,2-dimethoxybenzene

▶ Eugenol methyl ether see p. 1987

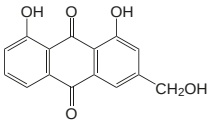
4-Allyl-2-methoxyphenol

▶ Eugenol see p. 1987

(S)-3-(Allylsulphinyl)-L-alanine

▶ Alliin see p. 1782

Aloe-emodin



$C_{15}H_{10}O_5$
M 270,23 g/mol
mp 223-225 °C
Storage temp.: +4 °C
[481-72-1] • EC No. 207-571-7
WGK 1
Warning H315-H319-H335

Aloe-emodin
ROTICHROM® HPLC
Reference substance for HPLC.

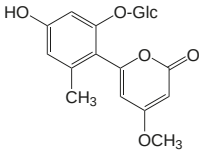
Type analysis:
Purity (HPLC)..... ≥98,5 %

6004.2	20 mg	glass	246,20 €

Aloe-emodin
ROTICHROM® TLC

3524.1	100 mg	plastic	385,95 €

Aloenin A

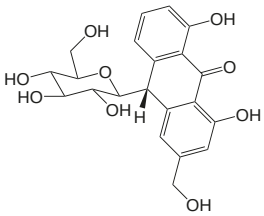


Aloenin A
ROTICHROM® HPLC
Reference substance for HPLC.
From *Aloe arborescens.*
$C_{19}H_{22}O_{10}$
M 410,38 g/mol
Storage temp.: +4 °C
[38412-46-3]

Type analysis:
Purity (HPLC)..... >99 %

1082.1	20 mg	glass	482,70 €

Aloin



$C_{21}H_{22}O_9$
M 418,40 g/mol
mp 148-152 °C
Storage temp.: +4 °C
[5133-19-7]
WGK 1
Warning H302

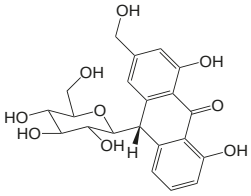
Aloin
ROTICHROM® TLC
Reference substance for thin layer chromatography.

5555.1	50 mg	glass	61,20 €

Aloin
ROTICHROM® CHR, cryst.

4568.1	250 mg	glass	53,65 €

Aloin A



Aloin A
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{21}H_{22}O_9$
M 418,40 g/mol
Storage temp.: +4 °C
[1415-73-2]
Warning H302

Type analysis:
Purity (HPLC)..... ≥98 %

4744.1	25 mg	glass	100,95 €

ALP
▶ Alkaline phosphatase see p. 1781

Alum
▶ Potassium aluminium sulphate dodecahydrate see p. 2222

Alum chrome
▶ Chromium(III) potassium sulphate dodecahydrate see p. 1897

Alumina
▶ Aluminium oxide see p. 1785

Aluminium granulate

Al
M 26,98 g/mol
D 2,7 • bp 2500 °C
mp 660 °C
[7429-90-5] • EC No. 231-072-3

Aluminium granulate
ROTI®METIC 99,995 % (4N5)

Type analysis:
Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5577.1	25 g	plastic	45,70 €
5577.2	100 g	plastic	124,60 €

Aluminium granulate
≥99,5 %, gran., ~1-5 mm

Type analysis:
Assay (Al)..... ≥99,5 %

5280.1	250 g	plastic	19,25 €
5280.2	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg

Aluminium powder

Aluminium powder
≥99,5 %, powdered, <160 µm
Al
M 26,98 g/mol
bp 2500 °C
mp 660 °C
[7429-90-5] • EC No. 231-072-3

Type analysis:
Assay (Al)..... ≥99,5 %
Filled under protective gas.

5285.1	250 g	glass	28,50 €
5285.2	1 kg	glass	72,60 €
Original pack 6 x 1 kg			68,97/1 kg

Aluminium Standards
▶ Aluminium AAS Standard Solution see p. 2358
▶ Aluminium ICP Standard Solution see p. 2361
▶ Aluminium ICP Standard Solution see p. 2366

Aluminium ammonium sulphate dodecahydrate

Aluminium ammonium sulphate dodecahydrate

≥99 %, p.a., ACS

Ammonium aluminium sulphate,
Ammonium alum

$NH_4Al(SO_4) \cdot 12\ H_2O$
M 453,33 g/mol
mp 93 °C
Solubility: 150 g/l (H_2O, 20 °C)
[7784-26-1] • EC No. 232-055-3
WGK 1

Guarantee analysis:

Assay (compl.)	≥99,0 %
pH value (5 % solution)	≥3,0
In H_2O insoluble matter	≤0,005 %
Chloride (Cl)	≤0,001 %
Nitrate (NO_3)	≤0,001 %
Silicate (SiO_3)	≤0,002 %
Phosphate (PO_4)	≤0,0025 %
Arsenic (As)	≤0,00005 %
Lead (Pb)	≤0,001 %
Calcium (Ca)	≤0,05 %
Iron (Fe)	≤0,001 %
Copper (Cu)	≤0,0005 %
Potassium (K)	≤0,05 %
Sodium (Na)	≤0,01 %
Heavy metals (as Pb)	≤0,001 %

X862.1	500 g	plastic	31,10 €
Original pack 6 x 500 g			29,55/500 g
X862.2	1 kg	plastic	51,10 €
Original pack 6 x 1 kg			48,55/1 kg
X862.3	2,5 kg	plastic	104,20 €

Aluminium carbide

Aluminium carbide

pure, powdered

Al_4C_3
M 143,96 g/mol
D 2,36
mp 2100 °C
[1299-86-1] • EC No. 215-076-2
UN No. 1394 • ADR 4.3 II • WGK 1

Danger H261-H315-H319-H335

Type analysis:

Aluminium (Al)	≥72 %
Carbon (C)	≥24 %
Nitrogen (N)	≤0,9 %
Iron (Fe)	≤0,2 %
Oxygen (O_2)	≤1,7 %

3094.2	25 g	glass	88,05 €
3094.1	100 g	glass	306,40 €

Aluminium chloride

Aluminium chloride

≥98 %, anhydrous, sublimated

Hydrochloric acid aluminium salt anhydrous
$AlCl_3$
M 133,34 g/mol
D 1,31
mp ~181 °C (subl.)
Solubility: 450 g/l (H_2O, 20 °C)
[7446-70-0] • EC No. 231-208-1
UN No. 1726 • ADR 8 II • WGK 1

Danger H314-EUH014

Type analysis:

Assay	≥98 %
Sulphate (SO_4)	≤0,05 %
Iron (Fe)	≤0,02 %
Heavy metals	≤0,005 %

CN86.1	100 g	glass	13,90 €
CN86.2	500 g	glass	28,95 €
Original pack 6 x 500 g			27,50/500 g
CN86.3	1 kg	glass	46,80 €
Original pack 6 x 1 kg			44,46/1 kg

Aluminium chloride hexahydrate

$AlCl_3 \cdot 6\ H_2O$
M 241,43 g/mol
D ~2,4
mp ~100 °C
Solubility: 1330 g/l (H_2O, 20 °C)
[7784-13-6] • EC No. 231-208-1
WGK 1

Warning H315-H319

Aluminium chloride hexahydrate

ROTI®METIC 99,9999 % (6N)

Type analysis:

Assay (metals basis)	99,9999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5368.1	25 g	plastic	96,65 €
5368.2	100 g	plastic	360,15 €

Aluminium chloride hexahydrate

≥95 %, Ph.Eur., USP

Guarantee analysis:

Assay (compl.)	95,0-101,0 %
Identity	complies
Appearance of solution	complies
Alkali and alkaline earth metals	≤0,5 %
SO_4 content	≤0,01 %
Sulphate (SO_4)	complies
Water (KF)	42-48 %
Heavy metals (as Pb)	≤0,002 %
Iron (Fe)	≤0,001 %

CP88.1	500 g	plastic	28,50 €
Original pack 6 x 500 g			27,08/500 g
CP88.2	1 kg	plastic	46,15 €
Original pack 6 x 1 kg			43,84/1 kg
CP88.3	2,5 kg	plastic	92,35 €

Aluminium fluoride

Aluminium fluoride

ROTI®METIC 99,99 % (4N), anhydrous

Aluminium trifluoride
AlF_3
M 83,98 g/mol
D 3,1
mp ~1272 °C (subl.)
Solubility: 5 g/l (H_2O, 20 °C)
[7784-18-1] • EC No. 232-051-1
WGK 1

Warning H302-H315-H319-H335

Type analysis:

Assay (metals basis)	99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5395.1	10 g	plastic	84,95 €
5395.2	50 g	plastic	299,95 €

Aluminium-nickel alloy

▶ Nickel-aluminium alloy see p. 2156

Aluminium nitrate nonahydrate

$Al(NO_3)_3 \cdot 9\ H_2O$
M 375,13 g/mol
mp 73 °C
Solubility: 419 g/l (H_2O, 20 °C)
[7784-27-2] • EC No. 236-751-8
UN No. 1438 • ADR 5.1 III • WGK 1

Danger H272-H315-H319

Aluminium nitrate nonahydrate

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis)	99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5567.1	10 g	plastic	40,75 €
5567.2	50 g	plastic	118,15 €

Aluminium nitrate nonahydrate

≥98 %, p.a.

Guarantee analysis:

Assay	≥98 %
pH value (5 %, 20 °C)	2,5-3,5
Chloride (Cl)	≤0,005 %
Sulphate (SO_4)	≤0,005 %
Heavy metals (as Pb)	≤0,001 %
Calcium (Ca)	≤0,02 %
Iron (Fe)	≤0,005 %
Potassium (K)	≤0,05 %
Magnesium (Mg)	≤0,005 %
Sodium (Na)	≤0,02 %

CN85.1	500 g	plastic	20,65 €
Original pack 6 x 500 g			19,62/500 g
CN85.2	1 kg	plastic	31,10 €
Original pack 6 x 1 kg			29,55/1 kg
CN85.3	2,5 kg	plastic	61,20 €

Aluminium oxide

Aluminium oxide
ROTI®METIC 99,995 % (4N5)
Alumina
Al_2O_3
M 101,94 g/mol
D 3,97 • bp 2980 °C
mp 2045 °C
[1344-28-1] • EC No. 215-691-6

Type analysis:
Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5575.1	5 g	plastic	40,75 €
5575.2	25 g	plastic	111,30 €

Aluminium oxide, nano

Aluminium oxide, nano
ROTI®nanoMETIC ≥99,9 %, 40 nm
Al_2O_3
M 101,94 g/mol
D 3,97 • bp 2980 °C
mp 2045 °C
[1344-28-1] • EC No. 215-691-6
WGK 1

Type analysis:
Assay (metals basis)..... ≥99,9 %
Particle size. ..... ~40 nm
Specific surface (BET). ..... ≥40 m^2/g
Loss on drying (2 h, 105 °C). ..... ≤3 %
Phase. ..... gamma
Stabilized with HNO_3

8250.1	10 g	glass	22,05 €
8250.2	50 g	glass	83,75 €
8250.3	100 g	glass	137,50 €

Aluminium oxide, neutral, basic, acidic

Al_2O_3
M 101,94 g/mol
[1344-28-1] • EC No. 215-691-6

Aluminium oxide 90 neutral
for column chromatography

Guarantee analysis:
Particle size. ..... 0,063-0,2 mm (70 %)
pH value (10 %). 6,8-7,8
Chloride (Cl). ..... ≤0,1 %
Calcium (Ca). ..... ≤0,15 %
Material washed out by H_2O. ..... ≤0,2 %
Filtration rate. ..... ≥0,3 ml/min
Activity stage I

P092.1	500 g	plastic	65,50 €
Original pack 6 x 500 g			62,23/500 g
P092.2	1 kg	plastic	117,75 €
Original pack 6 x 1 kg			111,86/1 kg
P092.3	2,5 kg	plastic	252,65 €

For further information, please see page 1656

Aluminium oxide 90 basic
for column chromatography

Guarantee analysis:
Particle size. ..... 0,063-0,2 mm (70 %)
pH value (10 %). 8,5-10,5
Chloride (Cl). ..... ≤0,004 %
Sulphate (SO_4). ..... ≤0,1 %
Filtration rate. ..... ≥0,3 ml/min
Activity stage I

X908.1	500 g	plastic	65,50 €
Original pack 6 x 500 g			62,23/500 g
X908.2	1 kg	plastic	117,75 €
Original pack 6 x 1 kg			111,86/1 kg
X908.3	2,5 kg	plastic	252,65 €

For further information, please see page 1656

Aluminium oxide 90 acidic
for column chromatography

Guarantee analysis:
Particle size. ..... 0,063-0,2 mm (70 %)
pH value (10 %). 3,5-4,5
Chloride (Cl). ..... ≤0,2 %
Sulphate (SO_4). ..... ≤0,1 %
Filtration rate. ..... ≥0,3 ml/min
Activity stage I

X909.1	500 g	plastic	65,50 €
Original pack 6 x 500 g			62,23/500 g
X909.2	1 kg	plastic	117,75 €
Original pack 6 x 1 kg			111,86/1 kg
X909.3	2,5 kg	plastic	256,95 €

For further information, please see page 1656

Aluminium potassium sulphate

▶ Potassium aluminium sulphate dodecahydrate see p. 2222

Aluminium sulphate hydrate

Aluminium sulphate hydrate
cryst.
$Al_2O_{12}S_3 \cdot 13,5\text{-}15,0\ H_2O$
M 342,14 + x H_2O g/mol
bp 770 °C (dec.)
mp 90-95 °C
Solubility: 360 g/l (H_2O, 20 °C)
[17927-65-0] • EC No. 233-135-0
WGK 1

Danger H318

Type analysis:
Assay (as Al_2O_3)..... 16,5-17,5 %
Alkalinity. ..... ≤0,5 % OH
Iron (Fe)..... ≤0,05 %

3731.1	1 kg	plastic	17,10 €
Original pack 6 x 1 kg			16,25/1 kg
3731.2	5 kg	plastic	41,40 €

Aluminium sulphate hexadecahydrate

Aluminium sulphate hexadecahydrate
≥98 %, p.a., ACS
$Al_2O_{12}S_3 \cdot 16\ H_2O$
M 630,39 g/mol
[16828-11-8]
WGK 1

Danger H318

Guarantee analysis:
Appearance. ..... white crystals
Assay (titr.)..... 98,0-102,0 %
Insoluble matter. ..... ≤0,01 %
Chloride (Cl)..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,002 %
Potassium (K). ..... ≤0,005 %
Magnesium (Mg). ..... ≤0,002 %
Sodium (Na)..... ≤0,02 %

5340.2	100 g	plastic	17,10 €
5340.1	500 g	plastic	40,75 €
Original pack 6 x 500 g			38,71/500 g
5340.3	1 kg	plastic	69,80 €
Original pack 6 x 1 kg			66,31/1 kg

Aluminium sulphate octadecahydrate

Aluminium sulphate octadecahydrate
extra pure
$Al_2(SO_4)_3 \cdot 18\ H_2O$
M 666,42 g/mol
mp 90 °C
Solubility: 600 g/l (H_2O, 20 °C)
[7784-31-8] • EC No. 233-135-0
WGK 1

Type analysis:
Assay $Al_2(SO_4)_3$ (compl.). ..... 51,0-59,0 %
Chloride (Cl)..... ≤0,05 %
Ammonium (NH_4)..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,005 %
Arsenic (As). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,01 %

9507.1	500 g	plastic	31,75 €
Original pack 6 x 500 g			30,16/500 g
9507.2	1 kg	plastic	48,95 €
Original pack 6 x 1 kg			46,50/1 kg
9507.3	2,5 kg	plastic	96,65 €

Aluminium trifluoride

▶ Aluminium fluoride see p. 1784

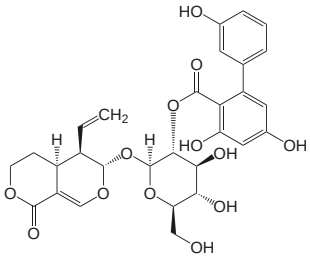
Aluminon

▶ Aurin tricarboxylic acid ammonium salt see p. 1819

Amantadine hydrochloride

▶ 1-Adamantanamine hydrochloride
see p. 1771

Amarogentin



Amarogentin

ROTICHROM® HPLC
Reference substance for HPLC.
From *Gentiana lutea.*
$C_{29}H_{30}O_{13}$
M 586,54 g/mol
Storage temp.: +4 °C
[21018-84-8]
WGK 1

Type analysis:
Purity (HPLC)..... ≥99 %

6488.1	10 mg	glass	310,70 €

Amber acid

▶ Succinic acid see p. 2384

Amberjet™

Amberjet™

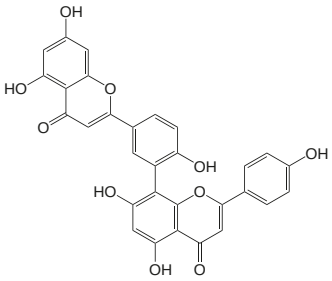
mixed bed exchanger, highly pure
WGK 1

Type analysis:
Delivery form..... H^+/OH^-
Blend ratio. 0,90-1,10
Particle size. ..... 0,3-1,2 mm

K306.1	100 g	plastic	29,60 €
K306.2	500 g	plastic	61,20 €
Original pack 6 x 500 g			58,14/500 g

For further information, please see page 1748

Amentoflavone trihydrate



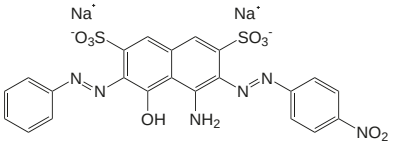
Amentoflavone trihydrate

ROTICHROM® HPLC
Reference substance for HPLC
$C_{30}H_{18}O_{10} \cdot 3\ H_2O$
M 592,46 g/mol
Storage temp.: +4 °C
[1617-53-4]

Type analysis:
Appearance..... yellow powder
Purity (HPLC). ..... ≥99 %

5255.1	10 mg	glass	295,65 €

Amido Black 10 B (C.I. 20470)



Amido black 10 B (C.I. 20470)

p.a.
For irreversible staining of proteins on membranes and for quantification of proteins in detergent containing solutions.
Naphthol blue black
$C_{22}H_{14}N_6Na_2O_9S_2$
M 616,50 g/mol
Solubility: 10 g/l (H_2O, 25 °C)
[1064-48-8] • EC No. 213-903-1
WGK 1

Type analysis:
Appearance..... dark-brown powder
Dye content. ..... ≥75 %
Loss on drying. ..... ≤10,0 %

9590.1	25 g	glass	39,25 €

Amido sulphonic acid

▶ Sulphamic acid see p. 2386

Amido sulphuric acid

▶ Sulphamic acid see p. 2386

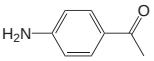
2-Aminoacetamide hydrochloride

▶ Glycinamide hydrochloride see p. 2026

Aminoacetic acid

▶ Glycine see p. 2026

4'-Aminoacetophenone



4'-Aminoacetophenone

≥99 %
For determination of nicotinic acid and vitamin B.
C_8H_9NO
M 135,17 g/mol
bp 292-294 °C
mp 103-108 °C
Solubility: 6,5 g/l (H_2O, 25 °C)
[99-92-3] • EC No. 202-801-2
WGK 1

Warning H302-H315-H319-H335

Type analysis:
Assay (GC). ..... ≥99,0 %
Melting point. ..... 103-107 °C

3973.2	10 g	glass	13,90 €
3973.1	25 g	glass	21,00 €

Amino Acids and their Derivatives

Art. No.	Description	Page
4126	N-Acetyl-L-cysteine	1766
5526	N-Acetylglycine	1767
7866	D-Alanine	1777
9798	DL-Alanine	1777
3076	L-Alanine	1777
3078	β-Alanine	1777
5521	L-Alaninol	1777
6831	L-Alanyl-L-glutamine	1778
6830	L-Alanyl-L-glutamine	1778
K031	Alliin	1782
5519	2-Amino-5-bromobenzoic acid	1788
5518	DL-2-Aminobutyric acid	1788
5516	2-Amino-4-chlorobenzoic acid	1789
3113	6-Aminohexanoic acid	1789
6187	4-Aminohippuric acid	1790
5514	2-Aminoisobutyric acid	1790
8451	5-Aminolevulinic acid hydrochloride	1790
8592	DL-Arginine	1814
1655	L-Arginine	1815
3144	L-Arginine	1815
7868	D-Arginine monohydrochloride	1815
4925	DL-Arginine monohydrochloride	1815
1989	L-Arginine monohydrochloride	1815

3145 L-Arginine monohydrochloride 1815
2061 L-Arginine $^{13}C_6$ monohydrochloride 1815
2063 L-Arginine $^{13}C_6$ $^{15}N_4$ monohydrochloride 1816
7872 D-Asparagine monohydrate 1817
5495 DL-Asparagine monohydrate 1818
KK37 L-Asparagine monohydrate 1818
HN23 L-Asparagine monohydrate 1818
7873 D-Aspartic acid 1818
8593 DL-Aspartic acid 1818
1690 L-Aspartic acid 1818
T202 L-Aspartic acid 1818
7856 D-β-Azidoalanine hydrochloride 1821
7854 L-β-Azidoalanine hydrochloride 1821
7858 D-γ-Azidohomoalanine hydrochloride 1821
7857 L-γ-Azidohomoalanine hydrochloride 1822
7862 D-Azidolysine hydrochloride 1822
7861 L-Azidolysine hydrochloride 1822
7860 D-Azidoornithine hydrochloride 1822
7859 L-Azidoornithine hydrochloride 1822
7853 D-4-Azidophenylalanine 1823
7850 L-4-Azidophenylalanine 1823
6907 Boc-L-Alanine 1843
6914 Boc-L-Arginine hydrochloride monohydrate 1843
6915 Boc-L-Asparagine 1843
8846 Boc-L-Aspartic acid-(OBenzyl) 1843
2042 Boc-L-Cysteine-(4-Mbzl) 1844
6917 Boc-L-Glutamic acid 1844
6916 Boc-L-Glutamine 1844
6918 Boc-Glycine 1844
6920 Boc-L-Histidine 1844
1994 Boc-L-Histidine-(Dnp) 1844
6921 Boc-L-Hydroxyproline 1845
6923 Boc-L-Isoleucine hemihydrate 1845
6924 Boc-L-Leucine monohydrate 1845
6942 Boc-L-tert-Leucine 1845
6926 Boc-L-Lysine 1845
6928 Boc-L-Methionine 1845
6931 Boc-L-Phenylalanine 1846
6932 Boc-L-Proline 1846
6933 Boc-L-Serine 1846
6935 Boc-L-Threonine 1846
6945 Boc-L-Tryptophan 1846
6949 Boc-L-Tyrosine 1846
6950 Boc-L-Valine 1847
7212 DL-Carnitinchloride 1879
4148 L-Carnosine 1879
6636 Cbz-Cyclohexyl-L-glycine 1883
7625 Cysteamine hydrochloride 1919
8594 DL-Cysteine 1919
1693 L-Cysteine 1919
3467 L-Cysteine 1919
3468 L-Cysteine hydrochloride 1919
7874 D-Cysteine hydrochloride monohydrate 1919
1694 L-Cysteine hydrochloride monohydrate 1920
T203 L-Cysteine hydrochloride monohydrate 1920
5565 DL-Cystine 1920
1695 L-Cystine 1920
3471 L-Cystine 1920
5431 DL-2,3-Diaminopropionic acid hydrochloride 1933
6646 Fmoc-L-Alanine monohydrate 1997
7400 Fmoc-8-Amino-3,6-dioxaoctanoic acid 1997
6896 Fmoc-L-Arginine 1997
8833 Fmoc-L-Arginine-(Pbf) 1997
6897 Fmoc-L-Asparagine 1998
9652 Fmoc-L-Asparagine-(Trityl) 1998
6641 Fmoc-L-Aspartic acid-(OAllyl) 1998
9654 Fmoc-L-Aspartic acid-(OtBu) 1998
7369 Fmoc-L-β-Azidoalanine 1998
7363 Fmoc-L-γ-Azidohomoalanine 1998
7357 Fmoc-L-Azidolysine 1999
7362 Fmoc-L-Azidoornithine 1999
7485 Fmoc-L-4-Azidophenylalanine 1999
7367 Fmoc-L-4-Azidoproline (2S,4R) 1999
8842 Fmoc-L-Cysteine-(Acetamidomethyl) 1999
8841 Fmoc-L-Cysteine-(Trityl) 1999
9655 Fmoc-L-Glutamic acid-(OtBu) monohydrate 2000
6898 Fmoc-L-Glutamine 2000
9653 Fmoc-L-Glutamine-(Trityl) 2000
6899 Fmoc-Glycine 2000
8843 Fmoc-L-Histidine-(Trityl) 2000
6647 Fmoc-L-Isoleucine 2001
6654 Fmoc-L-Leucine 2001
6900 Fmoc-L-Lysine 2001
8840 Fmoc-L-Lysine-(Boc) 2001
6656 Fmoc-L-Methionine 2001
1932 Fmoc-L-Ornithine-(Boc) 2002
6658 Fmoc-L-Phenylalanine 2002
6659 Fmoc-L-Proline 2002
7491 Fmoc-L-Propargylglycine 2002
6901 Fmoc-L-Serine monohydrate 2002
9666 Fmoc-L-Serine-(tBu) 2002
9659 Fmoc-L-Threonine-(tBu) 2003
6903 Fmoc-L-Tryptophan 2003
9668 Fmoc-L-Tryptophan-(Boc) 2003
6906 Fmoc-L-Tyrosine 2003
9669 Fmoc-L-Tyrosine-(tBu) 2003
6660 Fmoc-L-Valine 2003
6665 N-Formyl-L-Leucine 2007
7879 D-Glutamic acid 2022
8596 DL-Glutamic acid 2022
1743 L-Glutamic acid 2022
3774 L-Glutamic acid 2022
7876 D-Glutamine 2022
8595 DL-Glutamine 2023
HN08 L-Glutamine 2023
3772 L-Glutamine 2023
6378 Glutathione oxidized 2023
6382 L-Glutathione reduced 2024
5543 Glycinamide hydrochloride 2026
3908 Glycine 2026
HN07 Glycine 2026
T873 Glycine 2026
3187 Glycine 2026
3790 Glycine 2026
5542 Glycine anhydride 2027
3794 Glycylglycine 2027
HN74 Glycylglycine 2027
7507 Hippuric acid sodium salt hydrate 2044
7880 D-Histidine 2044
8597 DL-Histidine 2044
1696 L-Histidine 2044
3852 L-Histidine 2045
1697 L-Histidine hydrochloride monohydrate 2045
9455 L-Histidine hydrochloride monohydrate 2045
3893 L-4-Hydroxyproline 2059
6662 L-Hydroxyproline methylester hydrochloride 2059
8598 DL-Isoleucine 2077
1698 L-Isoleucine 2078
3922 L-Isoleucine 2078
8456 L-Kynurenine 2087
7882 D-Leucine 2097
8599 DL-Leucine 2097
1699 L-Leucine 2097
3984 L-Leucine 2098
6664 L-tert-Leucine methylester hydrochloride 2098
6829 L-Lysine monohydrate 2108
4207 L-Lysine monohydrate 2108
7883 D-Lysine hydrochloride 2108
8600 DL-Lysine hydrochloride 2108
1700 L-Lysine hydrochloride 2108
9357 L-Lysine hydrochloride 2108
2083 L-Lysine $^{13}C_6$ hydrochloride 2109
2085 L-Lysine $^{13}C_6$ $^{15}N_2$ hydrochloride 2109
7885 D-Methionine 2134
8602 DL-Methionine 2134
1702 L-Methionine 2134
9359 L-Methionine 2134
5275 3-Nitro-L-tyrosine 2167
6663 L-Norvalinol 2168
1703 L-Ornithine monohydrochloride 2186
T204 L-Ornithine monohydrochloride 2186
7886 D-Phenylalanine 2206
8603 DL-Phenylalanine 2206
1709 L-Phenylalanine 2206
4491 L-Phenylalanine 2206
7888 D-Proline 2238
5267 DL-Proline 2238
1713 L-Proline 2238
T205 L-Proline 2238
0647 Roti®-CELL MEM-AA solution 1375
9185 Roti®-CELL MEM-NEAA solution 1375
1032 Roti®fair Glycine 3.0 1305
7531 D-Serine 2313
8606 DL-Serine 2313
1714 L-Serine 2313
4682 L-Serine 2313
8385 Serotonin creatinine sulphate monohydrate 2313
7889 D-Threonine 2405
7532 DL-Threonine 2405
1738 L-Threonine 2405
T206 L-Threonine 2406
7700 D-Tryptophan 2425
5236 DL-Tryptophan 2425
1739 L-Tryptophan 2425
4858 L-Tryptophan 2425
7890 D-Tyrosine 2428
8608 DL-Tyrosine 2428
1741 L-Tyrosine 2428
T207 L-Tyrosine 2428
7891 D-Valine 2433
7540 DL-Valine 2433
1742 L-Valine 2433
4879 L-Valine 2433
1914 Z-L-Arginine 2449
1894 Z-L-Aspartic acid 2449
1885 Z-L-Glutamic acid 2449
1859 Z-L-Leucine 2453
1907 Z-L-Lysine 2453
1865 Z-L-Phenylalanine 2453

Amino acids, non-essential

▶ Roti®-CELL MEM-NEAA solution see p. 2270

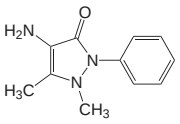
3-Amino-DL-alanine hydrochloride

▶ DL-2,3-Diaminopropionic acid hydrochloride see p. 1933

(*S*)-2-Amino-4-(2-amino-phenyl)-4-oxo-butanoic acid

▶ L-Kynurenine see p. 2087

4-Aminoantipyrine



4-Aminoantipyrine

≥98 %, p.a., ACS
Reagent for phenol detection.
4-Amino-2,3-dimethyl-1-phenyl-3-pyrazolin-5-one
$C_{11}H_{13}N_3O$
M 203,25 g/mol
mp 107-109 °C
Solubility: 56 g/l (H_2O, 20 °C)
[83-07-8] • EC No. 201-452-3
WGK 1

Warning H302

Guarantee analysis:

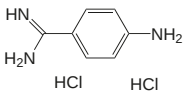
Assay	≥98,0 %
Melting point	107-109 °C
Solubility (1 g/20 ml H_2O)	clear solution
Ash content	≤0,1 %
Loss on drying	≤0,5 %
Suitablility for determination of phenol	complies

2671.1	10 g	glass	23,55 €
2671.2	25 g	glass	36,05 €
2671.3	100 g	glass	62,90 €

p-Aminobenzamidine dihydrochloride

▶ 4-Aminobenzamidine dihydrochloride see p. 1788

4-Aminobenzamidine dihydrochloride



4-Aminobenzamidine dihydrochloride

≥98 %, for biochemistry
Potent inhibitor of serine proteases.
p-Aminobenzamidine dihydrochloride
$C_7H_9N_3 \cdot 2\ HCl$
M 208,09 g/mol
mp 300-304 °C (dec.)
Storage temp.: +4 °C
[2498-50-2] • EC No. 219-692-2
WGK 2

Warning H315-H319-H335

Type analysis:

Assay (dry substance)	98,0-101,0 %
Melting point (dec.)	300-304 °C
Loss on drying (105 °C)	≤1,0 %

CN71.1	1 g	glass	15,60 €
CN71.2	5 g	plastic	61,20 €
CN71.3	10 g	plastic	111,70 €

For further information, please see page 1324

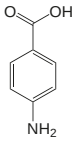
4-Aminobenzenesulphonamide

▶ Sulphanilamide see p. 2386

4-Aminobenzenesulphonic acid

▶ Sulphanilic acid see p. 2386

4-Aminobenzoic acid



4-Aminobenzoic acid

≥98,5 %, for synthesis
PABA, p-Aminobenzoic acid, Vitamin B_{10}
$C_7H_7NO_2$
M 137,14 g/mol
D 1,38
mp 186-189 °C • flp >171 °C
Solubility: 6 g/l (30 °C, H_2O)
[150-13-0] • EC No. 205-753-0
WGK 2

Type analysis:

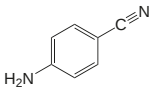
Assay (dry substance)	≥98,5 %
Melting point	186-189 °C
Loss on drying	≤0,5 %
Heavy metals	≤0,005 %

0979.1	50 g	plastic	17,10 €
0979.2	250 g	plastic	34,30 €
0979.3	1 kg	plastic	91,95 €
Original pack 6 x 1 kg			87,35/1 kg

p-Aminobenzoic acid

▶ 4-Aminobenzoic acid see p. 1788

4-Aminobenzonitrile



4-Aminobenzonitrile

≥98 %, for synthesis
p-Cyanoaniline
$C_7H_6N_2$
M 118,14 g/mol
D 1,08 • bp 288-290 °C
mp 84-87 °C
[873-74-5] • EC No. 212-850-1
UN No. 3439 • ADR 6.1 III • WGK 1

Danger H301-H319

Type analysis:

Appearance	white to yellow brown clotting crystals
Assay	≥98,0 %
2-Aminobenzonitrile	≤0,5 %
3-Aminobenzonitrile	≤0,5 %
Sulphated ash	≤1,0 %
Water	≤0,5 %

8721.1	10 g	plastic	18,20 €
8721.2	50 g	plastic	77,95 €
8721.3	100 g	plastic	133,20 €

N-(4-Aminobenzoyl)-amino acetic acid

▶ 4-Aminohippuric acid see p. 1790

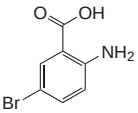
N-(4-Aminobenzoyl)-glycine

▶ 4-Aminohippuric acid see p. 1790

D-α-Aminobenzylpenicillin sodium salt

▶ Ampicillin sodium salt see p. 1805

2-Amino-5-bromobenzoic acid



2-Amino-5-bromobenzoic acid

≥95 %, for biochemistry
5-Bromoanthranilic acid
$C_7H_6BrNO_2$
M 216,04 g/mol
mp 204-211 °C
[5794-88-7] • EC No. 227-338-3 • WGK 1

Warning H315-H319-H335

Type analysis:

Assay (titr.)	≥95 %
Melting point	204-211 °C
Water (KF)	≤2,0 %

5519.1	5 g	plastic	24,20 €
5519.2	25 g	plastic	79,05 €

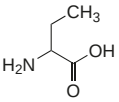
α-Aminobutyric acid

▶ DL-2-Aminobutyric acid see p. 1788

DL-α-Amino-n-butyric acid

▶ DL-2-Aminobutyric acid see p. 1788

DL-2-Aminobutyric acid



DL-2-Aminobutyric acid

≥98 %, for biochemistry
α-Aminobutyric acid, DL-α-Amino-n-butyric acid, H-DL-Abu-OH
$C_4H_9NO_2$
M 103,12 g/mol
mp 304 °C (dec.)
Solubility: 210 g/l (H_2O, 25 °C)
[2835-81-6] • EC No. 220-616-5
WGK 1

Type analysis:

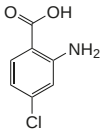
Assay (NMR)	≥98,0 %
Water (KF)	≤1,0 %

5518.1	25 g	plastic	46,80 €
5518.2	100 g	plastic	138,70 €

6-Aminocaproic acid

▶ 6-Aminohexanoic acid see p. 1789

2-Amino-4-chlorobenzoic acid



2-Amino-4-chlorobenzoic acid

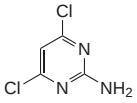
≥98 %, for biochemistry
4-Chloranthranilic acid
$C_7H_6ClNO_2$
M 171,58 g/mol
mp 231-233 °C (dec.)
Storage temp.: +4 °C
[89-77-0] • EC No. 201-938-5
WGK 1

Warning H315-H319-H335

Type analysis:
Assay (titr.). ..... ≥98 %
Solution (1 % in methanol). ..... colourless to slightly brown
Loss on drying. ..... ≤2,0 %

5516.1	10 g	plastic	18,85 €
5516.2	25 g	plastic	30,65 €
5516.3	100 g	plastic	91,30 €

2-Amino-4,6-dichloropyrimidine



2-Amino-4,6-dichloropyrimidine

≥95 %
ADCP
$C_4H_3Cl_2N_3$
M 164,00 g/mol
mp 216-220 °C (subl.)
[56-05-3] • EC No. 200-253-9
WGK 1

Warning H315-H319-H335

Type analysis:
Assay (HPLC). ..... ≥95 %
Solution (1 % in DMF, 40 °C). ..... orange
Water (KF). ..... ≤1,0 %

5515.1	10 g	plastic	33,25 €
5515.2	25 g	plastic	65,50 €

5-Amino-2,3-dihydro-phthalazine-1,4-dione

▶ Luminol see p. 2105

4-Amino-2,3-dimethyl-1-phenyl-3-pyrazolin-5-one

▶ 4-Aminoantipyrine see p. 1788

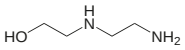
2-Aminoethanesulphonic acid

▶ Taurine see p. 2395

2-Aminoethanol

▶ Ethanolamine see p. 1977

2-(2-Aminoethylamino)ethanol



2-(2-Aminoethylamino)ethanol

≥98 %, for synthesis
N-(2-Aminoethyl)ethanolamine
$C_4H_{12}N_2O$
M 104,15 g/mol
D 1,03 • bp 240 °C
mp -28 °C • flp 144 °C
[111-41-1] • EC No. 203-867-5
UN No. 2735 • ADR 8 II • WGK 1

Danger
H314-H317-H335-H360Df

Type analysis:
Appearance. ..... clear colourless liquid
Assay (GC). ..... ≥98,0 %
Identity (IR). ..... complies
Density. 0,971-0,974

6717.1	100 ml	glass	15,60 €
6717.2	500 ml	glass	26,35 €
6717.3	1 l	glass	41,85 €
Original pack 6 x 1 l			39,76/1 l
6717.4	2,5 l	glass	89,80 €
Original pack 4 x 2,5 l			85,31/2,5 l

4-(2-Aminoethyl)benzene-sulfonyl fluoride hydrochloride

▶ AEBSF hydrochloride see p. 1773

4-(2-Aminoethyl)-benzyl-sulphonyl fluoride

▶ Pefabloc® SC-Protease Inhibitor see p. 2193

N-(2-Aminoethyl)ethanolamine

▶ 2-(2-Aminoethylamino)ethanol see p. 1789

3-(2-Aminoethyl)-5-hydroxy-indole hydrochloride

▶ Serotonin hydrochloride see p. 2313

4-(2-Aminoethyl)phenol hydrochloride

▶ Tyramine hydrochloride see p. 2428

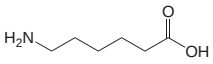
2-Amino-5-guanidinovaleric acid

▶ L-Arginine see p. 1815

2-Amino-5-guanidino-n-valeric acid hydrochloride

▶ D-Arginine monohydrochloride see p. 1815
▶ DL-Arginine monohydrochloride see p. 1815
▶ L-Arginine monohydrochloride see p. 1815

6-Aminohexanoic acid



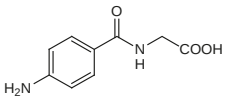
6-Aminohexanoic acid

≥99 %, for synthesis
6-Aminocaproic acid
$C_6H_{13}NO_2$
M 131,18 g/mol
mp 200-205 °C • flp 207 °C
Solubility: ~800 g/l (H_2O, 20 °C)
[60-32-2] • EC No. 200-469-3
WGK 1

Type analysis:
Assay. ..... ≥99 %

3113.1	100 g	plastic	26,80 €
3113.3	250 g	plastic	53,65 €
3113.2	500 g	plastic	96,25 €
Original pack 6 x 500 g			91,44/500 g

4-Aminohippuric acid



4-Aminohippuric acid

≥98 %, for biochemistry

N-(4-Aminobenzoyl)-aminoacetic acid,
N-(4-Aminobenzoyl)-glycine
p-Aminohippuric acid, PAH
$C_9H_{10}N_2O_3$
M 194,19 g/mol
mp 199-202 °C
[61-78-9] • EC No. 200-518-9
WGK 1

Type analysis:

Assay.....≥98 %

6187.1	10 g	plastic	36,45 €
6187.2	100 g	plastic	267,70 €

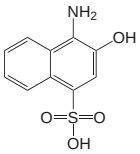
p-Aminohippuric acid

▶ 4-Aminohippuric acid see p. 1790

2-Amino-3-hydroxybutyric acid

▶ D-Threonine see p. 2405
▶ DL-Threonine see p. 2405
▶ L-Threonine see p. 2405

1-Amino-2-hydroxy-4-naphthalenesulfonic acid



1-Amino-2-hydroxy-4-naphthalenesulfonic acid

≥97 %, p.a., ACS

For determination of phosphate
1-Amino-2-naphthol-4-sulfonic acid
$C_{10}H_9NO_4S$
M 239,25 g/mol
mp 295 °C
[116-63-2] • EC No. 204-147-3
WGK 1

Guarantee analysis:

Assay.....≥97,0 %
Solubility in Na_2CO_3.....complies
Ash content.....≤0,1 %
Sulphate (SO_4).....≤0,2 %
Suitability for determination of phosphate.....complies

2672.1	25 g	glass	40,75 €
2672.2	100 g	glass	102,70 €

N-[(2S,3R)-3-Amino-2-hydroxy-4-phenyl-buturyl]-L-leucin hydrochloride

▶ Bestatin hydrochloride see p. 1835

2-Amino-3-(4-hydroxyphenyl)-propionic acid

▶ D-Tyrosine see p. 2428
▶ DL-Tyrosine see p. 2428
▶ L-Tyrosine see p. 2428

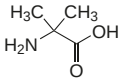
4-Aminohypoxanthine

▶ Guanine see p. 2031

2-Amino-3-(3-indolyl)-propionic acid

▶ D-Tryptophan see p. 2425
▶ DL-Tryptophan see p. 2425
▶ L-Tryptophan see p. 2425

2-Aminoisobutyric acid



2-Aminoisobutyric acid

≥97 %, for biochemistry

2-Methylalanine, H-Ala(Me)-OH
$C_4H_9NO_2$
M 103,12 g/mol
mp >300 °C
Solubility: soluble (H_2O, 20 °C)
[62-57-7] • EC No. 200-544-0
WGK 1

Type analysis:

Assay (titr.).....≥97 %
Solution (2,5 % in H_2O).....colourless
Loss on drying (160 °C).....≤1,0 %

5514.1	50 g	plastic	39,70 €
5514.2	100 g	plastic	67,20 €

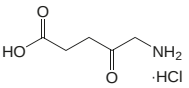
α-Aminoisovaleric acid

▶ D-Valine see p. 2432
▶ DL-Valine see p. 2433
▶ L-Valine see p. 2433

D-4-Amino-3-isoxazolidinone

▶ D-Cycloserine see p. 1918

5-Aminolevulinic acid hydrochloride



5-Aminolevulinic acid hydrochloride

≥98 %, for biochemistry

5-Amino-4-oxopentanoic acid HCl
$C_5H_9NO_3 \cdot HCl$
M 167,59 g/mol
mp 151-155 °C
Storage temp.: -20 °C • Transport temp.: room temp.
[5451-09-2] • EC No. 226-679-5
WGK 1

Type analysis:

Appearance.....white to off-white, cryst. powder
Assay (arg. titr.).....≥98,0 %
Appearance of solution (5 % in H_2O).....colourless to almost colourless
Sulphated ash.....≤0,1 %
Loss on drying (3 h, 105 °C, vacuum).....≤2,0 %
Water (KF).....≤1,0 %

8451.1	500 mg	glass	25,30 €
8451.2	1 g	glass	37,55 €
8451.3	5 g	glass	110,65 €

α-Amino-β-mercapto-propionic acid

▶ DL-Cysteine see p. 1919
▶ L-Cysteine see p. 1919

2-Amino-3-mercaptopropionic acid hydrochloride monohydrate

▶ D-Cysteine hydrochloride monohydrate see p. 1919
▶ L-Cysteine hydrochloride monohydrate see p. 1920

α-(Aminomethyl)benzyl alcohol

▶ 2-Amino-1-phenylethanol see p. 1791

4-(Aminomethyl)-5-hydroxy-6-methyl-3-pyridinemethanol dihydrochloride

▶ Pyridoxamine dihydrochloride see p. 2245

2-Amino-4-methyl-mercapto butyric acid

▶ D-Methionine see p. 2134
▶ DL-Methionine see p. 2134
▶ L-Methionine see p. 2134

2-Amino-4-methylpentanoic acid

▶ D-Leucine see p. 2097
▶ DL-Leucine see p. 2097
▶ L-Leucine see p. 2097

2-Amino-2-methyl-1-propanol

▶ AMP see p. 1804

2-Amino-3-methylvaleric acid

▶ DL-Isoleucine see p. 2077
▶ L-Isoleucine see p. 2078

1-Amino-2-naphthol-4-sulfonic acid

▶ 1-Amino-2-hydroxy-4-naphthalenesulfonic acid see p. 1790

1-Amino-2-nitrobenzene

▶ 2-Nitroaniline see p. 2162

1-Amino-3-nitrobenzene

▶ 3-Nitroaniline see p. 2162

1-Amino-4-nitrobenzene

▶ 4-Nitroaniline see p. 2162

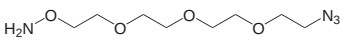
4-Amino-2-nitro-toluene

▶ 4-Methyl-3-nitroaniline see p. 2139

5-Amino-4-oxopentanoic acid HCl

▶ 5-Aminolevulinic acid hydrochloride see p. 1790

Aminooxy-PEG3-Azide



Aminooxy-PEG3-Azide

≥90 %
Linker
O-(2-(2-(2-(2-Azidoethoxy)ethoxy)ethoxy)-ethyl)hydroxylamine
$C_8H_{18}N_4O_4$
M 234,25 g/mol
Storage temp.: +4 °C
Transport temp.: cooled
[1306615-51-9]
WGK 1

Type analysis:
Appearance. ..... pale yellow oil
Assay (TLC). ..... ≥90 %

7832.1	5 mg	plastic	96,65 €
7832.2	10 mg	plastic	146,10 €

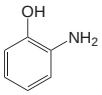
2-Aminopentanedioic acid

▶ D-Glutamic acid see p. 2022
▶ DL-Glutamic acid see p. 2022
▶ L-Glutamic acid see p. 2022

(S)-(+)-2-Amino-1-pentanol

▶ L-Norvalinol see p. 2168

2-Aminophenol



2-Aminophenol

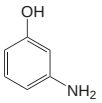
NEW

≥99 %, for synthesis
ortho-Aminophenol, o-Aminophenol, 2-Hydroxy aniline, 2-Amino-1-hydroxy benzene
C_6H_7NO
M 109,13 g/mol
[95-55-6] • EC No. 202-431-1
UN No. 2512 • ADR 6.1 III • WGK 2
Warning H302+H332-H341

Type analysis:
Appearance. ..... off-white to brown solid
Assay (GC). ..... ≥99 %
Melting range. ..... 172-177 °C

0879.1	100 g	glass	19,25 €
0879.2	500 g	glass	61,20 €
Original pack 6 x 500 g			58,14/500 g

3-Aminophenol



3-Aminophenol

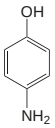
NEW

≥99 %, for synthesis
meta-Aminophenol, m-Aminophenol, 3-Hydroxy aniline, 3-Amino-1-hydroxy benzene
C_6H_7NO
M 109,13 g/mol
[591-27-5] • EC No. 209-711-2
UN No. 2512 • ADR 6.1 III • WGK 2
Warning H302+H332-H411

Type analysis:
Assay (titr.). ..... ≥99 %
Melting range. ..... 120-124 °C

0957.1	100 g	glass	18,20 €
0957.2	500 g	glass	64,40 €
Original pack 6 x 500 g			61,18/500 g

4-Aminophenol



4-Aminophenol

NEW

≥98 %, for synthesis
para-Aminophenol, p-Aminophenol, 4-Hydroxy aniline, 4-Amino-1-hydroxy benzene
C_6H_7NO
M 109,13 g/mol
[123-30-8] • EC No. 204-616-2
UN No. 2512 • ADR 6.1 III • WGK 3
Warning H302+H332-H341-H410

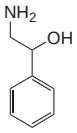
Type analysis:
Appearance. ..... off-white to brownish solid
Assay (GC). ..... ≥98 %

0950.1	100 g	glass	18,20 €
0950.2	500 g	glass	46,15 €
Original pack 6 x 500 g			43,84/500 g

4-Aminophenyl benzyl ether hydrochloride

▶ 4-(Benzyloxy) aniline hydrochloride see p. 1834

2-Amino-1-phenylethanol



2-Amino-1-phenylethanol

≥98 %
α-(Aminomethyl)benzyl alcohol, Phenylethanolamine
$C_8H_{11}NO$
M 137,18 g/mol
mp 56–58 °C
[7568-93-6] • EC No. 231-469-1
WGK 1
Warning H315-H319-H335

Type analysis:
Assay (titr.). ..... ≥98 %
Solution (1 % in ethanol). ..... almost colourless, clear
Water (KF). ..... ≤2,0 %

5513.1	25 g	plastic	49,35 €
5513.2	50 g	plastic	82,70 €

2-Amino-3-phenylpropionic acid

▶ D-Phenylalanine see p. 2206
▶ DL-Phenylalanine see p. 2206
▶ L-Phenylalanine see p. 2206

3-Aminophenyl sulphone

▶ 3,3'-Diaminodiphenyl sulphone see p. 1932

3-Aminophthalhydrazide

▶ Luminol see p. 2105

S(+)-2-Amino-1-propanol

▶ L-Alaninol see p. 1777

2-Aminopropionic acid

▶ D-Alanine see p. 1777
▶ DL-Alanine see p. 1777
▶ L-Alanine see p. 1777

3-Aminopropionic acid

▶ β-Alanine see p. 1777

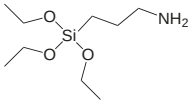
N-(3-Aminopropyl)-1,4-butanediamine

▶ Spermidine see p. 2356

Aminopropyl-modified silica gel

▶ Silica gel 60 diamino see p. 2317

γ-Aminopropyltriethoxysilane (APTES)



γ-Aminopropyltriethoxysilane (APTES)
≥98 %, for GC
Silylation reagent
APES, 3-Aminopropyltriethoxysilane, APTES
$C_9H_{23}NO_3Si$
M 221,37 g/mol
D 0,95 • bp 217 °C
mp <-70 °C • flp 93 °C
[919-30-2] • EC No. 213-048-4
UN No. 2735 • ADR 8 II • WGK 1
Danger H314-H302

Type analysis:
Appearance..... clear liquid
Assay (GC)..... ≥98 %

2328.1	25 g	glass	21,40 €
2328.2	100 g	glass	62,25 €

For further information, please see page 1628

6-Aminopurine

▶ Adenine see p. 1772

2-Amino-succinic acid

▶ D-Aspartic acid see p. 1818
▶ DL-Aspartic acid see p. 1818
▶ L-Aspartic acid see p. 1818

2-Aminotoluene

▶ o-Toluidine see p. 2413

N-Aminourea hydrochloride

▶ Semicarbazide hydrochloride see p. 2310

Aminoxybrucine

▶ Brucine N-oxide see p. 1856

Aminoxystrychnine

▶ Strychnine N-oxide see p. 2383

(±)-2-Aminsuccinic acid 4-amide

▶ DL-Asparagine monohydrate see p. 1818

Ammann solution

▶ Cotton blue (C.I. 42780) see p. 1911

Ammoidin

▶ Xanthotoxin see p. 2442

Ammonia solution Ultra-quality

Ammonia solution Ultra-quality
ROTIPURAN® Ultra 20 %
Extra highpure alkaline solution (ppt quality) for sample preparation in ultra trace analysis.
Ammonium hydroxide solution
$NH_3 + H_2O$
M 17,03 + aq g/mol
D ~0,92
[1336-21-6] • EC No. 215-647-6
UN No. 2672 • ADR 8 III • WGK 2
Danger H290-H314-H335

Guarantee analysis:
Assay (w/w)..... 20-22 %
Aluminium (Al)..... ≤20 ppt
Antimony (Sb)..... ≤10 ppt
Arsenic (As)..... ≤10 ppt
Barium (Ba)..... ≤10 ppt
Beryllium (Be)..... ≤10 ppt
Lead (Pb)..... ≤10 ppt
Cadmium (Cd)..... ≤10 ppt
Cesium (Cs)..... ≤10 ppt
Calcium (Ca)..... ≤10 ppt
Cerium (Ce)..... ≤10 ppt
Chromium (Cr)..... ≤10 ppt
Dysprosium (Dy)..... ≤10 ppt
Iron (Fe)..... ≤10 ppt
Erbium (Er)..... ≤10 ppt
Europium (Eu)..... ≤10 ppt
Gadolinium (Gd)..... ≤10 ppt
Gallium (Ga)..... ≤10 ppt
Germanium (Ge)..... ≤10 ppt
Gold (Au)..... ≤10 ppt
Holmium (Ho)..... ≤10 ppt
Indium (In)..... ≤10 ppt
Potassium (K)..... ≤10 ppt
Cobalt (Co)..... ≤10 ppt
Copper (Cu)..... ≤10 ppt
Lanthanum (La)..... ≤10 ppt
Lithium (Li)..... ≤10 ppt
Lutetium (Lu)..... ≤10 ppt
Magnesium (Mg)..... ≤10 ppt
Manganese (Mn)..... ≤10 ppt
Molybdenum (Mo)..... ≤10 ppt
Sodium (Na)..... ≤20 ppt
Neodymium (Nd)..... ≤10 ppt
Nickel (Ni)..... ≤10 ppt
Niobium (Nb)..... ≤10 ppt
Praseodymium (Pr)..... ≤10 ppt
Mercury (Hg)..... ≤200 ppt
Rhodium (Rh)..... ≤10 ppt
Rubidium (Rb)..... ≤10 ppt
Samarium (Sm)..... ≤10 ppt
Scandium (Sc)..... ≤10 ppt
Silver (Ag)..... ≤10 ppt
Strontium (Sr)..... ≤10 ppt
Tellur (Te)..... ≤10 ppt
Terbium (Tb)..... ≤10 ppt
Thallium (Tl)..... ≤10 ppt
Thorium (Th)..... ≤10 ppt
Thulium (Tm)..... ≤10 ppt
Titanium (Ti)..... ≤10 ppt
Uranium (U)..... ≤10 ppt
Vanadium (V)..... ≤10 ppt
Bismuth (Bi)..... ≤10 ppt
Tungsten (W)..... ≤10 ppt
Ytterbium (Yb)..... ≤10 ppt
Yttrium (Y)..... ≤10 ppt
Zinc (Zn)..... ≤10 ppt
Tin (Sn)..... ≤10 ppt
Zirconium (Zr)..... ≤10 ppt

HN66.2	250 ml	HDPE	235,45 €
HN66.1	500 ml	HDPE	400,45 €
HN66.3	1 l	HDPE	661,15 €
Original pack 6 x 1 l			628,09/1 l

For further information, please see page 1729

Ammonia solution Supra-quality

Ammonia solution Supra-quality

ROTIPURAN® Supra 20 %

Highpure alkaline solution (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

Ammonium hydroxide solution
$NH_3 + H_2O$
M 17,03 + aq g/mol
D ~0,92
[1336-21-6] • EC No. 215-647-6
UN No. 2672 • ADR 8 III • WGK 2

Danger H290-H314-H335

Guarantee analysis:

Assay (w/w)	20-22 %
Colour (APHA)	≤10
Chloride (Cl)	≤0,00005 %
Phosphate (PO_4)	≤0,000001 %
Sulphate (SO_4)	≤0,0001 %
Aluminium (Al)	≤1 ppb
Antimony (Sb)	≤0,5 ppb
Arsenic (As)	≤1 ppb
Barium (Ba)	≤0,1 ppb
Beryllium (Be)	≤0,1 ppb
Lead (Pb)	≤0,1 ppb
Cadmium (Cd)	≤0,5 ppb
Cesium (Cs)	≤0,1 ppb
Calcium (Ca)	≤1 ppb
Cerium (Ce)	≤0,1 ppb
Chromium (Cr)	≤0,5 ppb
Dysprosium (Dy)	≤0,1 ppb
Iron (Fe)	≤1 ppb
Erbium (Er)	≤0,1 ppb
Europium (Eu)	≤0,1 ppb
Gadolinium (Gd)	≤0,1 ppb
Gallium (Ga)	≤0,1 ppb
Germanium (Ge)	≤0,1 ppb
Gold (Au)	≤0,5 ppb
Holmium (Ho)	≤0,1 ppb
Indium (In)	≤0,1 ppb
Potassium (K)	≤1 ppb
Cobalt (Co)	≤0,5 ppb
Copper (Cu)	≤0,5 ppb
Lanthanum (La)	≤0,1 ppb
Lithium (Li)	≤0,1 ppb
Lutetium (Lu)	≤0,1 ppb
Magnesium (Mg)	≤1 ppb
Manganese (Mn)	≤0,5 ppb
Molybdenum (Mo)	≤0,5 ppb
Sodium (Na)	≤1 ppb
Neodymium (Nd)	≤0,1 ppb
Nickel (Ni)	≤0,5 ppb
Niobium (Nb)	≤0,1 ppb
Praseodymium (Pr)	≤0,1 ppb
Mercury (Hg)	≤0,2 ppb
Rhodium (Rh)	≤0,5 ppb
Rubidium (Rb)	≤0,1 ppb
Samarium (Sm)	≤0,1 ppb
Scandium (Sc)	≤0,1 ppb
Selenium (Se)	≤1 ppb
Silver (Ag)	≤0,5 ppb
Strontium (Sr)	≤0,1 ppb
Tellur (Te)	≤0,1 ppb
Terbium (Tb)	≤0,1 ppb
Thallium (Tl)	≤0,1 ppb
Thorium (Th)	≤0,1 ppb
Thulium (Tm)	≤0,1 ppb
Titanium (Ti)	≤0,5 ppb
Uranium (U)	≤0,1 ppb
Vanadium (V)	≤0,5 ppb
Bismuth (Bi)	≤0,1 ppb
Tungsten (W)	≤0,1 ppb
Ytterbium (Yb)	≤0,1 ppb
Yttrium (Y)	≤0,1 ppb
Zinc (Zn)	≤0,5 ppb
Tin (Sn)	≤0,5 ppb
Zirconium (Zr)	≤0,1 ppb

HN56.1	500 ml	plastic	70,45 €
HN56.3	4 l	plastic	390,15 €

For further information, please see page 1729

Ammonia solution 32 %

Ammonium hydroxide solution
$NH_3 + H_2O$
M 17,03 + aq g/mol
D 0,88 • bp 24,7 °C
mp -91,5 °C
[1336-21-6] • EC No. 215-647-6
UN No. 2672 • ADR 8 III • WGK 2

Danger H290-H314-H400-H335

Ammonia solution 32 %

30-33 %, extra pure

Type analysis:

Assay (NH_3)	30-33 %
Chloride (Cl)	≤0,0002 %
Sulphate (SO_4)	≤0,002 %
Iron (Fe)	≤0,0001 %
Heavy metals (as Pb)	≤0,0003 %
Non volatile matter	≤0,002 %

P093.1	1 l	glass	33,90 €
Original pack 6 x 1 l			32,21/1 l
P093.2	2,5 l	glass	63,35 €
Original pack 4 x 2,5 l			60,18/2,5 l
P093.3	10 l	plastic	231,15 €

Ammonia solution 32 %

30-33 %, for DNA synthesis.

Storage temp.: +4 °C

Type analysis:

Assay (NH_3)	≥30 %

A990.1	200 ml	glass	17,75 €

For further information, please see page 1552

Ammonia solution 30 %

Ammonia solution 30 %

ROTIPURAN® 30 %, p.a., ACS

For neutralisation and for manufacturing of buffer system.

Ammonium hydroxide solution
$NH_3 + H_2O$
M 17,03 + aq g/mol
D ~0,89 • bp ~30 °C
mp -77 °C
[1336-21-6] • EC No. 215-647-6
UN No. 2672 • ADR 8 III • WGK 2

Danger H290-H314-H400-H335

Guarantee analysis:

Appearance	clear, colourless liquid
Assay (acidim.)	28,0-30,0 %
Colour (APHA)	≤10
Solubility in H_2O	complies
$KMnO_4$ reducing substances (as O)	complies
Non volatile matter	≤0,002 %
Ash content	≤0,002 %
Pyridine and homologues	≤0,0002 %
Carbonate (as CO_2)	≤0,002 %
Sulphur compounds (as SO_4)	≤0,0002 %
Chloride (Cl)	≤0,00005 %
Phosphate (PO_4)	≤0,0001 %
Nitrate (NO_3)	≤0,0002 %
Sulphide (S)	≤0,00001 %
Heavy metals (as Pb)	≤0,00005 %
Aluminium (Al)	≤0,00001 %
Arsenic (As)	≤0,000005 %
Barium (Ba)	≤0,00001 %
Beryllium (Be)	≤0,00001 %
Lead (Pb)	≤0,000005 %
Cadmium (Cd)	≤0,00001 %
Calcium (Ca)	≤0,0001 %
Chromium (Cr)	≤0,000005 %
Iron (Fe)	≤0,00001 %
Gold (Au)	≤0,00001 %
Indium (In)	≤0,000005 %
Potassium (K)	≤0,0001 %
Cobalt (Co)	≤0,00001 %
Copper (Cu)	≤0,00001 %
Lithium (Li)	≤0,000002 %
Magnesium (Mg)	≤0,00005 %
Manganese (Mn)	≤0,00001 %
Molybdenum (Mo)	≤0,000002 %
Sodium (Na)	≤0,0002 %
Nickel (Ni)	≤0,000005 %
Silver (Ag)	≤0,000002 %
Strontium (Sr)	≤0,0001 %
Bismuth (Bi)	≤0,000005 %
Zinc (Zn)	≤0,00001 %

CP17.1	1 l	glass	21,00 €
Original pack 6 x 1 l			19,95/1 l
CP17.2	2,5 l	glass	33,90 €
Original pack 4 x 2,5 l			32,21/2,5 l
CP17.3	5 l	PE/steel	64,40 €
Original pack 2 x 5 l			61,18/5 l
CP17.4	10 l	PE/steel	107,40 €
CP17.5	25 l	PE/steel	177,40 €

Ammonia solution 25 %

Ammonium hydroxide solution
$NH_3 + H_2O$
M 17,03 + aq g/mol
D 0,91 • bp 37,7 °C
mp -57,5 °C
[1336-21-6] • EC No. 215-647-6
UN No. 2672 • ADR 8 III • WGK 2

Danger H290-H314-H400-H335

Ammonia solution 25 %

ROTIPURAN® ≥25 %, p.a.

Guarantee analysis:

Assay (acidimetric., NH_3)	≥25 %
Colour (APHA)	≤10
Non volatile matter	≤0,002 %
Sulphur compounds (as SO_4)	≤0,0002 %
Pyridine and homologues	≤0,0002 %
Carbonate (as CO_2)	≤0,001 %
Chloride (Cl)	≤0,00005 %
Sulphide (S)	≤0,00001 %
Phosphate (PO_4)	≤0,00005 %
Aluminium (Al)	≤0,00001 %
Arsenic (As)	≤0,000005 %
Barium (Ba)	≤0,00001 %
Beryllium (Be)	≤0,00001 %
Lead (Pb)	≤0,000005 %
Cadmium (Cd)	≤0,00001 %
Calcium (Ca)	≤0,0001 %
Chromium (Cr)	≤0,000005 %
Iron (Fe)	≤0,00001 %
Gallium (Ga)	≤0,000002 %
Gold (Au)	≤0,00001 %
Indium (In)	≤0,000002 %
Potassium (K)	≤0,0001 %
Cobalt (Co)	≤0,00001 %
Copper (Cu)	≤0,00001 %
Lithium (Li)	≤0,000002 %
Magnesium (Mg)	≤0,00005 %
Manganese (Mn)	≤0,00001 %
Molybdenum (Mo)	≤0,000002 %
Sodium (Na)	≤0,0001 %
Nickel (Ni)	≤0,000005 %
Platinum (Pt)	≤0,00001 %
Heavy metals (as Pb)	≤0,00005 %
Silver (Ag)	≤0,000002 %
Strontium (Sr)	≤0,0001 %
Thallium (Tl)	≤0,000002 %

Titanium (Ti).....≤0,000005 %
Bismuth (Bi).....≤0,000005 %
Zinc (Zn).....≤0,00001 %
Tin (Sn).....≤0,000005 %
$KMnO_4$ reducing substances (as O).....≤0,0008 %

6774.1	1 l	glass	22,05 €
Original pack 6 x 1 l			20,95/1 l
6774.2	2,5 l	glass	34,30 €
Original pack 4 x 2,5 l			32,59/2,5 l
6774.3	5 l	plastic	51,10 €
Original pack 2 x 5 l			48,55/5 l

Ammonia solution 25 %

25 %, Ph.Eur.

Guarantee analysis:

Assay (acidim.).....25,0-27,0 %
Identity.....complies
Appearance of solution.....complies
Pyridine and homologues.....≤0,0002 %
$KMnO_4$ reducing substances.....complies
Carbonate.....≤0,005 %
Chloride (Cl).....≤0,0001 %
Sulphate (SO_4).....≤0,0005 %
Heavy metals (as Pb).....≤0,0001 %
Iron (Fe).....≤0,000025 %
Non volatile matter.....≤0,002 %

2610.1	1 l	glass	21,00 €
Original pack 6 x 1 l			19,95/1 l
2610.2	2,5 l	glass	33,25 €
Original pack 4 x 2,5 l			31,59/2,5 l
2610.4	5 l	plastic	47,20 €
Original pack 2 x 5 l			44,84/5 l
2610.3	10 l	plastic	82,25 €

Ammonia solution 25 %

≥25 %, extra pure

Type analysis:

Assay (NH_3).....24,0-26,0 %
Density (20 °C).....0,904-0,910
Chloride (Cl).....≤0,00001 %
Iron (Fe).....≤0,0005 %
Evaporation residue.....≤0,0005 %

5460.1	1 l	plastic	18,85 €
Original pack 6 x 1 l			17,91/1 l
5460.2	5 l	plastic	34,30 €
Original pack 2 x 5 l			32,59/5 l
5460.3	10 l	plastic	45,05 €
5460.4	30 l	plastic	109,55 €

Ammonia solution 20 %

Ammonia solution 20 %

20 %, pure

Ammonium hydroxide solution
$NH_3 + H_2O$
M 17,03 + aq g/mol
D 0,93
[1336-21-6] • EC No. 215-647-6
UN No. 2672 • ADR 8 III • WGK 2

Danger H290-H314-H335

Type analysis:

Assay.....19,0-21,0 %
Iron (Fe).....≤0,0001 %
Heavy metals.....≤0,0001 %
Evaporation residue.....≤0,0003 %

6753.1	1 l	plastic	16,05 €
Original pack 6 x 1 l			15,25/1 l
6753.2	5 l	plastic	32,15 €
Original pack 2 x 5 l			30,54/5 l
6753.3	10 l	plastic	40,75 €
6753.4	25 l	plastic	80,55 €

Ammonia solution 15 %

Ammonia solution 15 %

15 %, extra pure

Ammonium hydroxide solution
$NH_3 + H_2O$
M 17,03 + aq g/mol
D ~0,94
[1336-21-6] • EC No. 215-647-6
UN No. 2672 • ADR 8 III • WGK 2

Danger H290-H314-H335

Type analysis:

Assay.....14,5-15,5 %
Density (20 °C).....0,9379-0,9413
Chloride (Cl).....≤0,00001 %
Iron (Fe).....≤0,00001 %
Evaporation residue.....≤0,0005 %

4346.1	1 l	plastic	16,05 €
Original pack 6 x 1 l			15,25/1 l
4346.5	2,5 l	plastic	20,35 €
Original pack 4 x 2,5 l			19,33/2,5 l
4346.2	5 l	plastic	31,75 €
Original pack 2 x 5 l			30,16/5 l
4346.3	10 l	plastic	41,85 €
4346.4	25 l	plastic	81,60 €

Ammonia solution 10 %

Ammonia solution 10 %

10 %, pure

Ammonium hydroxide solution
$NH_3 + H_2O$
M 17,03 + aq g/mol
D 0,96
[1336-21-6] • EC No. 215-647-6
UN No. 2672 • ADR 8 III • WGK 2

Danger H290-H314-H335

Type analysis:

Assay.....9,0-11,0 %
Iron (Fe).....≤0,0001 %
Heavy metals.....≤0,0001 %
Evaporation residue.....≤0,0003 %

6756.1	1 l	plastic	14,95 €
Original pack 6 x 1 l			14,20/1 l
6756.5	2,5 l	plastic	17,10 €
Original pack 4 x 2,5 l			16,25/2,5 l
6756.2	5 l	plastic	31,10 €
Original pack 2 x 5 l			29,55/5 l
6756.3	10 l	plastic	38,20 €
6756.4	25 l	plastic	71,95 €

Ammonia solution (4 N)

Ammonia solution

4 mol/l - 4 N volumetric standard solution

D 0,97
WGK 2

Danger H314-H335

Type analysis:

Amount-of-substance conc. (20 °C).....4 mol/l ±0,5 %
Titer.....0,9950-1,0050

9897.1	500 ml	plastic	23,55 €
9897.2	1 l	plastic	38,60 €
Original pack 6 x 1 l			36,67/1 l

Ammonia-D3 solution 25 % in D_2O

Ammonia-D3 solution 25 % in D_2O

99 Atom%D

For nuclear magnetic resonance spectroscopy.
$ND_3 + D_2O$
M 40,08 g/mol
D 1,056
[12168-30-8]
UN No. 2672 • ADR 8 III • WGK 2

Danger
H290-H314-H332-H335-H400

Type analysis:

Deuterising degree.....≥99,0 %
Assay (titr.).....≥25,0 %

9903.1	10 ml	glass	72,60 €

Ammonium Standards

▶ Ammonium IC Standard Solution
see p. 2377

Ammonium acetate

CH_3COONH_4
M 77,08 g/mol
D 1,17
mp 114 °C
Solubility: 1480 g/l (H_2O, 20 °C)
[631-61-8] • EC No. 211-162-9
WGK 1

Ammonium acetate

≥97 %, p.a., ACS
Buffer substance, for molecular biology.

Guarantee analysis:

Assay (acidim.)	≥97 %
pH value (5 %, water)	6,7-7,3
In H_2O insoluble matter	≤0,005 %
Ash content (as SO_4)	≤0,01 %
Chloride (Cl)	≤0,0005 %
Phosphate (PO_4)	≤0,0005 %
Nitrate (NO_3)	≤0,001 %
Sulphate (SO_4)	≤0,001 %
Heavy metals (as Pb)	≤0,0005 %
Aluminium (Al)	≤0,0005 %
Lead (Pb)	≤0,0005 %
Calcium (Ca)	≤0,001 %
Iron (Fe)	≤0,0005 %
Copper (Cu)	≤0,0005 %
Magnesium (Mg)	≤0,001 %
Nickel (Ni)	≤0,0005 %

7869.2	500 g	plastic	28,95 €
Original pack 6 x 500 g			27,50/500 g
7869.1	1 kg	plastic	40,75 €
Original pack 6 x 1 kg			38,71/1 kg
7869.3	2,5 kg	plastic	69,80 €

Ammonium acetate

≥96 %, extra pure
Buffer substance

Type analysis:

Assay (acidim.)	≥96 %
pH value (5 % in H_2O)	6,5-7,5
In H_2O insoluble matter	≤0,01 %
Ash content (as SO_4)	≤0,05 %
Chloride (Cl)	≤0,003 %
Phosphate (PO_4)	≤0,001 %
Nitrate (NO_3)	≤0,003 %
Sulphate (SO_4)	≤0,003 %
Lead (Pb)	≤0,001 %
Iron (Fe)	≤0,001 %
Copper (Cu)	≤0,002 %
Nickel (Ni)	≤0,002 %

T872.1	500 g	plastic	27,85 €
Original pack 6 x 500 g			26,46/500 g
T872.2	1 kg	plastic	39,70 €
Original pack 6 x 1 kg			37,72/1 kg
T872.3	2,5 kg	plastic	66,55 €
T872.5	25 kg	plastic	446,15 €

Ammonium alginate

▶ Alginic acid ammonium salt see p. 1780

Ammonium alum

▶ Aluminium ammonium sulphate dodecahydrate see p. 1784

Ammonium aluminium sulphate

▶ Aluminium ammonium sulphate dodecahydrate see p. 1784

Ammonium aurin tricarboxylate

▶ Aurin tricarboxylic acid ammonium salt see p. 1819

Ammonium benzoate

Ammonium benzoate

≥98 %, extra pure
For precipitation of aluminium and iron.
$C_7H_9NO_2$
M 139,15 g/mol
D 1,26
mp 198 °C (dec.)
Solubility: 140 g/l (H_2O, 20 °C)
[1863-63-4] • EC No. 217-468-9
WGK 1

Warning H302-H315-H319

Type analysis:

Assay	≥98,0 %
pH (10 % solution)	5,0-8,0
Heavy metals (as Pb)	≤0,001 %
Oxidizable impurities (as cinnamic acid)	complies

9836.1	100 g	plastic	17,10 €
9836.2	500 g	plastic	45,70 €
Original pack 6 x 500 g			43,42/500 g
9836.3	1 kg	plastic	80,55 €
Original pack 6 x 1 kg			76,52/1 kg

Ammonium bicarbonate

▶ Ammonium hydrogen carbonate see p. 1798

Ammonium bifluoride

▶ Ammonium hydrogen fluoride see p. 1799

Ammonium biphosphate

▶ Ammonium dihydrogen phosphate see p. 1796

Ammonium bisulphate

▶ Ammonium hydrogen sulphate see p. 1799

Ammonium bromide

Ammonium bromide

≥99 %, p.a., ACS
NH_4Br
M 97,94 g/mol
D ~2,43
mp 452 °C (subl.)
Solubility: 742 g/l (H_2O, 20 °C)
[12124-97-9] • EC No. 235-183-8
WGK 2

Guarantee analysis:

Assay (arg.)	≥99,0 %
In H_2O insoluble matter	≤0,005 %
pH value (5 % in H_2O)	4,5-6,0
Bromate (BrO_3)	≤0,002 %
Chloride (Cl)	≤0,2 %
Iodide (I)	≤0,005 %
Sulphate (SO_4)	≤0,005 %
Heavy metals (as Pb)	≤0,0005 %
Barium (Ba)	≤0,002 %
Iron (Fe)	≤0,0005 %
Ash content	≤0,01 %

HN14.1	500 g	plastic	32,15 €
Original pack 6 x 500 g			30,54/500 g
HN14.2	1 kg	plastic	50,45 €
Original pack 6 x 1 kg			47,93/1 kg
HN14.3	2,5 kg	plastic	110,65 €

Ammonium carbonate

$CH_6N_2O_2 \cdot CH_5NO_3$ (1:1)
M 157,13 g/mol
Solubility: ~320 g/l (H_2O, 20 °C)
[10361-29-2] • EC No. 233-786-0
WGK 1

Danger H302-H315-H318

Ammonium carbonate

≥30 %, NH_3, p.a., ACS

Guarantee analysis:

Assay (acidim, NH_3)	≥30,0 %
In H_2O insoluble matter	≤0,005 %
Non volatile matter	≤0,01 %
Chloride (Cl)	≤0,0005 %
Sulphur containing parts (as SO_4)	≤0,002 %
Heavy metals (as Pb)	≤0,0005 %
Iron (Fe)	≤0,0005 %

CP98.1	500 g	plastic	19,90 €
Original pack 6 x 500 g			18,91/500 g
CP98.2	1 kg	plastic	30,00 €
Original pack 6 x 1 kg			28,50/1 kg
CP98.4	2,5 kg	plastic	54,75 €
CP98.3	5 kg	plastic	96,65 €

Ammonium carbonate

≥30,5 %, NH_3, extra pure

Guarantee analysis:

Assay (NH_3)	≥30,5 %
Chloride (Cl)	≤0,005 %
Sulphate (SO_4)	≤0,005 %
Non volatile matter	≤0,01 %
Heavy metals (as Pb)	≤0,0005 %
Arsenic (As)	≤0,0001 %
Lead (Pb)	≤0,0001 %
Iron (Fe)	≤0,0005 %
Mercury (Hg)	≤0,0001 %

CN94.1	500 g	plastic	14,55 €
Original pack 6 x 500 g			13,82/500 g
CN94.2	1 kg	plastic	21,00 €
Original pack 6 x 1 kg			19,95/1 kg
CN94.4	2,5 kg	plastic	35,40 €
CN94.3	5 kg	plastic	57,55 €

Ammonium cerium(IV) nitrate

▶ Cerium(IV) ammonium nitrate see p. 1886

Ammonium cerium(IV) sulphate dihydrate

Ammonium cerium(IV) sulphate dihydrate

≥99 %, p.a.

Oxidant reagent, for cerimetric titrations
Cerium(IV) ammonium sulphate dihydrate
$(NH_4)_4Ce(SO_4)_4 \cdot 2\ H_2O$
M 632,55 g/mol
[10378-47-9] • EC No. 231-567-4
WGK 1

Guarantee analysis:

Assay ≥99,0 %
Chloride (Cl) ≤0,01 %
Phosphate (PO_4) ≤0,02 %
Iron (Fe) ≤0,005 %

4386.1	100 g	plastic	46,15 €
4386.2	250 g	plastic	102,70 €
4386.3	500 g	plastic	162,90 €
Original pack 6 x 500 g			154,76/500 g

Ammonium chloride

Salmiaksalt
NH_4Cl
M 53,49 g/mol
D 1,52
mp 355 °C (subl.)
Solubility: 372 g/l (H_2O, 20 °C)
[12125-02-9] • EC No. 235-186-4
WGK 1

Warning H302-H319

Ammonium chloride

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis) 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5050.1	50 g	plastic	110,65 €
5050.2	100 g	plastic	185,45 €

Ammonium chloride

≥99,7 %, p.a., ultra quality

Reagent for photography, buffer substance, molecularbiology, mixtures cryogens.

Guarantee analysis:

Assay (arg.) ≥99,7 %
pH value (5 % solution) 4,5-5,5
Water (KF) ≤0,1 %
Appearance of solution complies
In H_2O insoluble matter ≤0,005 %
Acidity or alkalinity complies
Ash content (as SO_4) ≤0,02 %
Pyridine and homologues ≤0,001 %
Bromide and Iodide (Br,I) complies
Phosphate (PO_4) ≤0,0002 %
Nitrate (NO_3) ≤0,001 %
Sulphate (SO_4) ≤0,002 %
Iodide (I) ≤0,001 %
Heavy metals (as Pb) ≤0,0005 %
Arsenic (As) ≤0,00005 %
Lead (Pb) ≤0,0001 %
Cadmium (Cd) ≤0,0001 %
Calcium (Ca) ≤0,001 %
Chromium (Cr) ≤0,0005 %
Iron (Fe) ≤0,0002 %
Potassium (K) ≤0,005 %
Cobalt (Co) ≤0,0005 %
Copper (Cu) ≤0,0005 %
Magnesium (Mg) ≤0,0005 %
Nickel (Ni) ≤0,0005 %
Mercury (Hg) ≤0,0001 %
Zinc (Zn) ≤0,0005 %

K298.1	500 g	plastic	23,15 €
Original pack 6 x 500 g			21,99/500 g
K298.2	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg
K298.3	2,5 kg	plastic	60,10 €
K298.4	5 kg	plastic	80,55 €
K298.6	10 kg	plastic	136,45 €
K298.5	25 kg	plastic	267,70 €

Ammonium chloride

≥99,5 %, Ph.Eur., USP, BP

Guarantee analysis:

Assay (argentometric, dry substance) 99,5-100,5 %
Identity complies
pH value (5 % in water) 4,6-6,0
Appearance of solution complies
Loss on drying (100 °C) ≤0,5 %
Ash content (as SO_4) ≤0,1 %
Acid or alkaline react. substances complies
Bromide and Iodide (Br,I) complies
Phosphate (PO_4) ≤0,002 %
Sulphate (SO_4) ≤0,005 %
Thiocyanate (SCN) complies
Arsenic (As) ≤0,0001 %
Lead (Pb) ≤0,001 %
Calcium (Ca) ≤0,02 %
Iron (Fe) ≤0,002 %
Copper (Cu) ≤0,001 %
Magnesium (Mg) ≤0,005 %
Nickel (Ni) ≤0,001 %
Heavy metals (as Pb) ≤0,001 %

P726.1	500 g	plastic	18,20 €
Original pack 6 x 500 g			17,29/500 g
P726.2	1 kg	plastic	29,60 €
Original pack 6 x 1 kg			28,12/1 kg
P726.4	2,5 kg	plastic	40,35 €
P726.3	5 kg	plastic	57,55 €
P726.6	10 kg	plastic	83,75 €
P726.5	25 kg	plastic	170,95 €

Ammonium chloride

≥99 %, cryst.

Type analysis:

Appearance fine white crystals
Assay (NH_4Cl) ≥99,0 %
Iron (Fe) ≤0,0003 %
Sodium chloride (NaCl) ≤0,2 %
Water (KF) ≤0,1 %
Ash ≤0,25 %

5470.1	1 kg	plastic	17,75 €
Original pack 6 x 1 kg			16,86/1 kg
5470.4	2,5 kg	plastic	29,60 €
5470.2	5 kg	plastic	42,90 €
5470.3	10 kg	plastic	63,35 €
5470.5	25 kg	plastic	117,20 €

Ammonium citrate, dibasic

▶ di-Ammonium hydrogen citrate see p. 1798

tri-Ammonium citrate

tri-Ammonium citrate

≥97 %, pure

Ammonium citrate tribasic, Citric acid triammonium salt
$C_6H_{17}N_3O_7$
M 243,22 g/mol
mp 185 °C (dec.)
Solubility: 1000 g/l (H_2O, 20 °C)
[3458-72-8] • EC No. 222-394-5
WGK 1

Type analysis:

Assay (titr.) ≥97,0 %
pH value (5 % in H_2O) 7,0-8,0
Chloride (Cl) ≤0,005 %
Sulphate (SO_4) ≤0,01 %
Iron (Fe) ≤0,005 %

9488.1	100 g	plastic	23,55 €
9488.2	500 g	plastic	59,05 €
Original pack 6 x 500 g			56,10/500 g
9488.3	1 kg	plastic	90,20 €
Original pack 6 x 1 kg			85,69/1 kg

Ammonium citrate tribasic

▶ tri-Ammonium citrate see p. 1796

Ammonium dihydrogene phosphate matrix modifier solution

▶ Matrix modifier solution Ammonium dihydrogen phosphate see p. 2123

Ammonium dihydrogen phosphate

prim. Ammonium phosphate, Ammonium phosphate monobasic, Ammonium biphosphate
$(NH_4)H_2PO_4$
M 115,03 g/mol
D 1,80
mp 190 °C
Solubility: 368 g/l (H_2O, 20 °C)
[7722-76-1] • EC No. 231-764-5
WGK 1

Ammonium dihydrogen phosphate

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis) 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5580.1	25 g	plastic	52,60 €
5580.2	100 g	plastic	121,40 €

Ammonium dihydrogen phosphate

≥99 %, p.a., ACS

Buffer substance

Guarantee analysis:

Assay (acidim.). ≥99 %
In H_2O insoluble matter. ≤0,005 %
pH value (5 %, water). 3,8-4,4
Sulphur compounds (as SO_4). ≤0,005 %
Chloride (Cl). ≤0,0005 %
Nitrate (NO_3). ≤0,001 %
Sulphate (SO_4). ≤0,005 %
Heavy metals (as Pb). ≤0,0005 %
Arsenic (As). ≤0,00005 %
Cadmium (Cd). ≤0,0005 %
Chromium (Cr). ≤0,0005 %
Iron (Fe). ≤0,0005 %
Lead (Pb). ≤0,0005 %
Magnesium (Mg). ≤0,0005 %
Calcium (Ca). ≤0,001 %
Sodium (Na). ≤0,005 %
Potassium (K). ≤0,005 %
Cobalt (Co). ≤0,0005 %
Copper (Cu). ≤0,0005 %
Manganese (Mn). ≤0,0005 %
Nickel (Ni). ≤0,0005 %
Zinc (Zn). ≤0,0005 %

P727.1	500 g	plastic	42,90 €
Original pack 6 x 500 g			40,76/500 g
P727.2	1 kg	plastic	77,30 €
Original pack 6 x 1 kg			73,44/1 kg
P727.3	2,5 kg	plastic	166,10 €

Ammonium dihydrogen phosphate

≥98 %, extra pure

Buffer substance

Type analysis:

Assay (acidim.). ≥98 %
pH value (5 %, water). 3,8-4,4
In H_2O insoluble matter. ≤0,01 %
Sulphur compounds (as SO_4). ≤0,05 %
Chloride (Cl). ≤0,003 %
Nitrate (NO_3). ≤0,005 %
Heavy metals (as Pb). ≤0,005 %
Arsenic (As). ≤0,0001 %
Iron (Fe). ≤0,003 %

CP85.1	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
CP85.2	1 kg	plastic	46,80 €
Original pack 6 x 1 kg			44,46/1 kg
CP85.3	2,5 kg	plastic	102,05 €

Ammonium ferric oxalate

▶ Ammonium iron(III) oxalate trihydrate see p. 1800

Ammonium fluoride

Ammonium fluoride

≥98 %, p.a., ACS

NH_4F
M 37,04 g/mol
D 1,01
mp ~100 °C (dec.)
Solubility: 820 g/l (H_2O, 20 °C)
[12125-01-8] • EC No. 235-185-9
UN No. 2505 • ADR 6.1 III • WGK 1

Danger H301+H311+H331

Guarantee analysis:

Appearance..... colorless or white hygroscopic solid
Assay. ≥98,0 %
Insoluble matter. ≤0,005 %
Chloride (Cl). ≤0,001 %
Sulphate (SO_4). ≤0,005 %
Iron (Fe). ≤0,0005 %
Heavy metals (as Pb). ≤0,0005 %
Loss on ignition. ≤0,01 %

6549.1	250 g	plastic	60,10 €
6549.2	500 g	plastic	103,10 €
Original pack 6 x 500 g			97,95/500 g
6549.3	1 kg	plastic	183,30 €
Original pack 6 x 1 kg			174,14/1 kg

Ammonium fluorosilicate

▶ Ammonium hexafluorosilicate see p. 1798

Ammonium formate

Ammonium formate

≥95 %, extra pure

$HCOONH_4$
M 63,06 g/mol
mp 116 °C
[540-69-2] • EC No. 208-753-9 • WGK 1

Warning H315-H319-H335

Type analysis:

Appearance..... hygroscopic crystals
Assay ($HCOONH_4$). ≥95 %
pH value (5 % in H_2O). 6-7
Chloride (Cl). ≤0,01 %
Sulphate (SO_4). ≤0,01 %
Iron (Fe). ≤0,002 %
Heavy metals (as Pb). ≤0,002 %

5093.2	500 g	plastic	23,15 €
Original pack 6 x 500 g			21,99/500 g
5093.1	1 kg	plastic	34,95 €
Original pack 6 x 1 kg			33,20/1 kg
5093.3	5 kg	plastic	130,65 €

Ammonium heptamolybdate tetrahydrate

Ammonium molybdate
$(NH_4)_6Mo_7O_{24} \cdot 4\ H_2O$
M 1235,86 g/mol
mp 90 °C
Solubility: 400 g/l (H_2O, 20 °C)
[12054-85-2] • EC No. 234-722-4 • WGK 1

Ammonium heptamolybdate tetrahydrate

≥99 %, p.a.

Type analysis:

Assay. ≥99,0 %
Aluminium (Al). ≤0,001 %
Lead (Pb). ≤0,0005 %
Calcium (Ca). ≤0,001 %
Chromium (Cr). ≤0,001 %
Iron (Fe). ≤0,001 %
Potassium (K). ≤0,01 %
Copper (Cu). ≤0,001 %
Magnesium (Mg). ≤0,001 %
Sodium (Na). ≤0,01 %
Nickel (Ni). ≤0,0005 %
Silicon (Si). ≤0,001 %
Titanium (Ti). ≤0,0005 %
Tin (Sn). ≤0,001 %

3666.1	250 g	plastic	89,80 €
3666.2	500 g	plastic	160,75 €
Original pack 6 x 500 g			152,71/500 g
3666.3	1 kg	plastic	287,60 €
Original pack 6 x 1 kg			273,22/1 kg
3666.7	25 kg	plastic	2999,25 €

For further information, please see page 1675

Ammonium heptamolybdate tetrahydrate

≥99 %, extra pure

Type analysis:

Assay. ≥99,0 %
Aluminium (Al). ≤0,001 %
Lead (Pb). ≤0,001 %
Iron (Fe). ≤0,001 %
Nickel (Ni). ≤0,0005 %

7311.1	100 g	plastic	24,20 €
7311.2	500 g	plastic	76,25 €
Original pack 6 x 500 g			72,44/500 g
7311.3	1 kg	plastic	126,35 €
Original pack 6 x 1 kg			120,03/1 kg
7311.4	2,5 kg	plastic	267,70 €

Ammonium hexachloroosmate (IV)

Ammonium hexachloroosmate (IV)

ROTI®METIC 99,99 % (4N)

Ammonium osmium chloride,
Osmium(IV) ammonium chloride
$(NH_4)_2OsCl_6$
M 439,00 g/mol
D 2,93
[12125-08-5] • EC No. 235-188-5 • WGK 3

Warning H315-H319-H335

Type analysis:

Assay (metals basis). 99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5585.1	1 g	glass	181,70 €

Ammonium hexachlororhodate(III)

Ammonium hexachlororhodate(III)

ROTI®METIC 99,995 % (4N5)

Rhodium(III) ammonium chloride
$(NH_4)_3RhCl_6$
M 369,74 g/mol
[15336-18-2] • EC No. 239-364-2 • WGK 1

Warning H315-H319

Type analysis:

Assay (metals basis). 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5586.1	1 g	plastic	514,95 €

Ammonium hexafluorosilicate

Ammonium fluorosilicate
$(NH_4)_2SiF_6$
M 178,14 g/mol
D 2,01
mp 145 °C (dec.)
Solubility: 186 g/l (H_2O, 17 °C)
[16919-19-0] • EC No. 240-968-3
UN No. 2854 • ADR 6.1 III • WGK 2

Danger H301+H311+H331

Ammonium hexafluorosilicate

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5587.1	10 g	plastic	60,10 €
5587.2	25 g	plastic	120,95 €
5587.3	50 g	plastic	204,80 €

Ammonium hexafluorosilicate

≥98,5 %, extra pure

Type analysis:

Assay (titr.). ..... ≥98,5 %
Sulphate (SO_4). ..... ≤0,5 %
Water. ..... ≤0,5 %
In water insoluble matter. ..... ≤0,5 %

7314.1	250 g	plastic	23,55 €
7314.2	500 g	plastic	36,05 €
Original pack 6 x 500 g			34,25/500 g
7314.3	1 kg	plastic	62,90 €
Original pack 6 x 1 kg			59,76/1 kg
7314.4	2,5 kg	plastic	123,10 €

Ammonium hexafluorotitanate(IV)

Ammonium hexafluorotitanate(IV)

ROTI®METIC 99,999 % (5N)
$(NH_4)_2TiF_6$
M 197,95 g/mol
[16962-40-6] • EC No. 241-036-9
WGK 1

Warning H302+H312+H332

Type analysis:

Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5589.3	100 g	plastic	332,20 €

Ammonium hydrogen carbonate

Ammonium bicarbonate
$(NH_4)HCO_3$
M 79,06 g/mol
D 1,586
mp 105 °C
Solubility: 220 g/l (H_2O, 20 °C)
[1066-33-7] • EC No. 213-911-5
WGK 1

Warning H302

Ammonium hydrogen carbonate

≥99 %, p.a.

Guarantee analysis:

Assay (acidim.)..... ≥99,0 %
In H_2O insoluble matter. ..... ≤0,005 %
Non volatile matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,0005 %
Phosphate (PO_4). ..... ≤0,001 %
Sulphate (SO_4). ..... ≤0,005 %
Arsenic (As)..... ≤0,0001 %
Lead (Pb). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe)..... ≤0,0005 %
Potassium (K)..... ≤0,005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,005 %
Sodium (Na)..... ≤0,005 %
Sulphide (S). ..... ≤0,001 %

T871.1	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
T871.2	1 kg	plastic	33,25 €
Original pack 6 x 1 kg			31,59/1 kg
T871.3	2,5 kg	plastic	53,65 €
T871.4	5 kg	plastic	90,85 €
T871.5	25 kg	plastic	310,70 €

Ammonium hydrogen carbonate

≥98 %, Ph.Eur., BP

Guarantee analysis:

Assay (acidim.)..... 98,0-101,0 %
Identity..... complies
In H_2O insoluble matter. ..... ≤0,01 %
Calcium (Ca). ..... ≤0,01 %
Chloride (Cl). ..... ≤0,005 %
Phosphate (PO_4). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,007 %
Sulphide (S). ..... complies
Arsenic (As)..... ≤0,0002 %
Iron (Fe)..... ≤0,001 %
Copper (Cu). ..... ≤0,025 %
Nickel (Ni)..... ≤0,0025 %
Heavy metals (as Pb). ..... ≤0,001 %

7094.2	500 g	plastic	16,05 €
Original pack 6 x 500 g			15,25/500 g
7094.1	1 kg	plastic	22,50 €
Original pack 6 x 1 kg			21,38/1 kg
7094.4	2,5 kg	plastic	34,30 €
7094.3	5 kg	plastic	62,25 €
7094.5	25 kg	plastic	210,20 €

di-Ammonium hydrogen citrate

Ammonium citrate, dibasic
$C_6H_{14}N_2O_7$
M 226,19 g/mol
D 1,48
Solubility: easily soluble (H_2O, 20 °C)
[3012-65-5] • EC No. 221-146-3
WGK 1

Warning H319

di-Ammonium hydrogen citrate

≥98 %, p.a., ACS

Guarantee analysis:

Assay (acidim.). ..... 98,0-103,0 %
Water . ..... ≤1,0 %
In H_2O insoluble matter. ..... ≤0,005 %
Ash content (as SO_4). ..... ≤0,01 %
Phosphate (PO_4). ..... ≤0,0005 %
Chloride (Cl). ..... ≤0,001 %
Oxalate (C_2O_4). ..... ≤0,05 %
Sulphur compounds (as SO_4). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,002 %
Chromium (Cr). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,005 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

P735.1	500 g	plastic	49,35 €
Original pack 6 x 500 g			46,88/500 g
P735.2	1 kg	plastic	89,15 €
Original pack 6 x 1 kg			84,69/1 kg
P735.3	2,5 kg	plastic	180,10 €

di-Ammonium hydrogen citrate

≥98 %, extra pure

Type analysis:

Assay (acidim.). ..... ≥98,0 %
In H_2O insoluble matter. ..... ≤0,05 %
Sulphated ash. ..... ≤0,1 %
Chloride (Cl). ..... ≤0,005 %
Iron (Fe). ..... ≤0,002 %
Heavy metals (as Pb). ..... ≤0,001 %
Total sulphur (as SO_4). ..... ≤0,01 %

0267.2	1 kg	plastic	42,50 €
Original pack 6 x 1 kg			40,38/1 kg
0267.1	500 g	plastic	26,35 €
Original pack 6 x 500 g			25,03/500 g
0267.3	2,5 kg	plastic	92,35 €

Ammonium hydrogen fluoride

Ammonium bifluoride, Ammonium difluoride
$(NH_4)HF_2$
M 57,04 g/mol
D 1,50 • bp ~240 °C (dec.)
mp 125 °C
Solubility: 630 g/l (H_2O, 20 °C)
[1341-49-7] • EC No. 215-676-4
UN No. 1727 • ADR 8 II • WGK 1

Danger H301-H314

Ammonium hydrogen fluoride
ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5363.1	25 g	plastic	112,35 €

Ammonium hydrogen fluoride
≥98 %, extra pure

Type analysis:
Assay..... ≥98,0 %
Sulphate (SO_4)..... ≤0,2 %
Iron (Fe)..... ≤0,005 %
Ash content..... ≤0,2 %
Water..... ≤1,5 %

7313.1	250 g	plastic	20,35 €
7313.2	500 g	plastic	31,10 €
Original pack 6 x 500 g			29,55/500 g
7313.3	1 kg	plastic	47,20 €
Original pack 6 x 1 kg			44,84/1 kg
7313.4	2,5 kg	plastic	100,55 €

di-Ammonium hydrogen phosphate

sec. Ammonium phosphate, Ammonium phosphate dibasic
$(NH_4)_2HPO_4$
M 132,06 g/mol
D 1,62
mp 155 °C (dec.)
Solubility: 690 g/l (H_2O, 20 °C)
[7783-28-0] • EC No. 231-987-8
WGK 1

di-Ammonium hydrogen phosphate
ROTI®METIC 99,999 % (5N)

Guarantee analysis:
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5596.1	100 g	plastic	235,45 €

di-Ammonium hydrogen phosphate
≥98 %, p.a., ACS
Buffer substance

Guarantee analysis:
Assay (acidim.)..... ≥98,0 %
pH value (5 % in water)..... 7,7-8,1
In H_2O insoluble matter..... ≤0,005 %
Sulphur compounds (as SO_4)..... ≤0,004 %
Chloride (Cl)..... ≤0,0005 %
Nitrate (NO_3)..... ≤0,003 %
Heavy metals (as Pb)..... ≤0,001 %
Arsenic (As)..... ≤0,0001 %
Lead (Pb)..... ≤0,001 %
Calcium (Ca)..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Potassium (K)..... ≤0,005 %
Copper (Cu)..... ≤0,001 %
Magnesium (Mg)..... ≤0,0005 %
Sodium (Na)..... ≤0,005 %
Nickel (Ni)..... ≤0,001 %

P736.1	500 g	plastic	53,65 €
Original pack 6 x 500 g			50,97/500 g
P736.2	1 kg	plastic	85,90 €
Original pack 6 x 1 kg			81,61/1 kg
P736.3	2,5 kg	plastic	194,50 €

di-Ammonium hydrogen phosphate
≥97 %, extra pure
Buffer substance

Type analysis:
Assay (acidim.)..... ≥97,0 %
pH value (5 % in H_2O)..... 7,7-8,3
In H_2O insoluble matter..... ≤0,01 %
Chloride (Cl)..... ≤0,005 %
Sulphate (SO_4)..... ≤0,01 %
Heavy metals (as Pb)..... ≤0,001 %
Arsenic (As)..... ≤0,0003 %
Iron (Fe)..... ≤0,003 %

0268.1	500 g	plastic	18,85 €
Original pack 6 x 500 g			17,91/500 g
0268.2	1 kg	plastic	28,95 €
Original pack 6 x 1 kg			27,50/1 kg
0268.4	2,5 kg	plastic	56,90 €
0268.3	5 kg	plastic	107,00 €

Ammonium hydrogen sulphate

Ammonium hydrogen sulphate
≥98,5 %, p.a.
Ammonium bisulphate
NH_4HSO_4
M 115,11 g/mol
mp 147 °C
Solubility: 115 g/l (H_2O, 20 °C)
[7803-63-6] • EC No. 232-265-5
UN No. 2506 • ADR 8 II • WGK 1

Danger H314

Guarantee analysis:
Assay (acidim.)..... ≥98,5 %
In H_2O insoluble matter..... ≤0,005 %
Chloride (Cl)..... <0,0002 %
Phosphate (PO_4)..... ≤0,0003 %
Nitrate (NO_3)..... ≤0,001 %
Heavy metals (as Pb)..... ≤0,0002 %
Aluminium (Al)..... ≤0,001 %
Arsenic (As)..... ≤0,00002 %
Calcium (Ca)..... <0,001 %
Magnesium (Mg)..... ≤0,0005 %
Manganese (Mn)..... ≤0,0005 %
Cadmium (Cd)..... <0,0005 %
Cobalt (Co)..... ≤0,0005 %
Copper (Cu)..... ≤0,0001 %
Iron (Fe)..... <0,0002 %
Potassium (K)..... ≤0,005 %
Sodium (Na)..... ≤0,005 %
Nickel (Ni)..... <0,0001 %
Lead (Pb)..... <0,0001 %
Zinc (Zn)..... ≤0,0001 %
Ash content..... ≤0,005 %

5485.2	250 g	plastic	26,80 €
5485.1	500 g	plastic	44,00 €
Original pack 6 x 500 g			41,80/500 g
5485.3	1 kg	plastic	79,45 €
Original pack 6 x 1 kg			75,48/1 kg

Ammonium hydroxide solution

- Ammonia solution Ultra-quality see p. 1792
- Ammonia solution Supra-quality see p. 1793
- Ammonia solution 32 % see p. 1793
- Ammonia solution 30 % see p. 1793
- Ammonia solution 25 % see p. 1793
- Ammonia solution 15 % see p. 1794
- Ammonia solution 10 % see p. 1794
- Ammonia solution (4 N) see p. 1794

Ammonium iodide

Ammonium iodide
≥99 %, p.a., ACS
NH_4I
M 144,94 g/mol
D 2,51 • bp 551 °C (dec.)
mp 405 °C (subl.)
Solubility: 1780 g/l (H_2O, 25 °C)
[12027-06-4] • EC No. 234-717-7
WGK 1

Warning H315-H319-H335

Guarantee analysis:
Assay (arg.)..... ≥99,0 %
Insoluble matter..... ≤0,005 %
Ash content..... ≤0,05 %
Chloride and bromide..... ≤0,005 %
Phosphate (PO_4)..... ≤0,001 %
Sulphate (SO_4)..... ≤0,05 %
Arsenic (As)..... ≤0,0005 %
Barium (Ba)..... ≤0,002 %
Iron (Fe)..... ≤0,0005 %
Heavy metals (as Pb)..... ≤0,001 %

9818.1	100 g	glass	53,25 €
9818.2	250 g	glass	118,15 €
9818.3	500 g	glass	221,35 €
Original pack 6 x 500 g			210,28/500 g

Ammonium iron(III) citrate

Citric acid ammonium iron(III) salt, Iron(III) ammonium citrate, Ammonium ferric citrate, Ferric ammonium citrate
D 0,73
Solubility: 1,2 g/l (H_2O, 20 °C)
[1185-57-5] • EC No. 214-686-6
WGK 1

Ammonium iron(III) citrate

~21 % Fe, brown

Type analysis:

Appearance. ..... red-brown powder
Assay (Fe). ..... 20,5-22,5 %
pH value (10 % in H_2O). 6,0-8,0
Chloride (Cl). ..... ≤0,05 %
Arsenic (As). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,005 %
Loss on drying (105 °C, 2 h). ..... ≤6,0 %

0618.1	250 g	plastic	24,65 €
0618.2	500 g	plastic	33,25 €
Original pack 6 x 500 g			31,59/500 g
0618.3	1 kg	plastic	55,80 €
Original pack 6 x 1 kg			53,01/1 kg
0618.4	2,5 kg	plastic	121,40 €

Ammonium iron(III) citrate

~18 % Fe
Microbiology

Guarantee analysis:

Appearance. ..... yellowish, brown powder
Assay (Fe). ..... 17,1-18,9 %
pH value (10 % solution). 6,0-8,0
Chloride (Cl). ..... ≤0,05 %
Sulphate (SO_4). ..... ≤1,5 %
Heavy metals (as Pb). ..... ≤0,005 %
Arsenic (As). ..... ≤0,0004 %
Loss on drying. ..... ≤6,0 %

CN77.1	250 g	plastic	16,70 €
CN77.2	500 g	plastic	25,30 €
Original pack 6 x 500 g			24,04/500 g
CN77.3	1 kg	plastic	40,75 €
Original pack 6 x 1 kg			38,71/1 kg
CN77.4	2,5 kg	plastic	82,70 €

Ammonium iron(III) citrate

~15 % Fe, green

Type analysis:

Assay (Fe). ..... 14,5-16,0 %

9366.1	250 g	plastic	23,55 €
9366.2	500 g	plastic	33,25 €
Original pack 6 x 500 g			31,59/500 g
9366.3	1 kg	plastic	54,75 €
Original pack 6 x 1 kg			52,01/1 kg

Ammonium iron(III) citrate solution

Ammonium iron(III) citrate solution

12,5 %, sterile, ready-to-use
Media supplement for detection of *Listeria monocytogenes*.
One box of 10 vials Ammonium iron(III) citrate solution is sufficient for 10 x 500 ml Fraser Broth.
Ferric(III) ammonium citrate solution
Storage temp.: +20 °C
WGK 1

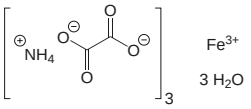
Formulation per vial:

Ammonium iron(III) citrate. ..... 0,25 g

3130.1	10 x 2 ml	plastic	41,40 €
3130.2	30 x 2 ml	plastic	103,75 €

For further information, please see page 1458

Ammonium iron(III) oxalate trihydrate



Ammonium iron(III) oxalate trihydrate

≥99 %, pure
Ammonium ferric oxalate, Iron ammonium oxalate
$(NH_4)_3Fe(C_2O_4)_3 \cdot 3\ H_2O$
M 428,06 g/mol
D 1,78
mp 160-170 °C (dec.)
Solubility: 1000 g/l (H_2O, 20 °C)
[13268-42-3] • EC No. 220-952-2
WGK 1

Warning H302+H312

Type analysis:

Assay (based on Fe). ..... ≥99,0 %
pH value (5 % in H_2O). ..... ~5,0
Chloride (Cl). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,005 %

0517.1	250 g	plastic	22,05 €
0517.2	500 g	plastic	33,25 €
Original pack 6 x 500 g			31,59/500 g
0517.3	1 kg	plastic	55,80 €
Original pack 6 x 1 kg			53,01/1 kg
0517.4	2,5 kg	plastic	111,70 €

Ammonium iron(II) sulphate hexahydrate

Iron(II) ammonium sulphate, Ferrous ammonium sulphate, Mohr's salt
$(NH_4)_2Fe(SO_4)_2 \cdot 6\ H_2O$
M 392,14 g/mol
D 1,86
mp 100 °C
Solubility: 270 g/l (H_2O, 20 °C)
[7783-85-9] • EC No. 233-151-8
WGK 1

Ammonium iron(II) sulphate hexahydrate

≥99 %, p.a., ISO

Guarantee analysis:

Assay (perm.). ..... 99,0-101,0 %
pH value (5 % in water). 3,0-5,0
In H_2SO_4 insoluble matter. ..... ≤0,005 %
Substances not precipitated by ammonia. ..... ≤0,1 %
Phosphate (PO_4). ..... ≤0,002 %
Chloride (Cl). ..... ≤0,001 %
Iron III (Fe III). ..... ≤0,02 %
Calcium (Ca). ..... ≤0,01 %
Copper (Cu). ..... ≤0,001 %
Potassium (K). ..... ≤0,01 %
Manganese (Mn). ..... ≤0,02 %
Lead (Pb). ..... ≤0,001 %
Cobalt (Co). ..... ≤0,005 %
Magnesium (Mg). ..... ≤0,005 %
Sodium (Na). ..... ≤0,01 %
Zinc (Zn). ..... ≤0,003 %

P728.1	500 g	plastic	28,50 €
Original pack 6 x 500 g			27,08/500 g
P728.2	1 kg	plastic	47,85 €
Original pack 6 x 1 kg			45,46/1 kg
P728.3	2,5 kg	plastic	107,40 €

Ammonium iron(II) sulphate hexahydrate

≥98 %, extra pure

Type analysis:

Assay. ..... ≥98,0 %
Iron III (Fe III). ..... complies
Copper (Cu). ..... ≤0,005 %
Zinc (Zn). ..... ≤0,02 %
Alkali and alkaline-earth metals (as SO_4). ..... ≤0,07 %

X884.1	500 g	plastic	17,75 €
Original pack 6 x 500 g			16,86/500 g
X884.2	1 kg	plastic	26,80 €
Original pack 6 x 1 kg			25,46/1 kg
X884.3	5 kg	plastic	94,10 €

Ammonium iron(II) sulphate solution (0,12 N)

Ammonium iron(II) sulphate solution

0,12 mol/l - 0,12 N volumetric solution, for determination of COD

According to DIN 38409 part H41.
UN No. 3264 • ADR 8 III • WGK 1

Warning H290

Type analysis:

Amount-of-substance conc. (20 °C).....0,12 mol/l
The titre has to be determined at least daily.

KK60.1	1 l	plastic	47,10 €
Original pack 6 x 1 l			44,75/1 l

Ammonium iron(III) sulphate dodecahydrate

Iron(III) ammonium sulphate, Ferric alum, Iron alum
$(NH_4)Fe(SO_4)_2 \cdot 12\ H_2O$
M 482,19 g/mol
D 1,71
mp 39-41 °C
Solubility: 1240 g/l (H_2O, 20 °C)
[7783-83-7] • EC No. 233-382-4
WGK 1

Ammonium iron(III) sulphate dodecahydrate

≥98,5 %, p.a., ACS, ISO

Guarantee analysis:

Assay (iodom.).....98,5-102,0 %
In H_2O insoluble matter.....≤0,005 %
Substances not precipitated by ammonia.....≤0,05 %
Chloride (Cl).....≤0,0005 %
Nitrate (NO_3).....≤0,01 %
Lead (Pb).....≤0,001 %
Calcium (Ca).....≤0,01 %
Iron II (Fe II).....≤0,001 %
Potassium (K).....≤0,005 %
Copper (Cu).....≤0,002 %
Magnesium (Mg).....≤0,001 %
Manganese (Mn).....≤0,005 %
Sodium (Na).....≤0,01 %
Zinc (Zn).....≤0,003 %

P734.1	500 g	plastic	31,10 €
Original pack 6 x 500 g			29,55/500 g
P734.2	1 kg	plastic	53,65 €
Original pack 6 x 1 kg			50,97/1 kg
P734.3	2,5 kg	plastic	111,70 €

Ammonium iron(III) sulphate dodecahydrate

≥98 %, extra pure

Type analysis:

Assay.....≥98,0 %
Chloride (Cl).....≤0,05 %
Copper (Cu).....≤0,002 %
Zinc (Zn).....≤0,005 %
Iron(II) salts.....complies
In NH_4OH not precipitated substances.....≤0,1 %

X885.1	500 g	plastic	19,25 €
Original pack 6 x 500 g			18,29/500 g
X885.2	1 kg	plastic	29,60 €
Original pack 6 x 1 kg			28,12/1 kg
X885.3	5 kg	plastic	111,70 €

Ammonium matrix modifier

▶ Ammonium nitrate matrix modifier solution see p. 2123

Ammonium metatungstate hydrate

Ammonium metatungstate hydrate

≥90 % WO_3, p.a.

Ammonium tungsten oxide hydrate, Hexaammonium tungstate hydrate, AMT
$(NH_4)_6H_2W_{12}O_{40} \cdot x\ H_2O$
M 2956,42 · x H_2O g/mol
D 4,00
mp 120 °C (dec.)
Solubility: 1000 g/l (H_2O, 20 °C)
[12028-48-7] • EC No. 234-733-4
WGK 1

Warning H302

Type analysis:

Assay (WO_3).....≥90 %
In water insoluble matter.....≤0,05 %
Loss on ignition (2 h, 750 °C).....≤10,0 %
Aluminium (Al).....≤0,0005 %
Arsenic (As).....≤0,0005 %
Iron (Fe).....≤0,001 %
Molybdenum (Mo).....≤0,005 %
Sodium (Na).....≤0,001 %
Phosphorus (P).....≤0,001 %
Silicon (Si).....≤0,0005 %

0742.1	25 g	plastic	33,25 €
0742.2	100 g	plastic	60,75 €
0742.3	500 g	plastic	219,20 €
Original pack 6 x 500 g			208,24/500 g

Ammonium metavanadate

▶ Ammonium monovanadate see p. 1801

Ammonium molybdate

▶ Ammonium heptamolybdate tetrahydrate see p. 1797

Ammonium molybdate(VI)

Ammonium molybdate(VI)

ROTI®METIC 99,99 % (4N)

$(NH_4)_2MoO_4$
M 196,02 g/mol
Solubility: >10 g/l (H_2O, 20 °C)
[13106-76-8] • EC No. 236-031-3
WGK 1

Warning H302-H315-H319-H335

Type analysis:

Assay (metals basis).....99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5591.1	5 g	plastic	46,15 €
5591.2	25 g	plastic	155,35 €

Ammonium molybdenum sulfide

▶ Ammonium tetrathiomolybdate see p. 1804

Ammonium monovanadate

Ammonium metavanadate
NH_4VO_3
M 116,98 g/mol
D 2,3
mp 200 °C (dec.)
Solubility: 5,1 g/l (H_2O, 20 °C)
[7803-55-6] • EC No. 232-261-3
UN No. 3285 • ADR 6.1 III • WGK 3

Danger

H301-H319-H332-H361fd-H372-H410

Ammonium monovanadate

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis).....99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5590.3	1 g	plastic	24,20 €
5590.2	25 g	plastic	396,70 €

Ammonium monovanadate

≥99,8 %, p.a.

Component of the molybdate-vanadate reagent for the determination of phosphate.

Guarantee analysis:

Assay.....≥99,8 %
Sodium (Na).....≤0,01 %
Potassium (K).....≤0,01 %
Iron (Fe).....≤0,01 %
Chromium (Cr).....≤0,005 %

4232.1	50 g	plastic	25,30 €
4232.2	100 g	plastic	36,45 €
4232.3	250 g	plastic	74,10 €
4232.4	1 kg	plastic	239,20 €
Original pack 6 x 1 kg			227,24/1 kg

Ammonium monovanadate

≥99 %, extra pure

Type analysis:

Assay.....≥99,0 %
Assay (V_2O_5).....≥77 %
Iron (Fe).....≤0,05 %
Potassium (K).....≤0,05 %
Sodium (Na).....≤0,05 %

9923.1	100 g	plastic	22,50 €
9923.2	500 g	plastic	68,70 €
Original pack 6 x 500 g			65,27/500 g
9923.3	1 kg	plastic	113,45 €
Original pack 6 x 1 kg			107,78/1 kg

Ammonium nitrate

Ammonium saltpeter
NH_4NO_3
M 80,04 g/mol
D 1,72
mp 170 °C (dec.)
Solubility: 1877 g/l (H_2O, 20 °C)
[6484-52-2] • EC No. 229-347-8
UN No. 1942 • ADR 5.1 III • WGK 1

Warning H272-H319

Ammonium nitrate

≥98 %, p.a., ACS

Guarantee analysis:

Assay (acidim.)	≥98,0 %
pH value (5 % in H_2O)	4,5-6,0
In H_2O insoluble matter	≤0,005 %
Chloride (Cl)	≤0,0003 %
Sulphate (SO_4)	≤0,002 %
Nitrite (NO_2)	≤0,0005 %
Phosphate (PO_4)	≤0,0005 %
Heavy metals (as Pb)	≤0,0005 %
Iron (Fe)	≤0,0002 %
Ash content (as SO_4)	≤0,01 %

K299.1	500 g	plastic	31,10 €
Original pack 6 x 500 g			29,55/500 g
K299.2	1 kg	plastic	50,45 €
Original pack 6 x 1 kg			47,93/1 kg
K299.3	2,5 kg	plastic	107,40 €

Ammonium nitrate

≥98 %, extra pure

Type analysis:

Assay (acidim.)	≥98,0 %
pH value (5 %, 20 °C)	4,5-6,0
Chloride (Cl)	≤0,005 %
Phosphate (PO_4)	≤0,001 %
Sulphate (SO_4)	≤0,01 %
Heavy metals (as Pb)	≤0,001 %

X988.1	500 g	plastic	28,95 €
Original pack 6 x 500 g			27,50/500 g
X988.2	1 kg	plastic	46,80 €
Original pack 6 x 1 kg			44,46/1 kg
X988.3	2,5 kg	plastic	103,10 €

Ammonium nitrate matrix modifier solution

▶ Matrix modifier solution
Ammonium nitrate see p. 2123

Ammonium osmium chloride

▶ Ammonium hexachloroosmate (IV)
see p. 1797

di-Ammonium oxalate monohydrate

Oxalic acid ammonium salt monohydrate
$(NH_4)_2 C_2O_4 \cdot H_2O$
M 142,11 g/mol
D 1,5
mp 70 °C (dec.)
Solubility: 50 g/l (H_2O, 20 °C)
[6009-70-7] • EC No. 214-202-3
WGK 1

Warning H302+H312

di-Ammonium oxalate monohydrate

≥99,5 %, p.a., ACS

Reagent for the determination of Ca, Pb and rare earth metals.

Guarantee analysis:

Assay (perm.)	≥99,5 %
In H_2O insoluble matter	≤0,005 %
Ash content (as SO_4)	≤0,02 %
Chloride (Cl)	≤0,001 %
Nitrate (NO_3)	≤0,001 %
Sulphate (SO_4)	≤0,002 %
Lead (Pb)	≤0,0005 %
Calcium (Ca)	≤0,001 %
Iron (Fe)	≤0,0002 %
Copper (Cu)	≤0,0005 %
Potassium (K)	≤0,001 %
Sodium (Na)	≤0,001 %
Zinc (Zn)	≤0,0005 %
Heavy metals (as Pb)	≤0,0005 %

P737.1	500 g	plastic	57,95 €
Original pack 6 x 500 g			55,05/500 g
P737.2	1 kg	plastic	96,65 €
Original pack 6 x 1 kg			91,82/1 kg
P737.3	2,5 kg	plastic	213,95 €

di-Ammonium oxalate monohydrate

≥98 %, BP

Reagent for the determination of Ca, Pb and rare earth metals.

Guarantee analysis:

Appearance	white crystals
Assay	≥98 %
Identity	complies
Chloride (Cl)	≤0,018 %
Heavy metals (as Pb)	≤0,002 %
Ash content	≤0,05 %

4266.3	500 g	plastic	23,55 €
Original pack 6 x 500 g			22,37/500 g
4266.1	1 kg	plastic	37,10 €
Original pack 6 x 1 kg			35,25/1 kg
4266.4	2,5 kg	plastic	77,30 €
4266.2	10 kg	plastic	267,70 €

Ammonium peroxydisulphate

Ammonium persulphate, APS
$(NH_4)_2S_2O_8$
M 228,20 g/mol
D 1,982
mp 120 °C (dec.)
Solubility: 620 g/l (H_2O, 20 °C)
[7727-54-0] • EC No. 231-786-5
UN No. 1444 • ADR 5.1 III • WGK 1

Danger
H334-H272-H302-H335-H315-H319-H317

Ammonium peroxydisulphate

≥98 %, p.a., ACS

Oxidizing agent for Cu, for separation of Mn and Cr. For electrophoresis. Polymerisation catalyst.

Guarantee analysis:

Assay (iodom.)	≥98,0 %
In H_2O insoluble matter	≤0,005 %
Chlorides and chlorates (as Cl)	≤0,001 %
Acidity	≤0,04 meq/g
Lead (Pb)	≤0,0005 %
Cadmium (Cd)	≤0,0005 %
Calcium (Ca)	≤0,01 %
Chromium (Cr)	≤0,0005 %
Iron (Fe)	≤0,001 %
Potassium (K)	≤0,005 %
Cobalt (Co)	≤0,0005 %
Copper (Cu)	≤0,0005 %
Magnesium (Mg)	≤0,005 %
Manganese (Mn)	≤0,00005 %
Sodium (Na)	≤0,01 %
Nickel (Ni)	≤0,0005 %
Heavy metals (as Pb)	≤0,005 %
Zinc (Zn)	≤0,0005 %
Ash content (as SO_4)	≤0,05 %

9592.3	50 g	plastic	10,25 €
9592.2	100 g	plastic	13,90 €
9592.5	500 g	plastic	28,95 €
Original pack 6 x 500 g			27,50/500 g
9592.1	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg
9592.4	2,5 kg	plastic	73,00 €

For further information, please see page 1191

Ammonium peroxydisulphate

≥98 %, extra pure

Type analysis:

Assay	≥98,0 %
Acid content (as H_2SO_4)	≤0,15 %
Active oxygen	≥6,9 %

9178.3	500 g	plastic	17,10 €
Original pack 6 x 500 g			16,25/500 g
9178.1	1 kg	plastic	24,65 €
Original pack 6 x 1 kg			23,42/1 kg
9178.4	2,5 kg	plastic	51,10 €
9178.2	5 kg	plastic	94,50 €

Ammonium persulphate

▶ Ammonium peroxydisulphate see p. 1802

Ammonium phosphate

▶ di-Ammonium hydrogen phosphate see p. 1799

Ammoniumphosphate monobasic

▶ Ammonium dihydrogen phosphate see p. 1796

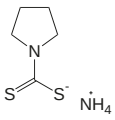
sec. Ammonium phosphate

▶ di-Ammonium hydrogen phosphate see p. 1799

Ammonium purpurate

▶ Murexide (C.I. 56085) see p. 2150

Ammonium pyrrolidine dithiocarbamate



Ammonium pyrrolidine dithiocarbamate

≥98 %, p.a.

APDC, Ammonium tetramethylene dithiocarbamate, Ammonium pyrrolidine dithiocarbamate

$C_5H_{12}N_2S_2$
M 164,29 g/mol
mp 146-151 °C
Solubility: 190 g/l (H_2O, 20 °C)
[5108-96-3] • EC No. 225-834-4
WGK 2

Warning H315-H319-H335

Guarantee analysis:

Appearance	white powder
Assay (NT)	≥98 %
Lead (Pb)	≤0,001 %
Cadmium (Cd)	≤0,001 %
Calcium (Ca)	≤0,001 %
Chromium (Cr)	≤0,001 %
Cobalt (Co)	≤0,001 %
Iron (Fe)	≤0,001 %
Potassium (K)	≤0,005 %
Copper (Cu)	≤0,001 %
Magnesium (Mg)	≤0,001 %
Manganese (Mn)	≤0,001 %
Sodium (Na)	≤0,005 %
Nickel (Ni)	≤0,001 %
Bismuth (Bi)	≤0,001 %
Zinc (Zn)	≤0,001 %

5486.1	10 g	plastic	38,60 €
5486.2	50 g	plastic	137,10 €

Ammonium rhodanide

▶ Ammonium thiocyanate see p. 1804

sec. Ammonium sodium phosphate

▶ Sodium ammonium hydrogen phosphate tetrahydrate see p. 2331

Ammonium sulphate

di-Ammoniumsulphate
$(NH_4)_2SO_4$
M 132,14 g/mol
D 1,77
mp 230 °C (dec.)
Solubility: 760 g/l (H_2O, 20 °C)
[7783-20-2] • EC No. 231-984-1
WGK 1

Ammonium sulphate

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis)	99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5606.1	10 g	plastic	30,00 €
5606.2	50 g	plastic	81,20 €

Ammonium sulphate

≥99,5 %, p.a., ACS, ISO

Reagent for precipitation of proteins, buffer substance, preparation of ammonium alum.

Guarantee analysis:

Assay (acidim.)	≥99,5 %
pH value (5 % in H_2O)	5,0-6,0
In H_2O insoluble matter	≤0,005 %
Ash content (as SO_4)	≤0,005 %
Phosphate (PO_4)	≤0,0005 %
Nitrate (NO_3)	≤0,001 %
Chloride (Cl)	≤0,0003 %
Arsenic (As)	≤0,00002 %
Lead (Pb)	≤0,0002 %
Cadmium (Cd)	≤0,0001 %
Calcium (Ca)	≤0,001 %
Iron (Fe)	≤0,0002 %
Cobalt (Co)	≤0,0005 %
Magnesium (Mg)	≤0,0005 %
Sodium (Na)	≤0,005 %
Nickel (Ni)	≤0,0005 %
Heavy metals (as Pb)	≤0,0005 %
Zinc (Zn)	≤0,0001 %
Loss on drying (100 °C)	≤0,1 %

3746.2	250 g	plastic	13,45 €
3746.1	1 kg	plastic	30,00 €
Original pack 6 x 1 kg			28,50/1 kg
3746.3	2,5 kg	plastic	54,30 €
3746.4	5 kg	plastic	95,60 €
3746.6	10 kg	plastic	153,65 €
3746.5	25 kg	plastic	332,20 €

Ammonium sulphate

≥99 %, enzyme quality

Reagent for precipitation of proteins, especially enzymes.

Guarantee analysis:

Assay (acidim.)	≥99,0 %
pH value (5 % in H_2O)	5,0-6,0
In H_2O insoluble matter	≤0,005 %
Nitrate (NO_3)	≤0,001 %
Chloride (Cl)	≤0,0005 %
Phosphate (PO_4)	≤0,0005 %
Arsenic (As)	≤0,00002 %
Lead (Pb)	≤0,0005 %
Cadmium (Cd)	≤0,0005 %
Calcium (Ca)	≤0,002 %
Iron (Fe)	≤0,0005 %
Cobalt (Co)	≤0,0005 %
Nickel (Ni)	≤0,0005 %
Magnesium (Mg)	≤0,0005 %
Zinc (Zn)	≤0,0005 %
Heavy metals (as Pb)	≤0,0005 %
Ash content (as SO_4)	≤0,005 %

9212.3	500 g	plastic	20,35 €
Original pack 6 x 500 g			19,33/500 g
9212.2	1 kg	plastic	28,95 €
Original pack 6 x 1 kg			27,50/1 kg
9212.1	2,5 kg	plastic	52,60 €
9212.7	25 kg	plastic	327,90 €

Ammonium sulphate

≥99 %, cryst.

Type analysis:

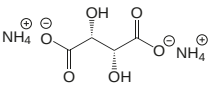
Appearance	white crystals
Assay	≥99,0 %
Identity	complies
Sulphated ash	≤0,005 %
Loss on drying (100 °C)	≤0,20 %
Arsenic (As)	≤0,0001 %
Iron (Fe)	≤0,001 %
Heavy metals (as Pb)	≤0,001 %
Phosphate (PO_4)	≤0,0005 %
Chloride (Cl)	≤0,001 %
pH value (5 % in H_2O)	5,0-6,0
In water insoluble matter	≤0,005 %

9218.3	500 g	plastic	18,85 €
Original pack 6 x 500 g			17,91/500 g
9218.1	1 kg	plastic	25,30 €
Original pack 6 x 1 kg			24,04/1 kg
9218.2	5 kg	plastic	89,15 €
9218.5	25 kg	plastic	321,45 €

di-Ammoniumsulphate

▶ Ammonium sulphate see p. 1803

di-Ammonium tartrate



di-Ammonium tartrate

≥98 %, pure

Ammonium tartrate dibasic, Tartaric acid diammonium salt

$(NH_4)_2C_4H_4O_6$
M 184,15 g/mol
D 1,60
Solubility: 58 g/l (H_2O, 20 °C)
[3164-29-2] • EC No. 221-618-9
WGK 1

Type analysis:

Assay	≥98,0 %
pH value (5 % in H_2O)	5,5-7,0

0487.1	100 g	plastic	18,85 €
0487.2	500 g	plastic	47,85 €
Original pack 6 x 500 g			45,46/500 g
0487.3	1 kg	plastic	77,30 €
Original pack 6 x 1 kg			73,44/1 kg
0487.4	2,5 kg	plastic	176,85 €

Ammonium tartrate dibasic

▶ di-Ammonium tartrate see p. 1803

Ammonium tetraborate tetrahydrate

Ammonium tetraborate tetrahydrate

ROTI®METIC 99,999 % (5N)
$(NH_4)_2B_4O_7 \cdot 4\ H_2O$
M 263,38 g/mol
D 2,4
mp ~87 °C
[12228-87-4]
WGK 1

Warning H315-H319-H335

Type analysis:
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5396.1	25 g	plastic	101,60 €

Ammonium tetramethylene dithiocarbamate

▶ Ammonium pyrrolidine dithiocarbamate see p. 1803

Ammonium tetrathiocyanato-diamminechromate(III) monohydrate

▶ Reinecke salt monohydrate see p. 2255

Ammonium tetrathiomolybdate

Ammonium tetrathiomolybdate

ROTI®METIC 99,99 % (4N)
Ammonium molybdenum sulfide
$(NH_4)_2MoS_4$
M 260,27 g/mol
mp 300 °C
[15060-55-6]
WGK 1

Warning H315-H319-H335

Type analysis:
Assay (metals basis)..... 99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5608.1	1 g	plastic	40,35 €
5608.2	5 g	plastic	78,40 €

Ammonium tetrathiotungstate

Ammonium tetrathiotungstate

ROTI®METIC 99,9 % (3N)
$(NH_4)_2WS_4$
M 348,18 g/mol • [13862-78-7] • WGK 1

Warning H315-H319-H335

Type analysis:
Assay (metals basis). ..... 99,9 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5397.1	5 g	plastic	134,40 €

Ammonium thiocyanate

Ammonium thiocyanate

≥99 %, p.a., ACS, ISO
Reagent for the detection of iron(III) ions. Stabilizer for photographic developer.
Ammonium rhodanide
NH_4SCN
M 76,12 g/mol • D 1,305 • mp 150 °C
Solubility: 1650 g/l (H_2O, 19 °C)
[1762-95-4] • EC No. 217-175-6 • WGK 1

Warning
H302+H312+H332-H412-EUH032

Guarantee analysis:
Assay (arg.). ..... ≥99,0 %
pH value (5 % in H_2O). 4,5-6,0
In H_2O insoluble matter. ..... ≤0,005 %
Iodine reducing substances (as I)..... ≤0,002 meq/g
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,005 %
Sulphide (S). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Iron (Fe)..... ≤0,0001 %
Copper (Cu). ..... ≤0,0005 %
Nickel (Ni)..... ≤0,0005 %
Ash content (as SO_4)..... ≤0,025 %

4477.1	100 g	plastic	16,70 €
4477.2	250 g	plastic	23,15 €
4477.3	500 g	plastic	34,30 €
Original pack 6 x 500 g			32,59/500 g
4477.4	1 kg	plastic	54,75 €
Original pack 6 x 1 kg			52,01/1 kg
4477.7	25 kg	plastic	854,65 €

Ammonium thiocyanate solution (0,1 N)

Ammonium thiocyanate solution

0,1 mol/l - 0,1 N volumetric standard solution
D 1,05

Type analysis:
Amount-of-substance conc. (20 °C). .....
..... 0,1 mol/l ±0,2 %
Titer. 0,998-1,002

P718.1	1 l	plastic	21,40 €
Original pack 6 x 1 l			20,33/1 l

For further information, please see page 1681

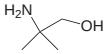
Ammonium tungsten oxide hydrate

▶ Ammonium metatungstate hydrate see p. 1801

Ammonium vanadium oxide

▶ Ammonium monovanadate see p. 1801

AMP



AMP

PUFFERAN® ≥90 %
2-Amino-2-methyl-1-propanol
$C_4H_{11}NO$
M 89,14 g/mol
D 0,93 • bp 165 °C
mp 30 °C • flp 78 °C
[124-68-5] • EC No. 204-709-8
WGK 1

Warning H315-H319-H412

Type analysis:
Assay (GC). ..... ≥90,0 %
Water. ..... ≤1,0 %

3121.1	250 ml	glass	37,55 €

For further information, please see page 1308

Ampholyte

▶ Roti®lyte Carrier Ampholyte see p. 2287

Amphotericin B

Amphotericin B

≥850 I.U./mg, for biochemistry
Broad-range fungicide, polyene.
Fungizon
$C_{47}H_{73}NO_{17}$
M 924,10 g/mol
mp >170 °C (dec.)
Storage temp.: +4 °C
[1397-89-3] • EC No. 215-742-2
WGK 3

Warning H315-H319-H335

Type analysis:
Activity. ..... ≥850 I.U./mg

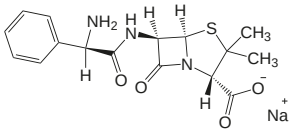
0246.1	50 mg	glass	22,05 €
0246.2	250 mg	glass	70,85 €
0246.3	500 mg	glass	128,50 €

For further information, please see page 1499

Ampicillin-LB Selective Agar

▶ LB-Agar (Lennox) / Amp100 see p. 2093
▶ LB-Agar (Luria/Miller) / Amp100 see p. 2094
▶ LB-Agar (Luria/Miller) / Amp50 see p. 2094

Ampicillin sodium salt



D-α-Aminobenzylpenicillin sodium salt
$C_{16}H_{18}N_3NaO_4S$
M 371,39 g/mol
Storage temp.: +4 °C
[69-52-3] • EC No. 200-708-1

Danger H334-H317

Ampicillin sodium salt

CELLPURE® ≥91 %

β-lactam antibiotic. Semi synthetic penicillin. For cell culture and biochemistry.

Guarantee analysis:

Appearance. ..... white to off-white powder
Assay (HPLC, dry substance). ..... 91,0-102,0 %
Dimer. ..... ≤4,5 %
Water (KF). ..... ≤2,0 %
pH value (10 % in H_2O). 8,0-10,0
Endotoxins. ..... <0,15 I.E./mg

HP62.1	10 g	plastic	47,20 €
HP62.2	50 g	plastic	175,15 €

For further information, please see page 1499

Ampicillin sodium salt

≥97 %, BioScience-Grade, for molecular biology and biochemistry

β-lactam antibiotic. Semi synthetic penicillin.

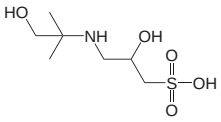
Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... ≥97,0 %
Water (KF). ..... ≤2,0 %
pH value (10 % in water). 8,0-10,0
Specific rotation $[\alpha]_D^{20}$ (0,25 % in KH-phthalate). ..... +258° to +287°
Absorption (430 nm). ..... ≤0,15
Dichloromethane. ..... ≤0,2 %

K029.1	10 g	plastic	23,55 €
K029.4	25 g	plastic	44,00 €
K029.5	50 g	plastic	76,25 €
K029.2	100 g	plastic	128,50 €
K029.3	250 g	plastic	278,45 €

For further information, please see page 1499

AMPSO



AMPSO

PUFFERAN® ≥98 %

3-N-(α,α-Dimethyl-hydroxyethyl)-amino-2-hydroxypropane sulphonic acid
$C_7H_{17}NO_5S$
M 227,28 g/mol
mp 228-230 °C
[68399-79-1] • EC No. 269-991-7

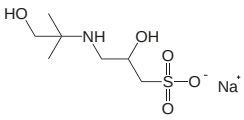
Type analysis:

Assay. ..... ≥98 %
UV-absorption (0,1 M in H_2O):
280 nm. ..... ≤0,02
260 nm. ..... ≤0,04

7159.1	25 g	plastic	48,95 €
7159.2	100 g	plastic	155,80 €

For further information, please see page 1308

AMPSO sodium salt



AMPSO sodium salt

PUFFERAN® ≥98 %

3-N-(α,α-Dimethyl hydroxyethyl)-amino-2-hydroxypropane sulphonic acid sodium salt
$C_7H_{16}NO_5SNa$
M 249,3 g/mol
[102029-60-7]

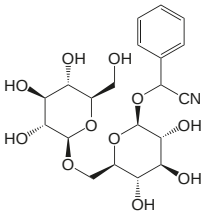
Type analysis:

Assay. ..... ≥98 %
Water (KF). ..... ≤4 %
Solution (10 % in H_2O). ..... clear, colourless
UV-absorption (0,1 M in H_2O):
280 nm. ..... ≤0,05
260 nm. ..... ≤0,06

7014.1	25 g	plastic	54,30 €
7014.2	100 g	plastic	173,65 €

For further information, please see page 1308

Amygdalin



Amygdaloside
$C_{20}H_{27}NO_{11}$
M 457,42 g/mol
D 0,4
mp 213 °C
Solubility: 83 g/l (H_2O, 25 °C)
Storage temp.: +4 °C
[29883-15-6] • EC No. 249-925-3
WGK 1

Warning H302

Amygdalin

≥97 %, for biochemistry

Type analysis:

Appearance. ..... white powder
Assay (HPLC). ..... ≥97 %
Specific rotation $[\alpha]_D^{20}$. ..... -37° to -41°
Loss on drying (110 °C). ..... <6,0 %
Melting point. ..... 208-215 °C

8713.1	10 g	plastic	52,15 €
8713.2	100 g	plastic	284,90 €

Amygdalin

ROTICHROM® ~CHR

5500.1	10 g	plastic	34,30 €

Amygdalose

▶ β-D-Gentiobiose see p. 2014

Amygdaloside

▶ Amygdalin see p. 1805

n-Amyl alcohol

▶ 1-Pentanol see p. 2196

β-Amylase

β-Amylase

16-24 U/mg, lyophil.

Made from barley malt.
Storage temp.: +4 °C
[9000-91-3] • EC No. 232-566-1
WGK 1

Danger H334

Type analysis:

Appearance. ..... white to off-white powder
Description. ..... lyophilized
Activity (10 mg/ml starch solution, pH 6,0; 40 °C). ..... 16-24 U/mg
α-Amylase. ..... ≤0,0001%
α-Glucosidase. ..... ≤0,0001%
1 Unit equivalent to the amount of enzyme, which produces 1 µmol maltose per minute at 40 °C and pH 6,0.

8717.1	100 mg	glass	53,65 €

For further information, please see page 1316

Amylopectin

Amylopectin

for biochemistry

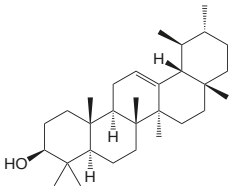
From maize starch.
M >1 000 000 g/mol
[9037-22-3] • EC No. 232-911-6

Type analysis:

Appearance. ..... white powder
pH value. 4-6
Water. ..... 10,5-13,5 %

8545.1	500 g	plastic	26,80 €
Original pack 6 x 500 g			25,46/500 g
8545.2	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
8545.3	2,5 kg	plastic	57,95 €

α-Amyrin



α-Amyrin

ROTICHROM® HPLC

Reference substance for HPLC.

$C_{30}H_{50}O$

M 426,73 g/mol

Storage temp.: +4 °C

[638-95-9] • EC No. 211-352-1

WGK 1

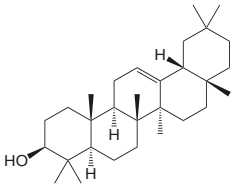
Warning H302

Type analysis:

Purity (HPLC)..... ≥98,5 %

7000.1	10 mg	glass	246,20 €

β-Amyrin



β-Amyrin

ROTICHROM® HPLC

Reference substance for HPLC.

$C_{30}H_{50}O$

M 426,73 g/mol

Storage temp.: +4 °C

[559-70-6] • EC No. 209-204-6 • WGK 1

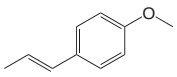
Warning H302

Type analysis:

Purity (HPLC)..... ≥98,5 %

7001.1	10 mg	glass	418,20 €

Anethole



Anethole

≥99 %, for biochemistry

p-Propenylanisole,
1-Methoxy-4-propenyl benzene

$C_{10}H_{12}O$

M 148,20 g/mol

D 0,99 • bp ~236 °C

mp 21,5 °C • flp 96 °C

Solubility: insoluble (H_2O, 20 °C)

Storage temp.: +4 °C

[4180-23-8] • EC No. 224-052-0

UN No. 3077 • ADR 9 III • WGK 2

H411

Type analysis:

Appearance..... colourless to yellowish liquid or white cryst. substance
Assay (GC, trans-anethole)..... ≥99,0 %
Assay (GC, cis-anethole)..... ≤0,3 %
Solidification point..... ≥21,5 °C
Refractive index n_D^{20}..... 1,559-1,562
Density (d 20 °C/4 °C)..... 0,986-0,989

5131.1	25 ml	glass	21,40 €
5131.2	250 ml	glass	61,20 €

Aneurine hydrochloride

▶ Thiamine hydrochloride see p. 2404

7-O-Angelyl-9-O-echimidinyl-retronecine

▶ Echimidine see p. 1964

7-Angelyleuropine

▶ Lasiocarpine see p. 2092

7-Angelyleuropine N-oxide

▶ Lasiocarpine N-oxide see p. 2092

Anhydrous soda

▶ Sodium carbonate see p. 2333

Aniline

Aminobenzene, Benzamine, Benzenamine, Phenylamine

C_6H_7N

M 93,13 g/mol

D 1,02 • bp 184 °C

mp -6 °C • flp 70 °C

Solubility: 35 g/l (H_2O, 20 °C)

[62-53-3] • EC No. 200-539-3

UN No. 1547 • ADR 6.1 II • WGK 3

Danger H301+H311+H331-H317-H318-H341-H351-H372-H410

Aniline

≥99,5 %, p.a.

Type analysis:

Assay..... ≥99,5 %
Nitrobenzene..... ≤0,005 %
Lead (Pb)..... ≤0,0001 %
Iron (Fe)..... ≤0,0001 %
Copper (Cu)..... ≤0,0001 %
Non volatile matter..... ≤0,005 %
Water..... ≤0,5 %

9846.1	100 ml	glass	19,25 €
9846.2	500 ml	glass	41,85 €
9846.3	1 l	glass	61,20 €
Original pack 6 x 1 l			58,14/1 l

Aniline

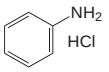
≥99 %, for synthesis

Type analysis:

Assay..... ≥99,0 %
Non volatile matter..... ≤0,01 %
Water..... ≤0,5 %

9931.1	250 ml	glass	13,45 €
9931.2	1 l	glass	31,10 €
Original pack 6 x 1 l			29,55/1 l
9931.3	2,5 l	glass	63,35 €
Original pack 4 x 2,5 l			60,18/2,5 l

Aniline hydrochloride



Aniline hydrochloride

≥99 %, extra pure

Anilinium chloride, Phenylamine hydrochloride

C_6H_8ClN

M 129,60 g/mol

bp 245 °C

mp 196-201 °C • flp 198 °C

Solubility: 107 g/l (H_2O, 20 °C)

[142-04-1] • EC No. 205-519-8

UN No. 1548 • ADR 6.1 III • WGK 2

Danger H301+H311+H331-H372-H341-H351-H318-H410-H317

Type analysis:

Assay (arg.)..... ≥99 %
Melting range..... 196-201 °C

5113.2	100 g	plastic	32,15 €
5113.1	250 g	plastic	71,95 €

Aniline blue water soluble

▶ Acid blue 93 (C.I. 42780) see p. 1768

Aniline phthalate spray solution

Aniline phthalate spray solution

for TLC

Ready-to-use spray solution for detection of reducing sugars. 0,9 ml Anilin and 1,66 g phthalic acid dissolved in 100 ml ethanol / 2-propanol (1/1 v/v).

UN No. 3316 • ADR 9 II • WGK 1

Danger

H225-H373-H319-H336-EUH208

Type analysis:

TLC-application..... complies

CP35.1	100 ml	glass	38,50 €

p-Anilinesulphonic acid

▶ Sulphanilic acid see p. 2386

Anilinium chloride

▶ Aniline hydrochloride see p. 1806

Anilinoacetic acid
▶ N-Phenylglycine see p. 2207

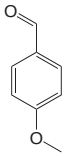
4-Anilinoazobenzene
▶ 4-(Phenylazo) diphenylamine see p. 2206

Anilinobenzene
▶ Diphenylamine see p. 1952

o-Anilobenzoic acid
▶ *N*-Phenylanthranilic acid see p. 2206

Anion exchangers
▶ Dowex® 1 X 2 Anion exchanger see p. 1960
▶ Ion exchange resin Roti®change see p. 2071

4-Anisaldehyde

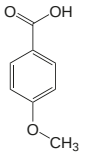


4-Anisaldehyde
≥97,5 %
4-Methoxybenzaldehyde, Aubepine
$C_8H_8O_2$
M 136,14 g/mol
D 1,119 • bp 248 °C
mp ~1 °C • flp 116 °C
Solubility: 2 g/l (H_2O, 20 °C)
[123-11-5] • EC No. 204-602-6
WGK 1
Warning H302-H315-H319-H335

Type analysis:
Appearance. ..... clear, colourless to slightly yellowish liquid
Assay (GC). ..... ≥97,5 %

7201.1	25 g	glass	23,15 €

4-Anisic acid

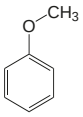


4-Anisic acid
≥98 %
4-Methoxybenzoic acid
$C_8H_8O_3$
M 152,15 g/mol
bp 277 °C
mp 182-184 °C • flp 185 °C
Solubility: 0,3 g/l (H_2O, 20 °C)
[100-09-4] • EC No. 202-818-5
WGK 1
Warning H315-H319-H335

Type analysis:
Assay. ..... ≥98,0 %

3631.1	100 g	plastic	19,90 €
3631.2	250 g	plastic	37,55 €
3631.3	500 g	plastic	69,35 €
Original pack 6 x 500 g			65,88/500 g

Anisole



Anisole
≥99 %, for synthesis
Methoxybenzene
C_7H_8O
M 108,14 g/mol
D 0,994 • bp 156 °C
mp -37 °C • flp 41 °C
Solubility: 1,6 g/l (H_2O, 20 °C)
[100-66-3] • EC No. 202-876-1
UN No. 2222 • ADR 3 III • WGK 2
Warning H226

Type analysis:
Assay (GC). ..... ≥99 %
Water. ..... ≤0,1 %

4417.1	100 ml	glass	13,45 €
4417.2	500 ml	glass	25,70 €
4417.3	1 l	glass	41,85 €
Original pack 6 x 1 l			39,76/1 l
4417.4	2,5 l	glass	85,90 €
Original pack 4 x 2,5 l			81,61/2,5 l

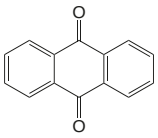
Anthocyans

Art. No.	Description	Page
3939	Apigeninidin chloride	1812
0641	Cyanidin 3-arabinoside chloride	1915
4545	Cyanidin chloride	1915
1133	Cyanin chloride	1915
5568	Cyanin chloride	1915
4537	Delphinidin chloride	1924
0643	Delphinidin 3-galactoside chloride	1925
0644	Delphinidin 3-glucoside chloride	1925
0977	Delphinidin 3-rutinoside chloride	1925
9326	Diosmetinidin chloride	1951
3967	Idaein chloride	2062
6134	Keracyanine chloride	2085
6136	Kuromanin chloride	2087
9325	Luteolinidin chloride	2106
6140	Malvidin chloride	2118
K013	Malvin chloride	2119
K030	Oenin chloride	2173
4541	Pelargonidin chloride	2194
6853	Pelargonidin chloride	2194
1646	Pelargonidin 3,5-diglucoside chloride	2194
4540	Peonidin chloride	2197
1413	Peonidin 3,5-diglucoside chloride	2197
1619	Peonidin 3-glucoside chloride	2197
1469	Petunidin 3-glucoside chloride	2204
K014	Primulin chloride	2237

9,10-Anthracenedione
▶ Anthraquinone see p. 1807

9(10*H*)-Anthracenone
▶ Anthrone see p. 1807

Anthraquinone



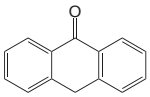
Anthraquinone
ROTI®CALIPURE Melting point standard 283-286 °C
9,10-Anthracenedione, 9,10-Anthraquinone
$C_{14}H_8O_2$
M 208,22 g/mol
bp 380 °C
mp 283-286 °C • flp 185 °C
[84-65-1] • EC No. 201-549-0
WGK 1
Warning H317

Type analysis:
Meniscus formation. ..... 283-286 °C
Complete liquefaction. ..... 283-286 °C

9754.1	1 g	glass	32,15 €

9,10-Anthraquinone
▶ Anthraquinone see p. 1807

Anthrone



Anthrone
p.a., ACS
Reagent for carbohydrates
9(10*H*)-Anthracenone
$C_{14}H_{10}O$
M 194,23 g/mol
mp 153-158 °C
Solubility: 4,6 g/mol (H_2O, 20 °C)
[90-44-8] • EC No. 201-994-0
WGK 1

Guarantee analysis:
Appearance. ..... light yellowish cryst. powder
Melting point. ..... 153-159 °C
Absorbance of reagent solution (425 nm). ..... complies
Absorbance of reagent solution (620 nm). ..... complies
Solubility in ethyl acetate. ..... complies
Suitability as reagent for carbohydrates. ..... complies

2673.1	10 g	plastic	26,35 €
2673.2	25 g	plastic	40,75 €
2673.3	100 g	plastic	110,65 €

Antibiotic G 418

▶ Geneticin disulphate (G418 Sulphate) see p. 2013

Antibiotic Medium No. 1

Antibiotic Medium No. 1

Ph.Eur., for microbiology

Standard agar medium for detection and for assaying the potency of antibiotics.

Application: Use 30,5 g for 1 l agar.

Antibiotic Agar No. 1 (Ph.Eur. 7,0), Penassay Seed Agar

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

Peptone. ..... 6,0 g/l
Casein peptone (Pancreas hydrolysate). ..... 4,0 g/l
Yeast extract. ..... 3,0 g/l
Beef extract. ..... 1,5 g/l
Glucose monohydrate. ..... 1,0 g/l
Agar. ..... 15,0 g/l
pH value ..... 6,6 ±0,1

CL53.1	500 g	plastic	121,40 €
Original pack 6 x 500 g			115,33/500 g

For further information, please see page 1435

Antibiotic Medium No. 23

Antibiotic Medium No. 23

for microbiology

Agar medium for detection and for assaying the potency of antibiotics.

Application: Use 27,1 g for 1 l agar. Directly prior to pouring add 14,3 g ammonium chloride in 10 ml sterile water.

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

Glucose. ..... 10,0 g/l
Yeast extract. ..... 2,5 g/l
di-Potassium hydrogen phosphate. ..... 0,69 g/l
Potassium dihydrogen phosphate. ..... 0,45 g/l
Agar. ..... 13,5 g/l
pH value ..... 5,6 ±0,1

CL54.1	500 g	plastic	107,40 €
Original pack 6 x 500 g			102,03/500 g

For further information, please see page 1436

Antibiotics

Art. No.	Description	Page
8969	Actinomycin D	1771
0246	Amphotericin B	1804
HP62	Ampicillin sodium salt	1805
K029	Ampicillin sodium salt	1805
5655	Bacitracin	1824
CP14	Blasticidin S hydrochloride	1842
6344	Carbenicillin disodium salt	1877
4156	Cefoxitin sodium salt	1884
4014	Cefsulodin sodium salt	1884
3886	Chloroamphenicol	1891
CN31	Colistinsulphate	1905
8682	Cycloheximide	1918
CN37	D-Cycloserine	1918
4166	Erythromycin	1974
HN71	Geldanamycin	1325
0239	Geneticin disulphate (G418 Sulphate)	2013
CP11	Geneticin disulphate (G418)-solution	2013
2039	Geneticin disulphate (G418)-solution	2013
0233	Gentamycin sulphate	2014
HN09	Gentamycin sulphate solution	2014
2475	Gentamycin sulphate solution	2014
CP13	Hygromycin B	2060
CP12	Hygromycin B solution	2060
1287	Hygromycin B solution	2061
T832	Kanamycin sulphate	2083
4150	Mitomycin C	2145
CN32	Nalidixic acid	2152
8668	Neomycin sulphate	2155
3011	Nourseothricin dihydrogen sulphate	2168
0247	Novobiocin sodium salt	2168
0241	Nystatin dihydrate	2170
HP49	Penicillin G potassium salt	1380
CN29	Penicillin G potassium salt	1485
HP48	Penicillin G sodium salt	1380
CN28	Penicillin G sodium salt	1485
HP10	Pen/Strep-PreMix	1380
0235	Polymyxin B sulphate	1486
0240	Puromycin dihydrochloride	1486
HN72	Radicicol	1326
4163	Rifampicin	1486
1463	Roti®-Antibiotic Discs Erythromycin (E)	2262
1463	Roti®-Antibiotic Discs Erythromycin (E)	2262
1454	Roti®-Antibiotic Discs Amphotericin B (AP)	2263
1454	Roti®-Antibiotic Discs Amphotericin B (AP)	2263
1456	Roti®-Antibiotic Discs Ampicillin (AMP)	2263
1456	Roti®-Antibiotic Discs Ampicillin (AMP)	2263
1458	Roti®-Antibiotic Discs Bacitracin (B)	2263
1458	Roti®-Antibiotic Discs Bacitracin (B)	2263
1459	Roti®-Antibiotic Discs Carbenicillin (CB)	2263
1459	Roti®-Antibiotic Discs Carbenicillin (CB)	2263
1460	Roti®-Antibiotic Discs Cefoxitin (CX)	2263
1460	Roti®-Antibiotic Discs Cefoxitin (CX)	2263
1461	Roti®-Antibiotic Discs Chloroamphenicol (C)	2263
1461	Roti®-Antibiotic Discs Chloroamphenicol (C)	2263
1494	Roti®-Antibiotic Discs Penicillin (P)	2263
1494	Roti®-Antibiotic Discs Penicillin (P)	2263
1495	Roti®-Antibiotic Discs Polymyxin B (PB)	2263
1495	Roti®-Antibiotic Discs Polymyxin B (PB)	2263
1462	Roti®-Antibiotic Discs Colistin (CL)	2263
1462	Roti®-Antibiotic Discs Colistin (CL)	2263
1464	Roti®-Antibiotic Discs Gentamycin (GEN)	2264
1464	Roti®-Antibiotic Discs Gentamycin (GEN)	2264
1465	Roti®-Antibiotic Discs Kanamycin (K)	2264
1465	Roti®-Antibiotic Discs Kanamycin (K)	2264
1466	Roti®-Antibiotic Discs Nalidix acid (NA)	2264
1466	Roti®-Antibiotic Discs Nalidix acid (NA)	2264
1467	Roti®-Antibiotic Discs Neomycin (N)	2264
1467	Roti®-Antibiotic Discs Neomycin (N)	2264
1468	Roti®-Antibiotic Discs Novobiocin (NV)	2264
1468	Roti®-Antibiotic Discs Novobiocin (NV)	2264
1476	Roti®-Antibiotic Discs Nystatin (NS)	2264
1476	Roti®-Antibiotic Discs Nystatin (NS)	2264
1496	Roti®-Antibiotic Discs Rifampicin (RIF)	2264
1496	Roti®-Antibiotic Discs Rifampicin (RIF)	2264
1497	Roti®-Antibiotic Discs Streptomycin (S)	2264
1497	Roti®-Antibiotic Discs Streptomycin (S)	2264
1498	Roti®-Antibiotic Discs Tetracycline (TE)	2264
1498	Roti®-Antibiotic Discs Tetracycline (TE)	2264
1499	Roti®-Antibiotic Discs Ticarcillin (TI)	2265
1499	Roti®-Antibiotic Discs Ticarcillin (TI)	2265
1501	Roti®-Antibiotic Discs Vancomycin (VA)	2265
1501	Roti®-Antibiotic Discs Vancomycin (VA)	2265
9830	Roti®-CELL Myco-Free	1380
HP66	Streptomycin sulphate	1380
0236	Streptomycin sulphate	1380
HP63	Tetracycline hydrochloride	1380
0237	Tetracycline hydrochloride	1487
4161	Ticarcillin disodium salt	1487
0242	Vancomycin hydrochloride	1380

Antibody, primary

Storage temp.: -20 °C
Transport temp.: cooled

Anti DYKDDDDK pAB

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection and isolation of DYKDDDDK-tagged proteins

Recommended dilution: 1:1.000

Primary anti DYKDDDDK antibody

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target. ..... DYKDDDDK-tag
Western Blot. ..... complies
ELISA. ..... complies

4665.1	100 µl	plastic	253,20 €

For further information, please see page 1360

Anti DYKDDDDK Serum

polyclonal

Polyclonal serum for detection and isolation of DYKDDDDK-tagged proteins

Recommended dilution: 1:1.000

Primary anti DYKDDDDK antibody

Type analysis:

Appearance. ..... clear, ochre-rose coloured liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target. ..... DYKDDDDK-tag
Western Blot. ..... complies
ELISA. ..... complies

4664.1	100 µl	plastic	206,95 €

For further information, please see page 1360

Anti GST pAB

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection and isolation of GST-tagged proteins

Recommended dilution: 1:1.000

Primary anti GST antibody

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target. ..... GST-tag
Western Blot. ..... complies
ELISA. ..... complies

3998.1	100 µl	plastic	253,20 €

For further information, please see page 1360

Anti GST Serum

polyclonal

Polyclonal serum for detection and isolation of GST-tagged proteins

Recommended dilution: 1:2.000

Primary anti GST antibody

Type analysis:

Appearance. ..... clear, ochre-rose coloured liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target. ..... GST-tag
Western Blot. ..... complies
ELISA. ..... complies

3994.1	100 µl	plastic	206,95 €

For further information, please see page 1360

Anti His pAB

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection and isolation of His-tagged proteins

Recommended dilution: 1:1.000 - 1:10.000

Primary anti His antibody

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target. ..... His-tag
Western Blot. ..... complies
ELISA. ..... complies

3742.1	100 µl	plastic	253,20 €

For further information, please see page 1360

Anti His Serum

polyclonal

Polyclonal serum for detection and isolation of His-tagged proteins

Recommended dilution: 1:1.000

Primary anti His antibody

Type analysis:

Appearance. ..... clear, ochre-rose coloured liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target. ..... His-tag
Western Blot. ..... complies
ELISA. ..... complies

3735.1	100 µl	plastic	206,95 €

For further information, please see page 1360

Anti Myc pAB

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection and isolation of Myc-tagged proteins

Recommended dilution: 1:1.000

Primary anti Myc antibody

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target. ..... Myc-tag
Western Blot. ..... complies
ELISA. ..... complies

4667.1	100 µl	plastic	253,20 €

For further information, please see page 1360

Anti Myc Serum

polyclonal

Polyclonal serum for detection and isolation of Myc-tagged proteins

Recommended dilution: 1:1.000

Primary anti Myc antibody

Type analysis:

Appearance. ..... clear, ochre-rose coloured liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target. ..... Myc-tag
Western Blot. ..... complies
ELISA. ..... complies

4666.1	100 µl	plastic	206,95 €

For further information, please see page 1360

Antibody, secondary

Storage temp.: -20 °C
Transport temp.: cooled

Anti Human-AP

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection of human IgG in western blotting, ELISA, and immunohistochemistry.

Recommended dilution: 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti human antibody, AP-conjugated

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... human
Labelling. ..... Alkaline Phosphatase (AP)
Western Blot. ..... complies
ELISA. ..... complies

4754.1	1 ml	plastic	196,20 €

For further information, please see page 1361

Anti Human-FITC

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection of human IgG in immunofluorescence, FACS analyses, and immunohistochemistry.

Recommended dilution: 1:1.000 - 1:20.000

Secondary anti human antibody, FITC-conjugated

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, yellowish liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... human
Labelling. ..... Fluorescein isothiocyanate (FITC)
ELISA. ..... complies

4755.1	2 ml	plastic	143,55 €

For further information, please see page 1361

Anti Human-HRP

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection of human IgG in western blotting, ELISA, and immunohistochemistry.

Recommended dilution: 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti human antibody, HRP-conjugated

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, lightly brown liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... human
Labelling. ..... Horse Raddish Peroxidase (HRP)
Western Blot. ..... complies
ELISA. ..... complies

4753.1	2 ml	plastic	160,75 €

For further information, please see page 1361

Anti Mouse-AP

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection of mouse IgG in western blotting, ELISA, and immunohistochemistry.

Recommended dilution: 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti mouse antibody, AP-conjugated

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... mouse
Labelling. ..... Alkaline Phosphatase (AP)
ELISA. ..... complies

4760.1	1 ml	plastic	196,20 €

For further information, please see page 1361

Anti Mouse-FITC

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection of mouse IgG in immunofluorescence, FACS analyses, and immunohistochemistry.

Recommended dilution: 1:1000 - 1:20.000

Secondary anti mouse antibody, FITC-conjugated

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, yellowish liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... mouse
Labelling. ..... Fluorescein isothiocyanate (FITC)
ELISA. ..... complies

4761.1	2 ml	plastic	143,55 €

For further information, please see page 1361

Anti Mouse-HRP

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection of mouse IgG in western blotting, ELISA, and immunohistochemistry.

Recommended dilution: 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti mouse antibody, HRP-conjugated

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, lightly brown liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... mouse
Labelling. ..... Horse Raddish Peroxidase (HRP)
Western Blot. ..... complies
ELISA. ..... complies

4759.1	2 ml	plastic	160,75 €

For further information, please see page 1361

Anti Rabbit-AP

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection of rabbit IgG in western blotting, ELISA, and immunohistochemistry.

Recommended dilution: 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti rabbit antibody, AP-conjugated

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... rabbit
Labelling. ..... Alkaline Phosphatase (AP)
Western Blot. ..... complies
ELISA. ..... complies

4751.1	1 ml	plastic	196,20 €

For further information, please see page 1361

Anti Rabbit-FITC

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection of rabbit IgG in immunofluorescence, FACS analyses, and immunohistochemistry.

Recommended dilution: 1:1000 - 1:20.000

Secondary anti rabbit antibody, FITC-conjugated

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, yellowish liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... rabbit
Labelling. ..... Fluorescein isothiocyanate (FITC)
ELISA. ..... complies

4752.1	2 ml	plastic	143,55 €

For further information, please see page 1361

Anti Rabbit-HRP

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection of rabbit IgG in western blotting, ELISA, and immunohistochemistry.

Recommended dilution: 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti rabbit antibody, HRP-conjugated

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, lightly brown liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... rabbit
Labelling. ..... Horse Raddish Peroxidase (HRP)
Western Blot. ..... complies
ELISA. ..... complies

4750.1	2 ml	plastic	160,75 €

For further information, please see page 1361

Anti Rat-AP

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection of rat IgG in western blotting, ELISA, and immunohistochemistry.

Recommended dilution: 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti rat antibody, AP-conjugated

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... rat
Labelling. ..... Alkaline Phosphatase (AP)
Western Blot. ..... complies
ELISA. ..... complies

4763.1	1 ml	plastic	196,20 €

For further information, please see page 1361

Anti Rat-FITC

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection of rat IgG in immunofluorescence, FACS analyses, and immunohistochemistry

Recommended dilution: 1:1000 - 1:20.000

Secondary anti rat antibody, FITC-conjugated

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, yellowish liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... rat
Labelling. ..... Fluorescein isothiocyanate (FITC)
ELISA. ..... complies

4764.1	2 ml	plastic	143,55 €

For further information, please see page 1361

Anti Rat-HRP

1 mg/ml, polyclonal, affinity purified

Polyclonal antibody for detection of rat IgG in western blotting, ELISA, and immunohistochemistry.

Recommended dilution: 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti rat antibody, HRP-conjugated

Type analysis:

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, lightly brown liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... rat
Labelling. ..... Horse Raddish Peroxidase (HRP)
Western Blot. ..... complies
ELISA. ..... complies

4762.1	2 ml	plastic	160,75 €

For further information, please see page 1361

Antibody Diluent clear

Antibody Diluent clear

ready-to-use, for immunohistochemistry

For optimisation of immunohistochemical detection signals.

One bottle for 125 ml is sufficient for enhancement of approx. 125 slides.

Enhancer solution

D 0,99

Storage temp.: +4 °C
Transport temp.: cooled

WGK 1

Type analysis:

Composition. ..... complies
pH value. ..... 7,4 ±0,5
Stability. ..... complies
Colour. ..... colourless

0509.1	125 ml	plastic	67,65 €
0509.2	4 x 125 ml	plastic	193,40 €

For further information, please see page 1366

Antibody Diluent green

Antibody Diluent green

ready-to-use, for immunohistochemistry

For optimisation of immunohistochemical detection signals.

One bottle for 125 ml is sufficient for enhancement of approx. 125 slides.

Enhancer solution

D 0,99

Storage temp.: +4 °C
Transport temp.: cooled

WGK 1

Type analysis:

Composition. ..... complies
pH value. ..... 7,4 ±0,5
Stability. ..... complies
Colour. ..... green

0070.1	125 ml	plastic	67,65 €
0070.2	4 x 125 ml	plastic	193,40 €

For further information, please see page 1366

Antimonous oxide

▶ Antimony(III) oxide see p. 1811

Antimonous chloride

▶ Antimony(III) chloride see p. 1811

Antimony shot

Antimony shot

ROTI®METIC 99,999 % (5N)

Sb

M 121,76 g/mol

D 6,68 • bp 1587 °C

[7440-36-0] • EC No. 231-146-5

UN No. 1549 • ADR 6.1 III • WGK 1

Warning H335

Type analysis:

Assay (metals basis). ..... 99,999 %
Particle size. ..... 1-3 mm
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

4516.2	50 g	glass	196,65 €

Antimony

Antimony
≥99,5 %, powder
Sb
M 121,75 g/mol
D 6,688 • bp 1635 °C
mp 630 °C
[7440-36-0] • EC No. 231-146-5
UN No. 2871 • ADR 6.1 III • WGK 1
Warning H335

Type analysis:
Appearance. ..... grey powder
Assay. ..... ≥99,5 %
Particle size. ..... ~325 mesh

9258.1	100 g	plastic	46,80 €
9258.2	500 g	plastic	170,95 €
Original pack 6 x 500 g			162,40/500 g

Antimony Standards
- Antimony AAS Standard Solution see p. 2358
- Antimony ICP Standard Solution see p. 2361
- Antimony ICP Standard Solution see p. 2366

Antimony(III) chloride

Antimony(III) chloride
≥99 %, p.a., ACS
Antimonous chloride, Butter of antimony, Stibous chloride, Trichlorostibane
$SbCl_3$
M 228,11 g/mol
D 3,14 • bp 220 °C
mp 73 °C
Solubility: 987 g/l (H_2O, 25 °C)
[10025-91-9] • EC No. 233-047-2
UN No. 1733 • ADR 8 II • WGK 2
Danger H314-H335-H411

Guarantee analysis:
Assay. ..... ≥99,0 %
Insoluble in $CHCl_3$. ..... ≤0,05 %
Insoluble in HCl. ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,005 %
Arsenic (As). ..... ≤0,001 %
Lead (Pb). ..... ≤0,005 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,002 %
Potassium (K). ..... ≤0,01 %
Copper (Cu). ..... ≤0,001 %
Sodium (Na). ..... ≤0,01 %

9819.1	100 g	plastic	28,95 €
9819.2	500 g	plastic	92,35 €
Original pack 6 x 500 g			87,73/500 g
9819.3	1 kg	plastic	156,85 €
Original pack 6 x 1 kg			149,01/1 kg

Antimony(III) oxide

di-Antimony trioxide, Antimonous oxide, Flowers of Antimony, Antimony sesquioxide
Sb_2O_3
M 291,52 g/mol
D 5,2 • bp 1425 °C
mp 655 °C
Solubility: 0,03 g/l (H_2O, 20 °C)
[1309-64-4] • EC No. 215-175-0
WGK 2
Warning H351

Antimony(III) oxide
≥99 %, p.a.

Guarantee analysis:
Assay. ..... ≥99,0 %
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,05 %
Arsenic (As). ..... ≤0,005 %
Lead (Pb). ..... ≤0,05 %
Iron (Fe). ..... ≤0,005 %
Potassium (K). ..... ≤0,005 %
Sodium (Na). ..... ≤0,005 %

9826.1	100 g	plastic	19,25 €
9826.2	500 g	plastic	64,40 €
Original pack 6 x 500 g			61,18/500 g
9826.3	1 kg	plastic	116,00 €
Original pack 6 x 1 kg			110,20/1 kg

Antimony(III) oxide
≥95 %, extra pure

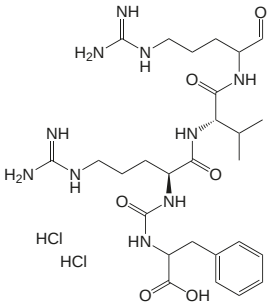
Type analysis:
Assay. ..... ≥95,0 %
Arsenic (As). ..... ≤0,05 %
Lead (Pb). ..... ≤0,5 %
Iron (Fe). ..... ≤0,1 %

7348.1	100 g	plastic	14,95 €
7348.2	500 g	plastic	39,70 €
Original pack 6 x 500 g			37,72/500 g
7348.3	1 kg	plastic	69,80 €
Original pack 6 x 1 kg			66,31/1 kg
7348.4	2,5 kg	plastic	154,70 €

Antimony sesquioxide
- Antimony(III) oxide see p. 1811

di-Antimony trioxide
- Antimony(III) oxide see p. 1811

Antipain dihydrochloride



Antipain dihydrochloride
≥30 U/mg, for biochemistry
Inhibitor of serine/cysteine proteases and trypsin-like serine proteases.
N-(Nα-Carbonyl-Arg-Val-Arg-al)-Phe dihydrochloride
$C_{27}H_{44}N_{10}O_6 \cdot 2\ HCl$
M 677,6 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[37682-72-7] • WGK 1

Type analysis:
Appearance. ..... white powder
Activity (trypsin, L-BAPA). ..... ≥30 U/mg
Solubility (0,5 % in H_2O). ..... clear

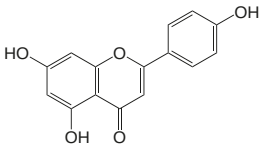
2933.1	5 mg	plastic	55,40 €
2933.2	25 mg	plastic	198,90 €

For further information, please see page 1324

AP
- Alkaline phosphatase see p. 1781

APDC
- Ammonium pyrrolidine dithiocarbamate see p. 1803

Apigenin



4',5,7-Trihydroxyflavone
$C_{15}H_{10}O_5$
M 270,23 g/mol
mp 352 °C
[520-36-5] • EC No. 208-292-3 • WGK 1
Warning H315-H319-H335

Apigenin
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤3,0 %
Water (KF). ..... ≤2,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE37.1	10 mg	glass	837,45 €

Apigenin
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC37.1	25 mg	glass	235,45 €

Apigenin
ROTICHROM® HPLC
Reference substance for HPLC.
From *Chamomillae romana*
Storage temp.: +4 °C

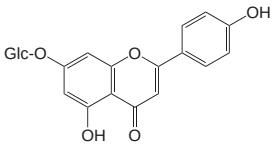
Type analysis:
Purity (HPLC)..... ≥99 %

7002.2	20 mg	glass	192,45 €

Apigenin
ROTICHROM® TLC
Reference substance for thin layer chromatography.
Storage temp.: +4 °C

5611.1	25 mg	glass	44,65 €

Apigenin-7-glucoside



Apigetrin
$C_{21}H_{20}O_{10}$
M 432,57 g/mol
mp 224-237 °C
[578-74-5] • EC No. 209-430-5
WGK 1

Apigenin-7-glucoside
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤2,0 %
Water (KF)..... ≤7,0 %
Assay (qNMR)..... ≥85,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE19.1	25 mg	glass	1052,45 €

Apigenin-7-glucoside
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC)..... ≥90,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC19.1	25 mg	glass	317,15 €

Apigenin-7-glucoside
ROTICHROM® HPLC
Reference substance for HPLC.
From *Chamomillae romana.*
Storage temp.: +4 °C

Type analysis:
Purity (HPLC)..... >99 %

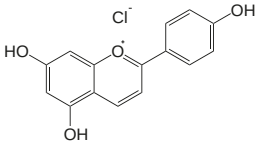
6348.1	10 mg	glass	155,90 €

Apigenin-7-glucoside
ROTICHROM® TLC
Reference substance for thin layer chromatography.
From *Chamomillae romana.*
Storage temp.: +4 °C

5557.1	100 mg	glass	147,85 €

Apigenin-8-glucoside
▶ Vitexin see p. 2436

Apigeninidin chloride



Apigeninidin chloride
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{15}H_{11}O_4Cl$
M 290,69 g/mol
mp >350 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[1151-98-0]

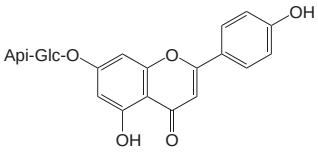
Type analysis:
Purity (HPLC)..... ≥97 %

3939.2	10 mg	glass	403,15 €

Apigenin-7-rhamnoglucoside
▶ Rhoifolin see p. 2258

Apigetrin
▶ Apigenin-7-glucoside see p. 1812

Apiin



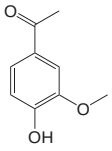
Apiin
ROTICHROM® HPLC
Reference substance for HPLC.
From *Petroselinum crispum.*
Apiosid, Apigenin-7-apiosylglucoside
$C_{26}H_{28}O_{14}$
M 564,50 g/mol
mp 236 °C
Storage temp.: +4 °C
[26544-34-3] • EC No. 247-780-0
Warning H315-H319-H335

Type analysis:
Purity (HPLC)..... >99 %

1085.1	10 mg	glass	342,95 €

6-O-(Apiofuranosyl)-1,6,8-trihydroxy-3-methyl-antrachinon
▶ Frangulin B see p. 2007

Apocynin



Apocynin
≥97,5 %
Acetovanillon
$C_9H_{10}O_3$
M 166,17 g/mol
mp 113-117 °C
[498-02-2] • EC No. 207-854-5
WGK 2

Type analysis:
Assay (GC)..... ≥97,5 %

7884.1	25 g	plastic	103,75 €

Aprotinin

Aprotinin
≥3,0 PEU/mg, for biochemistry
Inhibitor of serine proteases.
M 6500 g/mol
Storage temp.: +4 °C
[9087-70-1] • EC No. 232-994-9 • WGK 1

Type analysis:
Appearance. ..... white to off-white powder
Specific activity. ... ≥3,0 PEU/mg equals ≥5400 KIU/mg
pH value (aqueous solution). 5,0-7,0
Loss on drying. ..... ≤6 %
Lyophilized from bovine lungs.

A162.1	10 mg	glass	38,20 €
A162.2	50 mg	glass	111,70 €
A162.3	100 mg	glass	203,20 €
A162.4	500 mg	glass	772,95 €

For further information, please see page 1324

APS
▶ Ammonium peroxydisulphate see p. 1802

Aqueous Gentamycin sulphate solution
▶ Gentamycin sulphate solution see p. 2014

Aqueous Gentamicin solution
▶ Gentamycin sulphate solution see p. 2014

Arabic acid

Arabic acid
for biochemistry
Polyarabinic acid
M ~1100 g/mol
[32609-14-6] • EC No. 251-128-0

Type analysis:
Appearance. ..... white to off-white powder
Moisture. ..... <10 %
Ash content. ..... ≤1 %
pH value (5 % in H_2O). 2,0-3,0
Solubility (10 % in H_2O). ..... clear to slightly turbid

7264.1	25 g	plastic	99,90 €

Arabinitol
▶ D(+)-Arabitol see p. 1813
▶ L(-)-Arabitol see p. 1813

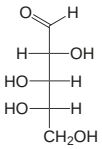
DL-Arabinose

DL-Arabinose
≥99 %, for biochemistry
$C_5H_{10}O_5$
M 150,13 g/mol
mp 161-162 °C
[147-81-9] • EC No. 243-619-3

Type analysis:
Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥99,0 %
L-Arabinose. ..... ~50 %
D-Arabinose. ..... ~50 %

8954.1	10 g	plastic	32,80 €
8954.2	50 g	plastic	94,10 €

L(+)-Arabinose

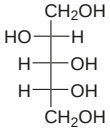


L(+)-Arabinose
≥99 %, for biochemistry
Pectinose
$C_5H_{10}O_5$
M 150,13 g/mol
D 0,5
mp 158 °C
Solubility: 594 g/l (H_2O, 10 °C)
[5328-37-0] • EC No. 226-214-6

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥99,0 %
Specific rotation $[\alpha]_D^{20}$ (10 % in H_2O). .... +102° to +105°
Solubility (10 % in H_2O). ..... clear, colourless
Water (KF). ..... ≤0,3 %
Sulphated ash. ..... ≤0,1 %
Heavy metals (as Pb). ..... ≤0,001 %

5118.1	50 g	plastic	41,85 €
5118.2	100 g	plastic	65,50 €
5118.3	250 g	plastic	130,00 €
5118.4	500 g	plastic	198,90 €
Original pack 6 x 500 g			188,96/500 g
5118.5	1 kg	plastic	299,95 €
Original pack 6 x 1 kg			284,95/1 kg

D(+)-Arabitol

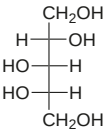


D(+)-Arabitol
≥99 %, for biochemistry
D(+)-Arabinitol, D(+)-Ara-ol
$C_5H_{12}O_5$
M 152,15 g/mol
mp 100-104 °C
[488-82-4] • EC No. 207-686-2

Type analysis:
Assay (HPLC). ..... ≥99,0 %
Solution (10 % in H_2O). ..... colourless
Specific rotation $[\alpha]_D^{20}$ (c=5 in 8 % aq. H_3BO_3). ..... +11,0° to +13,0°
Water (KF). ..... ≤1,0 %
Melting point. ..... 100-104 °C

5510.3	5 g	plastic	38,60 €
5510.1	25 g	plastic	121,40 €
5510.2	50 g	plastic	188,15 €

L(-)-Arabitol

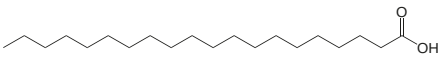


L(-)-Arabitol
for biochemistry
L(-)-Arabinitol
$C_5H_{12}O_5$
M 152,15 g/mol
mp ~99 °C
[7643-75-6] • EC No. 231-582-6

Type analysis:
Appearance. ..... white to off-white powder
Specific rotation $[\alpha]_D^{20}$ (2 % in 2 % aq. H_3BO_3). ..... -12,0° to -10,0°
Water (KF). ..... ≤1,0 %
Melting point. ..... 97-107 °C

7738.1	1 g	plastic	22,50 €
7738.2	5 g	plastic	60,10 €

Arachidic acid



Arachidic acid
≥99 %, synth.
n-Eicosanoic acid
$C_{20}H_{40}O_2$
M 312,52 g/mol
D 0,824 • bp 328 °C (dec.)
mp 75 °C • flp 110 °C
[506-30-9] • EC No. 208-031-3

Type analysis:
Appearance. ..... light beige, fine crystals
Assay (GC). ..... ≥99,0 %

8736.1	1 g	glass	53,65 €

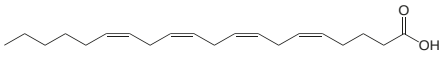
Arachidic acid calcium salt

Arachidic acid calcium salt
DAB
Calcium arachinate/-behenate
$C_{40}H_{78}CaO_4$
M 663,16 g/mol
mp ~150 °C
[22302-43-8] • EC No. 244-900-3

Guarantee analysis:
Appearance. ..... white, light powder
Identity. ..... complies
Appearance of solution. ..... complies
Acid value. 176-192
pH value. 6,8-8,1
Chloride (Cl). ..... ≤0,25 %
Sulphate (SO_4). ..... ≤0,25 %
Calcium (Ca). ..... (dry substance) 5,7-6,3 %
Heavy metals. ..... ≤0,004 %
Loss on drying. ..... ≤3 %

9264.1	500 g	plastic	32,15 €
Original pack 6 x 500 g			30,54/500 g
9264.2	1 kg	plastic	53,25 €
Original pack 6 x 1 kg			50,59/1 kg

Arachidonic acid



Arachidonic acid

>99 %
Isolated from porcine liver.
$C_{20}H_{32}O_2$
M 304,46 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[506-32-1] • EC No. 208-033-4
EUH019

Type analysis:
Appearance. ..... colourless to yellowish viscous oil
Assay. ..... >99 %

4717.2	10 mg	glass	50,45 €
4717.1	100 mg	glass	114,50 €
4717.3	1 g	glass	568,70 €

Araldit® Binding medium B 1

Araldit® Binding medium B 1

liquid
Epoxy resin, for connecting and filling of metal, ceramics and plastics.
Curing with Aradur® hardener H2 (2551)
[25068-38-6]
UN No. 3082 • ADR 9 III • WGK 3
Warning
H315-H317-H319-H410-EUH205

2530.1	500 g	tinplate	74,10 €

For further information, please see page 1177

Araldite® Rapid

Araldite® Rapid

liquid
Two component all-purpose glue, made on the basis of epoxid-resin.
D 1,17
UN No. 3082 • ADR 9 III • WGK 2
Warning
H315-H319-H317-H411-EUH205

3131.1	Two kits (= 60 ml glue)		41,40 €

For further information, please see page 1177

Araldit® Resin G 2

Araldit® Resin G 2

liquid
For casting and embedding electronic metal components
Curing with Aradur® hardener H2 (2551)
UN No. 3082 • ADR 9 III • WGK 2
Warning
H315-H317-H319-H411-EUH205

2545.1	500 g		38,20 €

For further information, please see page 1177

Aradur® Hardener H2

Aradur® Hardener H2

liquid
For using with Araldit® Binding medium B1 and Araldit® Resin G2
flp 110 °C
[112-24-3]
UN No. 2259 • ADR 8 II • WGK 2
Danger
H302+H312-H314-H317-H412

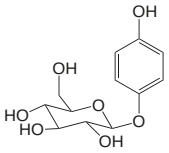
2551.1	100 g	glass	15,95 €
2551.2	500 g	glass	55,40 €

For further information, please see page 1177

D(+)-Ara-ol

▶ D(+)-Arabitol see p. 1813

p-Arbutin



Ursin, Ericolin
$C_{12}H_{16}O_7$
M 272,25 g/mol
mp 198 °C
[497-76-7] • EC No. 207-850-3
WGK 2

p-Arbutin

≥98 %, for biochemistry

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Solubility. ..... clear, colourless
Specific rotation $[\alpha]_D^{20}$. ..... -63° to -67°
Sulphated ash. ..... ≤0,5 %
Loss on drying. ..... ≤0,5 %

6115.1	10 g	plastic	53,25 €
6115.2	50 g	plastic	166,55 €

p-Arbutin

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤5,0 %
Assay (qNMR). ..... ≥80,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE38.1	10 mg	glass	532,15 €

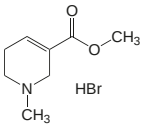
p-Arbutin

ROTICHROM® Working Standard

Type analysis:
Assay (HPLC). ..... ≥85,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC38.2	100 mg	glass	192,45 €

Arecoline hydrobromide



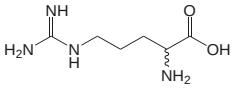
Arecoline hydrobromide

≥99 %
Methylarecaidin hydrobromide
$C_8H_{13}NO_2HBr$
M 236,12 g/mol
mp 171-174 °C
[300-08-3] • EC No. 206-087-3
WGK 1
Warning H302

Type analysis:
Assay. ..... ≥99,0 %

4602.1	1 g	glass	21,00 €

DL-Arginine



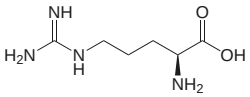
DL-Arginine

≥98,5 %, for biochemistry
$C_6H_{14}N_4O_2$
M 174,2 g/mol
mp 228 °C
Storage temp.: +4 °C
[7200-25-1] • EC No. 230-571-3
WGK 1
Warning H319

Type analysis:
Appearance. ..... white to off-white powder
Assay. ..... ≥98,5 %
Heavy metals (as Pb). ..... ≤0,001 %
Ash content. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

8592.1	5 g	plastic	21,00 €
8592.2	25 g	plastic	61,85 €
8592.3	100 g	plastic	203,20 €

L-Arginine



L-2-Amino-5-guanidino-n-valeric acid
$C_6H_{14}N_4O_2$
M 174,2 g/mol
D 1,42
mp 238 °C
Solubility: ~149 g/l (H_2O, 20 °C)
[74-79-3] • EC No. 200-811-1
WGK 1
Warning H319

L-Arginine
CELLPURE® ≥99 %
For cell culture and biochemistry.

Guarantee analysis:
Endotoxins. ≤6,0 E.U./g
Assay. ≥99 %
Loss on drying. ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. +26,9° to +27,9°
Ammonium (NH_4). ≤0,02 %
Chloride (Cl). ≤0,02 %
Sulphate (SO_4). ≤0,02 %
Heavy metals (as Pb). ≤0,001 %
Arsenic (As). ≤0,0001 %
Iron (Fe). ≤0,001 %

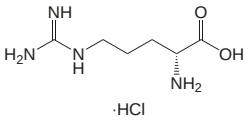
1655.1	25 g	plastic	10,65 €
1655.2	100 g	plastic	26,80 €
1655.3	500 g	plastic	87,00 €
Original pack 6 x 500 g			82,65/500 g

L-Arginine
≥98,5 %, USP, for biochemistry

Guarantee analysis:
Appearance. white, cryst. powder
Assay (dry substance). 98,5-101,0 %
Identity. complies
Appearance of solution. clear, colourless
Specific rotation $[\alpha]_D^{25}$ (8 % in HCl 6 N). +26,3° to +27,7°
pH value (1 g in 20 ml H_2O). 10,5-12,0
Ammonium (NH_4). ≤0,02 %
Chloride (Cl). ≤0,05 %
Sulphate (SO_4). ≤0,02 %
Arsenic (As_2O_3). ≤0,05 %
Iron (Fe). ≤0,001 %
Heavy metals (as Pb). ≤0,001 %
Foreign amino acids. complies
Loss on drying. ≤0,5 %
Sulphated ash. ≤0,1 %

3144.1	50 g	plastic	17,75 €
3144.3	250 g	plastic	45,05 €
3144.2	1 kg	plastic	139,65 €
Original pack 6 x 1 kg			132,67/1 kg

D-Arginine monohydrochloride

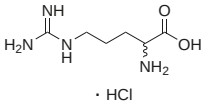


D-Arginine monohydrochloride
≥99 %, for biochemistry
D-2-Amino-5-guanidino-n-valeric acid hydrochloride, H-D-Arg-OH · HCl
$C_6H_{14}N_4O_2$ · HCl
M 210,7 g/mol
Storage temp.: +4 °C
[627-75-8] • EC No. 211-010-1
WGK 1

Type analysis:
Appearance. white to off-white powder
Assay. 99,0-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c= 2 in 6 N HCl). -23° to -21°
Loss on drying. ≤0,5 %

7868.1	1 g	plastic	24,65 €
7868.2	5 g	plastic	74,10 €
7868.3	25 g	plastic	213,95 €

DL-Arginine monohydrochloride

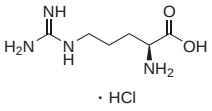


DL-Arginine monohydrochloride
≥98 %, for biochemistry
2-Amino-5-guanidino-n-valeric acid hydrochloride
$C_6H_{14}N_4O_2$ · HCl
M 210,70 g/mol
mp <200 °C
[32042-43-6] • EC No. 250-903-0
WGK 1

Type analysis:
Appearance. white to yellowish, cryst. powder
Assay (TLC). ≥98 %
Water (KF). ≤10 %
Solubility (50 mg/l H_2O). clear, colourless to yellow

4925.1	5 g	plastic	82,70 €

L-Arginine monohydrochloride



L-2-Amino-5-guanidino-n-valeric acid hydrochloride, H-L-Arg-OH · HCl
$C_6H_{14}N_4O_2$ · HCl
M 210,67 g/mol
Solubility: ~730 g/l (H_2O, 20 °C)
[1119-34-2] • EC No. 214-275-1
WGK 1

L-Arginine monohydrochloride
CELLPURE® ≥98,5 %
For cell culture and biochemistry.

Guarantee analysis:
Endotoxins. ≤6,0 E.U./g
Assay. ≥98,5 %
Loss on drying. ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. +22,1° to +22,9°
Ammonium (NH_4). ≤0,02 %
Chloride (Cl). ≤17 %
Sulphate (SO_4). ≤0,02 %
Heavy metals (as Pb). ≤0,001 %
Arsenic (As). ≤0,0001 %
Iron (Fe). ≤0,001 %

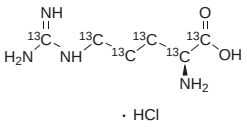
1689.1	25 g	plastic	15,60 €
1689.2	100 g	plastic	27,45 €
1689.3	500 g	plastic	90,20 €
Original pack 6 x 500 g			85,69/500 g

L-Arginine monohydrochloride
≥98,5 %, Ph.Eur., USP

Guarantee analysis:
Appearance. white, cryst. powder
Assay (dry substance). 98,5-101,0 %
Identity. complies
Appearance of solution. clear, colourless
Specific rotation $[\alpha]_D^{20}$. +22,1° to +22,9°
pH value (1 g, 10 ml H_2O). 4,7-6,2
Ammonium (NH_4). ≤0,02 %
Chloride (Cl). 16,58- 17,00 %
Sulphate (SO_4). ≤0,02 %
Arsenic (As_2O_3). ≤0,0001 %
Iron (Fe). ≤0,001 %
Heavy metals (as Pb). ≤0,001 %
Foreign amino acids. complies
Loss on drying. ≤0,2 %
Sulphated ash. ≤0,1 %

3145.1	50 g	plastic	17,75 €
3145.2	250 g	plastic	47,20 €

L-Arginine $^{13}C_6$ monohydrochloride

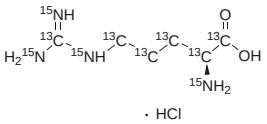


L-Arginine $^{13}C_6$ monohydrochloride
NEW
≥98 % ^{13}C
For proteomics by mass spectrometry.
(2S)-Amino-5-guanidino-n-valeric acid $^{13}C_6$ hydrochloride, ^{13}C labelled Arg, ^{13}C labelled arginine hydrochloride, SILAC (Stable Isotope Labelling by Amino acids in Cell culture), H-L-Arg-OH · HCl $^{13}C_6$
$^{13}C_6H_{14}N_4O_2$ · HCl
M 216,7 g/mol
[201740-91-2]
WGK 1

Type analysis:
Appearance. white powder
Assay (HPLC). ≥95 %
Isotope enrichment (^{13}C). ≥98 %

2061.1	100 mg	glass	188,15 €

L-Arginine $^{13}C_6$ $^{15}N_4$ monohydrochloride



· HCl

L-Arginine $^{13}C_6$ $^{15}N_4$ monohydrochloride

NEW

≥98 % ^{13}C ^{15}N

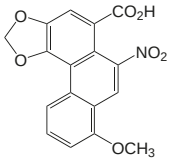
For proteomics by mass spectrometry.
(2S)-Amino-5-guanidino-n-valeric acid $^{13}C_6$ $^{15}N_4$ hydrochloride, ^{13}C and ^{15}N labelled Arg, ^{13}C and ^{15}N labelled arginine hydrochloride, SILAC (Stable Isotope Labelling by Amino acids in Cell culture),
H-L-Arg-OH · HCl $^{13}C_6$ $^{15}N_4$
$^{13}C_6H_{14}{}^{15}N_4O_2$ · HCl
M 220,7 g/mol
[202468-25-5]
WGK 1

Type analysis:

Appearance..... white powder
Assay (HPLC)..... ≥95 %
Isotope enrichment (^{13}C, ^{15}N)..... ≥98 %

2063.1	100 mg	glass	172,00 €

Aristolochic acid I



Aristolochic acid I

ROTICHROM® HPLC

Reference substance for HPLC.
From *Aristolochia clematitis.*
Aristolochin
$C_{17}H_{11}NO_7$
M 341,28 g/mol
mp 281-286 °C (dec.)
Storage temp.: +4 °C
[313-67-7] • EC No. 206-238-3
UN No. 1544 • ADR 6.1 III • WGK 1

Danger

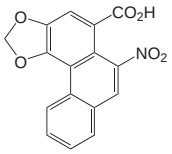
H301+H311+H331-H341-H351

Type analysis:

Purity (HPLC)..... >99 %

1086.1	20 mg	glass	317,15 €

Aristolochic acid II



Aristolochic acid II

ROTICHROM® HPLC

Reference substance for HPLC.
From *Aristolochia clematitis.*
Norаristolochic acid
$C_{16}H_9NO_6$
M 311,25 g/mol
mp 269-271 °C
Storage temp.: +4 °C
[475-80-9] • EC No. 207-499-6
UN No. 1544 • ADR 6.1 III • WGK 1

Danger

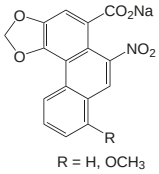
H301+H311+H331-H341-H351

Type analysis:

Purity (HPLC)..... >99 %

1088.1	20 mg	glass	403,15 €

Aristolochic acid sodium salt (I and II)



R = H, OCH_3

Aristolochic acid sodium salt (I and II)

for biochemistry

$C_{17}H_{10}NNaO_7$ / $C_{16}H_8NO_6Na$
M 363 / 333 g/mol
[10190-99-5] • EC No. 233-463-4
UN No. 1544 • ADR 6.1 II

Danger

H301+H311+H331-H351-H341

Type analysis:

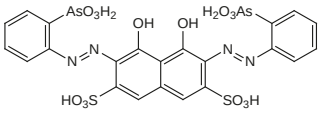
Appearance..... yellow to orange powder
Identity (TLC)..... complies
Solubility (c=20 mg/ml in H_2O)..... soluble

7268.1	500 mg	glass	370,90 €

Aristolochin

▶ Aristolochic acid I see p. 1816

Arsenazo III



Arsenazo III

≥85 %, p.a.

Indicator for metal ions
2,7-Bis(2-arsonophenylazo)-1,8-dihydroxy-naphthalin-3,6-disulphonic acid
$C_{22}H_{18}As_2N_4O_{14}S_2$
M 776,37 g/mol
[1668-00-4] • EC No. 216-788-6
UN No. 2811 • ADR 6.1 III • WGK 3

Danger H301+H331-H400-H410

Guarantee analysis:

Assay (HPLC)..... ≥85,0 %
Sulphated ash..... ≤0,2 %
Loss on drying (120 °C)..... ≤8,0 %
Specific Extinction E (1%/1cm)..... 300,0-450,0
Absorption max. (in H_2O)..... 535,0-543,0 nm
Absorption max. (in buffer pH 10)..... 571,0-576,0 nm
Lead (Pb)..... ≤0,001 %
Cadmium (Cd)..... ≤0,005 %
Calcium (Ca)..... ≤0,01 %
Chromium (Cr)..... ≤0,005 %
Iron (Fe)..... ≤0,01 %
Copper (Cu)..... ≤0,005 %
Magnesium (Mg)..... ≤0,005 %
Manganese (Mn)..... ≤0,005 %
Nickel (Ni)..... ≤0,005 %
Tin (Sn)..... ≤0,005 %

KK22.1	1 g	glass	52,60 €
KK22.2	5 g	glass	192,45 €

Arsenic Standards

▶ Arsenic AAS Standard Solution see p. 2358
▶ Arsenic ICP Standard Solution see p. 2361
▶ Arsenic ICP Standard Solution see p. 2366

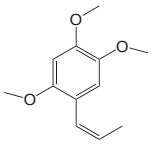
1-(2-Arsonophenylazo)-2-hydroxy-3,6-naphthalene-disulphonic acid sodium salt

▶ Thorin see p. 2405

Asarin

▶ β-Asarone see p. 1817

β-Asarone



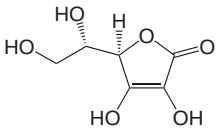
β-Asarone
ROTICHROM® GC
Reference substance for GC.
Asarin, Asarum camphor
$C_{12}H_{16}O_3$
M 208,25 g/mol
Storage temp.: +4 °C
[5273-86-9] • EC No. 226-096-6
WGK 1
Warning H302

Type analysis:
Purity (GC).....≥85 %

9363.1	1 g	plastic	84,85 €

Asarum camphor
▶ β-Asarone see p. 1817

L(+)-Ascorbic acid



Vitamin C
$C_6H_8O_6$
M 176,12 g/mol
D 1,65
mp 190-192 °C
Solubility: 333 g/l (H_2O, 20 °C)
[50-81-7] • EC No. 200-066-2
WGK 1

L(+)-Ascorbic acid
≥99 %, p.a.
Antioxidant, for biochemistry.

Guarantee analysis:
Appearance.....white crystals
Assay.....≥99 %
Identity.....complies
Arsenic (As).....≤0,0003 %
Lead (Pb).....≤0,0005 %
Iron (Fe).....≤0,0002 %
Copper (Cu).....≤0,0005 %
Heavy metals.....≤0,001 %
Oxalic acid ($C_2H_2O_4$).....≤0,2 %
Specific rotation $[\alpha]_D^{20}$.....+20,5° to +21,5°
pH value (2 % in H_2O).....2,2-2,8

3525.1	100 g	plastic	12,80 €
3525.2	250 g	plastic	18,20 €
3525.3	500 g	plastic	28,50 €
Original pack 6 x 500 g			27,08/500 g

L(+)-Ascorbic acid
≥99 %, Ph.Eur., USP, BP

Guarantee analysis:
Appearance.....white to off-white crystals
Assay.....99,0-100,5 %
Identity.....complies
Appearance of solution.....complies
Arsenic (As).....≤0,0003 %
Lead (Pb).....≤0,001 %
Iron (Fe).....≤0,0002 %
Copper (Cu).....≤0,0005 %
Heavy metals.....≤0,001 %
Sulphated ash.....≤0,1 %
Specific rotation $[\alpha]_D^{20}$.....+20,5° to +21,5°
Oxalic acid ($C_2H_2O_4$).....≤0,2 %
Related substances:
Impurities total C and D (each).....≤0,15 %
Impurities total (except C,D).....≤0,2 %
Related substances (unspecific impurities).....≤0,1 %

6288.1	100 g	plastic	13,45 €
6288.2	250 g	plastic	21,00 €
6288.3	1 kg	plastic	64,40 €
Original pack 6 x 1 kg			61,18/1 kg

L(+)-Ascorbic acid
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC).....≥90,0 %
Residual solvents (GC).....≤2,0 %
Water (KF).....≤2,0 %
Assay (qNMR).....≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE00.1	100 mg	glass	762,20 €

L(+)-Ascorbic acid
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC).....≥90,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC00.1	100 mg	glass	125,70 €

L(+)-Ascorbic acid sodium salt

Sodium L(+)-ascorbate
$C_6H_7O_6Na$
M 198,11 g/mol
D 1,8
mp 220 °C
[134-03-2] • EC No. 205-126-1
WGK 1

L(+)-Ascorbic acid sodium salt
≥99 %, USP, for biochemistry

Guarantee analysis:
Appearance.....white to light yellowish crystals
Assay (iodom., dry substance).....99,0 -101,0 %
Identity.....complies
pH value (10 % H_2O, 20 °C).....7,0-8,0
Heavy metals (as Pb).....≤0,001 %
Loss on drying.....≤0,25 %
Volatile organic impurities.....complies
Specific rotation $[\alpha]_D^{25}$
(10 % in H_2O, dry substance).....+103° to +106°

3149.1	100 g	plastic	25,30 €
3149.2	500 g	plastic	75,15 €
Original pack 6 x 500 g			71,39/500 g

L(+)-Ascorbic acid sodium salt
≥99 %, ROTI®click Grade
for Click Chemistry
Storage temp.: +4 °C
Transport temp.: cooled

Type analysis:
Appearance.....white crystals
Assay.....≥99 %

7819.1	10 mg	plastic	13,80 €
7819.2	5 x 10 mg	plastic	40,75 €

Asiaticoside

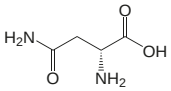
Asiaticoside
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{48}H_{78}O_{19}$
M 959,15 g/mol
mp 235-238 °C
Storage temp.: +4 °C
[16830-15-2] • EC No. 240-851-7

Type analysis:
Purity (HPLC).....≥99 %

3972.1	10 mg	glass	209,65 €

H-Asn-OH
▶ D-Asparagine monohydrate see p. 1817
▶ DL-Asparagine monohydrate see p. 1818

D-Asparagine monohydrate

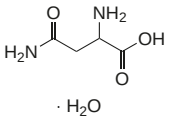


D-Asparagine monohydrate
≥98 %, for biochemistry
D-Asparaginic acid semiamide, H-D-Asn-OH
$C_4H_8N_2O_3 \cdot H_2O$
M 150,12 g/mol
Storage temp.: +4 °C
[5794-24-1] • EC No. 218-163-3
WGK 1

Type analysis:
Appearance.....white cryst. powder
Assay.....≥98,0 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in 5 N HCl).....-36,5° to -34,5°
Loss on drying.....11,5-12,5 %

7872.1	5 g	plastic	24,65 €
7872.2	25 g	plastic	74,10 €

DL-Asparagine monohydrate



DL-Asparagine monohydrate

≥98 %, for biochemistry

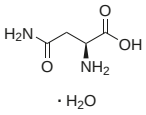
(±)-2-Aminsuccinic acid 4-amide, DL-Aspartic acid 4-amide, H-DL-Asn-OH
$C_4H_8N_2O_3 \cdot H_2O$
M 150,14 g/mol
[3130-87-8] • EC No. 221-521-1
WGK 1

Type analysis:

Assay (titr.). ..... ≥98,0 %
Solution (5 % in H_2O). ..... colourless, clear
Water (KF). ..... 10,5-13,5 %
Aspartic acid content (TLC). ..... ≤3,0 %

5495.1	100 g	plastic	40,75 €
5495.2	250 g	plastic	88,70 €

L-Asparagine monohydrate



Asparaginic acid semiamide
$C_4H_8N_2O_3 \cdot H_2O$
M 150,14 g/mol
mp 215-217 °C (dec.)
Solubility: ~22 g/l (H_2O, 20 °C)
[5794-13-8] • EC No. 200-735-9
WGK 1

L-Asparagine monohydrate

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... 10,5-12,5 %
Sulphated ash. ..... ≤0,1 %
Specific rotation $[\alpha]_D^{20}$. ..... +33,7° to +36,0°
Ammonium (NH_4). ..... ≤0,1 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

KK37.1	50 g	plastic	27,45 €
KK37.2	250 g	plastic	93,45 €
KK37.3	500 g	plastic	171,90 €
Original pack 6 x 500 g			163,31/500 g

L-Asparagine monohydrate

≥99 %, Ph.Eur., for biochemistry

Guarantee analysis:

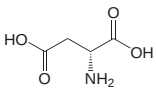
Appearance. ..... white, cryst. powder
Appearance of solution. ..... complies
Identity. ..... complies
Assay (dry substance). ..... 99,0-101,0 %
Specific rotation $[\alpha]_D^{20}$. ..... +33,7° to +36,0°
pH value. 4,0-6,0
Ammonium (NH_4). ..... ≤0,1 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Foreign amino acids. ..... complies
Aspartic acid. ..... ≤0,5 %
Loss on drying. ..... 10,5-12,5 %
Sulphated ash. ..... ≤0,1 %

HN23.1	100 g	plastic	38,20 €
HN23.2	500 g	plastic	161,15 €
Original pack 6 x 500 g			153,09/500 g
HN23.3	1 kg	plastic	264,35 €
Original pack 6 x 1 kg			251,13/1 kg

Asparaginic acid semiamide

▶ D-Asparagine monohydrate see p. 1817
▶ DL-Asparagine monohydrate see p. 1818
▶ L-Asparagine monohydrate see p. 1818

D-Aspartic acid



D-Aspartic acid

≥98 %, for biochemistry

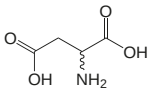
D-2-Amino-succinic acid, H-D-Asp-OH
$C_4H_7NO_4$
M 133,1 g/mol
Storage temp.: +4 °C
[1783-96-6] • EC No. 217-234-6
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... 98,0-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c=8 in 6 N HCl). ..... -26° to -24°
Loss on drying. ..... ≤0,2 %

7873.1	5 g	plastic	21,00 €
7873.2	25 g	plastic	61,20 €
7873.3	100 g	plastic	149,45 €

DL-Aspartic acid



DL-Aspartic acid

≥98 %, for biochemistry

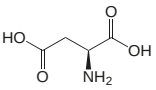
2-Amino-succinic acid
$C_4H_7NO_4$
M 133,1 g/mol
Storage temp.: +4 °C
[617-45-8] • EC No. 210-513-3
WGK 1

Type analysis:

Appearance. ..... white cryst. powder
Assay. ..... ≥98,0 %
Heavy metals (as Pb). ..... ≤0,005 %
Loss on drying. ..... ≤0,5 %

8593.1	100 g	plastic	32,15 €
8593.2	500 g	plastic	138,70 €
Original pack 6 x 500 g			131,77/500 g

L-Aspartic acid



L-2-Amino-succinic acid, H-L-Asp-OH
$C_4H_7NO_4$
M 133,1 g/mol
mp ~271 °C
Solubility: ~4 g/l (H_2O, 20 °C)
[56-84-8] • EC No. 200-291-6
WGK 1

L-Aspartic acid

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. ..... +24,5° to +26,0°
Foreign amino acids. ..... complies
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As_2O_3). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %

1690.1	25 g	plasitc	14,95 €
1690.2	100 g	plasitc	26,80 €
1690.3	500 g	plasitc	88,05 €
Original pack 6 x 500 g			83,65/500 g

L-Aspartic acid

≥98,5 %, Ph.Eur., for biochemistry

Guarantee analysis:

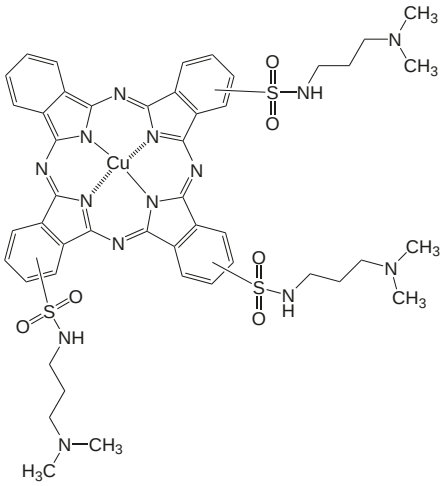
Appearance. ..... white, cryst. powder
Assay (dry substance). ..... 98,5 -101,0 %
Identity. ..... complies
Appearance of solution. ..... clear, colourless
Specific rotation $[\alpha]_D^{20}$. ..... +24,5° to +26,0°
pH value 2,5-3,5
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,02 %
Arsenic (As_2O_3). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,2 %
Sulphated ash. ..... ≤0,1 %

T202.1	100 g	plastic	17,10 €
T202.2	500 g	plastic	74,20 €
Original pack 6 x 500 g			70,49/500 g
T202.3	1 kg	plastic	123,55 €
Original pack 6 x 1 kg			117,37/1 kg

DL-Aspartic acid 4-amide

▶ DL-Asparagine monohydrate see p. 1818

Astra blue FM (C.I. 48048)



Astra blue FM (C.I. 48048)

for microscopy

$C_{47}H_{52}CuN_{14}O_6S_3$
M 1068,75 g/mol
[82864-57-1]
WGK 3

Warning H315-H319-H335

Type analysis:

Absorption max. (in H_2O)..... 605-615 nm
Loss on drying (110 °C)..... ≤15 %

5165.1	10 g	glass	13,90 €
5165.2	50 g	glass	28,95 €

For further information, please see page 1520

Astragalin

▶ Kaempferol-3-glucoside see p. 2082

ATP

ATP

≥98 %, lyophilised

Adenosine-5-triphosphate di-sodium salt
$C_{10}H_{14}N_5O_{13}P_3Na_2 \cdot 3\ H_2O$
M 605,18 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[51963-61-2]
WGK 1

K054.1	1 g	plastic	30,00 €
K054.3	10 g	plastic	119,90 €
K054.6	100 g	plastic	478,40 €

For further information, please see page 1305

ATP disodium salt

▶ Adenosin-5'-triphosphate disodium salt (ATP) see p. 1773

ATP solution

ATP solution

≥99 %, 100 mM solution

Adenosine-5-triphosphate
$C_{10}H_{13}N_5O_{13}P_3$
M 504,16 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[987-65-5] • EC No. 213-579-1
WGK 1

K045.1	25 µmol (250 µl)	plastic	42,50 €

For further information, please see page 1305

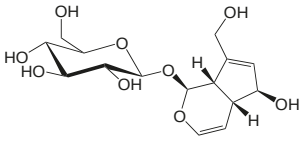
Aubepine

▶ 4-Anisaldehyde see p. 1807

Aucuboside

▶ Aucubin see p. 1819

Aucubin



Aucuboside, Rhinanthin
$C_{15}H_{22}O_9$
M 346,34 g/mol
mp 180 °C
Storage temp.: +4 °C
[479-98-1] • EC No. 207-540-8

Aucubin

>97 %

Type analysis:

Assay (HPLC)..... >97 %

9149.1	250 mg	glass	504,20 €

Aucubin

ROTICHROM® HPLC

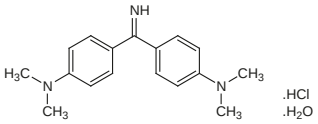
Reference substance for HPLC.
From *Aucuba japonica.*

Type analysis:

Purity (HPLC). ..... >98,5 %

7004.1	25 mg	glass	149,45 €

Auramine O (C.I. 41000)



Auramine O (C.I. 41000)

for microscopy

4,4'-Bis-(dimethylamino)-benzophenonimide-hydrochloride, Basic yellow 2
$C_{17}H_{22}ClN_3$
M 303,84 g/mol
mp >250 °C (dec.)
Solubility: 10 g/l (H_2O, 20 °C)
[2465-27-2] • EC No. 219-567-2
UN No. 3077 • ADR 9 III • WGK 3

Warning H351-H302-H319-H411

Type analysis:

Maximum absorption. .....430-440 nm

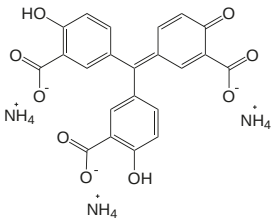
0319.1	25 g	glass	16,70 €
0319.2	50 g	glass	27,85 €

For further information, please see page 1529

Aureine

▶ Senecionine see p. 2310

Aurin tricarboxylic acid ammonium salt



Aurin tricarboxylic acid ammonium salt

p.a., ACS

Reagent for aluminium
Aluminon, Ammonium aurin tricarboxylate
$C_{22}H_{23}N_3O_9$
M 473,44 g/mol
mp 220-225 °C
Solubility: 800 g/l (H_2O, 20 °C)
[569-58-4] • EC No. 209-319-1
WGK 1

Warning H315-H319

Guarantee analysis:

Identity. .....complies
Insoluble matter. .....≤0,1 %
Ash content. .....≤0,2 %
Suitability as reagent for aluminum. .....complies

2670.1	10 g	glass	18,85 €
2670.2	25 g	glass	27,45 €
2670.3	100 g	glass	65,50 €

Autoradiography Pen

Autoradiography Pen

For marking of chemoluminescent or isotope labelled sheets prior to autoradiographic detection.
flp 20 °C
UN No. 1268 • ADR 3 II • WGK 2
Danger H225-H304-H372-EUH031

CL10.1	1 piece		126,75 €

For further information, please see page 1378

Avocado oil

Avocado oil

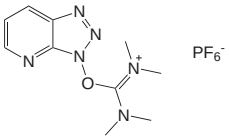
refined
Oleum Perseae
D 0,91
[8024-32-6] • EC No. 232-428-0

Type analysis:

Relative density (20 °C)	0,912-0,923
Refractive index n_D^{20}	1,468-1,476
Acid value	≤1,0 mg KOH/g
Peroxide value	≤15,0 meq O_2/kg
Saponification value	187-197 mg KOH/g
Iodine value (g I_2/ 100 g)	75-95
Unsaponifiable matter	≤2,0 %
GC-fatty acid constituents:	
<C 16:0	≤2,0 %
C 16:0 Palmitic acid	5,0-25 %
C 16:1 Palmitoleic acid	1,0-12 %
C 18:0 Stearic acid	≤3,0 %
C 18:1 Oleic acid	50-74 %
C 18:2 Linoleic acid	6,0-20 %
C 18:3 Linolenic acid	≤3,0 %
Other fatty acids	≤1,0 %

9341.1	1 l	glass	65,50 €
Original pack 6 x 1 l			62,23/1 l

O-(7-Azabenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HATU)



O-(7-Azabenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HATU)

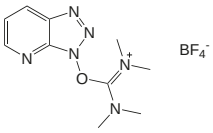
PEPTIPURE® ≥99 %
Coupling reagent for peptide synthesis
HATU
$C_{10}H_{15}F_6N_6OP$
M 380,23 g/mol
mp 181-185 °C
Storage temp.: +4 °C
[148893-10-1]
UN No. 1325 • ADR 4.1 II • WGK 1
Danger H228-H315-H319-H335

Type analysis:

Assay (HPLC)	≥99,0 %
Loss on drying	≤0,5 %
Solubility (5 % in DMF)	clearly soluble

2131.1	5 g	glass	54,30 €
2131.2	25 g	glass	206,30 €

O-(7-Azabenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TATU)



O-(7-Azabenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TATU)

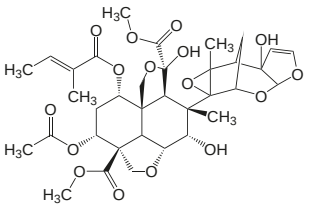
PEPTIPURE® ≥99 %
Coupling reagent for peptide synthesis
TATU
$C_{10}H_{15}BF_4N_6O$
M 322,07 g/mol
[873798-09-5]
WGK 1
Warning H302

Type analysis:

Assay (HPLC)	≥99,0 %
Loss on drying	≤0,5 %

2148.1	5 g	glass	44,00 €
2148.2	25 g	glass	153,65 €

Azadirachtin



Azadirachtin

ROTICHROM® HPLC
Reference substance for HPLC.
$C_{35}H_{44}O_{16}$
M 720,72 g/mol
mp 158-160 °C
Storage temp.: -20 °C • Transport temp.: room temp.
[11141-17-6]

Type analysis:

Purity (HPLC)	≥96 %

4314.1	1 mg	glass	213,95 €
4314.2	5 mg	glass	858,95 €

9-Azafluorene

▶ Carbazole see p. 1876

7-Azaindole

7-Azaindole

≥98 %
1H-Pyrrolo[2,3-b]pyridine
$C_7H_6N_2$
M 118,14 g/mol
bp 270 °C (1004 hPa)
mp 105-107 °C
[271-63-6] • EC No. 205-981-0

Type analysis:

Assay (GC)	≥98,0 %
Solution (5 % in methanol)	colourless to slightly yellow, clear
Water (KF)	≤0,5 %
Melting point	105-107 °C

5490.1	1 g	glass	19,25 €
5490.2	5 g	plastic	61,85 €
5490.3	10 g	plastic	110,65 €

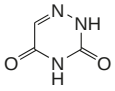
H-D-Aza-OH · HCl

▶ D-β-Azidoalanine hydrochloride see p. 1821

H-L-Aza-OH · HCl

▶ L-β-Azidoalanine hydrochloride see p. 1821

6-Azauracil



6-Azauracil

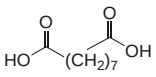
≥98 %, for biochemistry
1,2,4-Triazine-3,5-(2H,4H)-dione,
3,5-Dihydroxy-1,2,4-triazine
$C_3H_3N_3O_2$
M 113,08 g/mol
mp 277-281 °C
[461-89-2] • EC No. 207-318-0
WGK 1
Warning H371

Type analysis:

Assay (titr.)	≥98,0 %
Loss on drying	≤2,0 %
Melting point	277-281 °C

5488.1	5 g	plastic	66,55 €
5488.2	10 g	plastic	110,65 €

Azelaic acid



Azelaic acid

≥80 %
Nonanedioic acid
$C_9H_{16}O_4$
M 188,23 g/mol
D 1,03 • bp ~101 °C (20 hPa)
mp 97-107 °C • flp 215 °C
Solubility: 2,4 g/l (H_2O, 20 °C)
[123-99-9] • EC No. 204-669-1
WGK 1
Warning H319

Type analysis:
Assay (titr.). ..... ≥80,0 %
Water (KF). ..... ≤1,0 %
Melting point. ..... 97-107 °C

5487.1	25 g	plastic	22,05 €
5487.2	100 g	plastic	54,75 €

Azide Dextrose Broth

Azide Dextrose Broth

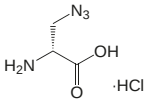
for microbiology
For enrichment and detection of enterococci.
Application: Use 34,7 g (1x) or 69,4 g (2x) for 1 l broth.
Storage temp.: +20 °C
WGK 1
Warning H302-H412

Formulation:
Casein peptone. ..... 15 g/l
Meat extract. ..... 4,5 g/l
Glucose. ..... 7,5 g/l
Sodium chloride (NaCl). ..... 7,5 g/l
Sodium azide. ..... 0,2 g/l
pH value. ..... 7,2 ±0,2

CL79.1	500 g	plastic	97,75 €
Original pack 6 x 500 g			92,86/500 g

For further information, please see page 1436

D-β-Azidoalanine hydrochloride



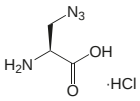
D-β-Azidoalanine hydrochloride

≥99 %
3-Azido-D-alanine hydrochloride,
H-D-Aza-OH · HCl
$C_3H_6N_4O_2$ · HCl
M 166,56 g/mol
Storage temp.: +4 °C
Transport temp.: cooled
[1379690-01-3]
WGK 1

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥99 %
Enantiomeric purity. ..... ≤0,5 % L-enantiomer

7856.1	5 mg	plastic	43,55 €
7856.2	10 mg	plastic	69,80 €
7856.3	100 mg	plastic	220,40 €
7856.4	500 mg	plastic	568,70 €

L-β-Azidoalanine hydrochloride



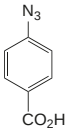
L-β-Azidoalanine hydrochloride

≥98 %
3-Azido-L-alanine hydrochloride,
H-L-Aza-OH · HCl
$C_3H_6N_4O_2$ · HCl
M 166,56 g/mol
Storage temp.: +4 °C
Transport temp.: cooled
[105661-40-3]
WGK 1

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

7854.1	5 mg	plastic	43,55 €
7854.2	10 mg	plastic	69,80 €
7854.3	100 mg	plastic	220,40 €
7854.4	500 mg	plastic	568,70 €

4-Azidobenzoic acid



4-Azidobenzoic acid

≥97 %
Linker
$C_7H_5N_3O_2$
M 163,14 g/mol
Storage temp.: +4 °C
Transport temp.: cooled
[6427-66-3]
UN No. 1325 • ADR 4.1 III • WGK 1
Warning H228

Type analysis:
Appearance. ..... white, cryst. powder
Assay (HPLC). ..... ≥97 %

7835.1	10 mg	plastic	39,70 €

2-[2-(2-Azidoethoxy)ethoxy]-ethanol

▶ HO-PEG2-Azide see p. 2193

5-((2-(2-(2-(2-Azidoethoxy)-ethoxy)ethoxy)ethyl)carbamoyl)-2-(6-(dimethylamino)-3-(dimethyliminio)-3*H*-xanthen-9-yl)benzoate

▶ 5-Carboxytetramethylrhodamine-PEG3-Azide (5-TAMRA-PEG3-Azide) see p. 1879

O-(2-(2-(2-(2-Azidoethoxy)-ethoxy)ethoxy)ethyl)hydroxyl-amine

▶ Aminooxy-PEG3-Azide see p. 1791

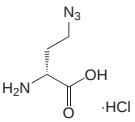
N-(2-(2-(2-(2-Azidoethoxy)-ethoxy)ethoxy)ethyl)-5-((3aS,4S,6aR)-2-oxohexa-hydro-1*H*-thieno[3,4-d]-imidazol-4-yl)pentanamide

▶ Biotin-PEG3-Azide see p. 1839

O-(2-Azidoethyl)-*O'*-methyl-heptaethylene glycole

▶ PEG8-Azide see p. 2193

D-γ-Azidohomoalanine hydrochloride



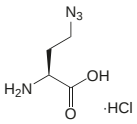
D-γ-Azidohomoalanine hydrochloride

≥99 %
4-Azido-D-homoalanine hydrochloride,
H-D-Aha-OH · HCl
$C_4H_8N_4O_2$ · HCl
M 180,58 g/mol
Storage temp.: +4 °C
Transport temp.: cooled
[120042-14-0]
WGK 1

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥99 %
Enantiomeric purity. ..... ≤0,5 % L-enantiomer

7858.1	5 mg	plastic	43,55 €
7858.2	10 mg	plastic	69,80 €
7858.3	100 mg	plastic	220,40 €
7858.4	500 mg	plastic	568,70 €

L-γ-Azidohomoalanine hydrochloride



L-γ-Azidohomoalanine hydrochloride

≥98 %

4-Azido-L-homoalanine hydrochloride,
H-L-Aha-OH · HCl

$C_4H_8N_4O_2$ · HCl

M 180,58 g/mol

Storage temp.: +4 °C
Transport temp.: cooled

[942518-29-8]

WGK 1

Type analysis:

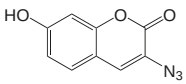
Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

7857.1	5 mg	plastic	43,55 €
7857.2	10 mg	plastic	69,80 €
7857.3	100 mg	plastic	220,40 €
7857.4	500 mg	plastic	568,70 €

3-Azido-7-hydroxy-chromen-2-one

▶ 3-Azido-7-hydroxycoumarin see p. 1822

3-Azido-7-hydroxycoumarin



3-Azido-7-hydroxycoumarin

≥98 %

Fluorescent dye

For a 10 mM solution: add 492 µl to 1 mg.

3-Azido-7-hydroxy-chromen-2-one

$C_9H_5N_3O_3$

M 203,15 g/mol

Storage temp.: -20 °C
Transport temp.: cooled

[817638-68-9]

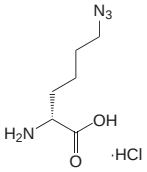
WGK 1

Type analysis:

Appearance. ..... brown solid
Assay (HPLC). ..... ≥98 %
Absorption max. (buffer, pH 7). ..... 404 nm (after click reaction)
Emission max. (buffer, pH 7). ..... 480 nm (after click reaction)
Solubility. ..... DMSO, DMF, MeOH, MeCN
For a 10 mM solution: add 492 µl to 1 mg.

7811.1	1 mg	plastic	90,85 €
7811.2	5 mg	plastic	303,70 €

D-Azidolysine hydrochloride



D-Azidolysine hydrochloride

≥99 %

6-Azido-D-lysine hydrochloride,
H-D-Lys(N_3)-OH · HCl

$C_6H_{12}N_4O_2$ · HCl

M 208,64 g/mol

Storage temp.: +4 °C
Transport temp.: cooled

[1159610-92-1]

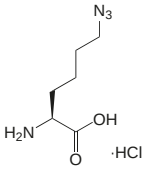
WGK 1

Type analysis:

Appearance. ..... white powder
Assay (HPLC). ..... ≥99 %
Enantiomeric purity. ..... ≤0,5 % L-enantiomer

7862.1	5 mg	plastic	43,55 €
7862.2	10 mg	plastic	69,80 €
7862.3	100 mg	plastic	220,40 €
7862.4	500 mg	plastic	568,70 €

L-Azidolysine hydrochloride



L-Azidolysine hydrochloride

≥98 %

6-Azido-L-lysine hydrochloride,
H-L-Lys(N_3)-OH · HCl

$C_6H_{12}N_4O_2$ · HCl

M 208,64 g/mol

Storage temp.: +4 °C
Transport temp.: cooled

[159610-92-1]

WGK 1

Type analysis:

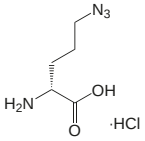
Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

7861.1	5 mg	plastic	43,55 €
7861.2	10 mg	plastic	69,80 €
7861.3	100 mg	plastic	220,40 €
7861.4	500 mg	plastic	568,70 €

26-Azido-3,6,9,12,15,18,21,24-octaoxahexacosan-1-amine

▶ H_2N-PEG8-Azide see p. 2194

D-Azidoornithine hydrochloride



D-Azidoornithine hydrochloride

≥99 %

5-Azido-D-ornithine hydrochloride,
H-D-Orn(N_3)-OH · HCl

$C_5H_{10}N_4O_2$ · HCl

M 194,7 g/mol

Storage temp.: +4 °C
Transport temp.: cooled

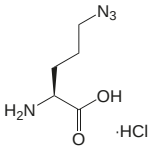
WGK 1

Type analysis:

Appearance. ..... white, cryst. powder
Assay (HPLC). ..... ≥99 %
Enantiomeric purity. ..... ≤0,5 % L-enantiomer

7860.1	5 mg	plastic	43,55 €
7860.2	10 mg	plastic	69,80 €
7860.3	100 mg	plastic	220,40 €
7860.4	500 mg	plastic	568,70 €

L-Azidoornithine hydrochloride



L-Azidoornithine hydrochloride

≥99 %

5-Azido-L-ornithine hydrochloride,
H-L-Orn(N_3)-OH · HCl

$C_5H_{10}N_4O_2$ · HCl

M 194,7 g/mol

Storage temp.: +4 °C
Transport temp.: cooled

[156463-09-1]

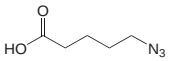
WGK 1

Type analysis:

Appearance. ..... white, cryst. powder
Assay (HPLC). ..... ≥99 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

7859.1	5 mg	plastic	43,55 €
7859.2	10 mg	plastic	69,80 €
7859.3	100 mg	plastic	220,40 €
7859.4	500 mg	plastic	568,70 €

5-Azidopentanoic acid



5-Azidopentanoic acid

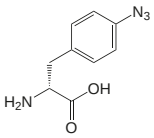
≥99 %
Linker
$C_5H_9N_3O_2$
M 143,15 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[79583-98-5]
WGK 3

Warning H351

Type analysis:
Appearance..... clear yellow liquid
Assay (TLC)..... ≥99 %

7836.1	5 mg	plastic	36,45 €
7836.2	10 mg	plastic	48,30 €

D-4-Azidophenylalanine



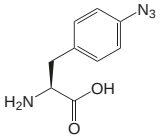
D-4-Azidophenylalanine

≥98 %
4-Azido-D-phenylalanine, H-D-Phe(4-N_3)-OH
$C_9H_{10}N_4O_2$
M 206,2 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[1241681-80-0]
WGK 1

Type analysis:
Appearance..... off-white powder
Assay (HPLC)..... ≥98 %
Enantiomeric purity..... ≤0,5 % L-enantiomer

7853.1	5 mg	plastic	43,55 €
7853.2	10 mg	plastic	69,80 €
7853.3	100 mg	plastic	220,40 €
7853.4	500 mg	plastic	568,70 €

L-4-Azidophenylalanine



L-4-Azidophenylalanine

≥98 %
4-Azido-L-phenylalanine, H-L-Phe(4-N_3)-OH
$C_9H_{10}N_4O_2$
M 206,2 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[33173-53-4] • WGK 1

Type analysis:
Appearance..... off-white powder
Assay (HPLC)..... ≥98 %
Enantiomeric purity..... ≤0,5 % D-enantiomer

7850.1	5 mg	plastic	43,55 €
7850.2	10 mg	plastic	69,80 €
7850.3	100 mg	plastic	220,40 €
7850.4	500 mg	plastic	568,70 €

5-((3-Azidopropyl)carbamoyl)-2-(6-(dimethylamino)-3-(dimethyliminio)-3*H*-xanthen-9-yl)benzoate

▶ 5-Carboxytetramethylrhodamine Azide (5-TAMRA-Azide) see p. 1878

4-((3-Azidopropyl)carbamoyl)-2-(6-hydroxy-3-oxo-3*H*-xanthen-9-yl)benzoic acid

▶ 6-Carboxyfluorescein Azide (6-FAM-Azide) see p. 1878

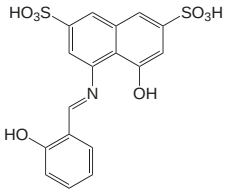
15-Azido-4,7,10,13-tetraoxapentadecanoic acid succinimidyl ester

▶ NHS-PEG4-Azide see p. 2193

11-Azido-3,6,9-trioxaundecan-1-amine

▶ H_2N-PEG3-Azide see p. 2193

Azomethine H hydrate



Azomethine H hydrate

≥95 %, p.a.
Reagent for the determination of boron.
4-Hydroxy-5-(2-hydroxybenzylidenamino)-naphthalene-2,7-disulphonic acid
$C_{17}H_{12}NNaO_8S_2 \cdot x\ H_2O$
M 445,40 g/mol
[206752-32-1] • EC No. 227-698-1
WGK 1

Type analysis:
Appearance..... yellow to orange powder
Assay (HPLC)..... ≥95,0 %
Water (KF)..... ≤8,0 %
Specific extinction E 1 %/ 1 cm (236 nm, pH 5,1)..... ≥1200
Suitability for determination of boron..... complies

CP99.1	5 g	plastic	103,10 €

Azorubine

▶ Chromotrope® FB (C.I. 14720) see p. 1898

Azo violet

▶ 4-(4-Nitrophenylazo)-resorcinol see p. 2165

Azulene

Azulene

≥98 %
Cyclopentacycloheptene
$C_{10}H_8$
M 128,16 g/mol
mp 98-99 °C
[275-51-4] • EC No. 205-993-6
WGK 1

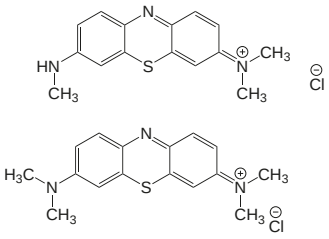
Type analysis:
Assay (GC)..... ≥98 %

3159.1	100 mg	glass	53,25 €

Azure I

▶ Azure B (C.I. 52010) see p. 1824

Azure II



Azure II

for microscopy
1:1 mixture of Azure B and Methylen blue
$C_{16}H_{18}ClN_3S \cdot C_{15}H_{16}ClN_3S$
M 625,68 g/mol
[37247-10-2]
WGK 2

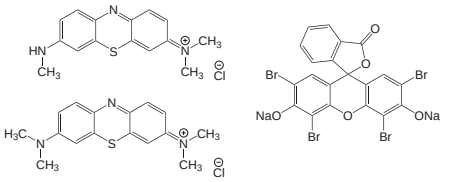
Warning H302-H412

Type analysis:
Appearance..... greenish brown to greenish black powder
Appearance of solution (0,1 % in H_2O)..... clear, dark blue
Loss on drying..... ≤12 %

7640.1	1 g	glass	11,75 €
7640.2	10 g	glass	19,90 €
7640.3	50 g	glass	48,30 €

For further information, please see page 1521

Azure II eosinate



Azure II eosinate

for microscopy

1:1:1 mixture of Azure B, Methylen blue and Eosine Y

$C_{16}H_{18}ClN_3S \cdot C_{15}H_{16}ClN_3S \cdot C_{20}H_6Br_4Na_2O_5$

M 1317,92 g/mol

[53092-85-6]

WGK 1

Danger H318

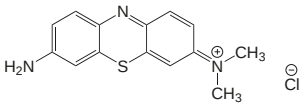
Type analysis:

Appearance. .....dark green to greenish black powder

7642.1	5 g	glass	19,25 €
7642.2	25 g	glass	36,45 €
7642.3	100 g	glass	106,35 €

For further information, please see page 1521

Azure A (C.I. 52005)



Azure A (C.I. 52005)

for microscopy

Dimethylthionin

$C_{14}H_{14}ClN_3S$

M 291,80 g/mol

mp 290 °C (dec.)

[531-53-3] • EC No. 208-510-7

WGK 3

Type analysis:

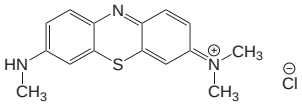
Appearance. .....dark green to green black cryst. powder

Appearance of solution (0,1 % in H_2O). .....clear, blue

Loss on drying (1 h, 110 °C). .....≤8,0 %

7636.1	5 g	glass	14,55 €
7636.2	25 g	glass	24,65 €
7636.3	100 g	glass	62,25 €

Azure B (C.I. 52010)



Azure B (C.I. 52010)

for microscopy

N,N,N'-Trimethylthionin, Azure I

$C_{15}H_{16}ClN_3S$

M 305,83 g/mol

mp 205 °C (dec.)

[531-55-5] • EC No. 208-511-2

WGK 1

Type analysis:

Appearance..... dark green to green black powder

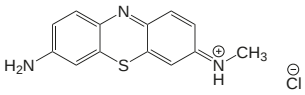
Appearance of solution (0,1 % in H_2O). ..... clear, blue

Loss on drying (1 h, 110 °C). ..... ≤8,0 %

7637.1	5 g	glass	14,55 €
7637.2	25 g	glass	24,65 €
7637.3	100 g	glass	62,25 €

For further information, please see page 1521

Azure C (C.I. 52002)



Azure C (C.I. 52002)

for microscopy

Monomethylthionin

$C_{13}H_{12}ClN_3S$

M 277,78 g/mol

[531-57-7] • EC No. 208-512-8

WGK 1

Type analysis:

Appearance.....blackish green powder

Appearance of solution (0,1 % in H_2O). ..... clear, blue

Loss on drying (1 h, 110 °C). ..... ≤8 %

7639.1	5 g	glass	14,55 €
7639.2	25 g	glass	24,65 €
7639.3	100 g	glass	62,25 €

Bacillus cereus Selective Agar

▶ Mannitol Egg Yolk Polymyxin Agar (Base) see p. 2121

Bacillus cereus Supplement

Bacillus cereus Supplement

lyophilised

Media supplement for selective isolation of *Bacillus cereus.*

One box of 10 vials Bacillus cereus Supplement is sufficient for 10 x 500 ml Mannitol Egg Yolk Polymyxin Agar.

Storage temp.: +4 °C

Transport temp.: room temp.

WGK 1

Formulation:

Polymyxin B. .....50 000 I.U. per vial

4856.1	10 vials	glass	110,65 €

For further information, please see page 1458

Bacitracin

Bacitracin

≥60 IU/mg, Ph.Eur., for biochemistry

Peptide antibiotic and protease inhibitor.

$C_{66}H_{103}N_{17}O_{16}S$

M 1422,72 g/mol

mp 221-225 °C

Storage temp.: +4 °C

[1405-87-4] • EC No. 215-786-2 • WGK 1

Guarantee analysis:

Appearance. .....off-white powder

Assay (dry substance). .....≥60 I.E./mg

Identity. .....complies

Solubility (water/ethanol 96 %).....complies

Appearance of solution. .....complies

pH value.....6,0-7,0

Loss on drying.....≤5,0 %

Sulphated ash. .....≤1,0 %

Bacitracin A .....≥40,0 %

Sum Bacitracin A, B1, B2, B3.....≥70,0 %

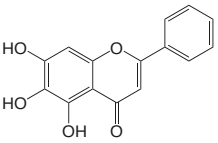
Related peptides.....≤20,0 %

Bacitracin F. .....≤6,0 %

5655.1	5 g	glass	54,75 €
5655.2	25 g	plastic	224,70 €

For further information, please see page 1325

Baicalein



Baicalein

ROTICHROM® HPLC

Reference substance for HPLC.

From *Scutellaria baicalensis.*

5,6,7-Trihydroxyflavone

$C_{15}H_{10}O_5$

M 270,24 g/mol

Storage temp.: +4 °C

[491-67-8] • WGK 1

Warning H302

Type analysis:

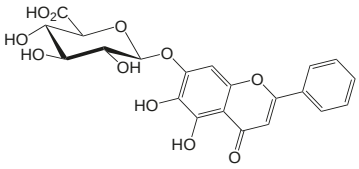
Purity (HPLC).....>99 %

1110.1	20 mg	glass	321,45 €

Baicalein-7-β-D-gluca-pyranosidouronat

▶ Baicalin see p. 1825

Baicalin



Baicalin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Scutellaria baicalensis.*

Baicalein-7-β-D-glucopyranosidouronate
$C_{21}H_{18}O_{11}$
M 446,37 g/mol
Storage temp.: +4 °C
[21967-41-9]
WGK 1

Warning H315-H319-H335

Type analysis:

Purity (HPLC)..... >99 %

1121.1	20 mg	glass	252,65 €

Baird Parker Agar (Base)

Baird Parker Agar (Base)

Ph.Eur., for microbiology

For isolation and enumeration of staphylococci.
Application: Use 63 g for 1 l agar. Add egg yolk emulsion tellurit (Art. No. 0339.1) to 5 % final concentration.
Agar medium O (Ph.Eur. 6.0)
Storage temp.: +20 °C
WGK 1

Guarantee analysis:

Casein peptone (pancreas hydrolysate) . ..... 10 g/l
Beef extract. ..... 5 g/l
Yeast extract..... 1 g/l
Lithium chloride. ..... 5 g/l
Glycine. ..... 12 g/l
Sodium pyruvate..... 10 g/l
Agar. ..... 20 g/l
pH value. ..... 6,8 ±0,2

X913.1	500 g	plastic	113,85 €
Original pack 6 x 500 g			108,16/500 g

For further information, please see page 1429

Ballistol®-oil

Ballistol®-oil

Mildly alkaline special oil with cleaning, conserving, protective, regenerating, impregnating, lubricating and disinfecting properties.
D 0,865
flp 55 °C
UN No. 1268 • ADR 3 III • WGK 1

Warning H226

AA74.1	50 ml	glass	5,50 €
AA74.2	500 ml	glass	24,30 €

For further information, please see page 1174

Ballistol®-spray

Ballistol®-spray

Mildly alkaline special oil with cleaning, conserving, protective, regenerating, impregnating, lubricating and disinfecting properties.
UN No. 1950 • ADR 2 • WGK 1

Danger H222-H229

AA75.1	200 ml	spray can	9,65 €

For further information, please see page 1174

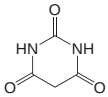
Balsam Canada

▶ Canada balsam see p. 1874

Balsamum canadense

▶ Canada balsam see p. 1874

Barbituric acid



Barbituric acid

≥99 %, extra pure

2,4,6-Trihydroxy-pyrimidine
$C_4H_4N_2O_3$
M 128,09 g/mol
mp ~250 °C (dec.) • flp 150 °C
Solubility: 11,4 g/l (H_2O, 25 °C)
[67-52-7] • EC No. 200-658-0
WGK 1

Type analysis:

Appearance..... light beige powder
Assay (acidim.)..... ≥99 %

4927.1	100 g	plastic	82,25 €
4927.2	500 g	plastic	317,15 €
Original pack 6 x 500 g			301,29/500 g

Barium Standards

▶ Barium AAS Standard Solution see p. 2358
▶ Barium ICP Standard Solution see p. 2361
▶ Barium ICP Standard Solution see p. 2366
▶ Barium IC Standard Solution see p. 2377

Barium acetate

Barium acetate

≥99 %, p.a., ACS

$Ba(CH_3COO)_2$
M 255,42 g/mol
D 2,47
mp 450 °C
Solubility: 720 g/l (H_2O, 20 °C)
[543-80-6] • EC No. 208-849-0
WGK 1

Warning H302+H332

Guarantee analysis:

Assay (compl.)..... 99,0-102,0 %
In H_2O insoluble matter. ..... ≤0,01 %
Chloride (Cl)..... ≤0,001 %
Heavy metals (as Pb)..... ≤0,0005 %
Calcium (Ca)..... ≤0,05 %
Iron (Fe)..... ≤0,001 %
Potassium (K)..... ≤0,003 %
Sodium (Na)..... ≤0,005 %
Strontium (Sr)..... ≤0,2 %
Oxidizing substances (as NO_3)..... ≤0,005 %

2553.1	250 g	plastic	38,60 €
2553.2	500 g	plastic	61,85 €
Original pack 6 x 500 g			58,76/500 g
2553.3	1 kg	plastic	103,10 €
Original pack 6 x 1 kg			97,95/1 kg

Barium carbonate

$BaCO_3$
M 197,35 g/mol
D 4,43
mp >1450 °C (dec.)
Solubility: 0,02 g/l (H_2O, 20 °C)
[513-77-9] • EC No. 208-167-3

Warning H302

Barium carbonate

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5321.1	25 g	plastic	123,55 €
5321.2	100 g	plastic	392,40 €

Barium carbonate

≥99 %, p.a., ACS

For preparation of further barium compounds.

Guarantee analysis:

Assay.....99,0-101,0 %
In HCl insoluble matter.....≤0,015 %
Oxidizing substances (as NO_3).....≤0,005 %
Heavy metals (as Pb).....≤0,001 %
Alkalinity.....≤0,002 meq/g
Chloride (Cl).....≤0,002 %
Calcium (Ca).....≤0,05 %
Iron (Fe).....≤0,002 %
Potassium (K).....≤0,005 %
Sodium (Na).....≤0,02 %
Strontium (Sr).....≤0,7 %
Sulphide (S).....≤0,001 %

P008.2	25 g	plastic	13,45 €
P008.3	100 g	plastic	25,70 €
P008.1	500 g	plastic	94,50 €
Original pack 6 x 500 g			89,78/500 g

Barium carbonate

≥99 %, extra pure

Type analysis:

Assay.....≥99,0 %
Total sulphur (as SO_4).....≤0,5 %
Iron (Fe).....≤0,005 %
Moisture.....≤0,5 %
Insoluble in HCl.....≤0,5 %

0326.1	100 g	plastic	17,75 €
0326.2	500 g	plastic	33,25 €
Original pack 6 x 500 g			31,59/500 g
0326.3	1 kg	plastic	55,40 €
Original pack 6 x 1 kg			52,63/1 kg
0326.4	2,5 kg	plastic	110,65 €

Barium chloride

Barium chloride

ROTI®METIC 99,999 % (5N), anhydrous

$BaCl_2$
M 208,23 g/mol
D 3,85 • bp 1560 °C
mp 563 °C
Solubility: 312 g/l (H_2O, 20 °C)
[10361-37-2] • EC No. 233-788-1
UN No. 1564 • ADR 6.1 III • WGK 1

Danger H301-H332

Type analysis:

Assay (metals basis).....99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5051.1	25 g	plastic	102,05 €

Barium chloride dihydrate

$BaCl_2 \cdot 2\ H_2O$
M 244,27 g/mol
D 3,86
mp 120 °C (dec.)
Solubility: 358 g/l (H_2O, 20 °C)
[10326-27-9] • EC No. 233-788-1
UN No. 1564 • ADR 6.1 III • WGK 1

Danger H301-H332

Barium chloride dihydrate

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis).....99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5115.1	50 g	plastic	170,95 €
5115.2	100 g	plastic	267,70 €

Barium chloride dihydrate

≥99 %, p.a., ACS, ISO

Reagent for the gravimetric determination of sulphate.

Guarantee analysis:

Assay (compl.).....≥99,0 %
pH (5 % H_2O, 25 °C).....5,2-8,0
In H_2O insoluble matter.....≤0,005 %
Loss on drying (150 °C).....14,0-16,0 %
Total nitrogen (N).....≤0,002 %
Oxidizing substances (as NO_3).....≤0,005 %
Heavy metals.....≤0,0005 %
Calcium (Ca).....≤0,005 %
Iron (Fe).....≤0,0002 %
Potassium (K).....≤0,0025 %
Magnesium (Mg).....≤0,001 %
Sodium (Na).....≤0,005 %
Cadmium (Cd).....≤0,0005 %
Cobalt (Co).....≤0,0005 %
Copper (Cu).....≤0,0005 %
Manganese (Mn).....≤0,0005 %
Nickel (Ni).....≤0,0005 %
Lead (Pb).....≤0,0005 %
Strontium (Sr).....≤0,01 %
Zinc (Zn).....≤0,0005 %

4453.1	250 g	plastic	16,05 €
4453.2	500 g	plastic	23,55 €
Original pack 6 x 500 g			22,37/500 g
4453.3	1 kg	plastic	39,70 €
Original pack 6 x 1 kg			37,72/1 kg
4453.4	2,5 kg	plastic	84,85 €
4453.6	5 kg	plastic	151,50 €
4453.5	25 kg	plastic	686,95 €

Barium chloride solution (0,1 N)

Barium chloride solution

0,05 mol/l - 0,1 N volumetric standard solution

D 1,01

Type analysis:

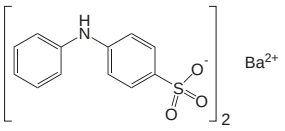
Amount-of-substance conc......0,05 mol/l ±0,2 %

0468.1	500 ml	plastic	19,90 €

Barium dinitrate

▶ Barium nitrate see p. 1827

Barium diphenylamine sulfonate



Barium diphenylamine sulfonate

p.a., ACS

Redox indicator
Diphenylamine-4-sulfonic acid barium salt
$C_{24}H_{20}BaN_2O_6S_2$
M 633,88 g/mol
mp 300 °C
[6211-24-1] • EC No. 228-278-0
WGK 1

Warning H302+H332

Guarantee analysis:

Ash content (as SO_4).....35,0-38,0 %
Clarity of solution (ACS-test).....complies
Suitability as redox indicator.....complies

2674.1	5 g	plastic	30,65 €
2674.2	25 g	plastic	82,25 €

Barium fluoride

Barium fluoride

ROTI®METIC 99,995% (4N5)

BaF_2
M 175,32 g/mol
D 4,83 • bp 2260 °C
mp 1353 °C
Solubility: 1,2 g/l (H_2O, 25 °C)
[7787-32-8] • EC No. 232-108-0
UN No. 1564 • ADR 6.1 III • WGK 1

Danger H301-H332

Type analysis:

Assay (metals basis).....99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5055.1	25 g	plastic	127,95 €

Barium hydroxide hydrate

Barium hydroxide hydrate

ROTI®METIC 99,995 % (4N5)

$Ba(OH)_2 \cdot x\ H_2O$
M 171,36 + x H_2O g/mol
mp 78 °C
[40226-30-0]
UN No. 3262 • ADR 8 II • WGK 1

Danger H302+H332-H314

Type analysis:

Assay (metals basis).....99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5609.1	5 g	plastic	59,05 €
5609.2	25 g	plastic	224,70 €

Barium hydroxide octahydrate

$Ba(OH)_2 \cdot 8\ H_2O$
M 315,48 g/mol
D 2,18
mp 78 °C
Solubility: 72 g/l (H_2O, 20 °C)
[12230-71-6] • EC No. 241-234-5
UN No. 3262 • ADR 8 II • WGK 1
Danger H302+H332-H314

Barium hydroxide octahydrate

≥98 %, p.a., ISO
Reagent for the detection of CO_2 and for the preparation of various barium salts.

Guarantee analysis:

Assay	≥98,0 %
In HCl insoluble matter	≤0,005 %
Carbonate (as $BaCO_3$)	≤2,0 %
Chloride (Cl)	≤0,001 %
Sulphide (S)	≤0,001 %
Calcium (Ca)	≤0,05 %
Cadmium (Cd)	≤0,0005 %
Iron (Fe)	≤0,001 %
Magnesium (Mg)	≤0,002 %
Sodium (Na)	≤0,01 %
Lead (Pb)	≤0,0005 %
Copper (Cu)	≤0,0005 %
Potassium (K)	≤0,005 %
Strontium (Sr)	≤1,5 %
Zinc (Zn)	≤0,0005 %

P009.2	250 g	plastic	26,80 €
P009.1	500 g	plastic	41,40 €
Original pack 6 x 500 g			39,33/500 g
P009.3	1 kg	plastic	64,40 €
Original pack 6 x 1 kg			61,18/1 kg

Barium hydroxide octahydrate

≥97 %, extra pure

Type analysis:

Assay (acidim.)	≥97 %
In HCl insoluble matter	≤0,02 %
Carbonate (as $BaCO_3$)	≤2,0 %
Chloride (Cl)	≤0,01 %
Sulphide (S)	≤0,005 %
Iron (Fe)	≤0,003 %
Heavy metals (as Pb)	≤0,002 %

HN75.1	500 g	plastic	27,85 €
Original pack 6 x 500 g			26,46/500 g
HN75.2	1 kg	plastic	47,20 €
Original pack 6 x 1 kg			44,84/1 kg
HN75.3	2,5 kg	plastic	103,10 €

Barium hydroxide solution (0,1 N)

Barium hydroxide solution

0,05 mol/l - 0,1 N volumetric standard solution

Type analysis:

Amount-of-substance conc. (20 °C)	0,05 mol/l ±0,2 %
Titer	0,998-1,002

N054.1	1 l	plastic	37,10 €
Original pack 6 x 1 l			35,25/1 l

For further information, please see page 1681

Barium nitrate

Barium dinitrate
$Ba(NO_3)_2$
M 261,35 g/mol
D 3,2
mp 590 °C (dec.)
Solubility: 90 g/l (H_2O, 20 °C)
[10022-31-8] • EC No. 233-020-5
UN No. 1446 • ADR 5.1 (6.1) II • WGK 1
Danger H272-H301-H319-H332

Barium nitrate

ROTI®METIC 99,9995 % (5N5)

Type analysis:

Assay (metals basis)	99,9995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5138.1	50 g	plastic	155,80 €
5138.2	100 g	plastic	274,15 €

Barium nitrate

≥99 %, p.a., ACS
Pyrotechnics

Guarantee analysis:

Assay (compl.)	≥99,0 %
pH value (5 % in H_2O)	5,0-8,0
In H_2O insoluble matter	≤0,01 %
Chloride (Cl)	≤0,0005 %
Calcium (Ca)	≤0,05 %
Iron (Fe)	≤0,0002 %
Potassium (K)	≤0,005 %
Sodium (Na)	≤0,005 %
Strontium (Sr)	≤0,05 %
Heavy metals (as Pb)	≤0,0005 %

4387.1	250 g	plastic	27,45 €
4387.2	500 g	plastic	42,90 €
Original pack 6 x 500 g			40,76/500 g
4387.3	1 kg	plastic	62,90 €
Original pack 6 x 1 kg			59,76/1 kg

Barium perchlorate solution (0,005 N)

Bariumperchlorate solution

0,005 mol/l - 0,005 N volumetric standard solution in 2-propanol/water
UN No. 1219 • ADR 3 II • WGK 1
Danger H225-H319-H336

Type analysis:

Amount-of-substance conc..	0,005 mol/l ±0,2 %

KK61.1	1 l	glass	28,95 €
Original pack 6 x 1 l			27,50/1 l

For further information, please see page 1681

Barium sulphate suspension

▶ McFarland BSS 0,5 see p. 2124
▶ McFarland PMS 0,5 see p. 2124

Basic blue 9

▶ Methylene blue (C.I. 52015) see p. 2137

Basic blue 11

▶ Victoria blue R (C.I. 44040) see p. 2435

Basic blue 17

▶ Toluidine blue O (C.I. 52040) see p. 2413

Basic brown 1

▶ Bismarck brown Y (C.I. 21000) see p. 1839

Basic brown 4

▶ Bismarck brown R (C.I. 21010) see p. 1839

Basic fuchsine

▶ Fuchsine basic (C.I. 42510) see p. 2008

Basic green 1

▶ Brilliant green (C.I. 42040) see p. 1850

Basic green 4

▶ Malachite green hydrochloride see p. 2116
▶ Malachite green oxalate (C.I. 42000) see p. 2116

Basic orange 14

▶ Acridine orange (C.I. 46005) see p. 1770
▶ Acridine orange base (C.I. 46005) see p. 1770

Basic red 1

▶ Rhodamine 6G (C.I. 45160) see p. 2258

Basic violet

▶ Methyl violet 2B (C.I. 42535) see p. 2144

Basic violet 4

▶ Ethyl violet (C.I. 42600) see p. 1986

Basic yellow 2

▶ Auramine O (C.I. 41000) see p. 1819

Basosorb

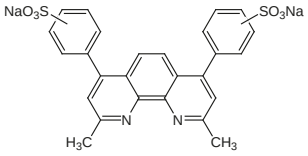
Basosorb

pH value at 20 °C: 1,9
For neutralizing alkaline solutions.
WGK 1
Warning H319

3287.1	5 kg	plastic	69,35 €

For further information, please see page 719

Bathocuproine sulphonate disodium salt hydrate



Bathocuproine sulphonate disodium salt hydrate

≥98 %

Reagent for copper.

2,9-Dimethyl-4,7-diphenyl-1,10-phenanthroline disulphonic acid disodium salt

$C_{26}H_{18}N_2Na_2O_6S_2 \cdot x\ H_2O$

M 564,55 + x H_2O g/mol

mp 300 °C

[52698-84-7] • EC No. 258-111-7

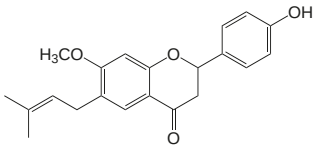
WGK 1

Type analysis:

Assay ..... ≥98,0 %
Water (KF) ..... ≤4,0 %
Suitability for determination of copper ..... complies

KK28.1	250 mg	glass	35,40 €
KK28.2	1 g	glass	111,70 €

Bavachinin A



Bavachinin A

ROTICHROM® HPLC

Reference substance for HPLC.

$C_{21}H_{22}O_4$

M 324,38 g/mol

mp 139-145 °C

Storage temp.: +4 °C

[19879-30-2]

WGK 1

Type analysis:

Purity (HPLC) ..... ≥99 %

8898.1	5 mg	glass	213,95 €

BCG

▶ Bromocresol green see p. 1852

BCIP-Na_2

▶ 5-Bromo-4-chloro-3-indolyl phosphate disodium salt see p. 1851

BCIP-p-toluidine salt

▶ 5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt see p. 1851

BDG

▶ Butyldiglycol see p. 1862

BDI

▶ 1,4-Diisocyanatobutane see p. 1943

Beeswax white

Beeswax white

pure, natural

Cera alba

D ~0,96

mp 61-65 °C

[8012-89-3] • EC No. 232-383-7

Type analysis:

Melting range. ..... 61-65 °C
Acid value (mg KOH/g) 17-22
Ester value (mg KOH/g). 72-79
Saponification value (mg KOH/g). 87-102

5825.1	250 g	plastic	18,85 €
5825.2	1 kg	plastic	53,25 €
Original pack 6 x 1 kg			50,59/1 kg

Beeswax yellow

Beeswax yellow

pure, natural

Cera flava

D ~0,96

mp 61-65 °C • flp >180 °C

[8012-89-3] • EC No. 232-383-7

Type analysis:

Melting range. ..... 61-65 °C
Acid value (mg KOH/g) 17-22
Ester value (mg KOH/g). 72-79
Saponification value (mg KOH/g). 87-102

5830.1	250 g	plastic	18,85 €
5830.2	1 kg	plastic	53,25 €
Original pack 6 x 1 kg			50,59/1 kg

Benedict's reagent

Benedict's reagent

for sugar determination

UN No. 3082 • ADR 9 III • WGK 3

Warning H319-H411

Type analysis:

Appearance ..... blue solution
Density (20 °C) ..... 1,15-1,19 g/cm³
Formulation: Sodium carbonate anhydrous, tri-Sodium citrate dihydrate, Copper(II) sulphate pentahydrate, water

0010.1	100 ml	dropp. bottle	19,25 €

For further information, please see page 1707

Bengal Red Agar (with chloroamphenicol)

Bengal Red Agar (with chloroamphenicol)

for microbiology

Standard-selective agar for counting yeast and food mould fungi.

Application: Use 31,6 g for 1 l agar.

RBC Agar

Storage temp.: +20 °C

WGK 3

Formulation:

Peptone. ..... 5 g/l
Glucose ..... 10 g/l
Potassium phosphate. ..... 1 g/l
Magnesium sulphate ($MgSO_4$) ..... 0,5 g/l
Chloroamphenicol ..... 0,1 g/l
Bengal red. ..... 0,05 g/l
Agar. ..... 15 g/l
pH value ..... 7,2 ±0,2

AE24.1	500 g	plastic	116,00 €
Original pack 6 x 500 g			110,20/500 g

For further information, please see page 1436

Bentonite

Bentonite

pure

Carrier in chromatography.

Montmorillonite

mp >1000 °C

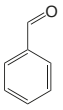
[1302-78-9] • EC No. 215-108-5

Type analysis:

Appearance. ..... beige powder
Montmorillonit. ..... ~70 %
pH value 9,0-11,0
Water. ..... 6-12 %
Methylene blue adsorption. ..... 320 ±40 mg/g
Bulk density. ..... 0,73-0,83 g/cm³
Swelling volume. ..... ≥22 ml/ 2 g
Sieve residue (63 µm, dry). ..... ≤30 %

0113.2	500 g	plastic	22,05 €
Original pack 6 x 500 g			20,95/500 g
0113.3	1 kg	plastic	28,50 €
Original pack 6 x 1 kg			27,08/1 kg
0113.1	2,5 kg	plastic	45,05 €

Benzaldehyde



C_7H_6O

M 106,13 g/mol

D ~1,05 • bp 179 °C

mp -26 °C • flp 64 °C

Solubility: 3 g/l (H_2O, 20 °C)

[100-52-7] • EC No. 202-860-4

UN No. 1990 • ADR 9 III • WGK 2

Warning H302

Benzaldehyde

≥99,5 %, for synthesis

Type analysis:
Assay (GC). ..... ≥99,5 %
Density (d 20 °C/4 °C). 1,044-1,046

4372.1	100 ml	glass	13,90 €
4372.2	500 ml	glass	23,15 €
4372.3	1 l	glass	30,00 €
Original pack 6 x 1 l			28,50/1 l
4372.4	2,5 l	glass	55,80 €
Original pack 4 x 2,5 l			53,01/2,5 l

Benzaldehyde

ROTI®STAR Primary Standard

Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:
Assay (GC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤2,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE01.1	100 mg	glass	751,45 €

Benzaldehyde

ROTICHROM® Working Standard

Storage temp.: -20 °C
Transport temp.: room temp.

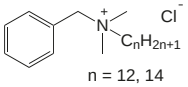
Type analysis:
Assay (GC). ..... ≥80,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC01.1	100 mg	glass	125,70 €

Benzalkonium chloride

▶ Benzalkonium chloride see p. 1829

Benzalkonium chloride



Benzalkonium chloride

80 %

Alkylbenzyldimethyl quaternary ammonium chloride, Zephiran chloride
D 0,97
mp 6 °C
UN No. 1760 • ADR 8 II • WGK 3
Danger H302-H314-H410

Type analysis:
Assay. ..... 78-82 %
pH value. 7,0-9,0
Colour (Hazen). ..... ≤150

2999.1	100 g	glass	18,85 €
2999.2	500 g	glass	45,05 €
Original pack 6 x 500 g			42,80/500 g
2999.3	1 kg	glass	73,65 €
Original pack 6 x 1 kg			69,97/1 kg
2999.4	2,5 kg	plastic	126,35 €

Benzalkonium chloride

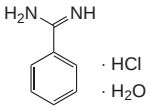
Benzalkonium chloride

50 %, aqueous solution

Alkylbenzyldimethyl quaternary ammonium compounds chloride, Zephiran chloride
D 0,99 • bp 100 °C
UN No. 1760 • ADR 8 II • WGK 3
Danger H314-H400-H302+H312

5091.1	500 ml	glass	35,40 €
5091.2	2,5 l	glass	126,35 €
Original pack 4 x 2,5 l			120,03/2,5 l

Benzamidine hydrochloride monohydrate



Benzamidine hydrochloride monohydrate

≥98 %, for biochemistry

Inhibitor of serine proteases.
$C_7H_8N_2 \cdot HCl \cdot H_2O$
M 174,63 g/mol
mp 83-87 °C • flp -31 °C
Storage temp.: +4 °C
[1670-14-0] • EC No. 216-795-4
WGK 1
Warning H315-H319-H335

Type analysis:
Assay. ..... ≥98 %
Water (KF). ..... ≤15,0 %
Melting point. ..... 83-87 °C

CN38.1	5 g	plastic	18,20 €
CN38.2	10 g	plastic	25,70 €
CN38.3	25 g	plastic	50,45 €

For further information, please see page 1325

Benzamine blue

▶ Trypan blue (C.I. 23850) see p. 2423

Benzenamine

▶ Aniline see p. 1806

Benzene

Cyclohexatriene
C_6H_6
M 78,11 g/mol
D 0,88 • bp 80 °C
mp 6 °C • flp -11 °C
Solubility: 0,7 g/l (H_2O, 20 °C)
[71-43-2] • EC No. 200-753-7
UN No. 1114 • ADR 3 II • WGK 3
Danger H225-H302-H304-H315-H319-H340-H350-H372-H412

Benzene

ROTIPURAN® ≥99,5 %, p.a.

Guarantee analysis:
Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,03 %
Density (d 20 °C/4 °C). 0,877-0,878
Non volatile matter. ..... ≤0,001 %
Aluminium (Al). ..... ≤0,00005 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Magnesium (Mg). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Chromium (Cr). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Lead (Pb). ..... ≤0,00001 %
Iron (Fe). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %
Reaction with H_2SO_4. ..... complies

7173.4	100 ml	glass	24,65 €
7173.3	500 ml	glass	31,75 €
7173.1	1 l	glass	51,50 €
Original pack 6 x 1 l			48,93/1 l
7173.2	2,5 l	glass	118,15 €
Original pack 4 x 2,5 l			112,24/2,5 l

Benzene

≥99,5 %, extra pure

Type analysis:
Appearance. ..... clear, colourless
Assay (GC). ..... ≥99,5 %
Free acid. ..... ≤0,0001 meq/g
Non volatile matter. ..... ≤0,001 %

5785.3	100 ml	glass	19,90 €
5785.1	1 l	glass	46,80 €
Original pack 6 x 1 l			44,46/1 l
5785.4	2,5 l	glass	96,65 €
Original pack 4 x 2,5 l			91,82/2,5 l
5785.2	10 l	tinplate	353,70 €

Benzene

ROTICHROM® GC

Reference substance for GC.
Storage temp.: +4 °C

Type analysis:
Purity (GC). ..... ≥99 %

4898.1	1 g	glass	31,10 €

Benzene D6

Cyclohexatriene deuterated
C_6D_6
M 84,16 g/mol
D 0,95 • bp ~80 °C
mp 6,8 °C • flp -11 °C
Solubility: 1,8 g/l (H_2O, 20 °C)
[1076-43-3] • EC No. 214-061-8
UN No. 1114 • ADR 3 II • WGK 3
Danger
H225-H340-H350-H372-H304-H315-H319

Benzene D6

99,8 Atom%D
For nuclear magnetic resonance spectroscopy.

Type analysis:
Deuterising degree. ..... ≥99,8 %
Water (KF, H_2O+D_2O). ..... ≤0,02 %

7912.1	10 ml	glass	80,55 €
7912.2	25 ml	glass	181,70 €
7912.3	10 x 0,75 ml	glass ampoule	83,75 €

Benzene D6

99,5 Atom%D
For nuclear magnetic resonance spectroscopy.

Guarantee analysis:
Deuterising degree. ..... ≥99,5 %
Water (KF, H_2O+D_2O). ..... ≤0,03 %

AE53.1	10 ml	glass	56,90 €
AE53.3	10 ml	septum bottle	59,05 €
AE53.2	50 ml	glass	224,70 €

Benzenecarbonylchloride

▶ Benzoyl chloride see p. 1833

Benzenecarboxylic acid

▶ Benzoic acid see p. 1830

Benzene 1,2-dialdehyde

▶ o-Phthaldialdehyde see p. 2212

1,3-Benzenediol

▶ Resorcinol see p. 2256

Benzethonium chloride solution

Benzethonium chloride solution

0,004 mol/l - 0,004 M volumetric standard solution
For determination of anionic tensides.
Hyamine® 1622-solution (0,004 M)
WGK 1

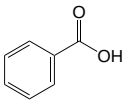
Type analysis:
Amount-of-substance conc. (20 °C)..... 0,004 mol/l ±0,1 %

9217.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

Benzoate Standards

▶ Benzoate IC Standard Solution see p. 2375

Benzoic acid



Phenylformic acid, Benzenecarboxylic acid
$C_7H_6O_2$
M 122,12 g/mol
D 1,321 • bp 249 °C
mp 121-123 °C • flp 121 °C
Solubility: 2,9 g/l (H_2O, 20 °C)
[65-85-0] • EC No. 200-618-2
WGK 1
Danger H372-H318-H315

Benzoic acid

≥99,5 %, p.a., ACS

Guarantee analysis:
Assay (acidim.)..... ≥99,5 %
Melting range. ..... 122-123 °C
In CH_3OH insoluble matter. ..... ≤0,005 %
Ash content (as SO_4)..... ≤0,005 %
$KMnO_4$ reducing substances . ..... complies
Chlorine compounds (as Cl). ..... ≤0,005 %
Sulphur compounds (as S). ..... ≤0,002 %
Arsenic (As)..... ≤0,0003 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Copper (Cu). ..... ≤0,001 %
Nickel (Ni)..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %

P738.1	100 g	plastic	21,40 €
P738.2	250 g	plastic	42,90 €

Benzoic acid

≥99,5 %, Ph.Eur., USP, BP

Guarantee analysis:
Assay (acidim., dry substance). ..... 99,5-100,5 %
Identity..... complies
Appearance of solution..... complies
Melting range. ..... 122-123 °C
Water (KF)..... ≤0,7 %
Sulphated ash. ..... ≤0,05 %
Halogen compound. (as Cl)..... ≤0,03 %
Reaction with H_2SO_4. ..... complies
$KMnO_4$ reducing substances (as O). ..... complies
Lead (Pb). ..... ≤0,0002 %
Heavy metals (as Pb). ..... ≤0,001 %

5781.2	500 g	plastic	23,15 €
Original pack 6 x 500 g			21,99/500 g
5781.1	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg
5781.3	2,5 kg	plastic	68,70 €
5781.4	5 kg	plastic	113,85 €
5781.5	25 kg	plastic	456,90 €

Benzoic acid

ROTI®CALIPURE Melting point standard 121-123 °C

Type analysis:
Meniscus formation..... 121-123 °C
Complete liquefaction. ..... 121-123 °C

9722.1	1 g	glass	31,10 €

Benzoic acid

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤2,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE03.1	100 mg	glass	751,45 €

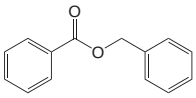
Benzoic acid

ROTICHROM® Working Standard

Type analysis:
Assay (HPLC). ..... ≥95,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC03.1	100 mg	glass	125,70 €

Benzoic acid benzyl ester



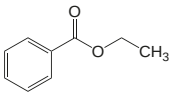
Benzoic acid benzyl ester

≥99 %, for synthesis
Benzyl benzoate
$C_{14}H_{12}O_2$
M 212,26 g/mol
D 1,1 • bp 324 °C
mp 21 °C • flp 148 °C
[120-51-4] • EC No. 204-402-9
UN No. 3077 • ADR 9 III • WGK 2
Warning H302-H400-H411

Type analysis:
Assay. ..... ≥99,0 %
Ash content (as SO_4). ..... ≤0,1 %
Aldehyde (as benzaldehyde). ..... ≤0,05 %
Density (d 20 °C/20 °C)..... 1,118-1,122

9498.1	250 ml	glass	31,10 €
9498.2	1 l	glass	84,40 €
Original pack 6 x 1 l			80,18/1 l
9498.3	2,5 l	glass	153,65 €
Original pack 4 x 2,5 l			145,97/2,5 l

Benzoic acid ethyl ester



NEW

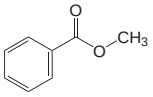
Benzoic acid ethyl ester

≥99 %, for synthesis
Ethyl benzoate
$C_6H_5COOC_2H_5$
M 150,17 g/mol
[93-89-0] • EC No. 202-284-3
WGK 1
Warning H315-H319

Type analysis:
Assay (GC). ..... ≥99 %
Density (d 20 °C/4 °C). 1,046-1,047

0880.1	250 ml	glass	18,20 €
0880.2	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l
0880.3	2,5 l	glass	105,25 €
Original pack 4 x 2,5 l			99,99/2,5 l

Benzoic acid methyl ester



Benzoic acid methyl ester

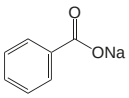
≥99 %, for histology and microscopy
Clearing agent for histological embedding.
Methyl benzoate
$C_8H_8O_2$
M 136,2 g/mol
D 1,09 • bp 199 °C
mp -12 °C • flp 82 °C
[93-58-3] • EC No. 202-259-7
WGK 1
Warning H302

Guarantee analysis:
Appearance. ..... clear, colourless to light yellow liquid
Assay (GC). ..... ≥99,0 %
Density (d 20 °C/4 °C). 1,085-1,089
Refractive index n_D^{20}. 1,516-1,518

6944.5	500 ml	glass	33,25 €
6944.1	1 l	glass	59,70 €
Original pack 6 x 1 l			56,72/1 l
6944.2	2,5 l	glass	119,25 €
Original pack 4 x 2,5 l			113,29/2,5 l
6944.4	25 kg	tinplate	611,70 €

For further information, please see page 1495

Benzoic acid sodium salt



Sodium benzoate
$C_7H_5NaO_2$
M 144,11 g/mol
D 1,44
mp 410-430 °C • flp >100 °C
[532-32-1] • EC No. 208-534-8
WGK 1

Benzoic acid sodium salt

≥99 %, Ph.Eur.

Guarantee analysis:
Assay (dry substance). ..... 99,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... complies
Acid or alkaline react. substances. ..... complies
Chloride (Cl). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Halogen comp. (as Cl). ..... ≤0,03 %
Loss on drying. ..... ≤2,0 %

8548.1	500 g	plastic	21,40 €
Original pack 6 x 500 g			20,33/500 g
8548.3	1 kg	plastic	34,30 €
Original pack 6 x 1 kg			32,59/1 kg
8548.2	2,5 kg	plastic	75,15 €

Benzoic acid sodium salt

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF). ..... ≤3,0 %
Assay (qNMR). ..... ≥95,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE11.1	100 mg	glass	751,45 €

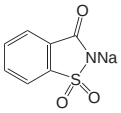
Benzoic acid sodium salt

ROTICHROM® Working Standard

Type analysis:
Assay (HPLC). ..... ≥90,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC11.1	100 mg	glass	125,70 €

o-Benzoic sulphimide sodium salt



o-Benzoic sulphimide sodium salt

≥99 %, Ph.Eur.
Saccharin sodium salt, o-Sulphobenzoic acid imide sodium salt
$C_7H_4NO_3SNa$
M 205,16 g/mol
D 0,97
mp 226-230 °C
[128-44-9] • EC No. 204-886-1
WGK 1

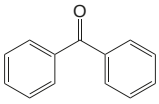
Guarantee analysis:
Appearance. ..... white, cryst. powder
Assay (dry substance). ..... 99,0-101,0 %
Water. ..... ≤15 %
Identity. ..... complies
Appearance of solution. ..... complies
Matter discoloured by H_2SO_4. ..... complies
Heavy metals. ..... ≤0,002 %
Acid or alkaline react. substances. ..... complies
2- and 4-Toluenesulphonamide. ..... each ≤0,001 %

9259.1	250 g	plastic	34,30 €
9259.2	1 kg	plastic	100,95 €
Original pack 6 x 1 kg			95,90/1 kg

Benzolchlorid

▶ Chlorobenzene see p. 1891

Benzophenone



Diphenyl ketone, Diphenylmethanone, Benzoylbenzene, Phenyl ketone
$C_{13}H_{10}O$
M 182,22 g/mol
bp 305 °C
mp 47-49 °C
[119-61-9] • EC No. 204-337-6
WGK 1
Warning H373-H412

Benzophenone

NEW

≥99 %, for synthesis

Type analysis:
Assay (GC). ..... ≥99 %
Melting range. ..... 46-49 °C

0963.1	250 g	plastic	16,05 €
0963.2	1 kg	plastic	41,85 €
Original pack 6 x 1 kg			39,76/1 kg

Benzophenone

ROTI®CALIPURE Melting point standard 47-49 °C

Type analysis:

Meniscus formation. ..... 47-49 °C
Complete liquefaction. ..... 47-49 °C

9709.1	1 g	glass	31,10 €

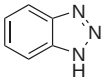
α-Benzopyrone

▶ Coumarin see p. 1912

5,6-Benzo-2-pyrone

▶ Coumarin see p. 1912

1,2,3-Benzotriazole



1,2,3-Benzotriazole

≥99 %, for synthesis
1*H*-Benzotriazole, BtaH
$C_6H_5N_3$
M 119,13 g/mol
D 1,36 • bp 350 °C
mp 97 °C • flp 212 °C
Solubility: 20 g/l (H_2O, 20 °C)
[95-14-7] • EC No. 202-394-1
WGK 1

Warning H302+H332-H319-H412

Type analysis:

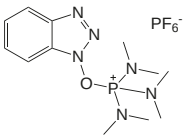
Assay. ..... ≥99,0 %
pH value. 5,5-6,5
Ash content. ..... ≤0,5 %
Moisture. ..... ≤0,1 %

9924.1	100 g	plastic	22,50 €
9924.2	500 g	plastic	68,70 €
Original pack 6 x 500 g			65,27/500 g
9924.3	1 kg	plastic	113,85 €
Original pack 6 x 1 kg			108,16/1 kg

1*H*-Benzotriazole

▶ 1,2,3-Benzotriazole see p. 1832

Benzotriazole-1-yl-oxy-tris-(dimethylamino)-phosphonium hexafluorophosphate (BOP)



Benzotriazole-1-yl-oxy-tris-(dimethylamino)-phosphonium hexafluorophosphate (BOP)

PEPTIPURE® ≥99 %
Coupling reagent for peptide synthesis.
BOP
$C_{12}H_{22}F_6N_6OP_2$
M 442,28 g/mol
mp 132-140 °C
Storage temp.: +4 °C
[56602-33-6] • EC No. 260-279-1
UN No. 1325 • ADR 4.1 II • WGK 1

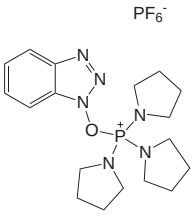
Danger H228-H315-H335-EUH044

Type analysis:

Assay (HPLC). ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %

2168.1	5 g	glass	21,00 €
2168.2	25 g	glass	53,65 €
2168.3	100 g	glass	160,20 €

Benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBOP®)



Benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBOP®)

PEPTIPURE® ≥98,5 %
Coupling reagent for peptide synthesis
PyBOP®
$C_{18}H_{28}F_6N_6OP_2$
M 520,39 g/mol
mp 140-155 °C
Storage temp.: +4 °C
[128625-52-5]
WGK 1

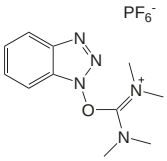
Warning H315-H319-H335

Type analysis:

Assay (HPLC). ..... ≥98,5 %

2178.1	5 g	glass	25,70 €
2178.2	25 g	glass	76,25 €
2178.3	100 g	glass	224,70 €
2178.5	1 kg	glass	1482,45 €
Original pack 6 x 1 kg			1408,33/1 kg

O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HBTU)



O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HBTU)

PEPTIPURE® ≥99 %
Coupling reagent for peptide synthesis
HBTU
$C_{11}H_{16}F_6N_5OP$
M 379,24 g/mol
mp 170-175 °C
Solubility: 1,6 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[94790-37-1] • EC No. 423-020-5
WGK 1

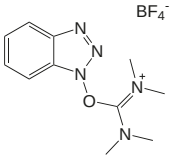
Warning H315-H319-H335

Type analysis:

Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤0,5 %

2132.1	5 g	glass	18,20 €
2132.2	25 g	glass	40,75 €
2132.3	100 g	glass	107,40 €
2132.5	1 kg	glass	547,20 €
Original pack 6 x 1 kg			519,84/1 kg

O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TBTU)



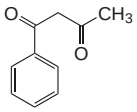
O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TBTU)

PEPTIPURE® ≥99 %
Coupling reagent for peptide synthesis
TBTU
$C_{11}H_{16}BF_4N_5O$
M 321,08 g/mol
mp 205 °C (dec.)
Solubility: 3 g/l (H_2O, 20 °C)
[125700-67-6] • EC No. 423-040-4
UN No. 1325 • ADR 4.1 II • WGK 1
Danger H228-H315-H319-H335

Type analysis:
Assay (HPLC)..... ≥99,0 %
Water (KF)..... ≤0,5 %

2140.1	5 g	glass	17,10 €
2140.2	25 g	glass	38,60 €
2140.3	100 g	glass	106,35 €
2140.5	1 kg	glass	536,45 €
Original pack 6 x 1 kg			509,63/1 kg

Benzoylacetone



Benzoylacetone

≥99 %
1-Phenyl-1,3-butadione, Acetoacetophenone
$C_{10}H_{10}O_2$
M 162,19 g/mol
mp 56-58 °C
[93-91-4] • EC No. 202-286-4

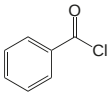
Type analysis:
Assay (GC)..... ≥99,0 %
Solution (5% in chloroform)..... colourless to yellow
Water (KF)..... ≤0,5 %
Melting point..... 56-58 °C

5484.1	25 g	plastic	63,35 €
5484.2	100 g	plastic	224,70 €

Benzoylbenzene

▶ Benzophenone see p. 1831

Benzoyl chloride



Benzoyl chloride

≥99 %, for synthesis
Benzenecarbonylchloride
C_7H_5ClO
M 140,57 g/mol
D 1,21 • bp ~197 °C
mp -1 °C
[98-88-4] • EC No. 202-710-8
UN No. 1736 • ADR 8 II • WGK 1
Danger
H302+H312+H332-H314-H317

Type analysis:
Assay (acidim.)..... ≥99,0 %
Identity (IR)..... complies
Density (d 20 °C/4 °C)..... 1,210-1,214

7456.1	100 ml	glass	13,90 €
7456.2	500 ml	glass	30,00 €
7456.3	1 l	glass	44,00 €
Original pack 6 x 1 l			41,80/1 l
7456.4	2,5 l	glass	85,50 €
Original pack 4 x 2,5 l			81,23/2,5 l

N-Benzoylglycine sodium salt

▶ Hippuric acid sodium salt hydrate see p. 2044

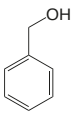
Benzylacetate

▶ Acetic acid benzyl ester see p. 1758

6-Benzyladenine

▶ 6-Benzylaminopurine see p. 1834

Benzyl alcohol



Phenylcarbinol, Phenylmethanol
C_7H_8O
M 108,14 g/mol
D 1,05 • bp 205 °C
mp -15,3 °C • flp 101 °C
Solubility: 39 g/l (H_2O, 20 °C)
[100-51-6] • EC No. 202-859-9
WGK 1
Warning H302+H332

Benzyl alcohol

ROTIPURAN® ≥99 %, p.a.

Guarantee analysis:
Assay (GC)..... ≥99,0 %
Colour (APHA)..... ≤20
Water (KF)..... ≤0,1 %
Ash content (as SO_4)..... ≤0,005 %
Benzaldehyde (GC)..... ≤0,1 %
Calcium (Ca)..... ≤0,00005 %
Cadmium (Cd)..... ≤0,000005 %
Cobalt (Co)..... ≤0,000002 %
Chromium (Cr)..... ≤0,000002 %
Copper (Cu)..... ≤0,000002 %
Iron (Fe)..... ≤0,00001 %
Magnesium (Mg)..... ≤0,00001 %
Manganese (Mn)..... ≤0,000002 %
Nickel (Ni)..... ≤0,000002 %
Lead (Pb)..... ≤0,00001 %
Zinc (Zn)..... ≤0,00001 %

0336.1	500 ml	glass	28,50 €
0336.2	1 l	glass	49,35 €
Original pack 6 x 1 l			46,88/1 l
0336.3	2,5 l	glass	103,10 €
Original pack 4 x 2,5 l			97,95/2,5 l

Benzyl alcohol

≥98 %, Ph.Eur.

Guarantee analysis:
Assay (titr., 1 M NaOH)..... 98,0-100,5 %
Identity..... complies
Appearance of solution..... clear, colourless
Acidity..... complies
Peroxide value..... ≤5 meq O/kg
Refractive index n_D^{20}..... 1,539-1,541
Related substances..... complies
Non volatile matter..... ≤0,05 %

8657.1	500 ml	glass	24,65 €
8657.2	1 l	glass	35,40 €
Original pack 6 x 1 l			33,63/1 l
8657.3	2,5 l	glass	74,75 €
Original pack 4 x 2,5 l			71,01/2,5 l

Benzyl alcohol

≥98 %, for synthesis

Type analysis:
Assay (GC)..... 98,0-100,5 %
Density (20 °C)..... 1,043-1,049
Refractive index n_D^{20}..... 1,539-1,541

4478.1	500 ml	glass	22,05 €
4478.2	1 l	glass	33,25 €
Original pack 6 x 1 l			31,59/1 l
4478.3	2,5 l	glass	71,50 €
Original pack 4 x 2,5 l			67,93/2,5 l

Benzyl alcohol

ROTI®STAR Primary Standard
Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:
Assay (GC)..... ≥95,0 %
Residual solvents (GC)..... ≤2,0 %
Water (KF)..... ≤2,0 %
Assay (qNMR)..... ≥95,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE02.1	100 mg	glass	751,45 €

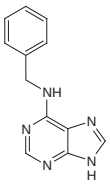
Benzyl alcohol

ROTICHROM® Working Standard
Storage temp.: -20 °C
Transport temp.: room temp.

Type analysis:
Assay (HPLC).....≥90,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC02.1	100 mg	glass	125,70 €

6-Benzylaminopurine



6-Benzylaminopurine

≥98 %, for biochemistry
6-Benzyladenine
$C_{12}H_{11}N_5$
M 225,26 g/mol
mp 232 °C
Storage temp.: +4 °C
[1214-39-7] • EC No. 214-927-5
WGK 1

Type analysis:
Appearance.....light beige, cryst. powder
Assay (HPLC).....≥98,0 %
Melting point.....229-233 °C
Heavy metals (as Pb).....≤0,001 %
Sulphated ash.....≤0,2 %

5552.1	1 g	glass	18,20 €
5552.2	5 g	glass	41,95 €
5552.3	25 g	glass	166,55 €

Benzyl carbinol

▶ 2-Phenylethanol see p. 2207

Benzyldimethylalkylammonium chloride

▶ Benzalkonium chloride see p. 1829

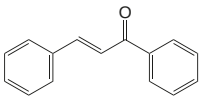
Benzyl benzoate

▶ Benzoic acid benzyl ester see p. 1830

Benzylglucosinolate potassium salt

▶ Glucotropaeolin see p. 2021

Benzylidene acetophenone



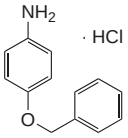
Benzylidene acetophenone

≥98 %, for synthesis
Chalcone, 1,3-Diphenyl-1-propen-3-one
$C_{15}H_{12}O$
M 208,25 g/mol
mp 55-58 °C
[94-41-7] • EC No. 202-330-2
WGK 1

Type analysis:
Assay (GC).....≥98,0 %
Melting range.....55-58 °C

3982.1	100 g	plastic	112,80 €

4-(Benzyloxy) aniline hydrochloride



4-(Benzyloxy) aniline hydrochloride

≥99 %
4-Aminophenyl benzyl ether hydrochloride
$C_{13}H_{14}ClNO$
M 235,71 g/mol
mp 226 °C (dec.)
[51388-20-6] • EC No. 257-170-6

Type analysis:
Assay (titr.).....≥99,0 %
Solution (2 % in ethanol)....almost colourless to brown
Water (KF).....≤1,0 %
Melting point.....214-218 °C

5480.1	25 g	plastic	37,10 €
5480.2	100 g	plastic	120,30 €

4-Benzyloxybenzyl alcohol resin

▶ Wang resin see p. 2438

N_α-Benzyloxycarbonyl-L-arginine

▶ Z-L-Arginine see p. 2449

N_α-Benzyloxycarbonyl-L-aspartic acid

▶ Z-L-Aspartic acid see p. 2449

N_α-Benzyloxycarbonyl-L-glutamic acid

▶ Z-L-Glutamic acid see p. 2449

N_α-Benzyloxycarbonyl-L-leucine

▶ Z-L-Leucine see p. 2453

N_α-Benzyloxycarbonyl-L-lysine

▶ Z-L-Lysine see p. 2453

N_α-Benzyloxycarbonyl-L-phenylalanine

▶ Z-L-Phenylalanine see p. 2453

Benzyl penicillin potassium salt

▶ Penicillin G potassium salt see p. 2195

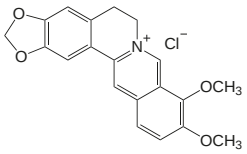
Benzyl penicillin sodium salt

▶ Penicillin G sodium salt see p. 2195

Benzyl salicylate

▶ Salicylic acid benzyl ester see p. 2304

Berberine chloride hydrate



Berberine chloride hydrate

≥97 %, for biochemistry
$C_{20}H_{18}ClNO_4 \cdot x\ H_2O$
M 371,81+ x H_2O g/mol
mp 204-206 °C
[141433-60-5] • EC No. 211-195-9

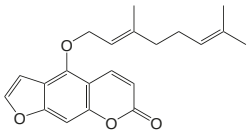
Type analysis:
Appearance.....yellow, cryst. powder
Assay (argentometric).....≥97,0 %
Loss on drying.....≤5,0 %

3192.1	1 g	glass	13,45 €
3192.2	5 g	glass	19,25 €
3192.3	25 g	glass	64,00 €

Bergamol

▶ Acetic acid linalyl ester see p. 1760

Bergamottin



5-Geranoxypsoralen
$C_{21}H_{22}O_4$
M 338,42 g/mol
Storage temp.: +4 °C
[7380-40-7]

Bergamottin
ROTICHROM® HPLC
Reference substance for HPLC.
From Oleum bergamottae.

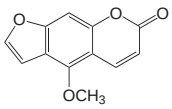
Type analysis:
Purity (HPLC)..... ≥99 %

8889.1	25 mg	glass	188,15 €

Bergamottin
ROTICHROM® TLC
Reference substance for thin layer chromatography. From Oleum bergamottae.

1217.1	50 mg	glass	310,70 €

Bergaptene



$C_{12}H_8O_4$
M 216,19 g/mol
mp 188 °C
Storage temp.: +4 °C
[484-20-8] • EC No. 207-604-5
WGK 3
Danger H317-H350

Bergaptene
≥97 %

Type analysis:
Purity (HPLC)..... ≥97,0 %

8899.1	1 g	plastic	336,40 €

Bergaptene
ROTICHROM® HPLC
Reference substance for HPLC.

Type analysis:
Purity (HPLC)..... ≥99 %

7006.2	20 mg	glass	160,20 €

Beryllium Standards

- Beryllium AAS Standard Solution see p. 2358
- Beryllium ICP Standard Solution see p. 2362
- Beryllium ICP Standard Solution see p. 2366

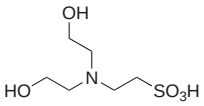
Beryllium acetate basic

Beryllium acetate basic
ROTI®METIC 99,999 % (5N)
$Be_4O(C_2H_3O_2)_6$
M 406,16 g/mol
D 1,25 • bp 330 °C
mp 285 °C
[19049-40-2] • EC No. 242-785-4
UN No. 1566 • ADR 6.1 II • WGK 3
Danger H301-H330-H315-H319-H317-H350i-H335-H372**-H411

Type analysis:
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5612.1	5 g	plastic	64,00 €
5612.2	25 g	plastic	224,70 €

BES



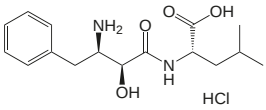
BES
PUFFERAN® ≥99 %
N,N-Bis-(2-hydroxyethyl)-2-aminoethane sulphonic acid
$C_6H_{15}NO_5S$
M 213,26 g/mol
mp 153-155 °C
[10191-18-1] • EC No. 233-465-5
Warning H315-H319

Guarantee analysis:
Assay (titr.). ..... ≥99,0 %
Loss on drying. ..... ≤1,0 %
pH value (1 % solution). 3,0-5,0
Solubility (0,1 M in H_2O). ..... clear, colourless
UV-absorption (10 % in H_2O):
280 nm. ..... ≤0,08
260 nm. ..... ≤0,1

9134.1	25 g	plastic	23,55 €
9134.2	100 g	plastic	64,40 €
9134.3	250 g	plastic	139,65 €
9134.4	500 g	plastic	224,70 €
Original pack 6 x 500 g			213,47/500 g

For further information, please see page 1308

Bestatin hydrochloride



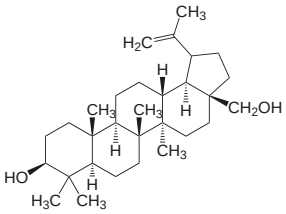
Bestatin hydrochloride
≥98 %, for biochemistry
Inhibitor of aminopeptidases
N-[(2S,3R)-3-Amino-2-hydroxy-4-phenyl-buturyl]-L-leucin hydrochloride
$C_{16}H_{24}N_2O_4 \cdot HCl$
M 344,84 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[65391-42-6]
WGK 1

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Specific rotation $[\alpha]_D^{20}$ (in H_2O). ..... -20° to -14°
Solubility (2,5 % in H_2O)..... clear

2937.1	5 mg	plastic	78,40 €
2937.2	25 mg	plastic	279,00 €

For further information, please see page 1325

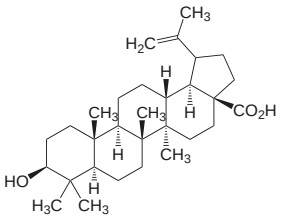
Betulin(ol)



Betulin(ol)
ROTICHROM® ~CHR
Trochol
$C_{30}H_{50}O_2$
M 442,70 g/mol
mp ~257 °C
Storage temp.: +4 °C
[473-98-3] • EC No. 207-475-5

8763.1	1 g	glass	66,55 €

Betulinic acid



Betulinic acid

ROTICHROM® HPLC

Reference substance for HPLC.
Mairin, Melaleucin, Gratiolon
$C_{30}H_{48}O_3$
M 456,71 g/mol
mp ~298 °C (dec.)
Solubility: 2 mg/l (H_2O, 25 °C)
Storage temp.: +4 °C
[472-15-1] • EC No. 207-448-8

Type analysis:

Purity (HPLC)..... ≥97 %

7007.1	25 mg	glass	206,40 €

BHA

▶ Butylated hydroxyanisole see p. 1862

BHT

▶ Butylated hydroxytoluene see p. 1862

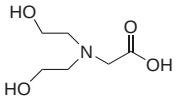
Bicarbonate solution

▶ Roti®-CELL Bicarbonate solution see p. 2266

Bicarnesin HCl

▶ DL-Carnitinchloride see p. 1879

BICINE



BICINE

PUFFERAN® ≥99 %

N,N-Bis-(2-hydroxyethyl)-glycine
$C_6H_{13}NO_4$
M 163,2 g/mol
mp ~194 °C
[150-25-4] • EC No. 205-755-1

Guarantee analysis:

Appearance..... white, cryst. powder
Assay (titration)..... ≥99,0 %
Loss on drying..... ≤1,0 %
pH value (1 M in H_2O)..... 4,0-6,0
UV-absorption (1 M in H_2O):
280 nm..... ≤0,05
260 nm..... ≤0,05

9162.1	50 g	plastic	39,70 €
9162.2	250 g	plastic	127,95 €
9162.3	500 g	plastic	182,65 €
Original pack 6 x 500 g			173,52/500 g

For further information, please see page 1308

Bicyclo-[2,2,1]-hepta-2,5-diene

▶ 2,5-Norbornadiene see p. 2168

Biflorine

▶ Protopine see p. 2243

Bile Esculin Azide Agar

Bile Esculin Azide Agar

DEV, ISO 7899-2:2000, for microbiology

For isolation and identification of intestinal enterococci from water samples.
Application: Use 56,6 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

Warning H412-H302

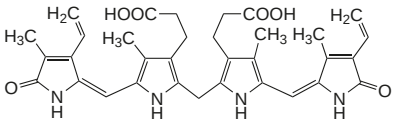
Guarantee analysis:

Tryptone..... 17 g/l
Peptone..... 3 g/l
Yeast extract..... 5 g/l
Ox bile dehydrated..... 10 g/l
Sodium chloride (NaCl)..... 5 g/l
Esculin..... 1 g/l
Ammonium iron(III) citrate..... 0,5 g/l
Sodium azide..... 0,15 g/l
Agar..... 15 g/l
pH value..... 7,1 ±0,1

CP62.1	500 g	plastic	203,75 €
Original pack 6 x 500 g			193,56/500 g

For further information, please see page 1437

Bilirubin



Bilirubin

p.a.

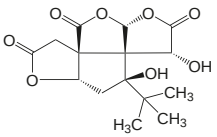
$C_{33}H_{36}N_4O_6$
M 584,68 g/mol
[635-65-4] • EC No. 211-239-7
WGK 1

Guarantee analysis:

Appearance..... orange to red brownish, cryst. powder
Solution (0,01 % in chloroform)..... yellowish, clear
Loss on drying (2 h, 60 °C, vacuum)..... ≤2 %
Calcium (Ca)..... ≤0,06 %

4008.1	250 mg	glass	33,25 €
4008.2	1 g	glass	89,15 €

Bilobalid



$C_{15}H_{18}O_8$
M 326,30 g/mol
[33570-04-6]
WGK 1

Bilobalid

ROTI®STAR Primary Standard

Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:

Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤2,0 %
Water (KF)..... ≤2,0 %
Assay (qNMR)..... ≥95,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE20.1	25 mg	glass	843,90 €

Bilobalid

ROTICHROM® Working Standard

Storage temp.: -20 °C • Transport temp.: cooled

Type analysis:

Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC20.1	50 mg	glass	310,70 €

Bilobalid

ROTICHROM® HPLC

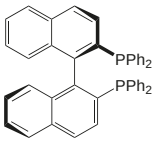
Reference substance for HPLC.
From *Ginkgo biloba.*
Storage temp.: +4 °C

Type analysis:

Purity (HPLC)..... >98 %

1122.1	20 mg	glass	424,65 €

(R)-BINAP



(R)-BINAP

≥98 %

Chiral phosphine ligand

(R)-(+)-(1,1'-Binaphthalene-2,2'-diyl)bis-(diphenylphosphine), (R)-(+)-2,2'-Bis(diphenyl-phosphino)-1,1'-binaphthyl, (R)-(+)-2,2'-Bis-(diphenylphosphino)-1,1'-binaphthalene

$C_{44}H_{32}P_2$

M 622,69 g/mol

mp 239-242 °C

[76189-55-4]

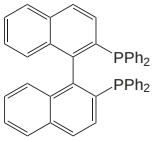
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98 %
Melting point. ..... 239-242 °C

2040.1	250 mg	glass	19,90 €
2040.2	1 g	glass	44,00 €
2040.3	5 g	glass	120,30 €

(rac)-BINAP



(rac)-BINAP

≥97 %

Phosphine ligand

(±)-2,2'-Bis(diphenylphosphino)-1,1'-binaphthalene, (±)-2,2'-Bis(diphenyl-phosphino)-1,1'-binaphthyl, (±)-(1,1'-Binaphthalene-2,2'-diyl)bis-(diphenylphosphine)

$C_{44}H_{32}P_2$

M 622,69 g/mol

mp 282-286 °C

[98327-87-8]

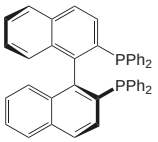
WGK 1

Type analysis:

Appearance. ..... white powder
Assay (HPLC). ..... ≥97 %
Melting point. ..... 282-286 °C

1845.1	1 g	glass	32,15 €
1845.2	5 g	glass	85,90 €
1845.3	10 g	glass	138,70 €

(S)-BINAP



(S)-BINAP

≥98 %

Chiral phosphine ligand

(S)-(–)-(1,1'-Binaphthalene-2,2'-diyl)bis-(diphenylphosphine), (S)-(–)-2,2'-Bis(diphenyl-phosphino)-1,1'-binaphthyl, (S)-(–)-2,2'-Bis-(diphenylphosphino)-1,1'-binaphthalene

$C_{44}H_{32}P_2$

M 622,69 g/mol

mp 241 °C

[76189-56-5]

WGK 1

Type analysis:

Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Melting point. ..... ≥241 °C

1950.1	250 mg	glass	18,85 €
1950.2	1 g	glass	38,60 €
1950.3	5 g	glass	106,45 €

(R)-(+)-(1,1'-Binaphthalene-2,2'-diyl)bis(diphenyl-phosphine)

▶ (R)-BINAP see p. 1837

(±)-(1,1'-Binaphthalene-2,2'-diyl)bis(diphenyl-phosphine)

▶ (rac)-BINAP see p. 1837

(S)-(–)-(1,1'-Binaphthalene-2,2'-diyl)bis(diphenyl-phosphine)

▶ (S)-BINAP see p. 1837

Biochanin B

▶ Formononetin see p. 2006

Bioethanol 96 %

Bioethanol 96 %

SOLVAGREEN® 96 %, Ph.Eur.

Ethyl alcohol, EtOH

C_2H_6O

M 46,07 g/mol

D ~0,81 • bp 78 °C

mp -114,5 °C • flp 17 °C

[64-17-5] • EC No. 200-578-6

UN No. 1170 • ADR 3 II • WGK 1

Danger H225-H319

Guarantee analysis:

Assay (V/V). ..... 95,1-96,9 %
Identity. ..... complies
Properties. ..... complies
Appearance. ..... complies
Acid or alkaline react. substances. ..... ≤0,003 %
Density (d 20 °C/20 °C). 0,805-0,812
Evaporation residue. ..... ≤0,0025 %
Permanganate test. ..... complies
Absorption:
240 nm. ..... ≤0,40
250-260 nm. ..... ≤0,30
270-340 nm. ..... ≤0,10
Volatile impurities:
Acetaldehyde and acetal. ..... ≤0,001 %
Benzene. ..... ≤0,0002 %
Methanol. ..... ≤0,01 %
Sum of other impurities. ..... ≤0,03 %
From controlled organic cultivation.
Prices include german tax on alcohol.

6724.1	1 l	glass	75,15 €
Original pack 6 x 1 l			71,39/1 l
6724.2	2,5 l	glass	157,50 €
Original pack 4 x 2,5 l			149,63/2,5 l
6724.3	2,5 l	plastic	153,65 €
Original pack 4 x 2,5 l			145,97/2,5 l
6724.4	5 l	plastic	282,65 €
Original pack 2 x 5 l			268,52/5 l
6724.5	10 l	plastic	525,70 €
6724.6	25 l	plastic	1073,95 €

Bioethanol 96 % denatured

Bioethanol 96 % denatured

SOLVAGREEN® 96 %

Ethyl alcohol, EtOH

C_2H_6O

M 46,07 g/mol

D ~0,81 • bp 78 °C

mp -114,5 °C • flp 17 °C

[64-17-5] • EC No. 200-578-6

UN No. 1170 • ADR 3 II • WGK 1

Danger H225-H319

Type analysis:

Assay (EtOH, v/v). ..... ≥96 %
Evaporation residue. ..... ≤0,005 %
Aldehydes (as acetaldehyde). ..... ≤0,001 %
Methanol (GC). ..... ≤0,01 %
Acid or alkaline react. substances. ..... ≤0,003 %
Sum of other impurities. ..... ≤0,03 %
Denaturing:
Methyl ethyl ketone (MEK). ..... 1 %
Isopropyl alcohol (IPA). ..... 1 %
Denatonium benzoate. ..... 1 g/100 l
From controlled organic cultivation.

6726.1	1 l	plastic	13,90 €
Original pack 6 x 1 l			13,21/1 l
6726.2	2,5 l	plastic	24,65 €
Original pack 4 x 2,5 l			23,42/2,5 l
6726.3	5 l	plastic	44,00 €
Original pack 2 x 5 l			41,80/5 l
6726.4	10 l	plastic	69,80 €
6726.5	25 l	plastic	156,45 €

Biological Buffers

Art. No.	Description	Page
9138	ACES	1754
0250	ADA	1771
3121	AMP	1804
7159	AMPSO	1805
7014	AMPSO sodium salt	1805
9134	BES	1835
9162	BICINE	1836
9140	BIS-TRIS	1842
6999	BIS-TRIS-Propane	1842
5169	Cacodylic acid sodium salt trihydrate	1308
9168	CAPS	1876
5584	CAPSO	1876
6861	CAPSO sodium salt	1876
9166	CHES	1890
X863	Citric acid	1900
7151	DIPSO	1954
0079	Glycine	2026
3908	Glycine	2026
HN07	Glycine	2026
3187	Glycine	2026
3794	Glycylglycine	2027
HN74	Glycylglycine	2027
HN77	HEPES	2036
6763	HEPES	2036
9105	HEPES	2036
HN78	HEPES	2036
7020	HEPES sodium salt	2037
9164	HEPPS, EPPS	2037
X998	Imidazole	2063
4256	MES	2129
4259	MES	2129
6066	MES monohydrate	2129
6922	MES sodium salt	2129
6979	MOPS	2147
6927	MOPS sodium salt	2147
7117	MOPSO	2147
7101	MOPSO sodium salt	2147
9156	PIPES	2214
9153	PIPES monosodium salt	2214
5583	PIPES 1,5 Na	2214
7109	PIPES disodium salt	2214
6632	POPSO	2221
6965	POPSO 1,5 Na	2221
T874	Potassium acetate	2221
3904	Potassium dihydrogen phosphate	2225
P749	di-Potassium hydrogen phosphate	2228
9729	Pyridine	2245
6773	Sodium acetate	2330
A135	Sodium carbonate	2333
HN13	Mono sodium citrate	2335
T879	Sodium dihydrogen phosphate dihydrate	2337
4404	Sodium formate	2338
6885	Sodium hydrogen carbonate	2338
P030	di-Sodium hydrogen phosphate	2339
3195	Succinic acid disodium salt hexahydrate	2384
6982	TAPS	2393
6628	TAPSO	2393
6974	TAPSO sodium salt	2393
4721	Taurine	2395
9137	TES	2398
6977	TRICINE	2416
6300	Triethanolamine	2417
4804	Triethanolamine hydrochloride	2417
4855	TRIS	2420
0188	TRIS	2421
3170	TRIS	2421
5429	TRIS	2421
A411	TRIS	2421
AE15	TRIS	2421
2449	TRIS	2421
7125	TRIS acetate	2421
9090	TRIS hydrochloride	2422
6991	TRIS maleate	2423

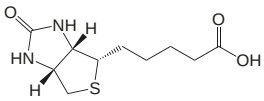
Biological Buffers, in Pouches or as Tablets

Art. No.	Description	Page
1032	Roti®fair Glycine 3.0	2275
1195	Roti®fair Na-Acetate 5.2	2275
1090	Roti®fair 0.02M Na-Phosphate 7.0	2276
1094	Roti®fair 0.02M Na-Phosphate 7.0	2276
1095	Roti®fair 1M Na-Phosphate 6.5	2276
1097	Roti®fair 1M Na-Phosphate 7.2	2276
1251	Roti®fair 1M Tris 7.4	2279
1260	Roti®fair 1M Tris 8.0	2279
1261	Roti®fair 1M Tris 8.3	2279

Biomolecular rapid test

- ▶ RiboFlow® Campylobacter see p. 2259
- ▶ RiboFlow® Candida albicans see p. 2259
- ▶ RiboFlow® Cosmetics see p. 2259
- ▶ RiboFlow® Cronobacter see p. 2259
- ▶ RiboFlow® E. coli see p. 2259
- ▶ RiboFlow® Enterobacteriaceae see p. 2259
- ▶ RiboFlow® Listeria Twin see p. 2259
- ▶ RiboFlow® P/En see p. 2260
- ▶ RiboFlow® Pseudomonas aeruginosa see p. 2260
- ▶ RiboFlow® Salmonella see p. 2260
- ▶ RiboFlow® Staphylococcus aureus see p. 2260
- ▶ RiboFlow® Vibrio parahaemolyticus see p. 2260

D(+)-Biotin



D(+)-Biotin

≥98,5 %, Ph.Eur., for biochemistry

Vitamin H

$C_{10}H_{16}N_2O_3S$

M 244,31 g/mol

mp 232-233 °C

[58-85-5] • EC No. 200-399-3

WGK 1

Guarantee analysis:

Appearance..... off-white, cryst. powder
Assay (dry substance)..... 98,5-100,5 %
Identity..... complies
Heavy metals..... ≤0,001 %
Specific rotation $[\alpha]_D^{20}$
(c=1 in 0,1N NaOH, dry substance)..... +89° to +93°
Solution (1 % in 0,1 N NaOH)..... clear, colourless
Loss on drying..... ≤1,0 %
Sulphated ash..... ≤0,1 %
Residual solvents..... complies
Related substances..... complies

3822.2	500 mg	glass	32,15 €
3822.1	1 g	glass	57,95 €
3822.3	5 g	glass	170,95 €
3822.4	10 g	glass	289,20 €
3822.5	25 g	plastic	536,45 €

Biotin-agarose beads

- ▶ Roti®garose-Biotin Beads see p. 2280
- ▶ Roti®garose-Biotin Beads see p. 2280

Biotin-11-dUTP

Biotin-11-dUTP

≥95 %, 1 mM solution

For non-radioactive, enzymatic labelling of DNA.

Biotin-aminocaproyl-[5-(3-aminoallyl)-2'-deoxy-uridine-5'-triphosphate]

$C_{28}H_{42}N_6O_{17}P_3S$

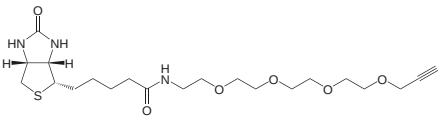
M 859,65 g/mol

Storage temp.: -20 °C
Transport temp.: cooled

1047.1	25 nmol (25 µl)	plastic	120,30 €
1047.2	50 nmol (50 µl)	plastic	202,00 €

For further information, please see page 1303

Biotin-PEG4-Alkyne



Biotin-PEG4-Alkyne

≥95 %

5-((3aS,4S,6aR)-2-oxohexahydro-1*H*-thieno[3,4-d]imidazol-4-yl)-N-(3,6,9,12-tetraoxapentadec-14-yn-1-yl)pentanamide

$C_{21}H_{35}N_3O_6S$

M 457,58 g/mol

Storage temp.: -20 °C
Transport temp.: cooled

[1458576-00-5]

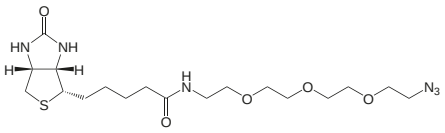
WGK 1

Type analysis:

Appearance..... white solid
Assay (NMR)..... ≥95 %
Solubility..... DMSO, DMF, CH_2Cl_2, $CHCl_3$, MeOH

7805.1	1 mg	plastic	113,85 €
7805.2	5 mg	plastic	403,15 €

Biotin-PEG3-Azide



Biotin-PEG3-Azide

≥90 %

N-(2-(2-(2-(2-Azidoethoxy)ethoxy)-ethoxy)ethyl)-5-((3aS,4S,6aR)-2-oxohexa-hydro-1*H*-thieno[3,4-d]imidazol-4-yl)-pentanamide

$C_{18}H_{32}N_6O_5S$

M 444,55 g/mol

Storage temp.: -20 °C

Transport temp.: cooled

[875770-34-6]

WGK 1

Type analysis:

Appearance. ..... off-white solid
Assay (HPLC). ..... ≥90 %
Solubility. ..... H_2O, DMSO

7804.1	1 mg	plastic	107,40 €
7804.2	5 mg	plastic	181,70 €

2,2'-Bipyridine

▶ 2,2'-Dipyridyl see p. 1954

Bis

▶ N,N'-Methylene bisacrylamide see p. 2137

Bisacrylamide

▶ N,N'-Methylene bisacrylamide see p. 2137

2,7-Bis(2-arsonophenylazo)-1,8-dihydroxynaphthalin-3,6-disulphonic acid

▶ Arsenazo III see p. 1816

3,3'-Bis[N,N-bis-(carboxymethyl)aminomethyl]-o-cresolsulfonephthalein tetrasodium salt

▶ Xylenol orange tetrasodium salt see p. 2445

4,4'-Bis-(dimethylamino)-benzophenonimide hydrochloride

▶ Auramine O (C.I. 41000) see p. 1819

1,2-Bis-(dimethylamino)-ethane

▶ TEMED see p. 2396

(R)-(+)-2,2'-Bis(diphenyl-phosphino)-1,1'-binaphthalene

▶ (R)-BINAP see p. 1837

(±)-2,2'-Bis(diphenyl-phosphino)-1,1'-binaphthalene

▶ (rac)-BINAP see p. 1837

(S)-(–)-2,2'-Bis(diphenyl-phosphino)-1,1'-binaphthalene

▶ (S)-BINAP see p. 1837

4,5-Bis(diphenylphosphino)-9,9-dimethylxanthene

▶ Xantphos see p. 2442

Bis-(β-hydroxyethyl)-amine

▶ Diethanolamine see p. 1937

N,N-Bis-(2-hydroxyethyl)-2-aminoethane sulphonic acid

▶ BES see p. 1835

3-N-Bis-(hydroxyethyl)-amino-2-hydroxypropane sulphonic acid

▶ DIPSO see p. 1954

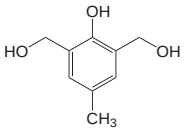
N,N-Bis-(2-hydroxyethyl)-glycine

▶ BICINE see p. 1836

Bis-(2-hydroxyethyl)imino-tris-(hydroxymethyl)-methane

▶ BIS-TRIS see p. 1842

2,6-Bis(hydroxymethyl)-p-cresol



2,6-Bis(hydroxymethyl)-p-cresol

≥97 %

$C_9H_{12}O_3$

M 168,19 g/mol

mp ≥120 °C

[91-04-3] • EC No. 202-036-4

WGK 1

Warning H315-H319-H335

Type analysis:

Appearance..... yellowish to light brown cryst. powder
Assay (HPLC)..... ≥97 %
Loss on drying. ..... ≤1,5 %
Sulphated ash. ..... ≤1,0 %

7299.1	25 g	glass	28,95 €
7299.2	100 g	glass	75,15 €

2,2-Bis(hydroxymethyl)-1,3-propanediol

▶ Pentaerythritol see p. 2195

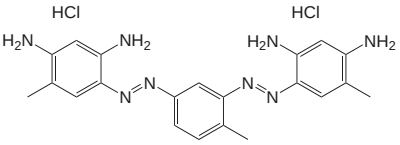
Bis(hydroxypropyl) ether

▶ Dipropylene glycol see p. 1954

Bismarck brown G

▶ Bismarck brown Y (C.I. 21000) see p. 1839

Bismarck brown R (C.I. 21010)



Bismarck brown R (C.I. 21010)

for microscopy

For modified Coomassie Blue-staining.

Basic brown 4, Vesuvin R

$C_{21}H_{24}N_8 \cdot 2\ HCl$

M 461,40 g/mol

[5421-66-9] • EC No. 226-541-4 • WGK 1

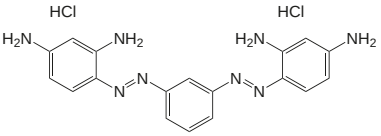
Type analysis:

Appearance. ..... brown black powder
Loss on drying (60 °C). ..... ≤1,0 %
Absorption max. (ethanol 50 %). ..... 468 nm

0316.1	25 g	plastic	20,35 €

For further information, please see page 1521

Bismarck brown Y (C.I. 21000)



Bismarck brown Y (C.I. 21000)

for microscopy

Basic Brown 1, Bismarck brown G

$C_{18}H_{18}N_8 \cdot 2\ HCl$

M 418,33 g/mol

[10114-58-6] • EC No. 233-314-3 • WGK 1

Type analysis:

Appearance. ..... red-brown to dark brown powder
Loss on drying (110 °C). ..... ≤10,0 %
Absorption max. (ethanol 50 %). ..... 450-460 nm

0313.1	10 g	glass	19,90 €
0313.2	25 g	glass	34,30 €

Bis-N-methylacridinium nitrate

▶ Lucigenin see p. 2105

Bis(methylendioxy)-protoberberin

▶ Coptisin chloride see p. 1911

Bismut Standards

- Bismuth AAS Standard Solution see p. 2358
- Bismuth ICP Standard Solution see p. 2362
- Bismuth ICP Standard Solution see p. 2366

Bismuth

Bismuth

≥99,5 %, powder
Bi
M 208,98 g/mol
D 9,78 • bp 1560 °C
mp 271,3 °C
[7440-69-9] • EC No. 231-177-4
UN No. 3089 • ADR 4.1 III

Warning H228

Type analysis:

Assay	≥99,5 %
Particle size	~200 mesh

2735.1	50 g	glass	51,50 €
2735.2	100 g	glass	87,00 €

Bismuth Standards

- Bismuth AAS Standard Solution see p. 2358
- Bismuth ICP Standard Solution see p. 2362
- Bismuth ICP Standard Solution see p. 2366

Bismuth carbonate, basic

- Bismuth subcarbonate see p. 1841

Bismuth(III) chloride

Bismuth(III) chloride

≥97 %, extra pure
Bismuth trichloride, Trichlorobismuthine
$BiCl_3$
M 315,34 g/mol
D 4,75 • bp 447 °C
mp 230–232 °C
[7787-60-2] • EC No. 232-123-2
WGK 1

Warning H315-H319

Type analysis:

Assay	≥97,0 %
Sulphate (SO_4)	≤0,05 %
Lead (Pb)	≤0,005 %
Cadmium (Cd)	≤0,005 %
Iron (Fe)	≤0,01 %
Copper (Cu)	≤0,005 %
Zinc (Zn)	≤0,005 %
Loss on drying (110 °C)	≤3,0 %

9827.1	50 g	plastic	28,95 €
9827.2	100 g	plastic	46,15 €
9827.3	500 g	plastic	182,65 €
Original pack 6 x 500 g			173,52/500 g

Bismuth citrate

Bismuth citrate

extra pure
$BiC_6H_5O_7$
M 398,08 g/mol
mp 300 °C (dec.)
[813-93-4] • EC No. 212-390-1
WGK 1

Type analysis:

Appearance	white fine powder
Assay (Bi)	49,0-54,0 %
Identity	complies
Nitrate (NO_3)	complies
Arsenic (As)	≤0,001 %
Lead (Pb)	≤0,001 %
Copper (Cu)	≤0,001 %
Silver (Ag)	≤0,001 %
Soluble Bismuth	≤0,004 %
Loss on drying	≤1,0 %

6550.3	100 g	plastic	38,60 €
6550.1	250 g	plastic	84,85 €
6550.2	1 kg	plastic	278,45 €
Original pack 6 x 1 kg			264,53/1 kg

Bismuth(III) nitrate

Bismuth(III) nitrate

≥71 % Bi, p.a., alkaline
Bismuth trinitrate, Bismuthsubnitrate
$BiNO_4$
M 286,98 g/mol
Solubility: almost insoluble (H_2O, 20 °C)
[10361-46-3] • EC No. 233-792-3
UN No. 1477 • ADR 5.1 II • WGK 1

Danger H272-H315-H319-H335

Guarantee analysis:

Assay (Bi)	≥71 %
Ammonium (NH_4)	≤0,005 %
Chloride (Cl)	≤0,01 %
Sulphate (SO_4)	≤0,02 %
Arsenic (As)	≤0,001 %
Lead (Pb)	≤0,005 %
Calcium (Ca)	≤0,005 %
Iron (Fe)	≤0,005 %
Copper (Cu)	≤0,005 %
Silver (Ag)	≤0,001 %
Zinc (Zn)	≤0,005 %

4447.1	50 g	plastic	45,05 €
4447.2	100 g	plastic	71,50 €

For further information, please see page 1673

Bismuth(III) nitrate pentahydrate

Bismuth(III) nitrate pentahydrate

≥98 %, p.a., ACS
$Bi(NO_3)_3 \cdot 5\ H_2O$
M 485,07 g/mol
D 2,83 • bp 80 °C
mp 30 °C
[10035-06-0] • EC No. 233-791-8
UN No. 1477 • ADR 5.1. II • WGK 2

Danger H272-H315-H319-H335

Guarantee analysis:

Assay (compl.)	≥98,0 %
Insoluble matter	≤0,005 %
Chloride (Cl)	≤0,001 %
Sulphate (SO_4)	≤0,005 %
Arsenic (As)	≤0,001 %
Lead (Pb)	≤0,002 %
Calcium (Ca)	≤0,005 %
Iron (Fe)	≤0,001 %
Potassium (K)	≤0,01 %
Copper (Cu)	≤0,002 %
Sodium (Na)	≤0,02 %
Silver (Ag)	≤0,001 %
Substances not precipitated by H_2S	≤0,1 %

2554.1	250 g	plastic	47,85 €
2554.2	500 g	plastic	87,00 €
Original pack 6 x 500 g			82,65/500 g
2554.3	1 kg	plastic	153,65 €
Original pack 6 x 1 kg			145,97/1 kg

Bismuth(III) oxide

Bismuth(III) oxide

≥99,5 %, p.a.
Bismuth trioxide
Bi_2O_3
M 465,96 g/mol
mp 825 °C
[1304-76-3] • EC No. 215-134-7

Guarantee analysis:

Appearance	yellow powder
Assay	≥99,5 %
Identity (Bi)	complies
Chloride (Cl)	≤0,001 %
Nitrate (NO_3)	≤0,05 %
Sulphate (SO_4)	≤0,002 %
Arsenic (As)	≤0,0002 %
Lead (Pb)	≤0,003 %
Iron (Fe)	≤0,002 %
Copper (Cu)	≤0,002 %
Silver (Ag)	≤0,0005 %
Substances not precipitated by NH_4OH	≤0,5 %
Loss on drying (105 °C)	≤0,1 %

6555.1	50 g	plastic	37,55 €
6555.2	100 g	plastic	51,50 €
6555.3	500 g	plastic	161,15 €
Original pack 6 x 500 g			153,09/500 g

Bismuth subcarbonate

Bismuth subcarbonate

≥97,5 %, USP
Bismuth carbonate, basic
$(BiO)_2CO_3$
M 509,97 g/mol
[5892-10-4] • EC No. 227-567-9
WGK 1

Guarantee analysis:

Appearance	white to off-white powder
Assay (dry substance)	97,6-100,7 %
Identity	complies
Chloride (Cl)	≤0,05 %
Nitrate (NO_3)	≤0,4 %
Arsenic (As)	≤0,0005 %
Lead (Pb)	≤0,002 %
Copper (Cu)	≤0,005 %
Silver (Ag)	≤0,0025 %
Alkali and alkaline earth metals	≤1,0 %
Loss on drying	≤1,0 %

6551.3	100 g	plastic	33,25 €
6551.1	250 g	plastic	75,15 €
6551.2	1 kg	plastic	224,70 €
Original pack 6 x 1 kg			213,47/1 kg

Bismuthsubnitrate

▶ Bismuth(III) nitrate see p. 1840

Bismuth subsalicylate

Bismuth subsalicylate

USP
$C_7H_5BiO_4$
M 362,09 g/mol
[14882-18-9] • EC No. 238-953-1
WGK 1

Guarantee analysis:

Appearance	white light powder
Assay (Bi)	56,0-59,4 %
Identity	complies
Total salicylates	36,5-39,3 %
Free salicylic acid	≤0,2 %
Nitrate (NO_3)	≤0,4 %
Arsenic (As)	≤0,001 %
Lead (Pb), Silver (Ag), Copper (Cu)	≤0,001 %
Soluble Bismuth	≤0,004 %
Loss on drying (105 °C)	≤1,0 %
pH value	2,7-5,0

6552.3	100 g	plastic	51,50 €
6552.1	250 g	plastic	102,70 €
6552.2	1 kg	plastic	321,45 €
Original pack 6 x 1 kg			305,38/1 kg

Bismuth trichloride

▶ Bismuth(III) chloride see p. 1840

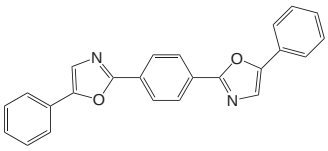
Bismuth trinitrate

▶ Bismuth(III) nitrate see p. 1840

Bismuth trioxide

▶ Bismuth(III) oxide see p. 1840

1,4-Bis[2-(5-phenyloxazolyl)]-benzene



1,4-Bis[2-(5-phenyloxazolyl)]-benzene

≥99 %, for scintillation
POPOP
$C_{24}H_{16}N_2O_2$
M 364,39 g/mol
mp 245 °C
[1806-34-4] • EC No. 217-304-6

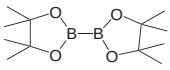
Type analysis:

Appearance	yellow crystals
Assay	≥99,0 %
Melting point	243-246 °C

Suitable for scintillation.

3210.1	5 g	glass	35,40 €
3210.2	100 g	plastic	385,95 €

Bis(pinacolato)diboron



Bis(pinacolato)diboron

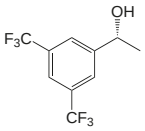
≥98 %
4,4,4',4',5,5,5',5'-Octamethyl-2,2'-bi-(1,3,2-dioxaborolane), B_2pin_2
$C_{12}H_{24}B_2O_4$
M 253,94 g/mol
mp 137-140 °C
[73183-34-3]
WGK 1

Type analysis:

Appearance	white to off-white powder
Assay (GC)	≥98 %

1983.1	1 g	glass	21,40 €
1983.2	5 g	glass	33,25 €
1983.3	25 g	glass	110,65 €

(R)-1-[3,5-Bis(trifluoromethyl)-phenyl]ethanol



(R)-1-[3,5-Bis(trifluoromethyl)-phenyl]ethanol

≥99 %
Chiral building block
$C_{10}H_8F_6O$
M 258,16 g/mol
mp 52-58 °C
[127852-28-2]
WGK 2

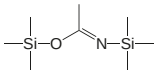
Warning H302-H412

Type analysis:

Appearance	white to off-white powder
Assay (GC)	≥99 %
Enantiomeric excess (GC)	≥99 %
Water (KF)	≤0,5 %

7481.1	1 g	glass	27,85 €
7481.2	5 g	glass	66,55 €
7481.3	25 g	glass	231,15 €

N,O-Bis(trimethylsilyl) acetamide (BSA)



N,O-Bis(trimethylsilyl) acetamide (BSA)

≥98 %, for GC
Silylation reagent
BSA
$C_8H_{21}NOSi_2$
M 203,43 g/mol
D 0,83
mp 24 °C • flp 42 °C
[10416-59-8] • EC No. 233-892-7
UN No. 2920 • ADR 8 (3) II • WGK 1

Danger
H314-H226-H302-EUH014

Type analysis:

Appearance	clear, colourless liquid
Assay (GC)	≥98 %

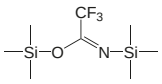
2330.1	25 g	glass	67,65 €

For further information, please see page 1628

Bis(trimethylsilyl)amine

▶ 1,1,1,3,3,3-Hexamethyldisilazane (HMDS) see p. 2040

N,O-Bis(trimethylsilyl)-trifluoroacetamide



N,O-Bis(trimethylsilyl)-trifluoroacetamide

≥98 %, for GC
Silylation reagent
BSTFA, 2,2,2-Trifluoro-N,O-bis(trimethylsilyl)-acetamide
$C_8H_{18}F_3NOSi_2$
M 257,41 g/mol
D 0,98 • bp 145 °C
mp -10 °C • flp 34 °C
[25561-30-2] • EC No. 247-103-9
UN No. 2920 • ADR 8 (3) II • WGK 1
Danger H226-H314

Type analysis:
Appearance. .....clear, colourless to yellowish liquid
Assay (GC). ..... ≥98 %

2331.1	10 g	glass	38,60 €

For further information, please see page 1628

N,O-Bis(trimethylsilyl)-trifluoroacetamide with 1 % trimethylchlorosilane

N,O-Bis(trimethylsilyl)-trifluoroacetamide with 1 % trimethylchlorosilane

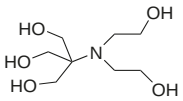
for GC
Silylation agent
BSTFA:TMCS (99:1), Silyl 991
$C_8H_{18}F_3NOSi_2$
M 257,41 g/mol
D 0,97
mp -10 °C • flp 7 °C
Storage temp.: +4 °C
[25561-30-2] • EC No. 247-103-9
UN No. 2924 • ADR 3 (8) II • WGK 1
Danger H225-H314

Type analysis:
Appearance. .....clear, yellowish liquid

9935.1	10 ml	septum bottle	81,90 €

For further information, please see page 1628

BIS-TRIS



BIS-TRIS

PUFFERAN® ≥99 %
Bis-(2-hydroxyethyl)imino-tris-(hydroxymethyl)-methane
$C_8H_{19}NO_5$
M 209,24 g/mol
mp 105 °C
[6976-37-0] • EC No. 230-237-7

Guarantee analysis:
Assay (titr.). ..... ≥99 %
Water..... ≤1,0 %
pH value (1 M, H_2O). 9,0-11,0
Solubility (1 M solution in H_2O). ..... clear soluble
Iron (Fe)..... ≤0,0003 %
Heavy metals (as Pb). ..... ≤0,0003 %
UV-absorption (0,1 M in H_2O):
340 nm. ..... ≤0,02
280 nm. ..... ≤0,04

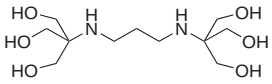
9140.1	50 g	plastic	53,65 €
9140.2	250 g	plastic	213,95 €
9140.3	500 g	plastic	357,45 €
Original pack 6 x 500 g			339,58/500 g
9140.8	1 kg	plastic	557,95 €
Original pack 6 x 1 kg			530,05/1 kg

For further information, please see page 1308

1,3-Bis(tris(hydroxymethyl)-methylaminopropane)

▶ BIS-TRIS-Propane see p. 1842

BIS-TRIS-Propane



BIS-TRIS-Propane

PUFFERAN® ≥98 %
1,3-Bis[tris(hydroxymethyl)-methylamino]-propane
$C_{11}H_{26}N_2O_6$
M 282,3 g/mol
[64431-96-5] • EC No. 264-899-3

Guarantee analysis:
Assay (titr.). ..... ≥98 %
Loss on drying. ..... ≤1,0 %
pH value (1 % in H_2O). 10,4-11,0
UV-absorption (0,1 M in H_2O):
280 nm. ..... ≤0,15

6999.1	25 g	plastic	60,10 €
6999.2	100 g	plastic	213,95 €

For further information, please see page 1308

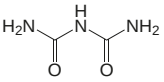
Bitter salt

▶ Magnesium sulphate heptahydrate see p. 2113

Bitter substance from Gentiana

▶ Gentiopicroside see p. 2014

Biuret



Biuret

≥97 %, p.a.
Reagent for positive control of the Biuret test
Carbamoylurea
$C_2H_5N_3O_2$
M 103,08 g/mol
mp 188-195 °C
Solubility: 0,2 g/l (H_2O, 20 °C)
[108-19-0] • EC No. 203-559-0
WGK 1
Warning H315-H319-H335

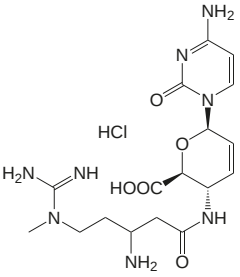
Guarantee analysis:
Appearance. ..... white cryst. powder
Assay (N). .....≥97,0 %
Melting point. .....188-195 °C
Loss on drying.....≤1 %

2675.1	25 g	glass	32,80 €
2675.2	50 g	glass	54,75 €

Biuret solutions

▶ Roti®-Quant universal see p. 2296

Blasticidin S hydrochloride



Blasticidin S hydrochloride

≥98 %, for biochemistry
Nucleoside antibiotic
$C_{17}H_{26}N_8O_5 \cdot HCl$
M 458,90 g/mol
Storage temp.: +4 °C
[3513-03-9] • EC No. 264-899-3
UN No. 2811 • ADR 6.1 II • WGK 2
Danger H300

Type analysis:
Assay. .....≥98,0 %

CP14.1	10 mg	glass	71,50 €
CP14.2	25 mg	glass	142,90 €
CP14.3	50 mg	glass	235,45 €
CP14.4	100 mg	glass	428,95 €

For further information, please see page 1499

Blocking reagents

▶ Roti®-Block see p. 2266
▶ Roti®-ImmunoBlock see p. 2285

Blood Agar (Base)

Blood Agar (Base)

for microbiology

For isolation, cultivation and detection of haemolytic reaction of fastidious microorganisms.

Application: Use 40 g for 1 l agar.
If required, add 50-110 ml defibr. blood.

Storage temp.: +20 °C

WGK 3

Formulation:

Meat peptone..... 10 g/l
Heart infusion. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,3 ±0,2

X914.1	500 g	plastic	159,00 €
Original pack 6 x 500 g			151,05/500 g

For further information, please see page 1437

Blood Agar No. 2 (Base)

Blood Agar No. 2 (Base)

ISO 7932, ISO 11290-1, for microbiology

For cultivation and detection of haemolytic reaction of fastidious microorganisms.

Application: Use 39,5 g for 1 l agar, add 50-70 ml defibr. blood.

Storage temp.: +20 °C

WGK 3

Guarantee analysis:

Proteose peptone. ..... 15 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Liver extract. ..... 2,5 g/l
Agar. ..... 12 g/l
pH value. ..... 7,0 ±0,2

8281.1	500 g	plastic	117,75 €
Original pack 6 x 500 g			111,86/500 g

For further information, please see page 1437

Blood sugar

▶ D(+)-Glucose see p. 2020
▶ D(+)-Glucose monohydrate see p. 2020

Blotting buffers

▶ Roti®-Blot 1 see p. 2266

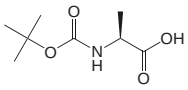
Blue tetrazolium chloride

▶ Tetrazolium blue chloride see p. 2403

BML-TC/100

▶ Roti®-CELL TC100 see p. 2271

Boc-L-Alanine



Boc-L-Alanine

PEPTIPURE® ≥98,5 %, for biochemistry

Boc-L-Ala-OH, N-(tert-Butoxycarbonyl)-L-alanine

$C_8H_{15}NO_4$

M 189,21 g/mol

mp 79 °C

Storage temp.: -20 °C
Transport temp.: room temp.

[15761-38-3] • EC No. 239-847-8

WGK 1

Type analysis:

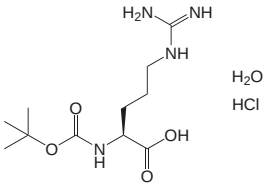
Appearance..... white cryst. powder
Assay. ..... ≥98,5 %
Water (KF)..... ≤0,5 %

6907.1	5 g	glass	16,05 €
6907.2	25 g	glass	39,70 €
6907.3	100 g	glass	115,60 €

Boc anhydride

▶ Di-*tert*-butyl dicarbonate (Boc_2O) see p. 1933

Boc-L-Arginine hydrochloride monohydrate



Boc-L-Arginine hydrochloride monohydrate

PEPTIPURE® ≥98 %, for biochemistry

Boc-L-Arg-OH, N-(tert-Butoxycarbonyl)-L-arginine

$C_{11}H_{22}N_4O_4 \cdot HCl \cdot H_2O$

M 328,79 g/mol

mp 105-115 °C

Storage temp.: -20 °C • Transport temp.: room temp.

[114622-81-0]

WGK 1

Type analysis:

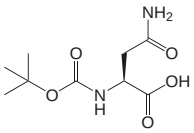
Appearance..... white to off-white powder
Assay. ..... ≥98,0 %
Water (KF)..... 5,0-6,0 %

6914.1	5 g	glass	29,60 €
6914.2	25 g	glass	78,40 €
6914.3	100 g	glass	228,90 €

Boc-L-Asn-OH

▶ Boc-L-Asparagine see p. 1843

Boc-L-Asparagine



Boc-L-Asparagine

PEPTIPURE® ≥98 %, for biochemistry

Boc-L-Asn-OH, N-(tert-Butoxycarbonyl)-L-asparagine

$C_9H_{16}N_2O_5$

M 232,23 g/mol

mp 165-175 °C

Storage temp.: +4 °C

[7536-55-2] • EC No. 231-405-2

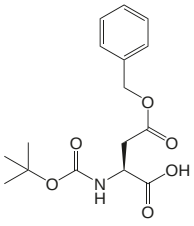
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay (titr.)..... 98,0-102,0 %
Purity (HPLC). ..... ≥98,0 %
Water (KF). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in DMF). ..... -8,0 ° to -6,0 °
Melting range. ..... 165,0-175,0 °C
Enantiomeric purity. ..... ≤0,3 % D-enantiomer
Free amino acids. ..... ≤0,5 %

6915.1	5 g	glass	12,05 €
6915.2	25 g	glass	32,15 €
6915.3	100 g	glass	99,90 €

Boc-L-Aspartic acid-(OBenzyl)



Boc-L-Aspartic acid-(OBenzyl)

PEPTIPURE® ≥98,5 %, for biochemistry

N-α-Boc-L-aspartic acid β-benzyl ester, Boc-L-Asp(OBzl)-OH

$C_{16}H_{21}NO_6$

M 323,35 g/mol

mp 98-105 °C

Storage temp.: +4 °C

[7536-58-5] • EC No. 439-640-4

WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98,5 %
Water (KF). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in DMF). ..... -21,5° to -18,5°
Enantiomeric purity. ..... ≤0,3 % D-Enantiomer

8846.1	5 g	glass	19,25 €
8846.2	25 g	glass	56,90 €
8846.3	100 g	glass	181,70 €

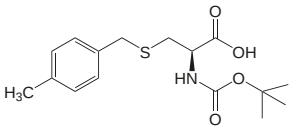
Boc-L-Asp(OBzl)-OH

▶ Boc-L-Aspartic acid-(OBenzyl) see p. 1843

Boc-Cys(4-Mbzl)-OH

▶ Boc-L-Cysteine-(4-Mbzl) see p. 1844

Boc-L-Cysteine-(4-Mbzl)



Boc-L-Cysteine-(4-Mbzl)

PEPTIPURE® ≥98,5 %, for biochemistry

Boc-Cys(4-Mbzl)-OH, N_α-tert.-Butyloxycarbonyl-S-(4-methylbenzyl)-L-cysteine, N_α-t.-Boc-S-p-methylbenzyl-L-cysteine, Boc-S-(4-methylbenzyl)-L-cysteine

$C_{16}H_{23}NO_4S$

M 325,42 g/mol

mp 63-66 °C

Storage temp.: +4 °C

[61925-77-7]

WGK 1

Type analysis:

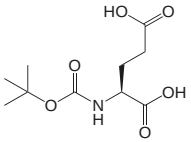
Appearance. ..... white to off-white powder
Purity (HPLC). ..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$ (2 % in methanol). ..... -37,0° to -34,0°
Water (KF). ..... ≤2,0 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

2042.1	5 g	plastic	23,55 €
2042.2	10 g	plastic	41,85 €
2042.3	25 g	plastic	85,90 €

Boc-L-Gln-OH

▶ Boc-L-Glutamine see p. 1844

Boc-L-Glutamic acid



Boc-L-Glutamic acid

PEPTIPURE® ≥99 %, for biochemistry

Boc-L-Glu-OH, N-(tert-Butoxycarbonyl)-L-glutamic acid

$C_{10}H_{17}NO_6$

M 247,25 g/mol

mp 110 °C

Storage temp.: +4 °C

[2419-94-5]

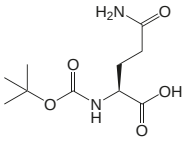
WGK 1

Type analysis:

Appearance. ..... white powder
Assay. ..... ≥99,0 %

6917.1	5 g	glass	19,90 €
6917.2	25 g	glass	62,25 €
6917.3	100 g	glass	213,95 €

Boc-L-Glutamine



Boc-L-Glutamine

PEPTIPURE® ≥99 %, for biochemistry

Boc-L-Gln-OH, N-(tert-Butoxycarbonyl)-L-glutamine

$C_{10}H_{18}N_2O_5$

M 246,26 g/mol

mp 113 °C

[13726-85-7] • EC No. 237-296-8

WGK 1

Type analysis:

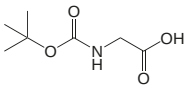
Appearance. ..... white powder
Assay. ..... ≥99,0 %

6916.1	5 g	glass	12,05 €
6916.2	25 g	glass	32,15 €
6916.3	100 g	glass	99,90 €

Boc-L-Glu-OH

▶ Boc-L-Glutamic acid see p. 1844

Boc-Glycine



Boc-Glycine

PEPTIPURE® ≥98 %, for biochemistry

Boc-Gly-OH, N-(tert-Butoxycarbonyl)-glycine

$C_7H_{13}NO_4$

M 175,18 g/mol

mp 85-90 °C

Storage temp.: +4 °C

[4530-20-5] • EC No. 224-864-5

WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤1,0 %

6918.1	5 g	glass	12,05 €
6918.2	25 g	glass	32,15 €
6918.3	100 g	glass	99,90 €

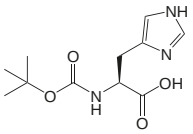
Boc-Gly-OH

▶ Boc-Glycine see p. 1844

Boc-L-His(Dnp)-OH

▶ Boc-L-Histidine-(Dnp) see p. 1844

Boc-L-Histidine



Boc-L-Histidine

PEPTIPURE® ≥98 %, for biochemistry

Boc-L-His-OH, N-(tert-Butoxycarbonyl)-L-histidine

$C_{11}H_{17}N_3O_4$

M 255,27 g/mol

mp 195 °C

[17791-52-5] • EC No. 241-768-9

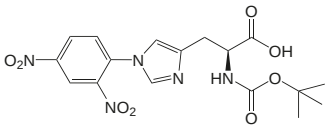
WGK 1

Type analysis:

Appearance. ..... white to off-white, cryst. powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤1,0 %

6920.1	5 g	glass	27,45 €
6920.2	25 g	glass	107,00 €

Boc-L-Histidine-(Dnp)



Boc-L-Histidine-(Dnp)

PEPTIPURE® ≥97,5 %, for biochemistry

Boc-L-His(Dnp)-OH, N_α-tert.-Butyloxycarbonyl-N_{im}-2,4-dinitrophenyl-L-histidine, N-α-Boc-N(im)-(2,4-dinitrophenyl)-L-histidine

$C_{17}H_{19}N_5O_8$

M 421,37 g/mol

mp 98-100 °C

Storage temp.: +4 °C

[25024-53-7] • EC No. 246-569-0

WGK 1

Type analysis:

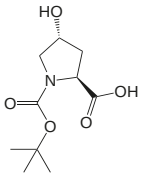
Appearance. ..... slightly yellow to light yellow powder
Purity (HPLC). ..... ≥97,5 %
Rotation spéc. $[\alpha]_D^{20}$ (1 % dans EtOAc). ..... +52,0° to +60,0°
Water (KF). ..... ≤2,0 %
Residual solvents (2-Propanol). ..... ≤15,0 %
Enantiomeric purity. ..... ≤0,5 % D-Enantiomer

1994.1	1 g	glass	22,05 €
1994.2	5 g	plastic	49,35 €
1994.3	10 g	plastic	88,05 €

Boc-L-His-OH

▶ Boc-L-Histidine see p. 1844

Boc-L-Hydroxyproline



Boc-L-Hydroxyproline

PEPTIPURE® ≥98 %, for biochemistry

Boc-L-Hyp-OH, N-(tert-Butoxycarbonyl)-L-hydroxyproline

$C_{10}H_{17}NO_5$

M 231,25 g/mol

mp 123 °C

[13726-69-7]

WGK 1

Type analysis:

Appearance. ..... white to off-white, cryst. powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤0,5 %

6921.1	5 g	glass	49,35 €
6921.2	25 g	glass	170,95 €

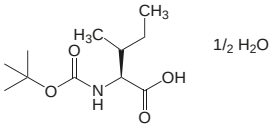
Boc-L-Hyp-OH

▶ Boc-L-Hydroxyproline see p. 1845

Boc-L-Ile-OH

▶ Boc-L-Isoleucine hemihydrate see p. 1845

Boc-L-Isoleucine hemihydrate



Boc-L-Isoleucine hemihydrate

PEPTIPURE® ≥98 %, for biochemistry

Boc-L-Ile-OH, N-(tert-Butoxycarbonyl)-L-isoleucine

$C_{11}H_{21}NO_4 \cdot ½\ H_2O$

M 240,31 g/mol

mp 50-60 °C

Storage temp.: +4 °C

[13139-16-7] • EC No. 236-074-8

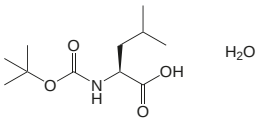
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay (titr., dry substance). ..... 98,0-102,0 %
Purity (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤8,0 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in pyridine). ..... -31,0° to -26,0°
Melting range. ..... 50,0-60,0 °C
Free amino acids. ..... ≤0,2 %

6923.1	5 g	glass	12,05 €
6923.2	25 g	glass	32,15 €
6923.3	100 g	glass	99,90 €

Boc-L-Leucine monohydrate



Boc-L-Leucine monohydrate

PEPTIPURE® ≥98 %, for biochemistry

Boc-L-Leu-OH, N-(tert-Butoxycarbonyl)-L-leucine

$C_{11}H_{21}NO_4 \cdot H_2O$

M 249,30 g/mol

mp 79-85 °C

Storage temp.: +4 °C

[13139-15-6] • EC No. 236-073-2

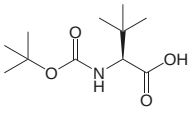
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay (titr., dry substance). ..... 98,0-102,0 %
Purity (TLC). ..... ≥99,0 %
Water (KF). ..... 6,5-7,9 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in CH_3COOH). ..... -27,5° to -23,5°
Melting range. ..... 79,0-85,0 °C
Enantiomeric purity. ..... ≤0,2 % D-Enantiomer
Free amino acids. ..... ≤0,2 %

6924.1	5 g	glass	12,05 €
6924.2	25 g	glass	32,15 €
6924.3	100 g	glass	99,90 €

Boc-L-tert-Leucine



Boc-L-tert-Leucine

PEPTIPURE® ≥98,5 %, for biochemistry

Boc-L-Tle-OH, N-(tert-Butoxycarbonyl)-L-tert-leucine

$C_{11}H_{21}NO_4$

M 231,29 g/mol

mp 118 °C

Storage temp.: +4 °C

[62965-35-9]

WGK 1

Type analysis:

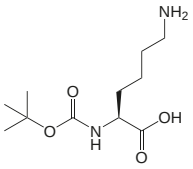
Appearance. ..... white powder
Assay. ..... ≥98,5 %
Water (KF). ..... ≤1,0 %

6942.1	1 g	glass	25,30 €
6942.2	5 g	glass	100,55 €
6942.3	10 g	glass	175,15 €

Boc-L-Leu-OH

▶ Boc-L-Leucine monohydrate see p. 1845

Boc-L-Lysine



Boc-L-Lysine

PEPTIPURE® ≥98 %, for biochemistry

Boc-L-Lys-OH, N-(tert-Butoxycarbonyl)-L-lysine

$C_{11}H_{22}N_2O_4$

M 246,30 g/mol

mp 205 °C

Storage temp.: +4 °C

[13734-28-6] • EC No. 237-303-4

WGK 1

Type analysis:

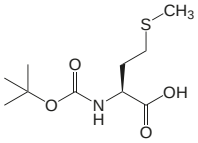
Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤1,0 %

6926.1	1 g	glass	19,90 €
6926.2	5 g	glass	61,85 €
6926.3	10 g	glass	112,35 €

Boc-L-Lys-OH

▶ Boc-L-Lysine see p. 1845

Boc-L-Methionine



Boc-L-Methionine

PEPTIPURE® ≥99 %, for biochemistry

Boc-L-Met-OH, N-(tert-Butoxycarbonyl)-L-methionine

$C_{10}H_{19}NO_4S$

M 249,33 g/mol

mp 47 °C

Storage temp.: +4 °C

[2488-15-5] • EC No. 219-639-3

WGK 1

Type analysis:

Appearance. ..... white powder
Assay. ..... ≥99,0 %
Water (KF). ..... ≤1,0 %

6928.1	5 g	glass	16,05 €
6928.2	25 g	glass	39,25 €
6928.3	100 g	glass	117,20 €

Boc-S-(4-methylbenzyl)-L-cysteine

▶ Boc-L-Cysteine-(4-Mbzl) see p. 1844

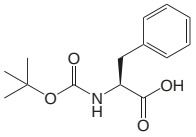
Boc-L-Met-OH

▶ Boc-L-Methionine see p. 1845

Boc_2O

▶ Di-*tert*-butyl dicarbonate (Boc_2O) see p. 1933

Boc-L-Phenylalanine



Boc-L-Phenylalanine

PEPTIPURE® ≥99 %, for biochemistry

Boc-L-Phe-OH, N-(tert-Butoxycarbonyl)-L-phenylalanine
$C_{14}H_{19}NO_4$
M 265,31 g/mol
mp 85-88 °C
Storage temp.: +4 °C
[13734-34-4] • EC No. 237-305-5
WGK 1

Type analysis:

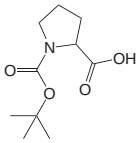
Appearance. ..... white cryst. powder
Assay (titr.). ..... 99,0-101,0 %
Purity (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤0,5 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in ethanol). ..... 24,0° to 26,0°
Melting range. ..... 84,0-88,0 °C
Enantiomeric purity. ..... ≤0,3 % D-enantiomer
Free amino acids. ..... ≤0,3 %

6931.1	5 g	glass	12,05 €
6931.2	25 g	glass	32,15 €
6931.3	100 g	glass	99,90 €

Boc-L-Phe-OH

▶ Boc-L-Phenylalanine see p. 1846

Boc-L-Proline



Boc-L-Proline

PEPTIPURE® ≥99 %, for biochemistry

Boc-L-Pro-OH, N-(tert-Butoxycarbonyl)-L-proline
$C_{10}H_{17}NO_4$
M 215,25 g/mol
mp 132-136 °C
Storage temp.: +4 °C
[15761-39-4] • EC No. 239-848-3
WGK 1

Type analysis:

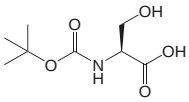
Appearance. ..... white to off-white powder
Assay (titr.). ..... 99,0-101,0 %
Purity (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in CH_3COOH). ..... -61,6° to -59,6°
Melting range. ..... 132,0-136,0 °C
Enantiomeric purity. ..... ≤0,2 % D-Enantiomer
Free amino acids. ..... ≤0,2 %

6932.1	5 g	glass	12,05 €
6932.2	25 g	glass	32,15 €
6932.3	100 g	glass	99,90 €

Boc-L-Pro-OH

▶ Boc-L-Proline see p. 1846

Boc-L-Serine



Boc-L-Serine

PEPTIPURE® ≥99 %, for biochemistry

Boc-L-Ser-OH, N-(tert-Butoxycarbonyl)-L-serine
$C_8H_{15}NO_5$
M 205,21 g/mol
mp 91 °C
Storage temp.: +4 °C
[3262-72-4] • EC No. 221-867-3
WGK 1

Type analysis:

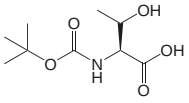
Appearance. ..... white to off-white powder
Assay. ..... ≥99,0 %
Water (KF). ..... ≤8,5 %

6933.1	5 g	glass	19,25 €
6933.2	25 g	glass	56,90 €
6933.3	100 g	glass	181,70 €

Boc-L-Ser-OH

▶ Boc-L-Serine see p. 1846

Boc-L-Threonine



Boc-L-Threonine

PEPTIPURE® ≥98 %, for biochemistry

Boc-L-Thr-OH, N-(tert-Butoxycarbonyl)-L-threonine
$C_9H_{17}NO_5$
M 219,23 g/mol
mp 80 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[2592-18-9] • EC No. 219-987-6
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %

6935.1	5 g	glass	27,45 €
6935.2	25 g	glass	103,10 €

Boc-L-Thr-OH

▶ Boc-L-Threonine see p. 1846

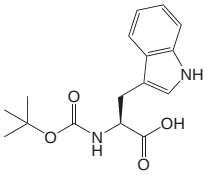
Boc-L-Tle-OH

▶ Boc-L-tert-Leucine see p. 1845

Boc-L-Trp-OH

▶ Boc-L-Tryptophan see p. 1846

Boc-L-Tryptophan



Boc-L-Tryptophan

PEPTIPURE® ≥95 %, for biochemistry

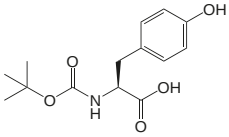
Boc-L-Trp-OH, N-(tert-Butoxycarbonyl)-L-tryptophan
$C_{16}H_{20}N_2O_4$
M 304,34 g/mol
mp 132-140 °C
Storage temp.: +4 °C
[13139-14-5] • EC No. 236-072-7
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay (titr.). ..... 95,0-102,0 %
Purity (HPLC). ..... ≥98,5 %
Water (KF). ..... ≤1,0 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in $CH3COOH$). ....-23° to -19°
Melting range. ..... 132,0-140,0 °C
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

6945.1	5 g	glass	12,05 €
6945.2	25 g	glass	32,15 €
6945.3	100 g	glass	99,45 €

Boc-L-Tyrosine



Boc-L-Tyrosine

PEPTIPURE® ≥98 %, for biochemistry

Boc-L-Tyr-OH, N-(tert-Butoxycarbonyl)-L-tyrosine
$C_{14}H_{19}NO_5$
M 281,30 g/mol
mp 133 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[3978-80-1] • EC No. 223-613-7
WGK 1

Type analysis:

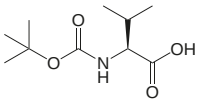
Appearance. ..... white powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤1,0 %

6949.1	5 g	glass	26,35 €
6949.2	25 g	glass	74,75 €

Boc-L-Tyr-OH

▶ Boc-L-Tyrosine see p. 1846

Boc-L-Valine



Boc-L-Valine

PEPTIPURE® ≥98 %, for biochemistry
Boc-L-Val-OH, N-(tert-Butoxycarbonyl)-L-valine
$C_{10}H_{19}NO_4$
M 217,26 g/mol
mp 75-82 °C
Storage temp.: +4 °C
[13734-41-3] • EC No. 237-307-6
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay (titr.). ..... 98,0-102,0 %
Purity (HPLC). ..... ≥98,0 %
Water (KF). ..... ≤1,0 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in CH3COOH). .. -6,8° to -5,8°
Melting range. ..... 75,0-82,0 °C
Enantiomeric purity. ..... ≤0,3 % D-enantiomer

6950.1	5 g	glass	12,05 €
6950.2	25 g	glass	32,15 €
6950.3	100 g	glass	99,90 €

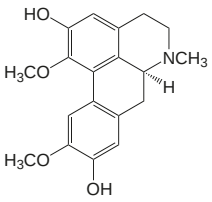
Boc-L-Val-OH

▶ Boc-L-Valine see p. 1847

Bold black

▶ Sudan black B (C.I. 26150) see p. 2385

Boldine



Boldine

ROTICHROM® ~CHR
$C_{19}H_{21}NO_4$
M 327,37 g/mol
mp 161 °C
[476-70-0] • EC No. 207-509-9
WGK 1

Warning H302-H315-H319-H335

8900.1	100 mg	glass	131,05 €

Bolus

Bolus

finely powdered
Kaolin, Hydrated aluminum silicate
D 2,6
[1332-58-7] • EC No. 310-127-6

Type analysis:

Appearance. ..... powder
pH value 5,5-8,0
SiO_2. ..... 51,0-59,0 %
MgO. ..... 0,4-1,2 %
Al_2O_3. ..... 30,0-36,0 %
K_2O. ..... 4,0-7,0 %
Fe_2O_3. ..... 1,5-5,0 %
Na_2O. ..... 0,05-0,15 %
TiO_2. ..... 0,05-0,15 %
CaO. ..... 0,02-3,50 %
Loss on ignition. ..... 6,0-9,5 %

8361.2	1 kg	plastic	18,85 €
Original pack 6 x 1 kg			17,91/1 kg
8361.1	2,5 kg	plastic	34,30 €

Bone ash

Bone ash

powder
[68439-86-1] • EC No. 270-423-5

Type analysis:

Appearance. ..... white powder

8493.2	500 g	plastic	15,60 €
Original pack 6 x 500 g			14,82/500 g
8493.1	1 kg	plastic	22,50 €
Original pack 6 x 1 kg			21,38/1 kg

BOP

▶ Benzotriazole-1-yl-oxy-tris-(dimethylamino)-phosphonium hexafluorophosphate (BOP) see p. 1832

Borate Buffered Saline (tablets)

▶ Roti®fair BBS see p. 2274

Borax

▶ di-Sodium tetraborate see p. 2350
▶ di-Sodium tetraborate decahydrate see p. 2350

Boric acid

H_3BO_3
M 61,83 g/mol
D 1,44 • mp >100 (dec.)
Solubility: 47 g/l (H_2O, 20 °C)
[10043-35-3] • EC No. 233-139-2 • WGK 1

Danger H360FD

Boric acid

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5614.1	25 g	plastic	53,25 €
5614.2	100 g	plastic	131,70 €

Boric acid

≥99,8 %, p.a., ACS, ISO
Buffer substance, for molecular biology

Guarantee analysis:

Assay (acidim.). ..... ≥99,8 %
In CH_3OH insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,0005 %
Sulphate (SO_4). ..... ≤0,002 %
Phosphate (PO_4). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,00005 %
Calcium (Ca). ..... ≤0,002 %
Cadmium (Cd). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0001 %
Magnesium (Mg). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %
With CH_3OH+HCl non volatile matter (as SO_4). ..... ≤0,05 %

6943.2	250 g	plastic	20,35 €
6943.4	500 g	plastic	25,70 €
Original pack 6 x 500 g			24,42/500 g
6943.1	1 kg	plastic	36,45 €
Original pack 6 x 1 kg			34,63/1 kg
6943.6	2,5 kg	plastic	76,25 €
6943.3	5 kg	plastic	147,20 €
6943.5	25 kg	plastic	676,20 €

Boric acid

≥99,5 %, Ph.Eur., USP, BP
Buffer substance

Guarantee analysis:

Assay (acidim., dry substance). ..... 99,5-100,5 %
Identity. ..... complies
Appearance of solution. ..... complies
pH value (3,3 %, water). 3,8-4,8
Solubility (in ethanol). ..... complies
Loss on drying. ..... ≤0,5 %
Ash content (CH_3OH+HCl) (as SO_4). ..... ≤0,1 %
Organic material. ..... complies
Chloride (Cl). ..... ≤0,002 %
Phosphate (PO_4). ..... ≤0,002 %
Sulphate (SO_4). ..... ≤0,045 %
Heavy metals (as Pb). ..... ≤0,0015 %
Arsenic (As). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,001 %
Magnesium (Mg). ..... ≤0,005 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,001 %

P010.1	500 g	plastic	20,35 €
Original pack 6 x 500 g			19,33/500 g
P010.2	1 kg	plastic	32,15 €
Original pack 6 x 1 kg			30,54/1 kg
P010.3	2,5 kg	plastic	68,30 €
P010.5	25 kg	plastic	547,20 €

Boric acid

≥99,8 %

Type analysis:

Assay.....≥99,8 %
Sulphate (SO_4).....≤0,05 %
Iron (Fe).....≤0,001 %

5935.1	1 kg	plastic	17,75 €
Original pack 6 x 1 kg			16,86/1 kg
5935.2	5 kg	plastic	72,60 €
5935.4	25 kg	plastic	213,95 €
5935.3	50 kg	plastic	375,20 €

Boric acid solution 4 %

Boric acid solution 4 %

p.a.
Analytical reagent
[10043-35-3] • EC No. 233-139-2
WGK 1

Type analysis:

Assay (Boric acid).....~40 g/l

HN24.1	1 l	plastic	18,20 €
Original pack 6 x 1 l			17,29/1 l
HN24.4	2,5 l	plastic	28,95 €
Original pack 4 x 2,5 l			27,50/2,5 l
HN24.2	5 l	plastic	40,75 €
Original pack 2 x 5 l			38,71/5 l
HN24.3	10 l	plastic	66,55 €

(-)-Borneol

(-)-Borneol

ROTICHROM® GC
Reference substance for GC.
$C_{10}H_{18}O$
M 154,25 g/mol
bp 210 °C
mp 206-208 °C • flp 86 °C
Storage temp.: +4 °C
[464-45-9] • EC No. 207-353-1
UN No. 1312 • ADR 4.1 III • WGK 2
Warning H228

Type analysis:

Purity (GC).....≥98 %

8495.2	100 mg	glass	85,90 €

(+)-Borneol

(+)-Borneol

ROTICHROM® GC
Reference substance for GC.
(+)-Bornyl alcohol
$C_{10}H_{18}O$
M 154,25 g/mol
mp 205-208 °C • flp 65 °C
Storage temp.: +4 °C
[464-43-7] • EC No. 207-352-6
UN No. 1312 • ADR 4.1 III • WGK 2
Warning H228

Type analysis:

Purity (GC).....≥96 %

8903.1	100 mg	plastic	142,90 €

L-Bornyl acetate

▶ Acetic acid L-bornyl ester see p. 1758

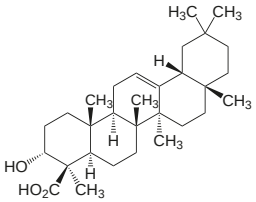
(+)-Bornyl alcohol

▶ (+)-Borneol see p. 1848

Boron Standards

▶ Boron AAS Standard Solution see p. 2359
▶ Boron ICP Standard Solution see p. 2362
▶ Boron ICP Standard Solution see p. 2366

α-Boswellic acid



α-Boswellic acid

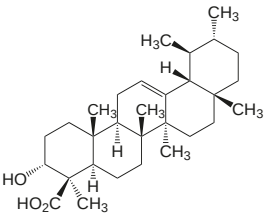
ROTICHROM® HPLC
Reference substance for HPLC.
From *Boswellia serrata.*
(3α,4β)-3-Hydroxy-olean-12-en-23-oic acid
$C_{30}H_{48}O_3$
M 456,73 g/mol
Storage temp.: +4 °C
[471-66-9]

Type analysis:

Purity (HPLC).....>99 %

1123.1	10 mg	glass	428,95 €

β-Boswellic acid



β-Boswellic acid

ROTICHROM® HPLC
Reference substance for HPLC.
From *Boswellia serrata.*
(3α,4β)-3-Hydroxy-urs-12-en-23-oic acid
$C_{30}H_{48}O_3$
M 456,73 g/mol
Storage temp.: +4 °C
[631-69-6]

Type analysis:

Purity (HPLC).....>99 %

1124.1	10 mg	glass	428,95 €

Bouin's fixative

Bouin's fixative

NEW

for histology
For fixing of histological specimens.
WGK 3
Danger
H302-H315-H317-H319-H335-H341-H350

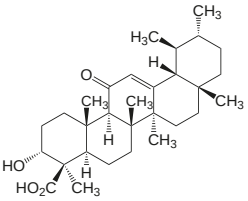
Type analysis:

Appearance.....yellow liquid
Odour.....formaldehyde
Solution contains.....
.....picric acid, formaldehyde, acetic acid, dem. water

6482.2	250 ml	glass	37,10 €
6482.3	500 ml	glass	51,10 €
6482.4	1 l	glass	80,10 €
Original pack 6 x 1 l			76,10/1 l

For further information, please see page 1505

11-keto-β-Boswellic acid



11-keto-β-Boswellic acid

ROTICHROM® HPLC
Reference substance for HPLC.
From *Boswellia serrata.*
3α-Hydroxy-urs-12-en-11-keto-23-acid
$C_{30}H_{46}O_4$
M 470,69 g/mol
Storage temp.: +4 °C
[17019-92-0]

Type analysis:
Purity (HPLC)..... >99 %

1155.1	10 mg	glass	385,95 €

BPB
▶ Bromophenol blue see p. 1854

Bradford solutions
▶ Roti®-Quant see p. 2296
▶ Roti®-Nanoquant see p. 2290

Brain-Heart-Infusion Agar

Brain-Heart-Infusion Agar
for microbiology
For cultivation of fastidious microorganisms.
Application: Use 52 g for 1 l agar.
BHI Agar
Storage temp.: +20 °C
WGK 3

Formulation:
Calf Brain Infusion..... 7,5 g/l
Beef Heart Infusion. ..... 10 g/l
Peptone. ..... 10 g/l
Glucose. ..... 2 g/l
Sodium chloride (NaCl). ..... 5 g/l
Disodium phosphate. ..... 2,5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,4 ±0,2

X915.1	500 g	plastic	100,55 €
Original pack 6 x 500 g			95,52/500 g

For further information, please see page 1437

Brain-Heart-Infusion Broth

Brain-Heart-Infusion Broth
for microbiology
For cultivation of fastidious microorganisms.
Application: Use 37 g for 1 l broth.
BHI Broth
Storage temp.: +20 °C
WGK 1

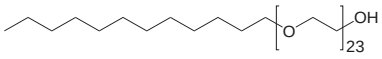
Formulation:
Pig brain infusion. ..... 7,5 g/l
Pig heart infusion. ..... 10 g/l
Peptone. ..... 10 g/l
Glucose. ..... 2 g/l
Sodium chloride (NaCl). ..... 5 g/l
Disodium phosphate. ..... 2,5 g/l
pH value. ..... 7,4 ±0,2

X916.1	500 g	plastic	93,00 €
Original pack 6 x 500 g			88,35/500 g
X916.2	1 kg	plastic	158,60 €
Original pack 6 x 1 kg			150,67/1 kg

For further information, please see page 1437

Brenzcatechinmono-methylether
▶ Guaiacol see p. 2030

Brij® 35



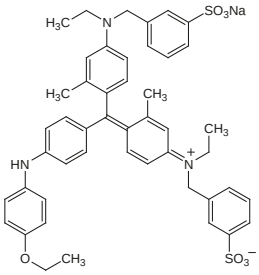
Brij® 35
for biochemistry
Non-ionic detergent.
Polyoxyethylene lauryl ether, Polyethylene glycol lauryl ether
$C_{58}H_{118}O_{24}$
M 1198,57 g/mol
D 1,05 • bp 100 °C
flp >149 °C
[9002-92-0]
WGK 2

Type analysis:
Water..... ≤4 %
Hydroxyl number (mg KOH/g). 40-60

CN21.1	250 g	plastic	17,75 €
CN21.2	500 g	plastic	27,85 €
Original pack 6 x 500 g			26,46/500 g
CN21.3	1 kg	plastic	42,50 €
Original pack 6 x 1 kg			40,38/1 kg

For further information, please see page 1310

Brilliant blue G 250 (C.I. 42655)



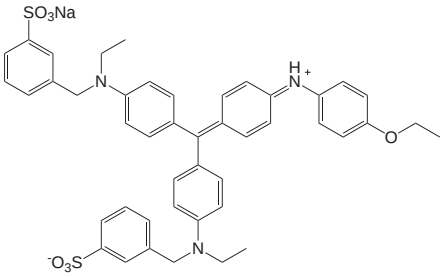
Brilliant blue G 250 (C.I. 42655)
For preparing staining solution for protein analysis in gel electrophoresis.
Coomassie® blue G 250
$C_{47}H_{48}N_3O_7S_2Na$
M 854,03 g/mol
Solubility: 40 g/l (H_2O, 20 °C)
[6104-58-1] • EC No. 228-058-4
WGK 1

Type analysis:
Maximum absorption. ..... 605-615 nm

9598.1	10 g	glass	30,00 €
9598.2	100 g	plastic	153,65 €

For further information, please see page 1217

Brilliant blue R 250 (C.I. 42660)



Brilliant blue R 250 (C.I. 42660)
For preparing staining solution for protein analysis in gel electrophoresis.
Coomassie® Brillant Blue R 250
$C_{45}H_{44}N_3NaO_7S_2$
M 825,99 g/mol
mp ~174-180 °C
Solubility: 20 g/l (H_2O, 30 °C)
[6104-59-2] • EC No. 228-060-5
WGK 1

Type analysis:
Appearance. ..... blue to purple powder
Absorption max. (in EtOH). ..... 580-600 nm
Loss on drying (110 °C). ..... ≤10 %

3862.1	10 g	glass	24,20 €
3862.2	100 g	glass	96,65 €

For further information, please see page 1217

Brilliant cresyl blue (C.I. 51010)

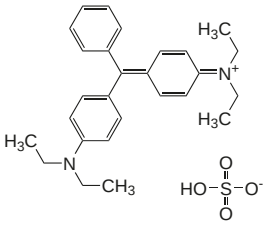
Brilliant cresyl blue (C.I. 51010)
p.a.
Brilliant blue C
$(C_{17}H_{20}N_3O)_2 \cdot ZnCl_4$
M 385,96 g/mol
Solubility: 30 g/l (H_2O, 25 °C)
[81029-05-2] • EC No. 279-675-0
WGK 1
Warning H315-H319-H335

Type analysis:
Absorption max. (in H_2O). ..... 620-640 nm
Loss on drying (110 °C). ..... ≤5 %

5162.1	5 g	glass	23,55 €
5162.2	10 g	glass	35,40 €

For further information, please see page 1521

Brilliant green (C.I. 42040)



Brilliant green (C.I. 42040)

for microscopy

Indicator pH 0,0-2,6

Basic green 1, Malachite green G, Diamond green G, Ethyl green

$C_{27}H_{34}N_2O_4S$

M 482,64 g/mol

mp 210 °C (dec.)

Solubility: 100 g/l (H_2O, 20 °C)

[633-03-4] • EC No. 211-190-1

WGK 2

Warning H302-H319

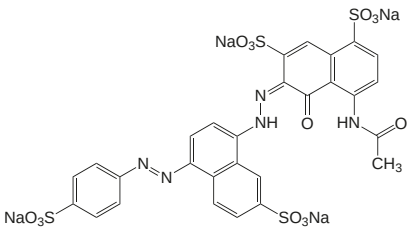
Type analysis:

Maximum absorption. ..... 628-632 nm
Specific extinction E 1 %/1 cm. ..... >1750
Loss on drying (135 °C). ..... ≤5 %

0324.1	25 g	glass	18,20 €
0324.2	100 g	plastic	40,75 €

For further information, please see page 1521

Brilliant black BN (C.I. 28440)



Brilliant black BN (C.I. 28440)

p.a.

$C_{28}H_{17}N_5Na_4O_{14}S_4$

M 867,69 g/mol

Solubility: 100 g/l (H_2O)

[2519-30-4] • EC No. 219-746-5

WGK 1

Type analysis:

Appearance. ..... black powder
Insoluble in water. ..... ≤0,5 %
Heavy metals. ..... ≤0,005 %
Lead (Pb). ..... ≤0,001 %
Mercury (Hg) ..... ≤0,0001 %

7643.1	5 g	glass	19,90 €
7643.2	25 g	glass	37,10 €
7643.3	100 g	glass	100,55 €

Brilliant blue C

▶ Brilliant cresyl blue (C.I. 51010) see p. 1849

Brilliant Green Bile Broth

Brilliant Green Bile Broth

DIN 10172, for microbiology

For selective enrichment and enumeration of coli bacteria in milk, water samples, faeces and other material.

Application: Use 40 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

Gelatine peptone. ..... 10 g/l
Lactose. ..... 10 g/l
Bile salts. ..... 20 g/l
Brilliant green. ..... 0,0133 g/l
pH value. ..... 7,2 ±0,2

CL06.1	500 g	plastic	147,85 €
Original pack 6 x 500 g			140,46/500 g

For further information, please see page 1438

Brilliant Green Lactose Sucrose Agar

Brilliant Green Lactose Sucrose Agar

Ph.Eur., for microbiology

Highly selective medium for the isolation of *Salmonellae* from pathological specimens and food.

Application: Use 58,1 g for 1 l agar.

Agar medium L (Ph.Eur. 6.0), **BPLS**

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

Meat and casein peptone. ..... 10 g/l
Yeast extract. ..... 3 g/l
Sodium chloride (NaCl). ..... 5 g/l
Lactose monohydrate. ..... 10 g/l
Saccharose. ..... 10 g/l
Phenol red. ..... 0,08 g/l
Brilliant green. ..... 0,0125 g/l
Agar ..... 20 g/l
pH value. ..... 6,9 ±0,2

AE43.1	500 g	plastic	99,90 €
Original pack 6 x 500 g			94,91/500 g

For further information, please see page 1438

Brilliant Green Tetrathionate Bile Broth

Brilliant Green Tetrathionate Bile Broth

Ph.Eur., for microbiology

For selective enrichment of *Salmonellae* in food and faeces.

Application: Use 63 g for 1 l broth.

Broth medium I (Ph.Eur. 6.0)

Storage temp.: +20 °C

WGK 1

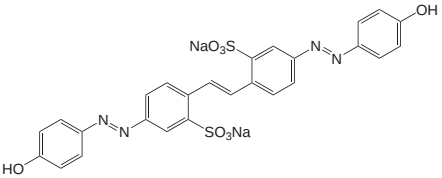
Guarantee analysis:

Peptone. ..... 8,6 g/l
Dried beef bile. ..... 8 g/l
Sodium chloride (NaCl). ..... 6,4 g/l
Calcium carbonate. ..... 20 g/l
Potassium tetrathionate. ..... 20 g/l
Brilliant green. ..... 0,07 g/l
pH value. ..... 7,0 ±0,2

AE42.2	100 g	plastic	118,15 €
AE42.1	500 g	plastic	461,20 €
Original pack 6 x 500 g			438,14/500 g

For further information, please see page 1438

Brilliant yellow (C.I. 24890)



Brilliant yellow (C.I. 24890)

p.a.

Indicator pH 6,4-8,0

$C_{26}H_{18}N_4Na_2O_8S_2$

M 624,55 g/mol

mp >250 °C

Solubility: 25 g/l (H_2O)

[3051-11-4]

WGK 1

Type analysis:

Appearance. ..... brick red to rust powder
pH-transition range. ..... 6,4 (yellow)-8,0 (red orange)

7645.1	5 g	glass	21,00 €
7645.2	25 g	glass	32,80 €
7645.3	100 g	glass	75,15 €

Brindi acid

Brindi acid

30 %, techn.

Brindi resin with hydrochloric acid.

For application the product has to be diluted with 3 to 6 times the amount of water. Not suitable for aluminium and zinc.

D 1,15

UN No. 1789 • ADR 8 II • WGK 1

Danger H314-H335-H290

Type analysis:

Appearance. ..... brown, viscous liquid
Assay. ..... 28,2-31,2 % (HCl)

5141.2	1 l	plastic	16,70 €
Original pack 6 x 1 l			15,87/1 l
5141.1	10 l	plastic	45,05 €

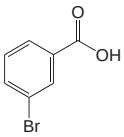
Brindi resin with hydrochloric acid

▶ Brindi acid see p. 1850

Bromate Standards

▶ Bromate IC Standard Solution see p. 2375

3-Brombenzoic acid



3-Brombenzoic acid

≥99 %, for synthesis
$C_7H_5BrO_2$
M 201,02 g/mol
mp 154-158 °C
[585-76-2] • EC No. 209-562-3
WGK 3
Warning H315-H319-H335

Type analysis:
Appearance. ..... white to pale yellow cryst. powder
Assay. ..... ≥99,0 %

4273.1	25 g	glass	32,80 €
4273.2	100 g	glass	82,70 €

Bromelain

Bromelain

~1200 GDU/g, for biochemistry
Made from stems of young pineapple *(Bromeliaceae)*.
Bromelin
mp ~60 °C
Storage temp.: +4 °C
[9001-00-7] • EC No. 232-572-4
WGK 3
Danger H334-H335-H315-H319

Type analysis:
Appearance. ..... off-white, hygroscopic powder
Activity. ..... ~1200 GDU/g (~2,4 FIP-units/mg)
pH value (1 % solution). 3,0-5,0
Ash. ..... <5 %
Loss on drying. ..... <5 %

5950.1	10 g	plastic	21,40 €
5950.2	100 g	plastic	96,25 €

For further information, please see page 1316

Bromelin

▶ Bromelain see p. 1851

Brome potassium

▶ Potassium bromide see p. 2222

Bromide bromate solution (0,1 N)

Bromide bromate solution

0,05 mol Br_2/l - 0,1 N volumetric standard solution
Potassium bromide bromate solution
WGK 3
Danger H350

Type analysis:
Amount-of-substance conc. (20 °C). ..... 0,05 mol Br_2/l ±0,2 %
Titer. 0,998-1,002

8131.1	1 l	plastic	32,15 €
Original pack 6 x 1 l			30,54/1 l

Bromide Standards

▶ Bromide IC Standard Solution see p. 2375

5-Bromoanthranilic acid

▶ 2-Amino-5-bromobenzoic acid see p. 1788

Bromobenzene D5

Bromobenzene D5

99,5 Atom%D
For nuclear magnetic resonance spectroscopy.
C_6D_5Br
M 162,05 g/mol
D ~1,49 • bp 156 °C
mp -31 °C
[4165-57-5] • EC No. 224-013-8
UN No. 2514 • ADR 3 III • WGK 2
Warning H226-H315-H411

Guarantee analysis:
Deuterising degree. ..... ≥99,5 %
Water (KF, H_2O+D_2O). ..... ≤0,03 %

HN93.1	10 ml	glass	127,95 €

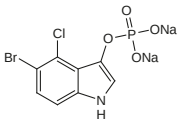
5-Bromo-4-chloro-indolyl-α-D-galactopyranoside

▶ X-α-Gal see p. 2443

5-Bromo-4-chloro-3-indolyl-β-D-glucuronide monohexyl ammonium salt

▶ X-Gluc see p. 2443

5-Bromo-4-chloro-3-indolyl phosphate disodium salt



5-Bromo-4-chloro-3-indolyl phosphate disodium salt

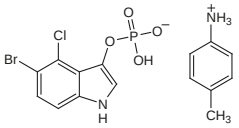
≥99 %
Substrate for alkaline phosphatase, in particular in immunoblot procedures.
BCIP-Na_2, X-phosphate disodium salt
$C_8H_4BrClNO_4PNa_2 \cdot 1,5\ H_2O$
M 397,46 g/mol
mp >300 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[102185-33-1]

Type analysis:
Appearance. ..... off-white powder
Assay (titr.). ..... ≥99,0 %
Water (KF). ..... 5,8-7,8 %

A155.1	100 mg	glass	27,85 €
A155.2	500 mg	glass	118,15 €
A155.3	1 g	glass	203,20 €
A155.4	5 g	glass	665,45 €

For further information, please see page 1328

5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt



5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt

≥99 %, BioScience-Grade
Histochemical substrate for phosphatase.
BCIP-p-toluidine salt, X-Phos
$C_{15}H_{15}N_2O_4BrClP$
M 433,63 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[6578-06-9] • EC No. 229-506-1
WGK 2
Warning H371

Guarantee analysis:
Appearance. ..... off-white powder
Assay (titr.). ..... ≥99 %
Water (KF). ..... ≤1 %
Appearance of solution (1% in DMF). ..... clear, colourless to slightly yellowish
Phosphate (PO_4). ..... ≤0,05 %

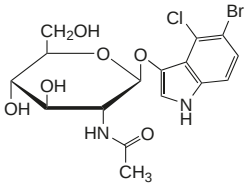
6368.1	500 mg	glass	36,45 €
6368.2	1 g	glass	70,45 €
6368.3	5 g	glass	267,70 €

For further information, please see page 1328

5-Bromo-4-chloro-3-indoxyl-2-acetamido-2-deoxy-β-D-glucopyranoside

▶ 5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide see p. 1852

5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide



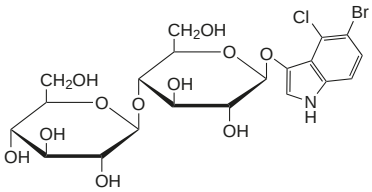
5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide

≥99,5 %, for biochemistry
Glycosidase substrate
5-Bromo-4-chloro-3-indoxyl-2-acetamido-2-deoxy-β-D-glucopyranoside, X-β-D-GlcNAc
$C_{16}H_{18}BrClN_2O_6$
M 449,69 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[4264-82-8]
WGK 1

Type analysis:
Assay (HPLC).....≥99,5 %
Solution (1 % in methanol).....clear, almost colourless
Water (KF).....≤4 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in methanol).....-68° ±3°

4149.1	25 mg	glass	22,05 €
4149.2	100 mg	glass	44,00 €

5-Bromo-4-chloro-3-indoxyl-β-D-cellobioside



5-Bromo-4-chloro-3-indoxyl-β-D-cellobioside

≥99 %, for biochemistry
Glycosidase substrate
X-β-D-Cellobioside
$C_{20}H_{25}BrClNO_{11}$
M 570,78 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[177966-52-8] • EC No. 206-375-9 • WGK 1

Warning H315-H319-H335

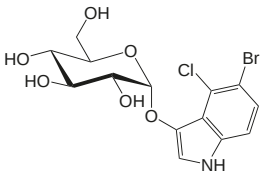
Type analysis:
Assay (HPLC).....≥99 %
Solution (1 % in methanol).....colourless
Water (KF).....≤5 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in methanol).....-70° to -67°

4152.1	50 mg	glass	28,95 €

5-Bromo-4-chloro-3-indoxyl-β-D-galactoside

▶ X-β-Gal see p. 2443

5-Bromo-4-chloro-3-indoxyl-α-D-glucopyranoside



5-Bromo-4-chloro-3-indoxyl-α-D-glucopyranoside

≥98 %, for biochemistry
X-α-D-glucoside, X-α-Glu, X-α-D-Glu
$C_{14}H_{15}BrClNO_6$
M 408,64 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[108789-36-2] • WGK 3

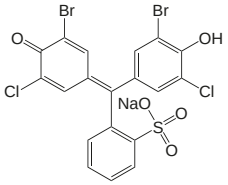
Type analysis:
Appearance.....white to off-white, cryst. powder
Assay (HPLC).....≥98,0 %
Appearance of solution (1 % in DMF).....colourless
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF, 20 °C).....+123,0° to +129,0°
Water (KF).....≤1,0 %

8434.1	100 mg	glass	81,60 €
8434.2	250 mg	glass	171,50 €
8434.3	500 mg	glass	319,85 €

5-Bromo-4-chloro-3-indoxyl-β-D-glucopyranoside

▶ X-Glu see p. 2443

Bromochlorophenol blue sodium salt



Bromochlorophenol blue sodium salt

p.a.
Indicator pH 3,2-4,8
5',5''-Dibromo-3',3''-dichlorophenolsulfonphthalein
$C_{19}H_9Br_2Cl_2NaO_5S$
M 603,06 g/mol
mp >250 °C • [102185-52-4] • WGK 3

Type analysis:
Appearance.....black powder
pH-transition range.....3,2 (yellow)-4,8 (purple)

6558.1	1 g	glass	42,90 €
6558.2	5 g	glass	102,15 €

Bromocresol green

Bromocresol green

ACS
Indicator pH 3,8-5,4
3,3',5,5'-Tetrabrom-m-cresolsulfonphthalein, BCG
$C_{21}H_{14}Br_4O_5S$
M 698,04 g/mol
mp 217-218 °C
Solubility: insoluble (H_2O, 20 °C)
[76-60-8] • EC No. 200-972-8
WGK 1

Guarantee analysis:
Appearance.....slightly light brown powder
Appearance of solution.....complies
pH-transition range.....3,8 (yellow)-5,4 (blue)
Loss on drying (110 °C).....≤3 %

T115.1	1 g	glass	17,10 €
T115.2	5 g	glass	27,45 €
T115.3	10 g	glass	46,80 €
T115.4	25 g	glass	89,15 €

For further information, please see page 1640

Bromocresol green indicator solution

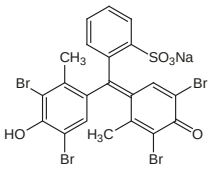
Bromocresol green indicator solution

0,1 % in ethanol denatured
UN No. 1170 • ADR 3 II • WGK 1

Danger H225-H319

9949.1	100 ml	plastic	23,15 €

Bromocresol green sodium salt



Bromocresol green sodium salt

ACS

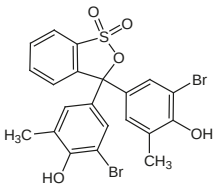
Indicator pH 3,8-5,4
$C_{21}H_{13}Br_4NaO_5S$
M 720,02 g/mol
mp 230 °C (dec.)
[62625-32-5] • EC No. 263-657-4
WGK 1

Guarantee analysis:

Appearance of solution (0,1 % in H_2O). ..... clearly soluble
pH-transition range. ..... 3,8 (yellow)-5,4 (blue)
Loss on drying. ..... ≤5,0 %

KK18.1	1 g	glass	12,80 €
KK18.2	5 g	glass	34,30 €
KK18.3	25 g	glass	117,75 €

Bromocresol purple



Bromocresol purple

p.a., ACS

Indicator pH 5,2-6,8
5',5''-Dibromo-cresolsulphonphthalein
$C_{21}H_{16}Br_2O_5S$
M 540,24 g/mol
D 3,86
mp 242 °C
Solubility: slightly soluble (H_2O, 20 °C)
[115-40-2] • EC No. 204-087-8
WGK 2

Guarantee analysis:

Dye content. ..... ≥89,0 %
Loss on drying (110 °C). ..... ≤1 %
Appearance of solution. ..... complies
Melting point. ..... 241-245 °C
pH-transition range. ..... 5,2 (yellow)-6,8 (purple)

0317.1	5 g	glass	21,40 €
0317.2	25 g	glass	66,55 €

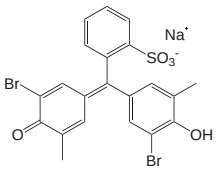
Bromocresol purple indicator solution

Bromocresol purple indicator solution

0,1 % in water

9955.1	100 ml	glass	43,55 €

Bromocresol purple sodium salt



Bromocresol purple sodium salt

p.a., ACS

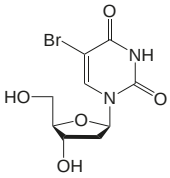
Indicator pH 5,2-6,8
5',5''-Dibromo-cresolsulphonphthalein sodium salt
$C_{21}H_{15}Br_2NaO_5S$
M 562,20 g/mol
mp 255 °C (dec.)
Solubility: soluble (H_2O)
[62625-30-3] • EC No. 263-655-3
WGK 1

Guarantee analysis:

Appearance of solution (ACS). ..... complies
Loss on drying. ..... ≤5 %
pH transition range. ..... 5,2 (yellow)-6,8 (purple)

2555.1	5 g	glass	19,90 €
2555.2	25 g	glass	50,45 €

5-Bromo-2'-deoxyuridine



5-Bromo-2'-deoxyuridine

≥99 %, for biochemistry

BrdU
$C_9H_{11}BrN_2O_5$
M 307,11 g/mol
mp 180-187 °C
Storage temp.: +4 °C
[59-14-3] • EC No. 200-415-9
WGK 3

Warning H341-H351

Type analysis:

Appearance. ..... white, cryst. powder
Assay (HPLC, area %). ..... ≥99,0 %
Heavy metals (as Pb). ..... ≤0,001 %
$[\alpha]_D^{20}$ (c=1 in 0,1 N NaOH). ..... +30,0° to +32,0°
Loss on drying. ..... ≤0,5 %
Melting range. ..... 180-187 °C

3243.1	250 mg	glass	34,30 €

Bromoethane

Bromoethane

≥99,5 %, for synthesis

Ethyl bromide
C_2H_5Br
M 108,96 g/mol
D 1,46 • bp 37-39 °C
mp -118 °C • flp -20 °C
[74-96-4] • EC No. 200-825-8
UN No. 1891 • ADR 6.1 II • WGK 2

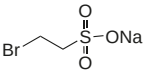
Danger H225-H302+H332-H351

Type analysis:

Appearance. .. clear, colourless to slightly yellow liquid
Assay (GC). ..... ≥99,5 %
Identity (GC). ..... complies
Evaporation residue. ..... ≤0,005 %
pH value (50 % in water). 6,0-8,0
Water. ..... ≤0,05 %

4195.1	250 ml	glass	24,65 €
4195.2	500 ml	glass	43,55 €
4195.3	1 l	glass	74,10 €
Original pack 6 x 1 l			70,40/1 l
4195.4	2,5 l	glass	166,10 €
Original pack 4 x 2,5 l			157,80/2,5 l

2-Bromoethanesulfonic acid sodium salt



2-Bromoethanesulfonic acid sodium salt

≥98 %

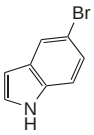
Sodium 2-bromoethanesulfonate
$C_2H_4BrNaO_3S$
M 211,02 g/mol
mp 283 °C
[4263-52-9] • EC No. 224-244-4

Type analysis:

Assay (titr.). ..... ≥98,0 %
Solution (10 % in H_2O). ..... colourless
Water (KF). ..... ≤5,0 %

5476.1	25 g	plastic	30,65 €
5476.2	100 g	plastic	84,85 €

5-Bromoindole



5-Bromoindole

≥99,5 %
C_8H_6BrN
M 196,05 g/mol
mp 90-94 °C
Solubility: 126 mg/l (H_2O, 25 °C)
Storage temp.: -20 °C
Transport temp.: room temp.
[10075-50-0] • EC No. 233-208-7
WGK 1

Type analysis:
Assay (titr.). ..... ≥99,5 %
Solution (1 % in acetone). ..... colourless, clear
Water (KF). ..... ≤0,5 %
Melting point. ..... 90-94 °C

5469.1	5 g	glass	25,30 €
5469.2	25 g	glass	100,95 €

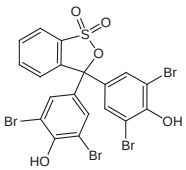
α-Bromo-4-nitrotoluene

▶ 4-Nitrobenzyl bromide see p. 2164

5-Bromopentanoic acid

▶ 5-Bromovaleric acid see p. 1855

Bromophenol blue



Bromophenol blue

ACS, for microscopy
Indicator pH 3,0-4,6
3,3',5,5'-Tetrabromophenolsulphonphthalein, BPB
$C_{19}H_{10}Br_4O_5S$
M 669,99 g/mol
mp 273 °C (dec.)
Solubility: practically insoluble (H_2O, 20 °C)
[115-39-9] • EC No. 204-086-2
WGK 2

Guarantee analysis:
Appearance. ..... pink powder
Appearance of solution. ..... complies
pH-transition range. ..... 3,0 (yellow)-4,6 (blue)
Loss on drying (110 °C). ..... ≤1,0 %

T116.1	5 g	glass	22,50 €
T116.2	10 g	glass	30,00 €
T116.3	25 g	glass	47,20 €

For further information, please see page 1521

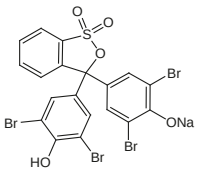
Bromophenol blue indicator solution

Bromophenol blue indicator solution

0,1 % in ethanol denatured
UN No. 1170 • ADR 3 II • WGK 1
Danger H225-H319

9952.1	100 ml	plastic	23,55 €

Bromophenol blue sodium salt



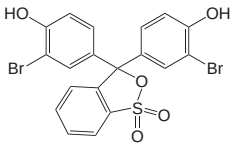
Bromophenol blue sodium salt

for electrophoresis
Staining agent for visualisation of running distance in gel electrophoresis.
Indicator pH 3,0-4,6
BPB, water soluble
$C_{19}H_9Br_4O_5SNa$
M 691,9 g/mol
mp >250 °C
[34725-61-6] • EC No. 252-170-2 • WGK 1

Type analysis:
pH-transition range. ..... 3,0 (yellow)-4,6 (blue)

A512.2	5 g	glass	22,50 €
A512.1	10 g	glass	42,90 €
A512.3	25 g	glass	71,95 €

Bromophenol red free acid



Bromophenol red free acid

p.a.
Indicator pH 5,2-7,0
3',3''-Dibromophenolsulfonphthalein
$C_{19}H_{12}Br_2O_5S$
M 512,19 g/mol
mp >250 °C
Solubility: slightly soluble (H_2O, 20 °C)
[2800-80-8] • EC No. 220-538-1 • WGK 1

Type analysis:
Appearance. ..... red brown powder
Loss on drying. ..... ≤5,0 %
pH-transition range. ..... 5,2 (yellow red)-7,0 (purple)

6573.1	1 g	glass	21,00 €
6573.2	5 g	glass	40,75 €
6573.3	50 g	glass	192,45 €

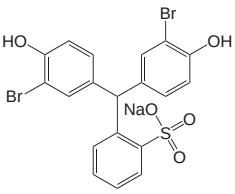
Bromophenol red indicator solution

Bromophenol red indicator solution

0,1 % in ethanol denatured
UN No. 1170 • ADR 3 II • WGK 1
Danger H225-H319

9956.1	100 ml	glass	32,15 €

Bromophenol red sodium salt



Bromophenol red sodium salt

p.a.
Indicator pH 5,2-6,8
$C_{19}H_{11}Br_2O_5SNa$
M 534,15 g/mol
[102185-50-2]
WGK 3

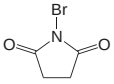
Type analysis:
Appearance. ..... red brown to brown powder
pH-transition range. ..... 5,2 (yellow red)-7,0 (purple)

6579.1	1 g	glass	19,90 €
6579.2	5 g	glass	38,20 €
6579.3	50 g	glass	170,95 €

Bromopropane

▶ Propyl bromide see p. 2242

N-Bromosuccinimide



N-Bromosuccinimide

≥98 %, for synthesis
NBS
$C_4H_4BrNO_2$
M 177,99 g/mol
mp 174-180 °C
Solubility: 14,8 g/l (H_2O, 20 °C)
[128-08-5] • EC No. 204-877-2
UN No. 3261 • ADR 8 II • WGK 3
Danger H302-H314-H410

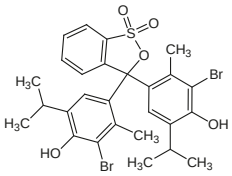
Type analysis:
Assay (iodom.). ..... ≥98 %
Melting point. ..... 174-180 °C

3261.1	100 g	glass	22,05 €
3261.2	500 g	glass	60,75 €
Original pack 6 x 500 g			57,71/500 g

Bromosulfalein

▶ Sulfobromophthalein disodium salt
see p. 2386

Bromothymol blue



Bromothymol blue

p.a., ACS
Indicator pH 6,0-7,6
3',3''-Dibromothymolsulphonphthaleine, BTB
$C_{27}H_{28}Br_2O_5S$
M 624,40 g/mol
mp 201 °C
Solubility: insoluble (H_2O, 20 °C)
[76-59-5] • EC No. 200-971-2
WGK 1

Guarantee analysis:
Appearance. ..... light pink powder
Appearance of solution. ..... complies
pH-transition range. ..... 6,0 (yellow)-7,6 (blue)
Loss on drying (110 °C). ..... ≤3 %

T117.1	5 g	glass	24,65 €
T117.2	25 g	glass	59,70 €
T117.3	50 g	glass	99,90 €
T117.7	100 g	glass	175,80 €

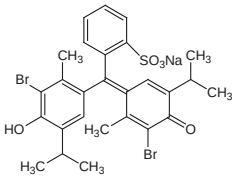
Bromothymol blue indicator solution

Bromothymol blue indicator solution

0,04 % in water

9947.1	100 ml	plastic	38,20 €

Bromothymol blue sodium salt



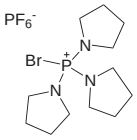
Bromothymol blue sodium salt

p.a.
Indicator pH 6,0-7,6
3',3''-Dibromo-thymolsulphonphthalein sodium salt
$C_{27}H_{27}Br_2NaO_5S$
M 646,38 g/mol
mp >250 °C
[34722-90-2] • EC No. 252-169-7 • WGK 1

Guarantee analysis:
Specific Extinction E (1%/1cm). ..... ≥600
Absorption max. (in buffer). ..... 611,0-619,0 nm
Appearance of solution (0,1 % in H_2O). ..... clearly soluble
pH-transition range. ..... 6,0 (yellow)-7,6 (blue)

KK19.1	5 g	glass	21,00 €
KK19.2	10 g	glass	32,80 €
KK19.3	25 g	glass	59,70 €

Bromo-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBrOP®)



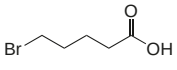
Bromo-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBrOP®)

PEPTIPURE® ≥98,5 %
Coupling reagent for peptide synthesis
PyBrOP®
$C_{12}H_{24}N_3P_2BrF_6$
M 466,2 g/mol
mp 152-156 °C
Storage temp.: +4 °C
[132705-51-2]
WGK 1
Warning H315-H319-H335

Type analysis:
Assay (HPLC) ..... ≥98,5 %
Loss on drying. ..... ≤0,5 %

2200.1	5 g	glass	40,75 €
2200.2	25 g	glass	149,45 €
2200.3	100 g	glass	525,70 €
2200.5	1 kg	glass	2793,95 €
Original pack 6 x 1 kg			2654,25/1 kg

5-Bromovaleric acid



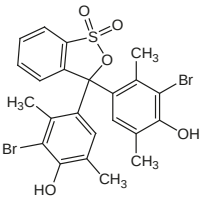
5-Bromovaleric acid

≥96 %
5-Bromopentanoic acid
$C_5H_9BrO_2$
M 181,04 g/mol
bp 142-145 (17 hPa)
mp 39-41 °C • flp >112 °C
[2067-33-6] • EC No. 218-185-3 • WGK 1
Warning H315-H319-H335

Type analysis:
Assay (titr.) ..... ≥96,0 %
Solution (1 % in ethanol). ..... colourless to slightly yellow, clear
Water (KF). ..... ≤2,0 %
Melting point. ..... 39-41 °C

5466.1	10 g	plastic	14,95 €
5466.2	50 g	plastic	49,35 €

Bromoxylenol blue



Bromoxylenol blue

p.a.
Indicator pH 6,0-7,6
$C_{23}H_{20}Br_2O_5S$
M 568,29 g/mol
mp 218 °C (dec.)
[40070-59-5] • EC No. 254-780-4
WGK 1

Guarantee analysis:
Specific Extinction E (1%/1cm). ..... ≥650
Absorption max. (0,001 N NaOH). ..... 611,0-619,0 nm
Solubility (0,1 % in ethanol). ..... clearly soluble
pH-transition range. ..... 6,0 (yellow)-7,6 (blue)

KK27.1	1 g	glass	14,20 €
KK27.2	5 g	glass	38,60 €
KK27.3	10 g	glass	64,40 €

Brucella Agar

Brucella Agar

for microbiology
For cultivation of *Brucella* and other fastidious microorganisms in foods and other specimens.
Application: Use 43,1 g for 1 l agar, add 50 ml defibr. sheep blood.
Storage temp.: +20 °C
WGK 1

Formulation:
Meat peptone. ..... 10 g/l
Casein peptone. ..... 10 g/l
Sodium chloride. ..... 5 g/l
Yeast extract. ..... 2 g/l
Glucose. ..... 1 g/l
Sodium bisulfite. ..... 0,1 g/l
Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

5752.1	500 g	plastic	98,80 €
Original pack 6 x 500 g			93,86/500 g

For further information, please see page 1438

Brucella Broth

Brucella Broth
for microbiology

For cultivation of *Brucella* and other fastidious microorganisms.

Application: Use 28,1 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

Formulation:

Meat peptone..... 10 g/l
Casein peptone. ..... 10 g/l
Sodium chloride..... 5 g/l
Yeast extract..... 2 g/l
Glucose. ..... 1 g/l
Sodium bisulfite. ..... 0,1 g/l
pH value. ..... 7,0 ±0,2

5754.1	500 g	plastic	85,90 €
Original pack 6 x 500 g			81,61/500 g

For further information, please see page 1438

Brucine N-oxide

Brucine N-oxide
ROTICHROM® CHR

Aminoxybrucine

$C_{23}H_{26}N_2O_5$

M 410,49 g/mol

mp 133-145 °C

[17301-81-4] • EC No. 241-328-6

UN No. 1570 • ADR 6.1 I • WGK 3

Danger H300+H330-H412

4255.1	5 g	glass	53,65 €

BSA

▶ Albumin see p. 1778
▶ Albumin Fraction V see p. 1778

BSA

▶ N,O-Bis(trimethylsilyl) acetamide (BSA) see p. 1841

BSA solution

▶ Albumin solution 20 % see p. 1779
▶ Albumin solution 30 % see p. 1779
▶ Albumin solution 30 %, with azide, US-Origin see p. 1779

BSC buffer powder (pouch)

▶ Roti®fair BSC see p. 2274

BSTFA

▶ N,O-Bis(trimethylsilyl)-trifluoroacetamide see p. 1842

BSTFA:TMCS (99:1)

▶ N,O-Bis(trimethylsilyl)-trifluoroacetamide with 1 % trimethylchlorosilane see p. 1842

BtaH

▶ 1,2,3-Benzotriazole see p. 1832

BTB

▶ Bromothymol blue see p. 1855

BTC

▶ Tetrazolium blue chloride see p. 2403

Buffer Salts

Art. No.	Description	Page
9488	tri-Ammonium citrate	1796
6943	Boric acid	1847
P010	Boric acid	1847
5935	Boric acid	1848
X863	Citric acid	1900
6490	Citric acid	1900
3958	Citric acid monohydrate	1901
5110	Citric acid monohydrate	1901
X888	tri-Potassium citrate monohydrate	2225
3904	Potassium dihydrogen phosphate	2225
P018	Potassium dihydrogen phosphate	2226
P748	Potassium hydrogen carbonate	2227
X887	Potassium hydrogen carbonate	2227
9437	Potassium hydrogen carbonate	2227
P749	di-Potassium hydrogen phosphate	2228
T875	di-Potassium hydrogen phosphate	2228
6875	di-Potassium hydrogen phosphate	2228
6878	di-Potassium hydrogen phosphate trihydrate	2228
P750	Potassium hydrogen phthalate	2228
1032	Roti®fair Glycine 3.0	2275
1090	Roti®fair 0.02M Na-Phosphate 7.0	2276
1094	Roti®fair 0.02M Na-Phosphate 7.0	2276
1095	Roti®fair 1M Na-Phosphate 6.5	2276
1097	Roti®fair 1M Na-Phosphate 7.2	2276
1251	Roti®fair 1M Tris 7.4	2279
1260	Roti®fair 1M Tris 8.0	2279
1261	Roti®fair 1M Tris 8.3	2279
6773	Sodium acetate	2330
X891	Sodium acetate	2330
6779	Sodium acetate trihydrate	2331
3856	Sodium acetate trihydrate	2331
T882	Sodium ammonium hydrogen phosphate tetrahydrate	2331
A135	Sodium carbonate	2333
3580	tri-Sodium citrate dihydrate	2335
4088	tri-Sodium citrate dihydrate	2336
K300	Sodium dihydrogen phosphate monohydrate	2336
T878	Sodium dihydrogen phosphate monohydrate	2336
T879	Sodium dihydrogen phosphate dihydrate	2337
2370	Sodium dihydrogen phosphate dihydrate	2337
T883	tetra-Sodium diphosphate decahydrate	2337
0269	tetra-Sodium diphosphate decahydrate	2337
6885	Sodium hydrogen carbonate	2338
8551	Sodium hydrogen carbonate	2339
0965	Sodium hydrogen carbonate	2339
4984	di-Sodium hydrogen phosphate dihydrate	2339
T877	di-Sodium hydrogen phosphate dihydrate	2340
X987	di-Sodium hydrogen phosphate heptahydrate	2340
T106	di-Sodium hydrogen phosphate dodecahydrate	2340
N350	di-Sodium hydrogen phosphate dodecahydrate	2340
4267	di-Sodium oxalate	2346
T880	di-Sodium tetraborate decahydrate	2350
8643	di-Sodium tetraborate decahydrate	2350

Buffer solutions, ready to use

Buffer solution pH 1,00 ±0,05 (20 °C)
ROTI®CALIPURE buffer solution, ready to use

Hydrochloric acid / Potassium chloride

Type analysis:
pH value (20 °C)..... 1,00 ±0,05

T180.2	500 ml	plastic	17,75 €
T180.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1720

Buffer solution pH 1,679 ±0,03 (25 °C)
ROTI®CALIPURE buffer solution, ready to use

Potassium tetraoxalate

Type analysis:
pH value (25 °C)..... 1,679 ±0,03

8112.1	1 l	plastic	42,90 €
Original pack 6 x 1 l			40,76/1 l

Buffer solution pH 2,00 ±0,02 (20 °C)
ROTI®CALIPURE buffer solution, ready to use

Citric acid / Hydrochloric acid / Sodium chloride

Type analysis:
pH value (20 °C)..... 2,00 ±0,02

P715.2	500 ml	plastic	17,75 €
P715.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1720

Buffer solution pH 3,00 ±0,02 (20 °C)
ROTI®CALIPURE buffer solution, ready to use

Citric acid / Caustic soda lye/ Sodium chloride

Type analysis:
pH value (20 °C)..... 3,00 ±0,02

T181.2	500 ml	plastic	17,75 €
T181.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1720

Buffer solution pH 3,776 ±0,012 (25 °C)
ROTI®CALIPURE buffer solution, ready to use

Potassium dihydrogen citrate

Type analysis:
pH value (25 °C)..... 3,776 ±0,012

4280.1	500 ml	plastic	18,20 €
4280.2	1 l	plastic	27,45 €
Original pack 6 x 1 l			26,08/1 l

For further information, please see page 1720

Buffer solution pH 4,00 ±0,01 (20 °C)

ROTI®STAR

Potassium hydrogen phthalate

Type analysis:

pH value (20 °C). ..... 4,00 ±0,01
Tested in an accredited laboratory acc. to ISO 17025.

9974.1	500 ml	plastic	18,85 €

For further information, please see page 1721

Buffer solution pH 4,00 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use

Citric acid / Caustic soda lye / Sodium chloride
WGK 1

Type analysis:

pH value (20 °C). ..... 4,00 ±0,02

P712.3	500 ml	plastic	17,75 €
P712.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l
P712.2	10 l	plastic	160,20 €

For further information, please see page 1720

Buffer solution pH 4,00 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use, tinted RED

Citric acid / Caustic soda lye / Sodium chloride
WGK 1

Type analysis:

pH value (20 °C). ..... 4,00 ±0,02

A517.3	250 ml	twin neck bottle	14,95 €
A517.2	500 ml	plastic	17,75 €
A517.4	500 ml	twin neck bottle	19,25 €
A517.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l
A517.5	10 l	plastic	160,20 €

For further information, please see page 1720

Buffer solution pH 4,005 ±0,02 (25 °C)

ROTI®CALIPURE buffer solution, ready to use

Potassium hydrogen phthalate
WGK 1

Type analysis:

pH value (25 °C). ..... 4,005 ±0,02

4281.1	500 ml	plastic	18,20 €
4281.2	1 l	plastic	27,45 €
Original pack 6 x 1 l			26,08/1 l

For further information, please see page 1720

Buffer solution pH 4,62 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use

Acetic acid / Caustic soda lye

Type analysis:

pH value (20 °C). ..... 4,62 ±0,02

T182.1	1 l	plastic	27,45 €
Original pack 6 x 1 l			26,08/1 l

For further information, please see page 1720

Buffer solution pH 5,00 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use

Citric acid / Caustic soda lye

Type analysis:

pH value (20 °C). ..... 5,00 ±0,02

T183.2	500 ml	plastic	17,75 €
T183.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1720

Buffer solution pH 6,00 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use

Citric acid / Caustic soda lye

Type analysis:

pH value (20 °C). ..... 6,00 ±0,02

T184.2	500 ml	plastic	17,75 €
T184.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1720

Buffer solution pH 6,865 ±0,02 (25 °C)

ROTI®CALIPURE buffer solution, ready to use

Potassium dihydrogen phosphate / di-Sodium hydrogen phosphate

Type analysis:

pH value (25 °C). ..... 6,865 ±0,02

4284.1	500 ml	plastic	18,20 €
4284.2	1 l	plastic	27,45 €
Original pack 6 x 1 l			26,08/1 l

For further information, please see page 1720

Buffer solution pH 6,88 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use

0,025 M KH_2PO_4 and 0,025 M Na_2HPO_4

Type analysis:

pH value (20 °C). ..... 6,88 ±0,02

T185.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1720

Buffer solution pH 7,00 ±0,01 (20 °C)

ROTI®STAR

Potassium dihydrogen phosphate/di-Sodium hydrogen phosphate

Type analysis:

pH value (20 °C) ..... 7,00 ±0,01
Tested in an accredited laboratory acc. to ISO 17025.

9977.1	500 ml	plastic	18,85 €

For further information, please see page 1721

Buffer solution pH 7,00 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use

Potassium dihydrogen phosphate / Sodium hydroxide solution

Type analysis:

pH value (20 °C) ..... 7,00 ±0,02

A518.3	500 ml	plastic	17,75 €
A518.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l
A518.2	10 l	plastic	160,20 €

For further information, please see page 1720

Buffer solution pH 7,00 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use, tinted GREEN

Potassium dihydrogen phosphate / sodium hydroxide solution

Type analysis:

pH value (20 °C) ..... 7,00 ±0,02

P713.3	250 ml	twin neck bottle	14,95 €
P713.2	500 ml	plastic	17,75 €
P713.4	500 ml	twin neck bottle	19,25 €
P713.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l
P713.5	10 l	plastic	160,20 €

For further information, please see page 1720

Buffer solution pH 7,413 ±0,02 (25 °C)

ROTI®CALIPURE buffer solution, ready to use

Potassium dihydrogen phosphate / di-Sodium hydrogen phosphate

Type analysis:

pH value (25 °C) ..... 7,413 ±0,02

4285.1	500 ml	plastic	18,20 €
4285.2	1 l	plastic	27,45 €
Original pack 6 x 1 l			26,08/1 l

For further information, please see page 1720

Buffer solution pH 8,00 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use

Potassium dihydrogen phosphate / Sodium hydroxide solution

Type analysis:

pH value (20 °C). ..... 8,00 ±0,02

T186.2	500 ml	plastic	17,75 €
T186.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1720

Buffer solution pH 9,00 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use

Boric acid / Potassium chloride / Caustic soda lye

Type analysis:

pH value (20 °C). ..... 9,00 ±0,02

A519.3	500 ml	plastic	17,75 €
A519.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1720

Buffer solution pH 9,00 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use, tinted BLUE

Boric acid / Caustic soda lye / Potassium chloride

Type analysis:

pH value (20 °C). ..... 9,00 ±0,02

P714.3	250 ml	twin neck bottle	14,95 €
P714.2	500 ml	plastic	17,75 €
P714.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1720

Buffer solution pH 9,180 ±0,02 (25 °C)

ROTI®CALIPURE buffer solution, ready to use

Sodium tetraborate decahydrate

WGK 1

Type analysis:

pH value (25 °C). ..... 9,180 ±0,02

4294.1	500 ml	plastic	18,20 €
4294.2	1 l	plastic	27,45 €
Original pack 6 x 1 l			26,08/1 l

For further information, please see page 1720

Buffer solution pH 9,22 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use

Boric acid / Caustic soda lye

Type analysis:

pH value (20 °C). ..... 9,22 ±0,02

0466.1	500 ml	plastic	22,50 €

Buffer solution pH 10,00 ±0,01 (20 °C)

ROTI®STAR

di-Sodium tetraborate/sodium hydroxide

Type analysis:

pH value (20 °C). ..... 10,00 ±0,01
Tested in an accredited laboratory acc. to ISO 17025.

9983.1	500 ml	plastic	18,85 €

For further information, please see page 1721

Buffer solution pH 10,00 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use

Boric acid / Caustic soda lye / Potassium chloride

Type analysis:

pH value (20 °C). ..... 10,00 ±0,02

P716.2	500 ml	plastic	17,75 €
P716.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1720

Buffer solution pH 10,00 ±0,02 (20 °C)

ROTI®CALIPURE buffer solution, ready to use, tinted BLUE

Boric acid / Caustic soda lye / Potassium chloride

Type analysis:

pH value (20 °C). ..... 10,00 ±0,02

8086.1	250 ml	twin neck bottle	16,70 €
8086.2	500 ml	plastic	18,85 €
8086.3	500 ml	twin neck bottle	19,90 €
8086.4	1 l	plastic	26,35 €
Original pack 6 x 1 l			25,03/1 l
8086.5	10 l	plastic	188,15 €

Buffer solution pH 10,00 for complexometry

ROTI®CALIPURE buffer solution, ready to use

Ammonium chloride/ Ammonia 25 %

WGK 2

Danger H314-H335

T188.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1720

Buffer solution pH 11,00 ±0,05 (20 °C)

ROTI®CALIPURE buffer solution, ready to use

Glycine / Caustic soda lye / Sodium chloride

Type analysis:

pH value (20 °C)..... 11,00 ±0,05

T187.2	500 ml	plastic	17,75 €
T187.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1720

Buffer solution pH 12,00 ±0,05 (20 °C)

ROTI®CALIPURE buffer solution, ready to use

Glycine/ Caustic soda lye / Sodium chloride

Type analysis:

pH value (20 °C)..... 12,00 ±0,05

T189.2	500 ml	plastic	17,75 €
T189.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1720

Buffer solution pH 13,00 ±0,05 (20 °C) NEW

ROTI®CALIPURE buffer solution, ready to use

Glycine/ Caustic soda lye / Sodium chloride

WGK 1

Type analysis:

pH value (20 °C)..... 13,00 ±0,05

0762.1	500 ml	plastic	19,25 €

For further information, please see page 1720

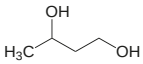
1,4-Butane diisocyanate

▶ 1,4-Diisocyanatobutane see p. 1943

Butanedioic acid

▶ Succinic acid see p. 2384

1,3-Butanediol



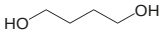
1,3-Butanediol

≥99 %, for synthesis
1,3-Butylene glycol
$C_4H_{10}O_2$
M 90,12 g/mol
D 1,01 • bp 204 °C
mp -50 °C
[107-88-0] • EC No. 203-529-7
WGK 1

Type analysis:
Assay (GC). ..... ≥99,0 %
Water. ..... ≤0,5 %

7473.1	250 ml	plastic	25,30 €
7473.2	500 ml	plastic	42,50 €
7473.3	1 l	plastic	76,25 €
Original pack 6 x 1 l			72,44/1 l

1,4-Butanediol



1,4-Butylene glycol, Tetramethylene glycol
$C_4H_{10}O_2$
M 90,12 g/mol
D 1,02 • bp 230 °C
mp 20 °C • flp 135 °C
[110-63-4] • EC No. 203-786-5
WGK 1

Warning H302-H336

1,4-Butanediol

≥99 %, for synthesis

Type analysis:
Assay (GC). ..... ≥99,0 %
Density (d 20 °C/4 °C). 1,015-1,016

4211.1	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
4211.2	2,5 l	glass	81,20 €
Original pack 4 x 2,5 l			77,14/2,5 l
4211.3	10 l	plastic	255,75 €

2,3-Butanedionedioxime disodium salt

▶ Dimethylglyoxime disodium salt octahydrate see p. 1949

2,3-Butanedione monoxime

▶ Diacetyl monoxime see p. 1932

Butane-1-sulphonic acid sodium salt

Butane-1-sulphonic acid sodium salt

≥99 %, for ion pair chromatography
Ion pair reagent for HPLC.
Sodium-1-butane sulphonate
$C_4H_9NaO_3S$
M 160,17 g/mol
mp >310 °C
[2386-54-1] • EC No. 219-201-1
WGK 3

Guarantee analysis:
Assay (acidim.). ..... ≥99,0 %
Solution (10 % in water). ..... clear, colourless
Water. ..... ≤1 %
A 210 nm (0,5 M in water). ..... ≤0,1 AU
A 220 nm (0,5 M in water). ..... ≤0,06 AU
A 230 nm (0,5 M in water). ..... ≤0,04 AU
A 260 nm (0,5 M in water). ..... ≤0,02 AU

KK50.1	10 g	glass	50,45 €
KK50.2	25 g	glass	95,60 €
KK50.3	100 g	glass	289,75 €

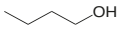
Butanoic acide

▶ Butyric acid see p. 1864

Butanoic acid sodium salt

▶ Sodium butyrate see p. 2332

1-Butanol



n-Butanol, Butyl alcohol
$C_4H_{10}O$
M 74,12 g/mol
D 0,81 • bp 116-118 °C
mp -89 °C • flp 35 °C
Solubility: 77 g/l (H_2O, 20 °C)
[71-36-3] • EC No. 200-751-6
UN No. 1120 • ADR 3 III • WGK 1

Danger
H318-H226-H302-H315-H335-H336

1-Butanol

ROTISOLV® HPLC

Guarantee analysis:
Assay (GC). ..... ≥99,8 %
Water (KF). ..... ≤0,05 %
Acidity (as CH_3COOH). ..... ≤0,002 %
Non volatile matter. ..... ≤0,0005 %
Layer thickness d = 1 cm water in comparison
Transmission:
310 nm. ..... ≥98 %
240 nm. ..... ≥75 %
230 nm. ..... ≥70 %
Filtered through 0,2 µm membrane and filled under protective gas.

T178.1	2,5 l	glass	99,90 €
Original pack 4 x 2,5 l			94,91/2,5 l

For further information, please see page 1650

1-Butanol

ROTISOLV® ≥99,8 %, UV/IR-Grade
For chromatography and spectroscopy.

Guarantee analysis:
Assay (GC). ..... ≥99,8 %
Water (KF). ..... ≤0,05 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
Transmission:
270 nm. ..... ≥97 %
250 nm. ..... ≥95 %
230 nm. ..... ≥60 %
220 nm. ..... ≥30 %

4431.1	2,5 l	glass	93,00 €
Original pack 4 x 2,5 l			88,35/2,5 l

1-Butanol

ROTIPURAN® ≥99,5 %, p.a.

Guarantee analysis:
Assay (GC). ..... ≥99,5 %
Colour (Hazen). ..... ≤10
Water (KF). ..... ≤0,1 %
Butanal (GC). ..... ≤0,01 %
Dibutylether (GC). ..... ≤0,1 %
Isobutanol (GC). ..... ≤0,15 %
2-Butanol (GC). ..... ≤0,05 %
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %
Evaporation residue. ..... ≤0,002 %
Carbonylic compounds. ..... ≤0,01 %

7171.2	1 l	glass	50,45 €
Original pack 6 x 1 l			47,93/1 l
7171.1	2,5 l	glass	102,05 €
Original pack 4 x 2,5 l			96,95/2,5 l

1-Butanol

≥99,5 %, for synthesis

Type analysis:
Appearance. ..... colourless, clear liquid
Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,5 %
Density (20 °C). ..... 0,808-0,814 g/cm³
Refractive index n_D^{20}. 1,390-1,401

7724.4	250 ml	glass	16,05 €
7724.1	1 l	glass	28,50 €
Original pack 6 x 1 l			27,08/1 l
7724.3	2,5 l	glass	44,00 €
Original pack 4 x 2,5 l			41,80/2,5 l
7724.2	10 l	tinplate	121,40 €
7724.5	25 l	tinplate	214,90 €

2-Butanol

2-Butanol

≥98,5 %, for synthesis
sec-Butyl alcohol, sec-Butanol
$C_4H_{10}O$
M 74,12 g/mol
D 0,81 • bp 99-102 °C
mp -115 °C • flp 24 °C
Solubility: 125 g/l (H_2O, 20 °C)
[78-92-2] • EC No. 201-158-5
UN No. 1120 • ADR 3 III • WGK 1
Warning H226-H319-H335-H336

Type analysis:
Assay (GC). ≥98,5 %
Density (d 20 °C/4 °C). 0,804-0,809
Water. ≤0,2 %

KK02.1	500 ml	glass	26,80 €
KK02.2	1 l	glass	46,15 €
Original pack 6 x 1 l			43,84/1 l
KK02.7	10 l	tinplate	252,65 €

iso-Butanol

▶ 2-Methyl-1-propanol see p. 2141

n-Butanol

▶ 1-Butanol see p. 1859

sec-Butanol

▶ 2-Butanol see p. 1860

tert-Butanol

2-Methyl-2-propanol, tert-Butyl alcohol, Trimethyl carbinol
$C_4H_{10}O$
M 74,12 g/mol
D 0,77 • bp 81-83 °C
mp ~25 °C • flp 14 °C
[75-65-0] • EC No. 200-889-7
UN No. 1120 • ADR 3 II • WGK 1
Danger H225-H332-H319-H335

tert-Butanol

ROTIPURAN® ≥99,5 %, p.a., ACS

Guarantee analysis:
Assay (GC). ≥99,5 %
Melting point. 24-26 °C
Colour (APHA). ≤20
Water. ≤0,1 %
Acidity. ≤0,001 meq/g
Alkalinity. ≤0,0005 meq/g
Carbonyl compound (as CH_2O). ≤0,01 %
Non volatile matter. ≤0,003 %
Calcium (Ca). ≤0,00005 %
Cadmium (Cd). ≤0,000005 %
Cobalt (Co). ≤0,000002 %
Chromium (Cr). ≤0,000002 %
Copper (Cu). ≤0,000002 %
Iron (Fe). ≤0,00001 %
Magnesium (Mg). ≤0,00001 %
Manganese (Mn). ≤0,000002 %
Nickel (Ni). ≤0,000002 %
Lead (Pb). ≤0,00001 %
Zinc (Zn). ≤0,00001 %

AE16.1	500 ml	glass	21,00 €
AE16.2	1 l	glass	35,40 €
Original pack 6 x 1 l			33,63/1 l
AE16.3	2,5 l	glass	70,45 €
Original pack 4 x 2,5 l			66,93/2,5 l

tert-Butanol

≥99 %, for synthesis

Type analysis:
Assay (GC). ≥99 %
Water (KF). ≤0,1 %
Melting point. ~25 °C

4323.1	1 l	glass	25,30 €
Original pack 6 x 1 l			24,04/1 l
4323.3	2,5 l	glass	45,05 €
Original pack 4 x 2,5 l			42,80/2,5 l
4323.2	10 l	tinplate	156,85 €
4323.7	25 l	tinplate	306,40 €

2-Butanone

MEK, Methyl ethyl ketone, Ethyl methyl ketone
C_4H_8O
M 72,11 g/mol
D 0,8 • bp 79-80,5 °C
mp -86,3 °C • flp -4 °C
Solubility: 290 g/l (H_2O, 20 °C)
[78-93-3] • EC No. 201-159-0
UN No. 1193 • ADR 3 II • WGK 1
Danger H225-H319-H336-EUH066

2-Butanone

≥99,5 %, VLSI Grade

Guarantee analysis:
Assay. ≥99,5 %
Particle number (≥0,5 µm). ≤250 p/ml
Water. ≤0,1 %
Alcohol (as 2-butanol). ≤0,1 %
Acidity (as CH_3COOH). ≤0,005 %
Colour (APHA). ≤10
Evaporation residue. ≤0,0005 %
Chloride (Cl). ≤0,0001 %
Sulphate (SO_4). ≤0,00005 %
Aluminium (Al). ≤50 ppb
Antimony (Sb). ≤10 ppb
Arsenic (As). ≤10 ppb
Barium (Ba). ≤20 ppb
Bismuth (Bi). ≤10 ppb
Lead (Pb). ≤10 ppb
Boron (B). ≤20 ppb
Cadmium (Cd). ≤10 ppb
Calcium (Ca). ≤50 ppb
Chromium (Cr). ≤10 ppb
Iron (Fe). ≤50 ppb
Gallium (Ga). ≤10 ppb
Potassium (K). ≤20 ppb
Cobalt (Co). ≤10 ppb
Copper (Cu). ≤10 ppb
Lithium (Li). ≤10 ppb
Magnesium (Mg). ≤20 ppb
Manganese (Mn). ≤10 ppb
Molybdenum (Mo). ≤10 ppb
Sodium (Na). ≤50 ppb
Nickel (Ni). ≤10 ppb
Silver (Ag). ≤10 ppb
Strontium (Sr). ≤10 ppb
Titanium (Ti). ≤10 ppb
Vanadium (V). ≤10 ppb
Zinc (Zn). ≤20 ppb
Tin (Sn). ≤10 ppb
Zirconium (Zr). ≤10 ppb

0051.1	2,5 l	plastic	97,75 €
Original pack 4 x 2,5 l			92,86/2,5 l

2-Butanone

ROTIPURAN® ≥99,5 %, p.a., ACS

Guarantee analysis:
Assay (GC). ≥99,5 %
Density (d 20 °C/20 °C). 0,805-0,807
Colour (APHA). ≤15
Water. ≤0,1 %
Acidity. ≤0,0005 meq/g
Acetone (GC). ≤0,05 %
2-Butanol (GC). ≤0,02 %
2-Propanol (GC). ≤0,05 %
2-Methylpropan-2-ol (GC). ≤0,1 %
Evaporation residue. ≤0,001 %
Aluminium (Al). ≤0,00005 %
Barium (Ba). ≤0,00001 %
Cadmium (Cd). ≤0,000005 %
Calcium (Ca). ≤0,00005 %
Cobalt (Co). ≤0,000002 %
Chromium (Cr). ≤0,000002 %
Copper (Cu). ≤0,000002 %
Iron (Fe). ≤0,00001 %
Magnesium (Mg). ≤0,00001 %
Nickel (Ni). ≤0,000002 %
Manganese (Mn). ≤0,000002 %
Lead (Pb). ≤0,00001 %
Zinc (Zn). ≤0,00001 %

T920.1	1 l	glass	40,75 €
Original pack 6 x 1 l			38,71/1 l
T920.2	2,5 l	glass	87,00 €
Original pack 4 x 2,5 l			82,65/2,5 l

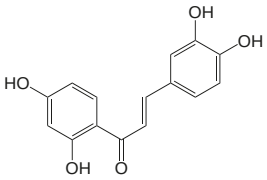
2-Butanone

≥99,5 %, for synthesis

Type analysis:
Assay (GC). ≥99,5 %
Water. ≤0,1 %
Acid value (mg KOH/g). ≤0,03
Refractive index n_D^{20}. 1,378-1,380

8403.1	1 l	glass	24,20 €
Original pack 6 x 1 l			22,99/1 l
8403.3	2,5 l	glass	41,40 €
Original pack 4 x 2,5 l			39,33/2,5 l
8403.5	5 l	aluminium	63,35 €
Original pack 2 x 5 l			60,18/5 l
8403.2	10 l	tinplate	110,65 €
8403.4	25 l	tinplate	228,45 €

Butein



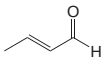
Butein

ROTICHROM® HPLC
Reference substance for HPLC.
$C_{15}H_{12}O_5$
M 272,25 g/mol
Storage temp.: +4 °C
[21849-70-7] • EC No. 207-659-5

Type analysis:
Purity (HPLC).....≥99 %

7010.1	10 mg	glass	332,20 €

2-Butenal



2-Butenal

≥98 %, for synthesis
Crotonaldehyde
C_4H_6O
M 70,09 g/mol
D ~0,85 • bp 102 °C
mp ~-76 °C • flp 13 °C
Solubility: 181 g/l (H_2O, 20 °C)
[4170-30-3] • EC No. 224-030-0
UN No. 1143 • ADR 6.1 (3) I • WGK 3
Danger H225-H301+H311-H315-H318-H330-H335-H341-H373-H410

Type analysis:
Assay (GC).....≥99,0 %
Density (d 20 °C/4 °C).....0,851-0,853

3425.1	250 ml	glass	45,05 €

cis-Butenedioic acid
▶ Maleic acid see p. 2116

2-Butenedioic acid
▶ Fumaric acid see p. 2009

cis-Butenedioic anhydride
▶ Maleic anhydride see p. 2117

3-Butenylglucosinolate potassium salt
▶ Gluconapin see p. 2019

N-(tert-Butoxycarbonyl)-L-alanine
▶ Boc-L-Alanine see p. 1843

N-(tert-Butoxycarbonyl)-L-arginine
▶ Boc-L-Arginine hydrochloride monohydrate see p. 1843

N-(tert-Butoxycarbonyl)-L-asparagine
▶ Boc-L-Asparagine see p. 1843

N-(tert-Butoxycarbonyl)-L-glutamic acid
▶ Boc-L-Glutamic acid see p. 1844

N-(tert-Butoxycarbonyl)-L-glutamine
▶ Boc-L-Glutamine see p. 1844

N-(tert-Butoxycarbonyl)-glycine
▶ Boc-Glycine see p. 1844

N-(tert-Butoxycarbonyl)-L-histidine
▶ Boc-L-Histidine see p. 1844

N-(tert-Butoxycarbonyl)-L-hydroxyproline
▶ Boc-L-Hydroxyproline see p. 1845

N-(tert-Butoxycarbonyl)-L-isoleucine
▶ Boc-L-Isoleucine hemihydrate see p. 1845

N-(tert-Butoxycarbonyl)-L-leucine
▶ Boc-L-Leucine monohydrate see p. 1845

N-(tert-Butoxycarbonyl)-L-tert-leucine
▶ Boc-L-tert-Leucine see p. 1845

N-(tert-Butoxycarbonyl)-L-lysine
▶ Boc-L-Lysine see p. 1845

N-(tert-Butoxycarbonyl)-L-methionine
▶ Boc-L-Methionine see p. 1845

N-(tert-Butoxycarbonyl)-L-phenylalanine
▶ Boc-L-Phenylalanine see p. 1846

N-(tert-Butoxycarbonyl)-L-proline
▶ Boc-L-Proline see p. 1846

N-(tert-Butoxycarbonyl)-L-serine
▶ Boc-L-Serine see p. 1846

N-(tert-Butoxycarbonyl)-L-threonine
▶ Boc-L-Threonine see p. 1846

N-(tert-Butoxycarbonyl)-L-tryptophan
▶ Boc-L-Tryptophan see p. 1846

N-(tert-Butoxycarbonyl)-L-tyrosine
▶ Boc-L-Tyrosine see p. 1846

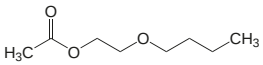
N-(tert-Butoxycarbonyl)-L-valine
▶ Boc-L-Valine see p. 1847

2-Butoxyethanol
▶ Ethylene glycol monobutyl ether see p. 1984

2-(2-Butoxyethoxy)ethanol
▶ Butyldiglycol see p. 1862

2-(2-Butoxyethoxy)ethyl acetate
▶ Diethylene glycol monobutyl ether acetate see p. 1938

2-Butoxyethyl acetate



2-Butoxyethyl acetate

≥98 %, pure
Ethylene glycol monobutyl ether acetate, 1-Acetoxy-2-butoxyethane, EGBEA
$C_8H_{16}O_3$
M 160,21 g/mol
D 0,94 • bp 184-195 °C
mp -64 °C • flp 78 °C
Solubility: 15 g/l (H_2O, 20 °C)
[112-07-2] • EC No. 203-933-3
WGK 1
Warning H302+H312+H332

Type analysis:
Assay (GC).....≥98,0 %
Colour (Hazen).....≤15

8009.1	1 l	plastic	21,40 €
Original pack 6 x 1 l			20,33/1 l
8009.2	2,5 l	plastic	39,70 €
Original pack 4 x 2,5 l			37,72/2,5 l

Butter of antimony

▶ Antimony(III) chloride see p. 1811

n-Butyl acetate

▶ Acetic acid n-butyl ester see p. 1758

Butylal

Butylal

NEW

SOLVAGREEN® ≥99 %, for synthesis

Alternative for D-Limonene, cyclic hydrocarbons, perchloroethylene

Dibutoxymethane, 1-(Butoxymethoxy)butane, 1,1'-[Methylenebis(oxy)]dibutane, Formaldehyde di-n-butyl acetale

$C_9H_{20}O_2$
M 160,26 g/mol
D 0,84
[2568-90-3] • EC No. 219-909-0
WGK 1

Type analysis:
Assay.....≥99,0 %
Water.....≤0,5 %

0796.1	100 ml	glass	17,10 €
0796.2	500 ml	glass	37,55 €
0796.3	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l
0796.4	2,5 l	plastic	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

For further information, please see page 1592

n-Butyl alcohol

▶ 1-Butanol see p. 1859

Butyl alcohol

▶ 1-Butanol see p. 1859

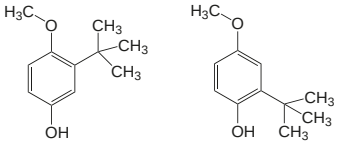
tert-Butyl alcohol

▶ tert-Butanol see p. 1860

sec-Butyl alcohol

▶ 2-Butanol see p. 1860

Butylated hydroxyanisole



2(3)-tert-Butyl-4-hydroxyanisole, BHA
$C_{11}H_{16}O_2$
M 180,25 g/mol
bp 268 °C
mp 58-60 °C • flp 113 °C
[25013-16-5] • EC No. 246-563-8
WGK 2

Warning
H302-H315-H319-H351-H335

Butylated hydroxyanisole

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC).....≥95,0 %
Residual solvents (GC).....≤2,0 %
Water (KF).....≤3,0 %
Assay (qNMR).....≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE04.1	100 mg	glass	751,45 €

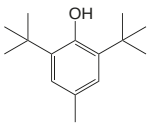
Butylated hydroxyanisole

ROTICHROM® Working Standard

Type analysis:
Assay (GC).....≥95,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC04.1	100 mg	glass	125,70 €

Butylated hydroxytoluene



2,6-Di-tert-butyl-p-cresol, 2,6-Di-tert.-butyl-4-methylphenol, BHT
$C_{15}H_{24}O$
M 220,34 g/mol
bp 265 °C
mp 69-71 °C
[128-37-0] • EC No. 204-881-4
UN No. 3077 • ADR 9 III • WGK 2

Warning H410

Butylated hydroxytoluene

≥99,8 %, for synthesis

Type analysis:
Appearance.....white crystals
Assay (GC).....≥99,8 %
Ash.....≤0,002 %
Solidification point.....69-71 °C
Colour (Hazen) 30 % in acetone.....≤30

3559.1	250 g	plastic	31,10 €
3559.2	1 kg	plastic	80,55 €
Original pack 6 x 1 kg			76,52/1 kg
3559.3	5 kg	plastic	342,95 €

Butylated hydroxytoluene

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC).....≥95,0 %
Residual solvents (GC).....≤2,0 %
Water (KF).....≤3,0 %
Assay (qNMR).....≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE05.1	100 mg	glass	751,45 €

Butylated hydroxytoluene

ROTICHROM® Working Standard

Type analysis:
Assay (GC).....≥95,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC05.1	100 mg	glass	125,70 €

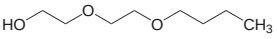
n-Butyl carbinol

▶ 1-Pentanol see p. 2196

sec-Butyl carbinol

▶ 2-Methyl-1-butanol see p. 2136

Butyldiglycol



Butyldiglycol

≥97 %, pure

Diethylene glycol butyl ether, BDG, 2-(2-Butoxyethoxy)ethanol
$C_8H_{18}O_3$
M 162,23 g/mol
D 0,95 • bp 224-234 °C
mp -68 °C • flp 109 °C
[112-34-5] • EC No. 203-961-6
WGK 1

Warning H319

Type analysis:
Assay (GC).....≥97,0 %
Colour (Hazen).....≤15

8046.1	1 l	glass	23,45 €
Original pack 6 x 1 l			22,28/1 l
8046.2	2,5 l	glass	40,75 €
Original pack 4 x 2,5 l			38,71/2,5 l
8046.3	10 l	tinplate	125,70 €

Butyldiglycol acetate

▶ Diethylene glycol monobutyl ether acetate see p. 1938

1,3-Butylene glycol

▶ 1,3-Butanediol see p. 1859

1,4-Butylene glycol

▶ 1,4-Butanediol see p. 1859

Butylglycol

▶ Ethylene glycol monobutyl ether see p. 1984

tert-Butyl methyl ether

MTBE, Methyl tert-butyl ether,
2-Methyl-2-methoxypropane, TBME
$C_5H_{12}O$
M 88,14 g/mol
D ~0,74 • bp 55 °C
mp -108 °C • flp -30 °C
Solubility: 51 g/l (H_2O, 25 °C)
[1634-04-4] • EC No. 216-653-1
UN No. 2398 • ADR 3 II • WGK 1

Danger H225-H315

tert-Butyl methyl ether

ROTISOLV® HPLC

Guarantee analysis:

Assay (GC).....≥99,5 %
Water (KF).....≤0,01 %
Free acid.....≤0,002 %
Non volatile matter.....≤0,0002 %
Transmission:
280 nm.....≥98 %
255 nm.....≥85 %
240 nm.....≥60 %
Filtered through 0,2 µm membrane and filled under protective gas.

T175.2	1 l	glass	45,05 €
Original pack 6 x 1 l			42,80/1 l
T175.1	2,5 l	glass	101,60 €
Original pack 4 x 2,5 l			96,52/2,5 l

For further information, please see page 1650

tert-Butyl methyl ether

≥99,5 %, p.a.

Type analysis:

Assay (GC).....≥99,5 %
Water (KF).....≤0,1 %
Free acid (as CH_3COOH).....≤0,001 %
Non volatile matter.....≤0,002 %
Isobutyl methyl ketone.....≤0,005 %
Carbonylic compounds (as CO).....≤0,001 %
Aluminium (Al).....≤0,00005 %
Lead (Pb).....≤0,000005 %
Calcium (Ca).....≤0,00005 %
Cadmium (Cd).....≤0,000005 %
Chromium (Cr).....≤0,00005 %
Iron (Fe).....≤0,00005 %
Magnesium (Mg).....≤0,00001 %
Manganese (Mn).....≤0,000005 %
Nickel (Ni).....≤0,00005 %
Zinc (Zn).....≤0,000005 %

8462.1	1 l	glass	39,25 €
Original pack 6 x 1 l			37,29/1 l
8462.2	2,5 l	glass	79,05 €
Original pack 4 x 2,5 l			75,10/2,5 l
8462.3	10 l	tinplate	260,70 €
8462.4	25 l	tinplate	579,45 €

tert-Butyl methyl ether

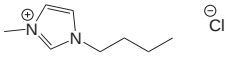
≥99,5 %, for synthesis

Type analysis:

Assay (GC).....≥99,5 %
Water.....≤0,01 %
Density (25 °C).....0,738-0,740 g/cm³

6746.1	1 l	glass	20,35 €
Original pack 6 x 1 l			19,33/1 l
6746.4	2,5 l	glass	37,55 €
Original pack 4 x 2,5 l			35,67/2,5 l
6746.5	5 l	aluminium	60,75 €
Original pack 2 x 5 l			57,71/5 l
6746.2	10 l	tinplate	113,85 €
6746.3	25 l	tinplate	214,50 €

1-Butyl-3-methyl-imidazolium-chloride (BMIM Cl)



1-Butyl-3-methyl-imidazolium-chloride (BMIM Cl)

≥99 %
Ionic liquid
BMIM Cl
$C_8H_{15}ClN_2$
M 174,67 g/mol
mp 65 °C
[79917-90-1]
UN No. 2811 • ADR 6.1 III • WGK 3

Danger H301-H315-H319-H335-H411

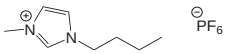
Type analysis:

Appearance.....yellow to orange, solid
Assay.....≥99 %
Water (KF).....≤0,5 %

2010.1	25 g	glass	127,95 €
2010.2	100 g	glass	252,65 €

Lit.: **"Dissolution and Regeneration of Bombyx mori Silk Fibroin Using Ionic Liquids"** D. M. Phillips, L. F. Drummy, D. G. Conrady, D. M. Fox, R. R. Naik, M. O. Stone, P. C. Trulove, H. C. De Long, R. A. Mantz, *J. Am. Chem. Soc.* **2004**, 126, 14350-14351.
For further information, please see page 1590

1-Butyl-3-methyl-imidazolium-hexafluorophosphate (BMIM PF_6)



1-Butyl-3-methyl-imidazolium-hexafluorophosphate (BMIM PF_6)

≥99 %
Ionic liquid
BMIM PF_6
$C_8H_{15}F_6N_2P$
M 284,18 g/mol
D 1,37
mp -8 °C
[174501-64-5]
WGK 3

Warning H315-H319-H335

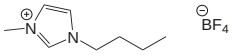
Type analysis:

Appearance.....yellowish liquid
Assay.....≥99 %
Water (KF).....≤0,025 %
Halogens.....≤0,01 %

2012.1	25 g	glass	94,50 €
2012.2	100 g	glass	252,65 €

Lit.: **"Vanadium-catalyzed selective aerobic alcohol oxidation in ionic liquid [bmim]PF_6"** N. Jiang, A. J. Ragauskas, *Tetrahedron Lett.* **2007,** 48, 273–276.
"Ionic Liquid (Molten Salt) Phase Organometallic Catalysis" J. Dupont, R. F. de Souza, P. A. Z. Suarez, *Chem. Rev.* **2002,** 102, 3667-3692.
For further information, please see page 1590

1-Butyl-3-methyl-imidazolium-tetrafluoroborate (BMIM BF_4)



1-Butyl-3-methyl-imidazolium-tetrafluoroborate (BMIM BF_4)

>99 %
Ionic liquid
BMIM BF_4
$C_8H_{15}BF_4N_2$
M 226,01 g/mol
D 1,21
mp -75 °C
[174501-65-6]

Warning H315-H319-H335

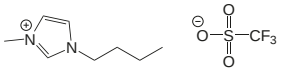
Type analysis:

Appearance.....yellow to orange liquid
Assay.....>99 %
Water (KF).....<0,025 %
Halogens.....<0,02 %

2014.1	25 g	glass	81,60 €
2014.2	100 g	glass	203,20 €

Lit.:**"Ionic Liquid (Molten Salt) Phase Organometallic Catalysis"** J. Dupont, R. F. de Souza, P. A. Z. Suarez, *Chem. Rev.* **2002,** 102, 3667-3692.
"Non-Aqueous Biocatalysis in Heterogeneous Solvent Systems" N. Krieger, T. Bhatnagar, J. C. Baratt, A. M. Baron, V. M. de Lima, D. Mitchell, *Food Technol. Biotechnol.* **2004**, 42, 279–286.
For further information, please see page 1590

1-Butyl-3-methyl-imidazolium-trifluoromethanesulphonate (BMIM OTf)



1-Butyl-3-methyl-imidazolium-trifluoromethanesulphonate (BMIM OTf)

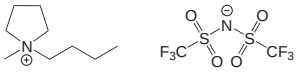
≥99 %
Ionic liquid
BMIM OTf
$C_9H_{15}F_3N_2O_3S$
M 288,28 g/mol
D 1,3 • mp 16 °C • [174899-66-2]
Warning H315-H319-H335

Type analysis:
Appearance. ..... clear, colourless to orange liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,1 %
Halogens. ..... ≤0,01 %

2015.1	25 g	glass	203,20 €
2015.2	100 g	glass	471,95 €

Lit.:**"tert-Amyl ethyl ether separation from its mixtures with ethanol using the 1-butyl-3-methyl-imidazolium trifluoromethanesulfonate ionic liquid: liquid-liquid equilibrium"** A. Arce, O. Rodriguez, A. Soto, *Ind. Eng. Chem. Res.* **2004,** 43, 8323-8327.
For further information, please see page 1590

1-Butyl-1-methyl-pyrrolidinium-bis-(trifluoromethylsulphonyl)-imide (BMPyrr BTA)



1-Butyl-1-methyl-pyrrolidinium-bis-(trifluoromethylsulphonyl)-imide (BMPyrr BTA)

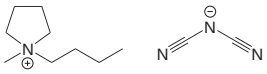
≥99 %
Ionic liquid
BMPyrr NTf_2, BMPyrr BTA
$C_{11}H_{20}N_2F_6S_2O_4$
M 422,40 g/mol
D 1,40 • mp -18 °C • [223437-11-4]
Warning H315-H319-H335

Type analysis:
Appearance. ..... colourless to yellow liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,01 %
Halogens. ..... ≤0,01 %

2021.1	25 g	glass	170,95 €
2021.2	100 g	glass	349,40 €

Lit.: "**In Situ STM Investigation of Gold Reconstruction and of Silicon Electro-deposition on Au(111) in the Room Temperature Ionic Liquid 1-Butyl-1-methyl-pyrrolidinium Bis(trifluoromethyl-sulfonyl)imide**" N. Borisenko, S. Zein El Abedin, F. Endres, *J. Phys. Chem. B* **2006,** 110, 6250-6256.
Electrodeposition of Metals and Semiconductors in Air-and Water-Stable Ionic Liquids" S. Z. El Abedin, F. Endres, *Chem. Phys. Chem.* **2006,** 7, 58–61.
For further information, please see page 1590

1-Butyl-1-methyl-pyrrolidinium-dicyanamide (BMPyrr DCA)



1-Butyl-1-methyl-pyrrolidinium-dicyanamide (BMPyrr DCA)

≥98 %
Ionic liquid
BMPyrr $N(CN)_2$, BMPyrr DCA
$C_{11}H_{20}N_4$
M 208,31 g/mol
D 1,023 • bp >171 °C (dec.)
mp -55 °C
[370865-80-8]
Warning H315-H319-H335

Type analysis:
Appearance. ..... yellow to brown liquid
Assay. ..... ≥98 %
Water (KF). ..... ≤0,2 %
Halogens. ..... ≤2,0 %

2022.1	25 g	glass	327,90 €
2022.2	100 g	glass	697,70 €

Lit:. **"Protein solubilising and stabilising ionic liquids"** K. Fujita, D. R. MacFarlane, M. Forsyth, *Chem. Commun*. **2005,** 4804–4806.
For further information, please see page 1590

N_α-tert.-Butyloxycarbonyl-N_{im}-2,4-dinitrophenyl-L-histidine

▶ Boc-L-Histidine-(Dnp) see p. 1844

N_α-tert.-Butyloxycarbonyl-S-(4-methylbenzyl)-L-cysteine

▶ Boc-L-Cysteine-(4-Mbzl) see p. 1844

5-Butylpicolinic acid

▶ Fusaric acid see p. 2009

5-Butylpyridine-2-carboxylic acid

▶ Fusaric acid see p. 2009

Butyl stearate

▶ Stearic acid butyl ester see p. 2380

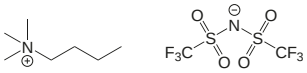
(R)-(+)-tert-Butyl sulfinamide

▶ (R)-(+)-2-Methyl-2-propanesulfinamide see p. 2140

(S)-(-)-tert-Butyl sulfinamide

▶ (S)-(-)-2-Methyl-2-propanesulfinamide see p. 2140

Butyl-trimethyl-ammonium-bis-(trifluoromethylsulphonyl)-imide (N1114 BTA)



Butyl-trimethyl-ammonium-bis-(trifluoromethylsulphonyl)-imide (N1114 BTA)

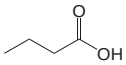
≥99 %
Ionic liquid
N1114 BTA
$C_9H_{18}F_6N_2O_4S_2$
M 396,36 g/mol
D 1,395
mp 7 °C
[258273-75-5]
Warning H315-H319-H335

Type analysis:
Appearance. ..... yellowish liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,01 %
Halogens. ..... ≤0,01 %

2025.1	25 g	glass	213,95 €
2025.2	100 g	glass	493,45 €

Lit:. **"Understanding structure-stability relationships of Candida antartica lipase B in ionic liquids"** T. De Diego, P. Lozano, S. Gmouh, M. Vaultier, J. L. Iborra, *Biomacromolecules* **2005**, 6, 1457-1464.
For further information, please see page 1590

Butyric acid



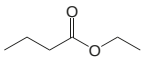
Butyric acid

≥99 %, for synthesis
Butanoic acide
$C_4H_8O_2$
M 88,11 g/mol
D ~0,96 • bp 164 °C
mp -5 °C • flp 72 °C
[107-92-6] • EC No. 203-532-3
UN No. 2820 • ADR 8 III • WGK 1
Danger H302-H314

Type analysis:
Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99 %
Water (KF). ..... ≤0,2 %

3277.1	100 ml	glass	16,70 €
3277.2	1 l	glass	64,40 €
Original pack 6 x 1 l			61,18/1 l

Butyric acid ethyl ester



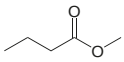
Butyric acid ethyl ester

ROTICHROM® GC
Reference substance for GC.
Ethyl butyrate
$C_6H_{12}O_2$
M 116,16 g/mol
D ~0,879 • bp 121 °C
mp -98 °C • flp 25 °C
Storage temp.: +4 °C
[105-54-4] • EC No. 203-306-4
UN No. 1180 • ADR 3 III • WGK 1
Warning H226-H315-H319-H335

Type analysis:
Purity (GC).....≥98 %

5572.1	1 g	plastic	81,20 €

Butyric acid methyl ester



Butyric acid methyl ester

ROTICHROM® GC
Reference substance for GC.
Methyl butyrate
$C_5H_{10}O_2$
M 102,14 g/mol
D ~0,90 • bp 102-103 °C
mp -84 °C • flp 14 °C
Solubility: 16 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[623-42-7] • EC No. 210-792-1
UN No. 1237 • ADR 3 II • WGK 1
Danger H225-H315-H319-H335

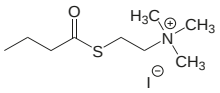
Type analysis:
Purity (GC).....≥96 %

5186.1	1 g	plastic	80,55 €

γ-Butyrolactame

▶ 2-Pyrrolidone see p. 2247

2-Butyrylthiocholine iodide



2-Butyrylthiocholine iodide

≥99 %, for biochemistry
$C_9H_{20}INOS$
mp 172-176 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[1866-16-6] • EC No. 217-475-7 • WGK 3
Warning H315-H319-H335

Type analysis:
Appearance.....white to off-white, cryst. powder
Assay (arg.).....≥99,0 %
Appearance of solution (10 %, H_2O).....colourless
Water (KF).....≤0,5 %

8452.1	1 g	glass	19,25 €
8452.2	5 g	glass	64,40 €
8452.3	10 g	glass	117,20 €

Cable cleanser

Cable cleanser

For cleaning and degreasing of dismantled cables.
Dipentene
D 0,84 • bp 178 °C
flp 52 °C
UN No. 2319 • ADR 3 III • WGK 3
Danger
H226-H304-H315-H317-H410

5235.1	1 l	tinplate	23,45 €
Original pack 6 x 1 l			22,28/1 l

For further information, please see page 1153

Cacodylic acid sodium salt trihydrate

Cacodylic acid sodium salt trihydrate

PUFFERAN® ≥98 %
Sodium dimethylarsonate, Sodium cacodylate
$C_2H_6AsNaO_2 \cdot 3\ H_2O$
M 214,03 g/mol
Solubility: 2000 g/l (H_2O, 20 °C)
[6131-99-3] • EC No. 204-708-2
UN No. 1688 • ADR 6. 1 II • WGK 3
Danger H301+H331-H410

Type analysis:
Appearance..... fine, white crystals
Assay (as trihydrate).....≥98,0 %
pH value. 8,0-8,3
Aqueous solution (2 g +10 ml).....clear, colourless
Chloride (Cl). ..... ≤0,02 %
Arsenic (As).....≤0,05 %
Methylarsonic acid disodium salt.....complies BPC-49
Acidity/alkalinity.....complies BPC-49

5169.3	10 g	plastic	22,50 €
5169.1	50 g	plastic	64,40 €
5169.2	250 g	plastic	209,65 €

For further information, please see page 1308

Cadmium Standards

▶ Cadmium AAS Standard Solution see p. 2359
▶ Cadmium ICP Standard Solution see p. 2362
▶ Cadmium ICP Standard Solution see p. 2366

Cadmium acetate

Cadmium acetate

ROTI®METIC 99,999 % (5N), anhydrous
Cadmium diacetate
$Cd(CH_3COO)_2$
M 230,50 g/mol
mp 255 °C
[543-90-8] • EC No. 208-853-2
UN No. 2570 • ADR 6.1 III • WGK 3
Danger
H302+H312+H332-H350-H400-H410

Type analysis:
Assay (metals basis).....99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5247.1	10 g	plastic	96,65 €
5247.2	25 g	plastic	155,35 €

Cadmium acetate dihydrate

Cadmium acetate dihydrate

≥99 %, p.a.
Reagent for determination of S, Se and Te.
$Cd(CH_3COO)_2 \cdot 2\ H_2O$
M 266,52 g/mol
D 2,01
mp 256 °C
[5743-04-4] • EC No. 208-853-2
UN No. 2570 • ADR 6.1 III • WGK 3
Warning
H400-H410-H302+H312+H332

Guarantee analysis:
Assay (compl.).....≥99,0 %
In H_2O insoluble matter. .....≤0,005 %
Total nitrogen (as N). .....≤0,002 %
Chloride (Cl).....≤0,001 %
Sulphate (SO_4).....≤0,005 %
Lead (Pb). .....≤0,003 %
Calcium (Ca). .....≤0,005 %
Iron (Fe). .....≤0,0005 %
Potassium (K). .....≤0,002 %
Copper (Cu). .....≤0,001 %
Sodium (Na).....≤0,002 %
Zinc (Zn). .....≤0,002 %
Substances not precipitated by H_2S (as SO_4)...≤0,1 %

KK06.1	100 g	plastic	32,80 €
KK06.2	250 g	plastic	68,70 €

Cadmium diacetate

▶ Cadmium acetate see p. 1865

Cadmium-free Quantum Dots

▶ Quantum Dots, hydrophobic see p. 2248

Cadmium sulphate hydrate

Cadmium sulphate hydrate

≥99 %, p.a., ACS

$CdSO_4 \cdot 8/3\ H_2O$, $3\ CdSO_4 \cdot 8\ H_2O$
M 256,51 g/mol
D 3,10
mp 41,5 °C
Solubility: 1130 g/l (H_2O, 20 °C)
[7790-84-3] • EC No. 233-331-6
UN No. 2570 • ADR 6.1 III • WGK 3

Danger H301-H330-H340-H350-H360FD-H372-H400-H410

Guarantee analysis:

Appearance	fine, white crystals
Assay	≥99,0 %
Chloride (Cl)	≤0,001 %
Nitrate and nitrite (as NO_3)	≤0,003 %
In H_2O insoluble matter	≤0,005 %
Calcium (Ca)	≤0,005 %
Copper (Cu)	≤0,002 %
Iron (Fe)	≤0,001 %
Potassium (K)	≤0,01 %
Sodium (Na)	≤0,02 %
Lead (Pb)	≤0,003 %
Zinc (Zn)	≤0,05 %

4482.2	25 g	plastic	18,85 €
4482.1	100 g	plastic	57,95 €
4482.3	250 g	plastic	96,65 €
4482.4	500 g	plastic	147,20 €
Original pack 6 x 500 g			139,84/500 g
4482.5	1 kg	plastic	274,15 €
Original pack 6 x 1 kg			260,44/1 kg

Cadmium telluride

▶ Quantum Dots, hydrophilic see p. 2247

Caesium Standards

▶ Caesium AAS Standard Solution see p. 2359
▶ Caesium ICP Standard Solution see p. 2362
▶ Caesium ICP Standard Solution see p. 2366
▶ Caesium IC Standard Solution see p. 2377

Caesium carbonate

Cesium carbonate
Cs_2CO_3
M 325,82 g/mol
D 4,072
mp 610 °C (dec.)
Solubility: 2615 g/l (H_2O, 15 °C)
[534-17-8] • EC No. 208-591-9
WGK 1

Warning H315-H319-H335

Caesium carbonate

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis)	99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5618.1	5 g	plastic	35,40 €
5618.2	25 g	plastic	112,35 €

Caesium carbonate

≥99,9 %, p.a.

Base for organic chemistry

Type analysis:

Appearance	colourless, cryst. and hygroscopic substance
Assay	≥99,9 %
Lithium (Li)	≤0,0005 %
Sodium (Na)	≤0,01 %
Potassium (K)	≤0,02 %
Rubidium (Rb)	≤0,02 %
Calcium (Ca)	≤0,0005 %
Magnesium (Mg)	≤0,0002 %
Barium (Ba)	≤0,003 %
Strontium (Sr)	≤0,0005 %
Aluminium (Al)	≤0,001 %
Iron (Fe)	≤0,0003 %
Chromium (Cr)	≤0,0002 %
P_2O_5	≤0,002 %
Sulphate (SO_4)	≤0,005 %
Chloride (Cl)	≤0,01 %
Nitrate (NO_3)	≤0,003 %
Silicate (SiO_2)	≤0,005 %
Loss on ignition (500 °C)	≤0,5 %

6873.1	5 g	plastic	17,10 €
6873.2	25 g	plastic	37,55 €
6873.3	100 g	plastic	119,25 €
6873.4	500 g	plastic	385,95 €
Original pack 6 x 500 g			366,65/500 g

Caesium chloride

Cesium chloride
CsCl
M 168,36 g/mol
D 3,983 • bp 1303 °C
mp 646 °C
Solubility: 1800 g/l (H_2O, 20 °C)
[7647-17-8] • EC No. 231-600-2
WGK 1

Warning H361

Caesium chloride

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis)	99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5061.1	10 g	plastic	55,80 €
5061.2	50 g	plastic	161,15 €

Caesium chloride

≥99,999 %, p.a., ultra quality

Reagent for density gradient centrifugation.

Guarantee analysis:

Assay	≥99,999 %
Aluminium (Al)	≤0,00001 %
Barium (Ba)	≤0,0005 %
Lead (Pb)	≤0,0001 %
Calcium (Ca)	≤0,00005 %
Chromium (Cr)	≤0,00001 %
Iron (Fe)	≤0,00002 %
Potassium (K)	≤0,0001 %
Lithium (Li)	≤0,00005 %
Magnesium (Mg)	≤0,00001 %
Manganese (Mn)	≤0,0001 %
Sodium (Na)	≤0,00003 %
Rubidium (Rb)	≤0,0001 %
Strontium (Sr)	≤0,0001 %
Sulphate (SO_4)	≤0,0005 %
Extinction (50 % in H_2O):	
260 nm	≤0,02
280 nm	≤0,02

8627.4	10 g	plastic	23,15 €
8627.3	50 g	plastic	50,00 €
8627.1	100 g	plastic	83,35 €
8627.5	250 g	plastic	150,40 €
8627.2	1 kg	plastic	551,40 €
Original pack 6 x 1 kg			523,83/1 kg

For further information, please see page 1280

Caesium chloride

≥99,9 %, extra pure, for biochemistry

Reagent for density gradient centrifugation.

Type analysis:

Assay	≥99,9 %
Sulphate (SO_4)	≤0,005 %
Aluminium (Al)	≤0,002 %
Barium (Ba)	≤0,005 %
Calcium (Ca)	≤0,005 %
Chromium (Cr)	≤0,002 %
Iron (Fe)	≤0,002 %
Potassium (K)	≤0,005 %
Lithium (Li)	≤0,0005 %
Magnesium (Mg)	≤0,005 %
Manganese (Mn)	≤0,002 %
Sodium (Na)	≤0,005 %
Rubidium (Rb)	≤0,02 %
Strontium (Sr)	≤0,005 %

In water insoluble matter, max. 25 ppm, may cause a light turbidity or opalescence in a concentrated solution.

7878.4	25 g	plastic	21,00 €
7878.1	100 g	plastic	48,30 €
7878.3	250 g	plastic	104,20 €
7878.5	500 g	plastic	188,15 €
Original pack 6 x 500 g			178,74/500 g
7878.2	1 kg	plastic	364,45 €
Original pack 6 x 1 kg			346,23/1 kg

For further information, please see page 1280

Caesium nitrate

Caesium nitrate
ROTI®METIC 99,999 % (5N)
Cesium nitrate
$CsNO_3$
M 194,91 g/mol
D 3,66
mp 414 °C
Solubility: 150 g/l (H_2O, 20 °C)
[7789-18-6] • EC No. 232-146-8
UN No. 1451 • ADR 5.1 III • WGK 1
Danger H272

Type analysis:
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

4505.1	10 g	plastic	97,30 €
4505.2	50 g	plastic	353,70 €

Caesium sulphate

Caesium sulphate
≥99,99 %, p.a.
Reagent for density gradient centrifugation.
Cesium sulphate
Cs_2SO_4
M 361,89 g/mol
D 4,243
mp 1010 °C
Solubility: 1790 g/l (H_2O, 20 °C)
[10294-54-9] • EC No. 233-662-6
Warning H302-H361

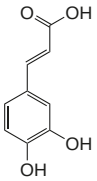
Guarantee analysis:
Assay..... ≥99,99 %
Aluminium (Al). ..... ≤0,0001 %
Barium (Ba). ..... ≤0,001 %
Calcium (Ca)..... ≤0,0001 %
Chromium (Cr). ..... ≤0,00005 %
Iron (Fe). ..... ≤0,00005 %
Potassium (K). ..... ≤0,0006 %
Lithium (Li)..... ≤0,0001 %
Magnesium (Mg)..... ≤0,0001 %
Manganese (Mn). ..... ≤0,0002 %
Sodium (Na). ..... ≤0,0002 %
Rubidium (Rb). ..... ≤0,001 %
Strontium (Sr). ..... ≤0,0002 %
Chloride (Cl). ..... ≤0,001 %
Extinction (50 % in H_2O):
260 nm..... ≤0,05
280 nm..... ≤0,05
Suitable for density gradient centrifugation

9355.3	25 g	plastic	42,50 €
9355.1	100 g	plastic	134,30 €
9355.2	1 kg	plastic	923,45 €
Original pack 6 x 1 kg			877,28/1 kg

For further information, please see page 1280

2-Caffeeoyl tartaric acid
▶ Caftaric acid see p. 1868

Caffeic acid



3,4-Dihydroxycinnamic acid
$C_9H_8O_4$
M 180,16 g/mol
[331-39-5] • EC No. 206-361-2
WGK 2
Warning H351

Caffeic acid
≥98 %
Storage temp.: +4 °C

Type analysis:
Appearance..... beige powder
Assay. ..... ≥98,0 %

5869.3	5 g	glass	19,90 €
5869.1	10 g	glass	32,80 €
5869.2	50 g	glass	122,45 €

Caffeic acid
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC)..... ≥90,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF)..... ≤2,0 %
Assay (qNMR)..... ≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE08.1	25 mg	glass	590,20 €

Caffeic acid
ROTICHROM® Working Standard

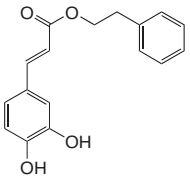
Type analysis:
Assay (HPLC)..... ≥90,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC08.1	100 mg	glass	125,70 €

Caffeic acid
ROTICHROM® TLC
Reference substance for thin layer chromatography.
Storage temp.: +4 °C

5574.1	100 mg	glass	36,45 €

Caffeic acid phenethyl ester

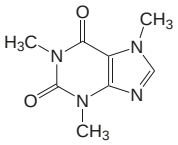


Caffeic acid phenethyl ester
≥99 %, for biochemistry
Phenethyl-3,4-dihydroxycinnamate, CAPE
$C_{17}H_{16}O_4$
M 284,31 g/mol
mp 127-129 °C
[104594-70-9]
Warning H315-H319-H335

Typ analysis:
Assay (HPLC). ..... ≥99,0 %
Solution (5 % in Aceton)..... colourless to yellow
Water (KF). ..... ≤0,5 %
Melting point. ..... 127-129 °C

5465.1	25 mg	glass	40,75 €
5465.2	50 mg	glass	60,10 €

Caffeine



1,3,7-Trimethylxanthine, 7-Methyltheobromine
$C_8H_{10}N_4O_2$
M 194,20 g/mol
D ~1,23
mp 234-239 °C • flp ~236 °C
[58-08-2] • EC No. 200-362-1
UN No. 1544 • ADR 6.1 III • WGK 1
Danger H301

Caffeine
≥98,5 %, for biochemistry, anhydrous

Type analysis:
Appearance. ..... white cryst. powder
Assay (dry substance). ..... 98,5-101,5 %
Melting range. ..... 234-239 °C
Appearance of solution. ..... complies
Sulphate (SO_4)..... ≤0,05 %
Heavy metals. ..... ≤0,001 %
Loss on drying..... ≤0,5 %

N815.1	50 g	plastic	11,30 €
N815.2	100 g	plastic	15,60 €
N815.3	500 g	plastic	46,15 €
Original pack 6 x 500 g			43,84/500 g

Caffeine

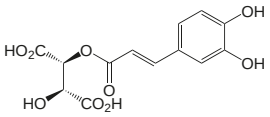
ROTI®CALIPURE Melting point standard 235-238 °C, anhydrous

Type analysis:

Meniscus formation. ..... 235-238 °C
Complete liquefaction. ..... 235-238 °C

9739.1	1 g	glass	31,10 €

Caftaric acid



Caftaric acid

ROTICHROM® HPLC

Reference substance for HPLC.
From *Echinacea pallida*.
2-Caffeoyl tartaric acid
$C_{13}H_{12}O_9$
M 312,24 g/mol
Storage temp.: +4 °C
[67879-58-7]

Type analysis:

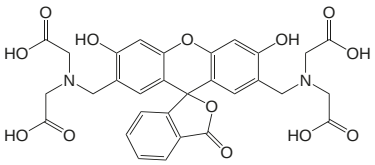
Purity (HPLC)..... >98 %

1125.1	10 mg	glass	396,70 €

Cakodylic acid sodium salt

▶ Cacodylic acid sodium salt trihydrate see p. 1865

Calcein



Calcein

p.a.

Metal indicator for Ca in the presence of Mg
Fluorexon, Fluorescein complexone
$C_{30}H_{26}N_2O_{13}$
M 622,55 g/mol
mp 200 °C
[1461-15-0] • EC No. 215-957-1
WGK 1

Type analysis:

Appearance. ..... yellow to orange powder
Suitability as indicator. ..... complies

7688.1	5 g	glass	36,45 €
7688.2	25 g	glass	110,65 €
7688.3	100 g	glass	303,70 €

Calcium

Calcium

≥99,5 %, granules

Ca
M 40,08 g/mol
bp 1484 °C
mp ~840 °C
[7440-70-2] • EC No. 231-179-5
UN No. 1401 • ADR 4.3 II • WGK 1

Danger H261

Type analysis:

Assay. ..... ≥99,5 %
Particle size. ..... ~6 mesh

2729.1	50 g	glass	71,95 €

Calcium Standards

▶ Calcium AAS Standard Solution see p. 2359
▶ Calcium ICP Standard Solution see p. 2362
▶ Calcium ICP Standard Solution see p. 2367
▶ Calcium IC Standard Solution see p. 2377

Calcium acetate hydrate

Calcium acetate hydrate

≥99 %, USP, extra pure

$Ca(CH_3COO)_2 \cdot x\ H_2O$
M 158,17 + x H_2O g/mol
[62-54-4] • EC No. 200-540-9
WGK 1

Guarantee analysis:

Assay (compl., dry substance). ..... 99,0-100,5 %
Identity. ..... complies
Easily oxidizable substance.. ..... complies
pH value (5 % solution). 6,3-9,6
Water ..... ≤7,0 %
Chloride (Cl). ..... ≤0,05 %
Sulphate (SO_4). ..... ≤0,06 %
Fluoride (F). ..... ≤0,005 %
Nitrate (NO_3). ..... complies
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,001 %

0260.1	500 g	plastic	19,25 €
Original pack 6 x 500 g			18,29/500 g
0260.2	1 kg	plastic	30,00 €
Original pack 6 x 1 kg			28,50/1 kg
0260.4	2,5 kg	plastic	57,55 €
0260.3	5 kg	plastic	106,35 €

Calcium acetate monohydrate

Calcium acetate monohydrate

≥99 %, p.a., ACS

$Ca(CH_3COO)_2 \cdot H_2O$
M 176,18 g/mol
D 1,50
[5743-26-0] • EC No. 200-540-9
WGK 1

Guarantee analysis:

Assay (compl.). ..... ≥99,0 %
In H_2O insoluble matter. ..... ≤0,005 %
Alkalinity. ..... complies
Acidity. ..... ≤0,035 meq/g
Chloride (Cl). ..... ≤0,001 %
Sulphate (SO_4). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,005 %
Barium (Ba). ..... ≤0,01 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,01 %
Magnesium (Mg). ..... ≤0,05 %
Sodium (Na). ..... ≤0,02 %
Strontium (Sr). ..... ≤0,05 %

P011.3	100 g	plastic	19,25 €
P011.1	500 g	plastic	49,35 €
Original pack 6 x 500 g			46,88/500 g
P011.2	1 kg	plastic	88,05 €
Original pack 6 x 1 kg			83,65/1 kg

Calcium arachinate/-behenate

▶ Arachidic acid calcium salt see p. 1813

Calcium carbide

Carbide
CaC_2
M 64,10 g/mol
D 2,22 • bp 2300 °C
mp 2160 °C
[75-20-7] • EC No. 200-848-3
UN No. 1402 • ADR 4.3 I • WGK 1

Danger H260-H315-H318

Calcium carbide

techn., 0,1-1 mm

Suitable for water analysis.

Type analysis:

Granulation. ..... 0,1-1,0 mm
Gas yield. ..... 260 l C_2H_2 ±3 %/kg

6110.2	500 g	tinplate	18,85 €
Original pack 6 x 500 g			17,91/500 g
6110.1	1 kg	tinplate	26,80 €
Original pack 6 x 1 kg			25,46/1 kg
6110.3	2,5 kg	tinplate	51,10 €
6110.4	5 kg	tinplate	84,40 €

Calcium carbide

techn., 1-3 mm

Type analysis:

Granulation. ..... 1-3 mm
Gas yield. ..... 260 l C_2H_2 ±3 %/kg

6666.1	500 g	tinplate	19,25 €
Original pack 6 x 500 g			18,29/500 g
6666.2	1 kg	tinplate	27,85 €
Original pack 6 x 1 kg			26,46/1 kg
6666.3	2,5 kg	tinplate	52,60 €
6666.4	5 kg	tinplate	88,05 €

Calcium carbide

techn., 7-20 mm

Type analysis:

Granulation. ..... 7-20 mm
Gas yield. ..... 260 l C_2H_2 ±3 %/kg

6667.1	500 g	tinplate	21,40 €
Original pack 6 x 500 g			20,33/500 g
6667.2	1 kg	tinplate	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
6667.3	2,5 kg	tinplate	69,80 €
6667.4	5 kg	tinplate	120,30 €

Calcium carbonate

$CaCO_3$
M 100,09 g/mol
Solubility: ~14 mg/l (H_2O, 20 °C)
[471-34-1] • EC No. 207-439-9

Calcium carbonate

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5616.1	5 g	plastic	47,20 €
5616.2	25 g	plastic	149,45 €

Calcium carbonate

≥99 %, p.a., precipitated

Disintegrating agent, for the determination of alkalis in silicates.

Guarantee analysis:

Assay (compl., dry substance). ..... ≥99,0 %
In HCl insoluble matter. ..... ≤0,005 %
Loss on drying (200 °C, 4 h). ..... ≤0,1 %
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,03 %
Heavy metals (as Pb). ..... ≤0,002 %
Barium (Ba). ..... ≤0,005 %
Lead (Pb). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,02 %
Magnesium (Mg). ..... ≤0,05 %
Sodium (Na). ..... ≤0,25 %
Copper (Cu). ..... ≤0,0005 %
Potassium (K). ..... ≤0,02 %
Strontium (Sr). ..... ≤0,1 %

P012.1	500 g	plastic	70,45 €
Original pack 6 x 500 g			66,93/500 g
P012.2	1 kg	plastic	123,10 €
Original pack 6 x 1 kg			116,95/1 kg
P012.3	2,5 kg	plastic	241,90 €

Calcium carbonate

≥98,5 %, Ph.Eur., USP, BP, precipitated

Guarantee analysis:

Assay (dry substance). ..... 98,5-100,5 %
Identity. ..... complies
In CH_3COOH insoluble matter. ..... ≤0,2 %
Loss on drying (200 °C). ..... ≤2,0 %
Chloride (Cl). ..... ≤0,033 %
Fluoride (F). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,25 %
Magnesium and alkali metals. ..... ≤1 %
Heavy metals (as Pb). ..... ≤0,002 %
Arsenic (As). ..... ≤0,0003 %
Barium (Ba). ..... complies
Lead (Pb). ..... ≤0,0003 %
Iron (Fe). ..... ≤0,02 %
Mercury (Hg). ..... ≤0,00005 %

P013.1	500 g	plastic	17,10 €
Original pack 6 x 500 g			16,25/500 g
P013.2	1 kg	plastic	27,45 €
Original pack 6 x 1 kg			26,08/1 kg
P013.4	2,5 kg	plastic	55,40 €
P013.3	5 kg	plastic	104,20 €

Calcium carbonate

≥98,5 %, powdered

Type analysis:

Assay (dry substance). ..... ≥98,5 %
Chloride (Cl). ..... ≤0,05 %
Sulphate (SO_4). ..... ≤0,5 %
Antimony (Sb). ..... ≤0,01 %
Lead (Pb). ..... ≤0,005 %
Cadmium (Cd). ..... ≤0,0001 %
Copper (Cu). ..... ≤0,01 %
Zinc (Zn). ..... ≤0,01 %
Particle size d_{50}. ..... 1,0 µm

6230.1	1 kg	plastic	16,70 €
Original pack 6 x 1 kg			15,87/1 kg
6230.3	2,5 kg	plastic	25,70 €
6230.2	5 kg	plastic	43,55 €
6230.5	25 kg	plastic	141,40 €

Calcium chloride

Chlorocalcium
$CaCl_2$
M 110,99 g/mol
Solubility: 740 g/l (H_2O, 20 °C)
[10043-52-4] • EC No. 233-140-8
WGK 1

⚠ **Warning** H319

Calcium chloride

≥98 %, dehydrated, powder

Drying agent

Type analysis:

Assay ($CaCl_2$). ..... ≥98,0 %
Water insoluble residue . ..... ≤0,1 %
Fluoride (F). ..... ≤0,004 %
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0002 %
Iron (Fe). ..... ≤0,01 %
Mercury (Hg). ..... ≤0,0001 %

CN93.1	500 g	plastic	26,35 €
Original pack 6 x 500 g			25,03/500 g
CN93.2	1 kg	plastic	39,70 €
Original pack 6 x 1 kg			37,72/1 kg
CN93.3	2,5 kg	plastic	81,60 €
CN93.4	5 kg	plastic	124,60 €
CN93.5	25 kg	plastic	295,10 €

Calcium chloride

≥96 %, dehydrated, granular material

Drying agent

Type analysis:

Assay ($CaCl_2$). ..... ≥96,0 %
Heavy metals. ..... ≤0,005 %
Iron (Fe). ..... ≤0,001 %
Magnesium (Mg). ..... ≤0,1 %
Zinc (Zn). ..... ≤0,003 %
Particle size. ..... ~0,5-5 mm

CN92.1	500 g	plastic	25,70 €
Original pack 6 x 500 g			24,42/500 g
CN92.2	1 kg	plastic	38,20 €
Original pack 6 x 1 kg			36,29/1 kg
CN92.3	2,5 kg	plastic	80,10 €
CN92.4	10 kg	plastic	214,50 €

Calcium chloride

≥94 %, dehydrated

Drying agent

Type analysis:

Assay ($CaCl_2$). ..... ≥94 %
Sulphate (SO_4). ..... ≤0,1 %
Barium (Ba). ..... ≤0,1 %
Iron (Fe). ..... ≤0,0005 %
NaCl. ..... ≤2 %
$MgCl_2$. ..... ≤0,1 %
Potassium chloride (KCl). ..... ≤3 %
Particle size. ..... ~2-5 mm (4-8 mesh)

A119.1	1 kg	plastic	18,85 €
Original pack 6 x 1 kg			17,91/1 kg
A119.3	2,5 kg	plastic	32,15 €
A119.2	5 kg	plastic	50,00 €
A119.4	10 kg	plastic	81,20 €
A119.5	25 kg	plastic	119,90 €

Calcium chloride hydrate

Calcium chloride hydrate

ROTI®METIC 99,999 % (5N)

$CaCl_2 \cdot x\ H_2O$
M 110,99 + x H_2O g/mol
mp ~30 °C
[22691-02-7]
WGK 1

⚠ **Warning** H319

Type analysis:

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5056.1	10 g	plastic	122,45 €

Calcium chloride dihydrate

$CaCl_2 \cdot 2\ H_2O$
M 147,02 g/mol
D 1,85
mp ~176 °C
Solubility: ~1000 g/l (H_2O, 0 °C)
[10035-04-8] • EC No. 233-140-8
WGK 1

Warning H319

Calcium chloride dihydrate

≥99 %, p.a., ACS

Reagent for the preparation of freezing mixtures, molecular biology.

Guarantee analysis:

Assay (compl.)	≥99,0 %
pH value (5 %, water)	4,5-8,5
In H_2O insoluble matter	≤0,01 %
Sulphate (SO_4)	≤0,01 %
Phosphate (PO_4)	≤0,001 %
Ammonium (NH_4)	≤0,005 %
Oxidizing substances (as NO_3)	≤0,003 %
Barium (Ba)	≤0,005 %
Lead (Pb)	≤0,0005 %
Iron (Fe)	≤0,0003 %
Potassium (K)	≤0,01 %
Copper (Cu)	≤0,0005 %
Magnesium (Mg)	≤0,005 %
Manganese (Mn)	≤0,0005 %
Sodium (Na)	≤0,02 %
Nickel (Ni)	≤0,0005 %
Heavy metals (as Pb)	≤0,0005 %
Strontium (Sr)	≤0,01 %
Zinc (Zn)	≤0,001 %

5239.2	500 g	plastic	18,20 €
Original pack 6 x 500 g			17,29/500 g
5239.1	1 kg	plastic	25,30 €
Original pack 6 x 1 kg			24,04/1 kg
5239.3	2,5 kg	plastic	53,65 €

Calcium chloride dihydrate

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins	≤5,0 I.U./g
Assay	≥99 %
Appearance of solution	complies
pH value (5 % solution)	4,5-9,2
Sulphate (SO_4)	≤0,024 %
Heavy metals (as Pb)	≤0,0005 %
Aluminium (Al)	≤0,00002 %
Arsenic (As)	≤0,0002 %
Iron (Fe)	≤0,001 %

HN04.1	250 g	plastic	16,70 €
HN04.2	500 g	plastic	27,45 €
Original pack 6 x 500 g			26,08/500 g
HN04.3	1 kg	plastic	40,75 €
Original pack 6 x 1 kg			38,71/1 kg

Calcium chloride dihydrate

≥99 %, Ph.Eur.

Guarantee analysis:

Assay (compl.)	99,0-103,0 %
Identity	complies
Appearance of solution	complies
Acid or alkaline react. substances	complies
Sulphate (SO_4)	≤0,03 %
Magnesium and alkali metals	≤0,5 %
Aluminium (Al)	≤0,0001 %
Barium (Ba)	complies
Iron (Fe)	≤0,001 %

T885.2	500 g	plastic	18,85 €
Original pack 6 x 500 g			17,91/500 g
T885.1	1 kg	plastic	30,65 €
Original pack 6 x 1 kg			29,12/1 kg
T885.3	2,5 kg	plastic	74,75 €

Calcium chloride hexahydrate

Chlorocalcium hexahydrate
$CaCl_2 \cdot 6\ H_2O$
M 219,09 g/mol
mp ~30 °C
Solubility: 5360 g/l (H_2O, 20 °C)
[7774-34-7] • EC No. 233-140-8
WGK 1

Warning H319

Calcium chloride hexahydrate

≥98 %, p.a.

Analytical reagent, molecular biology

Guarantee analysis:

Assay (compl.)	≥98,0 %
In H_2O insoluble matter, precipated by NH_4OH	≤0,01 %
Oxidizing substances (as NO_3)	≤0,003 %
Phosphate (PO_4)	≤0,001 %
Sulphate (SO_4)	≤0,01 %
Ammonium (NH_4)	≤0,005 %
Heavy metals (as Pb)	≤0,0005 %
Arsenic (As)	≤0,0001 %
Lead (Pb)	≤0,0005 %
Barium (Ba)	≤0,005 %
Copper (Cu)	≤0,0005 %
Iron (Fe)	≤0,0025 %
Magnesium (Mg)	≤0,005 %
Nickel (Ni)	≤0,0005 %
Manganese (Mn)	≤0,0005 %
Strontium (Sr)	≤0,01 %
Zinc (Zn)	≤0,001 %

Melting point: approx. 30 °C

T886.2	500 g	plastic	31,10 €
Original pack 6 x 500 g			29,55/500 g
T886.1	1 kg	plastic	52,15 €
Original pack 6 x 1 kg			49,54/1 kg
T886.3	2,5 kg	plastic	103,10 €

Calcium chloride hexahydrate

≥97 %, Ph.Eur.

Guarantee analysis:

Assay (compl.)	97,0-103,0 %
Identity	complies
Appearance of solution	complies
Acid or alkaline react. substances	complies
Sulphate (SO_4)	≤0,02 %
Aluminium (Al)	complies
Heavy metals (as Pb)	≤0,0015 %
Barium (Ba)	complies
Iron (Fe)	≤0,0007 %
Magnesium and alkali metals	≤0,3 %

Melting point: approx. 30 °C

CP89.1	500 g	plastic	19,90 €
Original pack 6 x 500 g			18,91/500 g
CP89.2	1 kg	plastic	28,50 €
Original pack 6 x 1 kg			27,08/1 kg
CP89.3	2,5 kg	plastic	56,45 €

tri-Calcium dicitrate tetrahydrate

tri-Calcium dicitrate tetrahydrate

≥97 %, extra pure

Calcium(II) citrate, Tricalcium citrate, TCC
$C_{12}H_{10}Ca_3O_{14} \cdot 4\ H_2O$
M 570,51 g/mol
Solubility: 1 g/l (H_2O, 20 °C)
[5785-44-4] • EC No. 212-391-7
WGK 1

Type analysis:

Assay (dry substance)	≥97,0 %
Fluoride (F)	≤0,005 %
Aluminium (Al)	≤0,005 %
Arsenic (As)	≤0,0001 %
Lead (Pb)	≤0,0001 %
Mercury (Hg)	≤0,0001 %
Heavy metals (as Pb)	≤0,0005 %
Loss on drying	10,0-14,0 %

7450.1	500 g	plastic	26,35 €
Original pack 6 x 500 g			25,03/500 g
7450.2	1 kg	plastic	41,85 €
Original pack 6 x 1 kg			39,76/1 kg
7450.3	2,5 kg	plastic	89,15 €

Calcium EDTA disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid calcium disodium salt dihydrate see p. 1981

D-Calciumgluconate monohydrate

▶ D-Gluconic acid calcium salt monohydrate see p. 2019

Calcium hydrate

▶ Calcium hydroxide see p. 1871

Calcium hydrogen phosphate

Calcium hydrogen phosphate

≥98 % extra pure, anhydrous

Calcium phosphate dibasic, sec. Calcium phosphate, Calcium monohydrogen phosphate
$CaHPO_4$
M 136,06 g/mol
Solubility: 0,1 g/l (H_2O, 20 °C)
[7757-93-9] • EC No. 231-826-1
WGK 1

Type analysis:

Assay (compl.)	≥98,0 %
Chloride (Cl)	≤0,5 %
Sulphate (SO_4)	≤0,5 %
Heavy metals (as Pb)	≤0,005 %
Arsenic (As)	≤0,001 %
Iron (Fe)	≤0,05 %
Insoluble matter in acid	≤0,1 %

9490.1	100 g	plastic	23,55 €
9490.2	500 g	plastic	48,30 €
Original pack 6 x 500 g			45,89/500 g
9490.3	1 kg	plastic	88,05 €
Original pack 6 x 1 kg			83,65/1 kg

Calcium hydrogen phosphate dihydrate

Calcium hydrogen phosphate dihydrate

≥98 %, Ph.Eur., USP

Calcium phosphate dibasic, sec. Calcium phosphate, Calcium monohydrogen phosphate

$CaHPO_4 \cdot 2\ H_2O$

M 172,10 g/mol

D 2,32

Solubility: 0,2 g/l (H_2O, 25 °C)

[7789-77-7] • EC No. 231-826-1

WGK 1

Guarantee analysis:

Assay (compl.)	98,0-105,0 %
Identity	complies
In HCl insoluble matter	≤0,2 %
Fluoride (F)	≤0,005 %
Carbonate (CO_3)	complies
Chloride (Cl)	≤0,033 %
Sulphate (SO_4)	≤0,5 %
Arsenic (As)	≤0,0003 %
Barium (Ba)	complies
Iron (Fe)	≤0,04 %
Heavy metals (as Pb)	≤0,003 %
Loss on ignition (800 °C)	24,5-26,5 %

HN70.1	500 g	plastic	20,35 €
Original pack 6 x 500 g			19,33/500 g
HN70.2	1 kg	plastic	31,10 €
Original pack 6 x 1 kg			29,55/1 kg
HN70.3	2,5 kg	plastic	62,25 €

Calcium hydroxide

Calcium hydrate, slaked lime

$Ca(OH)_2$

M 74,10 g/mol

D 2,24

mp 550 °C (dec.)

Solubility: 1,7 g/l (H_2O, 20 °C)

[1305-62-0] • EC No. 215-137-3

WGK 1

Danger H318-H315-H335

Calcium hydroxide

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis)	99,995 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5617.1	5 g	plastic	53,65 €
5617.2	25 g	plastic	181,70 €

Calcium hydroxide

≥96 %, p.a.

For detection of CO_2

Guarantee analysis:

Assay	≥96 %
In HCl insoluble matter	≤0,03 %
Carbonate (as $CaCO_3$)	≤3 %
Chloride (Cl)	≤0,005 %
Sulphur containing parts (as SO_4)	≤0,1 %
Heavy metals (as Pb)	≤0,003 %
Iron (Fe)	≤0,05 %
Potassium (K)	≤0,05 %
Magnesium (Mg)	≤0,5 %
Sodium (Na)	≤0,05 %
Strontium (Sr)	≤0,05 %

CN87.1	500 g	plastic	41,85 €
Original pack 6 x 500 g			39,76/500 g
CN87.2	1 kg	plastic	68,70 €
Original pack 6 x 1 kg			65,27/1 kg
CN87.3	2,5 kg	plastic	142,45 €

Calcium hydroxide

≥95 %, Ph.Eur., USP, BP

Guarantee analysis:

Assay (compl.)	95,0-100,5 %
In HCl insoluble matter	≤0,5 %
Carbonate (as $CaCO_3$)	≤5,0 %
Chloride (Cl)	≤0,033 %
Sulphate (SO_4)	≤0,4 %
Mg and alkali salts	≤4,0 %
Heavy metals (as Pb)	≤0,002 %
Arsenic (As)	≤0,0003 %
Residual solvents	complies

KK03.1	500 g	plastic	15,60 €
Original pack 6 x 500 g			14,82/500 g
KK03.2	1 kg	plastic	21,40 €
Original pack 6 x 1 kg			20,33/1 kg
KK03.4	2,5 kg	plastic	41,85 €
KK03.3	5 kg	plastic	74,75 €

Calcium hydroxide

≥96 %, powdered

Type analysis:

Assay	≥96 %
Water	0,20 %
Sulphite (SO_3)	0,01 %
Aluminium oxide (Al_2O_3)	0,07 %
Calcium oxide (CaO)	74,6 %
Ferric oxide (Fe_2O_3)	0,04 %
Carbon dioxide (CO_2)	0,6 %
Magnesium oxide (MgO)	0,60 %
Manganese oxide (Mn_3O_4)	0,02 %
Loss on ignition	24,5 %
Hydrate water	23,7 %

3529.4	1 kg	plastic	15,60 €
Original pack 6 x 1 kg			14,82/1 kg
3529.1	2,5 kg	plastic	26,35 €
3529.2	10 kg	plastic	56,90 €
3529.3	50 kg	plastic	109,15 €

penta-Calcium hydroxide triphosphate

▶ Calcium hydroxyphosphate see p. 1871

Calcium hydroxyphosphate

Calcium hydroxyphosphate

Ph.Eur., extra pure

penta-Calcium hydroxide triphosphate, Calciumphosphate tribasic

$HCa_5O_{13}P_3$

M 502,32 g/mol

[12167-74-7] • EC No. 235-330-6

Guarantee analysis:

Appearance	white to off-white powder
Assay (Ca)	35,0-40,0 %
Identity	complies
Identity Calcium	complies
Identity Phosphate	complies
Substances insoluble in HCl	≤0,2 %
Chloride (Cl)	≤0,15 %
Fluoride (F)	≤0,0075 %
Sulphate (SO_4)	≤0,5 %
Heavy metals (as Pb)	≤0,003 %
Arsenic (As)	≤0,0004 %
Iron (Fe)	≤0,04 %
Loss on ignition (800 °C)	≤8,0 %

8450.1	250 g	plastic	15,60 €
8450.2	1 kg	plastic	33,25 €
Original pack 6 x 1 kg			31,59/1 kg
8450.3	2,5 kg	plastic	68,70 €

Calcium hypochlorite

Calcium hypochlorite

≥65 %, granulated

Desinfectant and oxidizing agent

$CaCl_2O_2$

M 142,99 g/mol

D 2,35

Solubility: 200 g/l (H_2O, 20 °C)

[7778-54-3] • EC No. 231-908-7

UN No. 1748 • ADR 5.1 II • WGK 3

Danger

H272-H302-H314-H410-EUH031

Type analysis:

Availabe chlorine ($Ca(OCl)_2$)	≥65 %
Water	5,5-8,5 %
Iron (Fe)	≤0,05 %

5164.1	500 g	plastic	23,55 €
Original pack 6 x 500 g			22,37/500 g
5164.3	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
5164.2	2,5 kg	plastic	69,80 €

Calcium-L-lactate

▶ L(+)-Lactic acid calcium salt hydrate see p. 2088
▶ L(+)-Lactic acid calcium salt pentahydrate see p. 2088

Calcium-lignosulphonate

▶ Lignosulphonic acid calcium salt see p. 2098

Calcium monohydrogen phosphate

▶ Calcium hydrogen phosphate see p. 1870
▶ Calcium hydrogen phosphate dihydrate see p. 1871

Calcium nitrate hydrate

Calcium nitrate hydrate

ROTI®METIC 99,999 % (5N)

$Ca(NO_3)_2 \cdot x\ H_2O$
M 164,09 + x H_2O g/mol
D 1,82
mp ~40 °C (dec.)
[35054-52-5] • EC No. 233-332-1
UN No. 1454 • ADR 5.1 III • WGK 1

Danger H272-H315-H319-H335

Type analysis:

Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5058.1	5 g	plastic	52,15 €
5058.2	25 g	plastic	166,65 €

Calcium nitrate tetrahydrate

Lime salpetre
$Ca(NO_3)_2 \cdot 4\ H_2O$
M 236,15 g/mol
D 1,82
Solubility: 1470 g/l (H_2O, 0 °C)
[13477-34-4] • EC No. 233-332-1
UN No. 1454 • ADR 5.1 III • WGK 1

Danger H302-H318

Calcium nitrate tetrahydrate

≥99 %, p.a., ACS

Application in pyrotechnics, as component of freezing salt solutions and as fertilizer.

Guarantee analysis:

Assay (compl.).....99,0-103,0 %
pH value (5 % in H_2O).....5,0-7,0
In water insoluble matter.....≤0,005 %
Chloride (Cl).....≤0,005 %
Sulphate (SO_4).....≤0,002 %
Nitrite (NO_2).....≤0,001 %
Ammonium (NH_4).....≤0,005 %
Heavy metals (as Pb).....≤0,0005 %
Barium (Ba).....≤0,005 %
Iron (Fe).....≤0,0005 %
Lead (Pb).....≤0,0005 %
Magnesium (Mg).....≤0,01 %
Strontium (Sr).....≤0,01 %
Copper (Cu).....≤0,0005 %
Potassium (K).....≤0,005 %
Sodium (Na).....≤0,005 %
Aluminium (Al).....≤0,001 %
Cadmium (Cd).....≤0,0005 %
Cobalt (Co).....≤0,0005 %
Chromium (Cr).....≤0,0005 %
Manganese (Mn).....≤0,0005 %
Nickel (Ni).....≤0,0005 %
Zinc (Zn).....≤0,0005 %

P740.1	500 g	plastic	24,65 €
Original pack 6 x 500 g			23,42/500 g
P740.2	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg
P740.3	2,5 kg	plastic	83,75 €

Calcium nitrate tetrahydrate

≥98 %, extra pure

Type analysis:

Assay.....≥98,0 %
pH value (5 % solution).....5,0-7,0
Chloride (Cl).....≤0,01 %
Sulphate (SO_4).....≤0,01 %
Heavy metals (as Pb).....≤0,002 %
Iron (Fe).....≤0,001 %

X886.1	500 g	plastic	14,55 €
Original pack 6 x 500 g			13,82/500 g
X886.2	1 kg	plastic	18,85 €
Original pack 6 x 1 kg			17,91/1 kg
X886.4	2,5 kg	plastic	32,15 €
X886.3	5 kg	plastic	54,75 €
X886.7	25 kg	plastic	212,75 €

Calcium oxalate monohydrate

Calcium oxalate monohydrate

≥98 %

Oxalic acid calcium salt monohydrate
$CaC_2O_4 \cdot H_2O$
M 146,12 g/mol
[5794-28-5] • EC No. 209-260-1
WGK 1

Warning H302+H312

Type analysis:

Appearance.....white powder
Assay.....≥98,0 %
Identity.....complies
Chloride (Cl).....≤0,05 %
Sulphate (SO_4).....≤0,05 %

6145.1	1 kg	plastic	40,75 €
Original pack 6 x 1 kg			38,71/1 kg

Calcium oxide

Calcium oxide

≥96 %, powdered, extra pure

Lime caustic, Quicklime
CaO
M 56,08 g/mol
bp 2850 °C
mp 2580 °C
Solubility: ~1,5 g/l (H_2O, 20 °C)
[1305-78-8] • EC No. 215-138-9
UN No. 1910 • WGK 1

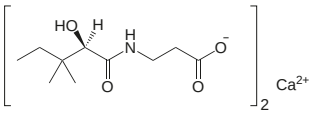
Danger H315-H318-H335

Type analysis:

Assay.....96,0-100,5 %
In HCl insoluble matter.....≤0,5 %
Loss on ignition.....≤3,5 %
Fluoride (F).....≤0,015 %
Arsenic (As).....≤0,0003 %
Lead (Pb).....≤0,0002 %

CN88.1	500 g	plastic	15,60 €
Original pack 6 x 500 g			14,82/500 g
CN88.2	1 kg	plastic	24,20 €
Original pack 6 x 1 kg			22,99/1 kg
CN88.4	2,5 kg	plastic	46,15 €
CN88.3	5 kg	plastic	85,90 €

Calcium D(+)-pantothenate



Calcium D(+)-pantothenate

≥98 %, Ph.Eur., for biochemistry

D(+)-Pantothenic acid calcium salt, Vitamin B_5 calcium salt
$C_{18}H_{32}CaN_2O_{10}$
M 476,53 g/mol
mp 190 °C • flp 145 °C
Solubility: 350 g/l (H_2O, 20 °C)
[137-08-6] • EC No. 205-278-9
WGK 1

Guarantee analysis:

Appearance.....white powder
Assay (perchloric acid titration, dry substance).....98,0-101,0 %
Identity.....complies
pH value (5 % in H_2O).....6,8-8,0
Appearance of solution (5 % in H_2O).....clear, colourless
Specific rotation $[\alpha]_D^{20}$ (5 % in H_2O, dry substance).....+25,5° to +27,5°
3-Aminopropionic acid.....≤0,5 %
Chloride (Cl).....≤0,02 %
Elemental impurities.....complies
Residual solvents.....complies
Loss on drying.....≤3,0 %

3812.2	100 g	plastic	27,85 €
3812.1	250 g	plastic	49,35 €

sec. Calcium phosphate

- Calcium hydrogen phosphate see p. 1870
- Calcium hydrogen phosphate dihydrate see p. 1871

Calcium phosphate dibasic

- Calcium hydrogen phosphate see p. 1870
- Calcium hydrogen phosphate dihydrate see p. 1871

Calciumphosphate tribasic

- Calcium hydroxyphosphate see p. 1871

Calcium sulphate dihydrate

$CaSO_4 \cdot 2\ H_2O$
M 172,17 g/mol
D 2,32
Solubility: ~2 g/l (H_2O, 20 °C)
[10101-41-4] • EC No. 231-900-3
WGK 1

Calcium sulphate dihydrate

≥98 %, p.a., ACS

Guarantee analysis:

Assay (compl.).....98,0-101,0 %
In HCl insoluble matter.....≤0,01 %
Carbonate (CO_3).....complies
Chloride (Cl).....≤0,002 %
Nitrate (NO_3).....≤0,002 %
Heavy metals (as Pb).....≤0,001 %
Arsenic (As).....≤0,00004 %
Lead (Pb).....≤0,001 %
Iron (Fe).....≤0,001 %

Magnesium (Mg)..... ≤0,02 %
Strontium (Sr). ..... ≤0,05 %
Nickel (Ni)..... ≤0,001 %
Copper (Cu)..... ≤0,001 %
Potassium (K). ..... ≤0,005 %
Sodium (Na). ..... ≤0,02 %

P741.1	500 g	plastic	53,25 €
Original pack 6 x 500 g			50,59/500 g
P741.2	1 kg	plastic	92,35 €
Original pack 6 x 1 kg			87,73/1 kg
P741.3	2,5 kg	plastic	197,30 €

Calcium sulphate dihydrate

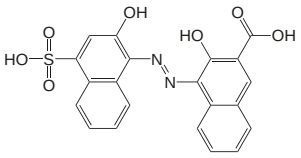
≥98 %, Ph.Eur., extra pure

Guarantee analysis:

Assay (compl.).....98,0-102,0 %
Identity. ..... complies
Chloride (Cl). ..... ≤0,03 %
Arsenic (As). ..... ≤0,001 %
Iron (Fe). ..... ≤0,01 %
Heavy metals (as Pb)..... ≤0,001 %
Acidity/alkalinity. ..... complies
Loss on ignition (800 °C)..... 18,0-22,0 %
Loss on drying (250 °C). ..... 19,0-23,0 %

0256.1	500 g	plastic	14,95 €
Original pack 6 x 500 g			14,20/500 g
0256.2	1 kg	plastic	20,35 €
Original pack 6 x 1 kg			19,33/1 kg
0256.4	2,5 kg	plastic	42,50 €
0256.3	5 kg	plastic	78,40 €

Calconcarboxylic acid



Calconcarboxylic acid

p.a.

For metal titration.
2-Hydroxy-1-(2-hydroxy-4-sulfo-1-naphthyl-azo)-naphthalene-3-carboxylic acid;
Patton and Reeder's Reagent
$C_{21}H_{14}N_2O_7S$
M 438,41 g/mol
mp 300 °C
[3737-95-9] • EC No. 223-117-0
WGK 1

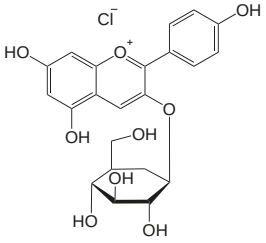
Warning H315-H319-H335

Type analysis:

Appearance. ..... black-violet powder
Maximum absorption. ..... ≤572 nm

2676.1	5 g	glass	26,80 €
2676.2	10 g	glass	39,25 €
2676.3	50 g	glass	103,10 €

Callistephin (chloride)



Callistephin (chloride)

ROTICHROM® HPLC

Reference substance for HPLC.
Pelargonidin chloride 3-glucoside
$C_{21}H_{21}ClO_{10}$
M 468,85 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[18466-51-8]
WGK 1

Type analysis:

Purity (HPLC). ..... ≥95,0 %

8956.2	10 mg	glass	403,15 €

Calomel

▶ Mercury(I) chloride see p. 2127

2-Camphanone

▶ (+)-Camphor see p. 1873

Camphene

$C_{10}H_{16}$
M 136,24 g/mol
D 0,84 • bp 158-160 °C
mp 42-45 °C • flp 26 °C
Solubility: 0,0042 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[79-92-5] • EC No. 201-234-8
UN No. 1325 • ADR 4.1 II • WGK 2

Danger H228-H319-H410

Camphene

≥95 %

Type analysis:

Assay (GC)..... ≥95 %
Tricyclene (GC). ..... ≤5 %

7558.2	100 g	glass	21,40 €
7558.1	500 g	glass	79,45 €
Original pack 6 x 500 g			75,48/500 g

Camphene

ROTICHROM® GC

Reference substance for GC.

Type analysis:

Purity (GC). ..... ≥90 %

5288.2	100 mg	glass	83,75 €

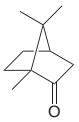
DL-Campher

▶ (+/-)-Camphor see p. 1873

D-(+)-Camphor

▶ (+)-Camphor see p. 1873

(+)-Camphor



(+)-Camphor

≥98 %

2-Camphanone, D-(+)-Camphor,
(1R)-1,7,7-Trimethylbicyclo [2.2.1] heptan-2-one
$C_{10}H_{16}O$
M 152,24 g/mol
D 0,99 • bp 209 °C
mp 179 °C • flp 66 °C
Solubility: 15 g/l (H_2O, 20 °C)
[464-49-3] • EC No. 207-355-2
UN No. 2717 • ADR 4.1 III • WGK 1

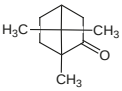
Warning
H228-H302-H315-H319-H335-H412

Type analysis:

Appearance. ..... colourless crystals
Assay (GC). ..... ≥98 %
Melting point. ..... 177-182 °C

6155.1	250 g	plastic	186,55 €

(+/-)-Camphor



DL-Campher
$C_{10}H_{16}O$
M 152,24 g/mol
D 0,992 • bp 204 °C
mp 172-176 °C • flp 64 °C
[76-22-2] • EC No. 244-350-4
UN No. 2717 • ADR 4.1 III • WGK 1

Warning H228-H315-H319-H335

(+/-)-Camphor

≥95 %

Type analysis:

Appearance. ..... white, cryst. powder and/or pieces
Assay (GC). ..... 95,5-100,0 %

7552.1	500 g	plastic	81,60 €
Original pack 6 x 500 g			77,52/500 g

(+/-)-Camphor

ROTICHROM® GC

Reference substance for GC.
Storage temp.: +4 °C

Type analysis:

Purity (GC). ..... ≥95 %

4329.1	1 g	plastic	87,00 €

Campylobacter Agar, blood-free (Base)

Campylobacter Agar, blood-free (Base)

for microbiology

For isolation of *Campylobacter jejuni*, *Campylobacter coli*, and *Campylobacter laridis* in foods, and other samples.

Application: Use 45,5 g for 1 l agar.
After cooling add 2 vials (2x5 ml) reconstituted Campylobacter Supplement (Art. No. 4857.1).

Campy-Selective-Bloodfree-Medium, Bolton-Agar, Blood-free **CCDA**, Modified **CCDA**

Storage temp.: +20 °C • WGK 1

Formulation:

Casein peptone. ..... 10 g/l
Beef extract. ..... 10 g/l
Sodium chloride. ..... 5 g/l
Casein hydrolysed. ..... 3 g/l
Bacteriological charcoal. ..... 4 g/l
Sodium deoxycholate. ..... 1 g/l
Iron sulphate. ..... 0,25 g/l
Sodium pyruvate. ..... 0,25 g/l
Agar. ..... 12 g/l
pH value. ..... 7,4 ±0,2

5756.1	500 g	plastic	160,20 €
Original pack 6 x 500 g			152,19/500 g

For further information, please see page 1431

Campylobacter Preston Supplement

Campylobacter Preston Supplement

lyophilised

For selective isolation of *Campylobacter spp.*

One box of 10 vials Campylobacter Preston Supplement is sufficient for 10 x 500 ml Campylobacter Selective Agar.

Preston Supplement

Storage temp.: +4 °C
Transport temp.: room temp.

UN No. 2811 • ADR 6.1 II • WGK 3

Danger H300-H341-H360D-H411

Formulation per vial:

Polymyxin B sulphate. ..... 2500 IU
Cycloheximide. ..... 50 mg
Rifampicin. ..... 5 mg
Trimetoprim. ..... 5 mg

8851.1	10 vials	glass	186,95 €

For further information, please see page 1458

Campylobacter Selective Agar (Base)

Campylobacter Selective Agar (Base)

for microbiology

For isolation of *Campylobacter coli* and *C. jejuni*.

Application: Use 18,5 g for 475 ml agar.
After cooling add 5-7 % lysed blood and 1 vial of Campylobacter Preston Supplement (Art. No. 8851).

Preston Agar, Campy Agar

Storage temp.: +20 °C • WGK 1

Formulation:

Casein peptone. ..... 10 g/l
Beef extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 12 g/l
pH value. ..... 7,5 ±0,2

8847.1	500 g	plastic	141,80 €
Original pack 6 x 500 g			134,71/500 g

For further information, please see page 1431

Campylobacter Supplement

Campylobacter Supplement

lyophilised

Media supplement for selective isolation of *Campylobacter jejuni, C. coli,* and *C. laridis.*

One box of 10 vials Campylobacter Supplement is sufficient for 10 x 500 ml Campylobacter Agar, blood-free.

CCDA Supplement

Storage temp.: +4 °C
Transport temp.: room temp.

WGK 3

Danger H334-H317

Formulation:

Cefoperazone. ..... 16 mg
Amphotericin B. ..... 5 mg
per vial

4857.1	10 vials	glass	159,00 €

For further information, please see page 1458

Campy-Selective-Bloodfree-Medium, CCDA

▶ Campylobacter Agar, blood-free (Base) see p. 1874

Canada balsam

Canada balsam

natural, for microscopy

Balsamum Canadense

D 0,99
flp 43 °C
[8007-47-4] • EC No. 232-362-2
UN No. 1993 • ADR 3 III • WGK 2

Warning H226

Type analysis:

Appearance. ..... yellowish translucent, highly viscous
Odour. ..... characteristic (like conifers)
Density (20 °C). 0,980-0,998
Refractive index n_D^{20}. 1,520-1,530
Solubility in:
Ether. 1:1
Toluene. 1:1
Chloroform. 1:1

8016.1	25 ml	glass	20,35 €
8016.2	100 ml	glass	50,00 €

For further information, please see page 1533

Candida chromogenic Agar

Candida chromogenic Agar

for microbiology

Selective medium for isolation and quick identification of pathogeneous Candida species.

Application: Use 45,9 g for 1 l agar.

Storage temp.: +4 °C • WGK 3

Warning H351

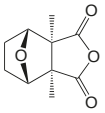
Formulation:

Peptone. ..... 10 g/l
Glucose. ..... 20 g/l
Chloroamphenicol. ..... 0,5 g/l
Chromogene Mixture. ..... 0,4 g/l
Agar. ..... 15 g/l
pH value. ..... 6,1 ±0,2

2922.2	100 g	plastic	149,45 €
2922.1	500 g	plastic	547,20 €
Original pack 6 x 500 g			519,84/500 g

For further information, please see page 1439

Cantharidin



Cantharidin

for biochemistry

Kantharidin
$C_{10}H_{12}O_4$ • M 196,20 g/mol • mp 216 °C
[56-25-7] • EC No. 200-263-3
UN No. 2811 • ADR 6.1 I

Danger H300+H310+H330

Typanalyse:

Appearance. ..... white, cryst. powder
Melting point. ..... 216-218 °C

3322.1	25 mg	glass	26,35 €

CAPE

▶ Caffeic acid phenethyl ester see p. 1867

Capping reagent I

Capping reagent I

for DNA synthesis with ABI™ and PolyGen® Synthesizer

Mixture of acetic anhydride, pyridine and tetrahydrofuran

D 0,93 • bp ~65 °C • flp -21 °C

Storage temp.: +4 °C

UN No. 2924 • ADR 3 (8) II • WGK 2

Danger H225-H318-H302+H332-H335-H351-H315-EUH019

2255.1	200 ml	glass	37,55 €
2255.2	450 ml	glass	79,45 €
2255.3	2,5 l	glass	218,15 €
Original pack 4 x 2,5 l			207,24/2,5 l

For further information, please see page 1551

Capping reagent II

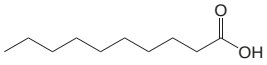
Capping reagent II
for DNA synthesis with ABI™ and PolyGen® Synthesizer

Mixture of 1-Methylimidazole and tetrahydrofuran
D 0,92 • bp ~65 °C
flp -21 °C
Storage temp.: +4 °C
UN No. 2924 • ADR 3 (8) II • WGK 1
Danger
H225-H314-H302-H335-H351-EUH019

2256.1	200 ml	glass	36,45 €
2256.2	450 ml	glass	76,25 €
2256.3	2,5 l	glass	203,20 €
Original pack 4 x 2,5 l			193,04/2,5 l

For further information, please see page 1551

Capric acid



Decanoic acid
$C_{10}H_{20}O_2$
M 172,27 g/mol
D 0,89 • bp 270 °C
mp 31 °C • flp 148 °C
Solubility: 0,15 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[334-48-5] • EC No. 206-376-4
WGK 1
Warning H315-H319-H412

Capric acid
≥98 %, for synthesis

Type analysis:
Assay (GC).....≥98 %
Melting point.....29-33 °C

8797.1	100 g	glass	20,35 €
8797.3	500 g	glass	49,35 €
Original pack 6 x 500 g			46,88/500 g
8797.2	1 kg	glass	85,50 €
Original pack 6 x 1 kg			81,23/1 kg

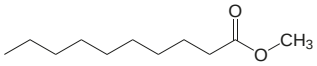
Capric acid
ROTICHROM® GC

Reference substance for GC.

Type analysis:
Purity (GC).....≥99 %

3164.1	1 g	glass	27,45 €

Capric acid methyl ester



Capric acid methyl ester
≥98 %, for synthesis

Decanoic acid methyl ester, Methyldecanoate
$C_{11}H_{22}O_2$
M 186,29 g/mol
D 0,87 • bp 224 °C
mp ~ -13 °C • flp 94 °C
Storage temp.: +4 °C
[110-42-9] • EC No. 203-766-6
WGK 1
Warning H315

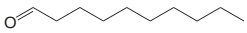
Type analysis:
Appearance.....clear, almost colourless liquid
Assay (GC).....≥98,0 %
Density (d 20 °C/20 °C).....0,8720-0,8750
Refractive index (20 °C).....1,4240-1,4270

3325.1	100 ml	glass	66,55 €

Capric alcohol

▶ 1-Decanol see p. 1924

Capric aldehyde



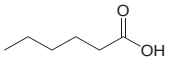
Capric aldehyde
≥97 %, for synthesis

Decanal
$C_{10}H_{20}O$
M 156,27 g/mol
D 0,83 • bp ~220 °C
mp 7 °C • flp 88 °C
[112-31-2] • EC No. 203-957-4
WGK 2
Warning H315

Type analysis:
Assay (GC).....≥97 %
Density (d 20 °C/4 °C).....0,815-0,844
Stabilised with α-Tocopherol

7547.1	100 ml	glass	116,00 €

Caproic acid



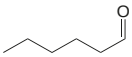
Caproic acid
≥98 %, for synthesis

Hexanoic acid
$C_6H_{12}O_2$
M 116,16 g/mol
D ~0,93 • bp 205 °C
mp -2 °C
[142-62-1] • EC No. 205-550-7
UN No. 2829 • ADR 8 III • WGK 1
Danger H314-H302-H311

Type analysis:
Assay (GC).....≥98,0 %
Density (d 20 °C/4 °C).....0,921-0,932

8799.1	100 ml	glass	18,85 €
8799.3	500 ml	glass	32,15 €
8799.2	1 l	glass	54,30 €
Original pack 6 x 1 l			51,59/1 l
8799.4	2,5 l	glass	109,55 €
Original pack 4 x 2,5 l			104,07/2,5 l

Caproic aldehyde



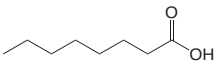
Caproic aldehyde
≥98 %, for synthesis

Hexanal
$C_6H_{12}O$
M 100,16 g/mol
D 0,81 • bp 119-124 °C
mp -56 °C • flp 25 °C
Solubility: 6 g/l (H_2O, 20 °C)
[66-25-1] • EC No. 200-624-5
UN No. 1207 • ADR 3 III • WGK 1
Warning H226-H315-H319

Type analysis:
Assay (GC).....≥98,0 %
Density (d 20 °C/4 °C).....0,813-0,820

3327.1	100 ml	glass	39,70 €

Caprylic acid



Caprylic acid
ROTICHROM® GC

Reference substance for GC.
n-Octanoic acid
$C_8H_{16}O_2$
M 144,21 g/mol
D ~0,910 • bp 237 °C
mp 12-16 °C • flp 127 °C
Storage temp.: +4 °C
[124-07-2] • EC No. 204-677-5
UN No. 3265 • ADR 8 III • WGK 1
Danger H314-H412

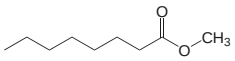
Type analysis:
Purity (GC).....≥99 %

3168.1	1 g	glass	41,85 €

Caprylic acid

▶ Octanoic acid see p. 2171

Caprylic acid methyl ester



Caprylic acid methyl ester

≥99 %, for synthesis

Methyl caprylate, Octanoic acid methyl ester, Methyloctanoate

$C_9H_{18}O_2$

M 158,24 g/mol

D 0,88 • bp 193 °C

mp -37 °C • flp 69 °C

Storage temp.: +4 °C

[111-11-5] • EC No. 203-835-0

WGK 1

Warning H315

Type analysis:

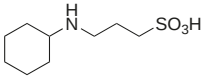
Appearance. ..... clear, almost colourless liquid
Assay (GC). ..... ≥99 %
Density (d 20 °C/20 °C). 0,8760-0,8800
Refractive index n_D^{20}. 1,4150-1,4190

3331.1	10 ml	glass	26,80 €

Caprylic alcohol

▶ 1-Octanol see p. 2171

CAPS



CAPS

PUFFERAN® ≥99 %

Cyclohexylamino propanesulphonic acid

$C_9H_{19}NO_3S$

M 221,32 g/mol

[1135-40-6] • EC No. 214-492-1

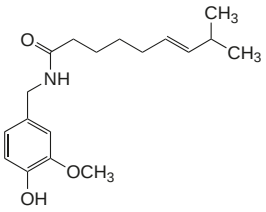
Guarantee analysis:

Appearance. ..... white powder
Assay (N). ..... ≥99,0 %
Water. ..... ≤1,0 %
pH value (1 % in H_2O). 4,9-6,0
Solubility (5 % in H_2O). ..... clear, soluble
Absorption (0,5 M in H_2O):
280 nm. ..... ≤0,1
250 nm. ..... ≤0,1

9168.1	25 g	plastic	19,25 €
9168.3	100 g	plastic	50,00 €
9168.2	250 g	plastic	114,95 €

For further information, please see page 1308

Capsaicin



Capsaicin

50 %, natural

$C_{18}H_{27}NO_3$

M 305,42 g/mol

mp 62-65 °C

[404-86-4] • EC No. 206-969-8

UN No. 3462 • ADR 6.1 III • WGK 1

Danger

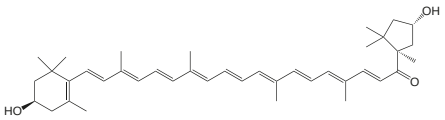
H301-H334-H318-H317-H335

Type analysis:

Appearance. ..... off-white to yellow crystals
Capsaicin (HPLC). ..... ≥50 %
Dihydrocapsaicin. ..... ≥20 %
Loss on drying. ..... ≤1,0 %

8804.1	100 mg	glass	63,35 €

Capsanthin



Capsanthin

ROTICHROM® TLC

Reference substance for thin layer chromatography

$C_{40}H_{56}O_3$

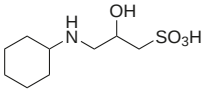
M 584,85 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

[465-42-9] • EC No. 207-364-1

5674.2	5 mg	glass	299,95 €

CAPSO



CAPSO

PUFFERAN® ≥98 %

3-N-Cyclohexylamino-2-hydroxypropane sulphonic acid

$C_9H_{19}NO_4S$

M 237,3 g/mol

mp 275 °C

Solubility: 100 g/l (H_2O, 20 °C)

[73463-39-5]

WGK 1

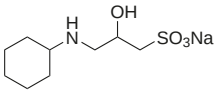
Guarantee analysis:

Assay (titr.). ..... ≥98 %
Water (KF). ..... ≤1,0 %
pH value (1 % solution). 5,0-6,5
UV-Absorption (0,5 M in H_2O):
280 nm. ..... ≤0,05
260 nm. ..... ≤0,05

5584.3	25 g	plastic	30,00 €
5584.1	100 g	plastic	89,15 €
5584.2	500 g	plastic	327,90 €
Original pack 6 x 500 g			311,51/500 g

For further information, please see page 1308

CAPSO sodium salt



CAPSO sodium salt

PUFFERAN® ≥95 %

3-N-Cyclohexylamino-2-hydroxypropane sulphonic acid sodium salt

$C_9H_{18}NO_4NaS$

M 259,3 g/mol

[102601-34-3]

Type analysis:

Assay (titr.). ..... ≥95 %
Water (KF). ..... ≤6,0 %
pH value (1 % solution). 10,9-11,6

6861.1	25 g	plastic	28,50 €

For further information, please see page 1308

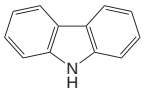
Carbamide

▶ Urea see p. 2430

Carbamoylurea

▶ Biuret see p. 1842

Carbazole



Carbazole

ROTI®CALIPURE Melting point standard 243-247 °C

Dibenzopyrrole, Diphenylenimine, 9-Azafluorene

$C_{12}H_9N$

M 167,21 g/mol

bp 351 °C

mp 243-247 °C

[86-74-8] • EC No. 201-696-0

UN No. 3077 • ADR 9 III • WGK 2

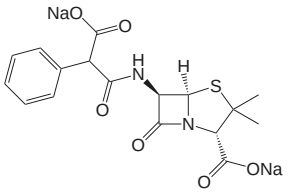
Warning H410

Type analysis:

Meniscus formation. ..... 243-247 °C
Complete liquefaction. ..... 243-247 °C

9752.1	1 g	glass	31,10 €

Carbenicillin disodium salt



Carbenicillin disodium salt

≥88 %, for biochemistry

β-lactam antibiotic, semi synthetic penicillin
α-Carboxybenzyl penicillin disodium salt
$C_{17}H_{16}N_2O_6SNa_2$
M 422,4 g/mol
D 0,7
Storage temp.: +4 °C
[4800-94-6]
WGK 1

Danger H334-H317

Type analysis:

Appearance. ..... white to nearly white powder
Assay (HPLC). ..... ≥88 %
Water . ..... ≤6 %
pH value (5 % in H_2O). 6,0-8,0

6344.1	1 g	glass	29,60 €
6344.2	5 g	plastic	67,20 €
6344.3	25 g	plastic	299,95 €

For further information, please see page 1500

Carbide

▶ Aluminium carbide see p. 1784
▶ Calcium carbide see p. 1868

Carbinol

▶ Methanol see p. 2131

N_α-Carbobenzyloxy-L-arginine

▶ Z-L-Arginine see p. 2449

N_α-Carbobenzyloxy-L-aspartic acid

▶ Z-L-Aspartic acid see p. 2449

N_α-Carbobenzyloxy-L-glutamic acid

▶ Z-L-Glutamic acid see p. 2449

N_α-Carbobenzyloxy-L-leucine

▶ Z-L-Leucine see p. 2453

N_α-Carbobenzyloxy-L-lysine

▶ Z-L-Lysine see p. 2453

N_α-Carbobenzyloxy-L-phenylalanine

▶ Z-L-Phenylalanine see p. 2453

Carbohydrates (Saccharides)

Art. No.	Description	Page
4114	N-Acetyl-D-galactosamine	1766
8993	N-Acetyl-D-glucosamine	1767
5525	N-Acetyl-D-mannosamine	1767
7480	N-Acetylneuraminic acid	1767
8954	DL-Arabinose	1813
5118	L(+)-Arabinose	1813
5510	D(+)-Arabitol	1813
7738	L(-)-Arabitol	1813
5840	D(+)-Cellobiose	1885
5463	α-D-Cellobiose octaacetate	1886
3363	α-Chloralose	1890
4122	α-Cyclodextrin	1916
9916	2-Deoxy-D-galactose	1926
CN96	2-Deoxy-D-glucose	1926
CN97	2-Deoxy-D-ribose	1926
8718	Dextran 2,5	1928
7615	Dextran 6	1928
7616	Dextran 10	1929
7617	Dextran 20	1929
8943	Dextran 35	1929
7626	Dextran 40	1929
9227	Dextran 40	1929
2247	Dextran 60	1929
9228	Dextran 70	1930
7618	Dextran 100	1930
7619	Dextran 150	1930
9233	Dextran 250	1930
9219	Dextran 500	1930
7610	Dextran sulphate 8 sodium salt	1930
7612	Dextran sulphate 40 sodium salt	1931
5956	Dextran sulphate 500 sodium salt	1931
6778	Dextrin	1931
6777	Dextrin	1931
3488	Dextrin	1931
4944	Dulcitol	1963
4981	D(-)-Fructose	2008
4982	D-Fructose-1,6-diphosphate trisodium salt octahydrate	2008
KK10	L(-)-Fucose	2009
7411	D-Galactosamine hydrochloride	2010
8878	D(+)-Galactose	2010
4987	D(+)-Galactose	2010
5550	α-D-Galactose-1-phosphate dipotassium salt pentahydrate	2010
4123	β-D-Gentiobiose	2014
3769	D(+)-Glucosamine hydrochloride	2020
X997	D(+)-Glucose	2020
HN06	D(+)-Glucose	2020
7509	L(-)-Glucose	2020
6780	D(+)-Glucose monohydrate	2020
6887	D(+)-Glucose monohydrate	2020
6119	α-D-Glucose-1-phosphate disodium salt tetrahydrate	2021
5544	D-Glucose-6-phosphate monosodium salt	2021
CN72	D-Glucose-6-phosphate disodium dihydrate	2021
4124	D-Glucuronic acid	2021
4355	D-Glucuronic acid sodium salt monohydrate	2022
HP51	Glycogen	2027
6329	meso-Inositol	2068
4191	meso-Inositol	2069
8400	Isomaltulose	2078
8921	α-Lactose monohydrate	2090
6868	α-Lactose monohydrate	2090
CN98	Lactulose	2090
2260	Maltodextrin 4,0-7,0	2118
2270	Maltodextrin 16,5-19,5	2118
8882	D(+)-Maltose monohydrate	2118
8951	D(+)-Maltose monohydrate	2118
8883	D(-)-Mannitol	2121
4175	D(-)-Mannitol	2121
8887	D(+)-Mannose	2122
4220	D(+)-Mannose	2122
4222	D(+)-Melezitose monohydrate	2125
4223	D(+)-Melibiose monohydrate	2125
8356	1-*O*-Methyl-β-D-glucopyranoside	2138
8407	1-*O*-Methyl-β-D-glucuronic acid, sodium salt	2138
4196	Phlorizin dihydrate	2209
5241	D(+)-Raffinose pentahydrate	2251
4655	L(+)-Rhamnose monohydrate	2257
7168	D(-)-Ribose	2261
1030	Roti®fair 20% Glucose	2275
4621	D(+)-Saccharose	2303
8890	D(+)-Saccharose	2303
4661	D(+)-Saccharose	2303
9286	D(+)-Saccharose	2303
9097	D(+)-Saccharose	1279
6213	D-Sorbitol	2355
4028	L(-)-Sorbose	2355
6161	D-Tagatose	2392
8897	D(+)-Trehalose dihydrate	2413
5151	D(+)-Trehalose dihydrate	2413
4414	Xylan	2444
8659	Xylan	2444
9711	Xylitol	2446
5537	D(+)-Xylose	2446
4061	L-Xylose	2446

Carbol-Gentianaviolet solution

▶ Carbol gentian violet solution see p. 1877

Carbol gentian violet solution

Carbol gentian violet solution

for microscopy

For Gram staining.
UN No. 1993 • ADR 3 III • WGK 2

Warning H226-H319

Type analysis:

Suitability for microscopy. ..... complies

CN00.1	500 ml	glass	23,55 €
CN00.2	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l

For further information, please see page 1519

Carbolic acid

▶ Phenol see p. 2204

Carbolic fuchsine solution

Carbolic fuchsine solution

for microscopy

For bacterial staining (Gram staining and staining of acid-fast bacteria, e.g. TB bacteria acc. to Ziehl-Neelsen).

D 0,987

UN No. 1760 • ADR 8 II • WGK 2

Danger H314-H341

A130.2	500 ml	glass	23,15 €
A130.1	1 l	glass	35,40 €
Original pack 6 x 1 l			33,63/1 l

For further information, please see page 1519

Carbonate bicarbonate buffer (tablets)

▶ Roti®fair CBB see p. 2274

Carbonic acid diethyl ester

▶ Diethyl carbonate see p. 1938

Carbonic acid dimethyl ester

▶ Dimethyl carbonate see p. 1947

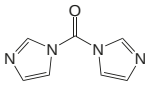
Carbonic acid diphenyl ester

▶ Diphenyl carbonate see p. 1953

N-(Nα-Carbonyl-Arg-Val-Arg-al)-Phe dihydrochloride

▶ Antipain dihydrochloride see p. 1811

1,1'-Carbonyldiimidazole (CDI)



1,1'-Carbonyldiimidazole (CDI)

PEPTIPURE® ≥98 %

Activation agent for carboxylic acids. Coupling reagent for peptide synthesis.

CDI

$C_7H_6N_4O$

M 162,1 g/mol

mp 116-120 °C

[530-62-1] • EC No. 208-488-9

UN No. 3263 • ADR 8 III • WGK 1

Danger H302-H314

Type analysis:

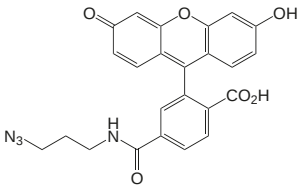
Appearance..... white to off-white powder
Assay (HPLC)..... ≥98 %
Water (KF)..... ≤0,5 %

6992.1	10 g	glass	27,45 €
6992.2	25 g	glass	50,45 €
6992.3	100 g	glass	117,20 €
6992.4	500 g	glass	450,45 €
Original pack 6 x 500 g			427,93/500 g

Carbowax

▶ Polyethylene glycol see p. 2217

6-Carboxyfluorescein Azide (6-FAM-Azide)



6-Carboxyfluorescein Azide (6-FAM-Azide)

≥95 %

Fluorescent dye

4-((3-Azidopropyl)carbamoyl)-2-(6-hydroxy-3-oxo-3*H*-xanthen-9-yl)benzoic acid, 6-FAM-Azide

$C_{24}H_{18}N_4O_6$

M 458,43 g/mol

Storage temp.: -20 °C
Transport temp.: cooled

WGK 3

Type analysis:

Appearance..... orange solid
Assay (HPLC)..... ≥95 %
Absorption max. (buffer, pH 9)..... 496 nm
Emission max. (buffer, pH 9)..... 516 nm
Molar extinction coefficient ε..... 83 000 $cm^{-1}M^{-1}$
Solubility..... DMSO, DMF, MeOH

7806.1	1 mg	plastic	47,20 €
7806.2	5 mg	plastic	81,60 €
7806.3	10 mg	plastic	121,40 €
7806.4	100 mg	plastic	478,40 €

2-Carboxy-2'-hydroxy-5'-sulfoformazyl-benzene-monosodium salt

▶ Zincon see p. 2451

Carboxylic acid C18

▶ Stearic acid see p. 2380

Carboxymethylcellulose sodium salt

Sodium carboxymethylcellulose

[9004-32-4]

WGK 1

Carboxymethylcellulose sodium salt

≥99,5 %, powdered

Type analysis:

Active assay (dry substance)..... ≥99,5 %
Moisture..... ≤10,0 %
Heavy metals..... ≤0,002 %
Degree of substitution..... 0,75-0,85 %
pH value (1 %, H_2O)..... 6,5-8,0
Viscosity (Brook., 1 %, 25 °C)..... 1000-1500 mPa s

3333.1	250 g	plastic	35,40 €
3333.2	1 kg	plastic	107,00 €
Original pack 6 x 1 kg			101,65/1 kg

Carboxymethylcellulose sodium salt

≥98 %, granulated

Used as binder, thickener and dispersing agent.

Type analysis:

Active assay..... ≥98,0 %
Moisture..... ≤8,0 %
Sodium (Na)..... 7,0-8,9 %
Degree of substitution..... 0,65-0,90
pH value (1 %, H_2O)..... 6,5-8,5
Viscosity (2 % solution)..... 1500-3100 mPa s

6190.1	250 g	plastic	25,30 €
6190.2	1 kg	plastic	82,70 €
Original pack 6 x 1 kg			78,57/1 kg

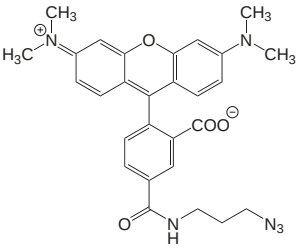
N-[N-(L-3-trans-Carboxy-oxirane-2-carbonyl)leucyl]-agmatine

▶ E-64 see p. 1963

α-Carboxypenicillin Disodium

▶ Carbenicillin disodium salt see p. 1877

5-Carboxytetramethyl-rhodamine Azide (5-TAMRA-Azide)



5-Carboxytetramethyl-rhodamine Azide (5-TAMRA-Azide)

≥95 %

Fluorescent dye

For a 10 mM solution: add 195 µl to 1 mg.

5-((3-Azidopropyl)carbamoyl)-2-(6-(dimethylamino)-3-(dimethyliminio)-3*H*-xanthen-9-yl)benzoate, 5-TAMRA-Azide

$C_{28}H_{28}N_6O_4$

M 512,56 g/mol

Storage temp.: -20 °C
Transport temp.: cooled

[1192590-89-8]

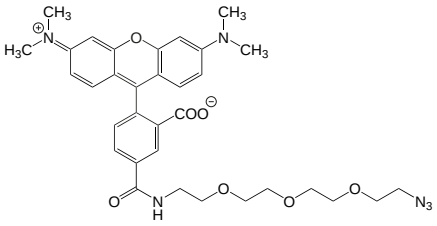
WGK 3

Type analysis:

Appearance..... dark red solid
Assay (LCMS)..... ≥95 %
Absorption max. (DMF)..... 546 nm
Emission max. (DMF)..... 579 nm
Molar extinction coefficient ε..... 91 000 $cm^{-1}M^{-1}$
Solubility..... DMSO, DMF, MeOH
For a 10 mM solution: add 195 µl to 1 mg.

7807.1	1 mg	plastic	47,20 €
7807.2	5 mg	plastic	81,60 €
7807.3	10 mg	plastic	121,40 €
7807.4	100 mg	plastic	478,40 €

5-Carboxytetramethyl-rhodamine-PEG3-Azide (5-TAMRA-PEG3-Azide)



5-Carboxytetramethyl-rhodamine-PEG3-Azide (5-TAMRA-PEG3-Azide)

≥90 %
Fluorescent dye
For a 10 mM solution: add 158 µl to 1 mg.
5-((2-(2-(2-(2-Azidoethoxy)ethoxy)ethoxy)-ethyl)carbamoyl)-2-(6-(dimethylamino)-3-(dimethyliminio)-3*H*-xanthen-9-yl)benzoate, 5-TAMRA-PEG3-Azide
$C_{33}H_{38}N_6O_7$
M 630,69 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[1380486-02-1]
WGK 1

Type analysis:
Appearance. ..... dark red solid
Assay (HPLC). ..... ≥90 %
Absorption max. (DMF). ..... 546 nm
Emission max. (DMF). ..... 579 nm
Molar extinction coefficient ε. ..... 91 000 $cm^{-1}M^{-1}$
Solubility. ..... DMSO, DMF, MeOH, Water (low)
For a 10 mM solution: add 158 µl to 1 mg.

7808.1	1 mg	plastic	45,70 €
7808.2	5 mg	plastic	79,45 €
7808.3	10 mg	plastic	120,95 €
7808.4	100 mg	plastic	471,95 €

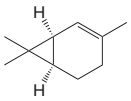
α-Carboxy-α-3-thienylmethylpenicillin disodium salt

▶ Ticarcillin disodium salt see p. 2407

Cardiogreen

▶ Indocyanine green see p. 2066

(+)-2-Carene



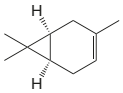
(+)-2-Carene

ROTICHROM® GC
Reference substance for GC.
$C_{10}H_{16}$
M 136,23 g/mol
D ~0,862 • bp 167-168 °C
flp 38 °C
Storage temp.: +4 °C
[4497-92-1] • EC No. 224-792-4
UN No. 2319 • ADR 3 III
Warning H226

Type analysis:
Purity (GC). ..... ≥92 %

4952.1	1 g	plastic	81,20 €

δ-3-Carene



δ-3-Carene

ROTICHROM® GC
Reference substance for GC.
$C_{10}H_{16}$
M 136,23 g/mol
D ~0,864 • bp 166-170 °C
flp 43 °C
Storage temp.: +4 °C
[13466-78-9] • EC No. 236-719-3
UN No. 2319 • ADR 3 III • WGK 2
Danger
H304-H226-H315-H317-H412

Type analysis:
Purity (GC). ..... ≥90 %

3572.1	1 g	plastic	40,75 €

Carmine (C.I. 75470)

Carmine (C.I. 75470)

for microscopy
Karmin, Karminrot
$C_{22}H_{20}O_{13}$
M 492,38 g/mol
[1390-65-4] • EC No. 215-724-4
WGK 1

Type analysis:
Suitability for microscopy. ..... complies
Absorption max. (in H_2O). ..... 525-535 nm
Loss on drying. ..... ≤20,0 %
Dye content. ..... 50,0-55,0 %

6859.1	10 g	glass	46,15 €
6859.2	25 g	glass	96,25 €

For further information, please see page 1522

Carmoisine

▶ Chromotrope® FB (C.I. 14720) see p. 1898

Carnauba wax

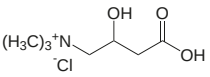
Carnauba wax

natural-coloured flakes
Cera Carnaubae
D ~0,99 • mp 81-86 °C
[8015-86-9] • EC No. 232-399-4

Type analysis:
Appearance. ..... light yellow flakes
Drop point. ..... 81-86 °C
Acid value (mg KOH/g). 2-7

3514.1	1 kg	plastic	52,15 €
Original pack 6 x 1 kg			49,54/1 kg

DL-Carnitinchloride



DL-Carnitinchloride

≥98 %, for biochemistry
Bicarnesin HCl, (±)-Carnitin hydrochloride
$C_7H_{15}O_3N \cdot HCl$
M 197,66 g/mol • mp 197-199 °C
[461-05-2] • EC No. 207-309-1 • WGK 1
Warning H315-H319-H335

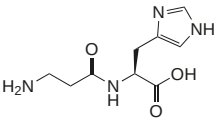
Type analysis:
Appearance. ..... white, fine crystals
Assay. ..... ≥98,0 %

7212.1	25 g	plastic	60,75 €

(±)-Carnitin hydrochloride

▶ DL-Carnitinchloride see p. 1879

L-Carnosine



L-Carnosine

≥98 %, for biochemistry
N-β-Alanyl-L-histidine, H-β-Ala-His-OH
$C_9H_{14}N_4O_3$
M 226,24 g/mol • mp ~250 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[305-84-0] • EC No. 206-169-9
WGK 2

Type analysis:
Assay (titr.). ..... ≥98 %
Solution (2 % in H_2O). ..... colourless
Water (KF). ..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in H_2O). ..... +21,0° ±1°
Heavy metals (as Pb). ..... ≤0,001 %

4148.1	1 g	glass	26,80 €
4148.2	5 g	glass	88,05 €

Ψ,Ψ-Carotene

▶ Lycopene see p. 2107

Carotene

Carotene

Natural, oil-soluble, liquid

Carotenoids from *Tagetes erecta*

$C_{40}H_{56}$

M 536,89 g/mol

D 1,0

mp 183 °C • flp 103 °C

Storage temp.: +4 °C

[7235-40-7] • EC No. 230-636-6

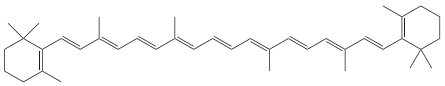
WGK 1

Type analysis:

Appearance. ..... red-brown liquid
Solubility. ..... completely soluble in cooking-oils
Dye content. ..... ≥2,5 % lutein
Water (KF). ..... ≤1 %
Density (20 °C). 0,92-0,94
Viscosity (20 °C/Brookfield). ..... ≤300 mPa s
Intensity of colour (in dichloromethane/ethanol):
E/1 %/443 nm. 69-73
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0002 %

7864.1	250 g	glass	48,30 €

β-Carotene



β-Carotene

ROTICHROM® ~CHR

$C_{40}H_{56}$

M 536,89 g/mol

D 1,0

mp 1863 °C • flp 103 °C

Storage temp.: -20 °C

Transport temp.: room temp.

[7235-40-7] • EC No. 230-636-6

WGK 1

5669.1	10 mg	glass	234,25 €

β-β-Carotene-3-ol

▶ β-Cryptoxanthin see p. 1914

Carotinoids

Art. No.	Description	Page
5674	Capsanthin	1876
5669	β-Carotene	1880
5675	β-Cryptoxanthin	1914
4452	Helenien	2034
5671	Lutein	2106
1180	Lycopene	2107
5670	Lycopene	2107
5673	Physalien	2212
5672	Zeaxanthin	2449

Carrageenan, iota

Carrageenan, iota

highly pure

Weakly gelating Carrageenan of iota type. Forms soft gels. For gelling of watery liquids like culture media for plants or animals in general, and for gelling of dairy products in particular. Manufactured from cultured and controlled sea weeds.

Carrageenan

[9062-07-1] • EC No. 232-949-3

Guarantee analysis:

Appearance. ..... white-pale tan
Particle size (95 %). ..... ≤0,149 mm
Loss on drying. ..... ≤12 %
Arsenic (As). ..... ≤3 ppm
Lead (Pb). ..... ≤5 ppm
Cadmium (Cd). ..... ≤2 ppm
Mercury (Hg). ..... ≤1 ppm
pH value. 8,0-11,0
Microbiological Analysis. ..... complies

3675.1	25 g	plastic	23,15 €
3675.2	100 g	plastic	58,60 €
3675.3	500 g	plastic	203,20 €
Original pack 6 x 500 g			193,04/500 g

For further information, please see page 1498

Carrageenan, kappa

Carrageenan, kappa

highly pure

Strongly gelling Carrageenan of kappa type. Forms gels of high gel strength. For gelling of watery liquids like e.g. culture media for plants or animals. Manufactured from cultured and controlled sea weeds.

Carrageenan

[11114-20-8] • EC No. 234-350-2

Guarantee analysis:

Appearance. ..... white-pale tan
Gel strength (1,5 %, aqueous). ..... 1200-1800 g/cm²
Particle size (95 %). ..... <0,25 mm
Loss on drying. ..... <12 %
Arsenic (As). ..... <3 ppm
Lead (Pb). ..... <5 ppm
Cadmium (Cd). ..... <2 ppm
Mercury (Hg). ..... <1 ppm
pH value. 7,0-11,0
Microbiological Analysis. ..... complies
Contains KCl

3059.1	25 g	plastic	23,15 €
3059.2	100 g	plastic	58,60 €
3059.3	500 g	plastic	203,20 €
Original pack 6 x 500 g			193,04/500 g

For further information, please see page 1498

Carrez solution I

Carrez solution I

for determination of sugars and starch

Zinc acetate and acetic acid solution

D 1,11

UN No. 3082 • ADR 9 III • WGK 3

H411

9944.1	500 ml	plastic	36,05 €

Carrez solution II

Carrez solution II

for determination of sugars and starch

Potassium hexacyanoferrate(II) solution

D 1,07

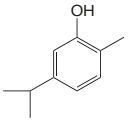
WGK 2

9950.1	500 ml	plastic	36,05 €

Carrier Ampholyte

▶ Roti®lyte Carrier Ampholyte see p. 2287

Carvacrol



Carvacrol

≥97 %

5-Isopropyl-2-methyl-phenol, Isothymol, 2-Hydroxy-p-cymene

$C_{10}H_{14}O$

M 150,21 g/mol

D 0,98 • bp 236-238 °C

mp 3-4 °C

Solubility: 1,25 g/l (H_2O, 25 °C)

[499-75-2] • EC No. 207-889-6

WGK 1

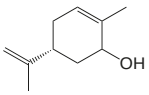
Warning H302-H315-H319

Type analysis:

Appearance. ..... colourless liquid
Assay (GC). ..... ≥97,0 %
Density (d 20 °C/4 °C). 0,976-0,978

8808.1	10 ml	glass	34,30 €

(-)-Carveol



(-)-Carveol

97 %, mixture of isomers

p-Mentha-6,8-dien-2-ol

$C_{10}H_{16}O$

M 152,24 g/mol

D 0,958 • bp 226-227 °C

flp 98 °C

[99-48-9] • EC No. 202-757-4

WGK 2

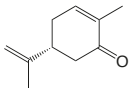
Warning H315-H319-H335

Type analysis:

Assay (GC). ..... ≥96,5 %
Appearance. ..... clear, colourless liquid
Specific rotation $[\alpha]_D^{20}$ (c=1 % in $CHCl_3$). ..... -112° ±5°

7219.1	5 g	glass	81,60 €

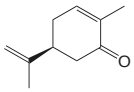
(-)-Carvone



(-)-Carvone
ROTICHROM® ~CHR
$C_{10}H_{14}O$
M 150,22 g/mol
D 0,92 • bp 230-231 °C
flp 88 °C
Solubility: insoluble (H_2O, 20 °C)
Storage temp.: +4 °C
[6485-40-1] • EC No. 229-352-5
WGK 2
Warning H302

8811.1	100 ml	glass	52,60 €

(+)-Carvone

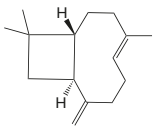


(+)-Carvone
ROTICHROM® GC
Reference substance for GC.
$C_{10}H_{14}O$
M 150,22 g/mol
D ~0,960 • bp 229 °C
flp 89 °C
Solubility: 1,3 g/l (H_2O, 18 °C)
Storage temp.: +4 °C
[2244-16-8] • EC No. 218-827-2
WGK 1

Type analysis:
Purity (GC)..... ≥98 %

6947.2	100 mg	glass	87,00 €

β-Caryophyllene



β-Caryophyllene
ROTICHROM® GC
Reference substance for GC.
$C_{15}H_{24}$
M 204,36 g/mol
D 0,89 • bp 260-261 °C
flp >100 °C
Storage temp.: +4 °C
[87-44-5] • EC No. 201-746-1
WGK 1

Type analysis:
Purity (GC)..... ≥95 %

7232.2	100 mg	glass	127,95 €

Casamino acids

▶ Casein hydrolysate see p. 1881

Casein

Casein
≥95 %, soluble in alkalis
Solubility: 20 g/l (H_2O, 25 °C)
[9000-71-9] • EC No. 232-555-1

Type analysis:
Assay (ex N, dry substance)..... ≥95 %
Ash content (800 °C)..... ≤3 %
Loss on drying (105 °C)..... ≤10 %
Free acid (as lactic acid)..... ≤1,5 %
Particle size (<315 µm)..... ≥95 %
Fat..... ≤1,0 %
Glucose (TLC)..... ≤0,2 %
Lactose (TLC)..... ≤0,5 %
Microbiological assay..... complies

7555.2	100 g	plastic	26,80 €
7555.1	500 g	plastic	105,90 €
Original pack 6 x 500 g			100,61/500 g

Casein hydrolysate

Casamino acids
Solubility: 310 g/l (H_2O, 23 °C)
Storage temp.: +20 °C
[65072-00-6] • EC No. 265-363-1
WGK 1

Casein hydrolysate, bacteriological
for biochemistry, acidic hydrolysate

Type analysis:
Total nitrogen..... 7,0-8,5 %
pH value 4,5-6,0
Loss on drying..... <6 %
Ratio AN/TN..... 56-93 %
Amino nitrogen..... 4,5-6,5 %

A157.3	250 g	plastic	94,10 €
A157.1	500 g	plastic	143,55 €
Original pack 6 x 500 g			136,37/500 g
A157.2	1 kg	plastic	257,50 €
Original pack 6 x 1 kg			244,63/1 kg

For further information, please see page 1491

Casein hydrolysate, standard
for molecular biology, acidic hydrolysate
Ingredient of molecular and microbiological nutrient media, vitamin-free.

Type analysis:
Total nitrogen..... ≥5,0 %
Amino nitrogen..... ≥3,5 %
Ratio AN/TN..... ≥46 %
Ash content..... ≤45 %
pH value (2 % solution)..... 6,0-7,5

AE41.1	500 g	plastic	76,25 €
Original pack 6 x 500 g			72,44/500 g
AE41.2	1 kg	plastic	136,45 €
Original pack 6 x 1 kg			129,63/1 kg

For further information, please see page 1491

Casein peptone Lecithin Polysorbate Broth

▶ TAT Broth (Base) see p. 2394

Casein-sodium

▶ Sodium-Casein see p. 2334

CASO Agar

CASO Agar
Ph.Eur., for microbiology
For isolation and cultivation of non-fastidious organisms.
Application: Use 40 g for 1 l agar.
Agar medium B (Ph.Eur. 6.0), Casein Soya Bean Digest Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Peptone Agar, **TSB Agar**, Trypticasein Soy Agar
Storage temp.: +20 °C
WGK 1

Guarantee analysis:
Casein peptone (pancreas hydrolysate)..... 15 g/l
Soy peptone (papain hydrolysate)..... 5 g/l
Sodium chloride (NaCl)..... 5 g/l
Agar..... 15 g/l
pH value..... 7,3 ±0,2

X937.1	500 g	plastic	84,40 €
Original pack 6 x 500 g			80,18/500 g
X937.2	1 kg	plastic	150,40 €
Original pack 6 x 1 kg			142,88/1 kg
X937.3	2,5 kg	plastic	322,00 €
X937.7	5 kg	plastic	611,70 €

For further information, please see page 1440

CASO Agar, granulated

CASO Agar, granulated
granulated, Ph.Eur., for microbiology
For isolation and cultivation of non-fastidious organisms.
Application: Use 40 g for 1 l agar.
Agar medium B (Ph.Eur. 6.0), Agar medium with Casein- and Soy Peptone (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Pepton Agar, TSB Agar, Trypticasein Soy Agar
Storage temp.: +20 °C
WGK 1

Guarantee analysis:
Casein peptone (pancreas hydrolysate)..... 15 g/l
Soy peptone (papain hydrolysate)..... 5 g/l
Sodium chloride (NaCl)..... 5 g/l
Agar..... 15 g/l
pH value..... 7,3 ±0,2

1506.1	500 g	plastic	114,50 €
Original pack 6 x 500 g			108,78/500 g

For further information, please see page 1456

CASO Agar with Lecithin/ Polysorbate 80

CASO Agar with Lecithin/ Polysorbate 80

for microbiology

For detection of microorganisms from cosmetics and disinfected surfaces.

Application: Use 45,7 g for 1 l agar.

TSA Letheen, Tryptone Soy Agar Letheen, TSA with Tween® 80 and Lecithin

Storage temp.: +20 °C

WGK 1

Formulation:

Pancreatic digest of casein. ..... 15 g/l
Soy peptone. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Lecithin. ..... 0,7 g/l
Polysorbate 80. ..... 5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,2

8848.1	500 g	plastic	116,00 €
Original pack 6 x 500 g			110,20/500 g

For further information, please see page 1440

CASO Broth

Storage temp.: +20 °C

WGK 1

CASO Broth

Ph.Eur., for microbiology

For cultivation of fastidious and non-fastidious microorganisms.

Application: Use 30 g for 1 l broth.

Broth medium A (Ph.Eur. 6.0), Casein Soya Bean Digest Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Peptone Broth, **TSB Broth**, Tryptic Soy Broth

Guarantee analysis:

Casein peptone (pancreas hydrolysate) . ..... 17 g/l
Soy peptone (papain hydrolysate). ..... 3 g/l
di-Potassium hydrogen phosphate. ..... 2,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Glucose monohydrate. ..... 2,5 g/l
pH value. ..... 7,3 ±0,2

X938.1	500 g	plastic	70,45 €
Original pack 6 x 500 g			66,93/500 g
X938.2	1 kg	plastic	117,75 €
Original pack 6 x 1 kg			111,86/1 kg
X938.3	2,5 kg	plastic	249,95 €
X938.7	5 kg	plastic	471,95 €

For further information, please see page 1439

CASO Broth, granulated

granulated, Ph.Eur., for microbiology

For cultivation of fastidious and non-fastidious microorganisms.

Application: Use 30 g for 1 l broth.

Broth medium A (Ph.Eur. 6.0), Casein Soya Bean Digest Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Peptone Broth, **TSB Broth**, Tryptic Soy Broth

Guarantee analysis:

Casein peptone (pancreas hydrolysate) . ..... 17 g/l
Soy peptone (papain hydrolysate). ..... 3 g/l
di-Potassium hydrogen phosphate. ..... 2,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Glucose monohydrate. ..... 2,5 g/l
pH value. ..... 7,3 ±0,2
Granulation. ..... complies

6678.1	500 g	plastic	105,25 €
Original pack 6 x 500 g			99,99/500 g
6678.2	1 kg	plastic	170,85 €
Original pack 6 x 1 kg			162,31/1 kg

For further information, please see page 1456

CASO Broth vegetal

for microbiology, animal-free

For cultivation of fastidious and non-fastidious microorganisms.

Application: Use 30 g for 1 l broth.

Soy Peptone Broth, **TSB Broth**, Tryptic Soy Broth

Formulation:

Vegetable peptone . ..... 20 g/l
di-Potassium hydrogen phosphate. ..... 2,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Glucose. ..... 2,5 g/l
pH value. ..... 7,3 ±0,2

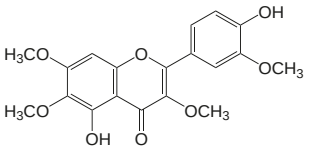
0139.1	500 g	plastic	85,90 €
Original pack 6 x 500 g			81,61/500 g

For further information, please see page 1439

Cassic acid

▶ Rhein see p. 2257

Casticin



Vitexicarpin
$C_{19}H_{18}O_8$
M 374,32 g/mol
[479-91-4]
WGK 3

Casticin

ROTI®STAR Primary Standard

Type analysis:

Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤1,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE39.1	10 mg	glass	880,45 €

Casticin

ROTICHROM® Working Standard

Type analysis:

Assay (HPLC). ..... ≥85,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC39.1	25 mg	glass	568,70 €

Casticin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Vitex agnus castus*.
Storage temp.: +4 °C

Type analysis:

Purity (HPLC). ..... >98 %

1126.1	20 mg	glass	456,90 €

Castor oil

Castor oil

Ph.Eur., nativ, extra pure

Oleum Ricini
D 0,95 • bp >350 °C
mp -10 to -18 °C • flp 229 °C
[8001-79-4] • EC No. 232-293-8

Guarantee analysis:

Appearance. ..... clear, colourless to yellowish oil
Identity. ..... complies
Relative density (20 °C). 0,952-0,965
Refractive index (20 °C). 1,477-1,481
Optical rotation. ..... +3,5° to +6,0°
Absorption (270 nm). ..... ≤0,7
Acid value. ..... ≤1,5 mg KOH/g
Peroxide value. ..... ≤10 meq O_2/kg
Unsaponifiable matter. ..... ≤0,8 %
Iodine value. ..... 82-90 g I_2/100 g
Water. ..... ≤0,3 %
Hydroxyl value. ..... ≥160 mg KOH/g
GC-fatty acid constituents:
C 16:0 Palmitic acid. ..... ≤2,0 %
C 18:0 Stearic acid. ..... ≤2,5 %
C 18:1 Oleic acid. ..... 2,5-6,0 %
C 18:1 Ricinoleic acid. ..... 85,0-92,0 %
C 18:2 Linoleic acid. ..... 2,5-7,0 %
C 18:3 Linolenic acid. ..... ≤1,0 %
C 20:1 Eicosenoic acid. ..... ≤1,0 %
Foreign oils (Ph.Eur.). ..... ≤1,0 %

4702.1	1 l	glass	30,00 €
Original pack 6 x 1 l			28,50/1 l
4702.3	2,5 l	glass	53,65 €
Original pack 4 x 2,5 l			50,97/2,5 l
4702.4	5 l	plastic	88,70 €
Original pack 2 x 5 l			84,27/5 l
4702.2	10 l	plastic	166,65 €

Catalase

Catalase

≥11 700 U/mg material (approx. 40 000 U/mg protein)

From bovine liver, freeze-dried
Storage temp.: -20 °C
Transport temp.: room temp.
[9001-05-2] • EC No. 232-577-1
WGK 1

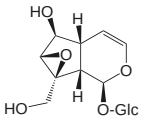
Type analysis:

Appearance. ..... brown green material
Activity. ..... ≥11 700 U/mg material

6025.1	5 MU	plastic	155,35 €

For further information, please see page 1316

Catalpol

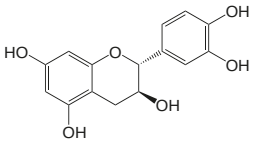


Catalpol
ROTICHROM® HPLC
Reference substance for HPLC.
From *Picrorhiza kurroa*.
$C_{15}H_{22}O_{10}$
M 362,33 g/mol
Storage temp.: +4 °C
[2415-24-9] • EC No. 219-324-0

Type analysis:
Purity (HPLC).....>99 %

1127.1	25 mg	glass	299,95 €

(+)-Catechin



(+)-Catechol
$C_{15}H_{14}O_6$
M 290,28 g/mol
mp 173-177 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[154-23-4] • EC No. 205-825-1
WGK 1

(+)-Catechin
≥98 %
From *Camellia sinensis*.

Type analysis:
Assay (HPLC).....≥98,0 %

6356.1	10 mg	glass	149,45 €

(+)-Catechin
ROTICHROM® ~CHR
From *Camellia sinensis*.

6200.1	1 g	glass	34,30 €

DL-Catechin hydrate

DL-Catechin hydrate
>96 %, for biochemistry
trans-3,3',4',5,7-Pentahydroxyflavan
$C_{15}H_{14}O_6 \cdot x\ H_2O$
M 290,28 + x H_2O g/mol
mp 200 °C
[7295-85-4] • EC No. 230-731-2
WGK 1
⚠ **Warning** H315-H319-H335

Type analysis:
Appearance..... light beige powder
Assay (HPLC).....≥96 %

8822.1	1 g	glass	117,20 €

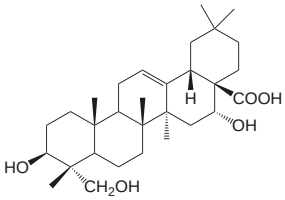
Catechins / Tannins

Art. No.	Description	Page
6356	(+)-Catechin	1883
6200	(+)-Catechin	1883
8822	DL-Catechin hydrate	1883
7293	(-)-Epicatechin	1971
NE41	(-)-Epicatechin	1971
NC41	(-)-Epicatechin	1971
1139	(-)-Epicatechin	1971
5798	(-)-Epicatechin	1971
6358	(-)-Epicatechin gallate	1971
6361	(-)-Epigallocatechin gallate	1972
4480	(-)-Gallocatechin	2011
1151	Hamamelitannin	2032
2726	Tannic acid	2393
4239	Tannic acid	2393

(+)-Catechol
▶ (+)-Catechin see p. 1883

Cation exchanger
▶ Dowex® 50 W X 2 Cation exchanger see p. 1961
▶ Ion exchange resin Roti®change see p. 2071

Caulophyllogenin



Caulophyllogenin
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{30}H_{48}O_5$
M 488,71 g/mol
mp >300 °C
Storage temp.: +4 °C
[52936-64-8] • EC No. 258-265-5

Type analysis:
Purity (HPLC).....≥99 %

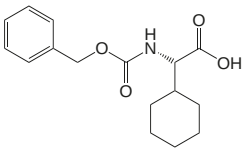
7439.1	5 mg	glass	521,40 €

Caulosapogenin
▶ Hederagenin see p. 2034

Cbz-L-Arginine
▶ Z-L-Arginine see p. 2449

Cbz-L-Aspartic acid
▶ Z-L-Aspartic acid see p. 2449

Cbz-Cyclohexyl-L-glycine



Cbz-Cyclohexyl-L-glycine
PEPTIPURE® ≥98 %, for biochemistry
Cbz-L-Chg-OH
$C_{16}H_{21}NO_4$
M 291,34 g/mol
mp 111 °C
Storage temp.: +4 °C
[69901-75-3]
WGK 1

Type analysis:
Assay (HPLC).....≥98,0 %
Water (KF).....≤1,0 %

6636.1	500 mg	glass	21,00 €
6636.2	1 g	glass	33,25 €
6636.3	5 g	glass	139,25 €

Cbz-L-Glutamic acid
▶ Z-L-Glutamic acid see p. 2449

Cbz-L-Chg-OH
▶ Cbz-Cyclohexyl-L-glycine see p. 1883

Cbz-L-Leucine
▶ Z-L-Leucine see p. 2453

Cbz-L-Lysine
▶ Z-L-Lysine see p. 2453

Cbz-(L)-Phenylalanine
▶ Z-L-Phenylalanine see p. 2453

CCA
▶ Coliforms chromogenic Agar (ISO) see p. 1905

CCDA Supplement
▶ Campylobacter Supplement see p. 1874

CDI
▶ 1,1'-Carbonyldiimidazole (CDI) see p. 1878

CDTA
▶ trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate see p. 1932

CDTA disodium salt solution (0,1 N)

CDTA disodium salt solution

0,1 mol/l - 0,1 N volumetric standard solution

UN No. 1824 • ADR 8 III • WGK 1

Warning H290

Type analysis:

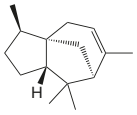
Amount-of-substance conc. ..... 0,1 mol/l ±0,2 %

0243.1	1 l	plastic	203,20 €
Original pack 6 x 1 l			193,04/1 l

CdTe

▶ Quantum Dots, hydrophilic see p. 2247

(-)-α-Cedrene



(-)-α-Cedrene

ROTICHROM® GC

Reference substance for GC.

$C_{15}H_{24}$

M 204,35 g/mol

D ~0,932 • bp 261-262 °C

flp 104 °C

Storage temp.: +4 °C

[469-61-4] • EC No. 207-418-4

UN No. 3082 • ADR 9 III • WGK 2

Warning H400-H410-H315-H319

Type analysis:

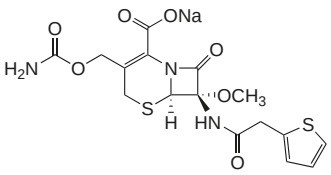
Purity (GC) ..... ≥96 %

8908.1	100 mg	plastic	201,60 €

Cefomonil

▶ Cefsulodin sodium salt see p. 1884

Cefoxitin sodium salt



Cefoxitin sodium salt

≥98 %, for biochemistry

Cephalosporin-antibiotic

$C_{16}H_{16}N_3NaO_7S_2$

M 449,43 g/mol

mp >160 °C

Solubility: 50 g/l

Storage temp.: +4 °C

[33564-30-6] • EC No. 251-574-6 • WGK 1

Danger H334-H335-H315-H319-H317

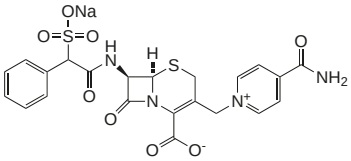
Type analysis:

Assay (HPLC) ..... ≥98 %
Solution (1 % in H_2O) ..... colourless to light yellowish
Water (KF) ..... ≤2,0 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in methanol) ..... +203° to +214°
pH value (10 % in water) 4,2-7,0
Heavy metals (as Pb) ..... ≤0,002 %

4156.1	250 mg	glass	53,25 €
4156.2	500 mg	glass	86,55 €

For further information, please see page 1500

Cefsulodin sodium salt



Cefsulodin sodium salt

≥97 %, for biochemistry

Cephalosporin-antibiotic

Cefomonil, Pseudocef

$C_{22}H_{19}N_4O_8S_2Na$

M 554,53 g/mol

Solubility: 50 mg/l (H_2O, 20 °C)

Storage temp.: -20 °C

Transport temp.: room temp.

[52152-93-9] • EC No. 257-692-4

WGK 1

Danger H334-H335-H315-H319-H317

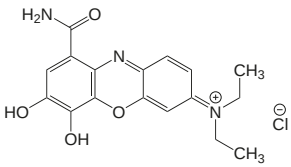
Type analysis:

Assay ..... ≥97 %
Solution (5 % in water) ..... yellowish, clear
Water (KF) ..... ≤7 %
pH value (c=2 in water) 3,3-4,8
Spec. rotation $[\alpha]_D^{20}$ (c=1 in water) ..... +15,5° to +18,5°

4014.1	100 mg	glass	53,65 €
4014.2	250 mg	glass	93,45 €

For further information, please see page 1500

Celestine blue (C.I. 51050)



Celestine blue (C.I. 51050)

for microscopy

$C_{17}H_{18}ClN_3O_4$

M 363,80 g/mol

mp 227-230 °C

[1562-90-9] • EC No. 216-346-2 • WGK 3

Type analysis:

Appearance ..... black to dark brown powder
Appearance of solution (0,1 % in H_2O) ..... dark blue to dark purple

7646.1	5 g	glass	25,30 €
7646.2	25 g	glass	91,95 €
7646.3	100 g	glass	310,70 €

For further information, please see page 1522

Celite®

[68855-54-9] • EC No. 272-489-0

Celite® 503

filter aid on silicate basis

Flux calcinated white diatoms

Type analysis:

Wet density ..... ≤345 g/l
Sieve residue (150 mesh) ..... ≤16,5 %
Permeability (Darcy) 1,27-2,4

0007.2	1 kg	plastic	26,80 €
Original pack 6 x 1 kg			25,46/1 kg
0007.1	2,5 kg	plastic	53,65 €

Celite® 535

filter aid on silicate basis

Flux calcinated white diatoms

Type analysis:

Wet density ..... ≤370 g/l
Sieve residue (150 mesh) ..... ≤25 %
Permeability (Darcy) 1,8-3,9

0009.2	1 kg	plastic	20,35 €
Original pack 6 x 1 kg			19,33/1 kg
0009.1	2,5 kg	plastic	41,85 €

Celite® 545

filter aid on silicate basis

Flux calcinated white diatoms

Type analysis:

Wet density ..... ≤480 g/l
Sieve residue (150 mesh) ..... ≤30 %
Permeability (Darcy) 3,5-5,5

0011.3	250 g	plastic	12,05 €
0011.2	1 kg	plastic	22,50 €
Original pack 6 x 1 kg			21,38/1 kg
0011.1	2,5 kg	plastic	33,90 €
0011.4	10 kg	plastic	99,45 €
0011.5	25 kg	plastic	185,90 €

Celite® Hyflo Super Cel®

filter aid on silicate basis

Flux calcinated white diatoms

Type analysis:

Wet density ..... ≤345 g/l
Sieve residue (150 mesh) ..... ≤12 %
Permeability (Darcy) 0,73-1,64

0005.2	1 kg	plastic	25,70 €
Original pack 6 x 1 kg			24,42/1 kg
0005.1	2,5 kg	plastic	47,85 €

Celite®, calcinated

[91053-39-3] • EC No. 293-303-4

Celite® 512

filter aid on silicate basis
Calcinated pink diatoms

Type analysis:
Wet density..... ≤346 g/l
Sieve residue (150 mesh)..... ≤12 %
Permeability (Darcy)..... 0,28-0,76

0050.2	1 kg	plastic	23,55 €
Original pack 6 x 1 kg			22,37/1 kg
0050.1	2,5 kg	plastic	46,15 €

Celite® Standard Super Cel®

filter aid on silicate basis
Calcinated pink diatoms

Type analysis:
Wet density..... ≤338 g/l
Sieve residue (150 mesh)..... ≤7 %
Permeability (Darcy)..... 0,16-0,36

0003.2	1 kg	plastic	22,50 €
Original pack 6 x 1 kg			21,38/1 kg
0003.1	2,5 kg	plastic	42,90 €

Cell Culture Media

Art. No.	Description	Page
9031	Roti®-CELL DMEM : F12	1372
9005	Roti®-CELL DMEM High Glucose	1372
9006	Roti®-CELL DMEM High Glucose	1372
9007	Roti®-CELL DMEM High Glucose	1372
9010	Roti®-CELL DMEM High Glucose	1372
9011	Roti®-CELL DMEM High Glucose	1372
9019	Roti®-CELL DMEM High Glucose	1372
9023	Roti®-CELL DMEM High Glucose	1372
9030	Roti®-CELL DMEM Low Glucose	1372
9027	Roti®-CELL DMEM Low Glucose	1372
9124	Roti®-CELL DPBS	1376
9130	Roti®-CELL 10x DPBS	1376
9131	Roti®-CELL DPBS	1376
9058	Roti®-CELL Eagle's MEM-Alpha	1373
9082	Roti®-CELL Eagle's MEM-Alpha	1373
9049	Roti®-CELL Eagle's MEM / Earle's	1373
9048	Roti®-CELL Eagle's MEM / Earle's	1373
9047	Roti®-CELL Eagle's MEM / Earle's	1373
9044	Roti®-CELL Eagle's MEM / Earle's	1373
9056	Roti®-CELL Eagle's MEM / Hanks'	1373
9108	Roti®-CELL Ham's F12	1374
9117	Roti®-CELL Hanks' BSS	1376
9118	Roti®-CELL Hanks' BSS	1376
9119	Roti®-CELL Hanks' BSS	1376
9122	Roti®-CELL Hanks' BSS	1376
9033	Roti®-CELL Iscove's MDM	1372
9035	Roti®-CELL Iscove's MDM	1372
9109	Roti®-CELL Leibovitz's L15	1374
9111	Roti®-CELL McCoy's 5A	1374
9112	Roti®-CELL Medium 199 / Earle's	1374
9085	Roti®-CELL RPMI-1640	1373
9086	Roti®-CELL RPMI-1640	1373
9091	Roti®-CELL RPMI-1640	1373
9093	Roti®-CELL RPMI-1640	1373
9094	Roti®-CELL RPMI-1640	1373
9099	Roti®-CELL RPMI-1640	1373
9104	Roti®-CELL RPMI-1640	1373
9114	Roti®-CELL TC100	1374
9116	Roti®-CELL William's E	1374

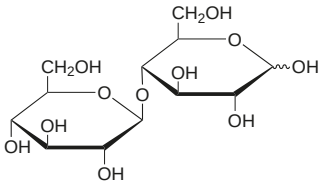
Cell Culture Ready-made Solutions

Art. No.	Description	Page
L787	DOTAP	1960
CP11	Geneticin disulphate (G418)-solution	1380
2039	Geneticin disulphate (G418)-solution	1380
HN09	Gentamycin sulphate solution	1380
2475	Gentamycin sulphate solution	1380
CP12	Hygromycin B solution	1380
1287	Hygromycin B solution	1380
9165	Roti®-CELL Bicarbonate solution	1375
9124	Roti®-CELL DPBS	1376
9130	Roti®-CELL 10x DPBS	1376
9131	Roti®-CELL DPBS	1376
9135	Roti®-CELL DPBS/EDTA	1383
0621	Roti®-CELL 0.1% Gelatine solution	1378
0646	Roti®-CELL 2% Gelatine solution	1378
9183	Roti®-CELL Glutamine solution	1375
9117	Roti®-CELL Hanks' BSS	1376
9118	Roti®-CELL Hanks' BSS	1376
9119	Roti®-CELL Hanks' BSS	1376
9122	Roti®-CELL Hanks' BSS	1376
9157	Roti®-CELL HEPES solution	1375
0647	Roti®-CELL MEM-AA solution	1375
9185	Roti®-CELL MEM-NEAA solution	1375
9830	Roti®-CELL Myco-Free	1380
9143	Roti®-CELL PBS	1379
9150	Roti®-CELL 10x PBS	1379
9152	Roti®-CELL PBS/EDTA	1383
9182	Roti®-CELL Pyruvate solution	1375
9186	Roti®-CELL Water	1375
P001	Roti®-Fect	1387
CL21	Roti®-Fect Plus	1387
3129	Roti®-Fect RNAi Kit	1386
AE29	Roti®-Insectofect	1388
0642	Roti®-Sep 1077 human	1384
0622	Roti®-Sep 1077 animal	1385
0634	Roti®-Sep 1077 human/tube	1385
0624	Roti®-Sep 1086 mouse	1385
8607	Sodium chloride solution 0,9 %	1378
3255	Water	1379

Cell Culture Reagents

Art. No.	Description	Page
6831	L-Alanyl-L-glutamine	1778
CP77	Albumin Fraction V, very low endotoxin	1779
CP84	Albumin Fraction V, endotoxin-tested	1779
HP62	Ampicillin sodium salt	1805
1655	L-Arginine	1815
1989	L-Arginine monohydrochloride	1815
KK37	L-Asparagine monohydrate	1818
1690	L-Aspartic acid	1818
HN04	Calcium chloride dihydrate	1870
1693	L-Cysteine	1919
1694	L-Cysteine hydrochloride monohydrate	1920
1695	L-Cystine	1920
4198	DEAE Dextran	1923
A994	Dimethyl sulphoxide (DMSO)	1950
L787	DOTAP	1960
6833	Flavine-adenine-dinucleotide disodium salt (FAD)	1320
8878	D(+)-Galactose	1382
HN06	D(+)-Glucose	1382
1743	L-Glutamic acid	1381
HN08	L-Glutamine	1381
6832	L-Glutathione reduced	1381
HN07	Glycine	1381
HN77	HEPES	1377
1696	L-Histidine	2044
1697	L-Histidine hydrochloride monohydrate	2045
1698	L-Isoleucine	2078
1699	L-Leucine	2097
6829	L-Lysine monohydrate	2108
1700	L-Lysine hydrochloride	2108
HN11	Magnesium acetate tetrahydrate	2110
HN03	Magnesium chloride hexahydrate	2111
8882	D(+)-Maltose monohydrate	2118
8883	D(-)-Mannitol	2121
8887	D(+)-Mannose	2122
1702	L-Methionine	2134
1703	L-Ornithine monohydrochloride	2186
HP49	Penicillin G potassium salt	2195
HP48	Penicillin G sodium salt	2195
HP10	Pen/Strep-PreMix	2195
1709	L-Phenylalanine	2206
HN10	Potassium acetate	2221
HN02	Potassium chloride	2224
1713	L-Proline	2238
1033	Roti®fair HBS	2275
P001	Roti®-Fect	2280
CL21	Roti®-Fect Plus	2280
3129	Roti®-Fect RNAi Kit	2280
AE29	Roti®-Insectofect	2285
8890	D(+)-Saccharose	2303
1714	L-Serine	2313
HN05	Sodium acetate trihydrate	2331
HN00	Sodium chloride	2334
HN12	tri-Sodium citrate dihydrate	2335
HN01	Sodium hydrogen carbonate	2339
HP66	Streptomycin sulphate	2381
HP63	Tetracycline hydrochloride	2399
1738	L-Threonine	2405
8897	D(+)-Trehalose dihydrate	2413
3170	TRIS	2421
1739	L-Tryptophan	2425
1741	L-Tyrosine	2428
1742	L-Valine	2433
0242	Vancomycin hydrochloride	2433
3255	Water	2439

D(+)-Cellobiose



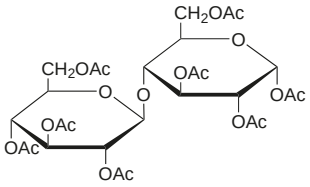
D(+)-Cellobiose

≥98 %, for biochemistry
4-O-β-D-Glucopyranosyl-D-glucose
$C_{12}H_{22}O_{11}$
M 342,29 g/mol • mp 225 °C
[528-50-7] • EC No. 208-436-5

Type analysis:
Appearance..... white to off-white, cryst. powder
Assay (HPLC)..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O , 15 h)..... +33° to +35°
Loss on drying (3 h, 110 °C)..... ≤2,0 %
Solution (5 % in H_2O)..... colourless
Heavy metals (as Pb)..... ≤0,001 %

5840.1	5 g	plastic	18,85 €
5840.3	25 g	plastic	57,55 €
5840.2	100 g	plastic	204,80 €

α-D-Cellobiose octaacetate



α-D-Cellobiose octaacetate

≥98 %, for biochemistry
Octaacetyl-α-D-cellobiose
$C_{28}H_{38}O_{19}$
M 678,60 g/mol
mp 225-229 °C
[5346-90-7] • EC No. 226-304-5

Type analysis:
Assay (TLC)..... ≥98,0 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in chloroform)..... +41,0° to +43,0°
Water (KF)..... ≤0,5 %
Melting point..... 225-229 °C

5463.1	5 g	plastic	28,95 €
5463.2	25 g	plastic	98,80 €

X-β-D-Cellobioside

▶ 5-Bromo-4-chloro-3-indoxyl-β-D-cellobioside see p. 1852

Cell proliferation test solution

▶ Rotitest® Vital see p. 2300

Cellulose

Cellulose

for column chromatography
Fibre length 0,02-0,1 mm
mp 200 °C (dec.)
[9004-34-6] • EC No. 232-674-9

Guarantee analysis:
pH value..... 5-7
Water..... ≤10 %

5873.3	100 g	plastic	15,90 €
5873.1	500 g	plastic	38,50 €
Original pack 6 x 500 g			36,58/500 g
5873.2	1 kg	plastic	60,90 €
Original pack 6 x 1 kg			57,86/1 kg

Cellulose acetate

Cellulose acetate

pure
Acetylcellulose
[9004-35-7]

Type analysis:
Appearance..... white granules

4458.1	250 g	plastic	30,00 €

Cera alba

▶ Beeswax white see p. 1828

Cera Carnaubae

▶ Carnauba wax see p. 1879

Cera flava

▶ Beeswax yellow see p. 1828

Cerium Standards

▶ Cerium ICP Standard Solution see p. 2362
▶ Cerium ICP Standard Solution see p. 2367

Cerium(III) acetate hydrate

Cerium(III) acetate hydrate

ROTI®METIC 99,999 % (5N)
$Ce(CH_3CO_2)_3 \cdot x\ H_2O$
M 317,25 + x H_2O g/mol
mp ~115 °C
Solubility: ~260 g/l (H_2O, 20 °C)
[17829-82-2]
WGK 1

Warning H335

Type analysis:
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5372.1	10 g	plastic	82,25 €
5372.2	50 g	plastic	322,00 €

Cerium(III) acetate hydrate

Cerium(III) acetate hydrate

ROTI®REMETIC 99,99 %
$Ce(CH_3CO_2)_3 \cdot x\ H_2O$
M 317,25 + x H_2O g/mol
[537-00-8] • EC No. 208-654-0
WGK 1

Warning H335

Type analysis:
Assay (TREO*)..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7084.1	10 g	plastic	68,70 €

Cerium(IV) ammonium nitrate

Ammonium cerium(IV) nitrate
$(NH_4)_2[Ce(NO_3)_6]$
M 548,23 g/mol
D 2,49
mp ~108 °C
Solubility: 1410 g/l (H_2O, 20 °C)
[16774-21-3] • EC No. 240-827-6
UN No. 3085 • ADR 5.1 (8) II • WGK 1

Danger H272-H302-H314

Cerium(IV) ammonium nitrate

≥99,5 %, p.a.
Titration reagent in volumetry.

Guarantee analysis:
Assay (oxidim.)..... ≥99,5 %
Chloride (Cl)..... ≤0,01 %
Sulphate (SO_4)..... ≤0,01 %
Aluminium (Al)..... ≤0,005 %
Barium (Ba)..... ≤0,001 %
Chromium (Cr)..... ≤0,005 %
Copper (Cu)..... ≤0,001 %
Potassium (K)..... ≤0,001 %
Nickel (Ni)..... ≤0,001 %
Strontium (Sr)..... ≤0,001 %

HN28.1	50 g	plastic	46,15 €
HN28.2	100 g	plastic	84,40 €
HN28.3	250 g	plastic	153,65 €

Cerium(IV) ammonium nitrate

≥99 %, extra pure

Type analysis:
Assay..... ≥99 %
Silicon dioxide (SiO_2)..... ≤0,05 %
Ferric oxide (Fe_2O_3)..... ≤0,02 %
Natriumoxide (Na_2O)..... ≤0,02 %
Chloride (Cl)..... ≤0,01 %

3338.1	100 g	plastic	41,85 €
3338.2	250 g	plastic	90,20 €
3338.4	500 g	plastic	159,00 €
Original pack 6 x 500 g			151,05/500 g
3338.3	1 kg	plastic	299,95 €
Original pack 6 x 1 kg			284,95/1 kg

Cerium(IV) ammonium sulphate dihydrate

▶ Ammonium cerium(IV) sulphate dihydrate see p. 1796

Cerium(III) nitrate hexahydrate

$Ce(NO_3)_3 \cdot 6\ H_2O$
M 434,23 g/mol
mp 150 °C (dec.)
Solubility: 1760 g/l (H_2O, 25 °C)
[10294-41-4] • EC No. 233-297-2
UN No. 1477 • ADR 5.1 III • WGK 1

Danger H272-H318

Cerium(III) nitrate hexahydrate

ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5312.1	5 g	plastic	66,55 €
5312.2	25 g	plastic	206,95 €

Cerium(III) nitrate hexahydrate

ROTI®REMETIC 99,9 %

Type analysis:
Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7049.1	5 g	plastic	41,85 €
7049.2	25 g	plastic	71,95 €

Cerium(III) nitrate hexahydrate

≥99,5 %, p.a.

Type analysis:
Assay CeO_2 (TREO). ..... ≥99,5 %
Assay (TREO*). ..... ~39,0 %
Ferric oxide (Fe_2O_3). ..... ≤0,0015 %
Natriumoxide (Na_2O). ..... ≤0,005 %
Calcium oxide (CaO). ..... ≤0,005 %
Total REO impurities. ..... ≤0,5 %
Sulphate (SO_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,01 %
*Total rare earth oxide

HN18.1	100 g	plastic	78,40 €
HN18.2	500 g	plastic	299,95 €
Original pack 6 x 500 g			284,95/500 g

Cerium(III) oxalate hydrate

Cerium(III) oxalate hydrate

ROTI®REMETIC 99,9 %

$Ce_2(C_2O_4)_3 \cdot x\ H_2O$
M 544,29 + x H_2O g/mol
[15750-47-7] • EC No. 205-362-5
WGK 3

Warning H302+H312

Type analysis:
Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7067.1	10 g	plastic	68,70 €
7067.2	50 g	plastic	235,45 €

Cerium(IV) oxide

CeO_2
M 172,11 g/mol
mp ~2000 °C
Solubility: insoluble (H_2O, 20 °C)
[1306-38-3] • EC No. 215-150-4
WGK 1

Cerium(IV) oxide

ROTI®REMETIC 99,99 %

Type analysis:
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7042.1	10 g	plastic	48,30 €
7042.2	50 g	plastic	125,25 €

Cerium(IV) oxide

≥99,9 %, p.a.

Guarantee analysis:
Assay. ..... ≥99,9 %
Total REO impurities. ..... ≤0,1 %

9837.1	100 g	plastic	34,30 €
9837.2	500 g	plastic	102,05 €
Original pack 6 x 500 g			96,95/500 g
9837.3	1 kg	plastic	160,20 €
Original pack 6 x 1 kg			152,19/1 kg

Cerium(III) sulphate

Cerium(III) sulphate

ROTI®METIC 99,99 % (4N), anhydrous
Cerous sulphate
$Ce_2(SO_4)_3$
M 568,42 g/mol
mp 920 °C (dec.)
[13454-94-9] • EC No. 236-644-6
WGK 3

Warning H315-H319-H335

Type analysis:
Assay (metals basis). ..... 99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5603.1	25 g	plastic	199,45 €

Cerium(III) sulphate octahydrate

Cerium(III) sulphate octahydrate

ROTI®METIC 99,995 % (4N5)
Cerous sulphate
$Ce_2(SO_4)_3 \cdot 8\ H_2O$
M 712,54 g/mol
mp 250 °C (dec.)
[10450-59-6] • EC No. 236-644-6
WGK 1

Type analysis:
Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5601.1	50 g	plastic	188,15 €
5601.2	250 g	plastic	736,40 €

Cerium(IV) sulphate tetrahydrate

Cerium(IV) sulphate tetrahydrate

≥98 %, p.a.
Titration agent for ceriometry.
Ceric sulphate
$Ce(SO_4)_2 \cdot 4\ H_2O$ • M 404,30 g/mol
D 5,02 • mp 180-200 °C
Solubility: 38 g/l (H_2O, 50 °C)
[10294-42-5] • EC No. 237-029-5
UN No. 3260 • ADR 8 III • WGK 2

Warning H315-H319

Guarantee analysis:
Assay (iodom.). ..... ≥98 %
In H_2SO_4 insoluble matter. ..... ≤0,1 %
Substances not precipitated by NH_4OH. ..... ≤0,3 %
Chloride (Cl). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,003 %
Lead (Pb). ..... ≤0,003 %
Iron (Fe). ..... ≤0,015 %
Copper (Cu). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,005 %

P014.2	50 g	plastic	67,65 €
P014.1	100 g	plastic	116,00 €

Cerium(IV) sulphate solution (0,1 N)

Cerium(IV) sulphate solution

0,1 mol/l - 0,1 N volumetric standard solution
D 1,07 • bp 100 °C
UN No. 2796 • ADR 8 II • WGK 1

Warning H290-H315-H319

Type analysis:
Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,2 %
Titer. 0,998-1,002

P719.1	1 l	glass	69,35 €
Original pack 6 x 1 l			65,88/1 l
P719.7	5 l	plastic	244,60 €
Original pack 2 x 5 l			232,37/5 l

For further information, please see page 1681

Cerium trinitrate

▶ Cerium(III) nitrate hexahydrate see p. 1886

Cesium Standards

▶ Caesium AAS Standard Solution see p. 2359
▶ Caesium ICP Standard Solution see p. 2362
▶ Caesium ICP Standard Solution see p. 2366
▶ Caesium IC Standard Solution see p. 2377

Cesium salts

▶ Caesium carbonate see p. 1866
▶ Caesium chloride see p. 1866
▶ Caesium nitrate see p. 1867
▶ Caesium sulphate see p. 1867

Ceten

▶ 1-Hexadecene see p. 2039

Cetrimide Agar (Base)

Cetrimide Agar (Base)

Ph.Eur., for microbiology

For isolation and identification of *Pseudomonas aeruginosa*.

Application: Use 45,3 g for 1 l agar, add 10 ml glycerol.

Agar medium N (Ph.Eur. 6.0), Cetrimide Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), **CTM**

Storage temp.: +20 °C

UN No. 3077 • ADR 9 III • WGK 3

Warning H400

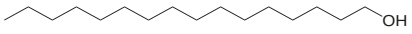
Guarantee analysis:

Gelatin peptone (Pancreas hydrolysate)..... 20 g/l
Magnesium chloride. ..... 1,4 g/l
Potassium sulphate. ..... 10 g/l
Cetrimide. ..... 0,3 g/l
Agar. ..... 13,6 g/l
pH value. ..... 7,2 ±0,2

X918.1	500 g	plastic	98,40 €
Original pack 6 x 500 g			93,48/500 g

For further information, please see page 1440

Cetyl alcohol



Cetyl alcohol

≥95 %

1-Hexadecanol, Alcohol C 16

$C_{16}H_{34}O$

M 242,45 g/mol

D 0,81 • bp 305-330 °C

mp 49-54 °C • flp ~155 °C

Solubility: <0,1 mg/l (H_2O, 25 °C)

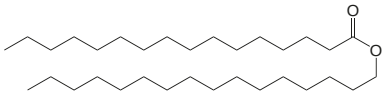
[36653-82-4] • EC No. 253-149-0

Type analysis:

Appearance. ..... white tablets
Assay. ..... ≥95 %
Water. ..... ≤0,1 %
Colour (Hazen). ..... ≤10
Ester value. ..... ≤0,5
Acid value. ..... ≤1,0
Iodine value. ..... ≤1,0
Melting point. ..... 49-54 °C

5762.1	1 kg	plastic	52,15 €
Original pack 6 x 1 kg			49,54/1 kg

Cetyl palmitate



Cetyl palmitate

synthetic

Spermaceti, Cetaceum

$C_{32}H_{64}O_2$

M 480,96 g/mol • mp 45-52 °C

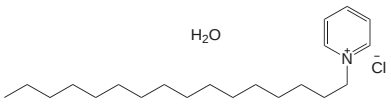
[540-10-3] • EC No. 208-736-6

Type analysis:

Appearance. ..... white, ceraceous powder respectively granules

9229.2	100 g	plastic	18,20 €
9229.1	1 kg	plastic	120,30 €
Original pack 6 x 1 kg			114,29/1 kg

Cetylpyridinium chloride monohydrate (CPC)



Cetylpyridinium chloride monohydrate (CPC)

≥98 %, for biochemistry

Cationic detergent

Hexadecylpyridinium chloride monohydrate, CPC

$C_{21}H_{38}ClN \cdot H_2O$

M 358,01 g/mol

mp 77-83 °C

Solubility: 50 g/l (H_2O, 20 °C)

[6004-24-6] • EC No. 204-593-9

UN No. 2811 • ADR 6.1 II • WGK 3

Danger

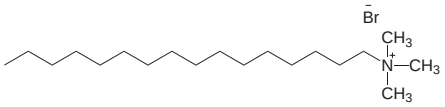
H301-H330-H400-H410-H315-H319-H335

Type analysis:

Assay (dry substance). ..... ≥98 %

CN27.1	100 g	plastic	29,60 €
CN27.2	500 g	plastic	110,65 €
Original pack 6 x 500 g			105,12/500 g

Cetyltrimethylammonium bromide (CTAB)



Cetyltrimethylammonium bromide (CTAB)

≥99 %, for biochemistry

Cationic detergent

Hexadecyl-trimethylammonium bromide, CTAB

$C_{19}H_{42}BrN$

M 364,46 g/mol

mp 248-251 °C • flp 244 °C

Solubility: 3 g/l (H_2O, 20 °C)

[57-09-0] • EC No. 200-311-3

UN No. 3077 • ADR 9 III • WGK 3

Danger

H302-H315-H318-H335-H373-H410

Type analysis:

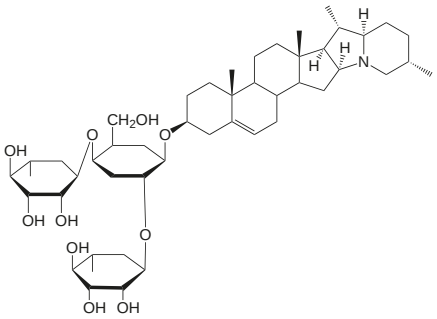
Assay (photometr., dry substance). ..... ≥99 %
pH value 5,0-7,0
Sulphate (SO_4^{2-}). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Melting point. ..... 249-253 °C
Loss on drying. ..... ≤1,0 %

9161.1	100 g	plastic	20,35 €
9161.3	500 g	plastic	69,35 €
Original pack 6 x 500 g			65,88/500 g
9161.2	1 kg	plastic	121,40 €
Original pack 6 x 1 kg			115,33/1 kg

CFA

▶ 3-Chloro-4-fluoroaniline see p. 1893

(-)-α-Chaconine



(-)-α-Chaconine

ROTICHROM® HPLC

From *Solanum tuberosum*

$C_{45}H_{73}NO_{14}$

M 852,07 g/mol

mp ~243 °C

Storage temp.: +4 °C

[20562-03-2]

WGK 3

Warning H361

Type analysis:

Purity (HPLC). ..... ≥98 %

4192.1	5 mg	glass	256,95 €

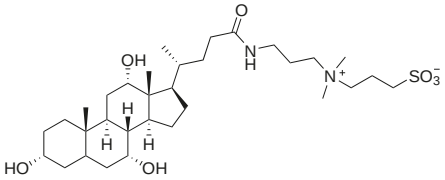
Chalcone

▶ Benzylidene acetophenone see p. 1834

Chapman Lactose Agar

▶ TTC Chapman Agar (with sodium heptadecylsulphate) (Base) see p. 2426

CHAPS



CHAPS

PUFFERAN® ≥98 %, for biochemistry

Buffer substance, zwitterionic detergent

3-[(3-Cholamidopropyl)dimethyl ammonio]-1-propane sulphonate

$C_{32}H_{58}N_2SO_7$

M 614,9 g/mol

mp 116 °C

Storage temp.: +4 °C

[75621-03-3]

Warning H315-H319-H335

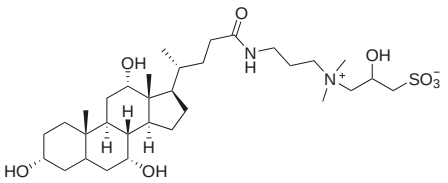
Guarantee analysis:

Appearance. ..... white powder
Assay. ..... ≥98 %
Loss on drying. ..... ≤2 %
Absorption:
400 nm. ..... ≤0,02
290 nm. ..... ≤0,05

1479.1	5 g	plastic	61,85 €
1479.3	10 g	plastic	103,10 €
1479.2	25 g	plastic	212,75 €
1479.4	100 g	plastic	450,45 €

For further information, please see page 1310

CHAPSO



CHAPSO

PUFFERAN® ≥99 %, for biochemistry

Buffer substance, zwitterionic detergent
3-[(3-Cholamidopropyl)-dimethylamino]-2-hydroxy-1-propanesulphonate
$C_{32}H_{58}N_2O_8S$
M 630,88 g/mol
mp ~184 °C
Storage temp.: +4 °C
[82473-24-3]
WGK 1

Warning H315-H319-H335

Guarantee analysis:

Assay (HPLC).....≥99 %
Water (KF).....≤2 %
UV-absorption (1 % in H_2O):
260 nm.....≤0,1
350 nm.....≤0,01

HN73.1	1 g	plastic	60,75 €
HN73.2	5 g	plastic	198,35 €
HN73.3	10 g	plastic	349,40 €

For further information, please see page 1310

Charcoal

C
M 12,01 g/mol
mp 3550 °C
[7440-44-0] • EC No. 231-153-3

Charcoal

p.a., powder, activated

Adsorbent

Guarantee analysis:

Substances soluble in ethanol.....≤0,2 %
Substances soluble in HCl.....≤1,0 %
Substances soluble in H_2O.....≤0,2 %
Methylene blue adsorption (0,15 % solution).....≥100 ml/g
Chloride (Cl).....≤0,01 %
Sulphate (SO_4).....≤0,01 %
Sulphide (S).....complies
Lead (Pb).....≤0,002 %
Calcium (Ca).....≤0,05 %
Iron (Fe).....≤0,025 %
Copper (Cu).....≤0,002 %
Nickel (Ni).....≤0,002 %
Ash content.....≤1 %
Loss on drying (120 °C).....≤10 %

X865.1	250 g	plastic	24,20 €
X865.2	500 g	plastic	37,55 €
Original pack 6 x 500 g			35,67/500 g
X865.3	1 kg	plastic	68,30 €
Original pack 6 x 1 kg			64,89/1 kg

For further information, please see page 1752

Charcoal

1-3 mm, made from peat, grey, steam activated

Fractured coal

Type analysis:

Methylene blue adsorption.....11 g/100 g
Bulk density.....~290 kg/m³
Ash.....≤8,0 %
Water.....≤2,0 %
pH value.....alkaline
Iodine value.....≥700
Particle size:
>3,15 mm.....≤10,0 %
<0,7 mm.....≤5,0 %

5966.1	1 kg	plastic	32,80 €
Original pack 6 x 1 kg			31,16/1 kg
5966.3	2,5 kg	plastic	73,65 €
5966.2	5 kg	plastic	126,35 €
5966.5	10 kg	plastic	233,85 €
5966.4	25 kg	plastic	482,70 €

For further information, please see page 1753

Charcoal

~3 mm, steam activated

For gas cleaning. Extruded charcoal.

Type analysis:

Butane adsorption (p/p_0=0,1).....18-23 g/100 g
Moisture.....≤5 %
Bulk density.....430-480 kg/m³

0998.1	500 g	plastic	40,35 €
Original pack 6 x 500 g			38,33/500 g
0998.2	1 kg	plastic	66,55 €
Original pack 6 x 1 kg			63,22/1 kg
0998.4	2,5 kg	plastic	136,45 €
0998.3	5 kg	plastic	241,90 €
0998.5	10 kg	plastic	407,45 €

For further information, please see page 1753

Charcoal

for the determination of AOX (column method)

Type analysis:

Iodine value.....≥1050 mg/g
Chloride (Cl).....≤0,0005 %
Particle size.....~50-150 µm

1299.1	10 g	glass	80,10 €

Charcoal

for the determination of AOX (shaking method)

Type analysis:

Iodine value.....≥1050 mg/g
Chloride (Cl).....≤0,0005 %
Particle size.....≤50 µm

1319.1	10 g	glass	75,15 €

Charcoal

Charcoal

powder, for decolourisation, phosphoric acid activated

Activated by phosphoric acid activation.
C
M 12,01 g/mol
[7440-44-0] • EC No. 931-334-3
UN No. 1362 • ADR 4.2 III

Warning H252

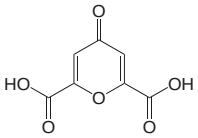
Type analysis:

Calcium (Ca).....≤0,02 %
Iron (Fe).....≤0,015 %
Phosphate (PO_4).....≤3,5 %
Water.....≤15 %
pH value.....2,0-3,5
Methylene blue adsorption.....≥25 g/100 g
Particle size:
>75 µm.....10 %
>10 µm.....91 %

5963.3	500 g	plastic	33,25 €
Original pack 6 x 500 g			31,59/500 g
5963.1	1 kg	plastic	51,50 €
Original pack 6 x 1 kg			48,93/1 kg
5963.4	2,5 kg	plastic	95,70 €
5963.2	5 kg	plastic	135,35 €
5963.5	10 kg	plastic	255,35 €

For further information, please see page 1752

Chelidonic acid



Chelidonic acid

98 % cryst.

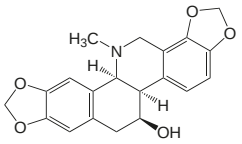
$C_7H_4O_6$
M 184,10 g/mol
mp ~260 °C
[99-32-1] • EC No. 202-749-0

Guarantee analysis:

Assay (titr.).....97,5-102,5 %

6240.1	5 g	glass	214,90 €

Chelidonine



Stylophorin
$C_{20}H_{19}NO_5$
M 353,36 g/mol
mp 125-135 °C
Storage temp.: +4 °C
[476-32-4] • EC No. 207-504-1
WGK 1

Warning H302+H312+H332

Chelidonine
ROTICHROM® HPLC
Reference substance for HPLC.
From *Chelidonium majus.*

Type analysis:
Purity (HPLC)..... >98 %

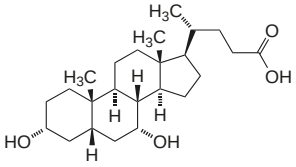
1129.1	25 mg	glass	295,65 €

Chelidonine
ROTICHROM® TLC

Type analysis:
Appearance..... colourless, cryst. powder
Melting point..... 125-135 °C

6235.1	25 mg	glass	170,95 €

Chenodeoxycholic acid



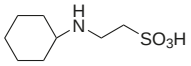
Chenodeoxycholic acid
≥98 %, for biochemistry
Anionic detergent
3α,7α-Dihydroxy-5β-cholanic acid
$C_{24}H_{40}O_4$
M 392,58 g/mol
mp 162-167 °C
[474-25-9] • EC No. 207-481-8
WGK 1

Warning H361d

Type analysis:
Assay (titr.)..... ≥98 %
Solution (5 % in ethanol)..... colourless
Water (KF)..... ≤3 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in ethanol)..... +12° ±1°
Sulphated ash..... ≤0,1 %
Heavy metals (as Pb)..... ≤0,002 %

4128.1	5 g	glass	35,40 €
4128.2	10 g	glass	66,55 €
4128.3	25 g	glass	130,65 €

CHES



CHES
PUFFERAN® ≥99 %
2-(Cyclohexylamino)-ethanesulphonic acid
$C_8H_{17}NO_3S$
M 207,29 g/mol
[103-47-9] • EC No. 203-115-6

Guarantee analysis:
Assay (titr.)..... ≥99,0 %
Loss on drying..... ≤1,0 %
pH value..... 5,0-6,0
UV-absorption (0,1 M in H_2O):
280 nm..... ≤0,05
260 nm..... ≤0,04

9166.1	10 g	plastic	14,20 €
9166.3	25 g	plastic	23,15 €
9166.2	100 g	plastic	64,00 €

For further information, please see page 1308

Chile saltpeter
▶ Sodium nitrate see p. 2345

Chitin

Chitin
from crab shells
$(C_8H_{13}NO_5)_n$
M ~400 000 g/mol
[1398-61-4] • EC No. 215-744-3

Type analysis:
Appearance..... white to brownish powder
Water (KF)..... ≤10 %

8845.1	100 g	plastic	40,75 €
8845.2	1 kg	plastic	298,75 €
Original pack 6 x 1 kg			283,81/1 kg

Chitosamine hydrochloride
▶ D(+)-Glucosamine hydrochloride see p. 2020

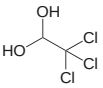
Chitosan

Chitosan
for biochemistry
Partly deacetylated chitin
[9012-76-4]

Type analysis:
Appearance..... white to light yellowish powder
Degree of Deacetylation..... ≥90 %
Water content..... ≤8,0 %

5375.1	10 g	plastic	35,40 €

Chloral hydrate



Chloral hydrate
≥99,5 %, Ph.Eur., BP, USP
Trichloroacetaldehyde monohydrate
$C_2H_3Cl_3O_2$
M 165,40 g/mol
mp 52 °C
Solubility: 6600 g/l (H_2O, 20 °C)
[302-17-0] • EC No. 206-117-5
UN No. 2811 • ADR 6.1 III • WGK 2

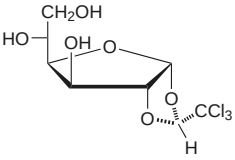
Danger H301-H315-H319

Guarantee analysis:
Assay (acidim.)..... 99,5-101,0 %
Identity..... complies
Appearance of solution..... complies
pH value (10 % in H_2O)..... 3,5-5,5
Chloral alcoholate..... complies
Heavy metals (as Pb)..... ≤0,002 %
Chloride (Cl)..... ≤0,007 %
Sulphated ash..... ≤0,1 %
Non volatile matter..... ≤0,1 %
Toluene..... ≤0,089 %
Benzene..... complies
Matter discoloured by H_2SO_4..... complies
Acid react. substances..... complies

K318.3	100 g	plastic	27,45 €
K318.1	500 g	plastic	110,65 €
Original pack 6 x 500 g			105,12/500 g
K318.2	2,5 kg	plastic	461,20 €

For further information, please see page 1498

α-Chloralose



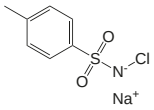
α-Chloralose
(≤20 % β-Anomer)
α-D-Glucochloralose
$C_8H_{11}Cl_3O_6$
M 309,54 g/mol
mp 187 °C
Solubility: 4,4 g/l (H_2O, 15 °C)
[15879-93-3] • EC No. 240-016-7
WGK 1

Warning H302+H332

Type analysis:
Appearance..... white to brownish powder
Water (KF)..... ≤0,5 %
Sulphated ash..... ≤0,4 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in ethanol, after 5 h)..... +15° to +19°

3363.2	25 g	plastic	19,90 €
3363.1	100 g	plastic	59,05 €
3363.3	250 g	plastic	120,30 €

Chloramine T trihydrate



Chloramine T trihydrate

≥98 %, p.a.
Chlorination reagent for determining halogens.
Toluene-4-sulphonechloramide sodium,
N-Chloro-4-toluene sulphoneacid amide
$CH_3C_6H_4SO_2NClNa \cdot 3\ H_2O$
M 281,69 g/mol
mp 167-170 °C (dec.) • flp 192 °C
Solubility: 150 g/l (H_2O, 25 °C)
[7080-50-4] • EC No. 204-854-7
UN No. 3263 • ADR 8 III • WGK 2
Danger
H334-H314-H302-EUH031

Guarantee analysis:

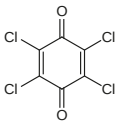
Assay (iodom.)	≥98,0 %
pH value (5 % in H_2O)	8,0-11,0
In ethanol insoluble parts.	≤1,5 %
Ortho-compounds	complies
Iron (Fe)	≤0,02 %
Heavy metals (as Pb)	≤0,05 %

0271.1	250 g	plastic	23,15 €
0271.2	500 g	plastic	36,45 €
Original pack 6 x 500 g			34,63/500 g
0271.3	1 kg	plastic	66,15 €
Original pack 6 x 1 kg			62,84/1 kg

Chloramphenicol-LB Selective Agar

▶ LB-Agar (Luria/Miller) / Chloramph34 see p. 2094

p-Chloranil



p-Chloranil

≥98 %, p.a.
Reagent for the dehydrogenation of hydroaromatic compounds.
2,3,5,6-Tetrachloro-1,4-benzoquinone
$C_6Cl_4O_2$
M 245,86 g/mol
mp 290-295 °C
[118-75-2] • EC No. 204-274-4
UN No. 3077 • ADR 9 III • WGK 2
Warning H315-H319-H410

Guarantee analysis:

Assay (HPLC)	≥98,0 %
Sulphated ash	≤0,1 %

KK33.1	10 g	glass	22,05 €
KK33.2	25 g	glass	37,10 €
KK33.3	100 g	glass	111,70 €

4-Chloranthranilic acid

▶ 2-Amino-4-chlorobenzoic acid see p. 1789

Chlorate Standards

▶ Chlorate IC Standard Solution see p. 2375

Chloride Standards

▶ Chloride IC Standard Solution see p. 2375

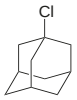
Chlorite Standards

▶ Chlorite IC Standard Solution see p. 2375

Chlornickel

▶ Nickel(II) chloride hexahydrate see p. 2156

1-Chloroadamantane



1-Chloroadamantane

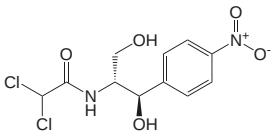
≥98 %, for synthesis
$C_{10}H_{15}Cl$
M 170,68 g/mol
mp 161-166 °C
[935-56-8] • EC No. 213-305-0
WGK 3

Type analysis:

Appearance	white to light grey solid
Assay (titr.)	≥98,0 %

7627.1	5 g	glass	13,90 €
7627.2	25 g	glass	23,55 €
7627.3	100 g	glass	59,05 €

Chloroamphenicol



Chloroamphenicol

≥98,5 %, Ph.Eur., for biochemistry
Bacteriostatic antibiotic
Chloromycetin
$C_{11}H_{12}Cl_2N_2O_5$
M 323,15 g/mol
D 0,7
mp 150 °C
Solubility: 2,5 g/l (H_2O, 25 °C)
Storage temp.: +20 °C
[56-75-7] • EC No. 200-287-4
WGK 1
Warning H351-H361d

Guarantee analysis:

Appearance	white to light grey, cryst. powder
Assay (dry substance)	98,5-102,0 %
Identity	complies
Solubility	complies
Chloride (Cl)	≤0,01 %
Specific rotation $[\alpha]_D^{20}$	+18,5° to +20,5°
Acid or alkaline react. substances	complies
Related substances	≤0,5 %
Ash content	≤0,1 %
Loss on drying	≤0,5 %

3886.2	25 g	plastic	19,90 €
3886.1	50 g	plastic	33,25 €
3886.3	100 g	plastic	54,30 €

For further information, please see page 1501

Chloroauric acid hydrate

▶ Hydrogen tetrachloroaurate(III) hydrate see p. 2055

Chlorobenzene

Chlorobenzene

≥99,5 %, for synthesis
Phenyl chloride
C_6H_5Cl
M 112,56 g/mol
D 1,11 • bp 132 °C
mp -45 °C • flp 27 °C
[108-90-7] • EC No. 203-628-5
UN No. 1134 • ADR 3 III • WGK 2
Warning H226-H315-H332-H411

Type analysis:

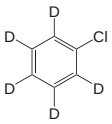
Assay (GC)	≥99,5 %
Density (d 20 °C/4 °C)	1,106-1,110
Acidity (as HCl)	≤0,01 %
Water	≤0,05 %

KK01.1	100 ml	glass	13,30 €
KK01.2	500 ml	glass	25,30 €
KK01.3	1 l	glass	36,45 €
Original pack 6 x 1 l			34,63/1 l

o-Chlorobenzene

▶ 1,2-Dichlorobenzene see p. 1934

Chlorobenzene D5



Chlorobenzene D5

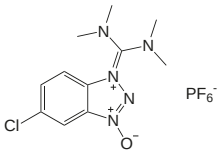
99 Atom%D

For nuclear magnetic resonance spectroscopy.
C_6D_5Cl
M 117,60 g/mol
D 1,16 • bp 130 °C
mp -45 °C • flp 23 °C
[3114-55-4] • EC No. 221-482-0
UN No. 1134 • ADR 3 III • WGK 2
Warning H226-H400-H410

Type analysis:
Deuterising degree. ..... ≥99 %
Water (KF, H_2O+D_2O). ..... ≤0,05 %

9905.1	5 ml	glass	123,55 €

O-(1H-6-Chlorobenzotriazole-1-yl)-N,N,N',N'-tetramethyl-uronium hexafluorophosphate (HCTU)



O-(1H-6-Chlorobenzotriazole-1-yl)-N,N,N',N'-tetramethyl-uronium hexafluorophosphate (HCTU)

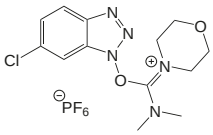
PEPTIPURE® ≥99 %

Coupling reagent for peptide synthesis
HCTU
$C_{11}H_{15}ClF_6N_5OP$
M 413,69 g/mol
mp >185 °C
Storage temp.: +4 °C
[330645-87-9]

Type analysis:
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤0,5 %

2112.1	5 g	glass	21,00 €
2112.2	25 g	glass	34,30 €
2112.3	100 g	glass	99,45 €
2112.5	1 kg	glass	590,20 €
Original pack 6 x 1 kg			560,69/1 kg

4-((6-Chloro-1H-benzo{d}-[1,2,3]triazol-1-yloxy)-(dimethylamino)methylene)-morpholin-4-ium hexafluorophosphate (HDMC)



4-((6-Chloro-1H-benzo{d}-[1,2,3]triazol-1-yloxy)-(dimethylamino)methylene)-morpholin-4-ium hexafluorophosphate (HDMC)

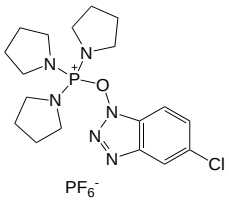
PEPTIPURE® ≥99 %

Coupling reagent for peptide synthesis
HDMC
$C_{13}H_{17}F_6N_5O_2PCl$
M 455,5 g/mol
mp 165-175 °C
Storage temp.: +4 °C
[1082951-62-9]
WGK 3

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥99 %
Loss on drying. ..... ≤0,5 %

6893.1	5 g	glass	40,75 €
6893.2	25 g	glass	160,20 €
6893.3	100 g	glass	536,45 €

6-Chloro-benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluoro-phosphate (PyClock®)



6-Chloro-benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluoro-phosphate (PyClock®)

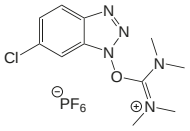
PEPTIPURE® ≥98,5 %

Coupling reagent for peptide synthesis
PyClock®
$C_{18}H_{27}ClF_6N_6OP_2$
M 554,84 g/mol
mp 174-180 °C
Storage temp.: +4 °C
[893413-42-8]

Type analysis:
Assay (HPLC). ..... ≥98,5 %
Loss on drying. ..... ≤0,5 %

2123.1	5 g	glass	27,45 €
2123.2	25 g	glass	87,00 €
2123.3	100 g	glass	295,65 €
2123.5	1 kg	glass	1987,70 €
Original pack 6 x 1 kg			1888,32/1 kg

O-(6-Chlorobenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TCTU)



O-(6-Chlorobenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TCTU)

PEPTIPURE® ≥98 %

Coupling reagent for peptide synthesis
TCTU
$C_{11}H_{15}BClF_4N_5O$
M 355,5 g/mol
[330641-16-2]
WGK 3

Warning H302

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Water (KF). ..... ≤0,5 %
Loss on drying. ..... ≤0,5 %

6890.1	5 g	glass	27,85 €
6890.2	25 g	glass	85,90 €
6890.3	100 g	glass	213,95 €

Chlorocalcium hexahydrate

▶ Calcium chloride hexahydrate see p. 1870

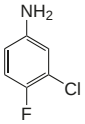
Chloro-4,4'-dimethoxytriphenylmethane

▶ 4,4'-Dimethoxytrityl chloride (DMT-Cl) see p. 1945

Chlorofluoroaniline

▶ 3-Chloro-4-fluoroaniline see p. 1893

3-Chloro-4-fluoroaniline



3-Chloro-4-fluoroaniline

≥95 %
Chlorofluoroaniline, CFA
C_6H_5ClFN
M 145,56 g/mol
bp 230 °C
mp 42-46 °C • flp 114 °C
Solubility: 10 g/l (H_2O, 20 °C)
[367-21-5] • EC No. 206-682-8
WGK 2

Warning H302+H312+H332

Type analysis:
Assay (GC). ..... ≥95,0 %
Solution (1 % in acetone). ..... colourless to brown, clear
Melting point. ..... 42-46 °C

5461.1	25 g	plastic	43,55 €
5461.2	100 g	plastic	124,60 €

Chloroform

▶ Trichloromethane/Chloroform see p. 2415

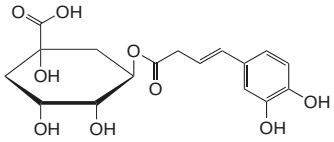
Chloroform D1

▶ Trichloromethane/Chloroform D1 see p. 2416

Chloroform D1 with TMS

▶ Trichloromethane/Chloroform D1 with TMS (0,03 vol.%) see p. 2416

Chlorogenic acid



$C_{16}H_{18}O_9$
M 354,32 g/mol
mp 202-206 °C
[327-97-9] • EC No. 206-325-6
WGK 3

Chlorogenic acid

≥97 %

Type analysis:
Appearance. ..... white to off-white powder
Assay (dry substance). ..... ≥97 %
Melting point. ..... 202-206 °C
Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O). ..... -40° to -36°

6385.1	250 mg	glass	30,65 €
6385.2	1 g	glass	95,15 €

Chlorogenic acid

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF). ..... ≤5,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE06.1	25 mg	glass	532,15 €

Chlorogenic acid

ROTICHROM® Working Standard

Type analysis:
Assay (HPLC). ..... ≥90,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC06.1	100 mg	glass	125,70 €

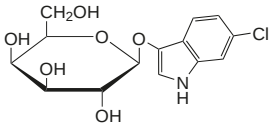
Chlorogenic acid

ROTICHROM® TLC

Reference substance for thin layer chromatography.

5558.1	50 mg	glass	41,85 €

6-Chloro-3-indoxyl-β-D-galactopyranoside



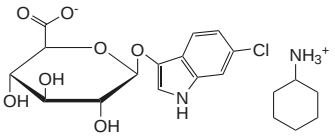
6-Chloro-3-indoxyl-β-D-galactopyranoside

≥98 %, for biochemistry
β-Galactosidase substrate
Rose-Gal
$C_{14}H_{16}ClNO_6$
M 329,74 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[138182-21-5]

Guarantee analysis:
Assay (HPLC). ..... ≥98 %
Solution (5 % in methanol). ..... colourless to light yellowish, clear
Water (KF). ..... ≤1 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in methanol). ..... -49° to -45°

4251.1	25 mg	glass	33,90 €
4251.2	50 mg	glass	44,00 €
4251.3	100 mg	glass	65,50 €

6-Chloro-3-indoxyl-β-D-glucuronic acid cyclohexylammonium salt



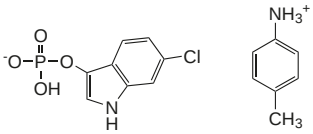
6-Chloro-3-indoxyl-β-D-glucuronic acid cyclohexylammonium salt

≥98 %, for biochemistry
β-Glucuronidase substrate
Rose-Glucuro CHAsalt
$C_{14}H_{14}ClNO_7 \cdot C_6H_{13}N$
M 442,9 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[138182-20-4]
WGK 1

Guarantee analysis:
Assay (HPLC). ..... ≥98 %
Solution (1 % in DMF). ..... nearly colourless, clear
Water (KF). ..... ≤2 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF/water 1:1). ..... -68° to -72°

4057.1	10 mg	glass	31,10 €
4057.2	50 mg	glass	46,15 €
4057.3	100 mg	glass	78,40 €

6-Chloro-3-indoxyl phosphate p-toluidine salt



6-Chloro-3-indoxyl phosphate p-toluidine salt

≥98 %, for biochemistry
Alkaline phosphatase substrate
Rose-Phos p-toluidine salt
$C_8H_7ClNO_4P \cdot C_7H_9N$
M 354,73 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[159954-33-3]

Warning H315-H319-H335

Guarantee analysis:
Assay (HPLC). ..... ≥98 %
Solution (1 % in methanol). ..... colourless to almost colourless, clear
Water (KF). ..... ≤1 %

4247.1	50 mg	glass	47,20 €
4247.2	100 mg	glass	84,85 €

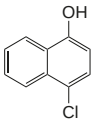
2-(Chloromethoxy)ethyl trimethyl silane

▶ 2-(Trimethylsilyl)ethoxymethyl chloride see p. 2419

Chloromethyl 2-trimethyl-silylethyl ether

▶ 2-(Trimethylsilyl)ethoxymethyl chloride see p. 2419

4-Chloro-1-naphthol



4-Chloro-1-naphthol

≥97 %, for biochemistry
Peroxidase substrate
4-CN
$C_{10}H_7ClO$
M 178,62 g/mol
mp ~120 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[604-44-4] • EC No. 210-068-5
WGK 1

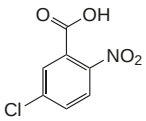
Warning H315-H319-H335

Guarantee analysis:

Assay (GC). ..... ≥97 %
Solution (10 % in methanol, 45 °C). ..... yellow to brownish, almost clear
Water (KF). ..... ≤0,5 %
Melting point. ..... 118-122 °C

4104.1	5 g	glass	29,60 €
4104.2	10 g	glass	48,95 €
4104.3	25 g	glass	94,50 €
4104.7	100 g	glass	278,45 €

5-Chloro-2-nitrobenzoic acid



5-Chloro-2-nitrobenzoic acid

≥98 %, for synthesis
$C_7H_4ClNO_4$
M 201,57 g/mol
mp 137-141 °C
Solubility: 9,67 g/l (H_2O, 25 °C)
[2516-95-2] • EC No. 219-738-1
WGK 1

Warning H315-H319-H335

Guarantee analysis:

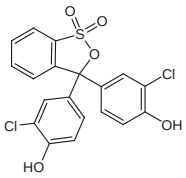
Assay (titr.). ..... ≥98,0 %
Solution (1 % in ethanol). ..... almost colourless to colourless
Water (KF). ..... ≤1,0 %
Melting point. ..... 137-141 °C

5456.1	25 g	plastic	24,65 €
5456.2	100 g	plastic	67,65 €

α-Chloro-4-nitrotoluene

▶ 4-Nitrobenzyl chloride see p. 2164

Chlorophenol red



Chlorophenol red

p.a.
Indicator pH 4,8-6,4
3',3"-Dichlorophenol sulphonephthalein
$C_{19}H_{12}Cl_2O_5S$
M 423,27 g/mol
mp 261 °C
Solubility: insoluble (H_2O, 20 °C)
[4430-20-0] • EC No. 224-619-2
WGK 1

Warning H315-H319-H335

Type analysis:

Maximum absorption. ..... 560-575 nm
Loss on drying (110 °C). ..... ≤5 %

0347.1	5 g	glass	31,10 €
0347.2	10 g	glass	50,45 €
0347.3	25 g	glass	107,40 €

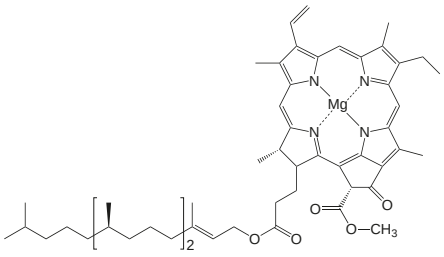
4-Chlorophenol solution

4-Chlorophenol solution

200 mg AOX/l
For determination of AOX acc. to EN ISO 9562:2004, DEV H14
WGK 1

2495.1	100 ml	glass	61,20 €

Chlorophyll A



Chlorophyll A

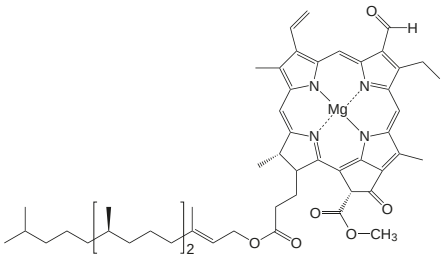
powd.
Isolated from algae *(Anacystis nidulans)*.
$C_{55}H_{72}MgN_4O_5$
M 893,48 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[479-61-8] • EC No. 207-536-6

Type analysis:

Appearance. ..... deep green to deep blue powder
UV-absorptionsmax. (I). ..... 426-430 nm
UV-absorptionsmax. (II). ..... 658-662 nm

6360.1	1 mg	glass	403,15 €
6360.2	5 mg	glass	1665,20 €

Chlorophyll B



Chlorophyll B

≥90 %, powd.
Isolated from spinach.
$C_{55}H_{70}MgN_4O_6$
M 907,46 g/mol
mp 183-185 °C
Storage temp.: +4 °C
[519-62-0] • EC No. 208-272-4

Type analysis:

Appearance. ..... dark green, fine powder
Assay (HPLC). ..... ≥90 %

6365.2	5 mg	glass	1374,95 €

Chlorophyllin sodium salt

Chlorophyllin sodium salt

water-soluble
Not copperized
WGK 1

Type analysis:

Appearance. ..... grey-green powder
Dye content. ..... ≥97 % Na chlorophyllin
Loss on drying (105 °C). ..... ≤10 %
pH value (10 % H_2O solution). 8,5-10,0
Intensity of colour E/ 1%/ 401 nm. ..... 680-780 in buffer pH 9
Intensity of colour E/1 %/653 nm. ..... 145-165 in buffer pH 9
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %

6217.1	10 g	plastic	32,80 €

Chloroplatinic acid hydrate

▶ Hydrogen hexachloroplatinate(IV) hydrate see p. 2053

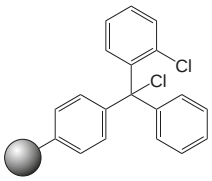
N-Chloro-4-toluene sulphonic acid amide

▶ Chloramine T trihydrate see p. 1891

Chlorotrimethylsilane

▶ Trimethylchlorosilane (TMCS) see p. 2419

2-Chlorotrityl chloride resin



2-Chlorotrityl chloride resin

PEPTIPURE® 100-200 mesh, 1 % DVB
For peptide synthesis
CTC resin
WGK 3
Warning H315-H319-H335

Type analysis:
Appearance. ..... pale yellow-brown beads
Loading. ..... 1,0-1,6 mmol/g
Identity (IR). ..... complies
Swelling. ..... ≥3 ml/g (DMF, 24 h)
Kaiser test. ..... negative
Particle size. ..... 75-150 µm (100-200 mesh)

7405.1	5 g	plastic	79,45 €
7405.2	25 g	plastic	307,35 €

3-[(3-Cholamidopropyl)-dimethylamino]-2-hydroxy-1-propanesulphonate

▶ CHAPSO see p. 1889

3-[(3-Cholamidopropyl)-dimethyl ammonio]-1-propane sulphonate

▶ CHAPS see p. 1888

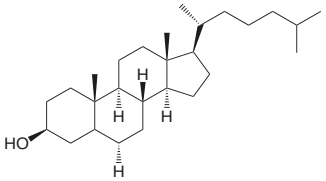
Cholera Agar

▶ TCBS Agar see p. 2395

Cholera Medium TCBS

▶ TCBS Agar see p. 2395

5-α-Cholestan-3β-ol



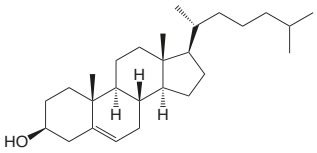
5-α-Cholestan-3β-ol

≥95 %
Dihydrocholesterol
$C_{27}H_{48}O$
M 388,68 g/mol
mp 138-142 °C
[80-97-7] • EC No. 201-315-8
WGK 1

Type analysis:
Appearance. ..... off-white to light brown cryst. powder
Assay (HPLC). ..... ≥95 %

3400.2	1 g	glass	21,00 €
3400.1	5 g	glass	77,30 €
3400.3	10 g	glass	125,70 €

Cholesterol



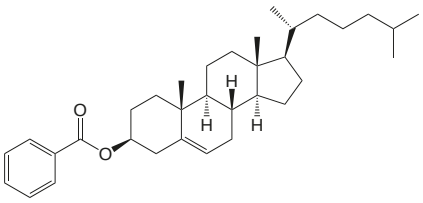
Cholesterol

≥95 %, Ph.Eur., for biochemistry
$C_{27}H_{46}O$
M 386,67 g/mol
D 1,07
mp 147-150 °C • flp 250 °C
Solubility: insoluble (H_2O, 20 °C)
Storage temp.: +4 °C
[57-88-5] • EC No. 200-353-2
WGK 1

Guarantee analysis:
Appearance. ..... white to off-white, cryst. powder
Content (total sterols). ..... 97,0-103,0 %
Assay (cholesterol). ..... ≥95,0 %
Identity. ..... complies
Melting point. ..... 147-150 °C
Sulphated ash. ..... ≤0,1 %
Loss on drying. ..... ≤0,3 %
Acid react. substances. ..... complies
Solubility in ethanol % vol. ..... complies

8866.2	25 g	plastic	25,30 €
8866.1	100 g	plastic	66,15 €
8866.7	1 kg	plastic	407,45 €
Original pack 6 x 1 kg			387,08/1 kg

Cholesterol benzoate



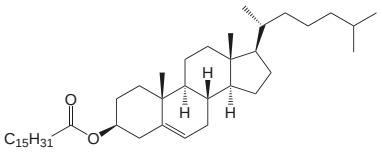
Cholesterol benzoate

>97,5 %, cryst.
$C_{34}H_{50}O_2$
M 490,76 g/mol
mp ~150 °C
[604-32-0] • EC No. 210-064-3
WGK 1

Type analysis:
Appearance. ..... white, cryst. powder
Assay. ..... >97,5 %

3402.1	10 g	plastic	48,95 €

Cholesterol palmitate



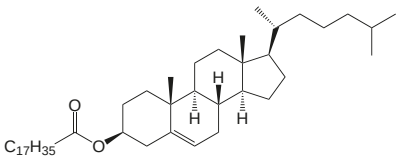
Cholesterol palmitate

≥97 %, pure
$C_{43}H_{76}O_2$
M 625,08 g/mol
mp ~76 °C
[601-34-3] • EC No. 210-002-5
WGK 1

Type analysis:
Assay. ..... ≥97 %

3404.1	5 g	plastic	48,95 €

Cholesterol stearate



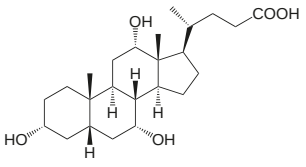
Cholesterol stearate

≥97 %, pure
$C_{45}H_{80}O_2$
M 653,14 g/mol
mp 79-81 °C
[35602-69-8] • EC No. 252-637-0
WGK 1

Type analysis:
Assay. ..... ≥97 %

3405.1	5 g	glass	34,30 €

Cholic acid



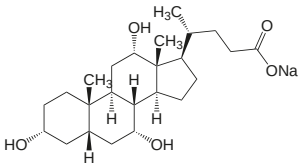
Cholic acid

≥99 %
$C_{24}H_{40}O_5$
M 408,58 g/mol
mp 195-202 °C
Solubility: 0,28 g/l (H_2O, 15 °C)
Storage temp.: +4 °C
[81-25-4] • EC No. 201-337-8
WGK 2

Typ analysis:
Assay (HPLC). ..... ≥99 %
Loss on drying. ..... ≤0,5 %
Deoxy cholic acid. ..... ≤1 %

8137.1	25 g	plastic	47,20 €
8137.2	100 g	plastic	95,15 €

Cholic acid sodium salt



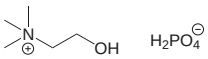
Cholic acid sodium salt

≥99 %, for biochemistry
Anionic detergent
Sodium cholate
$C_{24}H_{39}NaO_5$
M 430,57 g/mol
[361-09-1] • EC No. 206-643-5
WGK 1

Type analysis:
Assay (dry substance). ..... ≥99,0 %
Water (KF). ..... ≤5 %
Specific rotation $[\alpha]_D^{20}$. ..... +34° to +37°

3407.1	50 g	plastic	61,20 €

Choline-dihydrogenphosphate (Choline DHP)



Choline-dihydrogenphosphate (Choline DHP)

≥98 %
Ionic liquid
Choline DHP
$C_5H_{16}NO_5P$
M 201,06 g/mol
mp 190 °C
[83846-92-8]
WGK 3

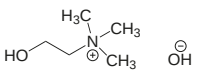
Warning H315-H319-H335

Type analysis:
Appearance. ..... white to yellowish, solid
Assay. ..... ≥98 %
Water (KF). ..... ≤0,25 %

2028.1	25 g	plastic	246,20 €
2028.2	100 g	plastic	557,95 €

Lit:. **"Protein solubilising and stabilising ionic liquids"** K. Fujita, D. R. MacFarlane, M. Forsyth, *Chem. Commun.* **2005,** 4804–4806.
For further information, please see page 1590

Choline hydroxide



Choline hydroxide

48-50 % in water
$C_5H_{15}NO_2$
M 121,18 g/mol
D 1,08
Storage temp.: +4 °C
[123-41-1] • EC No. 200-535-1
UN No. 3267 • ADR 8 II • WGK 1

Danger H314

Type analysis:
Assay. ..... 48-50 %
Density (20 °C). 1,0780-1,0900

3406.2	50 ml	glass	43,55 €
3406.1	250 ml	glass	193,40 €

Chondroitin sulphate sodium salt

Chondroitin sulphate sodium salt

for biochemistry
From bovine trachea.
$(C_{14}H_{20}NNaO_{15}S)_n$
Storage temp.: +4 °C
[9007-28-7] • EC No. 232-696-9

Type analysis:
Appearance. ..... bright powder
Assay. ..... ≥90,0 %
pH value. 5,5-7,5
Loss on drying. ..... ≤10 %

5197.1	25 g	plastic	46,15 €

Christensen Agar

▶ Urea Agar acc. to Christensen (Base) see p. 2430

Chromium Standards

▶ Chromium AAS Standard Solution see p. 2359
▶ Chromium ICP Standard Solution see p. 2362
▶ Chromium ICP Standard Solution see p. 2367

Chromate Standards

▶ Chromate IC Standard Solution see p. 2375

Chromic chloride

▶ Chromium(III) chloride hexahydrate see p. 1896

Chromic acid potassium salt

▶ Potassium chromate see p. 2224

Chromic(III) potassium sulphate 12-hydrate

▶ Chromium(III) potassium sulphate dodecahydrate see p. 1897

Chromium trichloride

▶ Chromium(III) chloride hexahydrate see p. 1896

Chromium(III) chloride hexahydrate

Chromium(III) chloride hexahydrate

≥97 %, p.a.
Chromium trichloride, Chromic chloride
$CrCl_3 \cdot 6\ H_2O$
M 266,45 g/mol
D 1,76
Solubility: 58 g/l (H_2O, 25 °C)
[10060-12-5] • EC No. 233-038-3
UN No. 3077 • ADR 9 III • WGK 2

Warning H302-H317-H410

Guarantee analysis:
Assay. ..... ≥97,0 %
pH (5 % H_2O, 25 °C). 2,0-3,0
Insoluble matter. ..... ≤0,01 %
Ammonium (NH_4). ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,05 %
Aluminium (Al). ..... ≤0,05 %
Iron (Fe). ..... ≤0,005 %

9832.1	100 g	plastic	17,10 €
9832.2	500 g	plastic	46,15 €
Original pack 6 x 500 g			43,84/500 g
9832.3	1 kg	plastic	75,15 €
Original pack 6 x 1 kg			71,39/1 kg

Chromium(III) nitrate nonahydrate

$Cr(NO_3)_3 \cdot 9\ H_2O$
M 400,14 g/mol
D 1,80 • bp 100 °C (dec.)
mp 36-37 °C
Solubility: 810 g/l (H_2O, 20 °C)
[7789-02-8] • EC No. 236-921-1
UN No. 2720 • ADR 5.1 III • WGK 2

Warning H272-H315-H319

Chromium(III) nitrate nonahydrate

ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5619.1	5 g	plastic	62,25 €
5619.2	25 g	plastic	184,40 €

Chromium(III) nitrate nonahydrate

≥98 %, p.a.

Type analysis:

Assay (iodom.) ≥98,0 %
Chloride (Cl) ≤0,005 %
Ammonium (NH_4) ≤0,001 %
Sulphate (SO_4) ≤0,005 %
Lead (Pb) ≤0,002 %
Calcium (Ca) ≤0,005 %
Cadmium (Cd) ≤0,001 %
Iron (Fe) ≤0,02 %
Copper (Cu) ≤0,001 %
Magnesium (Mg) ≤0,005 %
Sodium (Na) ≤0,01 %
Nickel (Ni) ≤0,005 %
Zinc (Zn) ≤0,001 %

8773.1	100 g	plastic	18,85 €
8773.2	500 g	plastic	37,55 €
Original pack 6 x 500 g			35,67/500 g
8773.3	1 kg	plastic	66,55 €
Original pack 6 x 1 kg			63,22/1 kg

Chromium(III) oxide

Cr_2O_3
M 151,99 g/mol
D 5,22 • bp ~3000 °C
mp 2435 °C
[1308-38-9] • EC No. 215-160-9

Chromium(III) oxide

ROTI®METIC 99,9 % (3N)

Type analysis:

Assay (metals basis) 99,9 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

4498.1	5 g	plastic	36,45 €
4498.2	25 g	plastic	149,45 €

Chromium(III) oxide

≥98 %, extra pure

Type analysis:

Assay ≥98,0 %
Water-soluble content ≤0,5 %
Sieve residue (45 µm) ≤0,1 %

9886.1	100 g	plastic	18,20 €
9886.2	500 g	plastic	40,35 €
Original pack 6 x 500 g			38,33/500 g
9886.3	1 kg	plastic	69,35 €
Original pack 6 x 1 kg			65,88/1 kg
9886.4	2,5 kg	plastic	126,35 €

Chromium(III) potassium sulphate dodecahydrate

Potassium chromium(III) sulphate, Alum chrome
$KCr(SO_4)_2 \cdot 12\ H_2O$
M 499,41 g/mol
D 1,83
mp 89 °C
Solubility: 250 g/l (H_2O, 20 °C)
[7788-99-0] • EC No. 233-401-6
WGK 2

Warning H315-H319

Chromium(III) potassium sulphate dodecahydrate

≥98 %, p.a., ACS

Guarantee analysis:

Appearance violet cryst. powder
Assay (iodom.) ≥98,0-102,0 %
In H_2O insoluble matter. ≤0,005 %
Chloride (Cl) ≤0,002 %
Aluminium (Al) ≤0,005 %
Ammonium (NH_4) ≤0,01 %
Lead (Pb) ≤0,005 %
Iron (Fe) ≤0,01 %
Copper (Cu) ≤0,001 %
Nickel (Ni) ≤0,001 %
Heavy metals (as Pb) ≤0,01 %

4389.1	250 g	plastic	28,95 €
4389.2	500 g	plastic	44,00 €
Original pack 6 x 500 g			41,80/500 g
4389.3	1 kg	plastic	84,40 €
Original pack 6 x 1 kg			80,18/1 kg

Chromium(III) potassium sulphate dodecahydrate

≥98 %

Type analysis:

Assay (iodom.) ≥98 %
Chloride (Cl) ≤0,03 %
Lead (Pb) ≤0,01 %
Iron (Fe) ≤0,03 %

3535.3	100 g	plastic	12,80 €
3535.1	1 kg	plastic	43,55 €
Original pack 6 x 1 kg			41,37/1 kg
3535.4	2,5 kg	plastic	88,05 €
3535.2	10 kg	plastic	310,70 €

Chromium shot

Chromium shot

NEW

99,95 %

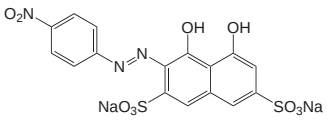
Cr
M 52,00 g/mol
D 7,2 • bp 2670 °C
mp 1890 °C
[7440-47-3] • EC No. 231-157-5

Type analysis:

Purity 99,95 %
Copper (Cu) ≤0,005 %
Iron (Fe) ≤0,01 %
Aluminium (Al) ≤0,005 %
Nickel (Ni) ≤0,005 %
Silicon (Si) ≤0,005 %

0886.1	10 g	glass	32,15 €
0886.2	25 g	glass	69,80 €
0886.3	50 g	glass	127,95 €
0886.4	100 g	glass	232,10 €

Chromotrope® 2B (C.I. 16575)



Chromotrope® 2B (C.I. 16575)

for microscopy

$C_{16}H_9N_3Na_2O_{10}S_2$
M 513,37 g/mol
mp >300 °C
[548-80-1] • EC No. 208-959-9
WGK 3

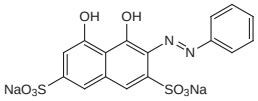
Warning H315-H319-H335

Type analysis:

Appearance dark green to brown powder
Absorption max. (in H_2O) 514 nm

7647.1	5 g	glass	14,55 €
7647.2	25 g	glass	24,65 €
7647.3	100 g	glass	61,85 €

Chromotrope® 2R (C.I. 16570)



Chromotrope® 2R (C.I. 16570)

for microscopy

Indicator for complexometry.
$C_{16}H_{10}N_2Na_2O_8S_2$
M 468,39 g/mol
[4197-07-3] • EC No. 224-085-0
WGK 3

Warning H315-H319-H335

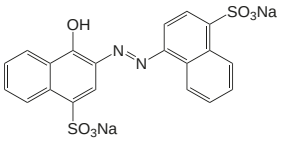
Type analysis:

Maximum absorption 500-520 nm
Loss on drying (110 °C) ≤10 %

4937.2	10 g	glass	30,00 €
4937.1	50 g	glass	110,65 €

For further information, please see page 1522

Chromotrope® FB (C.I. 14720)



Chromotrope® FB (C.I. 14720)

for microscopy

Acid red 14, Azorubine, Carmoisine

$C_{20}H_{12}N_2Na_2O_7S_2$

M 502,43 g/mol

[3567-69-9] • EC No. 222-657-4

WGK 3

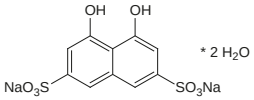
Warning H315-H319-H335

Type analysis:

Appearance. ..... dark red to black powder
Appearance of solution (0,1 % in H_2O). ..... clear
Loss on drying. ..... ≤8 %

7648.1	5 g	glass	14,55 €
7648.2	25 g	glass	24,65 €
7648.3	100 g	glass	61,85 €

Chromotropic acid disodium salt dihydrate



Chromotropic acid disodium salt dihydrate

≥98,5 %, p.a., ACS

Reagents for silver, boron, chrome, mercury, titanium, chromate, formaldehyde, nitrile and nitrate.

4,5-Dihydroxy-2,7-naphthalene disulphonic acid sodium salt

$C_{10}H_6Na_2O_8S_2 \cdot 2\ H_2O$

M 400,30 g/mol

mp >300 °C

Solubility: 170 g/l (H_2O, 20 °C)

[5808-22-0] • EC No. 204-972-9

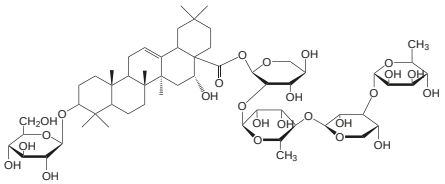
WGK 3

Guarantee analysis:

Assay (titr.). ..... ≥98,5 %
Water (KF). ..... 8,5-9,5 %
Solution (5 % in H_2O). ..... clear solution
In H_2O insoluble matter. ..... ≤0,02 %
Suitability for determination of nitrate and formaldehyde. ..... complies

KK30.1	10 g	glass	36,05 €
KK30.2	25 g	glass	77,30 €

Chrysanthellin A



Chrysanthellin A

ROTICHROM® HPLC

Reference substance for HPLC.

$C_{58}H_{94}O_{25}$

M 1191,37 g/mol

Storage temp.: +4 °C

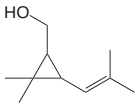
[73039-13-1] • EC No. 277-245-7

Type analysis:

Purity (HPLC). ..... ≥96 %

5261.1	10 mg	glass	418,20 €

Chrysanthemyl alcohol



Chrysanthemyl alcohol

>97,5 %

mixture of cis-trans isomers

$C_{10}H_{18}O$

M 154,25 g/mol

bp 66-69 °C

flp 84 °C

[18383-59-0] • EC No. 227-045-0

Type analysis:

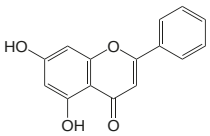
Appearance. ..... light yellowish liquid
Assay (GC). ..... >97,5 %
Refractive index n_D^{20}. 1,4730-1,4770

7243.1	2,5 g	glass	58,60 €

Chrysatropic acid

▶ Scopoletin see p. 2308

Chrysin



Chrysin

≥97 %

5,7-Dihydroxyflavone

$C_{15}H_{10}O_4$

M 254,24 g/mol

mp 277-281 °C

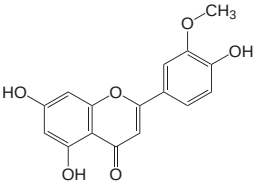
[480-40-0] • EC No. 207-549-7

Type analysis:

Appearance. ..... yellow powder
Assay (HPLC). ..... 97,0-100,0 %

6475.1	500 mg	glass	21,00 €

Chrysoeriol



Chrysoeriol

ROTICHROM® HPLC

Reference substance for HPLC.

$C_{16}H_{12}O_6$

M 300,26 g/mol

Storage temp.: +4 °C

[491-71-4] • EC No. 207-742-6

Type analysis:

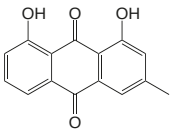
Purity (HPLC). ..... ≥99 %

6044.1	5 mg	glass	261,15 €

Chrysoidine solution

▶ Neisser's solution III see p. 2154

Chrysophanic acid



Chrysophanic acid

ROTICHROM® HPLC

Reference substance for HPLC.

Chrysophanol

$C_{15}H_{10}O_4$

M 254,23 g/mol

mp 196 °C (subl.)

Storage temp.: +4 °C

[481-74-3] • EC No. 207-572-2

WGK 2

Warning H315-H319-H335

Type analysis:

Purity (HPLC). ..... ≥99 %

7442.2	20 mg	glass	224,70 €

Chrysophanol

▶ Chrysophanic acid see p. 1898

Chymotrypsin

Chymotrypsin

≥1000 USP-U/mg, for biochemistry

Made from bovine pancreas.

α-Chymotrypsin

Storage temp.: -20 °C

Transport temp.: room temp.

[9004-07-3] • EC No. 232-671-2

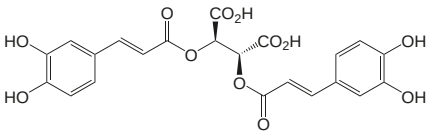
WGK 1

Danger H334-H335-H315-H319

Type analysis:
Identity. ..... complies
Activity. ..... ≥1000 USP-U/mg
pH value (1 % in H_2O). 3,0-5,0
Trypsin. ..... ≤25 USP-U/mg
Sulphated ash. ..... <2,5 %
Loss on drying. ..... <5,0 %

0238.1	100 mg	glass	26,80 €
0238.2	500 mg	glass	55,40 €
0238.3	1 g	glass	91,30 €

Cichoric acid



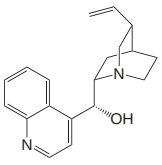
Cichoric acid
ROTICHROM® HPLC
Reference substance for HPLC.
From *Echinacea pallida.*
2,3-Dicaffeoyltartaric acid
$C_{22}H_{18}O_{12}$
M 474,38 g/mol
Storage temp.: +4 °C
[70831-56-0]

Type analysis:
Purity (HPLC). ..... >98 %

1130.1	10 mg	glass	413,90 €

CIN-Agar
▶ Yersinia Selective Agar (Base) see p. 2447

Cinchonidine

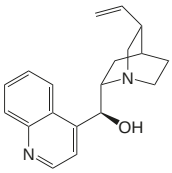


Cinchonidine
≥99 %
$C_{19}H_{22}N_2O$
M 294,40 g/mol
mp ~204 °C
[485-71-2] • EC No. 207-622-3
UN No. 1544 • ADR 6.1 III • WGK 1
Warning H302

Type analysis:
Assay. ..... ≥99,0 %
Specific rotation $[\alpha]_D^{20}$. ..... -189° to -162°
pH value (1 % solution). 7,0-9,0
Sulphated ash. ..... ≤0,1 %
Loss on drying. ..... ≤1,0 %

8872.1	25 g	plastic	109,55 €

Cinchonine

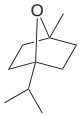


Cinchonine
≥99 %
For resolution of racemates and synthesis.
$C_{19}H_{22}N_2O$
M 294,40 g/mol
mp ~260 °C
Solubility: 0,25 g/l (H_2O, 20 °C)
[118-10-5] • EC No. 204-234-6
WGK 1
Warning H302-H317

Type analysis:
Assay (titr.). ..... ≥99,0 %
Specific rotation $[\alpha]_D^{20}$ (c=0,5 in methanol). ..... +218° to +222°

8875.1	50 g	plastic	149,45 €

1,4-Cineole



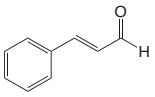
1,4-Cineole
ROTICHROM® GC
Reference substance for GC.
$C_{10}H_{18}O$
M 154,25 g/mol
D ~0,890 • bp 173-174 °C
mp -46 °C • flp 47 °C
Storage temp.: +4 °C
[470-67-7] • EC No. 207-428-9
UN No. 1993 • ADR 3 III • WGK 2
Warning H226

Type analysis:
Purity (GC). ..... ≥98 %

5833.2	100 mg	glass	128,50 €

1,8-Cineole
▶ Eucalyptol see p. 1987

Cinnamaldehyde



Cinnamaldehyde
≥98 %, for synthesis
3-Phenyl-2-propenal
C_9H_8O
M 132,16 g/mol
D ~1,05 • bp 252 °C
mp -7 °C • flp 138 °C
Solubility: 1,1 g/l (H_2O, 20 °C)
[104-55-2] • EC No. 203-213-9
WGK 1
Warning H312-H315-H317-H319

Type analysis:
Assay (GC). ..... ≥98 %
Density (20 °C). 1,047-1,051

5549.1	250 ml	glass	26,35 €

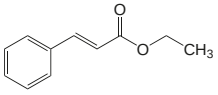
trans-Cinnamaldehyde

trans-Cinnamaldehyde
≥98,5 %, for synthesis
D ~1,05 • bp 250-252 °C
Storage temp.: +4 °C
[14371-10-9] • EC No. 203-213-9
WGK 1
Warning H315-H317-H319-H335

Type analysis:
Appearance. ..... clear, colourless to yellow liquid
Assay (GC). ..... 98,5-100,0 %

7195.1	250 ml	glass	67,20 €

Cinnamic acid ethyl ester

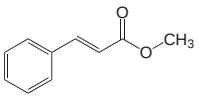


Cinnamic acid ethyl ester
ROTICHROM® GC
Reference substance for GC.
Ethyl cinnamate
$C_{11}H_{12}O_2$
M 176,22 g/mol
D 1,05 • bp 271 °C
mp 6-8 °C • flp 135 °C
Storage temp.: +4 °C
[103-36-6] • EC No. 203-104-6
WGK 1

Type analysis:
Purity (GC). ..... ≥98 %

3211.1	1 g	plastic	87,00 €

Cinnamic acid methyl ester



Cinnamic acid methyl ester

≥98 %, for synthesis
Methyl cinnamate
$C_{10}H_{10}O_2$
M 162,19 g/mol
bp 260-261 °C
mp 33-38 °C • flp 113 °C
[103-26-4] • EC No. 203-093-8
WGK 1

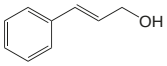
Type analysis:
Assay.....≥98,0 %

3643.1	25 g	plastic	12,40 €
3643.2	100 g	plastic	19,90 €
3643.3	500 g	plastic	55,80 €
Original pack 6 x 500 g			53,01/500 g

8'-Cinnamoylharpagid

▶ Harpagoside see p. 2033

Cinnamyl alcohol



Cinnamyl alcohol

≥98 %, for synthesis
3-Phenyl-2-propen-1-ol
$C_9H_{10}O$
M 134,18 g/mol
D ~1,04 • bp 258 °C
mp 32-34 °C • flp 126 °C
Solubility: 1,8 g/l (H_2O, 20 °C)
[104-54-1] • EC No. 203-212-3
WGK 2

Warning H302-H315-H319-H317

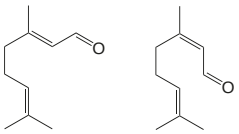
Type analysis:
Assay (GLC).....≥98 %
Melting point.....32-34 °C

4905.1	100 g	glass	14,95 €

CIN Supplement

▶ Yersinia Supplement see p. 2447

Citral



Geranium aldehyde, Geranial + Neral
$C_{10}H_{16}O$
M 152,23 g/mol
D ~0,88 • bp 288 °C
mp <-20 °C • flp 98 °C
Solubility: 0,4 g/l (H_2O, 25 °C)
[5392-40-5] • EC No. 226-394-6
WGK 1

Warning H315-H317

Citral

for biochemistry

Type analysis:
Appearance.....yellow oil
Purity (GC).....95-98 %
Density (20 °C).....0,885-0,895
Refractive index n_D^{20}.....1,486-1,491

5937.1	100 ml	glass	22,50 €

Citral

ROTICHROM® GC
Reference substance for GC.

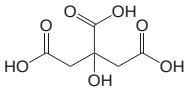
Type analysis:
Purity (GC).....≥95 %

5292.1	1 g	plastic	120,30 €

Citrate Standards

▶ Citrate IC Standard Solution see p. 2375

Citric acid



$C_6H_8O_7$
M 192,13 g/mol
D 1,542
mp 153 °C
Solubility: 1330 g/l (H_2O, 20 °C)
[77-92-9] • EC No. 201-069-1
WGK 1

Warning H319

Citric acid

≥99,5 %, p.a., ACS, anhydrous

Guarantee analysis:
Assay (acidim.).....≥99,5 %
In H_2O insoluble matter.....≤0,005 %
Chloride (Cl).....≤0,001 %
Phosphate (PO_4).....≤0,001 %
Oxalate (C_2O_4).....≤0,05 %
Sulphur compounds (as SO_4).....≤0,002 %
Heavy metals (As).....≤0,0005 %
Arsenic (As).....≤0,00001 %
Lead (Pb).....≤0,0002 %
Calcium (Ca).....≤0,0025 %
Iron (Fe).....≤0,0003 %
Magnesium (Mg).....≤0,0005 %
Nickel (Ni).....≤0,0002 %
Ash content (as SO_4).....≤0,02 %
Matter discoloured by H_2SO_4.....complies

X863.1	500 g	plastic	20,35 €
Original pack 6 x 500 g			19,33/500 g
X863.2	1 kg	plastic	31,10 €
Original pack 6 x 1 kg			29,55/1 kg
X863.3	2,5 kg	plastic	62,25 €
X863.4	5 kg	plastic	97,75 €
X863.6	10 kg	plastic	177,30 €
X863.5	25 kg	plastic	375,20 €

For further information, please see page 1680

Citric acid

≥99,5 %, Ph.Eur., anhydrous

Guarantee analysis:
Appearance.....white cryst. powder or white granular crystals
Assay (dry substance).....99,5-100,5 %
Appearance of solution.....complies
Identity.....complies
Water.....≤0,5 %
Sulphated ash.....≤0,05 %
Chloride (Cl).....≤0,0005 %
Sulphate (SO_4).....≤0,01 %
Oxalate (as $C_2H_2O_4$).....≤0,01 %
Heavy metals (as Pb).....≤0,0005 %
Iron (Fe).....≤0,0003 %
Arsenic (As).....≤0,0001 %
Calcium (Ca).....≤0,003 %
Reaction with H_2SO_4.....complies

6490.3	500 g	plastic	14,95 €
Original pack 6 x 500 g			14,20/500 g
6490.1	1 kg	plastic	24,20 €
Original pack 6 x 1 kg			22,99/1 kg
6490.4	2,5 kg	plastic	46,15 €
6490.2	5 kg	plastic	84,85 €
6490.6	10 kg	plastic	142,90 €
6490.5	25 kg	plastic	252,55 €

Citric acid

≥99,5 %, extra pure, anhydrous

Type analysis:
Assay.....≥99,5 %
Lead (Pb).....≤0,001 %
Iron (Fe).....≤0,001 %
Heavy metals.....≤0,001 %
Ash content.....≤0,1 %
Water.....≤0,5 %

7624.1	1 kg	plastic	18,20 €
Original pack 6 x 1 kg			17,29/1 kg
7624.2	5 kg	plastic	73,00 €
7624.3	10 kg	plastic	121,40 €
7624.4	25 kg	plastic	231,05 €

Citric acid ammonium iron(III) salt

▶ Ammonium iron(III) citrate see p. 1800

Citric acid monohydrate

$C_6H_8O_7 \cdot H_2O$
M 210,14 g/mol
D 1,54
mp 135-152 °C
Solubility: 1630 g/l (H_2O, 20 °C)
[5949-29-1] • EC No. 201-069-1
WGK 1

Warning H319

Citric acid monohydrate

≥99,5 %, p.a., ACS, ISO
Buffer substance

Guarantee analysis:

Assay (acidim.)	≥99,5 %
In H_2O insoluble matter	≤0,005 %
Ash content (as SO_4)	≤0,02 %
Matter discoloured by H_2SO_4	complies
Chloride (Cl)	≤0,0005 %
Oxalate (C_2O_4)	≤0,05 %
Phosphate (PO_4)	≤0,001 %
Sulphur compounds (as SO_4)	≤0,002 %
Heavy metals (as Pb)	≤0,0005 %
Arsenic (As)	≤0,00001 %
Lead (Pb)	≤0,0002 %
Calcium (Ca)	≤0,002 %
Iron (Fe)	≤0,0003 %
Copper (Cu)	≤0,00005 %
Magnesium (Mg)	≤0,0005 %
Nickel (Ni)	≤0,0002 %

3958.2	500 g	plastic	19,25 €
Original pack 6 x 500 g			18,29/500 g
3958.1	1 kg	plastic	31,10 €
Original pack 6 x 1 kg			29,55/1 kg
3958.3	2,5 kg	plastic	57,55 €
3958.4	5 kg	plastic	105,90 €
3958.6	10 kg	plastic	177,40 €
3958.5	25 kg	plastic	375,20 €

Citric acid monohydrate

≥99,5 %, Ph.Eur.

Guarantee analysis:

Appearance	white, cryst. powder
Assay (dry substance)	99,5-100,5 %
Identity	complies
Appearance of solution	complies
Water (KF)	7,5-8,8 %
Sulphate (SO_4)	≤0,015 %
Heavy metals (as Pb)	≤0,0005 %
Arsenic (As)	≤0,0003 %
Lead (Pb)	≤0,0001 %
Mercury (Hg)	≤0,0001 %
Oxalate (as $C_2H_2O_4$)	≤0,01 %
Reaction with H_2SO_4	complies
Sulphated ash	≤0,05 %

5110.3	500 g	plastic	14,55 €
Original pack 6 x 500 g			13,82/500 g
5110.1	1 kg	plastic	23,15 €
Original pack 6 x 1 kg			21,99/1 kg
5110.4	2,5 kg	plastic	39,70 €
5110.2	5 kg	plastic	62,25 €
5110.6	10 kg	plastic	95,15 €
5110.5	25 kg	plastic	188,15 €

Citric acid monohydrate

for removing lime deposits

1818.1	1 kg	plastic	16,05 €

For further information, please see page 1153

Citric acid monopotassium salt

▶ mono-Potassium citrate see p. 2224

Citric acid mono sodium salt

▶ Mono sodium citrate see p. 2335

Citric acid potassium salt

▶ tri-Potassium citrate monohydrate see p. 2225

Citric acid triammonium salt

▶ tri-Ammonium citrate see p. 1796

Citric acid trisodium salt dihydrate

▶ tri-Sodium citrate dihydrate see p. 2335

Claviformin

▶ Patulin see p. 2192

Orion Clean Card® PRO Pack

Orion Clean Card® PRO Pack

NEW

amfora health care for hygiene monitoring
For rapid detection of protein contamination on surfaces after the cleaning process.
Protein quick test, Cleaning control
Storage temp.: +20 °C
Transport temp.: room temp.
WGK 1

Type analysis:

Aussehen (Testfeld)	light yellow
Protein measurement negative control	complies
Protein measurement positive control	complies

0072.1	1 Set		172,00 €

For further information, please see page 1405

Orion Clean Card® PRO Starter Kit

Orion Clean Card® PRO Starter Kit

NEW

amfora health care for hygiene monitoring
For rapid detection of protein contamination on surfaces after the cleaning process.
Protein quick test, Cleaning control
Storage temp.: +20 °C
Transport temp.: room temp.
WGK 1

Type analysis:

Aussehen (Testfeld)	light yellow
Protein measurement negative control	complies
Protein measurement positive control	complies

0071.1	1 kit		100,00 €

For further information, please see page 1405

Cleaning control

▶ Clean Card® PRO Pack see p. 1901
▶ Clean Card® PRO Starter Kit see p. 1901

Clear rinsing agent

Clear rinsing agent

for dishwashers, liquid
pH 2
D 0,9964
WGK 1

Warning H319

N048.1	1 l	plastic	6,40 €

For further information, please see page 1144

CLED Agar

CLED Agar

for microbiology
For cultivation, differentiation and enumeration of gram-positive and gram-negative bacteria from the urinary tract.
Application: Use 36 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

Formulation:

Casein peptone	4 g/l
Gelatine peptone	4 g/l
Beef extract	3 g/l
Lactose	10 g/l
L-Cystine	0,128 g/l
Bromothymol blue	0,02 g/l
Agar	15 g/l
pH value	7,3 ±0,2

2835.1	500 g	plastic	95,60 €
Original pack 6 x 500 g			90,82/500 g
2835.2	1 kg	plastic	160,75 €
Original pack 6 x 1 kg			152,71/1 kg

For further information, please see page 1441

CLED Agar plus

CLED Agar plus

for microbiology
For cultivation, easy differentiation by colour, and enumeration of gram-positive and gram-negative bacteria from the urinary tract.
Application: Use 36,2 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

Formulation:

Casein peptone	4 g/l
Gelatine peptone	4 g/l
Beef extract	3 g/l
Lactose	10 g/l
L-Cystine	0,128 g/l
Bromothymol blue	0,02 g/l
Andrade's indicator	0,1 g/l
Agar	15 g/l
pH value	7,5 ±0,2

2836.1	500 g	plastic	107,40 €
Original pack 6 x 500 g			102,03/500 g

For further information, please see page 1441

Cleland's Reagent

▶ 1,4-Dithioerythritol (DTE) see p. 1955
▶ 1,4-Dithiothreitol (DTT) see p. 1955

Clostridium perfringens Supplement

Clostridium perfringens Supplement

lyophilised

Media supplement for selective isolation of *Clostridium perfringens*.

One box of 10 vials Clostridium perfringens Supplement is sufficient for 10 x 500 ml TSC Agar or for 10 x 500 ml m-CP Agar.

Storage temp.: +4 °C

WGK 1

Formulation per vial:

D-Cycloserine. ..... 0,2 g

CL52.1	10 vials	glass	224,70 €

For further information, please see page 1458

Club-moss spores

▶ Lycopodium see p. 2107

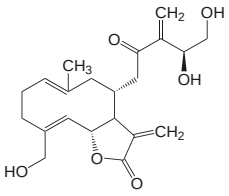
4-CN

▶ 4-Chloro-1-naphthol see p. 1894

CN Agar

▶ Pseudomonas Selective Agar (Base) see p. 2243

Cnicin



$C_{20}H_{26}O_7$
M 378,42 g/mol
mp 142-143 °C
Storage temp.: +4 °C
[24394-09-0] • EC No. 246-221-8
WGK 1

Warning H315-H319-H335

Cnicin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Cnicus benedictus*.

Type analysis:

Purity (HPLC)..... ≥98 %

2823.1	10 mg	glass	256,95 €

Cnicin

ROTICHROM® ~CHR

4560.1	10 mg	glass	78,40 €

Cobalt Standards

▶ Cobalt AAS Standard Solution see p. 2359
▶ Cobalt ICP Standard Solution see p. 2362
▶ Cobalt ICP Standard Solution see p. 2367

Cobalt powder

Cobalt powder

ROTI®METIC 99,999 % (5N)

Co
M 58,93 g/mol
D 8,86 • bp 2927 °C
mp 1495 °C
[7440-48-4] • EC No. 231-158-0
UN No. 3288 • ADR 6.1 I • WGK 3

Danger H302-H317-H319-H330-H334-H350-H361f-H410

Type analysis:

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5620.1	5 g	plastic	88,70 €
5620.2	25 g	plastic	284,90 €

Cobalt(II) acetate tetrahydrate

Cobaltous acetate
$Co(CH_3COO)_2 \cdot 4\ H_2O$
M 249,08 g/mol
D 1,70
Solubility: ~380 g/l (H_2O, 25 °C)
[6147-53-1] • EC No. 200-755-8
UN No. 3077 • ADR 9 III • WGK 3

Danger

H302-H317-H334-H341-H350i-H360F-H410

Cobalt(II) acetate tetrahydrate

≥98 %, p.a., ACS

Guarantee analysis:

Assay (compl.). ..... 98,0-102,0 %
In H_2O insoluble matter. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,002 %
Nitrate (NO_3). ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,005 %
Calcium (Ca). ..... ≤0,005 %
Copper (Cu). ..... ≤0,002 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,01 %
Magnesium (Mg). ..... ≤0,005 %
Manganese (Mn). ..... ≤0,01 %
Sodium (Na). ..... ≤0,05 %
Lead (Pb). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,1 %
Zinc (Zn). ..... ≤0,01 %

HN29.1	50 g	plastic	27,45 €
HN29.2	100 g	plastic	42,50 €
HN29.3	250 g	plastic	89,15 €

Cobalt(II) acetate tetrahydrate

≥98 %, extra pure

Type analysis:

Assay (based on Co). ..... ≥98,0 %
Lead (Pb). ..... ≤0,01 %
Iron (Fe). ..... ≤0,01 %
Copper (Cu). ..... ≤0,01 %
Nickel (Ni). ..... ≤0,1 %

9995.1	100 g	plastic	22,05 €
9995.2	500 g	plastic	66,15 €
Original pack 6 x 500 g			62,84/500 g
9995.3	1 kg	plastic	109,55 €
Original pack 6 x 1 kg			104,07/1 kg

Cobalt agarose beads

▶ Roti®garose-His/Co Beads see p. 2281

Cobalt(II) carbonate

Cobalt(II) carbonate

46 % Co, extra pure

Cobaltous carbonate
$CoCO_3$
M 118,94 g/mol
D 4,13
mp 200 °C (dec.)
Solubility: 1,1 g/l (H_2O, 15 °C)
[513-79-1] • EC No. 208-169-4
UN No. 3077 • ADR 9 III • WGK 3

Danger

H302-H317-H334-H341-H350i-H360F-H410

Type analysis:

Assay (Co). ..... ~46 %
Lead (Pb). ..... ≤0,01 %
Iron (Fe). ..... ≤0,01 %
Copper (Cu). ..... ≤0,01 %
Manganese (Mn). ..... ≤0,01 %
Nickel (Ni). ..... ≤0,01 %
Zinc (Zn). ..... ≤0,01 %

9930.1	50 g	plastic	20,35 €
9930.2	100 g	plastic	34,30 €
9930.3	500 g	plastic	114,95 €
Original pack 6 x 500 g			109,20/500 g

Cobalt charged IMAC columns

▶ Roti®garose-His/Co Columns see p. 2281

Cobalt(II) chloride hexahydrate

Cobaltous chloride
$CoCl_2 \cdot 6\ H_2O$
M 237,93 g/mol
D 1,92
mp ~86 °C
Solubility: 562 g/l (H_2O, 25 °C)
[7791-13-1] • EC No. 231-589-4
UN No. 3077 • ADR 9 III • WGK 2
Danger
H302-H334-H317-H341-H350i-H360F-H410

Cobalt(II) chloride hexahydrate

≥99 %, p.a., ACS, ISO

Colour indicator for drying agents, starting material for the preparation of further cobalt compounds.

Guarantee analysis:

Assay (compl.)	99,0-102,0 %
In H_2O insoluble matter	≤0,01 %
Nitrate (NO_3)	≤0,01 %
Sulphate (SO_4)	≤0,005 %
Ammonium (NH_4)	≤0,005 %
Lead (Pb)	≤0,003 %
Calcium (Ca)	≤0,005 %
Iron (Fe)	≤0,005 %
Potassium (K)	≤0,01 %
Copper (Cu)	≤0,001 %
Magnesium (Mg)	≤0,005 %
Manganese (Mn)	≤0,01 %
Sodium (Na)	≤0,05 %
Nickel (Ni)	≤0,05 %
Zinc (Zn)	≤0,002 %
Substances not precipitated by $(NH_4)_2S$	≤0,25 %

T889.2	50 g	plastic	62,25 €
T889.3	100 g	plastic	95,60 €
T889.1	250 g	plastic	182,25 €

Cobalt(II) chloride hexahydrate

≥98 %, extra pure

Typ analysis:

Assay (compl.)	≥98,0 %
Sulphate (SO_4)	≤0,01 %
Lead (Pb)	≤0,001 %
Iron (Fe)	≤0,001 %
Nickel (Ni)	≤0,001 %
Zinc (Zn)	≤0,001 %
In H_2O insoluble matter	≤0,02 %

7095.1	50 g	plastic	53,25 €
7095.2	100 g	plastic	80,55 €

Cobalt(II) nitrate hexahydrate

Cobaltous nitrate
$Co(NO_3)_2 \cdot 6\ H_2O$
M 291,04 g/mol
D 1,87 • bp 100 °C (dec.)
mp 57 °C
Solubility: 1030 g/l (H_2O, 25 °C)
[10026-22-9] • EC No. 233-402-1
UN No. 3077 • ADR 9 III • WGK 3
Danger
H317-H334-H341-H350i-H360F-H410

Cobalt(II) nitrate hexahydrate

ROTI®METIC 99,999 % (5N)

Typ analysis:

Assay (metals basis)	99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5291.1	10 g	plastic	223,10 €
5291.2	25 g	plastic	514,95 €

Cobalt(II) nitrate hexahydrate

≥98 %, p.a., ACS

Guarantee analysis:

Assay (compl.)	98,0-102,0 %
In H_2O insoluble matter	≤0,01 %
Chloride (Cl)	≤0,002 %
Sulphate (SO_4)	≤0,005 %
Iron (Fe)	≤0,001 %
Lead (Pb)	≤0,002 %
Calcium (Ca)	≤0,005 %
Sodium (Na)	≤0,05 %
Nickel (Ni)	≤0,15 %
Magnesium (Mg)	≤0,005 %
Potassium (K)	≤0,01 %
Copper (Cu)	≤0,002 %
Zinc (Zn)	≤0,01 %

HN16.1	50 g	plastic	29,60 €
HN16.2	100 g	plastic	48,30 €
HN16.3	250 g	plastic	99,90 €

Cobalt(II) nitrate hexahydrate

≥98 %, extra pure

Type analysis:

Assay (based on Co)	≥98,0 %
Lead (Pb)	≤0,01 %
Iron (Fe)	≤0,01 %
Copper (Cu)	≤0,01 %
Sodium (Na)	≤0,01 %
Nickel (Ni)	≤0,1 %

9928.1	100 g	plastic	22,50 €
9928.2	500 g	plastic	74,75 €
Original pack 6 x 500 g			71,01/500 g
9928.3	1 kg	plastic	125,25 €
Original pack 6 x 1 kg			118,99/1 kg

Cobaltous carbonate

▶ Cobalt(II) carbonate see p. 1902

Cobaltous nitrate

▶ Cobalt(II) nitrate hexahydrate see p. 1903

Cobalt(II,III) oxide

Cobalt(II,III) oxide

≥71 % Co, p.a.
Cobaltosic oxide
Co_3O_4
M 240,80 g/mol
D 6,07
mp >900 °C (dec.)
Solubility: insoluble (H_2O)
[1308-06-1] • EC No. 215-157-2
UN No. 3077 • ADR 9 III • WGK 1
Danger H317-H334-H351-H410

Guarantee analysis:

Assay (Co)	≥71,0 %
Appearance of solution (10 %, HCl)	clear
Lead (Pb)	≤0,001 %
Iron (Fe)	≤0,01 %
Nickel (Ni)	≤0,01 %

9834.1	25 g	plastic	17,10 €
9834.2	100 g	plastic	46,15 €
9834.3	500 g	plastic	192,45 €
Original pack 6 x 500 g			182,83/500 g

Cobalt(III) sodium nitrite

▶ Sodium hexanitrocobaltate(III) see p. 2338

Cobalt(II) sulphate hydrate

Cobalt(II) sulphate hydrate

ROTI®METIC 99,999 % (5N)
Cobalt(II) sulphate
$CoSO_4 \cdot x\ H_2O$
M 154,99 + x H_2O g/mol
bp 420 °C
mp 41 °C
Solubility: 383 g/l (H_2O, 20 °C)
[60459-08-7]
UN No. 3077 • ADR 9 III • WGK 3
Danger
H302-H334-H317-H341-H350i-H360F-H410

Type analysis:

Assay (metals basis)	99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5326.1	10 g	plastic	76,25 €

Cobalt(II) sulphate heptahydrate

Cobaltous sulphate
$CoSO_4 \cdot 7\ H_2O$
M 281,10 g/mol
mp 41 °C (dec.)
Solubility: 383 g/l (H_2O, 25 °C)
[10026-24-1] • EC No. 233-334-2
UN No. 3077 • ADR 9 III • WGK 3
Danger
H302-H317-H334-H341-H350i-H360F-H410

Cobalt(II) sulphate heptahydrate

≥97 %, p.a.
For manufacturing of ceramics.

Guarantee analysis:

Assay	≥97,0 %
In H_2O insoluble matter	≤0,01 %
Lead (Pb)	≤0,001 %
Calcium (Ca)	≤0,001 %
Iron (Fe)	≤0,001 %
Potassium (K)	≤0,001 %
Copper (Cu)	≤0,001 %
Magnesium (Mg)	≤0,005 %
Sodium (Na)	≤0,005 %
Nickel (Ni)	≤0,005 %
Zinc (Zn)	≤0,001 %

4390.1	100 g	plastic	36,45 €
4390.2	250 g	plastic	79,05 €
4390.3	500 g	plastic	142,90 €
Original pack 6 x 500 g			135,76/500 g

Cobalt(II) sulphate heptahydrate

≥97,5 %, extra pure

Type analysis:

Assay	≥97,5 %
Aluminium (Al)	≤0,005 %
Iron (Fe)	≤0,005 %
Nickel (Ni)	≤0,005 %
In water insoluble matter	≤0,05 %

7327.1	100 g	plastic	19,25 €
7327.2	500 g	plastic	59,05 €
Original pack 6 x 500 g			56,10/500 g
7327.3	1 kg	plastic	105,25 €
Original pack 6 x 1 kg			99,99/1 kg
7327.4	2,5 kg	plastic	235,45 €

Coccionella

▶ Cochineal see p. 1904

Cochin

▶ Oil of lemon-grass see p. 2178

Cochineal colouring matter

▶ Carmine (C.I. 75470) see p. 1879

Cochineal

Cochineal

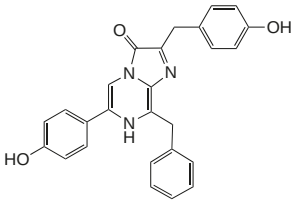
pure
Whole lice from *Coccus cacti*.
Coccionella
[1343-78-8] • EC No. 215-680-6

Type analysis:

Appearance	grey violet

6500.1	25 g	plastic	29,60 €

Coelenterazine



Coelenterazine

≥95 %, for biochemistry
Luciferase substrate
$C_{26}H_{21}N_3O_3$
M 423,48 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[55779-48-1]
WGK 1

Type analysis:

Assay (TLC)	≥95 %

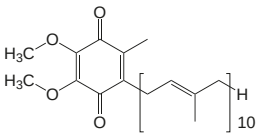
4094.3	1 mg	glass	58,60 €
4094.4	2,5 mg	glass	110,65 €

For further information, please see page 1329

Coenzyme I

▶ NAD see p. 2151

Coenzyme Q 10



Coenzyme Q 10

≥98 %, for biochemistry
Ubiquinone 50
$C_{59}H_{90}O_4$
M 863,37 g/mol
mp 49-51 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[303-98-0] • EC No. 206-147-9

Type analysis:

Appearance	yellow to orange crystalline powder
Assay (HPLC)	≥98 %
Water (KF)	≤0,5 %
Ash content	≤0,1 %

4047.1	25 mg	glass	21,40 €
4047.2	1 g	glass	37,55 €
4047.3	5 g	glass	94,50 €
4047.4	10 g	glass	153,65 €
4047.5	25 g	glass	321,45 €

For further information, please see page 1321

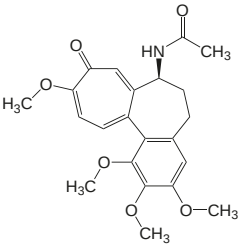
Coenzymes

Art. No.	Description	Page
HN35	Adenosin-5'-triphosphate disodium salt (ATP)	1773
4047	Coenzyme Q 10	1904
6833	Flavine-adenine-dinucleotide disodium salt (FAD)	1994
5581	Flavine-adenine-dinucleotide disodium salt (FAD)	1994
AE11	NAD	2151
AE12	NADH disodium salt	2151
AE13	NADP disodium salt	2152
AE14	NADPH tetrasodium salt	2152

Colamine

▶ Ethanolamine see p. 1977

Colchicine



Colchicine

≥94 %, for biochemistry
$C_{22}H_{25}NO_6$
M 399,45 g/mol
mp 155-157 °C (dec.)
Solubility: 45 g/l (H_2O, 20 °C)
[64-86-8] • EC No. 200-598-5
UN No. 1544 • ADR 6.1 II • WGK 3
Danger H300-H340

Type analysis:

Appearance	pale yellow powder
Assay (HPLC)	94,0-101,0 %
Water (KF)	≤2,0 %
Specific rotation $[\alpha]_D^{20}$ (1% in ethanol)	-250° to -240°

8884.1	500 mg	glass	52,60 €
8884.7	5 g	glass	385,95 €
8884.8	25 g	glass	1714,65 €

Cold spray

▶ Solidofix®-Cryo spray see p. 2352

Coli Fluoro Broth

Coli Fluoro Broth

for microbiology

Enrichment medium for the simultaneous and easy detection of total Coliforms and *E. coli* in water, foods and dairy products.

Application: Use 17 g for 1 l broth.

Storage temp.: +4 °C

WGK 1

Formulation:

Tryptose. ..... 5 g/l
Sodium chloride. ..... 5 g/l
Dipotassium phosphate. ..... 2,7 g/l
Potassium phosphate. ..... 2 g/l
Sorbitol. ..... 1 g/l
Tryptophane. ..... 1 g/l
Sodium lauryl sulphate. ..... 0,1 g/l
Chromogenic-fluorogenic mixture. ..... 0,23 g/l
pH value. ..... 6,8 ±0,2

2923.2	100 g	plastic	90,20 €
2923.1	500 g	plastic	364,45 €
Original pack 6 x 500 g			346,23/500 g

For further information, please see page 1441

Coliforms chromogenic Agar (ISO)

Coliforms chromogenic Agar (ISO)

ISO 9308-1, for microbiology

For detection and enumeration of *E. coli* and other coliforms in water.

Application: Use 26,45 g for 1 l agar.

CCA

Storage temp.: +4 °C

WGK 1

Guarantee analysis:

Sodium chloride (NaCl). ..... 5,0 g/l
di-Sodium hydrogen phosphate. ..... 2,7 g/l
Sodium dihydrogen phosphate . ..... 2,2 g/l
Yeast extract. ..... 2,0 g/l
Casein, enzymatically digested. ..... 1,0 g/l
Sodium pyruvate. ..... 1,0 g/l
Tryptophane. ..... 1,0 g/l
Sorbitol. ..... 1,0 g/l
Chromogene Mixture. ..... 0,4 g/l
Sodium heptadecyl sulphate (Tergitol-7). ..... 0,15 g/l
Agar. ..... 10 g/l
pH value. ..... 6,8 ±0,2

8849.1	500 g	plastic	471,95 €
Original pack 6 x 500 g			448,35/500 g

For further information, please see page 1441

Coliforms chromogenic Agar

Coliforms chromogenic Agar

for microbiology

For selective enrichment and simultaneous detection of *E. coli* and other Coliforms in water and food samples.

Application: Use 26,4 g for 1 l agar.

Storage temp.: +20 °C

WGK 3

Formulation:

Sodium chloride (NaCl). ..... 5 g/l
Phosphate buffer. ..... 4,9 g/l
Peptone. ..... 3 g/l
Sodium pyruvate. ..... 1 g/l
Tryptophane. ..... 1 g/l
Sorbitol. ..... 1 g/l
Chromogene Mixture. ..... 0,36 g/l
Sodium heptadecyl sulphate (Tergitol-7). ..... 0,1 g/l
Agar. ..... 10 g/l
pH value. ..... 6,8 ±0,2

CL45.2	100 g	plastic	127,85 €
CL45.1	525 g	plastic	470,75 €

For further information, please see page 1442

Colistinsulphate

Colistinsulphate

≥19000 IU/mg, for biochemistry

Bacteriostatic antibiotic, peptide antibiotic

Polymyxin E_1-disulphate

$C_{45}H_{85}N_{13}O_{10} \cdot H_2SO_4$

M 1066,32 g/mol

mp 200-220 °C

Storage temp.: +4 °C

[1264-72-8] • EC No. 215-034-3

UN No. 2811 • ADR 6.1 III • WGK 1

Danger H301

Type analysis:

Activity. ..... ≥19 000 IU/mg
Sulphate (SO_4). ..... 15-18 %
pH value (1 % in H_2O). 4,0-6,0
Loss on drying. ..... ≤3,5 %

CN31.1	100 mg	glass	26,35 €
CN31.2	250 mg	glass	52,15 €
CN31.3	1 g	glass	80,10 €

For further information, please see page 1501

Colophony

Colophony

for biochemistry

D 1,07

mp ~90 °C • flp >180 °C

Solubility: 130 mg/l (H_2O, 20 °C)

[8050-09-7] • EC No. 232-475-7

WGK 1

Warning H317

Type analysis:

Softening point (ring+pellet). ..... min. 71 °C
Acid value. ..... 145-185 mg KOH/g

9051.3	250 g	plastic	13,45 €
9051.1	1 kg	plastic	28,50 €
Original pack 6 x 1 kg			27,08/1 kg
9051.4	2,5 kg	plastic	55,80 €
9051.2	5 kg	card board	95,60 €

Columbia Agar (Base)

Columbia Agar (Base)

Ph.Eur., for microbiology

For cultivation of fastidious and non-fastidious microorganisms, also for Mycoplasms.

Application: Use 42,5 g for 1 l agar.
If required, add 50-110 ml defibr. blood.

Medium Q (Ph.Eur. 6.0), Columbia Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Columbia Blood Agar (Base)

Storage temp.: +20 °C

WGK 3

Guarantee analysis:

Casein peptone (Pancreas hydrolysate). ..... 10 g/l
Meat peptone (Pepsin hydrolysate). ..... 5 g/l
Heart peptone (Pancreas hydrolysate). ..... 3 g/l
Yeast extract. ..... 5 g/l
Corn starch. ..... 1 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 13,5 g/l
pH value. ..... 7,3 ±0,2

X919.1	500 g	plastic	78,40 €
Original pack 6 x 500 g			74,48/500 g
X919.2	1 kg	plastic	142,45 €
Original pack 6 x 1 kg			135,33/1 kg

For further information, please see page 1442

Columbia Agar (Base), granulated

Columbia Agar (Base), granulated

granulated, Ph.Eur., for microbiology

For cultivation of fastidious and non-fastidious microorganisms, also for Mycoplasms.

Application: Use 44 g for 1 l agar.
If required, add 50-110 ml defibr. blood.

Medium Q (Ph.Eur. 6.0), Columbia Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Columbia Blood Agar (Base)

Storage temp.: +20 °C

WGK 3

Guarantee analysis:

Casein peptone (Pancreas hydrolysate). ..... 10 g/l
Meat peptone (Pepsin hydrolysate). ..... 5 g/l
Heart peptone (Pancreas hydrolysate). ..... 3 g/l
Yeast extract. ..... 5 g/l
Corn starch. ..... 1 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,3 ±0,2

1507.1	500 g	plastic	113,85 €
Original pack 6 x 500 g			108,16/500 g

For further information, please see page 1456

Colza oil

▶ Rapeseed oil see p. 2251

Common salt

▶ Sodium chloride see p. 2334

Compact Dry

Storage temp.: +20 °C
WGK 1

Compact Dry CF

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of coliforms.

Growth area is 20 cm^2

Ready-made agar plate coliforms

Type analysis:

Appearance nutrient disk. ..... light yellow
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. 6,8-7,2
Growth of test strains. ..... complies

4827.1	40 plates	blister	79,45 €
4827.2	240 plates	blister	407,45 €

For further information, please see page 1430

Compact Dry EC

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of coliforms in general, particularly *E. coli*.

Growth area is 20 cm^2

Ready-made agar plate *E. coli*

Type analysis:

Appearance nutrient disk. ..... light yellow
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. 6,8-7,2
Growth of test strains. ..... complies

4826.1	40 plates	blister	79,45 €
4826.3	120 plates	blister	212,35 €
4826.2	240 plates	blister	407,45 €

For further information, please see page 1431

Compact Dry ETB

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of enterobacteriaceae.

Growth area is 20 cm^2

Ready-made agar plate enterobacteria

Type analysis:

Appearance nutrient disk. ..... light pink
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. 7,2-7,6
Growth of test strains. ..... complies

4828.3	10 plates	blister	23,55 €
4828.1	40 plates	blister	87,00 €
4828.2	240 plates	blister	456,90 €

For further information, please see page 1431

Compact Dry SL

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of salmonellae.

Growth area is 20 cm^2

Ready-made agar plate salmonells

Type analysis:

Appearance nutrient disk. ..... violet
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. 5,5-6,3
Growth of test strains. ..... complies

4817.1	40 plates	blister	102,05 €
4817.2	240 plates	blister	504,20 €

For further information, please see page 1431

Compact Dry TC

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for total germ count.

Growth area is 20 cm^2

Ready-made agar plate total count

Type analysis:

Appearance nutrient disk. ..... light yellow
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. 6,8-7,2
Growth of test strains. ..... complies

4816.3	10 plates	blister	21,40 €
4816.1	40 plates	blister	75,15 €
4816.2	240 plates	blister	375,20 €

For further information, please see page 1432

Compact Dry X-BC

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of *Bacillus cereus.*

Growth area is 20 cm^2

Type analysis:

Appearance nutrient disk. ..... light yellow
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. 6,8-7,2
Growth of test strains. ..... complies

1070.1	40 plates	blister	107,00 €
1070.2	240 plates	blister	557,95 €

For further information, please see page 1432

Compact Dry X-SA

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of *Staphylococcus aureus.*

Growth area is 20 cm^2

Type analysis:

Appearance nutrient disk. ..... light yellow
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. 7,2-7,6
Growth of test strains. ..... complies

1087.1	40 plates	blister	107,00 €
1087.2	240 plates	blister	557,95 €

For further information, please see page 1433

Compact Dry YM

NISSUI for microbiology

Ready-made plates with anhydrous chromogenic nutrient medium for detection of yeasts and moulds.

Growth area is 20 cm^2

Ready-made agar plate yeasts and moulds

Type analysis:

Appearance nutrient disk. ..... light yellow
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. 5,2-5,8
Growth of test strains. ..... complies

4818.3	10 plates	blister	22,50 €
4818.1	40 plates	blister	80,55 €
4818.2	240 plates	blister	429,50 €

For further information, please see page 1433

Compact Dry Swab

NISSUI for microbiology

All-in-one set of swab and nutrient broth for microbiological sampling of surfaces.

Contains 1 ml **Peptone Water, buffered**

Type analysis:

Appearance nutrient broth. ..... light yellow
Turbidity. ..... clear
Sterility. ..... complies
pH value. 6,8-7,2

4809.1	40 swabs	box	102,05 €
4809.2	240 swabs	box	504,20 €

For further information, please see page 1433

Compact Dry Dilution Rack MRD

ELMEX for microbiology

For preparation of dilution series of microbiological samples. Sterile nutrient broth.

128 wells in 32 racks of 4 separable wells each.

Maximum Recovery Solution in racks

Type analysis:

Appearance of solution. ..... light beige
Turbidity. ..... clear
Peptone. ..... 1,0 g/l
NaCl. ..... 8,5 ±0,5 g/l
Sterility. ..... complies
pH value. ..... 7,1 ±0,5

1096.1	128 wells	box	186,55 €

For further information, please see page 1434

Compact Dry Dilution Rack

ELMEX for microbiology

For preparation of dilution series of microbiological samples. **Sterile PBS.**

128 wells in 32 racks of 4 separable wells each.

Type analysis:

Appearance of solution. ..... limpid to light yellow
Turbidity. ..... clear
Content NaCl. ..... 0,85 ±0,1 %
Sterility. ..... complies
pH value. ..... 7,1±0,5

4823.1	128 wells	box	160,75 €

For further information, please see page 1434

Complexing Agents

Art. No.	Description	Page
6716	Acetyl acetone	1765
6717	2-(2-Aminoethylamino)ethanol	1789
X863	Citric acid	1900
6490	Citric acid	1900
3958	Citric acid monohydrate	1901
5110	Citric acid monohydrate	1901
1412	trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate	1932
1411	trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate	1932
6723	Diethylene triamine	1938
1407	Diethylene triamine pentaacetic acid	1938
2677	Dimethylglyoxim	1949
KK24	Dimethylglyoxime disodium salt octahydrate	1949
4153	2,2'-Dipyridyl	1954
3054	EGTA	1968
3049	Ethylenediamine	1980
4218	Ethylenediamine	1980
8040	Ethylenediamine tetraacetic acid	1981
CN06	Ethylenediamine tetraacetic acid	1981
6506	Ethylenediamine tetraacetic acid calcium disodium salt dihydrate	1981
6499	Ethylenediamine tetraacetic acid copper disodium salt dihydrate	1981
3053	Ethylenediamine tetraacetic acid dipotassium salt dihydrate	1981
1408	Ethylenediamine tetraacetic acid dipotassium salt dihydrate	1981
8043	Ethylenediamine tetraacetic acid disodium salt dihydrate	1982
X986	Ethylenediamine tetraacetic acid disodium salt dihydrate	1982
6498	Ethylenediamine tetraacetic acid iron(III) sodium salt trihydrate	1982
6508	Ethylenediamine tetraacetic acid magnesium disodium salt dihydrate	1982
6510	Ethylenediamine tetraacetic acid manganese disodium salt dihydrate	1982
1410	Ethylenediamine tetraacetic acid tetrasodium salt dihydrate	1983
3619	Ethylenediamine tetraacetic acid tetrasodium salt hydrate	1983
CP87	Ethylenediamine tetraacetic acid tetrasodium salt tetrahydrate	1983
1409	Ethylenediamine tetraacetic acid tripotassium salt dihydrate	1983
6518	Ethylenediamine tetraacetic acid zinc disodium salt dihydrate	1983
2557	8-Hydroxyquinoline	2059
8653	Nitrilotriacetic acid	2162
4384	Nitrilotriacetic acid	2161
8242	Nitrilotriacetic acid trisodium salt monohydrate	2162
T113	Oxalic acid dihydrate	2187
8879	Oxalic acid dihydrate	2187
9113	1,10-Phenanthroline monohydrate	2204
KK21	1,10-Phenanthroline hydrochloride monohydrate	2204
8645	Potassium hydrogen tartrate	2221
8087	Potassium sodium tartrate tetrahydrate	2234
7998	Potassium sodium tartrate tetrahydrate	2234
T110	di-Sodium tartrate dihydrate	2350
0254	di-Sodium tartrate dihydrate	2350
5529	D(-)-Tartaric acid	2394
4891	DL-Tartaric acid	2394
K302	L(+)-Tartaric acid	2394
4890	L(+)-Tartaric acid	2394

COMU®

▶ 1-[(1-(Cyano-2-ethoxy-2-oxoethylidene-aminooxy) dimethylamino-morpholino)] uronium hexafluorophosphate (COMU®) see p. 1915

Con A

▶ Concanavalin A see p. 1907

Concanavalin A

Concanavalin A

lyophilized

From *Canavalia ensiformis*.
Con A
Storage temp.: +4 °C
[11028-71-0] • EC No. 234-258-2
WGK 1

Danger H334-H317

Type analysis:

Appearance..... white lyophilisate
Solubility (1 mg/ml PBS)..... slightly cloudy, colourless solution

7246.1	100 mg	glass	98,40 €

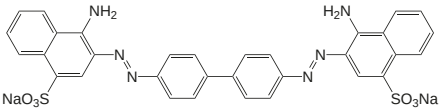
Conductivity standards

▶ Standards for conductivity measurement see p. 2378

Conductivity Standards

Art. No.	Description	Page
2462	Conductivity Standard 5 µS/cm	2378
0810	Conductivity Standard 10 µS/cm	2378
0810	Conductivity Standard 10 µS/cm	2378
0811	Conductivity Standard 20 µS/cm	2378
0812	Conductivity Standard 50 µS/cm	2378
2432	Conductivity Standard 84 µS/cm	2378
2463	Conductivity Standard 100 µS/cm	2378
2433	Conductivity Standard 147 µS/cm	2378
2464	Conductivity Standard 500 µS/cm	2378
2465	Conductivity Standard 1000 µS/cm	2378
2434	Conductivity Standard 1413 µS/cm	2378
0814	Conductivity Standard 5000 µS/cm	2378
2466	Conductivity Standard 10000 µS/cm	2378
2435	Conductivity Standard 12880 µS/cm	2378
0822	Conductivity Standard 20000 µS/cm	2378
0831	Conductivity Standard 50000 µS/cm	2378
0832	Conductivity Standard 100000 µS/cm	2378
2467	Conductivity Standard 500000 µS/cm	2379

Congo red (C.I. 22120)



Congo red (C.I. 22120)

for microscopy

Bacteriology, indicator pH 3,0-5,2
Direct Red 28, Disodium-3,3'[[1,1-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalin-1-sulphonate)
$C_{32}H_{22}N_6Na_2O_6S_2$
M 696,66 g/mol
mp 360 °C
Solubility: 25 g/l (H_2O, 20 °C)
[573-58-0] • EC No. 209-358-4
WGK 3

Danger H350-H361d

Type analysis:

Absorption max. (in H_2O)..... 490-500 nm
Loss on drying..... ≤3,0 %
pH-transition range..... 3,0 (blue)-5,2 (red)
Suitability for microscopy..... complies

0322.1	5 g	glass	16,05 €
0322.2	25 g	glass	29,60 €
0322.3	100 g	glass	59,05 €

For further information, please see page 1522

Contact plates

▶ Roti®-ContiPlates see p. 2271

Coomassie blue G 250

▶ Brilliant blue G 250 (C.I. 42655) see p. 1849

Coomassie blue R 250

▶ Brilliant blue R 250 (C.I. 42660) see p. 1849

Coomassie-Staining solution

▶ Roti®-Blue see p. 2266
▶ Roti®-Blue quick see p. 2266
▶ Rotiphorese® Blue R see p. 2292

Copper

Cu
M 63,54 g/mol
D 8,96 • bp 2595 °C
mp 1083 °C
[7440-50-8] • EC No. 231-159-6

Copper pellets

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis)..... 99,999 %
Particle size..... 3 x 3 mm
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5621.1	25 g	plastic	60,75 €
5621.2	100 g	plastic	150,40 €

Copper beads

≥99,9 %, beads

Type analysis:

Assay..... ≥99,9 %

2728.1	100 g	glass	40,75 €

Copper sheet

sheet 0,1 mm thick, 60 cm wide

8540.1	250 g	card board	36,45 €
8540.2	1 kg	card board	77,95 €
Original pack 6 x 1 kg			74,05/1 kg

Copper wool

~99 %

Fibre length ∅ 60 cm;
fibre cross section 0,05 x 0,2 mm²

Type analysis:

Assay (Cu)..... ~99 %
Lead (Pb)..... ≤0,05 %

9597.1	100 g	plastic	17,75 €
9597.2	250 g	plastic	32,15 €
9597.3	500 g	plastic	56,90 €
Original pack 6 x 500 g			54,06/500 g
9597.4	1 kg	plastic	102,05 €
Original pack 6 x 1 kg			96,95/1 kg

Copper, nano

Copper, nano

ROTI®nanoMETIC ≥97 %, 40 nm

Cu
M 63,54 g/mol
D 8,96 • bp 2567 °C
mp 1083 °C
[7440-50-8] • EC No. 231-159-6

Type analysis:

Appearance..... brown to red brown powder
Assay (dry substance)..... ≥97 %
Particle size..... ~40 nm
Specific surface (BET)..... 10-20 m²/g
Stabilized with Oleic acid

8279.1	5 g	glass	34,30 €
8279.2	25 g	glass	132,15 €
8279.3	100 g	glass	478,40 €

Copper powder

Cu
M 63,54 g/mol
D 8,96 • bp 2567 °C
mp 1083 °C
[7440-50-8] • EC No. 231-159-6
UN No. 3089 • ADR 4.1 III • WGK 2

Warning H228-H410

Copper powder

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis)..... 99,999 %
Particle size..... <100 mesh
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5386.1	10 g	glass	133,85 €
5386.2	50 g	glass	568,70 €

Copper powder

≥99,8 %, p.a., <63 µm

Type analysis:

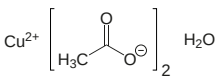
Assay (Cu)..... ≥99,8 %

CP21.1	100 g	plastic	18,20 €
CP21.2	500 g	plastic	55,40 €
Original pack 6 x 500 g			52,63/500 g

Copper Standards

- Copper AAS Standard Solution see p. 2359
- Copper ICP Standard Solution see p. 2362
- Copper ICP Standard Solution see p. 2367

Copper(II) acetate monohydrate



Cupric acetate
$Cu(CH_3COO)_2 \cdot H_2O$
M 199,65 g/mol
D 1,88
mp ~115 °C
Solubility: ~72 g/l (H_2O, 20 °C)
[6046-93-1] • EC No. 205-553-3
UN No. 3077 • ADR 9 III • WGK 3

Danger H302-H318-H410

Copper(II) acetate monohydrate

≥99 %, p.a., ACS

Spray reagent for TLC.

Guarantee analysis:

Assay (iodom.)..... ≥99 %
pH value (2 % in H_2O)..... 5,0-5,5
In H_2O insoluble matter..... ≤0,01 %
Chloride (Cl)..... ≤0,003 %
Sulphate (SO_4)..... ≤0,01 %
Calcium (Ca)..... ≤0,005 %
Iron (Fe)..... ≤0,002 %
Potassium (K)..... ≤0,01 %
Sodium (Na)..... ≤0,01 %
Nickel (Ni)..... ≤0,01 %

HN30.1	50 g	plastic	22,05 €
HN30.2	100 g	plastic	33,25 €
HN30.3	250 g	plastic	68,70 €

Copper(II) acetate monohydrate

≥98 %, extra pure

Type analysis:

Assay..... ≥98 %
In H_2O insoluble matter..... ≤0,1 %
pH (5 % in H_2O)..... 5-6
Chloride (Cl)..... ≤0,05 %
Sulphate (SO_4)..... ≤0,05 %
Iron (Fe)..... ≤0,01 %

8625.1	100 g	plastic	15,60 €
8625.2	500 g	plastic	42,90 €
Original pack 6 x 500 g			40,76/500 g
8625.3	1 kg	plastic	79,45 €
Original pack 6 x 1 kg			75,48/1 kg

Copper(I) bromide

Copper(I) bromide

≥99,999 %, ROTI®click Grade

for Click Chemistry
CuBr
M 143,45 g/mol
mp 504 °C
[7787-70-4] • EC No. 232-131-6
WGK 2

Warning H315-H319-H335

Type analysis:

Appearance..... light green powder
Assay (metals basis)..... ≥99,999 %

7813.1	5 mg	plastic	14,55 €
7813.2	10 x 5 mg	plastic	76,25 €

Copper(II) carbonate, basic

Copper(II) carbonate, basic

≥95 %, extra pure

Cupric carbonate
$CuCO_3 \cdot Cu(OH)_2$
M 221,12 g/mol
mp 200 °C (dec.)
[12069-69-1] • EC No. 235-113-6
UN No. 3077 • ADR 9 III • WGK 3

Warning H302+H332-H319-H410

Type analysis:

Assay..... ≥95,0 %
Chloride (Cl)..... ≤0,1 %
Iron (Fe)..... ≤0,05 %
Loss on drying..... ≤1,0 %
Insoluble in HCl..... ≤0,05 %

7318.1	250 g	plastic	31,10 €
7318.2	500 g	plastic	53,65 €
Original pack 6 x 500 g			50,97/500 g
7318.3	1 kg	plastic	93,45 €
Original pack 6 x 1 kg			88,78/1 kg
7318.4	2,5 kg	plastic	198,90 €

Copper(I) chloride

Copper monochloride
CuCl
M 99,00 g/mol
D 4,14 • bp 1367 °C
mp 422 °C
Solubility: 0,001-0,1 g/l (H_2O)
[7758-89-6] • EC No. 231-842-9
UN No. 2802 • ADR 8 III • WGK 3

Danger

H302+H312-H315-H318-H410

Copper(I) chloride

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5379.1	10 g	plastic	78,40 €
5379.2	50 g	plastic	256,95 €

Copper(I) chloride

≥98 %, p.a., ACS

Absorption reagent in gas analysis, identification of arsenic and antimony hydrides.

Guarantee analysis:

Assay..... ≥98 %
In HCl insoluble matter..... ≤0,02 %
Sulphate (SO_4)..... ≤0,1 %
Lead (Pb)..... ≤0,02 %
Cadmium (Cd)..... ≤0,0005 %
Calcium (Ca)..... ≤0,01 %
Chromium (Cr)..... ≤0,005 %
Cobalt (Co)..... ≤0,0005 %
Iron (Fe)..... ≤0,005 %
Potassium (K)..... ≤0,005 %
Magnesium (Mg)..... ≤0,0005 %
Manganese (Mn)..... ≤0,0005 %
Sodium (Na)..... ≤0,05 %
Nickel (Ni)..... ≤0,0005 %
Zinc (Zn)..... ≤0,0005 %

4391.1	100 g	plastic	19,90 €
4391.2	250 g	plastic	38,60 €
4391.3	500 g	plastic	68,70 €
Original pack 6 x 500 g			65,27/500 g
4391.4	1 kg	plastic	121,40 €
Original pack 6 x 1 kg			115,33/1 kg

Copper(I) chloride

≥97 %, extra pure

Type analysis:

Assay (mangan.)..... ≥97 %
Sulphate (SO_4)..... ≤0,05 %
Iron (Fe)..... ≤0,02 %
Substances not precipitated by H_2S (as SO_4)..... ≤2 %

CN81.1	250 g	plastic	25,30 €
CN81.2	500 g	plastic	41,85 €
Original pack 6 x 500 g			39,76/500 g
CN81.3	1 kg	plastic	68,30 €
Original pack 6 x 1 kg			64,89/1 kg

Copper(II) chloride dihydrate

Copper dichloride dihydrate
$CuCl_2 \cdot 2\ H_2O$
M 170,48 g/mol
D 2,54
Solubility: 1150 g/l (H_2O, 20 °C)
[10125-13-0] • EC No. 231-210-2
UN No. 2802 • ADR 8 III • WGK 3

Danger

H290-H302+H312-H315-H318-H410

Copper(II) chloride dihydrate

≥99 %, p.a.

Catalyst

Guaratee analysis:

Assay (compl.)..... ≥99 %
pH value (5 %, 20 °C)..... 3,0-3,8
Sulphate (SO_4)..... ≤0,005 %
Total nitrogen (N)..... ≤0,004 %
Arsenic (As)..... ≤0,0001 %
Calcium (Ca)..... ≤0,002 %
Iron (Fe)..... ≤0,001 %
Potassium (K)..... ≤0,002 %
Magnesium (Mg)..... ≤0,002 %
Sodium (Na)..... ≤0,002 %
Nickel (Ni)..... ≤0,005 %
Lead (Pb)..... ≤0,004 %

CN82.1	250 g	plastic	27,85 €
CN82.2	500 g	plastic	44,65 €
Original pack 6 x 500 g			42,42/500 g
CN82.3	1 kg	plastic	80,55 €
Original pack 6 x 1 kg			76,52/1 kg
CN82.7	25 kg	plastic	1596,40 €

Copper(II) chloride dihydrate

≥98 %, extra pure

Type analysis:

Assay..... ≥98,0 %
pH value (5 % solution)..... 3,0-4,0
In H_2O insoluble matter..... ≤0,05 %
Sulphate (SO_4)..... ≤0,01 %
Arsenic (As)..... ≤0,01 %
Lead (Pb)..... ≤0,005 %
Calcium (Ca)..... ≤0,01 %
Iron (Fe)..... ≤0,01 %
Magnesium (Mg)..... ≤0,01 %
Zinc (Zn)..... ≤0,06 %

2623.1	250 g	plastic	18,85 €
2623.2	500 g	plastic	29,60 €
Original pack 6 x 500 g			28,12/500 g
2623.3	1 kg	plastic	47,20 €
Original pack 6 x 1 kg			44,84/1 kg
2623.4	2,5 kg	plastic	104,20 €

Copper dichloride dihydrate

▶ Copper(II) chloride dihydrate see p. 1909

Copper EDTA disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid copper disodium salt dihydrate see p. 1981

Copper(II) hydroxide

Copper(II) hydroxide

≥97,5 %, extra pure

Cupric hydroxide
$Cu(OH)_2$
M 97,56 g/mol
D 3,37
mp 160 °C (dec.)
Solubility: 3 mg/l (H_2O, 25 °C)
[20427-59-2] • EC No. 243-815-9
UN No. 3288 • ADR 6.1 II • WGK 3

Danger H302-H318-H330-H410

Type analysis:

Assay..... ≥97,5 %
Moisture..... ≤2 %
Lead (Pb)..... ≤0,1 %
Iron (Fe)..... ≤0,1 %

9864.1	100 g	plastic	17,10 €
9864.2	500 g	plastic	40,75 €
Original pack 6 x 500 g			38,71/500 g
9864.3	1 kg	plastic	69,80 €
Original pack 6 x 1 kg			66,31/1 kg
9864.4	2,5 kg	plastic	140,75 €

Copper(I) iodide

CuI
M 190,45 g/mol
D 5,67 • bp 1290 °C
mp 591 °C
Solubility: ~0,0002 g/l (H_2O, 20 °C)
[7681-65-4] • EC No. 231-674-6
UN No. 3077 • ADR 9 III • WGK 3

Warning

H302-H315-H319-H335-H410

Copper(I) iodide

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5300.2	50 g	plastic	213,95 €

Copper(I) iodide

≥98 %, pure

Type analysis:

Assay..... ≥98 %
Sulphate (SO_4)..... ≤0,1 %
Lead (Pb)..... ≤0,01 %
Iron (Fe)..... ≤0,1 %
Loss on drying..... ≤1 %

0305.1	100 g	plastic	27,85 €
0305.2	500 g	plastic	104,85 €
Original pack 6 x 500 g			99,61/500 g
0305.3	1 kg	plastic	188,15 €
Original pack 6 x 1 kg			178,74/1 kg

Copper monochloride

▶ Copper(I) chloride see p. 1909

Copper nitrate trihydrate

▶ Copper(II) nitrate trihydrate see p. 1910

Copper(II) nitrate trihydrate

Cupric nitrate trihydrate
$Cu(NO_3)_2 \cdot 3\ H_2O$
M 241,60 g/mol
D 2,05
mp ~114 °C
Solubility: 1378 g/l (H_2O, 20 °C)
[10031-43-3] • EC No. 221-838-5
UN No. 1477 • ADR 5.1 II • WGK 3

Danger
H272-H400-H410-H302-H315-H319

Copper(II) nitrate trihydrate

≥99,5 %, p.a., ACS

Guarantee analysis:

Assay (iodom.)	99,5-102,0 %
pH value (5 % solution)	≥2,8
In H_2O insoluble matter	≤0,01 %
Chloride (Cl)	≤0,002 %
Sulphate (SO_4)	≤0,01 %
Lead (Pb)	≤0,001 %
Calcium (Ca)	≤0,005 %
Iron (Fe)	≤0,005 %
Potassium (K)	≤0,005 %
Sodium (Na)	≤0,01 %
Nickel (Ni)	≤0,01 %
Zinc (Zn)	≤0,03 %

P754.1	500 g	plastic	63,35 €
Original pack 6 x 500 g			60,18/500 g
P754.2	1 kg	plastic	166,55 €
Original pack 6 x 1 kg			158,22/1 kg

Copper(II) nitrate trihydrate

≥98 %, pure

Type analysis:

Assay	≥98,0 %
In H_2O insoluble matter	≤0,01 %
Chloride (Cl)	≤0,02 %
Sulphate (SO_4)	≤0,02 %
Iron (Fe)	≤0,01 %
Lead (Pb)	≤0,005 %

0255.1	500 g	plastic	29,60 €
Original pack 6 x 500 g			28,12/500 g
0255.2	1 kg	plastic	45,05 €
Original pack 6 x 1 kg			42,80/1 kg
0255.3	2,5 kg	plastic	96,65 €

Copper(I) oxide

Copper(I) oxide

≥97 %, red, powder
Cu_2O
M 143,08 g/mol
bp 1800 °C (dec.)
mp 1235 °C
[1317-39-1] • EC No. 215-270-7
UN No. 3077 • ADR 9 III • WGK 3

Danger H302+H322-H318-H410

Type analysis:

Appearance	red powder
Assay	≥97 %
Chloride (Cl)	≤0,5 %
Sulphate (SO_4)	≤0,5 %
Copper oxide (CuO)	≤1,0 %

2733.1	250 g	glass	25,30 €
2733.2	500 g	glass	42,50 €
Original pack 6 x 500 g			40,38/500 g
2733.3	1 kg	glass	74,75 €
Original pack 6 x 1 kg			71,01/1 kg

Copper(II) oxide

CuO
M 79,55 g/mol
D 6,48
mp 1326 °C
Solubility: insoluble (H_2O, 20 °C)
[1317-38-0] • EC No. 215-269-1
UN No. 3077 • ADR 9 III • WGK 1

Warning H410

Copper(II) oxide

p.a., ACS, as wire
For elementary analysis.

Guarantee analysis:

Assay (total oxygen as CuO)	≥55,0 %
Chloride (Cl)	≤0,005 %
Total carbon (as C)	≤0,002 %
Total nitrogen (as N)	≤0,002 %
Total sulphur (as SO_4)	≤0,005 %
Wire ~0,65 x 6 mm	
Surface: CuO, core: Cu_2O	

4467.2	25 g	plastic	21,40 €
4467.1	100 g	plastic	67,65 €
4467.3	250 g	plastic	145,05 €

Copper(II) oxide

≥97,5 %, powder

Type analysis:

Appearance	fine, black powder
Assay (CuO)	≥97,5 %
Copper (Cu)	≥78 %
Cuprous oxide (Cu_2O)	≤0,5 %

8169.4	250 g	plastic	19,90 €
8169.2	500 g	plastic	31,75 €
Original pack 6 x 500 g			30,16/500 g
8169.1	1 kg	plastic	58,60 €
Original pack 6 x 1 kg			55,67/1 kg
8169.3	2,5 kg	plastic	125,70 €

Copper(II) oxide, nano

Copper(II) oxide, nano

ROTI®nanoMETIC ≥99 %, 15-50 nm
CuO
M 79,55 g/mol
D 6,315
mp 1326 °C
Solubility: insoluble (H_2O, 20 °C)
[1317-38-0] • EC No. 215-269-1
UN No. 3077 • ADR 9 III • WGK 1

Warning H410

Type analysis:

Appearance	black powder
Assay	≥99 %
Particle size	15-50 nm
Specific surface (BET)	≥15 m^2/g
Phase	monoclinic

8251.1	10 g	glass	21,40 €
8251.2	50 g	glass	81,20 €
8251.3	100 g	glass	132,15 €

Copper(II) sulphate

$CuSO_4$
M 159,60 g/mol
D 3,61
mp >560 °C (dec.)
Solubility: 203 g/l (H_2O, 20 °C)
[7758-98-7] • EC No. 231-847-6
UN No. 3077 • ADR 9 III • WGK 3

Warning
H302-H315-H319-H400-H410

Copper(II) sulphate

≥98 %, p.a., anhydrous
Reagent for the detection of water, preparation of pigments.

Guarantee analysis:

Assay (iodom.)	≥98,0 %
In H_2O insoluble matter	≤0,01 %
Loss on drying (250 °C)	≤1 %
Substances not precipitated by H_2S (as SO_4)	≤0,15 %
Total nitrogen (as N)	≤0,005 %
Chloride (Cl)	≤0,002 %
Arsenic (As)	≤0,0001 %
Iron (Fe)	≤0,01 %
Magnesium (Mg)	≤0,005 %
Nickel (Ni)	≤0,005 %
Zinc (Zn)	≤0,05 %
Calcium (Ca)	≤0,01 %
Potassium (K)	≤0,005 %
Sodium (Na)	≤0,01 %
Lead (Pb)	≤0,01 %

P023.1	250 g	plastic	35,40 €
P023.2	1 kg	plastic	105,25 €
Original pack 6 x 1 kg			99,99/1 kg
P023.3	2,5 kg	plastic	231,15 €

Copper(II) sulphate

≥99 %, Ph.Eur., anhydrous

Guarantee analysis:

Assay (iodom., dry substance)	99,0-101,0 %
Identity	complies
Appearance of solution	complies
Chloride (Cl)	≤0,015 %
Iron (Fe)	≤0,015 %
Lead (Pb)	≤0,008 %
Loss on drying (250 °C)	≤1,0 %

CP86.1	250 g	plastic	22,50 €
CP86.2	500 g	plastic	36,45 €
Original pack 6 x 500 g			34,63/500 g
CP86.3	1 kg	plastic	62,25 €
Original pack 6 x 1 kg			59,14/1 kg
CP86.4	2,5 kg	plastic	128,90 €
CP86.5	5 kg	plastic	246,20 €
CP86.7	25 kg	plastic	1069,65 €

Copper(II) sulphate

≥98 %, anhydrous, ROTI®click Grade

For Click Chemistry.

Type analysis:

Appearance. ..... light grey powder
Assay. ..... ≥98 %

7816.1	10 mg	plastic	14,95 €
7816.2	5 x10 mg	plastic	42,90 €

Copper(II) sulphate pentahydrate

Cupric vitriol
$CuSO_4 \cdot 5\ H_2O$
M 249,69 g/mol • D 2,28
Solubility: 317 g/l (H_2O, 20 °C)
[7758-99-8] • EC No. 231-847-6
UN No. 3077 • ADR 9 III • WGK 3

Danger H302-H318-H410

Copper(II) sulphate pentahydrate

≥99,5 %, p.a., ACS, ISO

For the determination of reducing sugar (Fehling's solution). Used as spray in TLC.

Guarantee analysis:

Assay (iodom.). ..... ≥99,5 %
pH value (5 % solution). ..... ≥3,8
Insoluble matter. ..... ≤0,005 %
Total nitrogen (as N). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Cadmium (Cd). ..... ≤0,003 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,003 %
Magnesium (Mg). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,005 %
Zinc (Zn). ..... ≤0,03 %
Cobalt (Co). ..... ≤0,001 %
Potassium (K). ..... ≤0,001 %
Sodium (Na). ..... ≤0,005 %
Lead (Pb). ..... ≤0,005 %

P024.1	500 g	plastic	28,95 €
Original pack 6 x 500 g			27,50/500 g
P024.2	1 kg	plastic	49,35 €
Original pack 6 x 1 kg			46,88/1 kg
P024.3	2,5 kg	plastic	93,00 €

Copper(II) sulphate pentahydrate

≥99 %, Ph.Eur., BP

Guarantee analysis:

Assay (iodom.). ..... 99,0-100,5 %
Identity. ..... complies
pH value (5 % solution). ..... ≥3,8
Appearance of solution. ..... complies
In H_2O insoluble matter. ..... ≤0,025 %
Loss on drying (250 °C). ..... 35,0-36,5 %
Volatile organic impurities. ..... complies
Chloride (Cl). ..... ≤0,01 %
Arsenic (As). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,005 %
Iron (Fe). ..... ≤0,01 %
Nickel (Ni). ..... ≤0,005 %

P025.1	500 g	plastic	32,15 €
Original pack 6 x 500 g			30,54/500 g
P025.2	1 kg	plastic	55,80 €
Original pack 6 x 1 kg			53,01/1 kg
P025.4	2,5 kg	plastic	112,80 €
P025.3	5 kg	plastic	214,50 €

Copper(II) sulphate pentahydrate

≥98 %, cryst.

Type analysis:

Assay. ..... ≥98,0 %
Lead (Pb). ..... ≤0,02 %
Iron (Fe). ..... ≤0,015 %
Nickel (Ni). ..... ≤0,01 %

8175.1	1 kg	plastic	25,70 €
Original pack 6 x 1 kg			24,42/1 kg
8175.3	2,5 kg	plastic	51,50 €
8175.2	5 kg	plastic	91,30 €
8175.4	10 kg	plastic	150,40 €
8175.5	25 kg	plastic	251,05 €

Copper(II) sulphate solution

▶ Fehling's solution I see p. 1992

Copper(II) sulphate solution (0,1 N)

Copper(II) sulphate solution

0,1 mol/l - 0,1 N volumetric standard solution

D 1,01
UN No. 3082 • ADR 9 III • WGK 3

Warning H319-H411

Type analysis:

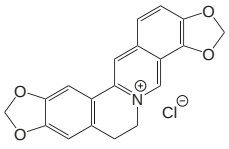
Amount-of-substance conc. (20 °C). ..... 0,1 mol/l ±0,2 %
Titer. 0,9980-1,0020

9948.1	1 l	plastic	36,45 €
Original pack 6 x 1 l			34,63/1 l

Coppervitriole

▶ Copper(II) sulphate see p. 1910

Coptisin chloride



Coptisin chloride

ROTICHROM® HPLC

Reference substance for HPLC.
From *Chelidonium majus.*
Bis(methylendioxy)protoberberinchloride
$C_{19}H_{14}NO_4Cl$
M 355,78 g/mol
Storage temp.: +4 °C
[6020-18-4]
UN No. 1544 • ADR 6.1 II

Danger H301+H311-H330-H373

Type analysis:

Purity (HPLC). ..... >99 %

1131.1	10 mg	glass	241,90 €

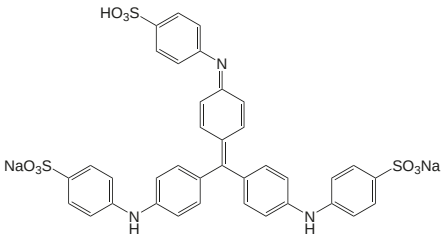
Cornin

▶ Verbenalin see p. 2434

Cosbiol

▶ Squalane see p. 2357

Cotton blue (C.I. 42780)



Cotton blue (C.I. 42780)

extra pure

For preparing "Amann" solution.
Methyl blue
$C_{37}H_{27}N_3Na_2O_9S_3$
M 799,82 g/mol
Solubility: 70 g/l (H_2O, 20 °C)
[28983-56-4] • EC No. 249-352-9
WGK 2

Type analysis:

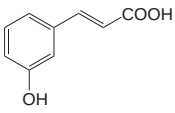
Maximum absorption. ..... 590-610 nm

5750.1	10 g	glass	19,90 €

Coulometric Karl Fischer solutions

▶ Karl Fischer Roti®hydroquant coulo A see p. 2084
▶ Karl Fischer Roti®hydroquant coulo AG see p. 2084
▶ Karl Fischer Roti®hydroquant coulo CG see p. 2084
▶ Karl Fischer Roti®hydroquant coulo Oil see p. 2084
▶ Karl Fischer Roti®hydroquant water standard 1.0 see p. 2085

m-Coumaric acid



m-Coumaric acid

≥98 %

trans-m-Hydroxy cinnamic acid
$C_9H_8O_3$
M 164,16 g/mol
mp 194-195 °C
[14755-02-3] • EC No. 209-615-0
WGK 1

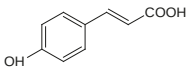
Warning H315-H319-H335

Type analysis:

Assay (GC). ..... ≥98,0 %

9904.1	5 g	glass	61,85 €

p-Coumaric acid



trans-p-Hydroxycinnamic acid
$C_9H_8O_3$
M 164,16 g/mol
mp 215-220 °C
[7400-08-0] • EC No. 231-000-0
WGK 1

Warning H315-H319-H335

p-Coumaric acid
≥98 %

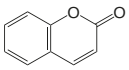
Type analysis:
Appearance. .....slightly yellow powder
Assay.....≥98,0 %

9908.1	10 g	glass	36,45 €
9908.2	50 g	glass	75,15 €

p-Coumaric acid
ROTICHROM® CHR

9906.1	1 g	glass	21,00 €

Coumarin



Coumarin
ROTICHROM® GC
Reference substance for GC.
α-Benzopyrone, 5,6-Benzo-2-pyrone
$C_9H_6O_2$
M 146,15 g/mol
D 0,935 • bp 298-302 °C
mp ~70 °C • flp 162 °C
Solubility: 1,7 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[91-64-5] • EC No. 202-086-7
UN No. 2811 • ADR 6.1 III • WGK 1

Danger H301-H412

Type analysis:
Purity (GC).....≥99 %

5284.2	50 mg	glass	94,10 €

Coumarins

Art. No.	Description	Page
8889	Bergamottin	1835
1217	Bergamottin	1835
8899	Bergaptene	1835
7006	Bergaptene	1835
5284	Coumarin	1912
6618	Daphnetin	1921
8690	Esculetin	1974
8704	Esculin sesquihydrate	1975
9369	Fraxidin	2008
9364	Fraxin	2008
7734	Herniarin	2039
NE47	Herniarin	2039
NC47	Herniarin	2039
8854	Isopimpinellin	2079
5883	Isoscopoletin	2081
NE51	Osthol	2187
NC51	Osthol	2187
7415	Psoralen	2243
7494	Scoparone	2308
7210	Scopoletin	2309
5437	Umbelliferone	2429
2827	Umckalin	2429
5497	Xanthotoxin	2442

Coupling Reagents

Art. No.	Description	Page
2131	O-(7-Azabenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HATU)	1820
2148	O-(7-Azabenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TATU)	1820
2168	Benzotriazole-1-yl-oxy-tris-(dimethylamino)-phosphonium hexafluorophosphate (BOP)	1832
2178	Benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBOP®)	1832
2132	O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HBTU)	1832
2140	O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TBTU)	1833
2200	Bromo-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBrOP®)	1855
6992	1,1'-Carbonyldiimidazole (CDI)	1878
2112	O-(1H-6-Chlorobenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HCTU)	1892
6893	4-((6-Chloro-1H-benzo{d}[1,2,3]triazol-1-yloxy)(dimethylamino)methylene)morpholin-4-ium hexafluorophosphate (HDMC)	1892
2123	6-Chloro-benzotriazole-1-yl-oxy-tris-pyrrolidinophosphonium hexafluorophosphate (PyClock®)	1892
6890	O-(6-Chlorobenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TCTU)	1892
2100	1-[(1-(Cyano-2-ethoxy-2-oxoethylidene-aminooxy) dimethylaminomorpholino)] uronium hexafluorophosphate (COMU®)	1915
4193	N,N'-Dicyclohexylcarbodiimide (DCC)	1936
6981	*N,N'*-Diisopropylcarbodiimide (DIC)	1944
6888	1-[(Dimethylamino)(morpholino)methylene]-1H-[1,2,3]triazolo[4,5-b]pyridine-1-ium 3-oxide hexafluorophosphate (HDMA)	1946
6988	4-(Dimethylamino)pyridine (DMAP)	1947
2110	N,N'-Disuccinimidyl carbonate (DSC)	1955
2125	O-[(Ethoxycarbonyl)cyanomethylenamino]-N,N,N',N'-tetramethyluronium tetrafluoroborate (TOTU)	1978
6891	Ethyl cyanoglyoxylate-2-oxyme potassium salt (K-Oxyma)	1980
2120	(Ethylcyano(hydroxyimino)-acetato-O_2)-tri-1-pyrrolidinylphosphonium hexafluorophosphate (PyOxim)	1980
2156	1-Ethyl-3-(3-dimethylaminopropyl)-carbodiimide hydrochloride (EDC-HCl)	1980
2118	Ethyl(hydroxyimino)cyanoacetate (Oxyma Pure)	1985
2130	O-(N-Succinimidyl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TSTU)	2384

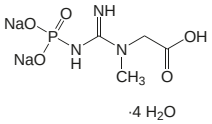
CPG-Supports for DNA-Synthesis

Art. No.	Description	Page
2318	Adenosine-CPG-Support	1773
2319	Cytidine-CPG-Support	1920
2320	Guanosine-CPG-Support	2031
2321	Thymidine-CPG-Support	2423

CPME
▶ Cyclopentyl methyl ether see p. 1918

Cream of tartar
▶ Potassium hydrogen tartrate see p. 2221

Creatine phosphate disodium salt tetrahydrate



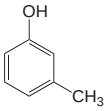
·4 H_2O

Creatine phosphate disodium salt tetrahydrate
≥98 %, for biochemistry
$C_4H_8N_3Na_2O_5P \cdot 4\ H_2O$
M 327,14 g/mol
Storage temp.: +4 °C
[71519-72-7] • EC No. 213-074-6 • WGK 3

Type analysis:
Appearance. .....white to off-white, cryst. powder
Assay (titr.).....≥98,0 %
Appearance of solution (20 %, H_2O). .....colourless
Water (KF). .....21-26 %

8459.1	1 g	glass	19,90 €
8459.2	5 g	glass	56,90 €
8459.3	10 g	glass	91,95 €

m-Cresol



m-Cresol
≥99 %, for synthesis
3-Methylphenol
C_7H_8O
M 108,14 g/mol
D 1,03 • bp ~203 °C
mp 11 °C • flp 86 °C
Solubility: 31 g/l (H_2O, 20 °C)
[108-39-4] • EC No. 203-577-9
UN No. 2076 • ADR 6.1 (8) II • WGK 2

Danger H301+H311-H314

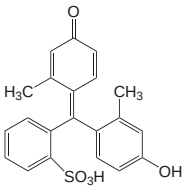
Type analysis:
Assay (GC). .....≥99,0 %
Density (d 20 °C/4 °C).....1,031-1,037

9269.1	250 g	glass	40,75 €
9269.7	1 l	glass	111,70 €
Original pack 6 x 1 l			106,12/1 l

o-Cresolphthalein complexone

▶ Metal phthaleine see p. 2129

m-Cresol purple



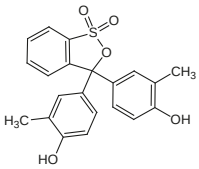
m-Cresol purple

p.a.
Indicator pH 1,2-2,8 and pH 7,4-9,0
2',2''-Dimethylphenolsulfonphthalein,
m-Cresolsulfonphthalein, MCP
$C_{21}H_{18}O_5S$
M 382,43 g/mol
mp >250 °C
Solubility: slightly soluble (H_2O, 20 °C)
[2303-01-7] • EC No. 218-960-6
WGK 2

Type analysis:
Appearance. ..... green powder
Assay. ..... ≥99,0 %
pH-transition range. ..... 1,2 (red)-2,8 (yellow)
pH-transition range. ..... 7,4 (yellow)-9,0 (purple)
Maximum absorption. ..... ~579 nm

5160.1	1 g	glass	13,45 €
5160.2	5 g	glass	36,45 €
5160.3	10 g	glass	63,35 €

o-Cresol red



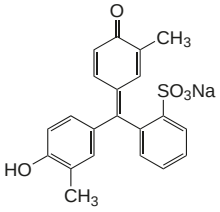
o-Cresol red

p.a.
Indicator pH 0,2-1,8 and pH 7,0-8,8
$C_{21}H_{18}O_5S$
M 382,44 g/mol
mp 290 °C (dec.)
Solubility: slightly soluble (H_2O, 20 °C)
[1733-12-6] • EC No. 217-064-2
WGK 1

Guarantee analysis:
Specific Extinction E (1%/1cm). ..... ≥1500
UV-spectrum: maximum at. ..... 568,0-576,0 nm
Solubility (0,1 % in ethanol). ..... clearly soluble
pH-transition range. ..... 7,0 (orange)-8,8 (purple)

KK15.1	5 g	glass	19,25 €
KK15.2	10 g	glass	31,10 €
KK15.3	25 g	glass	62,25 €

Cresol red sodium salt



Cresol red sodium salt

p.a.
Indicator pH 0,2-1,8 and pH 7,0-8,8
o-Cresolsulfonephthaleine sodium salt
$C_{21}H_{17}O_5SNa$
M 404,41 g/mol
mp >250 °C (dec.)
[62625-29-0] • EC No. 263-654-8
WGK 1

Type analysis:
Absorption peak (0,001 % in 0,01 N NaOH). ..... 568 -576 nm
pH-transition range. ..... 7,0 (yellow)-8,8 (purple)

5534.1	5 g	plastic	26,80 €
5534.2	25 g	plastic	104,20 €

o-Cresolsulfonephthaleine sodium salt

▶ Cresol red sodium salt see p. 1913

m-Cresolsulfonphthalein

▶ m-Cresol purple see p. 1913

3,4-Cresotic acid

▶ 3-Hydroxy-4-methylbenzoic acid see p. 2058

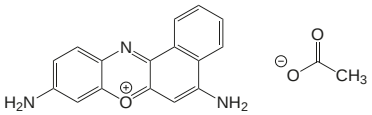
Cresyl echt violet

▶ Cresyl violet acetate see p. 1913

Cresyl fast violet

▶ Cresyl violet acetate see p. 1913

Cresyl violet acetate



Cresyl violet acetate

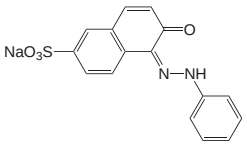
p.a.
Cresyl echt violet, Cresyl fast violet
$C_{18}H_{15}N_3O_3$
M 321,34 g/mol
mp 140-145 °C
Solubility: 20 g/l (H_2O)
[10510-54-0]
WGK 1

Type analysis:
Appearance. ..... dark green to almost black powder
Absorption max. (50 % C_2H_5OH). ..... 596-599 nm

7651.1	5 g	glass	55,80 €
7651.2	10 g	glass	94,50 €
7651.3	25 g	glass	219,85 €

For further information, please see page 1522

Crocein orange G (C.I. 15970)



Crocein orange G (C.I. 15970)

for microscopy
Acid orange 12, Ponceau 4G
$C_{16}H_{11}N_2NaO_4S$
M 350,32 g/mol
Solubility: 1 g/l (H_2O)
[1934-20-9] • EC No. 217-697-4
WGK 3

Type analysis:
Appearance. ..... red orange to orange powder
Appearance of solution. ..... clear, orange
Dye content. ..... ≥70 %
Absorption max. (1 % H_2O). ..... ≥457 nm

7652.1	5 g	glass	14,55 €
7652.2	25 g	glass	24,65 €
7652.3	100 g	glass	61,85 €

Cronobacter chromogenic Agar

Cronobacter chromogenic Agar

ISO 22964, for microbiology
Selective medium for detection of *Cronobacter* (formerly *Enterobacter*) *sakazakii* in milk powder and powdered infant formulae.
Application: Use 30,7 g for 1 l agar.
Storage temp.: +4 °C

Guarantee analysis:
Casein peptone (Pancreas hydrolysate). ..... 7 g/l
Sodium chloride. ..... 5 g/l
Yeast extract. ..... 3 g/l
Sodium deoxycholate. ..... 0,25 g/l
Chromogene Mixture. ..... 0,15 g/l
Sodium thiosulphate. ..... 1 g/l
Ammonium iron(III) citrate. ..... 1 g/l
Agar. ..... 15 g/l
pH value. ..... 7,3 ±0,2

2997.1	100 g	plastic	234,25 €

For further information, please see page 1442

Crotaline

▶ Monocrotaline see p. 2147

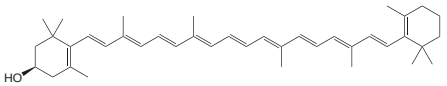
Crotonaldehyde

▶ 2-Butenal see p. 1861

Cryospray

▶ Solidofix®-Cryo spray see p. 2352

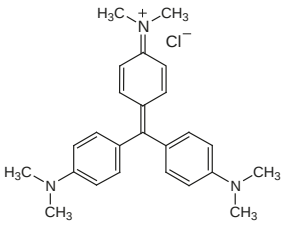
β-Cryptoxanthin



β-Cryptoxanthin
ROTICHROM® TLC
Reference substance for thin layer chromatography
β,β-Caroten-3-ol
$C_{40}H_{56}O$
M 552,85 g/mol
mp ~169 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[472-70-8]

5675.1	1 mg	glass	315,55 €

Crystal violet (C.I. 42555)



Crystal violet (C.I. 42555)
p.a., ACS
Indicator pH 0,0-2,0
Hexamethylpararosaniline chloride, Methyl violet 10B, Gentian violet
$C_{25}H_{30}ClN_3$
M 407,99 g/mol
D 1,19
mp 205-215 °C (dec.)
Solubility: 10 g/l (H_2O, 20 °C)
[548-62-9] • EC No. 208-953-6
UN No. 3077 • ADR 9 III • WGK 3
Danger
H318-H351-H400-H410-H302

Type analysis:
pH-transition range. ..... 0,0 (yellow)-2,0 (blue violet)
Assay (spectrophotometric). ..... ≥90,0 %
Loss on drying (110 °C). ..... ≤7,5 %
Ash content. ..... ≤1,5 %
Suitability as indicator (in non aqueous solution) . ..... complies
Absorption. ..... complies

T123.2	5 g	glass	17,75 €
T123.1	25 g	glass	27,85 €
T123.3	100 g	glass	71,95 €

For further information, please see page 1522

Crystal violet solution
▶ Neisser's solution II see p. 2154

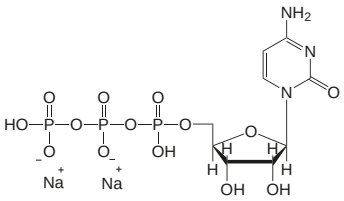
CSB Determination

Art. No.	Description	Page
P728	Ammonium iron(II) sulphate hexahydrate	1800
KK60	Ammonium iron(II) sulphate solution (0,12 N)	1801
T132	Ferroin solution	1993
T112	Mercury(II) sulphate	2128
X871	Mercury(II) sulphate solution 80 g/l	2128
P720	Potassium dichromate solution (0,12 N)	2225
P721	Potassium dichromate solution (0,25 N)	2225
X870	Silver sulphate solution (10 g/l)	2328
4623	Sulphuric acid 96 %	2389

CTAB
▶ Cetyltrimethylammonium bromide (CTAB) see p. 1888

CTC resin
▶ 2-Chlorotrityl chloride resin see p. 1895

CTP



CTP
≥98 %, lyophilised
Cytidin-5'-triphosphate, di-sodium salt
$C_9H_{14}N_3O_{14}P_3Na_2 \cdot 3\,H_2O$
M 581,16 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[36051-68-0]

K057.1	100 mg	plastic	60,10 €
K057.4	1 g	plastic	239,65 €
K057.5	10 g	plastic	955,70 €

For further information, please see page 1305

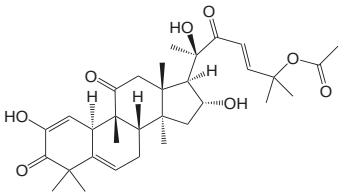
CTP solution

CTP solution
≥99 %, 100 mM solution
Cytidine-5'-triphosphate
$C_9H_{13}N_3O_{14}P_3$
M 480,13 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[6757-06-8] • EC No. 252-849-3
WGK 1

K048.1	25 µmol (250 µl)	plastic	41,85 €

For further information, please see page 1305

Cucurbitacin E

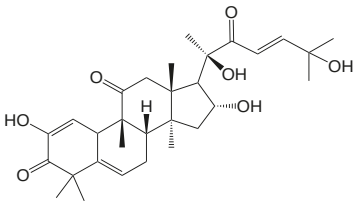


Cucurbitacin E
ROTICHROM® HPLC
Reference substance for HPLC.
α-Elaterin
$C_{32}H_{44}O_8$
M 556,69 g/mol
mp 228-234 °C
Storage temp.: +4 °C
[18444-66-1] • EC No. 242-325-2
Warning H302+H312

Type analysis:
Purity (HPLC). ..... ≥98 %

9741.1	10 mg	glass	321,45 €

Cucurbitacin I



Cucurbitacin I
ROTICHROM® HPLC
Reference substance for HPLC.
Elatericin B
$C_{30}H_{42}O_7$
M 514,65 g/mol
mp 148-150 °C
Storage temp.: +4 °C
[2222-07-3] • EC No. 218-736-8
UN No. 2811 • ADR 6.1 I
Danger H300-H311

Type analysis:
Purity (HPLC). ..... ≥95 %

9032.3	10 mg	glass	450,45 €

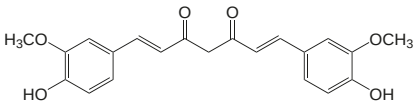
Cupric acetate
▶ Copper(II) acetate monohydrate see p. 1908

Cupric carbonate
▶ Copper(II) carbonate, basic see p. 1908

Cupric hydroxide
▶ Copper(II) hydroxide see p. 1909

Cuprous chloride
▶ Copper(I) chloride see p. 1909

Curcumin



Diferuloylmethane
$C_{21}H_{20}O_6$
M 368,39 g/mol
mp 170-175 °C
Solubility: insoluble (H_2O, 20 °C)
Storage temp.: +4 °C
[458-37-7] • EC No. 207-280-5 • WGK 2

Curcumin

≥90 %, nat., powdered, oil-soluble

Mixture of curcumin, desmethoxycurcumin and bisdesmethoxycurcumin.

Type analysis:

Appearance. .....orange coloured powder
Dye content. .....≥90 %
Arsenic (As). .....≤0,0003 %
Lead (Pb). .....≤0,0002 %
Intensity of colour E/1%/420 (CH_2Cl_2/EtOH).....≥1450
Produced by extraction from *Curcuma longa*, followed by purification

9469.1	10 g	glass	26,80 €
9469.2	25 g	glass	47,85 €
9469.3	50 g	glass	78,40 €

Curcumin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Curcuma longa.*

Type analysis:

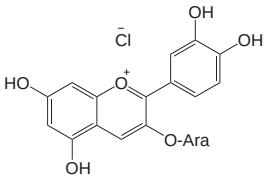
Purity (HPLC).....>98 %

1132.1	20 mg	glass	403,15 €

Cyanide Standards

▶ Cyanide IC Standard Solution see p. 2375

Cyanidin 3-arabinoside chloride



Cyanidin 3-arabinoside chloride

ROTICHROM® HPLC

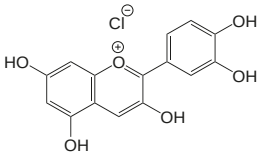
Reference substance for HPLC.
From *Aronia melanocarpa*
$C_{20}H_{19}O_{10}Cl$ • M 454,82 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[57186-11-5] • WGK 1

Type analysis:

Purity (HPLC).....≥95 %

0641.1	10 mg	glass	413,90 €

Cyanidin chloride



Cyanidin chloride

ROTICHROM® HPLC

Reference substance for HPLC.
$C_{15}H_{11}O_6Cl$
M 322,70 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[528-58-5] • EC No. 208-438-6
WGK 2

Type analysis:

Purity (HPLC). ..... ≥96 %

4545.1	10 mg	glass	214,50 €

Cyanidin-3,5-diglucoside chloride

▶ Cyanin chloride see p. 1915

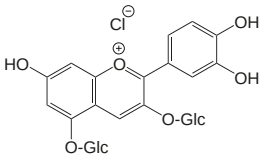
Cyanidin-3-galactoside chloride

▶ Idaein chloride see p. 2062

Cyanidin-3-O-glucoside

▶ Kuromanin chloride see p. 2087

Cyanin chloride



Cyanidin-3,5-diglucoside chloride
$C_{27}H_{31}O_{16}Cl$
M 646,98 g/mol
mp 203-204 °C
Storage temp.: +4 °C
[2611-67-8] • EC No. 220-034-1

Cyanin chloride

ROTICHROM® HPLC

Reference substance for HPLC.
From *Rosa centifolia.*

Type analysis:

Purity (HPLC). ..... >98 %

1133.1	20 mg	glass	241,90 €

Cyanin chloride

ROTICHROM® TLC

Reference substance for thin layer chromatography
From *Rosa centifolia.*

5568.1	25 mg	glass	56,90 €

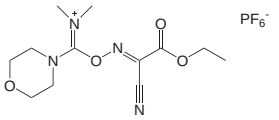
p-Cyanoaniline

▶ 4-Aminobenzonitrile see p. 1788

Cyanocobalamin

▶ Vitamin B_{12} see p. 2436

1-[(1-(Cyano-2-ethoxy-2-oxoethylideneaminooxy) dimethylaminomorpholino)] uronium hexafluorophosphate (COMU®)



1-[(1-(Cyano-2-ethoxy-2-oxoethylideneaminooxy) dimethylaminomorpholino)] uronium hexafluorophosphate (COMU®)

PEPTIPURE® ≥99 %

Coupling reagent for peptide synthesis
COMU®
$C_{12}H_{19}F_6N_4O_4P$
M 428,27 g/mol
mp >135 °C (dec.)
Storage temp.: +4 °C
[1075198-30-9]
WGK 1

Warning H315-H319-H335

Type analysis:

Assay (HPLC). .....≥99,0 %
Loss on drying.....≤0,5 %
Solubility (10 % in DMF)..... clearly soluble

2100.1	5 g	glass	37,55 €
2100.2	25 g	glass	134,30 €
2100.3	100 g	glass	454,65 €

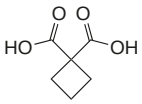
Cyanomethane

▶ Acetonitrile see p. 1762

3-Cyano-1-nitrobenzene

▶ 3-Nitrobenzonitrile see p. 2163

Cyclobutane-1,1-dicarboxylic acid



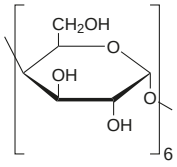
Cyclobutane-1,1-dicarboxylic acid

≥98 %
$C_6H_8O_4$
M 144,13 g/mol
mp 155-159 °C
Storage temp.: +4 °C
[5445-51-2] • EC No. 226-651-2
UN No. 3261 • ADR 8 II • WGK 3
Danger H314

Type analysis:
Assay (titr.). ..... ≥98,0 %
Solution (5 % in H_2O). ..... colourless, clear
Water (KF). ..... ≤0,5 %
Melting point. ..... 155-159 °C

5451.1	5 g	plastic	38,60 €
5451.2	25 g	plastic	135,35 €

α-Cyclodextrin



α-Cyclodextrin

≥98 %, for biochemistry
$C_{36}H_{60}O_{30}$
M 972,86 g/mol
mp ~275 °C
[10016-20-3] • EC No. 233-007-4
WGK 1
Warning H319

Type analysis:
Assay (HPLC). ..... ≥98,0 %
Solution (10 % in water). ..... colourless to slightly yellowish
Loss on drying (3 h, 105 °C, vacuum). ..... ≤2,5 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O). ..... +143° to +153°

4122.1	5 g	glass	22,05 €
4122.2	25 g	glass	71,95 €
4122.3	50 g	plastic	117,75 €

Cyclo(Gly-Gly)

▶ Glycine anhydride see p. 2027

Cyclohexane

Hexahydrobenzene
C_6H_{12}
M 84,16 g/mol
D 0,78 • bp 81 °C
mp 6 °C • flp -18 °C
Solubility: 0,05 g/l (H_2O, 20 °C)
[110-82-7] • EC No. 203-806-2
UN No. 1145 • ADR 3 II • WGK 2
Danger
H225-H304-H400-H410-H315-H336

Cyclohexane

ROTISOLV® HPLC

Guarantee analysis:
Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,01 %
Free acid. ..... ≤0,001 %
Non volatile matter. ..... ≤0,0005 %
Transmission:
255 nm. ..... ≥99 %
240 nm. ..... ≥90 %
215 nm. ..... ≥35 %
Filtered through 0,2 µm membrane and filled under protective gas.

7333.2	1 l	glass	48,30 €
Original pack 6 x 1 l			45,89/1 l
7333.1	2,5 l	glass	87,00 €
Original pack 4 x 2,5 l			82,65/2,5 l

For further information, please see page 1650

Cyclohexane

ROTISOLV® ≥99,9 %, GC Ultra Grade
For gaschromatographic residue analysis.

Guarantee analysis:
Assay (GC). ..... ≥99,9 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,01 %
Free acid (as CH_3COOH). ..... ≤0,001 %
Evaporation residue. ..... ≤0,0001 %
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤3 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
PAH-test (less than 2 ppb, HPLC). ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

KK41.1	2,5 l	glass	90,20 €
Original pack 4 x 2,5 l			85,69/2,5 l

Cyclohexane

ROTISOLV® ≥99,9 %, Pestilyse® plus
For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:
Assay (GC). ..... ≥99,9 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,005 %
Free acid (as CH_3COOH). ..... ≤0,001 %
Evaporation residue. ..... ≤0,0001 %
GC/FID suitability (as 2-octanol). ..... ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ..... ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤2 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
GC/ECD volatile impurities (as ethylene dibromide). ..... ≤5 ng/ml
Oil index (any hydrocarbon C_{10}-C_{40}). ..... ≤0,1 mg/l
PAH-test (less than 2 ppb, HPLC). ..... complies
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb

7542.1	2,5 l	glass	83,35 €
Original pack 4 x 2,5 l			79,18/2,5 l

Cyclohexane

ROTISOLV® ≥99,5 %, Pestilyse®
For residue and environmental analysis.

Guarantee analysis:
Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,02 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0001 %
GC/ECD (individual signal as lindane). ..... ≤5 ng/l
GC/PND (individual signal as ethylparathion). ..... ≤10 ng/l

T163.2	1 l	glass	37,10 €
Original pack 6 x 1 l			35,25/1 l
T163.1	2,5 l	glass	82,25 €
Original pack 4 x 2,5 l			78,14/2,5 l
T163.3	4 l	glass	109,15 €

Cyclohexane

ROTISOLV® ≥99,9 %, UV/IR-Grade
For chromatography and spectroscopy.

Guarantee analysis:
Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,01 %
Colour (Hazen). ..... ≤10
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
Fluorescence (as quinine):
254 nm. ..... ≤1,0 ppb
365 nm. ..... ≤1,0 ppb
Transmission:
250 nm. ..... ≥98 %
240 nm. ..... ≥90 %
232 nm. ..... ≥80 %
223 nm. ..... ≥50 %
208 nm. ..... ≥10 %

CP81.1	2,5 l	glass	90,20 €
Original pack 4 x 2,5 l			85,69/2,5 l

Cyclohexane

ROTIPURAN® ≥99,5 %, p.a., ACS, ISO

Guarantee analysis:
Assay (GC). ..... ≥99,5 %
Colour (APHA). ..... ≤10
Density (d 20 °C/4 °C). 0,776-0,780
Water . ..... ≤0,01 %
Acidity. ..... ≤0,0003 meq/g
Melting point. ..... >6,0 °C
Matter discoloured by H_2SO_4. ..... complies
$KMnO_4$ reducing substances (as O). ..... complies
Aromatic compounds (as benzene). ..... ≤0,01 %
Sulphur compounds (as S). ..... ≤0,002 %
Evaporation residue. ..... ≤0,001 %
Cyclohexene (GC). ..... ≤0,01 %
Cyclopentane (GC). ..... ≤0,05 %
Methyl cyclohexane (GC). ..... ≤0,05 %
Thiophene. ..... complies
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %

Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %

6886.1	1 l	glass	51,50 €
Original pack 6 x 1 l			48,93/1 l
6886.2	2,5 l	glass	98,80 €
Original pack 4 x 2,5 l			93,86/2,5 l

Cyclohexane

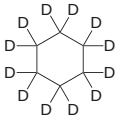
≥99,5 %, for synthesis

Type analysis:

Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99,5 %
Density (15 °C). ..... 0,775-0,784 g/cm³
Refractive index n_D^{20}. 1,425-1,427

6570.1	1 l	glass	22,50 €
Original pack 6 x 1 l			21,38/1 l
6570.3	2,5 l	glass	32,80 €
Original pack 4 x 2,5 l			31,16/2,5 l
6570.5	5 l	aluminium	53,65 €
Original pack 2 x 5 l			50,97/5 l
6570.2	10 l	tinplate	85,90 €
6570.4	25 l	tinplate	171,50 €

Cyclohexane D12



Cyclohexane D12

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.
C_6D_{12}
M 96,23 g/mol
D 0,89 • bp 81 °C
mp 7 °C • flp -18 °C
[1735-17-7] • EC No. 217-077-3
UN No. 1145 • ADR 3 II • WGK 3

Danger
H225-H304-H315-H336-H410

Guarantee analysis:

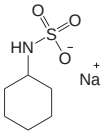
Deuterising degree. ..... ≥99,5 %
Water (KF, H_2O+D_2O). ..... ≤0,03 %

5200.1	5 ml	glass ampoule	99,45 €

1,2-Cyclohexane dinitrilo tetraacetic acid

▶ trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate see p. 1932

Cyclohexane sulphamic acid sodium salt



Cyclohexane sulphamic acid sodium salt

≥98,5 %, Ph.Eur., extra pure

Sodium cyclamate
$C_6H_{12}NNaO_3S$
M 201,22 g/mol
Solubility: 200 g/l (H_2O, 20 °C)
[139-05-9] • EC No. 205-348-9
WGK 1

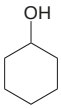
Warning H302

Guarantee analysis:

Appearance. ..... white to off-white, cryst. powder
Appearance of solution. ..... clear, colourless
Assay (dry substance). ..... 98,5-101,0 %
Identity. ..... complies
pH value (10 % solution). 5,5-7,5
Loss on drying. ..... ≤1,0 %
Sulphate (SO_4). ..... ≤0,1 %
Anilin. ..... ≤0,0001 %
Cyclohexylamin. ..... ≤0,001 %
Dicyclohexylamine. ..... ≤0,0001 %
Sulfamic acid. ..... ≤0,1 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0003 %
Selenium (Se). ..... ≤0,003 %
Absorption:
270 nm. ..... ≤0,10

8578.1	250 g	plastic	24,20 €
8578.2	1 kg	plastic	59,70 €
Original pack 6 x 1 kg			56,72/1 kg

Cyclohexanol



Cyclohexanol

≥99 %, for synthesis

Hexalin, Hexahydrophenol
$C_6H_{12}O$
M 100,16 g/mol
D ~0,94 • bp ~160 °C
mp 24 °C • flp 61 °C
Solubility: 56,7 g/l (H_2O, 20 °C)
[108-93-0] • EC No. 203-630-6
WGK 1

Warning H302+H332-H315-H335

Type analysis:

Assay (GC). ..... ≥99,0 %
Water (KF). ..... ≤0,2 %
Melting point. ..... ≥23,5 %

7756.1	1 l	glass	30,00 €
Original pack 6 x 1 l			28,50/1 l
7756.2	2,5 l	glass	56,90 €
Original pack 4 x 2,5 l			54,06/2,5 l
7756.7	25 l	tinplate	375,20 €

Cyclohexanone

Cyclohexanone

≥99,5 %, extra pure

$C_6H_{10}O$
M 98,15 g/mol
D 0,95 • bp 153-156 °C
mp ~ -31 °C • flp 43 °C
Solubility: 80 g/l (H_2O, 20 °C)
[108-94-1] • EC No. 203-631-1
UN No. 1915 • ADR 3 III • WGK 1

Danger
H226-H302+H312+H332-H318-H315

Type analysis:

Assay (GC). ..... ≥99,5 %
Colour (Hazen). ..... ≤10
Density (20 °C). 0,945-0,950
Water. ..... ≤0,2 %

CP27.1	1 l	glass	29,60 €
Original pack 6 x 1 l			28,12/1 l
CP27.2	2,5 l	glass	51,50 €
Original pack 4 x 2,5 l			48,93/2,5 l
CP27.5	5 l	aluminium	82,70 €
Original pack 2 x 5 l			78,57/5 l
CP27.3	10 l	tinplate	142,90 €
CP27.4	25 l	tinplate	267,70 €

Cyclohexatriene

▶ Benzene see p. 1829

Cyclohexatriene deuterated

▶ Benzene D6 see p. 1830

Cyclohexene

Cyclohexene

≥99 %, for synthesis

1,2,3,4-Tetrahydrobenzene
C_6H_{10}
M 82,15 g/mol
D ~0,81 • bp 81-84 °C
mp -104 °C • flp -15,6 °C
Solubility: 50 mg/l (H_2O, 20 °C)
[110-83-8] • EC No. 203-807-8
UN No. 2256 • ADR 3 II • WGK 1

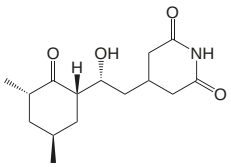
Danger
H225-H302-H304-H411

Type analysis:

Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99 %
Refractive index n_D^{20}. 1,445-1,447
Evaporation residue. ..... ≤0,01 %

3451.1	500 ml	glass	62,90 €

Cycloheximide



Cycloheximide

≥98 %, for biochemistry
Glutarimid antibiotiotic, fungicidal
Naramycin A, Actidione
$C_{15}H_{23}NO_4$
M 281,36 g/mol
mp 112 °C
Storage temp.: +4 °C
[66-81-9] • EC No. 200-636-0
UN No. 2811 • ADR 6.1 II • WGK 3
Danger H300-H360D-H341-H411

Type analysis:
Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98 %
Water (KF). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$ (c=1 % in $CHCl_3$) ..... -32° to -26°
Ash content ..... ≤0,5 %

8682.1	1 g	glass	39,25 €
8682.3	5 g	glass	153,65 €
8682.4	10 g	glass	263,40 €

For further information, please see page 1501

2-(Cyclohexylamino)-ethanesulphonic acid

▶ CHES see p. 1890

3-N-Cyclohexylamino-2-hydroxypropane sulphonic acid

▶ CAPSO see p. 1876
▶ CAPSO sodium salt see p. 1876

Cyclohexylamino propanesulphonic acid

▶ CAPS see p. 1876

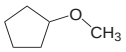
Cyclohexyl dimethylamine

▶ N,N-Dimethylcyclohexylamine see p. 1947

Cyclopentacycloheptene

▶ Azulene see p. 1823

Cyclopentyl methyl ether



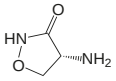
Cyclopentyl methyl ether

SOLVAGREEN® ≥99 %, extra pure
CPME, Methoxycyclopentane
$C_6H_{12}O$
M 100,16 g/mol
D 0,86 • bp 106 °C
mp <-140 °C • flp -1 °C
[5614-37-9] • EC No. 445-090-6
UN No. 3271 • ADR 3 II • WGK 2
Danger
H225-H302-H315-H319-H412-EUH019

Type analysis:
Assay (GC). ..... ≥99,0 %
Appearance of solution. ..... clear
Water ..... ≤0,01 %

7763.1	250 ml	glass	36,45 €
7763.2	500 ml	glass	62,25 €
7763.3	1 l	glass	97,75 €
Original pack 6 x 1 l			92,86/1 l
7763.4	2,5 l	glass	196,65 €
Original pack 4 x 2,5 l			186,82/2,5 l

D-Cycloserine



D-Cycloserine

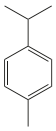
≥90 %, for biochemistry
Bacteriostatic antibiotic
Oxamycin, D-4-Amino-3-isoxazolidinone
$C_3H_6N_2O_2$
M 102,09 g/mol
mp 147 °C (dec.)
Storage temp.: +4 °C
[68-41-7] • EC No. 200-688-4
WGK 1

Type analysis:
Assay. ..... ≥90 %
Specific rotation $[\alpha]_D^{20}$. ..... +108° to +114°
Loss on drying. ..... ≤1 %

CN37.1	1 g	glass	25,30 €
CN37.2	5 g	plastic	54,75 €
CN37.3	10 g	plastic	103,75 €

For further information, please see page 1502

p-Cymene



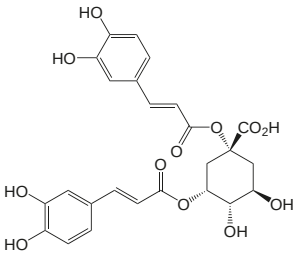
p-Cymene

≥98,5 %
$C_{10}H_{14}$
M 134,22 g/mol
D 0,86 • bp ~175 °C
mp -68 °C • flp 47 °C
Storage temp.: +4 °C
[99-87-6] • EC No. 202-796-7
UN No. 2046 • ADR 3 III • WGK 2
Warning H226-H315-H319-H335

Type analysis:
Appearance. ..... clear, almost colourless liquid
Assay (GC). ..... ≥98,5 %

3465.1	500 ml	glass	57,95 €

Cynarin



1,3-Dicaffeoylquinic acid
$C_{25}H_{24}O_{12}$
M 516,44 g/mol
Storage temp.: +4 °C
[1182-34-9]
Warning H315-H319-H335

Cynarin

with analytical records
From *Cyanara scolymus*.

Type analysis:
Purity (HPLC). ..... >99 %
Analytical records: HPLC, TLC, ^{1}H- NMR, ^{13}C- NMR, UV, IR, MS, melting point.

T892.1	10 mg	glass	461,20 €

Cynarin

ROTICHROM® HPLC
Reference substance for HPLC.
From *Cyanara scolymus*.

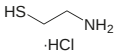
Type analysis:
Purity (HPLC). ..... >99 %

4457.1	10 mg	glass	353,70 €

8'-Cynnamoylharpagide

▶ Harpagoside see p. 2033

Cysteamine hydrochloride



Cysteamine hydrochloride

≥99 %, for biochemistry
2-Mercaptoethylamine hydrochloride
C_2H_7NS
M 113,61 g/mol
bp ~150 °C (dec.)
mp 66-70 °C
Solubility: ~440 g/l (H_2O, 20 °C)
[156-57-0] • EC No. 205-858-1
WGK 3

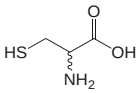
Warning H302

Type analysis:

Appearance. ..... colourless crystals
Assay (dry substance). ..... ≥99,0 %
Identity (IR). ..... complies
Heavy metals. ..... ≤0,001 %
Loss on drying. ..... ≤3,0 %

7625.1	25 g	glass	28,95 €
7625.2	100 g	glass	75,15 €
7625.3	250 g	glass	132,15 €
7625.8	500 g	glass	221,35 €
Original pack 6 x 500 g			210,28/500 g

DL-Cysteine



DL-Cysteine

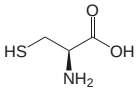
≥98 %, for biochemistry
DL-α-Amino-β-mercapto-propionic acid
$C_3H_7NO_2S$
M 121,16 g/mol
Storage temp.: +4 °C
[3374-22-9] • EC No. 222-160-2
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤0,5 %

8594.1	5 g	plastic	49,35 €
8594.2	25 g	plastic	120,30 €
8594.3	100 g	plastic	342,95 €

L-Cysteine



L-α-Amino-β-mercapto-propionic acid
$C_3H_7NO_2S$
M 121,16 g/mol
mp 220-228 °C
Solubility: ~160 g/l (H_2O, 20 °C)
[52-90-4] • EC No. 200-158-2
WGK 1

Warning H302

L-Cysteine

CELLPURE® ≥99 %
For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤24 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... +8,3° to +9,5°
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,04 %
Sulphate (SO_4). ..... ≤0,028 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As_2O_3). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %

1693.1	25 g	plastic	27,45 €
1693.2	100 g	plastic	67,20 €
1693.3	500 g	plastic	286,95 €
Original pack 6 x 500 g			272,60/500 g

L-Cysteine

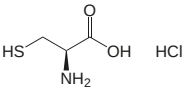
≥98 %, DAB, for biochemistry

Guarantee analysis:

Appearance. ..... white, cryst. powder
Appearance of solution. ..... clear and colourless
Identity. ..... complies
Assay. ..... 98,0-101,0 %
pH value 4,5-5,5
Specific rotation $[\alpha]_D^{20}$. ..... +8,3° to +9,5°
Loss on drying. ..... ≤0,5 %
Ash content (as SO_4). ..... ≤0,05 %
Foreign amino acids. ..... complies
Chloride (Cl). ..... ≤0,04 %
Sulphate (SO_4). ..... ≤0,028 %
Ammonium (NH_4). ..... ≤0,02 %
Arsenic (As_2O_3). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %

3467.1	10 g	glass	15,60 €
3467.2	50 g	glass	30,65 €
3467.3	250 g	glass	113,85 €

L-Cysteine hydrochloride



L-Cysteine hydrochloride

≥99 %, p.a., anhydrous
$C_3H_7NO_2S \cdot HCl$
M 157,62 g/mol
D 0,84
[52-89-1] • EC No. 200-157-7
WGK 1

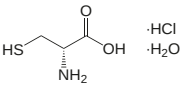
Warning H315-H319-H335

Guarantee analysis:

Assay. ..... ≥99,0 %
pH value. 1,5-2,0
Heavy metals. ..... ≤0,001 %

3468.1	10 g	plastic	15,60 €
3468.2	50 g	plastic	27,85 €
3468.3	250 g	plastic	79,45 €

D-Cysteine hydrochloride monohydrate



D-Cysteine hydrochloride monohydrate

≥98,5 %, for biochemistry
D-2-Amino-3-mercaptopropionic acid hydrochloride monohydrate,
H-D-Cys-OH · HCl · H_2O
$C_3H_7NO_2S \cdot HCl \cdot H_2O$
M 175,7 g/mol
Storage temp.: +4 °C
[32443-99-5] • EC No. 251-043-9
WGK 1

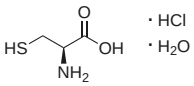
Warning H315-H319-H335

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... 98,5-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c=8 in 6 N HCl). ..... -7,0° to -5,5°
Loss on drying. ..... 8,0-12,0 %

7874.1	1 g	glass	25,70 €
7874.2	5 g	plastic	75,15 €

L-Cysteine hydrochloride monohydrate



L-2-Amino-3-mercaptopropionic acid hydrochloride monohydrate,
H-L-Cys-OH · HCl · H_2O
$C_3H_7NO_2S \cdot HCl \cdot H_2O$
M 175,64 g/mol
Solubility: ~650 g/l (H_2O, 20 °C)
[7048-04-6] • EC No. 200-157-7
WGK 1

Warning H315-H319-H335

L-Cysteine hydrochloride monohydrate

CELLPURE® ≥99 %
For cell culture and biochemistry.

Guarantee analysis:

Endotoxins	≤24 E.U./g
Assay	≥99 %
Loss on drying	8,5-12,0 %
Specific rotation $[\alpha]_D^{20}$	+6,1° to +7,8°
Ammonium (NH_4)	≤0,02 %
Chloride (Cl)	19,89-20,29 %
Sulphate (SO_4)	≤0,02 %
Heavy metals (as Pb)	≤0,001 %
Arsenic (As_2O_3)	≤0,0001 %
Iron (Fe)	≤0,001 %

1694.1	25 g	plastic	19,25 €
1694.2	100 g	plastic	43,55 €
1694.3	500 g	plastic	180,10 €
Original pack 6 x 500 g			171,10/500 g

L-Cysteine hydrochloride monohydrate

≥98,5 %, for biochemistry

Type analysis:

Appearance	white, cryst. powder
Assay (dry substance)	98,5-101,0 %
Specific rotation $[\alpha]_D^{20}$	+6,1° to +7,8°
pH value	1,5-2,0
Ammonium (NH_4)	≤0,02 %
Chloride (Cl)	19,89-20,29 %
Sulphate (SO_4)	≤0,02 %
Arsenic (As_2O_3)	≤0,0001 %
Iron (Fe)	≤0,001 %
Heavy metals	≤0,001 %
Sulphated ash	≤0,1 %
Loss on drying	8,6-12,0 %

T203.1	50 g	plastic	26,80 €
T203.2	100 g	plastic	41,40 €
T203.3	500 g	plastic	169,35 €
Original pack 6 x 500 g			160,88/500 g

DL-Cystine

DL-Cystine

≥98,5 %
$C_6H_{12}N_2O_4S_2$
M 240,30 g/mol
mp 250 °C
[923-32-0] • EC No. 213-094-5

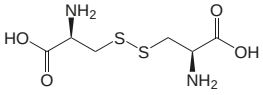
Warning H302

Type analysis:

Appearance	white, cryst. powder
Assay	≥98,5 %
Loss on drying	≤0,2 %
Specific rotation $[\alpha]_D^{20}$	-5° to +5°

5565.1	1 g	glass	20,35 €

L-Cystine



3,3'-Dithio-bis-(2-amino propionic acid)
$C_6H_{12}N_2O_4S_2$
M 240,30 g/mol
D 1,68
mp 261-262 °C (dec.)
Solubility: insoluble (H_2O, 20 °C)
[56-89-3] • EC No. 200-296-3
WGK 1

L-Cystine

CELLPURE® ≥98,5 %
For cell culture and biochemistry.

Guarantee analysis:

Endotoxins	≤0,5 E.U./g
Assay	≥98,5 %
Loss on drying	≤0,2 %
Specific rotation $[\alpha]_D^{20}$	-225° to -215°
Chloride (Cl)	≤0,05 %
Sulphate (SO_4)	≤0,02 %
Heavy metals (as Pb)	≤0,001 %
Arsenic (As_2O_3)	≤0,0001 %
Iron (Fe)	≤0,001 %

1695.1	25 g	plastic	27,85 €
1695.2	100 g	plastic	71,95 €
1695.3	500 g	plastic	299,95 €
Original pack 6 x 500 g			284,95/500 g

L-Cystine

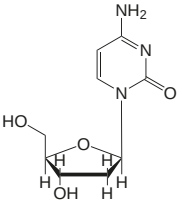
≥98,5 %, for biochemistry

Type analysis:

Appearance	white, cryst. powder
Assay	≥98,5 %
pH value	5,0-6,5
Specific rotation $[\alpha]_D^{20}$	-225° to -215°
Chloride (Cl)	≤0,05 %
Sulphate (SO_4)	≤0,02 %
Arsenic (As_2O_3)	≤0,0001 %
Iron (Fe)	≤0,001 %
Heavy metals (as Pb)	≤0,001 %
Loss on drying	≤0,2 %
Ash content	≤0,1 %

3471.1	100 g	plastic	64,40 €
3471.2	500 g	plastic	289,20 €
Original pack 6 x 500 g			274,74/500 g

Cytidine



Cytidine

≥99 %, for biochemistry
Cytosine-1-β-D-ribofuranoside
$C_9H_{13}N_3O_5$
M 243,22 g/mol
mp 210-220 °C
[65-46-3] • EC No. 200-610-9
WGK 1

Type analysis:

Assay (HPLC)	≥99,0 %
Heavy metals	≤0,002 %
Loss on drying	≤0,5 %

0717.1	10 g	plastic	38,60 €
0717.2	25 g	plastic	75,15 €

Cytidine-BCE-phosphoramidite

Cytidine-BCE-phosphoramidite

for DNA synthesis
For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-dC(N-Bz)P-(OCH_2CH_2CN)-N($iPr)_2$
$C_{46}H_{52}N_5O_8P$
M 833,7 g/mol
Storage temp.: +4 °C

K922.1	1 g	glass	35,40 €

For further information, please see page 1550

Cytidine-CPG-Support

Cytidine-CPG-Support

500 Å pore size
Support material for DNA-synthesis.
dC-lcaa-CPG
Storage temp.: +4 °C

Type analysis:

Purity (HPLC)	≥95,0 %
CPG loading	30-40 µmol/g
Coupling efficiency	≥99 %

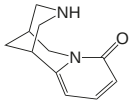
2319.3	1 g	plastic	58,60 €

For further information, please see page 1550

Cytidine-5'-triphosphate disodium salt

▶ CTP see p. 1914

Cytisine



Cytisine

ROTICHROM® TLC

Reference substance for thin layer chromatography
From *Laburnum anagyroides.*
$C_{11}H_{14}N_2O$
M 190,24 g/mol
mp 155 °C
Solubility: 439 g/l (H_2O, 16 °C)
Storage temp.: +4 °C
[485-35-8] • EC No. 207-616-0
UN No. 1544 • ADR 6.1 III • WGK 3

Danger H301+H311+H331

5615.1	25 mg	glass	112,90 €

Cytochrome C

Cytochrome C

≥90 %, for biochemistry

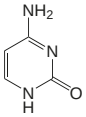
Iron porphyrin protein complex.
M ~13 000 g/mol
Storage temp.: +4 °C
[9007-43-6] • EC No. 232-700-9

Type analysis:

Assay.....≥90 %
pH value.....5,0-7,0
Water.....<6,0 %

6301.1	250 mg	glass	220,95 €

Cytosine



Cytosine

≥99 %, for biochemistry

$C_4H_5N_3O$
M 111,10 g/mol
mp 335 °C
[71-30-7] • EC No. 200-749-5
WGK 2

Type analysis:

Appearance.....white to off-white, cryst. powder
Assay (HPLC).....≥99,0 %
Heavy metals.....≤0,001 %
Loss on drying.....≤0,5 %
Residue on ignition.....≤0,1 %

7295.1	5 g	glass	31,75 €
7295.2	25 g	plastic	74,10 €
7295.3	100 g	plastic	196,65 €

Cytosine-1-β-D-ribofuranoside

▶ Cytidine see p. 1920

DAB

▶ 3,3'-Diaminobenzidine tetrahydrochloride see p. 1932

DABCO®

DABCO®

≥99 %

Anti-bleaching reagent in histology.
Solubility may change depending on the batch.
If required stir solution constantly overnight at a temperature of 40-60 °C.
Triethylendiamine, 1,4-Diazabicyclo[2.2.2]octane
$C_6H_{12}N_2$
M 112,18 g/mol
D ~1,14 • bp 174-176 °C
mp ~160 °C • flp 62 °C
Solubility: 400 g/l (H_2O, 20 °C)
[280-57-9] • EC No. 205-999-9
UN No. 1325 • ADR 4.1 II • WGK 1

Danger

H228-H302-H315-H318-H335

Type analysis:

Appearance.....white to off-white crystals
Assay.....≥99,0 %
Water.....≤0,5 %
Solubility may change depending on the batch.
If required stir solution constantly overnight at a temperature of 40-60 °C.

0718.1	25 g	glass	20,35 €
0718.2	50 g	glass	36,45 €
0718.7	250 g	glass	106,45 €
0718.9	500 g	glass	176,85 €
Original pack 6 x 500 g			168,01/500 g

For further information, please see page 1535

DAB Metal Enhancer

DAB Metal Enhancer

for immunochemistry

For enhancement of HRP signals on blot membranes and slides.
One bottle of 100 ml is sufficient for enhancement of approx. 10 minigel blots or 100 slides.
Enhancer solution
Storage temp.: +20 °C
WGK 2

Danger

H317-H334-H341-H350i-H360D-H372-H412

Type analysis:

RNAse.....complies
DNAse.....complies

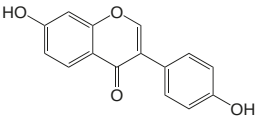
9204.1	100 ml	plastic	97,75 €

For further information, please see page 1375

DAB substrate kit

▶ Roti®-DAB Kit see p. 2272

Daidzein



Daidzein

ROTICHROM® HPLC

$C_{15}H_{10}O_4$
M 254,23 g/mol
[486-66-8] • EC No. 207-635-4

Warning H315-H319

Type analysis:

Purity (HPLC).....≥99 %

6047.2	20 mg	glass	170,95 €

Dammar

Dammar

light

Resina Dammar
mp 150 °C
[9000-16-2] • EC No. 232-528-4
WGK 1

Type analysis:

Melting point.....≤150 °C
Acid value.....≤35
Colour number (Gardner).....≤5
Total ash.....≤0,5 %

6615.1	1 kg	plastic	36,45 €
Original pack 6 x 1 kg			34,63/1 kg

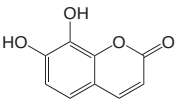
Dansyl chloride

▶ 5-(Dimethylamino)-1-naphthalenesulphonyl chloride see p. 1946

DAP · HCl

▶ DL-2,3-Diaminopropionic acid hydrochloride see p. 1933

Daphnetin



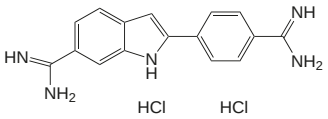
Daphnetin

ROTICHROM® ~CHR

7,8-Dihydroxycoumarin
$C_9H_6O_4$
M 178,14 g/mol
mp 254-257 °C
[486-35-1] • EC No. 207-632-8

6618.1	10 mg	glass	268,75 €

DAPI



4',6-Diamidino-2-phenylindole dihydrochloride
$C_{16}H_{17}Cl_2N_5$
M 350,3 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[28718-90-3] • EC No. 249-186-7
WGK 1

DAPI

≥98 %, p.a.
For DNA-staining.

Guarantee analysis:
Appearance. ..... yellow powder
Assay (HPLC). ..... ≥98 %
Solubility (10 mg/ml in H_2O). ..... clear

6335.1	25 mg	glass	92,35 €
6335.2	100 mg	glass	260,05 €

For further information, please see page 1529

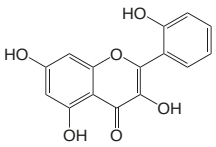
DAPI

≥98 %, for biochemistry

Type analysis:
Assay (HPLC). ..... ≥98 %

6843.1	10 mg	glass	37,55 €
6843.2	25 mg	glass	69,35 €
6843.3	100 mg	glass	202,00 €

Datiscetin



Datiscetin

ROTICHROM® HPLC
Reference substance for HPLC.
2,3,5,7-Tetrahydroxyflavone
$C_{15}H_{10}O_6$
M 286,23 g/mol
Storage temp.: +4 °C
[480-15-9] • EC No. 207-541-3

Type analysis:
Purity (HPLC). ..... ≥99 %

7444.1	10 mg	plastic	254,25 €

dATP

dATP

≥95 %, lyophilised
2'-Deoxyadenosine-5'-triphosphate tri-sodium salt
$C_{10}H_{13}N_5O_{12}P_3Na_3 \cdot 3\ H_2O$
M 611,17 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[74299-50-6] • EC No. 277-809-2

K050.1	10 mg	plastic	24,20 €
K050.2	100 mg	plastic	149,45 €

For further information, please see page 1304

dATP solution

dATP solution

≥99 %, 100 mM solution
2'-Deoxyadenosine-5'-triphosphate
$C_{10}H_{13}N_5O_{12}P_3$
M 488,16 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[74299-50-6] • EC No. 277-809-2

K035.1	25 µmol (250 µl)	plastic	34,30 €

For further information, please see page 1302

DBE

▶ Dibasic ester see p. 1933

DBU

▶ 1,8-Diazabicyclo[5.4.0]undec-7-ene (DBU) see p. 1933

DCC

▶ N,N'-Dicyclohexylcarbodiimide (DCC) see p. 1936

DCM

▶ Dichloromethane see p. 1935

DCPIP

▶ 2,6-Dichlorophenol-indophenol sodium salt hydrate see p. 1936

dCTP

dCTP

≥95 %, lyophilised
2'-Deoxycytidine-5'-triphosphate tri-sodium salt
$C_9H_{13}N_3O_{13}P_3Na_3 \cdot 3\ H_2O$
M 587,14 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[102783-51-7]

K053.1	10 mg	plastic	24,20 €
K053.2	100 mg	plastic	150,40 €

For further information, please see page 1304

dCTP solution

dCTP solution

≥99 %, 100 mM solution
2'-Deoxycytidine-5'-triphosphate
$C_9H_{13}N_3O_{13}P_3$
M 464,13 g/mol
Storage temp.: -20 °C
Transport temp.: cooled

K038.1	25 µmol (250 µl)	plastic	34,30 €

For further information, please see page 1302

ddATP solution

ddATP solution

≥98 %, 10 mM solution
2',3'-Dideoxyadenosine-5'-triphosphate
$C_{10}H_{13}N_5O_{11}P_3$
M 472,16 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[132619-65-9] • EC No. 300-359-6

K040.1	1 µmol (100 µl)	plastic	47,85 €

For further information, please see page 1306

ddCTP solution

ddCTP solution

≥98 %, 10 mM solution
2',3'-Dideoxycytidine-5'-triphosphate
$C_9H_{13}N_3O_{12}P_3$
M 448,13 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[132619-66-0] • EC No. 300-366-4

K043.1	1 µmol (100 µl)	plastic	47,85 €

For further information, please see page 1306

ddGTP solution

ddGTP solution

≥98 %, 10 mM solution
2',3'-Dideoxyguanosine-5'-triphosphate
$C_{10}H_{13}N_5O_{12}P_3$
M 488,16 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[68726-28-3] • EC No. 300-358-0

K042.1	1 µmol (100 µl)	plastic	47,85 €

For further information, please see page 1306

ddNTP-Set

ddNTP-Set

≥98 %, ddATP, ddCTP, ddGTP, ddTTP

ddNTP-set, composed of the nucleotid-single solutions
ddATP, ddCTP, ddGTP, ddTTP.
Concentration: 10 mM per ddNTP.

Dideoxynucleoside triphosphate set

Storage temp.: -20 °C
Transport temp.: cooled

K044.1	4 x 1 µmol (100 µl), 10 mM	plastic	155,90 €

For further information, please see page 1306

ddTTP solution

ddTTP solution

≥98 %, 10 mM solution

2',3'-Dideoxythymidine-5'-triphosphate
$C_{10}H_{14}N_2O_{13}P_3$
M 463,14 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[611-60-9] • EC No. 300-368-5

K041.1	1 µmol (100 µl)	plastic	47,85 €

For further information, please see page 1306

DEAE Dextran

DEAE Dextran

for biochemistry

Transfection reagent
Diethylaminoethyldextran
M ~500000 g/mol
[9013-34-7]
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Loss on drying. ..... ≤10 %
pH value (5 % in water). 5,0-7,0
Nitrogen content (N). ..... 3,0-3,8 %
Sulphated ash. ..... ≤2 %
Free DEAE-Cl. ..... ≤0,002 %

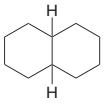
4198.1	25 g	plastic	57,95 €
4198.2	100 g	plastic	183,30 €

For further information, please see page 1389

DEC

▶ Diethyl carbonate see p. 1938

Decahydronaphthalene



Decahydronaphthalene

≥98 %, for synthesis

Decalin® (mixture of cis and trans isomers)
$C_{10}H_{18}$
M 138,24 g/mol
D ~0,89
flp +57 °C
[91-17-8] • EC No. 202-046-9
UN No. 1147 • ADR 3 III • WGK 2

Danger
H226-H304-H314-H331-H411

Type analysis:

Assay (GC). ..... ≥98,0 %
Water (KF). ..... ≤0,1 %

4438.1	1 l	glass	33,25 €
Original pack 6 x 1 l			31,59/1 l
4438.3	2,5 l	glass	61,20 €
Original pack 4 x 2,5 l			58,14/2,5 l
4438.4	5 l	aluminium	107,40 €
Original pack 2 x 5 l			102,03/5 l
4438.2	10 l	tinplate	203,20 €

For further information, please see page 1581

Decalcifier soft

Decalcifier soft

for histology

Decalcifier solution on base of EDTA.
Used for gentle decalcification of bones and other calcified tissues. The solution is also suitable for immunological applications.
D 1,129
UN No. 1824 • ADR 8 II • WGK 2

Danger H290-H314-H373

Type analysis:

Appearance. ..... clear, colourless
pH (20 °C). 7-9

6484.1	500 ml	glass	24,20 €
6484.2	1 l	glass	36,45 €
Original pack 6 x 1 l			34,63/1 l
6484.3	2,5 l	plastic	55,80 €
Original pack 4 x 2,5 l			53,01/2,5 l
6484.4	5 l	plastic	96,25 €
Original pack 2 x 5 l			91,44/5 l

For further information, please see page 1499

Decalcifier standard

Decalcifier standard

for histology

Acid-based decalcifier. Contains trichloracetic acid and formalin. Used for acid decalcification of bones and other calcified tissues.
D 1,01
UN No. 3265 • ADR 8 III • WGK 2

Danger
H314-H335-H350-H411-EUH208

Type analysis:

Appearance. ..... clear, colourless
pH (20 °C). ..... 0,9 ±0,3

6483.1	500 ml	glass	24,20 €
6483.2	1 l	glass	36,45 €
Original pack 6 x 1 l			34,63/1 l
6483.3	2,5 l	plastic	55,80 €
Original pack 4 x 2,5 l			53,01/2,5 l
6483.4	5 l	plastic	96,25 €
Original pack 2 x 5 l			91,44/5 l

For further information, please see page 1499

Decalin®

▶ Decahydronaphthalene see p. 1923

Decanal

▶ Capric aldehyde see p. 1875

n-Decane

n-Decane

≥99 %, for synthesis

$C_{10}H_{22}$
M 142,29 g/mol
D 0,73 • bp 174 °C
mp -30 °C • flp +46 °C
Solubility: 37 mg/l (H_2O, 20 °C)
[124-18-5] • EC No. 204-686-4
UN No. 2247 • ADR 3 III • WGK 2

Danger H304-H226-EUH066

Type analysis:

Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99,0 %
Density (15 °C). 0,7330-0,7370

3475.1	100 ml	glass	27,45 €
3475.2	500 ml	glass	71,95 €
3475.3	1 l	glass	126,35 €
Original pack 6 x 1 l			120,03/1 l
3475.4	2,5 l	glass	256,95 €
Original pack 4 x 2,5 l			244,10/2,5 l

Decane-1-sulphonic acid sodium salt

Decane-1-sulphonic acid sodium salt

≥99 %, for ion pair chromatography
Ion pair reagent for HPLC.
Sodium-1-decane sulphonate
$C_{10}H_{21}NaO_3S$
M 244,33 g/mol
mp >300 °C
[13419-61-9] • EC No. 236-525-9
WGK 2

Guarantee analysis:

Assay (acidim.)	≥99,0 %
Water	≤1 %
Absorption:	
A 210 nm (0,2 M in water)	≤0,05 AU
A 220 nm (0,2 M in water)	≤0,03 AU
A 230 nm (0,2 M in water)	≤0,02 AU
A 260 nm (0,2 M in water)	≤0,02 AU

KK51.1	10 g	glass	52,15 €
KK51.2	25 g	glass	102,05 €
KK51.3	100 g	glass	314,45 €

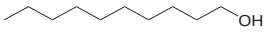
Decanoic acid

▶ Capric acid see p. 1875

Decanoic acid methyl ester

▶ Capric acid methyl ester see p. 1875

1-Decanol



1-Decanol

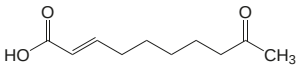
≥99 %, for synthesis
Decylalcohol, Caprinalcohol
$C_{10}H_{22}O$
M 158,28 g/mol
D ~0,83 • bp 230 °C
mp 7 °C • flp 108 °C
[112-30-1] • EC No. 203-956-9
UN No. 3082 • ADR 9 III • WGK 1
Warning H315-H319-H411

Type analysis:

Assay (GC)	≥99,0 %
Density (d 20 °C/4 °C)	0,829-0,830

4151.1	1 l	glass	55,80 €
Original pack 6 x 1 l			53,01/1 l

9-oxo-2(E)-Decenoic acid



NEW

9-oxo-2(E)-Decenoic acid

ROTICHROM® GC
Queen substance
$C_{10}H_{16}O_3$
M 184,23 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[334-20-3]
Warning H315-H319

Type analysis:

Assay (GC)	≥99 %

0766.1	25 mg	glass	2015,65 €

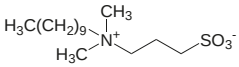
Decontamination solution

▶ DNA AWAY® see p. 1956
▶ RNase AWAY® see p. 2261
▶ Roti® Nucleic Acid-free see p. 2290
▶ Roti® Nucleic Acid-free eXtra see p. 2290

Decyl alcohol

▶ 1-Decanol see p. 1924

N-Decyl-N,N-dimethyl-3-ammonio-1-propane sulphonate



N-Decyl-N,N-dimethyl-3-ammonio-1-propane sulphonate

≥98 %, for biochemistry
Zwitterionic detergent
Sulfobetaine-10, SB-10
$C_{15}H_{33}NO_3S$
M 307,5 g/mol
[15163-36-7]
WGK 1
Warning H315-H319-H335

Guarantee analysis:

Assay (HPLC)	≥98,0 %
Loss on drying	≤2,0 %
Sulphated ash	≤0,1 %

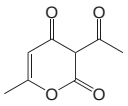
1816.1	5 g	glass	53,65 €
1816.2	25 g	glass	139,65 €

For further information, please see page 1314

Defoamer

▶ Silicone anti-foaming emulsion see p. 2322

Dehydracetic acid



Dehydracetic acid

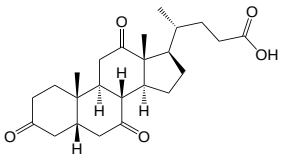
>98 %
$C_8H_8O_4$
M 168,15 g/mol • mp 109-111 °C
[520-45-6] • EC No. 208-293-9 • WGK 1
Warning H302

Type analysis:

Assay	>98 %

7548.1	100 g	plastic	63,45 €

Dehydrocholic acid



Dehydrocholic acid

≥99 %, for biochemistry
$C_{24}H_{34}O_5$
M 402,54 g/mol • mp ~238 °C
Storage temp.: +4 °C
[81-23-2] • EC No. 201-335-7

Type analysis:

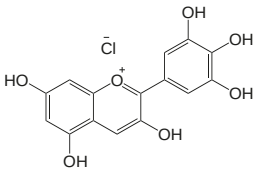
Assay	≥99,0 %

8139.1	25 g	plastic	52,60 €
8139.2	100 g	plastic	148,90 €

Delafields hematoxylin solution

▶ Hematoxylin solution acc. to Delafield see p. 2035

Delphinidin chloride



Delphinidin chloride

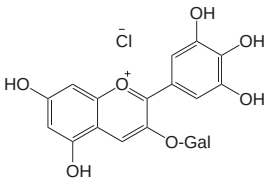
ROTICHROM® HPLC
Reference substance for HPLC.
From *Vaccinium myrtillus* or *Vitis vinifera*
$C_{15}H_{11}O_7Cl$
M 338,70 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[528-53-0] • EC No. 208-437-0

Type analysis:

Purity (HPLC)	≥97 %

4537.1	10 mg	plastic	284,90 €

Delphinidin 3-galactoside chloride



Delphinidin 3-galactoside chloride

ROTICHROM® HPLC

Reference substance for HPLC.
From *Vaccinium myrtillus*
Empetrin
$C_{21}H_{21}O_{12}Cl$
M 500,84 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[28500-00-7]
WGK 1

Type analysis:

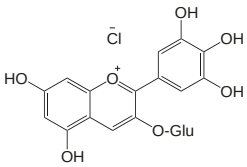
Purity (HPLC)..... ≥95 %

0643.1	10 mg	glass	428,95 €

Delphinidin 3-glucorhamnoside

▶ Delphinidin 3-rutinoside chloride see p. 1925

Delphinidin 3-glucoside chloride



Delphinidin 3-glucoside chloride

ROTICHROM® HPLC

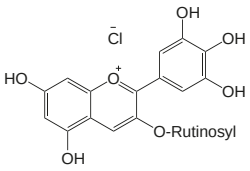
Reference substance for HPLC.
From *Vaccinium myrtillus* or *Vitis vinifera*
Myrtillin
$C_{21}H_{21}O_{12}Cl$
M 500,84 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[6906-38-3]
WGK 1

Type analysis:

Purity (HPLC)..... ≥95 %

0644.1	10 mg	glass	375,20 €

Delphinidin 3-rutinoside chloride



Delphinidin 3-rutinoside chloride

ROTICHROM® HPLC

Reference substance for HPLC.
From *Ribes nigrum*
Delphinidin-3-glucorhamnoside, Tulipanin
$C_{27}H_{31}O_{16}Cl$
M 646,98 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[15674-58-5]
WGK 1

Type analysis:

Purity (HPLC)..... ≥97 %

0977.1	20 mg	glass	375,20 €

Demoslides Fluoro-4C

Demoslides Fluoro-4C

Reference sample for fluorescent microscopy

Glass slide with ready-to-use cell specimen.
For fine tuning of fluorescent microscopes.
Fluorescent preparation Fluoro-4C
Storage temp.: +4 °C
WGK 1

Type analysis:

Number of cells..... complies
Structure of growth..... complies
Cy2 fluorescence..... complies
Cy3 fluorescence..... complies
Cy5 fluorescence..... complies
DAPI fluorescence..... complies

8987.1	1 piece	283,30 €
8987.2	2 pieces	536,45 €

For further information, please see page 1538

D/E Neutralizing Agar

D/E Neutralizing Agar

for microbiology

For detection and enumeration of microorganisms from a sanitized environment.
Application: Use 54 g for 1 l agar.
Dey-Engley Agar
Storage temp.: +20 °C
WGK 1

Warning H317-EUH031

Formulation:

Dextrose..... 10 g/l
Lecithin..... 7 g/l
Sodium thiosulphate..... 6 g/l
Casein peptone..... 5 g/l
Polysorbate 80..... 5 g/l
Yeast extract..... 2,5 g/l
Sodium bisulfite..... 2,5 g/l
Sodium thioglycolate..... 1 g/l
Bromocresol purple..... 0,02 g/l
Agar..... 15 g/l
pH value..... 7,6 ±0,2

8850.1	500 g	plastic	99,45 €
Original pack 6 x 500 g			94,48/500 g

For further information, please see page 1442

Denhardt's solution, lyophilised powder (50x)

Denhardt's solution, lyophilised powder (50x)

BioScience-Grade, for molecular biology

Blocking reagent for hybridisation and stripping.
Storage temp.: +4 °C
WGK 1

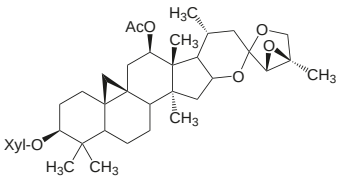
Type analysis:

Albumin Fraction V..... 0,5 g
Ficoll 400..... 0,5 g
Polyvinylpyrrolidone K30..... 0,5 g
pH value (stock solution in water)..... 6,3 ±0,2

HP33.1	Powder mix for 50 ml	plastic	99,90 €

For further information, please see page 1288

27-Deoxyactein



27-Deoxyactein

ROTICHROM® HPLC

Reference substance for HPLC.
From *Cimicifuga racemosa.*
$C_{37}H_{56}O_{10}$
M 660,84 g/mol
Storage temp.: +4 °C
[264624-38-6]

Type analysis:

Purity (HPLC)..... >99 %

1134.1	5 mg	glass	450,45 €

2'-Deoxyadenosine-5'-triphosphate

▶ dATP solution see p. 1922

2-Deoxy-D-arabinohexose

▶ 2-Deoxy-D-glucose see p. 1926

Deoxycholate Citrate Agar

Deoxycholate Citrate Agar

Ph.Eur., for microbiology

For highly selective isolation of enteric pathogenes, particularly *Salmonella* and *Shigella*.

Application: Use 70 g for 1 l agar.

Agar medium J (Ph.Eur. 6.0)

Storage temp.: +20 °C

WGK 1

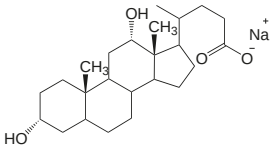
Guarantee analysis:

Beef extract.	10 g/l
Meat peptone.	10 g/l
Lactose monohydrate.	10 g/l
Sodium citrate.	20 g/l
Iron(III) citrate.	1 g/l
Sodium deoxycholate.	5 g/l
Neutral red.	0,02 g/l
Agar.	13,5 g/l
pH value.	7,5 ±0,2

AE44.1	500 g	plastic	107,40 €
Original pack 6 x 500 g			102,03/500 g
AE44.2	1 kg	plastic	188,15 €
Original pack 6 x 1 kg			178,74/1 kg

For further information, please see page 1443

Deoxycholic acid sodium salt (DOC)



Deoxycholic acid sodium salt (DOC)

≥98 %, for biochemistry

Anionic detergent

Sodium deoxycholate, DOC

$C_{24}H_{39}NaO_4$

M 414,64 g/mol

mp 357-365 °C

Solubility: ~330 g/l (H_2O, 15 °C)

Storage temp.: +4 °C

[302-95-4] • EC No. 206-132-7

WGK 1

Warning H302-H335-H315-H319

Type analysis:

Appearance.	white to off-white powder
Assay (titr.).	98,0-101,0 %
pH value (5 % in H_2O).	7,2-9,5
Specific rotation $[\alpha]_D^{20}$ (c=2 in ethanol, dry substance).	+43° to +45°
Heavy metals.	≤0,002 %
Sodium cholate.	≤1,0 %
Loss on drying (105 °C).	≤5 %

3484.1	10 g	plastic	18,85 €
3484.2	50 g	plastic	58,60 €
3484.3	100 g	plastic	103,10 €

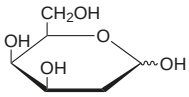
2'-Deoxycytidine-5'-triphosphate tetrasodium salt

▶ dCTP solution see p. 1922

2-Deoxy-D-erythropentose

▶ 2-Deoxy-D-ribose see p. 1926

2-Deoxy-D-galactose



2-Deoxy-D-galactose

≥99 %, for biochemistry

2-Deoxy-D-lyxohexose

$C_6H_{12}O_5$

M 164,16 g/mol

mp 107-108 °C

[1949-89-9] • EC No. 217-765-3

Type analysis:

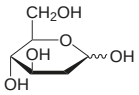
Assay (GC).	≥99 %

9916.1	250 mg	glass	24,65 €
9916.2	1 g	glass	48,95 €
9916.3	5 g	glass	177,40 €

6-Deoxy-L-galactose

▶ L(-)-Fucose see p. 2008

2-Deoxy-D-glucose



2-Deoxy-D-glucose

≥98 %, for biochemistry

2-Deoxy-D-arabinohexose

$C_6H_{12}O_5$

M 164,16 g/mol

mp ~148 °C

[154-17-6] • EC No. 205-823-0

WGK 1

Type analysis:

Assay.	≥98 %
Water.	≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (c=1, H_2O, after 24 h).	+44° to +48°
Ash content.	≤1,0 %

CN96.1	50 mg	glass	17,75 €
CN96.2	1 g	glass	40,75 €
CN96.3	5 g	glass	141,80 €

2'-Deoxyguanosine-5'-triphosphate tetrasodium salt

▶ dGTP see p. 1931

2'-Deoxyinosine-5'-triphosphate tetrasodium salt

▶ dITP see p. 1955

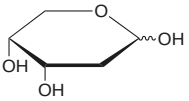
2-Deoxy-D-lyxohexose

▶ 2-Deoxy-D-galactose see p. 1926

Deoxyribonucleic acid sodium salt

▶ Salmon Sperm DNA sodium salt see p. 2305

2-Deoxy-D-ribose



2-Deoxy-D-ribose

≥99 %, for biochemistry

2-Deoxy-D-erythropentose, Thyminose

$C_5H_{10}O_4$

M 134,13 g/mol

mp ~90 °C

Solubility: ~50 g/l (H_2O, 20 °C)

[533-67-5] • EC No. 208-573-0

WGK 1

Type analysis:

Assay.	≥99 %
pH value.	6,0-8,0
Water.	≤1,0 %
Specific rotation $[\alpha]_D^{20}$.	-58° to -55°
Heavy metals.	≤0,002 %
Sulphated ash.	≤0,5 %

CN97.1	5 g	glass	42,90 €
CN97.2	10 g	glass	71,50 €
CN97.3	25 g	glass	153,65 €

2'-Deoxythymidine

▶ Thymidine see p. 2406

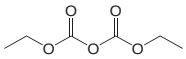
2'-Deoxythymidine-5'-triphosphate tetrasodium salt

▶ dTTP see p. 1962

2'-Deoxyuridine-5'-triphosphate tetrasodium salt

▶ dUTP solution see p. 1963

DEPC



DEPC

≥97 %, for biochemistry and molecular biology

Diethyl pyrocarbonate, Pyrocarbonic acid diethyl ester,
Dicarbonic acid diethyl ester.

$C_6H_{10}O_5$

M 162,14 g/mol

D ~1,12 • bp 160-163 °C

flp 69 °C

Storage temp.: +4 °C

[1609-47-8] • EC No. 216-542-8

WGK 3

Warning H302+H332-H315-H319-H335

Type analysis:

Appearance. ..... clear liquid
Assay (titr.). ..... ≥97,0 %

K028.3	5 ml	glass	22,05 €
K028.1	25 ml	glass	66,55 €

For further information, please see page 1298

Derivatization reagents

Art. No.	Description	Page
2328	γ-Aminopropyltriethoxysilane (APTES)	1792
2330	N,O-Bis(trimethylsilyl) acetamide (BSA)	1841
2331	N,O-Bis(trimethylsilyl)-trifluoroacetamide	1842
9935	N,O-Bis(trimethylsilyl)-trifluoroacetamide with 1 % trimethylchlorosilane	1842
6870	N,N-Dimethylformamid-dimethylacetal	1949
0026	Heptafluorobutyric acid anhydride (HFBA)	2037
3840	1,1,1,3,3,3-Hexamethyldisilazane (HMDS)	2040
9933	N-Methyl-N-(trimethylsilyl)-trifluoroacetamide (MSTFA)	2143
8007	N-Methyl-N-(trimethylsilyl)-trifluoroacetamide (MSTFA)	2143
0027	Trifluoroacetic anhydride (TFAA)	2418
2338	Trimethylchlorosilane (TMCS)	2419
0013	N-(Trimethylsilyl)-diethylamine (TMSDEA)	2419
0012	N-(Trimethylsilyl)-imidazole (TSIM)	2419
9934	Trimethylsulfonium hydroxide in methanol	2420

Descaler

Descaler

ideal for removing lime deposits

D 1,23

UN No. 3412 • ADR 8 II • WGK 1

Danger

H290-H302+H332-H314-EUH071

0023.1	500 ml	cardboard	8,85 €

For further information, please see page 1153

Desiccant sachet Silica gel orange

WGK 1

Desiccant sachet Silica gel orange

10 g (4x9 cm), with indicator

Desiccant sachet made of white long fiber paper with Silica gel orange filling.
Regeneration is not possible.

Type analysis:

Adsorption capacity:
20 % rel. humidity. ..... approx. 10 %
40 % rel. humidity. ..... approx. 19 %
50 % rel. humidity. ..... approx. 23 %
Colour change from orange to colourless.
Regeneration is not possible.

N077.2	75 pieces/box		33,25 €

For further information, please see page 1743

Desiccant sachet Silica gel orange

25 g (10x10 cm), with indicator

Desiccant sachet made of white long fiber paper with Silica gel orange filling.
Regeneration is not possible.

Type analysis:

Adsorption capacity:
20 % rel. humidity. ..... approx. 10 %
40 % rel. humidity. ..... approx. 19 %
50 % rel. humidity. ..... approx. 23 %
Colour change from orange to colourless.
Regeneration is not possible.

N078.1	30 pieces/box		28,50 €

For further information, please see page 1742

Desiccant sachet Silica gel orange

50 g (9x12 cm), with indicator

Desiccant sachet made of white long fiber paper with Silica gel orange filling.
Regeneration is not possible.

Type analysis:

Adsorption capacity:
20 % rel. humidity. ..... approx. 10 %
40 % rel. humidity. ..... approx. 19 %
50 % rel. humidity. ..... approx. 23 %
Colour change from orange to colourless.
Regeneration is not possible.

N079.1	20 pieces/box		40,35 €

For further information, please see page 1742

DETA

▶ Diethylene triamine see p. 1938

Detergents

Art. No.	Description	Page
CN21	Brij® 35	1849
CN27	Cetylpyridinium chloride monohydrate (CPC)	1888
9161	Cetyltrimethylammonium bromide (CTAB)	1888
1479	CHAPS	1889
HN73	CHAPSO	1889
4128	Chenodeoxycholic acid	1890
3407	Cholic acid sodium salt	1896
1816	N-Decyl-N,N-dimethyl-3-ammonio-1-propane sulphonate	1924
3484	Deoxycholic acid sodium salt (DOC)	1926
HN76	Digitonin	1940
4005	Digitonin	1940
1821	N-Dodecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate	1959
4129	n-Dodecyl-β-D-glucopyranoside	1960
CN26	Dodecyl-β-D-maltoside (DDM)	1960
0982	Ecosurf™ SA-9	1964
1823	N-Hexadecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate	1314
CN25	Lithiumdodecyl sulphate (LDS)	2103
1800	N-Octyl-N,N-dimethyl-3-ammonio-1-propane sulphonate	2172
CN23	n-Octyl-β-D-glucopyranoside (OGP)	2172
4133	n-Octyl-β-D-thiogalactopyranoside	2172
4139	n-Octyl-β-D-thioglucopyranoside	2172
1156	Roti®fair SDS 0.5g	2278
1157	Roti®fair 10% SDS	2278
1057	Roti®-Stock 20 % SDS	2298
0183	SDS	2309
2326	SDS ultra pure	2309
4360	SDS / Sodium lauryl sulphate	2309
5136	SDS / Sodium lauryl sulphate	2309
8029	SDS Pellets	2309
CN30	SDS Pellets	2309
9975	Tergitol™ 15-S-9	2396
1822	N-Tetradecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate	2400
7452	Tetradecyltrimethylammonium bromide (MTAB)	2400
3051	Triton® X 100	2423
9127	Tween® 20	2427
8240	Tween® 40	2427
9694	Tween® 60	2427
9139	Tween® 80	2427
4859	Tween® 80	2427

Deuterated Compounds

Art. No.	Description	Page
9902	Acetic acid D1	1757
HN83	Acetic acid D4	1757
AE51	Acetone D6	1762
7909	Acetone D6	1762
7911	Acetonitrile D3	1764
AE52	Acetonitrile D3	1764
9903	Ammonia-D3 solution 25 % in D_2O	1794
7912	Benzene D6	1830
AE53	Benzene D6	1830
HN93	Bromobenzene D5	1851
9905	Chlorobenzene D5	1892
5200	Cyclohexane D12	1917
HN80	Deuterium chloride 38 % solution in D_2O	1928
HN81	Deuterium oxide	1928
6672	Deuterium oxide	1928
HN82	1,2-Dichlorobenzene D4	1934
7913	Dichloromethane D2	1936
AE55	Dichloromethane D2	1936
9907	Diethyl ether D10	1939
CP92	N,N-Dimethylformamide D7	1948
7915	Dimethyl sulphoxide D6	1950
AE56	Dimethyl sulphoxide D6	1951
7916	Dimethyl sulphoxide D6 with TMS (0,03 vol.%)	1951
AE60	Dimethyl sulphoxide D6 with TMS (0,03 vol.%)	1951
HN84	Ethanol D1	1977
CP93	Ethanol D6	1977
HN92	Formic acid D2, 95 % solution in D_2O	2006
9909	1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2)	2040
HN88	Iodomethane D3	2070
HN86	Methanol D1	2133
9910	Methanol D3	2133
7918	Methanol D4	2133
AE57	Methanol D4	2133
7919	Methanol D4 with TMS (0,03 vol.%)	2133
9913	Methylcyclohexane D14	2137
9914	Nitrobenzene D5	2163
HN91	Nitromethane D3	2164
9915	ortho-Phosphoric acid D3, 85 % solution in D_2O	2211
9917	2-Propanol D1	2241
9919	2-Propanol D8	2241
7922	Pyridine D5	2245
CP94	Pyridine D5	2245
HN89	Sodium borodeuteride	2332
HN90	Sodium deuterium oxide 30 % solution in D_2O	2336
9921	Styrene D8	2383
HN87	Sulphuric acid D2, 98 % solution in D_2O	2391
CP96	1,1,2,2-Tetrachloroethane D2	2399
AE58	Tetrahydrofuran D8	2401
7924	Toluene D8	2412
CP95	Toluene D8	2412
CP91	Trichloromethane/Chloroform D1	2416
7903	Trichloromethane/Chloroform D1	2416
AE54	Trichloromethane/Chloroform D1	2416
7905	Trichloromethane/Chloroform D1 with TMS (0,03 vol.%)	2416
AE59	Trichloromethane/Chloroform D1 with TMS (0,03 vol.%)	2416
CP97	Trifluoroacetic acid D1	2418
9922	3-(Trimethylsilyl)propionic-2,2,3,3 acid sodium salt D4 (TSP-D4)	2419

Deuterium chloride 38 % solution in D_2O

Deuterium chloride 38 % solution in D_2O

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.
DCl + D_2O
bp ~108,6 °C
[7698-05-7] • EC No. 231-715-8
UN No. 1789 • ADR 8 II • WGK 1

Danger H314-H335-H290

Guarantee analysis:
Deuterising degree. ..... ≥99,5 %
Assay (mass %). ..... ≥38 %

HN80.1	10 ml	glass	40,75 €

Deuterium oxide

Heavy water, Water D_2
D_2O
M 20,03 g/mol
D ~1,11 • bp 101,4 °C
mp 3,8 °C
[7789-20-0] • EC No. 232-148-9

Deuterium oxide

100 Atom%D

For nuclear magnetic resonance spectroscopy.

Guarantee analysis:
Deuterising degree. ..... ≥99,96 %
Assay. ..... ≤370 Bq/g Tritium

HN81.1	10 ml	glass	30,00 €
HN81.4	10 ml	septum bottle	31,10 €
HN81.2	50 ml	glass	106,35 €
HN81.3	10 x 0,75 ml	glass ampoule	34,30 €

Deuterium oxide

99,9 Atom%D

For nuclear magnetic resonance spectroscopy.

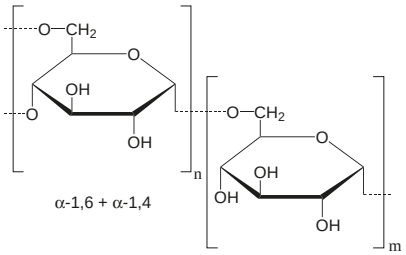
Type analysis:
Deuterising degree. ..... ≥99,9 %

6672.1	10 ml	glass	26,35 €
6672.5	10 ml	septum bottle	27,45 €
6672.2	25 ml	glass	49,35 €
6672.3	100 ml	glass	160,20 €
6672.4	500 ml	glass	719,20 €
6672.6	10 x 0,75 ml	glass ampoule	29,60 €

Deuterotrifluoroacetic acid

▶ Trifluoroacetic acid D1 see p. 2418

Dextran 2,5



Dextran 2,5

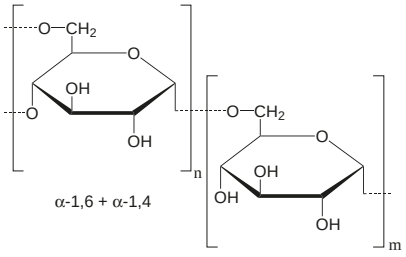
for biochemistry

$(C_6H_{10}O_5)_n$
M ~2500 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

Type analysis:
Appearance. .....white to slightly off-white powder
pH value. 4,5-7,0
Specific rotation $[\alpha]_D^{20}$. ..... ≥+140°
Ash. .....≤2,0 %
Loss on drying. .....≤7,0 %

8718.1	10 g	plastic	30,00 €
8718.2	100 g	plastic	115,60 €
8718.3	500 g	plastic	439,70 €
Original pack 6 x 500 g			417,72/500 g

Dextran 6



Dextran 6

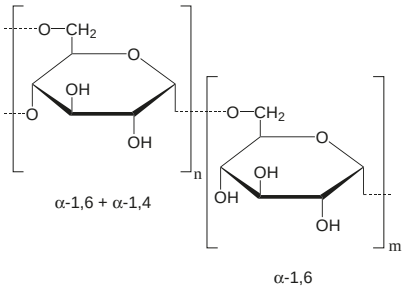
for biochemistry

$(C_6H_{10}O_5)_n$
M ~6 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

Type analysis:
Appearance. .....white to slightly off-white powder
pH value. 4,5-7,0
Specific rotation $[\alpha]_D^{20}$. ..... ≥+148°
Ash. .....≤2,0 %
Loss on drying. .....≤7,0 %

7615.1	10 g	plastic	16,05 €
7615.2	100 g	plastic	57,95 €
7615.3	500 g	plastic	239,20 €
Original pack 6 x 500 g			227,24/500 g

Dextran 10

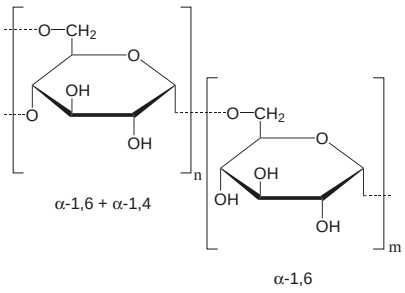


Dextran 10
for biochemistry
$(C_6H_{10}O_5)_n$
M ~10 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

Type analysis:
Appearance. ..... white to slightly off-white powder
pH value. 4,5-7,0
Specific rotation $[\alpha]_D^{20}$. ..... ≥+148°
Ash. ..... ≤2,0 %
Loss on drying. ..... ≤7,0 %

7616.1	10 g	plastic	16,05 €
7616.2	100 g	plastic	57,95 €
7616.3	500 g	plastic	239,20 €
Original pack 6 x 500 g			227,24/500 g

Dextran 20

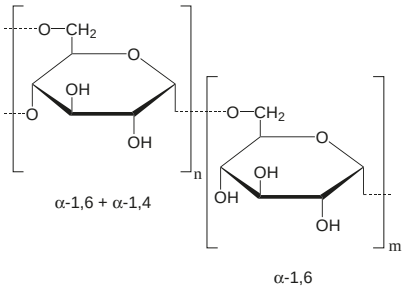


Dextran 20
for biochemistry
$(C_6H_{10}O_5)_n$
M ~20 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

Type analysis:
Appearance. ..... white to slightly off-white powder
pH value. 4,5-7,0
Specific rotation $[\alpha]_D^{20}$. ..... ≥+148°
Ash. ..... ≤2,0 %
Loss on drying. ..... ≤7,0 %

7617.1	10 g	plastic	16,05 €
7617.2	100 g	plastic	57,95 €
7617.3	500 g	plastic	239,20 €
Original pack 6 x 500 g			227,24/500 g

Dextran 35

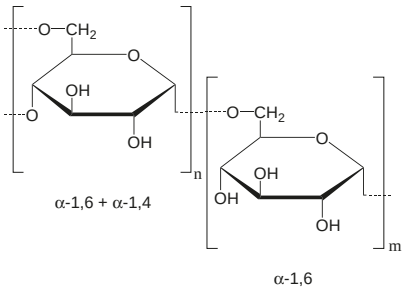


Dextran 35
for biochemistry
$(C_6H_{10}O_5)_n$
M ~35 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

Type analysis:
Appearance. ..... white powder
Molecular mass. 30000-40000
pH value 4,5-7,0
Sulphate (SO_4). ..... <0,03 %
Chloride (Cl). ..... <0,01 %
Nitrogen (N). ..... <0,01 %
Alcohol. ..... <0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... +192° to +200°
Ash content. ..... <0,1 %
Loss on drying. ..... <7,0 %

8943.2	10 g	plastic	16,05 €
8943.1	50 g	plastic	46,15 €
8943.3	100 g	plastic	75,15 €

Dextran 40



$(C_6H_{10}O_5)_n$
M ~40 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

Dextran 40
extra pure

Type analysis:
Appearance. ..... white powder
Molecular mass. 35000-45000
pH value (10 % solution). 4,5-7,0
Appearance of solution. ..... complies
Acid or alkaline react. substances. ..... complies
Nitrogen (N). ..... ≤0,011 %
Heavy metals. ..... ≤0,001 %
Ethanol (GC). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... +195° to +201°
Sulphated ash. ..... ≤0,3 %
Loss on drying. ..... ≤7,0 %

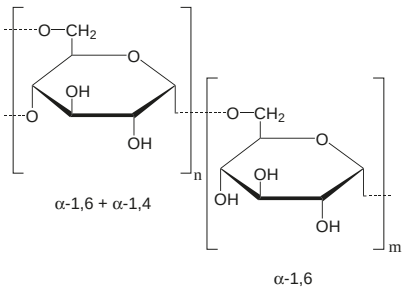
9227.3	10 g	plastic	16,05 €
9227.1	100 g	plastic	42,50 €
9227.4	250 g	plastic	85,50 €
9227.2	500 g	plastic	142,90 €
Original pack 6 x 500 g			135,76/500 g

Dextran 40
for biochemistry

Type analysis:
Appearance. ..... white to off-white powder
Molecular mass. 35000-45000
pH value (10 % solution). 4,5-7,0
Optical rotation. ..... +195° to +201°
Loss on drying. ..... ≤7,0 %

7626.1	10 g	plastic	11,75 €
7626.2	100 g	plastic	36,45 €
7626.3	250 g	plastic	75,15 €
7626.4	500 g	plastic	132,15 €
Original pack 6 x 500 g			125,54/500 g

Dextran 60

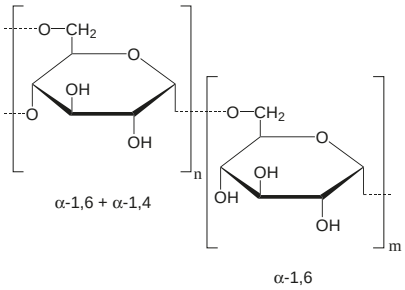


Dextran 60
NEW
for biochemistry
$(C_6H_{10}O_5)_n$
M ~ 60000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

Type analysis:
Appearance. ..... white to off-white powder
Molecular mass. 50000-76000
pH value. 4,5-7,0
Specific rotation $[\alpha]_D^{20}$. ..... +180° to 201°
Loss on drying. ..... ≤7 %

2247.1	10 g	plastic	15,60 €
2247.2	100 g	plastic	53,65 €
2247.3	250 g	plastic	75,15 €
2247.4	500 g	plastic	128,90 €
Original pack 6 x 500 g			122,46/500 g

Dextran 70



Dextran 70

extra pure

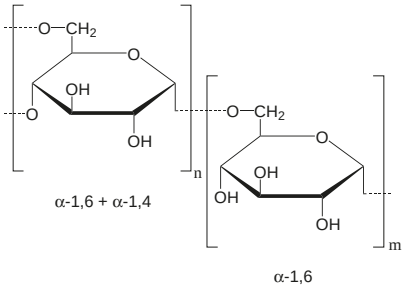
$(C_6H_{10}O_5)_n$
M ~70 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

Type analysis:

Appearance. ..... white powder
Molecular mass. 63000-77000
Appearance of solution. ..... clear
pH-Wert (6 % in H_2O). 4,5-7,0
Nitrogen (N). ..... ≤0,011 %
Heavy metals. ..... ≤0,001 %
Specific rotation $[\alpha]_D^{20}$. ..... +195° to +203°
Sulphated ash. ..... ≤0,3 %
Loss on drying. ..... ≤7,0 %

9228.3	10 g	plastic	17,75 €
9228.1	100 g	plastic	63,35 €
9228.4	250 g	plastic	125,70 €
9228.2	500 g	plastic	232,10 €
Original pack 6 x 500 g			220,50/500 g

Dextran 100



Dextran 100

for biochemistry

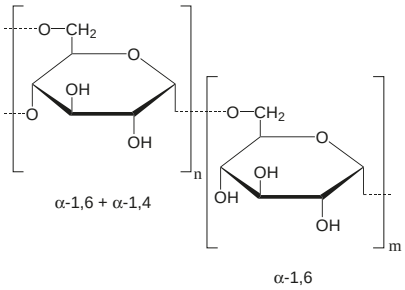
$(C_6H_{10}O_5)_n$
M ~100 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

Type analysis:

Appearance. ..... white to slightly off-white powder
pH value. 4,5-7,0
Specific rotation $[\alpha]_D^{20}$. ..... +195° to +203°
Ash. ..... ≤2,0 %
Loss on drying. ..... ≤7,0 %

7618.1	10 g	plastic	16,05 €
7618.2	100 g	plastic	57,95 €
7618.3	500 g	plastic	239,20 €
Original pack 6 x 500 g			227,24/500 g

Dextran 150



Dextran 150

for biochemistry

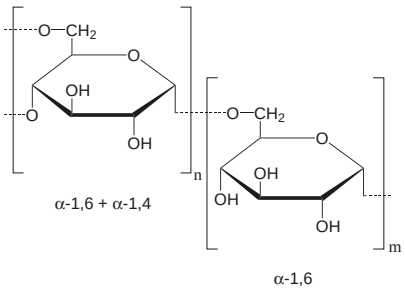
$(C_6H_{10}O_5)_n$
M ~150 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

Type analysis:

Appearance. ..... white to slightly off-white powder
pH value. 4,5-7,0
Specific rotation $[\alpha]_D^{20}$. ..... +195° to +203°
Ash. ..... ≤2,0 %
Loss on drying. ..... ≤7,0 %

7619.1	10 g	plastic	16,05 €
7619.2	100 g	plastic	57,95 €
7619.3	500 g	plastic	239,20 €
Original pack 6 x 500 g			227,24/500 g

Dextran 250



Dextran 250

for biochemistry

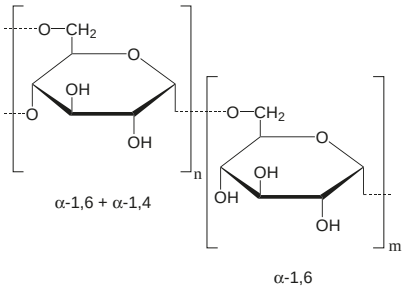
$(C_6H_{10}O_5)_n$
M ~250 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

Type analysis:

Appearance. ..... white powder
Molecular mass. 225 000-275 000
pH value 4,5-7,0
Loss on drying. ..... <7,0 %
Rotation $[\alpha]_D^{20}$. ..... +195° to +203°

9233.3	10 g	plastic	35,40 €
9233.1	100 g	plastic	178,35 €
9233.2	500 g	plastic	762,20 €
Original pack 6 x 500 g			724,09/500 g

Dextran 500



Dextran 500

for biochemistry

$(C_6H_{10}O_5)_n$
M ~500 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

Type analysis:

Appearance. ..... white to off-white powder
Appearance of solution
(6 % in H_2O at 375 nm). ..... ≤0,15
Molecular mass. 500 000
pH value 4,0-7,0
Specific rotation $[\alpha]_D^{20}$. ..... +195° to +203°
Ash. ..... ≤2,0 %
Loss on drying. ..... ≤10,0 %

9219.3	10 g	plastic	25,30 €
9219.1	100 g	plastic	84,40 €
9219.2	500 g	plastic	353,70 €
Original pack 6 x 500 g			336,02/500 g

Dextranhydrogensulphate sodium salt

▶ Dextran sulphate 8 sodium salt see p. 1930
▶ Dextran sulphate 40 sodium salt see p. 1931
▶ Dextran sulphate 500 sodium salt see p. 1931

Dextran sulphate 8 sodium salt

Dextran sulphate 8 sodium salt

for biochemistry

Dextranhydrogensulphate 8 sodium salt
M ~8 000 g/mol
[9042-14-2]
WGK 2

Type analysis:

Appearance. ..... off-white to light yellow powder
Specific viscosity (25 °C, 1 M NaCl). 0,018-0,032
pH value (1 % in H_2O). 5,0-7,5
Specific rotation $[\alpha]_D^{20}$. ..... +75° to +105°
Loss on drying. ..... ≤10,0 %
Loss on ignition. ..... 35-50 %
Free sulphate. ..... ≤0,2 %
Sulphur (S). ..... 17,0-20,0 %
Iron (Fe). ..... ≤2,0 %
Chloride (Cl). ..... ≤0,1 %
Glucose. ..... 35-48 %

7610.1	10 g	plastic	31,10 €
7610.2	25 g	plastic	57,95 €
7610.3	50 g	plastic	102,05 €
7610.4	100 g	plastic	188,05 €

Dextran sulphate 40 sodium salt

Dextran sulphate 40 sodium salt

for biochemistry

Dextranhydrogensulphate 40 sodium salt
M ~40 000 g/mol
[9042-14-2]
WGK 2

Type analysis:

Appearance. .....off-white to light yellow powder
Specific viscosity (25 °C, 1 M NaCl). 0,05-0,13
pH value (1 % in H_2O).....5,0-7,5
Specific rotation $[\alpha]_D^{20}$. ..... +75° to +105°
Loss on drying. .....≤10,0 %
Loss on ignition.....35-50 %
Free sulphate.....≤0,2 %
Sulphur (S). .....17,0-20,0 %
Iron (Fe).....≤2,0 %
Chloride (Cl). .....≤0,1 %
Glucose. .....35-48 %

7612.1	10 g	plastic	31,10 €
7612.2	25 g	plastic	57,95 €
7612.3	50 g	plastic	102,05 €
7612.4	100 g	plastic	188,05 €

Dextran sulphate 500 sodium salt

Dextran sulphate 500 sodium salt

for biochemistry and molecular biology

Dextranhydrogensulphate 500 sodium salt
M ~500 000 g/mol
[9042-14-2]
WGK 2

Type analysis:

Appearance. .....white to light yellow powder
Specific viscosity (25 °C, 1 M NaCl). 0,1-0,7
pH value (1 %, H_2O). 5,0-7,2
Specific rotation $[\alpha]_D^{20}$. ..... +75° to +105°
Loss on drying. .....≤10 %
Loss on ignition.....40-50 %
Free sulphate.....≤0,2 %
Sulphur (S). .....17-20 %
Iron (Fe).....≤2 %
Chloride (Cl). .....≤0,1 %
Glucose. .....35-48 %

5956.5	10 g	plastic	31,10 €
5956.3	25 g	plastic	60,10 €
5956.4	50 g	plastic	103,10 €
5956.1	100 g	plastic	196,20 €
5956.2	500 g	plastic	858,95 €
Original pack 6 x 500 g			816,00/500 g

For further information, please see page 1287

Dextrin

Potato starch, Starch gum
$(C_6H_{10}O_5)_n \cdot x\ H_2O$
[9004-53-9] • EC No. 232-675-4
WGK 1

Dextrin

white, extra pure

From potatoes, medium viscosity in solution.

Type analysis:

Appearance.....white, amorphous powder
Moisture. ..... ≤14,5 %
Solubility in cold water (10 %)..... 50-70 %

6778.3	500 g	plastic	17,75 €
Original pack 6 x 500 g			16,86/500 g
6778.1	1 kg	plastic	27,45 €
Original pack 6 x 1 kg			26,08/1 kg
6778.4	2,5 kg	plastic	55,80 €
6778.2	5 kg	plastic	103,10 €

Dextrin

yellow, extra pure

Starch gum, from potatoes, medium viscosity in solution.

Type analysis:

Appearance.....yellow, amorphous powder
Moisture. ..... ≤12 %
Viscosity (40 %, 20 °C)..... 100-150 mPa s
Solubility in cold water . ..... ≥99,7 %

6777.3	500 g	plastic	12,40 €
Original pack 6 x 500 g			11,78/500 g
6777.1	1 kg	plastic	17,75 €
Original pack 6 x 1 kg			16,86/1 kg
6777.4	2,5 kg	plastic	34,30 €
6777.2	5 kg	plastic	62,25 €

Dextrin

for microbiology

From potato starch.

Type analysis:

Appearance..... light yellow powder

3488.2	100 g	plastic	21,40 €
3488.1	250 g	plastic	36,05 €

Dextrose

▶ D(+)-Glucose see p. 2020
▶ D(+)-Glucose monohydrate see p. 2020

Dey-Engley Agar

▶ D/E Neutralizing Agar see p. 1925

dGTP

dGTP

≥95 %, lyophilised

2'-Deoxyguanosine-5'-triphosphate tri-sodium salt
$C_{10}H_{13}N_5O_{13}P_3Na_3 \cdot 3\ H_2O$
M 627,16 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[93919-41-6] • EC No. 300-026-5

K052.1	10 mg	plastic	24,20 €
K052.2	100 mg	plastic	150,00 €

For further information, please see page 1304

dGTP solution

dGTP solution

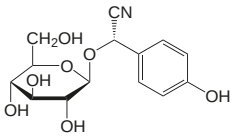
≥99 %, 100 mM solution

2'-Deoxyguanosine-5'-triphosphate
$C_{10}H_{13}N_5O_{13}P_3$
M 504,16 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[93919-41-6] • EC No. 300-026-5

K037.1	25 µmol (250 µl)	plastic	34,30 €

For further information, please see page 1302

Dhurrin



Dhurrin

ROTICHROM® HPLC

Reference substance for HPLC.
(S)-4-Hydroxymandelonitrile-β-D-glucoside, (S)-(β-D-Glucopyranosyloxy)(4-hydroxyphenyl)acetonitrile
$C_{14}H_{17}NO_7$
M 311,29 g/mol
mp >200 °C (dec.)
Storage temp.: +4 °C
[499-20-7] • EC No. 207-878-6
WGK 1

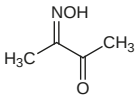
Warning H302

Type analysis:

Purity (HPLC).....≥98 %

3866.1	1 mg	glass	55,80 €
3866.2	5 mg	glass	166,65 €
3866.3	25 mg	glass	493,45 €

Diacetyl monoxime



Diacetyl monoxime

≥99 %, p.a.

For determination of urea.
2,3-Butandione monoxime
$C_4H_7NO_2$
M 101,11 g/mol
bp 185-186 °C
mp ~75 °C
[57-71-6] • EC No. 200-348-5 • WGK 2

Type analysis:

Assay..... ≥99 %
Melting point. ..... 74-77 °C
Sulphated ash..... ≤0,05 %
Solution (5 % in H_2O)..... clear solution

3494.1	25 g	plastic	18,85 €
3494.2	100 g	plastic	56,45 €

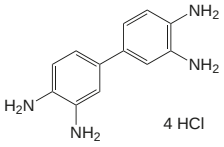
4',6-Diamidino-2-phenylindole dihydrochloride

▶ DAPI see p. 1922

1,4-Diaminobenzene

▶ 1,4-Phenylenediamine see p. 2207

3,3'-Diaminobenzidine tetrahydrochloride



3,3'-Diaminobenzidine tetrahydrochloride

≥98 %, p.a.

Substrate of horseradish peroxidase. For detection of endogenous peroxidase and for immunohistochemical stainings.
3,3',4,4'-Tetra-aminobiphenyl tetrahydrochloride, DAB
$C_{12}H_{14}N_4 \cdot 4\ HCl$
M 360,10 g/mol
mp >300 °C
Storage temp.: +4 °C
[7411-49-6] • EC No. 231-018-9 • WGK 1

Warning
H315-H319-H341-H351-H335

Guarantee analysis:

Assay (titr.). ..... ≥98 %
Sulphated ash..... ≤0,3 %

CN75.1	1 g	glass	23,55 €
CN75.2	5 g	plastic	76,25 €
CN75.3	10 g	plastic	130,65 €

For further information, please see page 1329

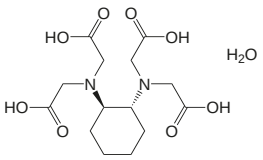
1,4-Diaminobutane

▶ Putrescin see p. 2244
▶ Putrescin dihydrochloride see p. 2244

α,ε-Diamino-N-capronic acid hydrochloride

▶ L-Lysine hydrochloride see p. 2108

trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate



1,2-Cyclohexane dinitrilo tetraacetic acid, CDTA, Titration complex IV
$C_{14}H_{22}N_2O_8 \cdot H_2O$
M 364,34 g/mol • mp 213 °C
Solubility: practically insoluble in H_2O (20 °C)
[125572-95-4] • EC No. 236-308-9 • WGK 2

Warning H315-H319

trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate

≥99 %, p.a., ACS

Guarantee analysis:

Appearance..... white cryst. powder
Assay. ..... ≥99,0 %
pH value (saturated sol.). 2,5-3,1
Chloride (Cl). ..... ≤0,002 %
Sulphate (SO_4). ..... ≤0,01 %
Heavy metals..... ≤0,001 %
Lead (Pb). ..... ≤0,0001 %
Iron (Fe)..... ≤0,001 %
Sulphated ash. ..... ≤0,1 %
Water (KF)..... 4,8-5,6 %

1412.1	25 g	plastic	32,80 €
1412.2	100 g	plastic	96,65 €
1412.3	250 g	plastic	214,50 €
1412.4	500 g	plastic	396,70 €
Original pack 6 x 500 g			376,87/500 g

trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate

≥99 %, for synthesis

Type analysis:

Appearance..... white cryst. powder
Assay. ..... ≥99,0 %
pH value (saturated sol.). 2,5-3,1
Heavy metals..... ≤0,001 %
Water content. ..... 4,8-5,6 %

1411.1	100 g	plastic	71,95 €
1411.2	250 g	plastic	168,25 €
1411.3	500 g	plastic	295,10 €
Original pack 6 x 500 g			280,35/500 g
1411.4	1 kg	plastic	547,20 €
Original pack 6 x 1 kg			519,84/1 kg

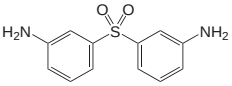
2,2'-Diaminodiethylamine

▶ Diethylene triamine see p. 1938

3,8-Diamino-5-(3-diethyl-aminopropyl)-6-phenyl-phenanthridinium iodide-methiodide

▶ Propidiumiodide see p. 2241

3,3'-Diaminodiphenyl sulphone



3,3'-Diaminodiphenyl sulphone

≥99 %, for synthesis

3,3'-Sulphonyldianiline, 3-Aminophenyl sulphone
$C_{12}H_{12}N_2O_2S_2$
M 248,29 g/mol
mp 170-173 °C
[599-61-1] • EC No. 209-967-5
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... ≥99,0 %
Loss on drying..... ≤0,5 %

8082.1	25 g	plastic	15,60 €
8082.2	250 g	plastic	35,40 €
8082.3	1 kg	plastic	71,50 €
Original pack 6 x 1 kg			67,93/1 kg

1,2-Diaminoethane

▶ Ethylenediamine see p. 1980

3,8-Diamino-5-ethyl-6-phenyl-phenanthridinium bromide

▶ Ethidium bromide see p. 1978
▶ Ethidium bromide solution 1 % see p. 1978

1,6-Diamino-hexane

▶ Hexamethylene diamine see p. 2041

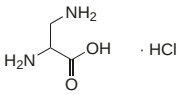
3,8-Diamino-5-methyl-6-phenyl-phenanthridium bromide

▶ Dimidium bromide see p. 1951

3,7-Diaminophenothiazin-5-ium acetate

▶ Thionine (acetate) (C.I. 52000) see p. 2404

DL-2,3-Diaminopropionic acid hydrochloride



DL-2,3-Diaminopropionic acid hydrochloride

≥99 %, for biochemistry
3-Amino-DL-alanine hydrochloride, DAP · HCl
$C_3H_9ClN_2O_2$
M 140,57 g/mol
mp 223-227 °C
[54897-59-5] • EC No. 259-387-1
WGK 1

Warning H315-H319-H335

Type analysis:
Assay (TLC)..... ≥99,0 %
Solution (5 % in H_2O)..... colourless
Melting point. ..... 223-227 °C

5431.1	1 g	glass	24,65 €
5431.2	5 g	plastic	85,50 €

L(+)-2,5-Diaminovaleriic acid hydrochloride

▶ L-Ornithine monohydrochloride see p. 2186

Diamondfuchsin

▶ Fuchsine basic (C.I. 42510) see p. 2008

Diamond green G

▶ Brilliant green (C.I. 42040) see p. 1850

3,3'-Dianisole-4,4'-bis-(3,5-diphenyltetrazolium chloride)

▶ Tetrazolium blue chloride see p. 2403

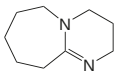
Diatomaceous earth

▶ Infusorial earth see p. 2067

1,4-Diazabicyclo[2.2.2]octane

▶ DABCO® see p. 1921

1,8-Diazabicyclo[5.4.0]undec-7-ene (DBU)



1,8-Diazabicyclo[5.4.0]undec-7-ene (DBU)

≥98 %, for synthesis
Base for organic chemistry
DBU
$C_9H_{16}N_2$
M 152,24 g/mol
D 1,02 • bp 80-83 °C
mp -70 °C • flp 116 °C
[6674-22-2] • EC No. 229-713-7
UN No. 2922 • ADR 8 (6.1) I • WGK 2

Danger H290-H301-H314-H412

Type analysis:
Appearance..... colourless to light yellow liquid
Assay. ..... ≥98 %

6869.1	25 ml	glass	30,00 €
6869.2	100 ml	glass	88,05 €
6869.3	250 ml	glass	162,25 €
6869.4	500 ml	glass	289,20 €

1,3-Diaza-2,4-cyclopentadiene

▶ Imidazole see p. 2063

Diazin Green S

▶ Janus green B (C.I. 11050) see p. 2082

Dibasic ester

Dibasic ester

SOLVAGREEN® ≥99 %, pure
DBE
D 1,09 • bp 209 °C
mp -55 °C • flp 99 °C
EC No. 906-170-0
WGK 1

Type analysis:
Assay (GC)..... ≥99,0 %
Colour (Hazen)..... ≤20
Density (20 °C)..... 1,087-1,093
Dimethyl adipate. ..... 8,0-22,0 %
Dimethyl glutarate. ..... 57,0-67,0 %
Dimethyl succinate. ..... 18,0-28,0 %

7973.1	1 l	plastic	24,20 €
Original pack 6 x 1 l			22,99/1 l
7973.2	2,5 l	plastic	43,55 €
Original pack 4 x 2,5 l			41,37/2,5 l
7973.3	5 l	plastic	71,95 €
Original pack 2 x 5 l			68,35/5 l

Dibenz[de,kl]anthracene

▶ Perylene see p. 2200

Dibenzopyrrole

▶ Carbazole see p. 1876

DIBK

▶ Diisobutyl ketone see p. 1943

5',5''-Dibromo-cresol-sulphonephthaleine

▶ Bromocresol purple see p. 1853
▶ Bromocresol purple sodium salt see p. 1853

4',5'-Dibromo-2',7'-dinitro-fluorescein-disodium salt

▶ Eosin B (C.I. 45400) see p. 1970

3',3''-Dibromophenol-sulphonephthaleine

▶ Bromophenol red free acid see p. 1854

3',3''-Dibromothymol-sulphonphthaleine

▶ Bromothymol blue see p. 1855
▶ Bromothymol blue sodium salt see p. 1855

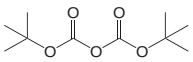
N,N-Dibutyl-1-butanamine

▶ Tributylamine see p. 2414

2,6-Di-tert-butyl-p-cresol

▶ Butylated hydroxytoluene see p. 1862

Di-*tert*-butyl dicarbonate (Boc_2O)



Di-*tert*-butyl dicarbonate (Boc_2O)

PEPTIPURE® ≥98 %
Protective group reagent
Boc_2O, Di-*tert*-butyl pyrocarbonate, Boc anhydride
$C_{10}H_{18}O_5$
M 218,25 g/mol
D 0,949
mp 23 °C • flp 37 °C
Solubility: insoluble (H_2O, 20 °C)
Storage temp.: +4 °C
[24424-99-5] • EC No. 246-240-1
UN No. 2929 • ADR 6.1 (3) I • WGK 1

Danger H226-H330-H315-H319-H317

Type analysis:
Appearance. ..... colorless solid
Assay (GC). ..... ≥98,0 %

6985.1	100 g	plastic	149,45 €
6985.2	500 g	plastic	471,95 €
Original pack 6 x 500 g			448,35/500 g

2,6-Di-tert.-butyl-4-methyl-phenol

▶ Butylated hydroxytoluene see p. 1862

Di-*tert*-butyl pyrocarbonate

▶ Di-*tert*-butyl dicarbonate (Boc_2O)
see p. 1933

DIC

▶ *N,N'*-Diisopropylcarbodiimide (DIC)
see p. 1944

1,3-Dicaffeoylquinic acid

▶ Cynarin see p. 1918

2,3-Dicaffeoyltartaric acid

▶ Cichoric acid see p. 1899

Dichlorane Bengal Red Agar (with chloroamphenicol)

Dichlorane Bengal Red Agar (with chloroamphenicol)

ISO 21527-1, for microbiology

Selective agar for enumeration of yeast and food mould fungi, especially for strongly hyphen-forming fungi.

Application: Use 31,6 g for 1 l agar.

DRBC Agar

Storage temp.: +20 °C

WGK 3

Formulation:

Peptone. ..... 5 g/l
Glucose. ..... 10 g/l
Potassium phosphate. ..... 1 g/l
Magnesium sulphate ($MgSO_4$). ..... 0,5 g/l
Chloroamphenicol. ..... 0,1 g/l
Dichlorane. ..... 0,002 g/l
Bengal red. ..... 0,025 g/l
Agar. ..... 15 g/l
pH value. ..... 5,6 ±0,2

AE25.1	500 g	plastic	153,65 €
Original pack 6 x 500 g			145,97/500 g

For further information, please see page 1443

Dichlorane Glycerol Agar (Base)

Dichlorane Glycerol Agar (Base)

ISO 21527-2, for microbiology

Selective agar for enumeration of yeast and food mould fungi, especially in half-dry and dry food.

Application: Use 31,6 g for 1 l agar, add 18 vol.-% glycerol.

DG18 Agar

Storage temp.: +20 °C

WGK 1

Formulation:

Peptone. ..... 5 g/l
Glucose. ..... 10 g/l
Potassium phosphate. ..... 1 g/l
Magnesium sulphate ($MgSO_4$). ..... 0,5 g/l
Chloroamphenicol. ..... 0,1 g/l
Dichlorane. ..... 0,002 g/l
Agar. ..... 15 g/l
pH value. ..... 5,6 ±0,2

AE26.1	500 g	plastic	129,55 €
Original pack 6 x 500 g			123,07/500 g

For further information, please see page 1443

1,2-Dichlorobenzene

1,2-Dichlorobenzene

≥98 %, for synthesis

o-Chlorobenzene
$C_6H_4Cl_2$
M 147,00 g/mol
D 1,307 • bp 180 °C
mp -17 °C • flp 66 °C
[95-50-1] • EC No. 202-425-9
UN No. 1591 • ADR 6.1 III • WGK 2

Warning
H400-H410-H302-H315-H319-H335

Type analysis:

Assay (GC). ..... ≥98,0 %
Density (d 20 °C/4 °C). 1,305-1,307

4374.1	100 ml	glass	13,90 €
4374.2	500 ml	glass	27,85 €
4374.3	1 l	glass	42,50 €
Original pack 6 x 1 l			40,38/1 l

1,2-Dichlorobenzene D4

1,2-Dichlorobenzene D4

99 Atom%D

For nuclear magnetic resonance spectroscopy.
$C_6D_4Cl_2$
M 151,03 g/mol
D 1,34 • bp 180 °C
mp -17 °C • flp 66 °C
[2199-69-1] • EC No. 218-606-0
UN No. 1591 • ADR 6.1 III • WGK 2

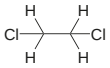
Warning
H400-H410-H302-H315-H319-H335

Guarantee analysis:

Deuterising degree. ..... ≥99 %
Water (KF, H_2O+D_2O). ..... ≤0,01 %

HN82.2	1 ml	glass	59,70 €
HN82.1	5 ml	glass	192,45 €

1,2-Dichloroethane



Ethylene chloride, Ethylene dichloride
$C_2H_4Cl_2$
M 98,96 g/mol
D 1,25 • bp 84 °C
mp -35,5 °C • flp 13 °C
Solubility: 8 g/l (H_2O, 20 °C)
[107-06-2] • EC No. 203-458-1
UN No. 1184 • ADR 3 (6.1) II • WGK 3

Danger H225-H302-H304-H315-H319-H331-H335-H350

1,2-Dichloroethane

ROTIPURAN® ≥99,5 %, p.a.

Guarantee analysis:

Assay (GC). ..... ≥99,5 %
Colour (Hazen). ..... ≤50
Water . ..... ≤0,03 %
Density (d 20 °C/20 °C). ..... ~1,25
Free chlorine (Cl). ..... ≤0,00003 %
Aluminium (Al). ..... ≤0,000005 %
Barium (Ba). ..... ≤0,000005 %
Lead (Pb). ..... ≤0,000002 %
Cadmium (Cd). ..... ≤0,000002 %
Calcium (Ca). ..... ≤0,00002 %
Chromium (Cr). ..... ≤0,000002 %
Cobalt (Co). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,0001 %
Potassium (K). ..... ≤0,00002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,000005 %
Manganese (Mn). ..... ≤0,000002 %
Sodium (Na). ..... ≤0,00005 %
Nickel (Ni). ..... ≤0,000002 %
Strontium (Sr). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %
Evaporation residue. ..... ≤0,002 %

6837.4	500 ml	glass	21,40 €
6837.1	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l
6837.2	2,5 l	glass	68,30 €
Original pack 4 x 2,5 l			64,89/2,5 l
6837.3	10 l	tinplate	221,35 €

1,2-Dichloroethane

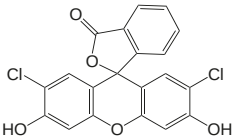
≥99 %, for synthesis

Type analysis:

Assay (GC). ..... ≥99 %
Free acid (as HCl). ..... ≤0,001 %
Iron (Fe). ..... ≤0,0005 %
Evaporation residue. ..... ≤0,01 %

T869.1	1 l	glass	21,40 €
Original pack 6 x 1 l			20,33/1 l
T869.2	2,5 l	glass	42,90 €
Original pack 4 x 2,5 l			40,76/2,5 l
T869.3	10 l	tinplate	110,20 €
T869.4	25 l	tinplate	217,05 €

2',7'-Dichlorofluorescein



2',7'-Dichlorofluorescein

p.a., ACS

Fluorescence indicator
$C_{20}H_{10}Cl_2O_5$
M 401,20 g/mol
[76-54-0] • EC No. 200-968-6
WGK 2

Guarantee analysis:

Appearance. ..... red-brown powder
Appearance of solution. ..... complies
Loss on drying (110 °C). ..... ≤3,0 %
Suitability as adsorption indicator. ..... complies

X866.2	1 g	glass	20,35 €

X866.1	5 g	glass	34,30 €
X866.3	25 g	glass	92,35 €
X866.4	50 g	glass	150,00 €

2',7'-Dichlorofluorescein spray solution

2',7'-Dichlorofluorescein spray solution

for TLC

Ready-to-use spray solution for detection of Lipids (saturated, unsaturated).
0,2 g 2',7'- Dichlorofluorescein dissolved in 100 ml 2-propanol.

UN No. 1219 • ADR 3 II • WGK 1

Danger H225-H319-H336

Type analysis:

TLC-application. ..... complies

CP36.1	100 ml	glass	38,50 €

Dichloromethane

Methylene chloride, DCM
CH_2Cl_2
M 84,93 g/mol
D ~1,33 • bp 40 °C
mp -95,1 °C
[75-09-2] • EC No. 200-838-9
UN No. 1593 • ADR 6.1 III • WGK 2

Warning H315-H319-H336-H351

Dichloromethane

NEW

ROTISOLV® ≥99,9 %, MOSH/MOAH

Suitable for MOSH/MOAH analysis.

Guarantee analysis:

Assay (GC, TS)..... ≥99,9 %
Colour (APHA)..... ≤10
MOSH test (GC/FID)..... ≤5 ng/ml
MOAH test (LC/UV)..... ≤5 ng/ml
GC/EDC (1,2,4-trichlorobenzene to decachlorobiphenyl as lindane)..... ≤3 pg/ml
Water (KF)..... ≤0,02 %
Evaporation residue..... ≤0,0003 %
Stabilized with 30-60 ppm Amylene
Filtered through a 0,2 µm membrane and filled under protective gas.

0770.1	2,5 l	glass	96,65 €
Original pack 4 x 2,5 l			91,82/2,5 l

Dichloromethane

ROTISOLV® HPLC

Guarantee analysis:

Assay (GC)..... ≥99,9 %
Water (KF)..... ≤0,005 %
Free acid..... ≤0,0002 %
Non volatile matter..... ≤0,0001 %
Transmission:
255 nm..... ≥99 %
240 nm..... ≥80 %
235 nm..... ≥50 %
229 nm..... ≥10 %
Stabilized with approx. 30 ppm amylene

7334.2	1 l	glass	38,20 €
Original pack 6 x 1 l			36,29/1 l
7334.1	2,5 l	glass	59,05 €
Original pack 4 x 2,5 l			56,10/2,5 l

For further information, please see page 1650

Dichloromethane

ROTISOLV® ≥99,9 %, GC Ultra Grade

For gaschromatographic residue analysis.

Guarantee analysis:

Assay (GC)..... ≥99,9 %
Colour (APHA)..... ≤10
Water (KF)..... ≤0,02 %
Free acid (as CH_3COOH)..... ≤0,002 %
Evaporation residue..... ≤0,0002 %
GC/ECD dioxins, furans and PCBs (as lindane)..... ≤5 ng/l
GC/ECD pesticides (as lindane)..... ≤5 ng/l
GC/NPD pesticides (as parathion)..... ≤5 ng/l
PAH-test (less than 2 ppb, HPLC)..... complies
Filtered through 0,2 µm membrane and filled under protective gas.
Stabilized with 30-60 ppm Amylene

KK47.1	2,5 l	glass	69,35 €
Original pack 4 x 2,5 l			65,88/2,5 l

Dichloromethane

ROTISOLV® ≥99,9 %, Pestilyse® plus

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:

Assay (GC)..... ≥99,9 %
Colour (APHA)..... ≤10
Water (KF)..... ≤0,02 %
Free acid (as HCl)..... ≤0,0005 %
Evaporation residue..... ≤0,0003 %
GC/FID suitability (as 2-octanol)..... ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide)..... ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane)..... ≤5 ng/l
GC/ECD pesticides (as lindane)..... ≤5 ng/l
GC/NPD pesticides (as parathion)..... ≤10 ng/l
Oil index (any hydrocarbon C_{10}-C_{40})..... ≤0,1 mg/l
GC/ECD volatile impurities (as ethylene dibromide)..... ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC)..... complies
Fluorescence (as quinine):
254 nm..... ≤1 ppb
365 nm..... ≤1 ppb
Stabilized with 30-60 ppm Amylene

7562.1	2,5 l	glass	68,70 €
Original pack 4 x 2,5 l			65,27/2,5 l

Dichloromethane

ROTISOLV® ≥99,8 %, Pestilyse®

For residue and environmental analysis.

Guarantee analysis:

Assay (GC)..... ≥99,8 %
Water (KF)..... ≤0,05 %
Acidity..... ≤0,0005 meq/g
Evaporation residue..... ≤0,0005 %
GC/ECD (individual signal as lindane)..... ≤5 ng/l
GC/PND (individual signal as ethylparathion)..... ≤10 ng/l
Stabilized with approx. 50 ppm amylene

T162.2	1 l	glass	33,25 €
Original pack 6 x 1 l			31,59/1 l
T162.1	2,5 l	glass	67,65 €
Original pack 4 x 2,5 l			64,27/2,5 l
T162.3	4 l	glass	83,35 €

Dichloromethane

ROTISOLV® ≥99,8 %, UV/IR-Grade

For chromatography and spectroscopy

Guarantee analysis:

Assay (GC)..... ≥99,8 %
Water (KF)..... ≤0,01 %
Acidity..... ≤0,0005 meq/g
Evaporation residue..... ≤0,0005 %
Transmission:
260 nm..... ≥98 %
250 nm..... ≥90 %
240 nm..... ≥80 %
230 nm..... ≥5 %
Stabilized with approx. 50 ppm amylene

4433.1	2,5 l	glass	43,55 €
Original pack 4 x 2,5 l			41,37/2,5 l

Dichloromethane

ROTIDRY®Sept ≥99,9 % (≤50 ppm H_2O)

Dried; in a septum bottle

Guarantee analysis:

Assay (GC)..... ≥99,9 %
Colour (APHA)..... ≤10
Water (KF)..... ≤0,005 %
Acidity (as HCl)..... ≤0,001 %
Evaporation residue..... ≤0,001 %
Stabilized with approx. 50 ppm amylene

5176.1	250 ml	glass	38,60 €

Dichloromethane

ROTIDRY® ≥99,8 % (≤50 ppm H_2O)

Dried; for analysis and organic synthesis.

Guarantee analysis:

Assay (GC)..... ≥99,8 %
Colour (Hazen)..... ≤10
Water (KF)..... ≤0,005 %
Acidity..... ≤0,0005 meq/g
Evaporation residue..... ≤0,0005 %
Stabilized with approx. 50 ppm amylene
Filtered through a membrane and filled under protective gas.

AE03.1	1 l	glass	32,15 €
Original pack 6 x 1 l			30,54/1 l

Dichloromethane

ROTIPURAN® ≥99,5 %, p.a., ACS, ISO

Guarantee analysis:

Assay (GC) ≥99,5 %
Colour (Hazen) ≤10
Density (d 20 °C/4 °C) 1,323-1,325
Water ≤0,02 %
Acidity ≤0,0003 meq/g
Free chlorine (Cl) ≤0,0001 %
Chloroform (GC) ≤0,05 %
Carbon tetrachloride (GC) ≤0,01 %
Aluminium (Al) ≤0,00005 %
Barium (Ba) ≤0,00001 %
Lead (Pb) ≤0,00001 %
Boron (B) ≤0,000002 %
Cadmium (Cd) ≤0,000005 %
Calcium (Ca) ≤0,00005 %
Chromium (Cr) ≤0,000002 %
Cobalt (Co) ≤0,000002 %
Iron (Fe) ≤0,00001 %
Copper (Cu) ≤0,000002 %
Magnesium (Mg) ≤0,00001 %
Manganese (Mn) ≤0,000002 %
Nickel (Ni) ≤0,000002 %
Zinc (Zn) ≤0,00001 %
Tin (Sn) ≤0,00001 %
Evaporation residue ≤0,001 %
Matter discoloured by H_2SO_4 (Hazen) complies
Stabilized with approx. 20 ppm amylene

6053.3	100 ml	glass	16,05 €
6053.1	1 l	glass	36,45 €
Original pack 6 x 1 l			34,63/1 l
6053.2	2,5 l	glass	66,55 €
Original pack 4 x 2,5 l			63,22/2,5 l
6053.4	10 l	tinplate	166,55 €
6053.5	25 l	tinplate	317,15 €

Dichloromethane

≥99,5 %, Ph.Eur., extra pure

Guarantee analysis:

Assay (GC) ≥99,5 %
Identity complies
Appearance complies
Density (d 20 °C/20 °C) 1,320-1,332
Refractive index n_D^{20} 1,423-1,425
Free chlorine (Cl) complies
Water (KF) ≤0,02 %
Chloride (Cl) ≤0,0003 %
Acid react. substances complies
Heavy metals (as Pb) ≤0,0001 %
Evaporation residue ≤0,002 %
Related substances:
Ethanol (GC) ≤2,0 %
Chloroform (GC) ≤0,005 %
Carbon tetrachloride (GC) ≤0,001 %
2-Methylbut-2-ene ≤0,03 %
Sum of other impurities ≤0,1 %
Stabilized with approx. 20 ppm amylene

CP45.1	1 l	glass	27,85 €
Original pack 6 x 1 l			26,46/1 l
CP45.2	2,5 l	glass	55,80 €
Original pack 4 x 2,5 l			53,01/2,5 l
CP45.3	10 l	tinplate	141,80 €
CP45.4	25 l	tinplate	266,10 €

Dichloromethane

≥99,5 %, for synthesis

Type analysis:

Assay (GC) ≥99,5 %
Water ≤0,1 %
Density (20 °C) 1,324-1,330
Refractive index n_D^{20} 1,4230-1,4250
Stabilized with amylene

8424.4	100 ml	glass	10,65 €
8424.1	1 l	glass	21,00 €
Original pack 6 x 1 l			19,95/1 l
8424.2	2,5 l	glass	40,75 €
Original pack 4 x 2,5 l			38,71/2,5 l
8424.3	10 l	tinplate	107,40 €
8424.5	25 l	tinplate	182,65 €

Dichloromethane

PEPTIPURE® ≥99,9 %, for peptide synthesis

Guarantee analysis:

Assay (GC) ≥99,9 %
Water (KF) ≤0,005 %
Non volatile matter ≤0,0005 %
Free amines ≤0,001 %
Stabilized with approx. 50 ppm amylene

P089.1	2,5 l	glass	64,00 €
Original pack 4 x 2,5 l			60,80/2,5 l

Dichloromethane D2

Methylene chloride D2
CCl_2D_2
M 86,95 g/mol
D 1,36 • bp 39 °C
mp -97 °C
[1665-00-5] • EC No. 216-776-0
UN No. 1593 • ADR 6.1 III • WGK 2

Warning H315-H319-H336-H351

Dichloromethane D2

99,8 Atom%D

For nuclear magnetic resonance spectroscopy.

Type analysis:

Deuterising degree ≥99,8 %
Water (KF, H_2O+D_2O) ≤0,02 %

7913.1	10 ml	glass	109,55 €
7913.2	10 x 0,75 ml	glass ampoule	110,65 €

Dichloromethane D2

99,5 Atom%D

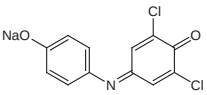
For nuclear magnetic resonance spectroscopy.

Guarantee analysis:

Deuterising degree ≥99,5 %
Water (KF, H_2O+D_2O) ≤0,03 %

AE55.3	5 ml	glass	54,75 €
AE55.1	10 ml	glass	95,60 €
AE55.2	25 ml	glass	224,70 €
AE55.4	50 ml	glass	396,70 €
AE55.5	10 x 0,75 ml	glass ampoule	96,65 €

2,6-Dichlorophenol-indophenol sodium salt hydrate



2,6-Dichlorophenol-indophenol sodium salt hydrate

p.a., ACS

DCPIP, Tillman's reagent
$C_{12}H_6Cl_2NNaO_2 \cdot x\ H_2O$
M 290,08 + x H_2O g/mol
[620-45-1] • EC No. 210-640-4
WGK 3

Guarantee analysis:

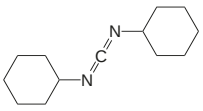
Appearance dark green powder
Solubility (0,1 % in 50 % EtOH + 1 ml 1 N Na_2CO_3) clear blue solution
Loss on drying (120 °C) ≤12 %
Disturbing dyes complies

HN79.1	1 g	glass	17,10 €
HN79.2	5 g	glass	37,55 €
HN79.3	25 g	glass	153,65 €

3',3"-Dichlorophenol sulphonic phthalein

▶ Chlorophenol red see p. 1894

N,N'-Dicyclohexylcarbodiimide (DCC)



N,N'-Dicyclohexylcarbodiimide (DCC)

PEPTIPURE® ≥98 %, for peptide synthesis

Coupling reagent for peptide synthesis
DCC
$C_{13}H_{22}N_2$
M 206,33 g/mol
bp 32-35 °C
Solubility: 10 mg/l (H_2O, 20 °C)
[538-75-0] • EC No. 208-704-1
UN No. 2811 • ADR 6.1 II • WGK 3

Danger H302-H310-H317-H318

Type analysis:

Appearance white to brown solid
Assay (GC) ≥98,0 %
Loss on ignition ≤0,1 %
Melting point 32-35 °C

4193.1	100 g	glass	20,35 €
4193.2	250 g	glass	39,70 €
4193.3	500 g	glass	70,85 €
Original pack 6 x 500 g			67,31/500 g
4193.4	1 kg	glass	130,65 €
Original pack 6 x 1 kg			124,12/1 kg
4193.5	2,5 kg	glass	295,65 €

2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

▶ SPhos see p. 2356

2-Dicyclohexylphosphino-2',4',6'-triisopropylbiphenyl

▶ XPhos see p. 2443

13,19-Didehydro-12-hydroxy-senecionan-11,16-dione

▶ Seneciphylline see p. 2311

2',3'-Dideoxyadenosine-5'-triphosphate tetrasodium salt

▶ ddATP solution see p. 1922

2',3'-Dideoxycytidine-5'-triphosphate tetrasodium salt

▶ ddCTP solution see p. 1922

2',3'-Dideoxyguanosine-5'-triphosphate sodium salt

▶ ddGTP solution see p. 1922

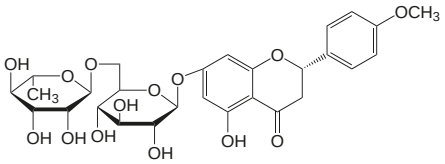
2',3'-Dideoxythymidine-5'-triphosphate sodium salt

▶ ddTTP solution see p. 1923

1,2-Dideutero-1,1,2,2-tetrachloroethane

▶ 1,1,2,2-Tetrachloroethane D2 see p. 2399

Didymin



Didymin

ROTICHROM® HPLC

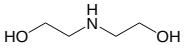
Reference substance for HPLC.
Rutinosyl-7-isosakuranetin
$C_{28}H_{34}O_{14}$
M 594,57 g/mol
Storage temp.: +4 °C
[14259-47-3] • EC No. 238-139-6

Type analysis:

Purity (HPLC)..... ≥99 %

7445.2	10 mg	glass	375,20 €

Diethanolamine



2,2'-Dihydroxy diethylamine,
Bis-(β-hydroxyethyl)-amine
$C_4H_{11}NO_2$
M 105,14 g/mol
D ~1,09 • bp 269-270 °C
mp 27-28 °C • flp 176 °C
[111-42-2] • EC No. 203-868-0
WGK 1

Danger H318-H373-H302-H315

Diethanolamine

ROTIPURAN® ≥99 %, p.a., ACS

For biochemistry.

Guarantee analysis:

Assay (GC)..... ≥99,0 %
Melting point..... 27-28 °C
Colour (APHA)..... ≤15
Water..... ≤0,15 %
Chloride (Cl)..... ≤0,001 %
Ethanol amine (GC)..... ≤0,3 %
Triethanol amine (GC)..... ≤0,3 %
Ash content (as SO_4)..... ≤0,002 %
Heavy metals (as Pb)..... ≤0,0001 %
Iron (Fe)..... ≤0,0001 %
Apparent equivalent weight..... 104,0-106,0

0332.1	250 ml	glass	37,55 €
0332.2	500 ml	glass	65,50 €
0332.3	1 l	glass	111,70 €
Original pack 6 x 1 l			106,12/1 l

Diethanolamine

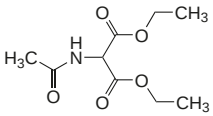
≥99 %, for synthesis

Type analysis:

Assay (GC)..... ≥99,0 %
Water..... ≤0,1 %
Melting range..... 25-28 °C

HN99.1	500 ml	plastic	30,65 €
HN99.2	1 l	plastic	38,60 €
Original pack 6 x 1 l			36,67/1 l
HN99.3	2,5 l	plastic	74,10 €
Original pack 4 x 2,5 l			70,40/2,5 l
HN99.4	5 l	plastic	110,65 €
Original pack 2 x 5 l			105,12/5 l
HN99.5	10 l	plastic	188,15 €

Diethyl acetamidomalonate



Diethyl acetamidomalonate

≥99 %

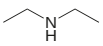
Acetamidomalonic acid diethyl ester
$C_9H_{15}NO_5$
M 217,22 g/mol
bp 185 °C
mp 96-98 °C
Solubility: insoluble (H_2O, 20 °C)
[1068-90-2] • EC No. 213-952-9

Type analysis:

Assay (GC)..... ≥99,0 %
Solution (5 % in methanol)..... colourless, clear
Melting point..... 96-98 °C

5428.1	25 g	plastic	14,95 €
5428.2	50 g	plastic	25,70 €

Diethylamine



N-Ethyleneamine, DEA
$C_4H_{11}N$
M 73,14 g/mol
D ~0,70 • bp 55-58 °C
mp -50 °C
[109-89-7] • EC No. 203-716-3
UN No. 1154 • ADR 3 (8) II • WGK 1

Danger

H225-H302+H332-H311-H314-H335

Diethylamine

ROTIPURAN® ≥99,5 %, p.a., ACS

Guarantee analysis:

Assay (GC)..... ≥99,5 %
Water..... ≤0,1 %
Colour (APHA)..... ≤20
Lead (Pb)..... ≤0,00001 %
Cadmium (Cd)..... ≤0,000005 %
Calcium (Ca)..... ≤0,00005 %
Chromium (Cr)..... ≤0,000002 %
Iron (Fe)..... ≤0,00001 %
Cobalt (Co)..... ≤0,000002 %
Copper (Cu)..... ≤0,000002 %
Magnesium (Mg)..... ≤0,00001 %
Manganese (Mn)..... ≤0,000002 %
Nickel (Ni)..... ≤0,000002 %
Zinc (Zn)..... ≤0,00001 %
Evaporation residue..... ≤0,01 %
Monoethylamine (GC)..... ≤0,5 %
Triethylamine (GC)..... ≤0,5 %

3495.1	250 ml	glass	18,85 €
3495.2	1 l	glass	50,45 €
Original pack 6 x 1 l			47,93/1 l

Diethylamine

≥99,5 %, for synthesis

Type analysis:

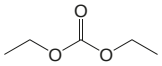
Assay (GC)..... ≥99,5 %
Water..... ≤0,2 %

KK00.1	100 ml	glass	13,90 €
KK00.2	500 ml	glass	21,40 €
KK00.3	1 l	glass	27,85 €
Original pack 6 x 1 l			26,46/1 l
KK00.4	2,5 l	glass	48,30 €
Original pack 4 x 2,5 l			45,89/2,5 l

Diethylaminoethyldextran

▶ DEAE Dextran see p. 1923

Diethyl carbonate



Diethyl carbonate

≥99,9 %
Carbonic acid diethyl ester, Ethyl carbonate, DEC
$C_5H_{10}O_3$
M 118,13 g/mol
D 0,98 • bp 126 °C
mp -43 °C • flp 33 °C
Solubility: insoluble (H_2O, 20 °C)
[105-58-8] • EC No. 203-311-1
UN No. 2366 • ADR 3 III • WGK 1
Warning H226

Type analysis:
Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,1 %
Ethanol (GC). ..... ≤0,2 %
Density (20 °C). 0,978-0,983

2627.1	100 ml	glass	14,95 €
2627.2	500 ml	glass	24,65 €
2627.3	1 l	glass	33,25 €
Original pack 6 x 1 l			31,59/1 l
2627.4	2,5 l	glass	62,25 €
Original pack 4 x 2,5 l			59,14/2,5 l

Diethyl dicarbonate

▶ DEPC see p. 1927

Diethyldithiocarbamic acid silver salt

▶ Silver diethyldithiocarbamate see p. 2326

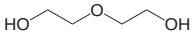
Diethyldithiocarbamic acid sodium salt

▶ Sodium diethyldithiocarbamate trihydrate see p. 2336

1.4-Diethylene dioxide

▶ 1,4-Dioxane see p. 1952

Diethylene glycol



Diethylene glycol

≥99 %, for synthesis
Diglycol, 2,2'-Dihydroxy diethyl ether
$C_4H_{10}O_3$
M 106,12 g/mol
D ~1,115 • bp 242-252 °C
mp -6 °C • flp 140 °C
[111-46-6] • EC No. 203-872-2 • WGK 1
Warning H302-H373

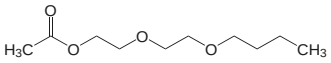
Type analysis:
Assay (GC). ..... ≥99 %
Density (20 °C). 1,115-1,120
Water (KF). ..... ≤0,2 %

0968.1	1 l	plastic	17,75 €
Original pack 6 x 1 l			16,86/1 l
0968.2	2,5 l	plastic	30,65 €
Original pack 4 x 2,5 l			29,12/2,5 l
0968.5	5 l	plastic	55,40 €
Original pack 2 x 5 l			52,63/5 l
0968.3	10 l	plastic	77,95 €
0968.4	25 l	plastic	170,95 €

Diethylene glycol butyl ether

▶ Butyldiglycol see p. 1862

Diethylene glycol monobutyl ether acetate



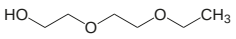
Diethylene glycol monobutyl ether acetate

≥97 %, pure
2-(2-Butoxyethoxy)ethyl acetate, Butyldiglycol acetate
$C_{10}H_{20}O_4$
M 204,26 g/mol
D 0,98 • bp 238-248 °C
mp -32 °C • flp 102 °C
Solubility: 65 g/l (20 °C, H_2O)
[124-17-4] • EC No. 204-685-9
WGK 1

Type analysis:
Assay (GC). ..... ≥97,0 %
Colour (Hazen). ..... ≤20

8021.1	1 l	glass	23,55 €
Original pack 6 x 1 l			22,37/1 l
8021.2	2,5 l	glass	39,70 €
Original pack 4 x 2,5 l			37,72/2,5 l

Diethylene glycol monoethyl ether



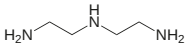
Diethylene glycol monoethyl ether

≥99 %, pure
2-(2-Ethoxyethoxy)ethanol, Ethyldiglycol
$C_6H_{14}O_3$
M 134,17 g/mol
D 0,99 • bp 202 °C
mp -90 °C • flp 94 °C
[111-90-0] • EC No. 203-919-7
WGK 1

Type analysis:
Assay (GC). ..... ≥99,0 %
Colour (Hazen). ..... ≤15

8686.1	1 l	glass	24,20 €
Original pack 6 x 1 l			22,99/1 l
8686.2	2,5 l	glass	41,85 €
Original pack 4 x 2,5 l			39,76/2,5 l

Diethylene triamine



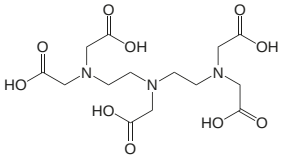
Diethylene triamine

≥98 %, for synthesis
2,2'-Diaminodiethylamine, DETA
$C_4H_{13}N_3$
M 103,17 g/mol
D 0,95 • bp 207 °C
mp -35 °C • flp 102 °C
[111-40-0] • EC No. 203-865-4
UN No. 2079 • ADR 8 II • WGK 2
Danger H302+H312-H314-H317

Type analysis:
Appearance. ..... clear colourless to yellowish liquid
Assay (GC). ..... ≥98,0 %
Density. 0,949-0,952
Refractive index n_D^{20}. 1,482-1,483
Water. ..... ≤0,3 %

6723.1	100 ml	glass	13,90 €
6723.2	500 ml	glass	28,95 €
6723.3	1 l	glass	41,85 €
Original pack 6 x 1 l			39,76/1 l
6723.4	2,5 l	glass	81,60 €
Original pack 4 x 2,5 l			77,52/2,5 l

Diethylene triamine pentaacetic acid



Diethylene triamine pentaacetic acid

≥99 %, for synthesis
Titration complex V
DTPA, Pentetic acid
$C_{14}H_{23}N_3O_{10}$
M 393,35 g/mol
mp 220-222 °C (dec.)
Solubility: 4,8 g/l (H_2O, 25 °C)
[67-43-6] • EC No. 200-652-8 • WGK 2
Warning H319-H332-H361

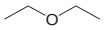
Type analysis:
Appearance. ..... white cryst. powder
Assay. ..... ≥99,0 %
Chloride (Cl). ..... ≤0,01 %
Nitrilotriacetic acid. ..... ≤0,5 %
Sulphate (SO_4). ..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
pH value (saturated solution). 2,1-2,5
Loss on drying. ..... ≤0,2 %

1407.1	100 g	plastic	18,85 €
1407.2	250 g	plastic	32,80 €
1407.3	500 g	plastic	52,60 €
Original pack 6 x 500 g			49,97/500 g
1407.4	1 kg	plastic	92,35 €
Original pack 6 x 1 kg			87,73/1 kg

N,N-Diethylethane amine

▶ Triethylamine (TEA) see p. 2417

Diethyl ether



Ether, Ethyl ether
$C_4H_{10}O$
M 74,12 g/mol
D 0,71 • bp 35 °C
mp -116,3 °C • flp -40 °C
Solubility: 69 g/l (H_2O, 20 °C)
[60-29-7] • EC No. 200-467-2
UN No. 1155 • ADR 3 I • WGK 1

Danger

H224-H302-H336-EUH019-EUH066

Diethyl ether

ROTISOLV® ≥99,8 %, Pestilyse®, stab.

For residue and environmental analysis.

Guarantee analysis:

Assay (GC).....≥99,8 %
Water (KF).....≤0,1 %
Acidity.....≤0,0005 meq/g
Evaporation residue.....≤0,0005 %
GC/ECD (individual signal as lindane).....≤5 ng/l
GC/PND (individual signal as ethylparathion).≤10 ng/l
Stabilized with approx. 1 % ethanol

T900.1	2,5 l	glass	85,90 €
Original pack 4 x 2,5 l			81,61/2,5 l

Diethyl ether

ROTIDRY® Sept ≥99,5 % (≤50 ppm H_2O), stab.

Dried; in a septum bottle

Guarantee analysis:

Assay (GC).....≥99,5 %
Colour (APHA).....≤10
Water (KF).....≤0,005 %
Acidity (as CH_3COOH).....≤0,001 %
Evaporation residue.....≤0,001 %
Stabilized with approx. 10 ppm BHT

5177.1	250 ml	glass	57,95 €

Diethyl ether

ROTIDRY® ≥99,5 % (≤50 ppm H_2O), stab.

Dried; for analysis and organic synthesis.

Guarantee analysis:

Assay (GC).....≥99,5 %
Colour (Hazen).....≤10
Water (KF).....≤0,005 %
Acidity.....≤0,0005 meq/g
Evaporation residue.....≤0,001 %
Stabilized with ~5 ppm BHT
Filtered through 0,2 µm membrane and filled under protective gas.

AE04.1	1 l	glass	46,80 €
Original pack 6 x 1 l			44,46/1 l

Diethyl ether

ROTIPURAN® ≥99,5 %, p.a., stab.

Guarantee analysis:

Assay (GC).....≥99,5 %
Density (20 °C).....0,714-0,716
Water (KF).....≤0,1 %
Acetone (GC).....≤0,01 %
Ethanol (GC).....≤0,1 %
Methanol (GC).....≤0,1 %
Acid content (as CH_3COOH).....≤0,01 %
Peroxides (as H_2O_2).....none detected
Aluminium (Al).....≤0,00005 %
Barium (Ba).....≤0,00001 %
Lead (Pb).....≤0,000001 %
Cadmium (Cd).....≤0,000005 %
Calcium (Ca).....≤0,00005 %
Chromium (Cr).....≤0,000002 %
Cobalt (Co).....≤0,000002 %
Iron (Fe).....≤0,000001 %
Copper (Cu).....≤0,000001 %
Manganese (Mn).....≤0,000002 %
Nickel (Ni).....≤0,00001 %
Zinc (Zn).....≤0,000001 %
Tin (Sn).....≤0,00001 %
Evaporation residue.....≤0,002 %
Stabilized with ~5 ppm BHT

3942.1	1 l	glass	46,15 €
Original pack 6 x 1 l			43,84/1 l
3942.6	2,5 l	glass	81,60 €
Original pack 4 x 2,5 l			77,52/2,5 l
3942.4	5 l	aluminium	155,35 €
Original pack 2 x 5 l			147,58/5 l
3942.5	25 l	tinplate	450,45 €

Diethyl ether

≥99,5 %, Ph.Eur., stab.

Guarantee analysis:

Appearance.....clear, colourless
Assay (GC).....≥99,5 %
Identity.....complies
Density (d 20 °C/4 °C).....0,714- 0,716
Water.....≤0,05 %
Evaporation residue.....≤0,002 %
Acid react. substances.....complies
Destillation range.....34,0-35,0 °C
Aldehydes.....complies
Peroxides.....none detected
Foreign odour.....complies
Stabilized with ~5 ppm BHT

8810.1	1 l	glass	36,45 €
Original pack 6 x 1 l			34,63/1 l
8810.5	2,5 l	glass	67,65 €
Original pack 4 x 2,5 l			64,27/2,5 l
8810.2	5 l	aluminium	131,05 €
Original pack 2 x 5 l			124,50/5 l
8810.4	25 l	tinplate	386,90 €

Diethyl ether

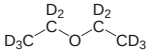
≥99,5 %, for synthesis, stab.

Type analysis:

Assay (GC).....≥99,5 %
Density (20 °C).....0,714-0,716
Peroxides (as H_2O_2).....none detected
Stabilized with ~5 ppm BHT

5920.2	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l
5920.3	5 l	aluminium	119,90 €
Original pack 2 x 5 l			113,91/5 l
5920.4	25 l	tinplate	342,95 €

Diethyl ether D10



Diethyl ether D10

99 Atom%D

For nuclear magnetic resonance spectroscopy.
Ether D10, Ethyl ether D10
$C_4D_{10}O$
M 84,18 g/mol
D 0,8 • bp 35 °C
mp -116 °C • flp -45 °C
Storage temp.: +4 °C
Transport temp.: room temp.
[2679-89-2] • EC No. 220-235-4
UN No. 1155 • ADR 3 I • WGK 1

Danger

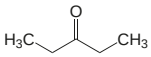
H224-H302-H336-EUH019-EUH066

Type analysis:

Deuterising degree.....≥99 %

9907.1	1 ml	glass ampoule	125,70 €

Diethyl ketone



Diethyl ketone

≥99 %, for synthesis

3-Pentanone, Dimethyl acetone, Propione
$C_5H_{10}O$
M 86,13 g/mol
D 0,81 • bp 101 °C
mp -39 °C • flp 7 °C
[96-22-0] • EC No. 202-490-3
UN No. 1156 • ADR 3 II • WGK 1

Danger

H225-H319-H335-H336-EUH066

Type analysis:

Assay (GC).....≥99,0 %

0262.1	500 ml	glass	27,85 €
0262.2	1 l	glass	44,65 €
Original pack 6 x 1 l			42,42/1 l
0262.3	2,5 l	glass	89,15 €
Original pack 4 x 2,5 l			84,69/2,5 l
0262.4	5 l	plastic	153,65 €
Original pack 2 x 5 l			145,97/5 l

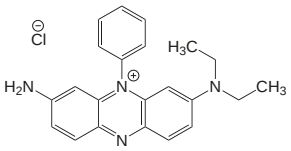
Diethylmethane

▶ n-Pentane see p. 2195

Diethyl pyrocarbonate

▶ DEPC see p. 1927

Diethyl safranine (C.I. 50206)



Diethyl safranine (C.I. 50206)

for microscopy

Methylene violet 3RAX
$C_{22}H_{23}ClN_4$
M 378,91 g/mol
mp ~285 °C
[4569-86-2]
WGK 3

Type analysis:

Appearance. ..... green cryst. powder
Appearance of solution (0,1 % in H_2O). ..... clear red
Absorption max. (in H_2O). ..... ≤557 nm

7654.1	1 g	glass	12,40 €
7654.2	5 g	glass	25,30 €
7654.3	10 g	glass	37,55 €

Diferuloylmethane

▶ Curcumin see p. 1915

Differential Reinforced Clostridial Medium

Differential Reinforced Clostridial Medium

for microbiology

For enrichment and enumeration of clostridia in foods and other samples.
Application: Use 27,5 g for 1 l broth.

DRCM

Storage temp.: +20 °C
WGK 1

Formulation:

Casein peptone. ..... 5 g/l
Meat peptone. ..... 5 g/l
Beef extract. ..... 8 g/l
Yeast extract. ..... 1 g/l
Soluble starch. ..... 1 g/l
Glucose monohydrate. ..... 1 g/l
Cystein hydrochloride. ..... 0,5 g/l
Sodium acetate. ..... 5 g/l
Sodium bisulfite. ..... 0,5 g/l
Ammonium iron(III) citrate. ..... 0,5 g/l
Sodium resazurin. ..... 0,002 g/l
pH value. ..... 7,1 ±0,2

CL78.1	500 g	plastic	120,95 €
Original pack 6 x 500 g			114,90/500 g

For further information, please see page 1443

Digilanide

▶ Lanatoside C see p. 2090

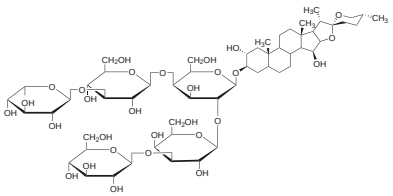
Digitalin

▶ Digitoxin see p. 1940

Digitoflavone

▶ Luteolin-7-glucoside see p. 2106

Digitonin



$C_{56}H_{92}O_{29}$
M 1229,32 g/mol
mp ~250 °C
[11024-24-1] • EC No. 234-255-6
UN No. 2811 • ADR 6.1 III • WGK 3
Danger H301+H311+H331

Digitonin

ultra quality

Water soluble quality, for biochemistry.
Non-ionic detergent.

Guarantee analysis:

Appearance. ..... white, cryst. powder
Solution (2,5 %, warm EtOH). ..... clear, colourless
Solubility (1 g dissolved in 20 ml H_2O by heating up to 95-98 °C for 15 min, clear colorless). ..... complies
Spec. rotation $[\alpha]_D^{20}$ (c=1 in ethanol). ..... -57,0° to -49,0°
Sulphated ash. ..... ≤0,3 %
Loss on drying (3 h, 105 °C, vacuum). ..... ≤6,0 %
Water (KF). ..... ≤6,0 %

HN76.3	100 mg	glass	73,65 €
HN76.1	250 mg	glass	166,65 €
HN76.2	1 g	glass	478,40 €

For further information, please see page 1311

Digitonin

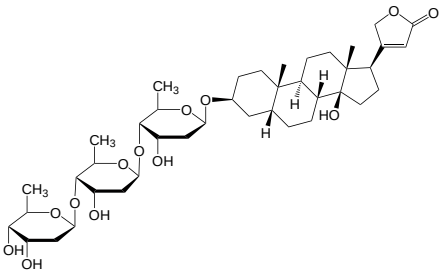
for biochemistry

Guarantee analysis:

Appearance. ..... white to yellowish powder
Appearance of solution (2,5 % EtOH). ..... clear, colourless to light yellowish
Solubility (2,5 %, warm EtOH). ..... complies
Specific rotation $[\alpha]_D^{20}$. ..... -48° ±3°
Ash content. ..... ≤0,3 %
Loss on drying. ..... ≤6 %

4005.1	100 mg	glass	44,00 €
4005.2	500 mg	glass	147,85 €
4005.3	1 g	glass	266,10 €
4005.4	5 g	glass	1020,20 €

Digitoxin



Digitoxin

ROTICHROM® ~CHR

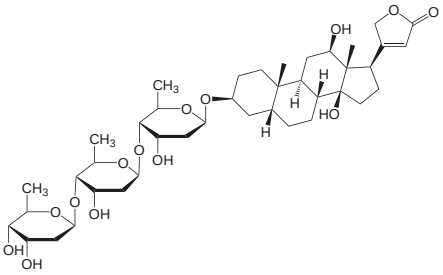
Digitalin
$C_{41}H_{64}O_{13}$
M 764,96 g/mol
mp 256-257 °C
Solubility: 10 mg/l (H_2O, 20 °C)
[71-63-6] • EC No. 200-760-5
UN No. 2811 • ADR 6.1 I • WGK 3
Danger H301+H331-H373

7359.1	50 mg	glass	39,70 €

Diglycine

▶ Glycylglycine see p. 2027

Digoxin



Digoxin

ROTICHROM® ~CHR

Lanoxin
$C_{41}H_{64}O_{14}$
M 780,96 g/mol
mp 260-265 °C
Solubility: 65 mg/l (H_2O, 25 °C)
[20830-75-5] • EC No. 244-068-1
UN No. 2811 • ADR 6.1 I • WGK 3
Danger H300+H330-H400-H319

7323.1	50 mg	glass	73,00 €

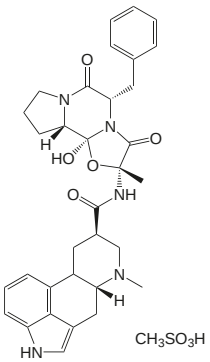
Diholmium trioxide

▶ Holmium(III) oxide see p. 2045

Dihydrocholesterol

▶ 5-α-Cholestan-3β-ol see p. 1895

Dihydroergotamine methane sulphonate



Dihydroergotamine methane sulphonate

≥98 %, for biochemistry

$C_{33}H_{37}N_5O_5 \cdot CH_3SO_3H$
M 679,8 g/mol
mp 232 °C
[6190-39-2] • EC No. 228-235-6
WGK 1

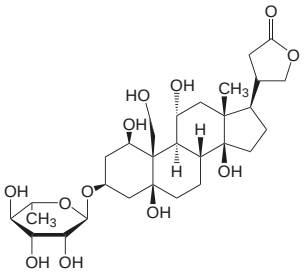
Warning H312+H332

Type analysis:

Appearance. ..... cryst. powder
Assay (dry substance). ..... 98,0-101,0 %
pH value (0,1 % in H_2O) 4,5-5,4
Specific rotation $[\alpha]_D^{20}$ (1 % in pyridine). ..... -47° to -42°
Related substances. ..... complies
Loss on drying (5 h, 100-105 °C). ..... ≤4,0 %

6948.1	100 mg	glass	25,30 €

Dihydroouabain



Dihydroouabain

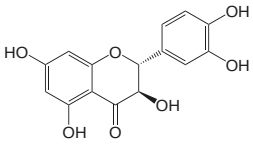
ROTICHROM® ~CHR

$C_{29}H_{46}O_{12}$
M 586,67 g/mol
[1183-35-3] • EC No. 214-663-0
UN No. 2811 • ADR 6.1 II

Danger H300+H330-H373

7197.1	50 mg	glass	153,65 €

(+)-Dihydroquercetin



(+)-Taxifolin, Distylin
$C_{15}H_{12}O_7$
M 304,25 g/mol
mp 228-230 °C
[480-18-2] • EC No. 207-543-4
WGK 1

(+)-Dihydroquercetin

ROTI®STAR Primary Standard

Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:

Assay (HPLC)..... ≥90,0 %
Residual solvents (GC). ..... ≤7,0 %
Water (KF)..... ≤7,0 %
Assay (qNMR)..... ≥85,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE55.1	10 mg	glass	880,45 €

(+)-Dihydroquercetin

ROTICHROM® Working Standard

Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:

Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC55.1	50 mg	glass	407,45 €

(+)-Dihydroquercetin

with analytical records

From *Pseudozuga menziesii*.
Storage temp.: +4 °C

Type analysis:

Purity (HPLC). ..... >99 %
Analytical records: HPLC, TLC, ^{1}H- NMR, ^{13}C- NMR, UV, IR, MS, melting point.

T893.1	20 mg	glass	385,95 €

(+)-Dihydroquercetin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Pseudozuga menziesii*.
Storage temp.: +4 °C

Type analysis:

Purity (HPLC). ..... >99 %

4464.1	20 mg	glass	263,40 €
4464.2	50 mg	glass	493,45 €

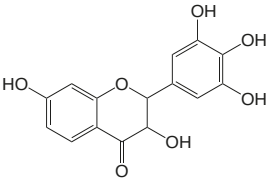
(+)-Dihydroquercetin

ROTICHROM® ~CHR

Storage temp.: +4 °C

5797.2	100 mg	plastic	223,10 €

Dihydrorobinetin



Dihydrorobinetin

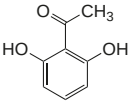
ROTICHROM® ~CHR

$C_{15}H_{12}O_7$
M 304,26 g/mol
mp ~225 °C
[4382-33-6] • EC No. 224-486-0
WGK 1

Warning H302

6960.1	100 mg	glass	66,55 €

2,6-Dihydroxyacetophenone



2,6-Dihydroxyacetophenone

≥98 %

2-Acetylresorcinol, 2-Acetyl-1,3-dihydroxy-benzene
$C_8H_8O_3$
M 152,15 g/mol
mp 155-159 °C
Solubility: 10 g/l (H_2O, 20 °C)
[699-83-2] • EC No. 211-833-6
WGK 1

Warning H302+H312+H332

Type analysis:

Assay (GC). ..... ≥98,0 %
Solution (1 % in ethanol). ..... yellowish, clear
Melting point. ..... 155-159 °C
Sulphated ash. ..... ≤0,5 %

5426.1	5 g	plastic	19,90 €
5426.2	10 g	plastic	31,10 €

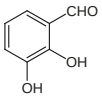
1,2-Dihydroxyantraquinone

▶ Alizarin (C.I. 58000) see p. 1781

2,2'-Dihydroxy-1,1'-azo-naphthalene-3',4,6'-trisulfonic acid disodium salt

▶ Hydroxy naphthol blue disodium salt see p. 2058

2,3-Dihydroxybenzaldehyde



2,3-Dihydroxybenzaldehyde

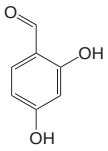
≥98 %
$C_7H_6O_3$
M 138,12 g/mol
bp 235 °C
mp 104-106 °C
[24677-78-9] • EC No. 246-398-1

Warning H315-H319-H335

Type analysis:
Assay.....≥98,0 %

7274.1	1 g	glass	16,05 €
7274.2	5 g	glass	30,00 €
7274.3	25 g	glass	96,65 €

2,4-Dihydroxybenzaldehyde



2,4-Dihydroxybenzaldehyde

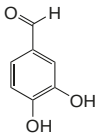
≥98 %, for synthesis
ß-Resorcylaldehyde
$C_7H_6O_3$
M 138,12 g/mol
mp 135-140 °C
[95-01-2] • EC No. 202-383-1
WGK 1

Warning H302-H315-H319-H335

Type analysis:
Appearance..... off-white to light red powder
Assay (HPLC).....≥98,0 %

4039.1	25 g	glass	38,60 €
4039.2	100 g	glass	113,85 €
4039.3	250 g	glass	228,45 €

3,4-Dihydroxybenzaldehyde



3,4-Dihydroxybenzaldehyde

≥98 %
Protocatechualdehyde,
4-Formyl-1,2-dihydroxybenzene
$C_7H_6O_3$
M 138,12 g/mol
mp 153-155 °C
Solubility: 6,3 g/l (H_2O, 25 °C)
Storage temp.: +4 °C
[139-85-5] • EC No. 205-377-7
WGK 1

Warning H315-H319-H335

Type analysis:
Assay (titr.).....≥98,0 %
Loss on drying.....≤1,0 %

5424.1	5 g	plastic	17,10 €
5424.2	25 g	plastic	39,25 €
5424.3	100 g	plastic	107,40 €

1,2-Dihydroxybenzene

▶ Pyrocatechol see p. 2246

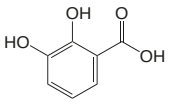
1,3-Dihydroxybenzene

▶ Resorcinol see p. 2256

1,4-Dihydroxybenzene

▶ Hydroquinone see p. 2055

2,3-Dihydroxybenzoic acid



2,3-Dihydroxybenzoic acid

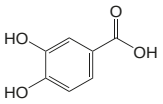
≥98 %
$C_7H_6O_4$
M 154,12 g/mol
mp 206 °C
Solubility: 20 g/l (H_2O, 20 °C)
[303-38-8] • EC No. 206-139-5

Warning H315-H319-H335

Type analysis:
Assay.....≥98,0 %

6057.1	5 g	plastic	28,95 €

3,4-Dihydroxybenzoic acid



Protocatechuic acid
$C_7H_6O_4$
M 154,12 g/mol
mp ~200 °C
[99-50-3] • EC No. 202-760-0
WGK 1

Warning H315-H319-H335

3,4-Dihydroxybenzoic acid

≥97 %

Type analysis:
Appearance.....light-brown, fine crystals
Assay (titr.).....≥97 %

8274.1	10 g	glass	46,15 €

3,4-Dihydroxybenzoic acid

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC).....≥95,0 %
Residual solvents (GC).....≤3,0 %
Water (KF).....≤7,0 %
Assay (qNMR).....≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE52.1	50 mg	glass	590,20 €

3,4-Dihydroxybenzoic acid

ROTICHROM® Working Standard

Type analysis:
Assay (HPLC).....≥90,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC52.1	100 mg	glass	145,15 €

3α,7α-Dihydroxy-5β-cholanic acid

▶ Chenodeoxycholic acid see p. 1890

3,4-Dihydroxycinnamic acid

▶ Caffeic acid see p. 1867

6,7-Dihydroxycoumarin

▶ Esculetin see p. 1974

7,8-Dihydroxycoumarin

▶ Daphnetin see p. 1921

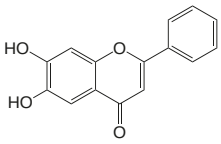
6,7-Dihydroxycoumarin-6-glycoside

▶ Esculin sesquihydrate see p. 1975

2,2'-Dihydroxydiethyl amine
▶ Diethanolamine see p. 1937

5,7-Dihydroxyflavone
▶ Chrysin see p. 1898

6,7-Dihydroxyflavone



6,7-Dihydroxyflavone
ROTICHROM® ~CHR
$C_{15}H_{10}O_4$
M 254,22 g/mol
[38183-04-9]
Warning H302

8066.1	10 mg	glass	343,50 €

1,7-Dihydroxyginkgolide A
▶ Ginkgolide C see p. 2016

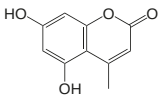
1,7-Dihydroxyheptane
▶ 1,7-Heptanediol see p. 2038

2,2-Dihydroxy-1,3-indanedione
▶ Ninhydrin see p. 2159

5,7-Dihydroxy-4'-methoxyflavone
▶ Acacetin see p. 1754

1,8-Dihydroxy-3-methoxy-6-methylanthraquinone
▶ Physcion see p. 2212

5,7-Dihydroxy-4-methylcoumarin Monohydrate



5,7-Dihydroxy-4-methylcoumarin Monohydrate
≥97 %
$C_{10}H_8O_4 \cdot H_2O$
M 210,18 g/mol
mp ~295 °C
[2107-76-8] • EC No. 218-289-9
Warning H315-H319-H335

Type analysis:
Assay. ≥97 %
Melting point. ≥280 °C
Water. 8,1-9,1 %

6063.1	100 mg	glass	40,75 €

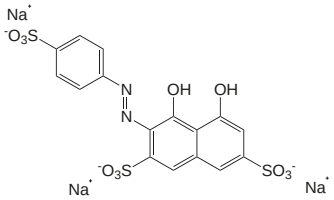
4,5-Dihydroxy-2,7-naphthalene disulphonic acid sodium salt
▶ Chromotropic acid disodium salt dihydrate see p. 1898

3,4-Dihydroxyphenylethanol
▶ Hydroxytyrosol see p. 2060

12,18-Dihydroxysenecionan-11,16-dion
▶ Retrorsine see p. 2257

12,18-Dihydroxysenecionan-11,16-dione-4-oxide
▶ Retrorsine-N-oxide see p. 2257

1,8-Dihydroxy-2-(4-sulfophenylazo)-naphthalene-3,6-disulfonic acid trisodium salt



1,8-Dihydroxy-2-(4-sulfophenylazo)-naphthalene-3,6-disulfonic acid trisodium salt
p.a., ACS
Reagent for fluoride.
SPADNS
$C_{16}H_9N_2Na_3O_{11}S_3$
M 570,42 g/mol
Solubility: 220 g/l (H_2O, 22 °C)
[23647-14-5] • EC No. 245-803-9
WGK 1

Guarantee analysis:
Assay. ≥80,0 %
Appearance of solution. complies
Loss on drying. ≤10 %
Suitability as reagent for fluoride. complies

2605.1	10 g	glass	26,80 €
2605.2	25 g	glass	46,80 €

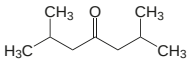
2,5-Dihydroxytoluene
▶ Toluhydroquinone see p. 2412

3,5-Dihydroxy-1,2,4-triazine
▶ 6-Azauracil see p. 1820

3',5-Dihydroxy-4',6,7-trimethoxyflavone
▶ Eupatorin see p. 1988

Diiodine pentoxide
▶ Iodine(V) oxide see p. 2070

Diisobutyl ketone

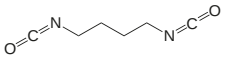


Diisobutyl ketone
≥94 %, pure
2,6-Dimethyl-4-heptanone, DIBK
$C_9H_{18}O$
M 142,24 g/mol
D 0,81 • bp 169 °C
mp -46 °C • flp 49 °C
Solubility: 0,5 g/l (20 °C, H_2O)
[108-83-8] • EC No. 203-620-1
UN No. 1157 • ADR 3 III • WGK 1
Warning H226-H335

Type analysis:
Assay. ≥94,0 %
Colour (Hazen) ≤30
Density (20 °C) 0,804-0,813

7653.1	100 ml	glass	11,75 €
7653.2	500 ml	glass	20,35 €
7653.3	1 l	glass	35,40 €
Original pack 6 x 1 l			33,63/1 l
7653.4	2,5 l	glass	77,95 €
Original pack 4 x 2,5 l			74,05/2,5 l

1,4-Diisocyanatobutane

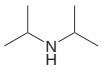


1,4-Diisocyanatobutane
≥99 %, for synthesis
BDI, 1,4-Butane diisocyanate, Tetramethylene diisocyanate
$C_6H_8N_2O_2$
M 140,14 g/mol
D 1,11 • bp 220 °C
mp 27 °C • flp 106 °C
[4538-37-8]
WGK 1
Danger H302+H312+H332-H315-H317-H319-H334-H335

Type analysis:
Assay. ≥99,0 %

0660.1	1 g	glass	32,80 €
0660.2	5 g	glass	110,65 €
0660.3	10 g	glass	187,60 €

Diisopropylamine



Diisopropylamine

≥99,5 %, for synthesis

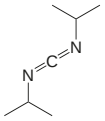
$C_6H_{15}N$
M 101,19 g/mol
D ~0,717 • bp 84 °C
mp -96 °C • flp -17 °C
[108-18-9] • EC No. 203-558-5
UN No. 1158 • ADR 3 (8) II • WGK 2

Danger
H225-H302-H314-H331-H335

Type analysis:
Assay (GC). ..... ≥99,5 %
Water. ..... ≤0,1 %

4369.1	100 ml	glass	13,90 €
4369.2	500 ml	glass	26,80 €
4369.3	1 l	glass	42,50 €
Original pack 6 x 1 l			40,38/1 l

N,N'-Diisopropylcarbodiimide (DIC)



N,N'-Diisopropylcarbodiimide (DIC)

PEPTIPURE® ≥99 %

Activation agent for carboxylic acids.
Coupling reagent for peptide synthesis.

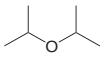
DIC
$C_7H_{14}N_2$
M 126,2 g/mol
D 0,81 • bp 145-148 °C
[693-13-0] • EC No. 211-743-7
UN No. 2929 • ADR 6.1 (3) I • WGK 3

Danger H226-H330-H318-H334-H317

Type analysis:
Appearance. ..... clear to yellowish liquid
Identity (IR). ..... complies
Assay (GC). ..... ≥99 %
Refractive index (20 °C). 1,431-1,435

6981.1	5 ml	glass	20,35 €
6981.2	25 ml	glass	55,40 €
6981.3	100 ml	glass	153,65 €
6981.4	500 ml	glass	536,45 €

Diisopropyl ether



Isopropyl ether, IPE
$C_6H_{14}O$
M 102,18 g/mol
D 0,72 • bp 67-70 °C
mp -86 °C • flp -28 °C
Solubility: 12 g/l (H_2O, 20 °C)
[108-20-3] • EC No. 203-560-6
UN No. 1159 • ADR 3 II • WGK 1

Danger H225-H336-EUH066-EUH019

Diisopropyl ether

ROTIPURAN® ≥99 %, p.a., stab.

Guarantee analysis:
Assay (GC). ..... ≥99,0 %
Density (d 20 °C/4 °C). 0,723-0,726
Water (KF). ..... ≤0,1 %
Peroxide (H_2O_2, at the time of analysis). ..... ≤0,001 %
Evaporation residue. ..... ≤0,001 %
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %
Stabilized with 50 ppm BHT

T919.1	1 l	glass	38,60 €
Original pack 6 x 1 l			36,67/1 l
T919.2	2,5 l	glass	81,20 €
Original pack 4 x 2,5 l			77,14/2,5 l
T919.4	5 l	aluminium	143,55 €
Original pack 2 x 5 l			136,37/5 l
T919.3	10 l	tinplate	265,00 €

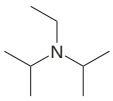
Diisopropyl ether

≥98 %, for synthesis, stab.

Type analysis:
Assay (GC). ..... ≥98,0 %
Density (20 °C). 0,724-0,726
Refractive index (20 °C). 1,3670-1,3690
Stabilized with 10 ppm Ionol

T899.1	1 l	glass	21,00 €
Original pack 6 x 1 l			19,95/1 l
T899.2	2,5 l	glass	36,45 €
Original pack 4 x 2,5 l			34,63/2,5 l
T899.4	5 l	aluminium	64,40 €
Original pack 2 x 5 l			61,18/5 l
T899.3	10 l	tinplate	113,45 €
T899.5	25 l	tinplate	234,90 €

N,N-Diisopropylethylamine (DIPEA)



DIPEA, Hunig's base, N-Ethyldiisopropylamine
$C_8H_{19}N$
M 129,3 g/mol
D 0,742 • bp 125 °C
mp -46 °C • flp 9,5 °C
Solubility: 3,9 g/l (H_2O, 20 °C)
[7087-68-5] • EC No. 230-392-0
UN No. 1992 • ADR 3 (6.1) II • WGK 1

Danger
H225-H302-H318-H331-H335

N,N-Diisopropylethylamine (DIPEA)

PEPTIPURE® ≥99,5 %, for (peptide) synthesis

Type analysis:
Appearance. ..... colourless to yellowish, clear liquid
Assay (GC). ..... ≥99,5 %
Water. ..... ≤0,2 %

2474.1	100 ml	glass	24,20 €
2474.2	250 ml	glass	43,55 €
2474.3	1 l	glass	144,60 €
Original pack 6 x 1 l			137,37/1 l
2474.4	2,5 l	glass	295,65 €
Original pack 4 x 2,5 l			280,87/2,5 l

N,N-Diisopropylethylamine (DIPEA)

≥99 %, for synthesis

Type analysis:
Assay. ..... ≥99,0 %
Water (KF). ..... ≤0,3 %
Colour (APHA). ..... ≤50

4105.1	100 ml	glass	16,70 €
4105.2	250 ml	glass	27,45 €
4105.3	1 l	glass	77,30 €
Original pack 6 x 1 l			73,44/1 l
4105.4	2,5 l	glass	154,70 €
Original pack 4 x 2,5 l			146,97/2,5 l

2,5-Diketopiperazine

▶ Glycine anhydride see p. 2027

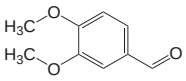
Dilanthanum trioxide

▶ Lanthanum(III) oxide see p. 2092

Dimercury dichloride

▶ Mercury(I) chloride see p. 2127

3,4-Dimethoxybenzaldehyde



3,4-Dimethoxybenzaldehyde

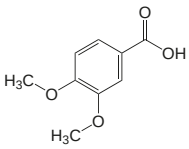
≥99 %, for synthesis
Veratric aldehyde
$C_9H_{10}O_3$
M 166,18 g/mol
bp 281 °C
mp 41-44 °C
Solubility: 6,3 g/l (H_2O, 25 °C)
[120-14-9] • EC No. 204-373-2
WGK 1

Warning H302-H315-H319-H335

Type analysis:
Assay (GC). ..... ≥99 %
Melting point. ..... 42-45 °C
Water. ..... ≤0,5 %
Heavy metals. ..... ≤0,001 %

9651.1	100 g	plastic	46,80 €
9651.2	500 g	plastic	198,35 €
Original pack 6 x 500 g			188,43/500 g

3,4-Dimethoxybenzoic acid



3,4-Dimethoxybenzoic acid

≥99 %, for synthesis
Veratric acid
$C_9H_{10}O_4$
M 182,18 g/mol
mp 179-182 °C
[93-07-2] • EC No. 202-215-7
WGK 3

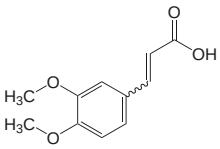
Type analysis:
Appearance. ..... white to pale yellow cryst. powder
Assay (titr.). ..... 99,0-101,0 %

4230.1	100 g	plastic	42,90 €
4230.2	250 g	plastic	95,15 €
4230.3	1 kg	plastic	353,70 €
Original pack 6 x 1 kg			336,02/1 kg

3,3'-(3,3'-Dimethoxy-[1,1'-biphenyl]-4,4'-diyl)-bis(2,5-diphenyl-2H-tetrazolium) dichloride

▶ Tetrazolium blue chloride see p. 2403

3,4-Dimethoxy cinnamic acid



3,4-Dimethoxy cinnamic acid

ROTICHROM® CHR
Dimethyl caffeic acid
$C_{11}H_{12}O_4$
M 208,21 g/mol
mp 185-188 °C
[2316-26-9] • EC No. 219-025-5
WGK 1

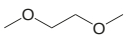
Warning H315-H319-H335

9918.1	5 g	glass	23,15 €

6,7-Dimethoxycoumarin

▶ Scoparone see p. 2308

1,2-Dimethoxyethane



1,2-Dimethoxyethane

>99 %, for synthesis
Ethylene glycol dimethyl ether, Monoglyme
$C_4H_{10}O_2$
M 90,12 g/mol
D 0,86 • bp 84-86 °C
mp -69 °C • flp -6 °C
[110-71-4] • EC No. 203-794-9
UN No. 2252 • ADR 3 II • WGK 1

Danger
H225-H360FD-H332-EUH019

Type analysis:
Assay (GC). ..... >99 %
Water (KF). ..... <0,2 %
Density (d 20 °C/4 °C). 0,866-0,868

5498.2	100 ml	glass	22,05 €
5498.1	500 ml	glass	68,30 €

3,5-Dimethoxy-4-hydro-cinnamic acid

▶ Sinapic acid see p. 2329

3,5-Dimethoxy-4-hydroxy-acetophenone

▶ Acetosyringone see p. 1765

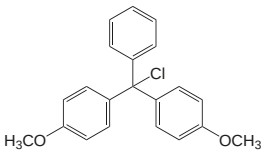
4-(2',4'-Dimethoxyphenyl-Fmoc-aminomethyl)phenoxy resin

▶ Rink amide resin see p. 2261

Dimethoxypsoralen

▶ Isopimpinellin see p. 2079

4,4'-Dimethoxytrityl chloride (DMT-Cl)



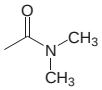
4,4'-Dimethoxytrityl chloride (DMT-Cl)

≥98 %, for synthesis
Protective group reagent
4,4'-Dimethoxytriphenylmethyl chloride, Chloro-4,4'-dimethoxytriphenylmethane, DMT-Cl
$C_{21}H_{19}ClO_2$
M 338,83 g/mol
mp 120-127 °C
[40615-36-9] • EC No. 255-002-6
WGK 1

Type analysis:
Appearance. ..... light pink coloured powder
Assay (HPLC). ..... ≥98,0 %
Loss on drying. ..... ≤0,5 %
Melting range. ..... 120,0-127,0 °C

9671.1	5 g	glass	24,20 €
9671.2	25 g	glass	71,95 €
9671.3	50 g	glass	117,75 €
9671.4	100 g	glass	188,05 €

N,N-Dimethylacetamide (DMA)



DMA, Acetic acid dimethylamide
C_4H_9NO
M 87,12 g/mol
D ~0,94 • bp 165 °C
mp -20 °C • flp 66 °C
[127-19-5] • EC No. 204-826-4 • WGK 1

Danger H360D-H312+H332-H319

N,N-Dimethylacetamide (DMA)

ROTISOLV® ≥99,99 %, Headspace Grade
For determination of solvent residues (O.V.I.)

Guarantee analysis:
Assay (GC). ..... ≥99,99 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,03 %
Free acid (as CH_3COOH). ..... ≤0,005 %
Refractive index (20 °C). 1,437-1,439
Non volatile matter. ..... ≤0,001 %
UV-Cutoff. ..... 190-268 nm
Transmission:
400 nm. ..... ≥99 %
350 nm. ..... ≥98 %
300 nm. ..... ≥85 %
275 nm. ..... ≥55 %
268 nm. ..... ≥10 %
Headspace suitability test for O.V.I.. ..... complies

HN45.1	1 l	glass	252,65 €
Original pack 6 x 1 l			240,02/1 l

N,N-Dimethylacetamide (DMA)

≥99 %, for synthesis

Type analysis:

Assay (GC). ..... ≥99,0 %
Water . ..... ≤0,05 %
Colour (APHA). ..... ≤10
Acid content (as CH_3COOH). ..... ≤0,008 %

3617.1	250 ml	glass	12,80 €
3617.2	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
3617.3	2,5 l	glass	51,50 €
Original pack 4 x 2,5 l			48,93/2,5 l
3617.4	10 l	plastic	124,20 €
3617.5	25 l	plastic	260,70 €

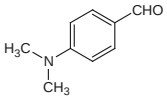
Dimethyl acetone

▶ Diethylketone see p. 1939

4-(Dimethylamino)-azobenzene-4'-sulphonic acid sodium salt

▶ Methyl orange (C.I. 13025) see p. 2140

4-(Dimethylamino)-benzaldehyde



4-(Dimethylamino)-benzaldehyde

≥98 %, p.a., ACS

Reagent for the detection of nitrogen containing compounds.

p-Formyl dimethylamine, Ehrlich's reagent
$C_9H_{11}NO$
D ~1,03 • bp 176-177 °C (23 hPa)
mp 75 °C • flp >100 °C
[100-10-7] • EC No. 202-819-0
WGK 1

Guarantee analysis:

Assay (GC). ..... ≥98,0 %
Solubility (in ethanol). ..... complies
Color in ethanol ..... ≤60 Hazen
Solubility in HCl. ..... complies
Color of the solution in HCl. ..... complies
Melting point. ..... 73-75 °C
Ash content (as SO_4). ..... ≤0,1 %
Calcium (Ca). ..... ≤0,005 %
Cadmium (Cd). ..... ≤0,0005 %
Cobalt (Co). ..... ≤0,0005 %
Chromium (Cr). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,01 %
Potassium (K). ..... ≤0,005 %
Manganese (Mn). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,05 %
Nickel (Ni). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,005 %

X867.1	25 g	plastic	45,05 €
X867.2	100 g	plastic	113,45 €

For further information, please see page 1692

4-(Dimethylamino) benzaldehyde spray solution

4-(Dimethylamino) benzaldehyde spray solution

for TLC

Ready-to-use spray solution for detection of terpenes, sugars and steroids.
0,5 g 4-(Dimethylamino)-benzaldehyde dissolved in 100 ml 2-propanol.
UN No. 1219 • ADR 3 II • WGK 2

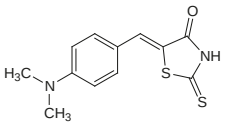
Danger H225-H319-H336

Type analysis:

TLC-application. ..... complies

CP38.1	100 ml	glass	38,50 €

5-(4-Dimethylamino-benzylidene)rhodanine



5-(4-Dimethylamino-benzylidene)rhodanine

p.a.

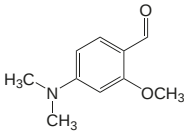
Analytical reagent for silver.
$C_{12}H_{12}N_2OS_2$
M 264,37 g/mol
mp 275-280 °C (dec.)
[536-17-4] • EC No. 208-625-2 • WGK 3

Guarantee analysis:

Insoluble matter in acetone. ..... complies
Suitability for determination of silver. ..... complies
Sensitivity for silver. 1:1000000

KK23.1	5 g	glass	26,35 €
KK23.2	10 g	glass	40,75 €
KK23.3	50 g	glass	160,75 €

4-Dimethylamino-2-methoxy-benzaldehyde



4-Dimethylamino-2-methoxy-benzaldehyde

≥98 %, for biochemistry

$C_{10}H_{13}NO_2$
M 179,22 g/mol
mp 59-61 °C
Storage temp.: +4 °C
[84562-48-1] • WGK 3

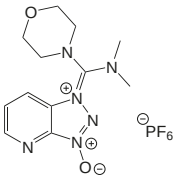
Warning H315-H319-H335

Type analysis:

Appearance. ..... white to light yellow cryst. powder
Assay (GC). ..... ≥98,0 %
Appearance of solution (1 % in Acetone). ..... colourless to almost colourless

8412.1	1 g	glass	42,90 €
8412.2	5 g	glass	176,85 €

1-[(Dimethylamino)-(morpholino)methylene]-1H-[1,2,3]triazolo-[4,5-b]pyridine-1-ium 3-oxide hexafluorophosphate (HDMA)



1-[(Dimethylamino)-(morpholino)methylene]-1H-[1,2,3]triazolo-[4,5-b]pyridine-1-ium 3-oxide hexafluorophosphate (HDMA)

PEPTIPURE® ≥98 %

Coupling reagent for peptide synthesis
HDMA
$C_{12}H_{17}F_6N_6O_2P$
M 422,3 g/mol
mp 185-195 °C
Storage temp.: +4 °C
[958029-37-3] • WGK 3

Warning

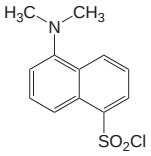
H302+H312+H332-H315-H319-H335

Type analysis:

Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Loss on drying. ..... ≤0,5 %

6888.1	5 g	glass	41,85 €
6888.2	25 g	glass	134,40 €
6888.3	100 g	glass	439,70 €

5-(Dimethylamino)-1-naphthalenesulphonyl chloride



5-(Dimethylamino)-1-naphthalenesulphonyl chloride

≥98 %, p.a.

Dansyl chloride, DIS, DNSCl
$C_{12}H_{12}ClNO_2S$
M 269,75 g/mol
mp 68-73 °C
Storage temp.: +4 °C
[605-65-2] • EC No. 210-092-6
UN No. 3261 • ADR 8 II • WGK 1

Danger H290-H314

Type analysis:
Assay (HPLC).....≥98,0 %
Melting point.....68-73 °C

3624.1	1 g	glass	72,60 €

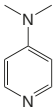
2-[(4-Dimethylamino)-phenylazo]-benzoeic acid

▶ Methyl red (C.I. 13020) see p. 2142
▶ Methyl red hydrochloride (C.I. 13020) see p. 2142
▶ Methyl red sodium salt (C.I. 13020) see p. 2142

N-(3-Dimethylaminopropyl)-N'-ethylcarbodiimide hydrochloride

▶ 1-Ethyl-3-(3-dimethylaminopropyl) carbodiimide hydrochloride (EDC-HCl) see p. 1980

4-(Dimethylamino)pyridine (DMAP)



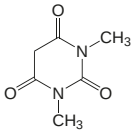
4-(Dimethylamino)pyridine (DMAP)

PEPTIPURE® ≥99 %
Nucleophilic catalyst. Activation agent for carboxylic acids.
DMAP
$C_7H_{10}N_2$
M 122,17 g/mol
mp 108-112 °C • flp 124 °C
Solubility: 60 g/l (H_2O, 20 °C)
[1122-58-3] • EC No. 214-353-5
UN No. 2811 • ADR 6.1 I • WGK 3
Danger H301-H310-H315-H319

Type analysis:
Appearance.....white to off-white powder
Assay (GC).....≥99 %
Identity.....complies
Water (KF).....≤0,1 %
Solution (10 % in methanol).....clear, colorless solution
Lead (Pb).....≤0,00001 %
Iron (Fe).....≤0,00001 %
Magnesium (Mg).....≤0,00001 %
Zinc (Zn).....≤0,00001 %

6988.1	5 g	glass	13,90 €
6988.2	25 g	glass	27,85 €
6988.3	100 g	glass	85,50 €
6988.4	500 g	glass	298,35 €
Original pack 6 x 500 g			283,43/500 g

1,3-Dimethylbarbituric acid



NEW

1,3-Dimethylbarbituric acid

≥99 %, for synthesis
$C_6H_8N_2O_3$
M 156,14 g/mol
mp 121-123 °C
[769-42-6] • EC No. 212-211-7
WGK 1
Danger H302-H318

Guarantee analysis:
Assay (HPLC).....≥99 %
Water.....≤0,5 %

0761.1	25 g	plastic	16,05 €
0761.2	100 g	plastic	42,90 €
0761.3	250 g	plastic	85,90 €

Dimethyl benzene

▶ Xylene (isomers) see p. 2444

1,2-Dimethyl benzene

▶ o-Xylene see p. 2445

1,3-Dimethyl benzene

▶ m-Xylene see p. 2445

1,4-Dimethyl benzene

▶ p-Xylene see p. 2445

N,N'-Dimethyl-9,9'-biacridinium dinitrate

▶ Lucigenin see p. 2105

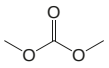
Dimethyl caffeic acid

▶ 3,4-Dimethoxy cinnamic acid see p. 1945

Dimethyl carbinol

▶ 2-Propanol see p. 2239

Dimethyl carbonate



Dimethyl carbonate

≥99,8 %
Carbonic acid dimethyl ester, Methyl carbonate, DMC
$C_3H_6O_3$
M 90,08 g/mol
D 1,07 • bp 90 °C
mp 0,5-4,7 °C • flp 16,7 °C
Solubility: 139 g/l (H_2O, 20 °C)
[616-38-6] • EC No. 210-478-4
UN No. 1161 • ADR 3 II • WGK 1
Danger H225

Type analysis:
Assay (GC).....≥99,8 %
Water.....≤0,1 %
Methanol (GC).....≤0,1 %
Free acid (as CH_3COOH).....≤0,015 %

2625.1	100 ml	glass	13,45 €
2625.2	500 ml	glass	21,40 €
2625.3	1 l	glass	28,95 €
Original pack 6 x 1 l			27,50/1 l
2625.4	2,5 l	glass	49,35 €
Original pack 4 x 2,5 l			46,88/2,5 l

N,N-Dimethylcyclohexylamine

N,N-Dimethylcyclohexylamine

≥99 %, for synthesis
Cyclohexyl dimethylamine
$C_8H_{17}N$
M 127,23 g/mol
D 0,85 • bp 162 °C
mp -77 °C • flp 41 °C
[98-94-2] • EC No. 202-715-5
UN No. 2264 • ADR 8 II • WGK 1
Danger
H226-H301+H311+H331-H314-H411

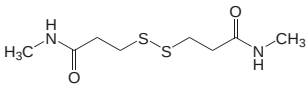
Type analysis:
Assay (GC).....≥99,0 %
Water.....≤0,3 %

9986.1	500 ml	glass	27,85 €
9986.2	1 l	glass	38,60 €
Original pack 6 x 1 l			36,67/1 l
9986.3	2,5 l	glass	77,30 €
Original pack 4 x 2,5 l			73,44/2,5 l
9986.4	5 l	plastic	131,05 €
Original pack 2 x 5 l			124,50/5 l

2,9-Dimethyl-4,7-diphenyl-1,10-phenanthroline-disulphonic acid disodium salt

▶ Bathocuproine sulphonate disodium salt hydrate see p. 1828

N,N'-Dimethyl-3,3'-dithio-dipropionamide



NEW

N,N'-Dimethyl-3,3'-dithio-dipropionamide

≥98 %, for synthesis

3,3'-Dithiobis[N-methylpropionamide]
$C_8H_{16}N_2O_2S_2$
M 236,35 g/mol
[999-72-4] • EC No. 213-665-9

Type analysis:

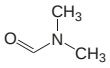
Assay.....≥98 %
Water.....≤0,5 %

0970.1	250 mg	glass	32,15 €
0970.2	1 g	glass	85,90 €
0970.3	5 g	glass	213,95 €
0970.4	10 g	plastic	375,20 €

N,N'-Dimethylethylene urea

▶ 1,3-Dimethyl-2-imidazolidinone (DMI) see p. 1949

N,N-Dimethylformamide (DMF)



DMF
C_3H_7NO
M 73,10 g/mol
D 0,95 • bp ~153 °C
mp -61 °C • flp 58 °C
[68-12-2] • EC No. 200-679-5
UN No. 2265 • ADR 3 III • WGK 2

Danger

H226-H360D-H312+H332-H319

N,N-Dimethylformamide (DMF)

ROTISOLV® HPLC

Guarantee analysis:

Assay (GC).....≥99,8 %
Water (KF).....≤0,05 %
Acidity (as CH_3COOH).....≤0,003 %
Evaporation residue.....≤0,0005 %
Transmission:
320 nm.....≥97 %
300 nm.....≥90 %
275 nm.....≥60 %
270 nm.....≥30 %
Filtered through a 0,4 µm membrane and filled under protective gas.

0702.1	2,5 l	glass	93,00 €
Original pack 4 x 2,5 l			88,35/2,5 l

N,N-Dimethylformamide (DMF)

ROTISOLV® ≥99,99 %, Headspace Grade

For determination of solvent residues (O.V.I.).

Guarantee analysis:

Assay (GC).....≥99,99 %
Colour (APHA).....≤5
Water (KF).....≤0,03 %
Free acid (as CH_3COOH).....≤0,003 %
Free alkali (as NH_3).....≤0,002 %
Refractive index (20 °C).....1,430-1,440
Non volatile matter.....≤0,001 %
UV-Cutoff.....190-268 nm
Transmission:
320 nm.....≥97 %
300 nm.....≥90 %
275 nm.....≥60 %
270 nm.....≥30 %
Headspace suitability test for O.V.I.....complies

HN46.1	1 l	glass	233,20 €
Original pack 6 x 1 l			221,54/1 l

N,N-Dimethylformamide (DMF)

ROTISOLV® ≥99,9 %, UV/IR-Grade

For chromatography and spectroscopy.

Guarantee analysis:

Assay (GC).....≥99,9 %
Water (KF).....≤0,02 %
Colour (Hazen).....≤10
Acidity.....≤0,0005 meq/g
Evaporation residue.....≤0,0005 %
Fluorescence (as quinine):
365 nm.....≤1,0 ppb
Transmission:
330 nm.....≥98 %
300 nm.....≥90 %
290 nm.....≥80 %
275 nm.....≥50 %
270 nm.....≥20 %

CP79.1	2,5 l	glass	97,30 €
Original pack 4 x 2,5 l			92,44/2,5 l

N,N-Dimethylformamide (DMF)

ROTIPURAN® ≥99,8 %, p.a., ACS, ISO

Guarantee analysis:

Assay (GC).....≥99,8 %
Density (d 20 °C/4 °C).....0,949-0,952
Colour (APHA).....≤15
Water.....≤0,1 %
Acidity.....≤0,0005 meq/g
Alkalinity.....≤0,0005 meq/g
Methanol (GC).....≤0,05 %
Diethylamine (GC).....≤0,05 %
Evaporation residue.....≤0,005 %
Lead (Pb).....≤0,00001 %
Cadmium (Cd).....≤0,000005 %
Calcium (Ca).....≤0,00005 %
Chromium (Cr).....≤0,000002 %
Iron (Fe).....≤0,00001 %
Cobalt (Co).....≤0,000002 %
Copper (Cu).....≤0,000002 %
Magnesium (Mg).....≤0,00001 %
Manganese (Mn).....≤0,000002 %
Nickel (Ni).....≤0,000002 %
Zinc (Zn).....≤0,00001 %

T921.3	250 ml	glass	19,25 €
T921.1	1 l	glass	37,10 €
Original pack 6 x 1 l			35,25/1 l
T921.2	2,5 l	glass	67,30 €
Original pack 4 x 2,5 l			63,94/2,5 l

N,N-Dimethylformamide (DMF)

≥99,5 %, for synthesis

Type analysis:

Assay (GC).....≥99,5 %
Water (KF).....≤0,05 %
Colour (Hazen).....≤10
Refractive index n_D^{20}.....1,427-1,431

6251.1	1 l	glass	27,45 €
Original pack 6 x 1 l			26,08/1 l
6251.2	2,5 l	glass	51,50 €
Original pack 4 x 2,5 l			48,93/2,5 l
6251.3	2,5 l	plastic	46,15 €
Original pack 4 x 2,5 l			43,84/2,5 l
6251.5	10 l	plastic	113,45 €
6251.4	25 l	plastic	261,15 €

N,N-Dimethylformamide (DMF)

PEPTIPURE® ≥99,8 %, for peptide synthesis

Type analysis:

Assay (GC).....≥99,8 %
Water (KF).....≤0,01 %
Free amines.....≤0,0003 %
Free acid (as CH_3COOH).....≤0,001 %

A529.3	500 ml	glass	38,60 €
A529.1	2,5 l	glass	105,25 €
Original pack 4 x 2,5 l			99,99/2,5 l
A529.7	10 l	plastic	176,85 €
A529.2	25 l	plastic	332,75 €

N,N-Dimethylformamide D7

N,N-Dimethylformamide D7

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.
Heptadeuterodimethylformamide, DMF deuterated
C_3D_7NO
M 80,17 g/mol
D 1,05 • bp 152 °C
mp -60 °C • flp 58 °C
[4472-41-7] • EC No. 224-745-8
UN No. 2265 • ADR 3 III • WGK 1

Danger

H226-H360D-H312+H332-H319

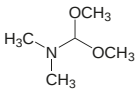
Guarantee analysis:

Deuterising degree.....≥99,5 %
Water (KF, H_2O+D_2O).....≤0,05 %

CP92.2	1 ml	glass ampoule	74,20 €
CP92.1	5 ml	glass	213,95 €

For further information, please see page 1594

N,N-Dimethylformamide dimethyl acetal (DMF-DMA)



N,N-Dimethylformamide dimethyl acetal (DMF-DMA)

≥98 %
Derivatization reagent for GC, alkylation agent
DMF-DMA
$C_5H_{13}NO_2$
M 119,16 g/mol
D 0,897 • bp 104-110 °C
Storage temp.: +4 °C
[4637-24-5] • EC No. 225-063-3
UN No. 3271 • ADR 3 II • WGK 1

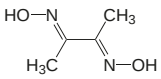
Danger H225-H332-H315-H319

Type analysis:

Appearance. ..... clear liquid
Assay. ..... ≥98 %

6870.1	5 ml	glass	24,65 €
6870.2	25 ml	glass	36,45 €
6870.3	100 ml	glass	121,40 €
6870.4	500 ml	glass	450,45 €

Dimethylglyoxim



Dimethylglyoxim

≥99 %, p.a., ACS
Reagent for nickel.
$C_4H_8N_2O_2$
M 116,12 g/mol
mp 239-242 °C (dec.)
Solubility: 0,6 g/l (H_2O, 20 °C)
[95-45-4] • EC No. 202-420-1
UN No. 1325 • ADR 4.1. III • WGK 2

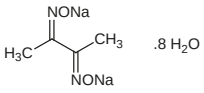
Warning H228

Guarantee analysis:

Assay (dry substance). ..... ≥99,0 %
Insoluble in alcohol. ..... ≤0,05 %
Melting point. ..... 239-242 °C
Ash content. ..... ≤0,05 %
Suitability for nickel determination. ..... complies

2677.1	50 g	plastic	42,90 €
2677.2	100 g	plastic	67,65 €
2677.3	500 g	plastic	254,70 €
Original pack 6 x 500 g			241,97/500 g

Dimethylglyoxime disodium salt octahydrate



Dimethylglyoxime disodium salt octahydrate

≥98 %, p.a.
Reagent for nickel.
2,3-Butanedionedioxime disodium salt
$C_4H_6N_2Na_2O_2 \cdot 8\ H_2O$
M 304,21 g/mol
[75006-64-3] • EC No. 262-523-2
WGK 3

Guarantee analysis:

Assay (titr., dry substance). ..... ≥98 %
Water. ..... 44,0-49,0 %
Substances soluble in H_2O. ..... ≤0,01 %
Suitability for nickel determination. ..... complies

KK24.1	25 g	glass	38,60 €
KK24.2	50 g	glass	64,40 €

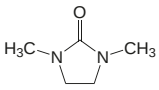
2,6-Dimethyl-4-heptanone

▶ Diisobutyl ketone see p. 1943

3-N-(α,α-Dimethyl-hydroxy-ethyl)-amino-2-hydroxy-propane sulphonic acid

▶ AMPSO see p. 1805
▶ AMPSO sodium salt see p. 1805

1,3-Dimethyl-2-imidazolidinone (DMI)



1,3-Dimethyl-2-imidazolidinone (DMI)

ROTISOLV® ≥99,5 %, Headspace Grade
For determination of solvent residues (O.V.I.).
DMEU, N,N'-Dimethylethylene urea, DMI
$C_5H_{10}N_2O$
M 114,15 g/mol
D 1,06 • bp 104 °C (20 hPa)
mp 8 °C • flp 114 °C
[80-73-9] • EC No. 201-304-8
WGK 1

Danger H302-H318-H373

Guarantee analysis:

Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,04 %
Refractive index (20 °C). 1,470-1,473
UV-Cutoff. ..... 190-270 nm
Transmission:
>350 nm. ..... ≥90 %
325 nm. ..... ≥80 %
300 nm. ..... ≥60 %
275 nm. ..... ≥30 %
Headspace suitability test for O.V.I. ..... complies

HN48.1	500 ml	glass	923,45 €

Dimethyl ketone

▶ Acetone see p. 1760

3,7-Dimethyl-2,6-octadien-1-ol

▶ Geraniol see p. 2014

2',2''-Dimethylphenol-sulfonphthalein

▶ m-Cresol purple see p. 1913

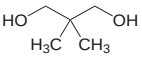
Dimethylphthalate

▶ Phthalic acid dimethyl ester see p. 2212

1,3-Dimethylpropane

▶ n-Pentane see p. 2195

2,2-Dimethyl-1,3-propanediol



2,2-Dimethyl-1,3-propanediol

≥99 %, for synthesis
Neopentyl glycol
$C_5H_{12}O_2$
M 104,14 g/mol
bp ~209°C
mp ~127 °C • flp 103 °C
Solubility: 830 g/l (H_2O, 20 °C)
[126-30-7] • EC No. 204-781-0
WGK 1

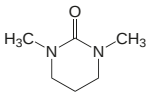
Danger H318

Type analysis:

Assay (dry substance). ..... ≥99,0 %
Colour (APHA). ..... ≤10
Acidity (as CH_3COOH). ..... ≤0,01 %
Aldehyde. ..... ≤0,05 %
Water. ..... ≤0,5 %

7349.1	100 g	plastic	13,45 €
7349.2	500 g	plastic	25,30 €
Original pack 6 x 500 g			24,04/500 g
7349.3	1 kg	plastic	37,55 €
Original pack 6 x 1 kg			35,67/1 kg
7349.4	2,5 kg	plastic	80,55 €

N,N'-Dimethylpropylene urea



N,N'-Dimethylpropylene urea

≥99 %, for synthesis

Polar aprotic solvent, substitute for hexamethylphosphoramide (HMPA).

DMPU, N,N'-Dimethyl-N,N'-trimethylene urea, 1,3-Dimethyl-3,4,5,6-tetrahydro-2(1H)-pyrimidinone

$C_6H_{12}N_2O$

M 128,18 g/mol

D 1,06 • bp 246 °C

mp -24 °C • flp 120 °C

[7226-23-5] • EC No. 230-625-6

WGK 1

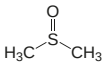
Danger H302-H318-H361f

Type analysis:

Assay ..... ≥99,0 %
Refractive index (20 °C) 1,4883-1,4913
Water (KF) ..... ≤0,1 %

0662.1	25 ml	glass	22,05 €
0662.2	100 ml	glass	50,00 €
0662.3	500 ml	glass	142,90 €

Dimethyl sulphoxide (DMSO)



DMSO

C_2H_6OS

M 78,13 g/mol

D 1,1 • bp 189 °C

mp 18,5 °C • flp 87 °C

Solubility: 1000 g/l (H_2O, 20 °C)

[67-68-5] • EC No. 200-664-3

WGK 1

Dimethyl sulphoxide (DMSO)

ROTISOLV® HPLC

Guarantee analysis:

Assay (GC) ..... ≥99,9 %
Water (KF) ..... ≤0,05 %
Acidity ..... ≤0,001 meq/g
Evaporation residue ..... ≤0,001 %
Transmission:
≥350 nm ..... ≥98 %
330 nm ..... ≥95 %
310 nm ..... ≥90 %
290 nm ..... ≥70 %
270 nm ..... ≥40 %
Filtered through a 0,2 µm membrane and filled under protective gas.

0728.1	2,5 l	glass	154,30 €
Original pack 4 x 2,5 l			146,59/2,5 l

Dimethyl sulphoxide (DMSO)

ROTISOLV® ≥99,99 %, Headspace Grade

For determination of solvent residues (O.V.I.).

Guarantee analysis:

Assay (GC) ..... ≥99,99 %
Colour (APHA) ..... ≤5
Water (KF) ..... ≤0,03 %
Free acid (as CH_3COOH) ..... ≤0,002 %
Free alkali (as NH_3) ..... ≤0,0005 %
Refractive index (20 °C) 1,477-1,480
Non volatile matter ..... ≤0,001 %
Melting point ..... ≥18 °C
UV-Cutoff ..... 190-265 nm
Transmission:
400 nm ..... ≥98 %
350 nm ..... ≥95 %
300 nm ..... ≥85 %
275 nm ..... ≥60 %
268 nm ..... ≥30 %
Headspace suitability test for O.V.I. ..... complies

HN47.1	1 l	glass	242,45 €
Original pack 6 x 1 l			230,33/1 l

Dimethyl sulphoxide (DMSO)

ROTIDRY®Sept ≥99,8 % (≤100 ppm H_2O)

Dried; in a septum bottle

Guarantee analysis:

Assay (GC) ..... ≥99,8 %
Colour (APHA) ..... ≤10
Water (KF) ..... ≤0,01 %
Acidity (as CH_3COOH) ..... ≤0,002 %
Evaporation residue ..... ≤0,001 %

5179.1	250 ml	glass	64,00 €

Dimethyl sulphoxide (DMSO)

ROTIDRY® ≥99,5 % (≤200 ppm H_2O)

Dried; for analysis and organic synthesis.

Guarantee analysis:

Assay (GC) ..... ≥99,5 %
Colour (Hazen) ..... ≤10
Water (KF) ..... ≤0,02 %
Acidity ..... ≤0,0005 meq/g
Evaporation residue ..... ≤0,005 %
Filtered through a membrane and filled under protective gas.

AE02.1	1 l	glass	65,50 €
Original pack 6 x 1 l			62,23/1 l

Dimethyl sulphoxide (DMSO)

ROTIPURAN® ≥99,8 %, p.a.

Guarantee analysis:

Assay (GC) ..... ≥99,8 %
Colour (Hazen) ..... ≤10
Water ..... ≤0,05 %
Chloride (Cl) ..... ≤0,0001 %
Aluminium (Al) ..... ≤0,000001 %
Lead (Pb) ..... ≤0,000001 %
Calcium (Ca) ..... ≤0,000001 %
Iron (Fe) ..... ≤0,000001 %
Potassium (K) ..... ≤0,000001 %
Copper (Cu) ..... ≤0,000001 %
Sodium (Na) ..... ≤0,000001 %
Magnesium (Mg) ..... ≤0,000001 %
Manganese (Mn) ..... ≤0,000001 %
Zinc (Zn) ..... ≤0,000001 %

4720.4	100 ml	glass	16,70 €
4720.2	500 ml	glass	30,00 €
4720.1	1 l	glass	50,45 €
Original pack 6 x 1 l			47,93/1 l
4720.3	2,5 l	glass	104,20 €
Original pack 4 x 2,5 l			98,99/2,5 l

Dimethyl sulphoxide (DMSO)

≥99,5 %, for synthesis

Guarantee analysis:

Assay (GC) ..... ≥99,5 %
Water ..... ≤0,1 %
Melting point ..... ≥18,1 °C
Acid value ..... ≤0,04 mg KOH/g

7029.1	1 l	glass	33,90 €
Original pack 6 x 1 l			32,21/1 l
7029.2	2,5 l	glass	67,65 €
Original pack 4 x 2,5 l			64,27/2,5 l
7029.4	5 l	plastic	110,20 €
Original pack 2 x 5 l			104,69/5 l
7029.3	10 l	plastic	207,40 €
7029.5	25 l	plastic	407,45 €

Dimethyl sulphoxide (DMSO)

≥99,5 %, BioScience-Grade, for molecular biology

Recommended for PCR, sequencing, hybridisation and cell culture.

Guarantee analysis:

Assay (GC) ..... ≥99,5 %
Colour (APHA) ..... ≤10
Water content ..... ≤0,1 %
Chloride (Cl) ..... ≤0,00005 %
Arsenic (As) ..... ≤0,000001 %
Cadmium (Cd) ..... ≤0,000001 %
Potassium (K) ..... ≤0,000001 %
Lithium (Li) ..... ≤0,000001 %
Magnesium (Mg) ..... ≤0,000001 %
Sodium (Na) ..... ≤0,000005 %

A994.1	100 ml	glass	22,50 €
A994.2	250 ml	glass	35,40 €

For further information, please see page 1289

Dimethyl sulphoxide D6

Methyl sulphoxide deuterated, DMSO deuterated

C_2D_6OS

M 84,18 g/mol

D 1,19 • bp 190 °C

mp 20,2 °C • flp 88 °C

[2206-27-1] • EC No. 218-617-0

WGK 1

Dimethyl sulphoxide D6

99,9 Atom%D

For nuclear magnetic resonance spectroscopy.

Type analysis:

Deuterising degree ..... ≥99,9 %
Water (KF, H_2O+D_2O) ..... ≤0,025 %

7915.1	10 ml	glass	46,15 €
7915.2	10 ml	septum bottle	47,20 €
7915.3	10 x 0,75 ml	glass ampoule	49,35 €

Dimethyl sulphoxide D6

99,8 Atom%D

For nuclear magnetic resonance spectroscopy.

Guarantee analysis:

Deuterising degree. ..... ≥99,8 %
Water (KF, H_2O+D_2O). ..... ≤0,03 %

AE56.3	10 x 0,75 ml	glass ampoule	42,50 €
AE56.1	10 ml	glass	37,10 €
AE56.4	10 ml	septum bottle	39,25 €
AE56.6	25 ml	glass	85,90 €
AE56.2	50 ml	glass	149,45 €
AE56.5	100 ml	glass	267,70 €

Dimethyl sulphoxide D6 with TMS (0,03 vol.%)

Deuterated DMSO with TMS
C_2D_6OS
M 84,18 g/mol
D 1,19 • bp 190 °C
mp 20,2 °C • flp 88 °C
[2206-27-1] • EC No. 218-617-0
WGK 1

Dimethyl sulphoxide D6 with TMS (0,03 vol.%)

99,9 Atom%D

For nuclear magnetic resonance spectroscopy.

Type analysis:

Deuterising degree. ..... ≥99,9 %
Water (KF, H_2O+D_2O). ..... ≤0,025 %
Trimethylsilane (TMS)..... 0,02-0,04 %

7916.1	10 x 0,75 ml	glass ampoule	48,30 €

Dimethyl sulphoxide D6 with TMS (0,03 vol.%)

99,8 Atom%D

For nuclear magnetic resonance spectroscopy.

Guarantee analysis:

Deuterising degree. ..... ≥99,8 %
Water (KF, H_2O+D_2O). ..... ≤0,04 %
Tetramethylsilane (TMS). ..... 0,02-0,04 %

AE60.1	10 ml	glass	41,40 €
AE60.2	50 ml	glass	152,55 €

For further information, please see page 1594

1,3-Dimethyl-3,4,5,6-tetra-hydro-2(1H)-pyrimidinone

▶ N,N'-Dimethylpropylene urea see p. 1950

3-(4,5-Dimethylthiazol-2-yl-2,5-diphenyl-2H-tetrazolium bromide

▶ Thiazolyl blue see p. 2404

Dimethylthionin

▶ Azure A (C.I. 52005) see p. 1824

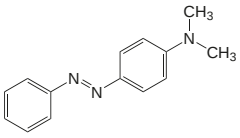
N,N'-Dimethyl-N,N'-trimethylene urea

▶ N,N'-Dimethylpropylene urea see p. 1950

3,7-Dimethylxanthine

▶ Theobromine see p. 2403

Dimethyl yellow (C.I. 11020)



Dimethyl yellow (C.I. 11020)

pure

Indicator pH 2,9-4,0
p-Dimethylaminoazobenzene, Solvent Yellow 2, Butter Yellow, Methyl yellow
$C_{14}H_{15}N_3$
M 225,29 g/mol
mp 110-116 °C (dec.)
[60-11-7] • EC No. 200-455-7
UN No. 2811 • ADR 6.1 III • WGK 2

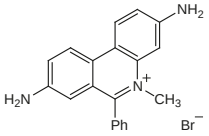
Danger H301-H351

Type analysis:

pH-transition range..... 2,9 (red)-4,0 (yellow)
Melting range. ..... 110-116 °C

9982.1	10 g	glass	56,90 €

Dimidium bromide



Dimidium bromide

≥95 %, for biochemistry

For fluorescence detection of nucleic acids; for titration of anion surfactants acc. to Epon as indicator.
3,8-Diamino-5-methyl-6-phenyl-phenanthridium bromide
$C_{20}H_{18}BrN_3$
M 380,30 g/mol
[518-67-2] • EC No. 208-256-7
WGK 1

Warning H315-H319-H335

Type analysis:

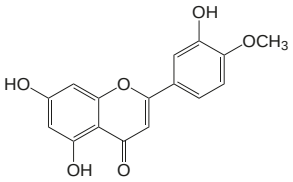
Assay (arg.)..... ≥95 %
Loss on drying (105 °C)..... ≤5 %

2217.1	500 mg	glass	96,25 €

2,4-Dinitro-1-naphthol

▶ Martius yellow (C.I. 10315) see p. 2123

Diosmetin



Diosmetin

ROTICHROM® HPLC

Reference substance for HPLC.
$C_{16}H_{12}O_6$ • M 300,29 g/mol
Storage temp.: +4 °C
[520-34-3] • EC No. 208-291-8

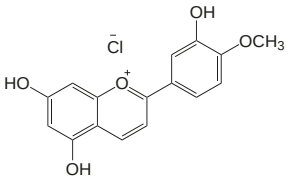
Warning H302

Type analysis:

Purity (HPLC)..... ≥99 %

7446.2	20 mg	glass	213,95 €

Diosmetinidin chloride



Diosmetinidin chloride

ROTICHROM® HPLC

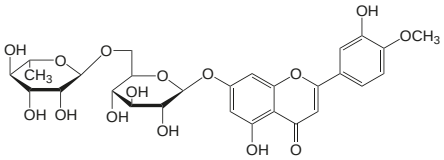
Reference substance for HPLC.
$C_{16}H_{13}O_5Cl$ • M 320,71 g/mol
Storage temp.: +4 °C

Type analysis:

Purity (HPLC)..... ≥97 %

9326.1	10 mg	glass	310,70 €

Diosmin



$C_{28}H_{32}O_{15}$
M 608,55 g/mol • mp 275-277 °C
Storage temp.: +4 °C
[520-27-4] • EC No. 208-289-7

Diosmin

≥95 %

Type analysis:

Appearance. ..... yellow to grey powder
Assay (HPLC). ..... ≥95 %
Sulphated ash. ..... ≤0,2 %
Water. ..... ≤6,0 %

6736.1	5 g	glass	42,90 €
6736.2	25 g	glass	87,65 €
6736.3	100 g	glass	260,70 €

Diosmin

ROTICHROM® HPLC

Reference substance for HPLC.

Type analysis:

Purity (HPLC) ..... ≥99 %

7447.2	20 mg	glass	225,25 €

1,4-Dioxane

1,4-Diethylene dioxide
$C_4H_8O_2$
M 88,11 g/mol
D ~1,03 • bp 101,5 °C
mp 12 °C • flp 12 °C
[123-91-1] • EC No. 204-661-8
UN No. 1165 • ADR 3 II • WGK 2

Danger

H225-H319-H335-H351-EUH019-EUH066

1,4-Dioxane

ROTISOLV® HPLC, not stabilized

Guarantee analysis:

Assay (GC) ..... ≥99,8 %
Colour (Hazen) ..... ≤10
Water (KF) ..... ≤0,02 %
Free acid (as CH_3COOH) ..... ≤0,002 %
Non volatile matter ..... ≤0,0005 %
Transmission:
300 nm ..... ≥98 %
280 nm ..... ≥90 %
240 nm ..... ≥40 %
220 nm ..... ≥20 %
Filtered through 0,2 µm membrane and filled under protective gas.
Note: Possible storage time is limited!

X949.1	1 l	glass	64,40 €
Original pack 6 x 1 l			61,18/1 l
X949.2	2,5 l	glass	147,20 €
Original pack 4 x 2,5 l			139,84/2,5 l

For further information, please see page 1650

1,4-Dioxane

ROTIDRY® ≥99,8 % (≤100 ppm H_2O)

Dried, for analysis and organic synthesis.

Type analysis:

Assay (GC) ..... ≥99,8 %
Water (KF) ..... ≤0,01 %
Acidity ..... ≤0,0005 meq/g
Evaporation residue ..... ≤0,0005 %
Unstabilized.
Note: Possible storage time is limited!

4429.1	1 l	glass	73,00 €
Original pack 6 x 1 l			69,35/1 l

1,4-Dioxane

ROTIPURAN® ≥99,5 %, p.a., ACS, ISO

Guarantee analysis:

Assay (GC) ..... ≥99,5 %
Colour (Hazen) ..... ≤10
Water ..... ≤0,05 %
Acidity ..... ≤0,0016 meq/g
Evaporation residue ..... ≤0,005 %
Density (d 20 °C/4 °C) 1,032-1,034
Melting point ..... ≥11 °C
Aluminium (Al) ..... ≤0,00005 %
Barium (Ba) ..... ≤0,00001 %
Lead (Pb) ..... ≤0,00001 %
Boron (B) ..... ≤0,000002 %
Cadmium (Cd) ..... ≤0,000005 %
Calcium (Ca) ..... ≤0,00005 %
Chromium (Cr) ..... ≤0,000002 %
Cobalt (Co) ..... ≤0,000002 %
Iron (Fe) ..... ≤0,00001 %
Copper (Cu) ..... ≤0,000002 %
Magnesium (Mg) ..... ≤0,00001 %
Manganese (Mn) ..... ≤0,000002 %
Nickel (Ni) ..... ≤0,000002 %
Zinc (Zn) ..... ≤0,00001 %
Tin (Sn) ..... ≤0,00001 %
Acetaldehyde ..... ≤0,005 %
Peroxides (as H_2O_2) ..... ≤0,005 %
Carbonylic compounds (as CO) ..... ≤0,01 %
Stabilized with approx. 25 ppm 2,6-di-tert-butyl-4-methylphenol (BHT)

4626.4	100 ml	glass	13,45 €
4626.3	500 ml	glass	37,55 €
4626.1	1 l	glass	66,15 €
Original pack 6 x 1 l			62,84/1 l
4626.2	2,5 l	glass	137,10 €
Original pack 4 x 2,5 l			130,25/2,5 l
4626.5	5 l	aluminium	247,15 €
Original pack 2 x 5 l			234,79/5 l
4626.6	25 l	tinplate	1181,45 €

1,4-Dioxane

≥99,5 %, for synthesis

Type analysis:

Assay (GC) ..... ≥99,5 %
Peroxides ..... ≤0,001 %
Water ..... ≤0,1 %
Colour (APHA) ..... ≤10
Stabilized with approx. 5 ppm BHT

4229.1	500 ml	glass	23,55 €
4229.2	1 l	glass	33,90 €
Original pack 6 x 1 l			32,21/1 l
4229.3	2,5 l	glass	69,35 €
Original pack 4 x 2,5 l			65,88/2,5 l
4229.5	5 l	aluminium	121,40 €
Original pack 2 x 5 l			115,33/5 l
4229.6	10 l	tinplate	221,35 €
4229.4	25 l	tinplate	493,45 €

1,3-Dioxolane

1,3-Dioxolane

SOLVAGREEN® 90 %, for synthesis

Formal glycol
$C_3H_6O_2$
M 74,08 g/mol
D 1,06 • bp 74 °C
mp -26 °C • flp 2 °C
[646-06-0] • EC No. 211-463-5
UN No. 1166 • ADR 3 II • WGK 1

Danger H225-H319-H360D

Type analysis:

Assay ..... ≥90 %
Water ..... ≤7 %
Methanol ..... ≤2 %

0447.1	100 ml	glass	14,55 €
0447.2	500 ml	glass	33,25 €
0447.3	1 l	glass	55,40 €
Original pack 6 x 1 l			52,63/1 l
0447.4	2,5 l	glass	110,65 €
Original pack 4 x 2,5 l			105,12/2,5 l

2,5-Dioxopyrrolidin-1-yl 17-oxo-4,7,10,13-tetraoxa-16-azahenicos-1-yn-21-oate

▶ NHS-PEG5-Alkyne see p. 2193

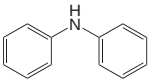
DIPEA

▶ N,N-Diisopropylethylamine (DIPEA) see p. 1944

Dipentene

▶ D-(+)-Limonene see p. 2099

Diphenylamine



Diphenylamine

≥99 %, p.a., ACS

Redox indicator
N-Phenylaniline, *N*-Phenylbenzenamine, DPA, Anilinobenzene
$C_{12}H_{11}N$
M 169,23 g/mol
D 1,16 • bp 302 °C
mp 53 °C
Solubility: 40 mg/l (H_2O, 20 °C)
[122-39-4] • EC No. 204-539-4
UN No. 2811 • ADR 6.1 III • WGK 3

Danger

H301+H311+H331-H373-H410

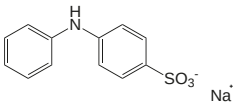
Guarantee analysis:
Assay ≥99,0 %
Sensitivity to NO_3 1:1600000
Solubility in ethanol complies
Melting range 52,5-54,0 °C
Anilin ≤0,01 %
Sulphated ash ≤0,03 %
Nitrate (NO_3) complies
Lead (Pb) ≤0,001 %
Iron (Fe) ≤0,001 %
Copper (Cu) ≤0,001 %
Nickel (Ni) ≤0,001 %

9865.1	25 g	glass	17,10 €
9865.2	100 g	glass	40,75 €
9865.3	500 g	glass	114,50 €
Original pack 6 x 500 g			108,78/500 g

Diphenylamine-2-carboxylic acid

▶ *N*-Phenylanthranilic acid see p. 2206

Diphenylamine-4-sulphonic acid sodium salt



Diphenylamine-4-sulphonic acid sodium salt

p.a., ACS
Redox indicator
Sodiumdiphenylaminesulphonate
$C_{12}H_{10}NNaO_3S$
M 271,27 g/mol
mp 200 °C
Solubility: 820 g/l (H_2O, 20 °C)
[6152-67-6] • EC No. 228-165-6
WGK 1

Guarantee analysis:
Appearance of solution clear, colourless
Suitability as indicator complies

2602.3	1 g	glass	17,75 €
2602.1	10 g	glass	78,40 €
2602.2	25 g	glass	142,90 €

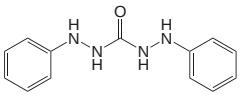
Diphenylamine-4-sulphonic acid barium salt

▶ Barium diphenylamine sulfonate see p. 1826

Diphenylboric acid β-aminoethyl ester complex

▶ Natural product reagent A see p. 2154

1,5-Diphenylcarbazide



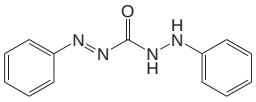
1,5-Diphenylcarbazide

≥97 %, p.a., ACS
Redox indicator
1,5-Diphenylcarbohydrazide
$C_{13}H_{14}N_4O$
M 242,28 g/mol
mp 173-176 °C
[140-22-7] • EC No. 205-403-7
WGK 1

Guarantee analysis:
Assay (HPLC) ≥97,0 %
Solubility (ACS) complies
Melting point 173-176 °C
Loss on drying ≤1,0 %
Ash content ≤0,05 %
Suitability for chromate complies

2696.1	10 g	plastic	24,20 €
2696.2	25 g	plastic	39,70 €
2696.3	100 g	plastic	115,60 €

Diphenylcarbazone



Diphenylcarbazone

p.a.
Metal indicator
$C_{13}H_{12}N_4O$
M 240,26 g/mol
mp 156-159 °C (dec.)
[538-62-5] • EC No. 208-698-0
WGK 1

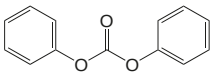
Guarantee analysis:
Appearance orange cryst. powder
Melting point 156-159 °C
Solubility in aceton complies
Ash content ≤0,1 %
Suitability as redox indicator complies

2678.1	10 g	glass	62,25 €
2678.2	25 g	glass	121,40 €
2678.3	50 g	glass	210,20 €

1,5-Diphenylcarbohydrazide

▶ 1,5-Diphenylcarbazide see p. 1953

Diphenyl carbonate



Diphenyl carbonate

≥99 %
Carbonic acid diphenyl ester, Phenyl carbonate, DPC
$C_{13}H_{10}O_3$
M 214,22 g/mol
D 1,3 • bp 301 °C
mp 77,5-79 °C • flp 168 °C
Solubility: 12 mg/l (H_2O, 20 °C)
[102-09-0] • EC No. 203-005-8
WGK 1
Warning H302

Type analysis:
Assay (GC) ≥99,0 %
pH value 6,8-7,2
Water ≤0,1 %
Melting point 77,5-79,5 °C

2626.1	100 g	plastic	13,45 €
2626.2	500 g	plastic	26,35 €
Original pack 6 x 500 g			25,03/500 g
2626.3	1 kg	plastic	47,20 €
Original pack 6 x 1 kg			44,84/1 kg

trans-1,2-Diphenylethylene

▶ trans-Stilbene see p. 2381

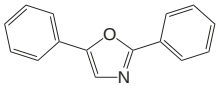
Diphenyl ketone

▶ Benzophenone see p. 1831

Diphenylmethanone

▶ Benzophenone see p. 1831

2,5-Diphenyloxazole



2,5-Diphenyloxazole

~99 %, for scintillation
PPO
$C_{15}H_{11}NO$
M 221,26 g/mol
bp 360 °C
mp 69-72 °C
[92-71-7] • EC No. 202-181-3
WGK 1

Type analysis:
Appearance white, cryst. powder
Assay ~99 %
Suitable for scintillation.

3689.1	25 g	plastic	30,00 €
3689.2	100 g	plastic	78,40 €
3689.3	500 g	plastic	332,20 €
Original pack 6 x 500 g			315,59/500 g

1,3-Diphenyl-1-propen-3-one

▶ Benzylidene acetophenone see p. 1834

1,5-Diphenylthiocarbazone

▶ Dithizone see p. 1955

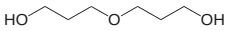
Diphosphorous pentoxide

▶ Phosphorus pentoxide see p. 2211

Dipotassium hydrogen phosphate

▶ di-Potassium hydrogen phosphate see p. 2227

Dipropylene glycol



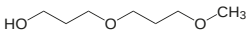
Dipropylene glycol

≥99 %, pure
Bis(hydroxypropyl) ether
$C_6H_{14}O_3$
M 134,17 g/mol
D 1,03 • bp 228 °C
mp -40 °C • flp 138 °C
[25265-71-8] • EC No. 246-770-3
WGK 1

Type analysis:
Assay (GC). ..... ≥99,0 %
Colour (Hazen). ..... ≤15

8656.1	1 l	plastic	34,30 €
Original pack 6 x 1 l			32,59/1 l
8656.2	2,5 l	plastic	60,10 €
Original pack 4 x 2,5 l			57,10/2,5 l

Dipropylene glycol monomethyl ether



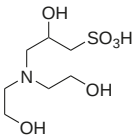
Dipropylene glycol monomethyl ether

≥98 %, pure
(2-Methoxymethylethoxy)propanol, DPGME
$C_7H_{16}O_3$
M 148,2 g/mol
D ~0,95 • bp 189 °C
mp -83 °C • flp 75 °C
[34590-94-8] • EC No. 252-104-2
WGK 1

Type analysis:
Assay (isomers, GC). ..... ≥98,0 %
Colour (Hazen). ..... ≤15
Density (20 °C). 0,943-0,962

7656.1	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
7656.2	2,5 l	glass	71,95 €
Original pack 4 x 2,5 l			68,35/2,5 l

DIPSO



DIPSO

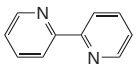
PUFFERAN® ≥98 %
3-N-Bis(hydroxyethyl)-amino-2-hydroxy-propane sulphonic acid
$C_7H_{17}NO_6S$
M 243,29 g/mol
mp 189-191 °C
[68399-80-4] • EC No. 269-992-2

Type analysis:
Assay (titr.). ..... ≥98 %
Solubility (25 % in H_2O). ..... clear
Loss on drying. ..... ≤7,0 %
Heavy metals (as Pb). ..... ≤0,0005 %

7151.1	25 g	plastic	72,60 €

For further information, please see page 1308

2,2'-Dipyridyl



2,2'-Dipyridyl

≥95 %, for biochemistry
Redox indicator
α,α'-Dipyridyl, 2,2'-Bipyridine
$C_{10}H_8N_2$
M 156,19 g/mol
bp 272 °C
mp 70-72 °C • flp 121 °C
Solubility: 5,5 g/l (H_2O, 22 °C)
[366-18-7] • EC No. 206-674-4
UN No. 2811 • ADR 6.1 III • WGK 1
Danger H301-H312

Type analysis:
Appearance. ..... white to brownish, cryst. powder
Assay (titr.). ..... ≥95 %
Solution (5 % in ethanol). ..... colourless
Water (KF). ..... ≤1,0 %

4153.1	5 g	glass	15,60 €
4153.2	25 g	glass	40,35 €

α,α'-Dipyridyl

▶ 2,2'-Dipyridyl see p. 1954

Direct blue 53

▶ Evan's blue (C.I. 23860) see p. 1988

Direct Red 28

▶ Congo red (C.I. 22120) see p. 1907

DIS

▶ 5-(Dimethylamino)-1-naphthalenesulphonyl chloride see p. 1946

Dishwasher cleaner

Dishwasher cleaner

intensive cleaning powder for dishwashers
pH 12
D 1,02
UN No. 3262 • ADR 8 III
Danger
H302-H314-H335-H412-EUH206

N047.1	5 kg	plastic	21,45 €

For further information, please see page 1144

Dishwasher regenerating salt

Dishwasher regenerating salt

pH (50 g/l) 6-9
D 2,16
Solubility: 358 g/l
WGK 1

N049.1	2 kg	plastic	7,50 €

For further information, please see page 1144

Disodium-3,3'[[1,1-biphenyl]-4,4'-diyl(bis(azo)]bis(4-amino-naphthalin-1-sulfonate)

▶ Congo red (C.I. 22120) see p. 1907

Disodium molybdate

▶ Sodium molybdate dihydrate see p. 2345

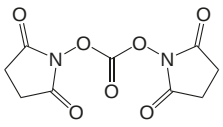
Disodium pentacyanonitrosyl ferrate(III) dihydrate

▶ Sodium nitroprusside dihydrate see p. 2346

Distylin

▶ (+)-Dihydroquercetin see p. 1941

N,N'-Disuccinimidyl carbonate (DSC)



N,N'-Disuccinimidyl carbonate (DSC)

PEPTIPURE® ≥99 %
Coupling reagent for peptide synthesis
DSC, di-(N-Succinimidyl) carbonate
$C_9H_8N_2O_7$
M 256,17 g/mol
mp 190 °C
Storage temp.: +4 °C
[74124-79-1] • EC No. 277-730-3 • WGK 1
Warning H315-H319-H335

Type analysis:
Assay (HPLC). ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %

2110.1	5 g	glass	24,20 €
2110.2	25 g	glass	62,25 €
2110.3	100 g	glass	171,90 €

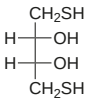
3,3'-Dithio-bis-(2-amino-propionic acid)

▶ L-Cystine see p. 1920

3,3'-Dithiobis[N-methyl-propionamide]

▶ N,N'-Dimethyl-3,3'-dithiodipropionamide see p. 1948

1,4-Dithioerythritol (DTE)



1,4-Dithioerythritol (DTE)

≥99 %, p.a.
For biochemistry and molecular biology.
DTE, Cleland's reagent
$C_4H_{10}O_2S_2$
M 154,2 g/mol
mp 82-86 °C • flp <110 °C
[6892-68-8] • EC No. 229-998-8 • WGK 3

Warning H315-H319-H335

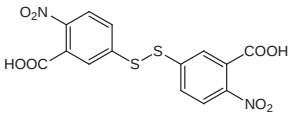
Type analysis:

Assay (iodom.).....≥99,0 %
Solution (10 % in H_2O).....colourless
Melting point. ..... 84 ±2 °C

Reagent for stabilizing monothioles and for quantitative reduction of disulphide compounds to thiole compounds. DTE is an isomer of DTT and is as such used for reducing disulphide bridge-bonds and for stabilizing thiole groups in enzymes and other proteins.

8814.1	5 g	glass	65,50 €
8814.3	10 g	glass	110,20 €
8814.2	25 g	glass	243,50 €

5,5'-Dithio-bis-(2-nitrobenzoic acid)



5,5'-Dithio-bis-(2-nitrobenzoic acid)

≥98 %, p.a.
For determination of thiol groups
DTNB, Ellman's reagent
$C_{14}H_8N_2O_8S_2$ • M 396,36 g/mol
mp 240-244 °C
Storage temp.: +4 °C
[69-78-3] • EC No. 200-714-4 • WGK 1

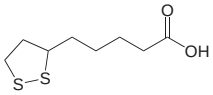
Warning H315-H319-H335

Guarantee analysis:

Appearance. .....white to yellow cryst. powder
Assay.....≥98,0 %
Water (KF). .....≤1,0 %

6334.1	1 g	glass	20,35 €
6334.2	5 g	glass	57,95 €
6334.3	25 g	glass	210,60 €

DL-6,8-Dithiooctanoic acid



DL-6,8-Dithiooctanoic acid

≥98 %
α-Lipoic acid, DL-6,8-Thioctic acid
$C_8H_{14}O_2S_2$
M 206,33 g/mol
mp 60-62 °C
Storage temp.: +4 °C
[1077-28-7] • EC No. 214-071-2 • WGK 1

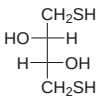
Warning H302

Type analysis:

Appearance..... light yellow powder
Assay (HPLC)..... ≥98 %
Loss on drying. ..... ≤0,1 %
Ash content. ..... ≤0,1 %
Melting point. ..... 60-62 °C

6229.1	5 g	glass	121,40 €

1,4-Dithiothreitol (DTT)



1,4-Dithiothreitol (DTT)

≥99 %, p.a.
For biochemistry and molecular biology.
DTT, Cleland's reagent,
DL-threo-2,3-Dihydroxy-1,4-dithiobutane
$C_4H_{10}O_2S_2$
M 154,2 g/mol • mp 38-44 °C
Solubility: 1500 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[3483-12-3] • EC No. 222-468-7 • WGK 2

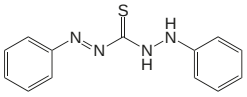
Warning H302-H315-H319-H335

Guarantee analysis:

Appearance.....white to light grey, cryst. powder
Assay (iodom.). ..... ≥99 %
pH value (0,1 M, H_2O). 4,0-6,5
Solution (10 % in H_2O). .....clear, colourless
Oxidized part. ..... ≤0,2 %
Melting point. ..... 38-44 °C
Heavy metals (as Pb). ..... ≤0,0001 %
UV-absorption (0,1 M in H_2O):
260 nm. ..... ≤0,4
280 nm. ..... ≤0,2

6908.1	5 g	plastic	59,05 €
6908.3	10 g	plastic	88,70 €
6908.2	25 g	plastic	209,65 €
6908.4	100 g	plastic	622,45 €

Dithizone



Dithizone

≥85 %, p.a., ACS
Metal indicator
1,5-Diphenylthiocarbazone
$C_{13}H_{12}N_4S$
M 256,32 g/mol
mp 168 °C (dec.)
[60-10-6] • EC No. 200-454-1
WGK 1

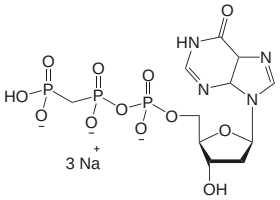
Warning H315-H319

Guarantee analysis:

Assay. .....≥85,0 %
Ash content. .....≤0,3 %
Heavy metals (as Pb). .....≤0,002 %
Ratio of absorbance (A 620 nm/450 nm).....≥1,55

2697.1	5 g	glass	33,25 €
2697.2	25 g	glass	107,40 €
2697.3	50 g	glass	171,90 €

dITP solution



dITP solution

≥99 %, 100 mM solution
2'-Deoxyinosine-5'-triphosphate
$C_{10}H_{12}N_4O_{13}P_3$
M 489,14 g/mol
Storage temp.: -20 °C
Transport temp.: cooled

P732.1	25 µmol (250 µl)	plastic	34,30 €

For further information, please see page 1302

Diytterbium trioxide

▶ Ytterbium(III) oxide see p. 2448

DMAP

▶ 4-(Dimethylamino)pyridine (DMAP) see p. 1947

DMC

▶ Dimethyl carbonate see p. 1947

DMEM : F12 cell culture medium

▶ Roti®-CELL DMEM : F12 see p. 2267

DMEM cell culture medium

▶ Roti®-CELL DMEM Low Glucose see p. 2267
▶ Roti®-CELL DMEM High Glucose see p. 2267

DMEU

▶ 1,3-Dimethyl-2-imidazolidinone (DMI) see p. 1949

DMF

▶ N,N-Dimethylformamide (DMF) see p. 1948

DMFA

▶ N,N-Dimethylformamide (DMF) see p. 1948

DMF-DMA

▶ N,N-Dimethylformamide dimethyl acetal (DMF-DMA) see p. 1949

DMI

▶ 1,3-Dimethyl-2-imidazolidinone (DMI) see p. 1949

DMP

▶ Phthalic acid dimethyl ester see p. 2212

DMPU

▶ N,N'-Dimethylpropylene urea see p. 1950

DMSO

▶ Dimethyl sulphoxide (DMSO) see p. 1950

DMSO/t-Butanol Solvent

DMSO/t-Butanol Solvent

ROTI®click Grade
for Click Chemistry
UN No. 1120 • ADR 3.III • WGK 1
Warning H226-H319-H335

Formulation:
DMSO:t-Butanol (v/v). 3:1

7815.1	1 ml	plastic	14,95 €
7815.2	10 x 1 ml	plastic	69,80 €

DMSO deuterated

▶ Dimethyl sulphoxide D6 see p. 1950
▶ Dimethyl sulphoxide D6 with TMS (0,03 vol.%) see p. 1951

DMT-Cl

▶ 4,4'-Dimethoxytrityl chloride (DMT-Cl) see p. 1945

DMT removal reagent

DMT removal reagent

for DNA synthesis with ABI™ Synthesizer
3 % Trichloro acetic acid in dichloromethane
D 1,324
UN No. 2927 • ADR 6.1 (8) II • WGK 2
Danger
H315-H318-H335-H336-H351-H373-H411

2257.1	450 ml	glass	37,55 €
2257.2	2,5 l	glass	121,40 €
Original pack 4 x 2,5 l			115,33/2,5 l

For further information, please see page 1551

DNA AWAY®

DNA AWAY®

ready-to-use solution for removal of DNA-contaminations
Danger H314

X996.1	250 ml	plastic	42,50 €
X996.2	4 l	plastic	222,45 €

For further information, please see page 1298

DNA from salmon sperm

▶ Salmon Sperm DNA sodium salt see p. 2305

DNA-Isolation kits

▶ Roti®-Prep Plasmid MINI see p. 2296

DNA-Marker, not prestained

Storage temp.: -20 °C
Transport temp.: room temp.
WGK 3

20 bp-DNA-Ladder

DNA marker ready-to-use
Size range: 20-200 bp
Number of fragments: 10
Number of lanes per ml:
approx. 200 (mini gels)

2805.1	500 µl (50 µg)	plastic	121,40 €

For further information, please see page 1212

50 bp-DNA-Ladder

DNA marker ready-to-use
Size range: 50-500 bp
Number of fragments: 10
Number of lanes per ml:
approx. 200 (mini gels)

2810.1	500 µl (50 µg)	plastic	102,05 €

For further information, please see page 1212

100 bp-DNA-Ladder *equimolar*

DNA ladder + gel loading buffer
Size range: 100-1000 bp
Number of fragments: 11
Number of lanes per 100 µg:
approx. 200 (mini gels)

T834.1	50 µg + gel loading buffer	plastic	77,30 €
T834.2	4 x 50 µg + gel loading buffer	plastic	295,65 €

For further information, please see page 1213

100 bp-DNA-Ladder *equalized*

DNA ladder + gel loading buffer
Size range: 100-1000 bp
Number of fragments: 11
Number of lanes per 100 µg:
approx. 500 (mini gels)

T833.1	20 µg + gel loading buffer	plastic	77,30 €
T833.2	4 x 20 µg + gel loading buffer	plastic	295,65 €

For further information, please see page 1213

100 bp-DNA-Ladder *extended*

DNA ladder + gel loading buffer
Size range: 100-5000 bp
Number of fragments: 17
Number of lanes per 100 µg:
approx. 160 (mini gels)

T835.1	50 µg + gel loading buffer	plastic	77,30 €
T835.2	4 x 50 µg + gel loading buffer	plastic	295,65 €

For further information, please see page 1213

200 bp-DNA-Ladder

DNA marker ready-to-use
Size range: 200-2000 bp
Number of fragments: 10
Number of lanes per ml:
approx. 200 (mini gels)

8272.1	500 µl (50 µg)		90,20 €

For further information, please see page 1213

250 bp-DNA-Ladder

DNA ladder + gel loading buffer
Size range: 250-8000 bp
Number of fragments: 16
Number of lanes per 100 µg:
approx. 200 (mini gels)

T918.1	50 µg + gel loading buffer	plastic	83,35 €

For further information, please see page 1214

500 bp-DNA-Ladder

DNA marker ready-to-use
Size range: 500-5000 bp
Number of fragments: 10
Number of lanes per ml:
approx. 200 (mini gels)

8273.1	500 µl (50 µg)		71,95 €

For further information, please see page 1214

1 kbp DNA-Ladder

DNA ladder + gel loading buffer
Size range: 500-10000 bp
Number of fragments: 11
Number of lanes per 100 µg:
approx. 200 (mini gels)

Y014.1	50 µg + gel loading buffer	plastic	37,55 €
Y014.2	4 x 50 µg + gel loading buffer	plastic	129,55 €

For further information, please see page 1214

DNA-Ladder combi

DNA marker + gel loading buffer
Size range: 100-10000 bp
Number of fragments 20
Number of lanes per 40 µg + 100 µg:
approx. 200 (mini gels)

CL22.1	20 µg + 50 µg + gel loading buffer	plastic	112,80 €

For further information, please see page 1214

DNA-Marker ccc-plasmid

DNA marker + gel loading buffer
Size range: 3000-12000 bp
Number of fragments: 3
Number of lanes per 100 µg:
approx. 1000 (mini gels)
A "covalently closed circle" DNA-marker for rapid determination of plasmid size and estimation of plasmid concentration following DNA-preparation.

0149.1	10 µg + gel loading buffer	plastic	63,35 €

For further information, please see page 1215

DNA-Marker short-run 1

DNA marker + gel loading buffer
Size range: 500-2500 bp
Number of fragments: 5
Number of lanes per 100 µg:
approx. 400 (mini gels)
The perfect DNA-marker for very short gel running distances and high-through-put approaches.

0146.1	50 µg + gel loading buffer	plastic	75,15 €

For further information, please see page 1215

DNA-Marker short-run *extended*

DNA marker + gel loading buffer
Size range: 100-6000 bp
Number of fragments: 9
Number of lanes per 100 µg:
approx. 300 (mini gels)

CL05.1	50 µg + gel loading buffer	plastic	87,00 €

For further information, please see page 1215

Lambda Hind III / phiX Hae III Marker

DNA marker + gel loading buffer
Size range: 72-23130 bp
Number of fragments: 17
Number of lanes per 100 µg:
approx. 200 (mini gels)

CP49.1	50 µg + gel loading buffer	plastic	141,80 €

For further information, please see page 1209

Lambda Hind III Marker

DNA marker + gel loading buffer
Size range: 125-23130 bp
Number of fragments: 8
Number of lanes per 100 µg:
approx. 200 (mini gels)

X910.1	100 µg + gel loading buffer	plastic	61,20 €

For further information, please see page 1209

pBR328 Mix I

DNA marker + gel loading buffer
Size range: 154-2176 bp
Number of fragments: 11
Number of lanes per 100 µg:
approx. 200 (mini gels)

T146.1	50 µg + gel loading buffer	plastic	76,90 €

For further information, please see page 1209

pBR328-Marker ready-to-use

DNA marker ready-to-use
Size range: 154-2176 bp
Number of fragments: 11
Number of lanes per ml:
approx. 200 (mini gels)

X902.1	500 µl (50 µg)	plastic	65,50 €
X902.2	4 x 500 µl (4 x 50 µg)	plastic	246,20 €

For further information, please see page 1209

PCR-Marker DNA*score*

DNA marker + gel loading buffer
Size range: 500-1500 bp
Number of fragments: 7
Reinforced bands: 500 bp, 1000 bp, 1500 bp
Band for DNA quantitation: 1000 bp
Number of lanes per 100 µg:
approx. 200 (mini gels)

T917.1	50 µg + gel loading buffer	plastic	83,75 €

For further information, please see page 1215

pUC19-Marker ready-to-use

DNA marker ready-to-use
Size range: 26-501 bp
Number of fragments: 10
Number of lanes per ml:
approx. 200 (mini gels)

X901.1	500 µl (50 µg)	plastic	61,20 €
X901.2	4 x 500 µl (4 x 50 µg)	plastic	218,15 €

For further information, please see page 1208

pUC19/Msp I

DNA marker + gel loading buffer
Size range: 26-501 bp
Number of fragments: 10
Number of lanes per 100 µg:
approx. 200 (mini gels)

T149.1	50 µg + gel loading buffer	plastic	77,30 €
T149.2	4 x 50 µg + gel loading buffer	plastic	263,40 €

For further information, please see page 1208

DNA-Marker, prestained

Storage temp.: -20 °C
Transport temp.: room temp.
WGK 1

20 bp-DNA-Fluoro-Ladder

DNA-Marker ready-to-use, prestained with DNA fluorescent dye
Size range: 20-200 bp
Number of fragments: 10
Number of lanes per ml:
approx. 200 (mini gels)

8262.1	500 µl (50 µg)		138,70 €

For further information, please see page 1210

50 bp-DNA-Fluoro-Ladder

DNA-Marker ready-to-use, prestained with DNA fluorescent dye
Size range: 50-500 bp
Number of fragments: 10
Number of lanes per ml:
approx. 200 (mini gels)

8263.1	500 µl (50 µg)		121,40 €

For further information, please see page 1210

100 bp-DNA-Fluoro-Ladder

DNA-Marker ready-to-use, prestained with DNA fluorescent dye
Size range: 100-1000 bp
Number of fragments: 10
Number of lanes per ml:
approx. 200 (mini gels)

8264.1	500 µl (50 µg)		111,30 €

For further information, please see page 1211

200 bp-DNA-Fluoro-Ladder

DNA-Marker ready-to-use, prestained with DNA fluorescent dye
Size range: 200-2000 bp
Number of fragments: 10
Number of lanes per ml:
approx. 200 (mini gels)

8265.1	500 µl (50 µg)		99,90 €

For further information, please see page 1211

500 bp-DNA-Fluoro-Ladder

DNA-Marker ready-to-use, prestained with DNA fluorescent dye
Size range: 500-5000 bp
Number of fragments: 10
Number of lanes per ml: approx. 200 (mini gels)

8266.1	500 µl (50 µg)	87,00 €

For further information, please see page 1211

1 kbp-DNA-Fluoro-Ladder

DNA-Marker ready-to-use, prestained with DNA fluorescent dye
Size range: 1000-10000 bp
Number of fragments: 10
Number of lanes per ml: approx. 200 (mini gels)

8267.1	500 µl (50 µg)	76,90 €

For further information, please see page 1211

DNA polymerase (thermostable)

- Roti®-Pol Hot-TaqUltra see p. 2294
- Roti®-Pol Hot-TaqHY see p. 2294
- Roti®-Pol Hot-TaqS see p. 2294
- Roti®-Pol Hot-TaqS Mix (2x) see p. 2294
- Roti®-Pol Hot-TaqS Red-Mix (2x) see p. 2294
- Roti®-Pol ProofRead see p. 2295
- Roti®-Pol TaqUltra see p. 2295
- Roti®-Pol TaqHY see p. 2295
- Roti®-Pol TaqS see p. 2295
- Roti®-Pol TaqS Mix (2x) see p. 2295
- Roti®-Pol TaqS Red-Mix (2x) see p. 2295

DNA-quantifying marker

Storage temp.: -20 °C
Transport temp.: room temp.

DNA-quantifying marker QSK 200

for DNA-quantitation

L508.1	40 µg	plastic	193,50 €

DNA-quantifying marker QSK 500

for DNA-quantitation

L507.1	40 µg	plastic	193,50 €

For further information, please see page 1283

DNA-quantifying marker QSK 1000

for DNA-quantitation

L506.1	40 µg	plastic	193,50 €

DNase Test Agar

DNase Test Agar

for microbiology

For detection of DNase activity for identification of pathogenic bacteria.
Application: Use 42 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

Formulation:

Casein peptone. ..... 15 g/l
Soy peptone. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Deoxyribonucleic acid. ..... 2 g/l
Agar ..... 15 g/l
pH value. ..... 7,3 ±0,2

8295.1	500 g	plastic	241,90 €
Original pack 6 x 500 g			229,81/500 g

For further information, please see page 1444

DNA-Synthesis Reagents

Art. No.	Description	Page
2253	Activation reagent	1771
K921	Adenosine-BCE-phosphoramidite	1773
2318	Adenosine-CPG-Support	1773
2255	Capping reagent I	1874
2256	Capping reagent II	1875
K922	Cytidine-BCE-phosphoramidite	1920
2319	Cytidine-CPG-Support	1920
2257	DMT removal reagent	1956
A133	Fast Oxidation reagent	1989
K923	Guanosine-BCE-phosphoramidite	2031
2320	Guanosine-CPG-Support	2031
N893	Molecular sieve 3 Å	2145
2254	Oxidation reagent	2188
K924	Thymidine-BCE-phosphoramidite	2406
2321	Thymidine-CPG-Support	2406

DNSCl

- 5-(Dimethylamino)-1-naphthalenesulphonyl chloride see p. 1946

dNTP-Set 1

Deoxynucleoside triphosphate set
Storage temp.: -20 °C • Transport temp.: cooled

dNTP-Set 1

≥99 %, dATP, dTTP, dGTP, dCTP

dNTP-Set 1, composed of the nucleotide-single solutions: dATP, dTTP, dGTP, dCTP.
Concentration: 100 mM per dNTP.

K039.1	4 x 25 µmol (250 µl), 100 mM	102,05 €
K039.2	5 x 4 x 25 µmol (250 µl), 100 mM	421,95 €

For further information, please see page 1301

dNTP-Set 1 (pH 7)

≥99 %, dATP, dTTP, dGTP, dCTP

dNTP-Set 1 (pH 7), composed of the nucleotide-single solutions: dATP, dTTP, dGTP, dCTP.
Concentration: 100 mM per dNTP, **pH 7,0 ±0,1**

0178.1	4 x 25 µmol (250 µl), 100 mM	102,05 €
0178.2	5 x 4 x 25 µmol (250 µl), 100 mM	421,95 €

For further information, please see page 1301

dNTP-Set 2

dNTP-Set 2

≥99 %, dATP, dUTP, dGTP, dCTP

dNTP-Set 2, composed of the nucleotide-single solutions: dATP, dUTP, dGTP, dCTP.
Concentration: 100 mM per dNTP.
Deoxynucleoside triphosphate set
Storage temp.: -20 °C
Transport temp.: cooled

L540.1	4 x 25 µmol (250 µl), 100 mM	102,05 €
L540.2	5 x 4 x 25 µmol (250 µl), 100 mM	424,65 €

For further information, please see page 1301

dNTP-Set 3

dNTP-Set 3

≥99 %, dATP, dTTP, dITP, dCTP

dNTP-Set 3, composed of the nucleotide-single solutions: dATP, dTTP, dITP, dCTP.
Concentration: 100 mM per dNTP.
Deoxynucleoside triphosphate set
Storage temp.: -20 °C
Transport temp.: cooled

P731.1	4 x 25 µmol (250 µl), 100 mM	102,05 €
P731.2	5 x 4 x 25 µmol (250 µl), 100 mM	424,65 €

For further information, please see page 1301

DOC

- Deoxycholic acid sodium salt (DOC) see p. 1926

cis-13-Docosenoic acid

- Erucic acid see p. 1973

Dodecanal

- Dodecyl aldehyde see p. 1959

n-Dodecane

n-Dodecane

≥95 %, for synthesis

$C_{12}H_{26}$
M 170,34 g/mol
D 0,75 • bp 213-216 °C
mp -10 °C • flp 71 °C
[112-40-3] • EC No. 203-967-9
WGK 1

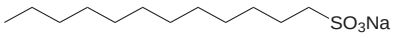
Danger H304-EUH066

Type analysis:

Appearance. ..... clear colourless liquid
Assay ..... ≥95,0 %
Density (15 °C). 0,750-0,756
Aromatic compounds ..... ≤0,1 %
Refractive index n_D^{20}. 1,418-1,425

8786.1	100 ml	glass	18,85 €
8786.2	500 ml	glass	60,10 €
8786.3	1 l	glass	107,40 €
Original pack 6 x 1 l			102,03/1 l

Dodecane-1-sulphonic acid sodium salt



Dodecane-1-sulphonic acid sodium salt

≥99 %, for ion pair chromatography

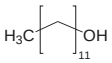
Ion pair reagent for HPLC.
Sodium-1-dodecane sulphonate
$C_{12}H_{25}NaO_3S$
M 272,37 g/mol
[2386-53-0] • EC No. 219-200-6
WGK 2

Guarantee analysis:

Assay (acidim.). ..... ≥99,0 %
Water. ..... ≤2 %
A 210 nm (5 % in water). ..... ≤0,05 AU
A 220 nm (5 % in water). ..... ≤0,03 AU
A 230 nm (5 % in water). ..... ≤0,02 AU

KK52.1	10 g	glass	55,80 €
KK52.2	25 g	glass	109,55 €
KK52.3	100 g	glass	360,15 €

1-Dodecanol



1-Dodecanol

≥98 %, for synthesis

Dodecan-1-ol, Dodecyl alcohol, Lauryl alcohol
$C_{12}H_{26}O$
M 186,34 g/mol
D 0,83 • bp 261 °C
mp 21-24 °C • flp 121 °C
Solubility: 4 mg/l (H_2O, 25 °C)
[112-53-8] • EC No. 203-982-0
UN No. 3082 • ADR 9 III • WGK 1

Warning H319-H410

Type analysis:

Assay. ..... ≥98,0 %
Melting point. ..... 21-24 °C

9853.1	250 ml	glass	13,90 €
9853.2	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
9853.3	2,5 l	glass	77,95 €
Original pack 4 x 2,5 l			74,05/2,5 l

2-Dodecenylsuccinic acid anhydride

▶ Glycidether Hardener DBA see p. 2025

Dodecyl alcohol

▶ 1-Dodecanol see p. 1959

Dodecyl aldehyde

Dodecyl aldehyde

≥98 %, for synthesis

Dodecanal, Lauraldehyde
$C_{12}H_{24}O$
M 184,32 g/mol
D 0,83 • bp 257 °C
mp 11-13 °C • flp 114 °C
[112-54-9] • EC No. 203-983-6
UN No. 3082 • ADR 9 III • WGK 2

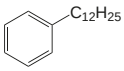
Warning H315-H411

Type analysis:

Assay (GC). ..... ≥98,0 %
Density (d 20 °C/4 °C). 0,830-0,840

3754.1	50 ml	glass	50,00 €

Dodecylbenzene



Dodecylbenzene

≥98,5 %, tech.

1-Phenyldodecane, Mixture of C_{10}-C_{13} alkylbenzenes
$C_{18}H_{30}$
M 246,44 g/mol
D ~0,85
[123-01-3] • EC No. 204-591-8
WGK 1
H413

Type analysis:

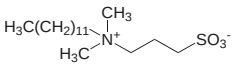
Assay (C_{10}-C_{13} alkylbenzenes). ..... ≥98,5 %
Density. 0,850-0,870
Refractive index. 1,480-1,490

0974.1	100 ml	glass	26,80 €
0974.2	500 ml	glass	87,00 €

n-Dodecyl-β-D-Glc

▶ n-Dodecyl-β-D-glucopyranoside see p. 1960

N-Dodecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate



N-Dodecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate

≥98 %, for biochemistry

Zwitterionic detergent
Sulfobetaine-12, SB-12
$C_{17}H_{37}NO_3S$
M 335,5 g/mol
[14933-08-5]
WGK 1

Warning H315-H319-H335

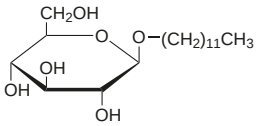
Type analysis:

Assay (HPLC). ..... ≥98,0 %
Loss on drying ..... ≤2,0 %
Ash ..... ≤0,1 %

1821.1	5 g	glass	22,50 €
1821.2	25 g	glass	55,80 €
1821.3	100 g	glass	190,85 €

For further information, please see page 1314

n-Dodecyl-β-D-gluco-pyranoside



n-Dodecyl-β-D-gluco-pyranoside

for biochemistry

Non-ionic detergent.
n-Dodecyl-β-D-Glc
$C_{18}H_{36}O_6$
M 348,48 g/mol
Storage temp.: +4 °C
[59122-55-3] • EC No. 261-614-4
WGK 1

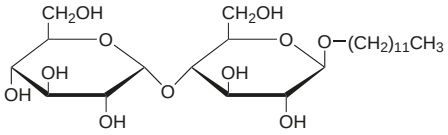
Warning H315-H319-H335

Type analysis:

Solution (1 % in methanol). ..... colourless, clear
Water (KF). ..... ≤2 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in methanol, after 24 h). ..... -25° ±2°

4129.1	500 mg	glass	115,60 €

Dodecyl-β-D-maltoside (DDM)



Dodecyl-β-D-maltoside (DDM)

≥99 %, for biochemistry

Non-ionic detergent.
DDM, Lauryl-β-D-maltoside
$C_{24}H_{46}O_{11}$
M 510,63 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[69227-93-6]
WGK 1

Type analysis:

Assay (HPLC). ..... ≥99 %
α-Anomer (NMR). ..... ≤2 %
Dodecanol (HPLC). ..... ≤0,005 %
Conductance (10 % H_2O). ..... ≤100 µS
pH value (1 % in H_2O). 5-8
Solubility (20 % in H_2O). ..... clear, colourless
Water (KF). ..... ≤1,0 %
UV-absorption (1 % in H_2O):
225 nm. ..... ≤0,1
260 nm. ..... ≤0,06
280 nm. ..... ≤0,04
340 nm. ..... ≤0,02

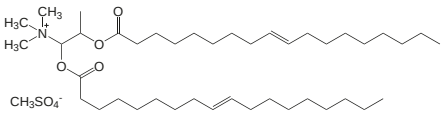
CN26.1	500 mg	glass	42,90 €
CN26.2	1 g	glass	69,35 €
CN26.3	2,5 g	glass	150,00 €
CN26.4	10 g	glass	493,45 €
CN26.5	50 g	plastic	1392,15 €

For further information, please see page 1311

Dodecylsulphate sodium salt

▶ SDS see p. 2309
▶ Roti®fair SDS 0.5g see p. 2278
▶ Roti®fair 10% SDS see p. 2278

DOTAP



DOTAP

CELLPURE® for transfection

Approx. 200 assays per ml in 24wells.
$C_{43}H_{83}NO_8S$
M 774,21 g/mol
Storage temp.: +4 °C
WGK 3

L787.1	0,5 ml	plastic	81,20 €
L787.2	1 ml	plastic	130,65 €
L787.3	5 x 1 ml	plastic	478,40 €

For further information, please see page 1389

Double Sugar Iron Agar, KIA

▶ Kligler Iron Agar see p. 2087

Dowex® 1 X 2 Anion exchanger

[9085-42-1]
WGK 1

Dowex® 1 X 2

50-100 mesh, Cl^--form

highly basic anion exchanger

Type analysis:

Appearance. ..... beads
Water capacity. ..... 65-75 %
Capacity (eq/l). ..... ≥0,7
Counter ion. ..... Cl^-
Particle size (mesh):
>35. ..... ≤10 %
<80. ..... ≤10 %
Ion exchanger on the basis of a microporous styrene DVB-copolymerisate. Active group: Quaternary ammonium compound type I.

0302.3	50 g	plastic	69,80 €
0302.1	100 g	plastic	114,50 €
0302.4	250 g	plastic	219,85 €
0302.2	1 kg	plastic	854,65 €
Original pack 6 x 1 kg			811,92/1 kg

For further information, please see page 1750

Dowex® 1 X 2

100-200 mesh, Cl^--form

highly basic anion exchanger

Type analysis:

Appearance. ..... beads
Water capacity. ..... 65-75 %
Capacity (eq/l). ..... ≥0,6
Counter ion. ..... Cl^-
Particle size (mesh):
>50. ..... ≤10 %
<140. ..... ≤5 %
Ion exchanger on the basis of a microporous styrene DVB-copolymerisate. Active group: Quaternary ammonium compound type I.

0303.3	50 g	plastic	50,00 €
0303.1	100 g	plastic	89,80 €
0303.4	250 g	plastic	171,50 €
0303.2	1 kg	plastic	585,90 €
Original pack 6 x 1 kg			556,61/1 kg

For further information, please see page 1750

Dowex® 1 X 2

200-400 mesh, Cl^--form

highly basic anion exchanger

Type analysis:

Appearance. ..... beads
Water capacity. ..... 65-80 %
Capacity (eq/l). ..... ≥0,6
Counter ion. ..... Cl^-
Particle size (mesh):
>70. ..... ≤15 %
<270. ..... ≤15 %
Ion exchanger on the basis of a microporous styrene DVB-copolymerisate. Active group: Quaternary ammonium compound type I.

0304.2	50 g	plastic	52,60 €
0304.1	100 g	plastic	91,95 €
0304.3	250 g	plastic	180,50 €
0304.4	1 kg	plastic	628,90 €
Original pack 6 x 1 kg			597,46/1 kg

For further information, please see page 1750

Dowex® 1 X 8 Anion exchanger

[12627-85-9]
WGK 1

Dowex® 1 X 8

50-100 mesh, Cl^--form

Type analysis:

Appearance. ..... beige beads
Water capacity. ..... 43-48 %
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... Cl^-
Particle size (mesh):
>35. ..... ≤15 %
<80. ..... ≤15 %
Ion exchanger on the basis of a microporous styrene DVB-copolymerisate. Active group: Quaternary ammonium compound type I.

0310.3	50 g	plastic	53,65 €
0310.1	250 g	plastic	185,90 €
0310.2	1 kg	plastic	650,40 €
Original pack 6 x 1 kg			617,88/1 kg

For further information, please see page 1750

Dowex® 1 X 8

100-200 mesh, Cl^--form

Type analysis:

Appearance. ..... white to yellow beads
Water capacity. ..... 39-45 %
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... Cl^-
Particle size (mesh):
>60. ..... ≤15 %
<170. ..... ≤15 %
Ion exchanger on the basis of a microporous styrene DVB-copolymerisate. Active group: Quaternary ammonium compound type I.

0311.3	50 g	plastic	55,80 €
0311.1	100 g	plastic	103,75 €
0311.4	250 g	plastic	196,20 €
0311.2	1 kg	plastic	714,90 €
Original pack 6 x 1 kg			679,16/1 kg

For further information, please see page 1750

Dowex® 1 X 8

200-400 mesh, Cl^--form

Type analysis:

Appearance. ..... white to yellow beads
Water capacity. ..... 39-45 %
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... Cl^-
Particle size (mesh):
>100. ..... ≤15 %
<325. ..... ≤15 %
Ion exchanger on the basis of a microporous styrene DVB-copolymerisate. Active group: Quaternary ammonium compound type I.

0312.3	50 g	plastic	69,80 €
0312.1	100 g	plastic	114,95 €
0312.4	250 g	plastic	220,40 €
0312.2	1 kg	plastic	848,20 €
Original pack 6 x 1 kg			805,79/1 kg

For further information, please see page 1750

Dowex® 50 W X 2 Cation exchanger

[69011-20-7]
WGK 1
⚠ **Warning** H319

Dowex® 50 W X 2

50-100 mesh, H^+-form

Highly acidic cation exchanger.

Type analysis:

Appearance. ..... beads
Water capacity. ..... 74-82 %
Capacity (eq/l). ..... ≥0,6
Counter ion. ..... H^+
Particle size (mesh):
>20. ..... ≤15 %
<70. ..... ≤15 %
Matrix: Polystyrene - DVB; Active group: sulphonate

6800.1	50 g	plastic	47,85 €
6800.2	250 g	plastic	160,75 €
6800.3	1 kg	plastic	557,95 €
Original pack 6 x 1 kg			530,05/1 kg

Dowex® 50 W X 2

100-200 mesh, H^+-form

Highly acidic cation exchanger.

Type analysis:

Appearance. ..... beads
Water capacity. ..... 74-82 %
Capacity (eq/l). ..... ≥0,6
Counter ion. ..... H^+
Particle size (mesh):
>35. ..... ≤15 %
<140. ..... ≤15 %
Matrix: Polystyrene - DVB; Active group: sulphonate

0334.2	50 g	plastic	50,00 €
0334.1	100 g	plastic	89,80 €
0334.3	250 g	plastic	171,50 €
0334.4	1 kg	plastic	590,20 €
Original pack 6 x 1 kg			560,69/1 kg

For further information, please see page 1750

Dowex® 50 W X 2

200-400 mesh, H^+-form

Highly acidic cation exchanger.

Type analysis:

Appearance. ..... beige grain
Particle size (mesh). 200-400
Loss on drying (3 h, 105 °C). ..... ~74-82 %
Capacity (eq/l). ..... ~0,6
Counter ion. ..... H^+
Matrix: Polystyrene - DVB; Active group: sulphonate

N099.3	50 g	plastic	47,85 €
N099.1	100 g	plastic	88,05 €
N099.4	250 g	plastic	160,75 €
N099.2	1 kg	plastic	557,95 €
Original pack 6 x 1 kg			530,05/1 kg

For further information, please see page 1750

Dowex® 50 W X 4 Cation exchanger

Dowex® 50 W X 4

200-400 mesh, H^+-form

[11113-61-4]
⚠ **Warning** H319

Type analysis:

Appearance. ..... beads
Water capacity. ..... 64-72 %
Capacity (eq/l). ..... ≥1,1
Counter ion. ..... H^+
Particle size (mesh):
>100. ..... ≤15 %
<325. ..... ≤15 %
Matrix: Polystyrene - DVB; Active group: sulphonate

6821.1	50 g	plastic	45,05 €
6821.2	250 g	plastic	153,65 €
6821.3	1 kg	plastic	525,70 €
Original pack 6 x 1 kg			499,42/1 kg

Dowex® 50 W X 8 Cation exchanger

[11119-67-8]
⚠ **Warning** H319

Dowex® 50 W X 8

50-100 mesh, H^+-form

Type analysis:

Appearance. ..... beige to green beige beads
Water capacity. ..... 50-56 %
Capacity (eq/l). ..... ≥1,7
Counter ion. ..... H^+
Particle size (mesh):
>35. ..... ≤15 %
<80. ..... ≤20 %
Matrix: Polystyrene - DVB; Active group: sulphonate

0344.2	50 g	plastic	53,65 €
0344.1	250 g	plastic	185,90 €
0344.3	1 kg	plastic	654,70 €
Original pack 6 x 1 kg			621,97/1 kg

For further information, please see page 1750

Dowex® 50 W X 8

100-200 mesh, H^+-form

Type analysis:

Appearance. ..... beige to light brown beads
Water capacity. ..... 50-58 %
Capacity (eq/l). ..... ≥1,7
Counter ion. ..... H^+
Particle size (mesh):
>60. ..... ≤15 %
<170. ..... ≤15 %
Matrix: Polystyrene - DVB; Active group: sulphonate

0345.2	50 g	plastic	55,80 €
0345.1	100 g	plastic	103,75 €
0345.3	250 g	plastic	196,65 €
0345.4	1 kg	plastic	714,90 €
Original pack 6 x 1 kg			679,16/1 kg

For further information, please see page 1750

Dowex® 50 W X 8

200-400 mesh, H^+-form

Type analysis:

Appearance. ..... beige to light brown beads
Water capacity. ..... 50-58 %
Capacity (eq/l). ..... ≥1,7
Counter ion. ..... H^+
Particle size (mesh):
>100. ..... ≤15 %
<325. ..... ≤15 %
Matrix: Polystyrene - DVB; Active group: sulphonate

0346.2	50 g	plastic	53,65 €
0346.1	100 g	plastic	92,35 €
0346.3	250 g	plastic	185,90 €
0346.4	1 kg	plastic	654,70 €
Original pack 6 x 1 kg			621,97/1 kg

For further information, please see page 1750

DPA

▶ Diphenylamine see p. 1952

DpC
▶ *N*-Phenylanthranilic acid see p. 2206

DPC
▶ Diphenyl carbonate see p. 1953

DPGME
▶ Dipropylene glycol monomethyl ether see p. 1954

DPN
▶ NAD see p. 2151

$DPNH_2$-Na_2
▶ NADH disodium salt see p. 2151

Dragendorff-Munier spray solution

Dragendorff-Munier spray solution
for TLC

Ready-to-use spray solution for detection of nitrogen compounds and alkaloids. 1 % basic Bismuth nitrate, 16,5 % tartaric acid, 20 % potassium iodide dissolved in water.
WGK 1

⚠ **Warning** H319

Type analysis:
TLC-application. ..... complies

CP33.1	100 ml	glass	38,50 €

DRBC Agar
▶ Dichlorane Bengal Red Agar (with chloroamphenicol) see p. 1934

DRCM
▶ Differential Reinforced Clostridial Medium see p. 1940

Dried Solvents ROTIDRY®Sept

Art. No.	Description	Page
5175	Acetonitrile	1763
5176	Dichloromethane	1935
5177	Diethyl ether	1939
5179	Dimethyl sulphoxide (DMSO)	1950
5180	n-Hexane	2042
5181	Methanol	2132
5182	Tetrahydrofuran	2400
5191	Toluene	2412

Dried Solvents ROTIDRY®

Art. No.	Description	Page
4424	Acetic acid ethyl ester	1759
AE00	Acetonitrile	1763
AE03	Dichloromethane	1935
AE04	Diethyl ether	1939
AE02	Dimethyl sulphoxide (DMSO)	1950
4429	1,4-Dioxane	1952
AE05	n-Hexane	2042
AE01	Methanol	2132
AE07	Tetrahydrofuran	2401
AE06	Toluene	2412
4423	Trichloromethane/Chloroform	2415

Dry cleaning gasoline
▶ Petroleum benzine 30-50 see p. 2201
▶ Petroleum benzine 30-75 see p. 2201
▶ Petroleum benzine 40-60 see p. 2201
▶ Petroleum benzine 40-65 see p. 2201
▶ Petroleum benzine 40-80 see p. 2201
▶ Petroleum benzine 50-70 see p. 2201
▶ Petroleum benzine 60-70 see p. 2202
▶ Petroleum benzine 60-95 see p. 2202
▶ Petroleum benzine 63-80 see p. 2202
▶ Petroleum benzine 80-110 see p. 2202
▶ Petroleum benzine 100-140 see p. 2202
▶ Petroleum benzine 135-180 see p. 2202
▶ Petroleum benzine 145-200 see p. 2202
▶ Petroleum benzine 180-220 see p. 2202
▶ Petroleum benzine 190-245 see p. 2203
▶ Petroleum benzine 235-265 see p. 2203

Drying Agents

Art. No.	Description	Page
5280	Aluminium granulate	1783
5285	Aluminium powder	1783
2729	Calcium	1868
CN93	Calcium chloride	1869
CN92	Calcium chloride	1869
A119	Calcium chloride	1869
CN88	Calcium oxide	1872
P023	Copper(II) sulphate	1910
N077	Desiccant sachet Silica gel orange	1927
N078	Desiccant sachet Silica gel orange	1927
N079	Desiccant sachet Silica gel orange	1927
AE61	Magnesium filings	2110
CP20	Magnesium powder	2110
4468	Magnesium ribbon	2110
8280	Magnesium oxide	2113
0261	Magnesium sulphate hydrate	2113
N893	Molecular sieve 3 Å	2145
8487	Molecular sieve 3 Å	2145
P729	Molecular sieve 3 Å	2145
8471	Molecular sieve 4 Å	2145
8475	Molecular sieve 5 Å	2146
8483	Molecular sieve 10 Å	2146
9076	Phosphorus pentoxide	2211
P743	Potassium carbonate	2223
6751	Potassium hydroxide	2229
2440	Silica gel blue	2321
CN70	Silica gel industry grade	2321
P077	Silica gel orange	2321
8109	Silica gel water resistant	2321
9376	Silica gel white	2321
T858	Silica gel white	2321
4469	Sodium	2330
6771	Sodium hydroxide	2340
8560	Sodium sulphate	2348

Drying agent water resistant
▶ Silica gel water resistant see p. 2321

Drying pearls blue
▶ Silica gel blue see p. 2321

Drying pearls orange
▶ Silica gel orange see p. 2321

Drying pearls water resistant
▶ Silica gel water resistant see p. 2321

Drying pearls white
▶ Silica gel white see p. 2321

Drying pearls WS
▶ Silica gel water resistant see p. 2321

DSC
▶ N,N'-Disuccinimidyl carbonate (DSC) see p. 1954

DTE
▶ 1,4-Dithioerythritol (DTE) see p. 1955

DTNB
▶ 5,5'-Dithio-bis-(2-nitrobenzoic acid) see p. 1955

DTPA
▶ Diethylene triamine pentaacetic acid see p. 1938

DTT
▶ 1,4-Dithiothreitol (DTT) see p. 1955

dTTP

dTTP
≥95 %, lyophilised

5'-Deoxythymidine-5'-triphosphate tri-sodium salt
$C_{10}H_{14}N_2O_{14}P_3Na_3 \cdot 3\ H_2O$
M 602,15 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[27821-54-1] • EC No. 248-679-4

K051.1	10 mg	plastic	23,55 €
K051.2	100 mg	plastic	150,40 €

For further information, please see page 1304

dTTP solution

dTTP solution
≥99 %, 100 mM solution

2'-Deoxythymidine-5'-triphosphate
$C_{10}H_{14}N_2O_{14}P_3$
M 479,14 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[3624-46-2] • EC No. 248-679-4

K036.1	25 µmol (250 µl)	plastic	34,30 €

For further information, please see page 1302

Dulbecco's balanced salt solution

▶ Roti®-CELL DPBS see p. 2267

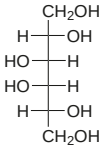
Dulbecco's Modified Eagle Medium

▶ Roti®-CELL DMEM Low Glucose see p. 2267

Dulbecco's Modified Eagle Medium + Ham's F12 medium (1:1)

▶ Roti®-CELL DMEM : F12 see p. 2267

Dulcitol



Dulcitol

≥99 %, for biochemistry
Galactit, Melampyrit, Dulcitol
$C_6H_{14}O_6$
M 182,17 g/mol
D 1,47 • bp 275-280 °C
mp 186-192 °C
[608-66-2] • EC No. 210-165-2
WGK 1
Warning H315-H319-H335

Type analysis:
Appearance. ..... white, fine powder
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤1,0 %
Melting point. ..... 186-192 °C

4944.2	10 g	plastic	18,20 €
4944.1	50 g	plastic	60,10 €

dUTP solution

dUTP solution

≥99 %, 100 mM solution
2'-Deoxyuridine-5'-triphosphate
$C_9H_{12}N_2O_{14}P_3$
M 465,12 g/mol
Storage temp.: -20 °C
Transport temp.: cooled

L539.1	25 µmol (250 µl)	plastic	34,30 €

For further information, please see page 1302

Dyes

▶ Indicators and Dyes see p. 2063

Dyes for vital staining

▶ Chapter histology see p. 1527

Dysprosium Standards

▶ Dysprosium ICP Standard Solution see p. 2362
▶ Dysprosium ICP Standard Solution see p. 2367

Dysprosium(III) oxide

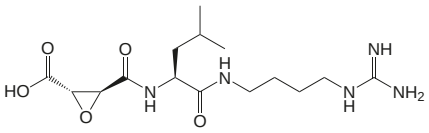
Dysprosium(III) oxide

ROTI®REMETIC 99,9 %
Didysprosium trioxide, Dysprosia
Dy_2O_3
M 373,00 g/mol
bp 3900 °C
mp 2310 °C
Solubility: insoluble (H_2O, 20 °C)
[1308-87-8] • EC No. 215-164-0
WGK 1

Type analysis:
Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7145.1	5 g	plastic	41,85 €
7145.2	25 g	plastic	75,15 €

E-64



E-64

≥99 %, for biochemistry
Inhibitor of cysteine proteases.
N-[N-(L-3-trans-Carboxyoxirane-2-carbonyl)-leucyl]-agmatine, N-(trans-Epoxysuccinyl)-L-leucine-4-guanidinobutylamide
$C_{15}H_{27}N_5O_5 \cdot 0,5\ H_2O$
M 357,41 g/mol
mp 182 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[66701-25-5]
WGK 3

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥99,0 %
Spec. rotation $[\alpha]_D^{20}$ (in 0,1 N HCl). ..... +21° to +26°

2935.1	5 mg	plastic	91,30 €
2935.2	25 mg	plastic	325,20 €

For further information, please see page 1325

Eagle's MEM

▶ Roti®-CELL Eagle's MEM / Hanks' see p. 2268
▶ Roti®-CELL Eagle's MEM-Alpha see p. 2268
▶ Roti®-CELL Eagle's MEM / Earle's see p. 2268

EC Blue 10

EC Blue 10

NISSUI for water analysis
For qualitative and quantitative detection of Coliforms and *E. coli* in particular in water.
Add 10 ml sample water.
WGK 1

Guarantee analysis:
Appearance of the powder. ..... light to dark yellow
Solubility in 10 ml water. ..... complies
pH value. 6,9-7,3
Sterility. ..... complies

7754.1	150 pieces	plastic	553,65 €

For further information, please see page 1414

EC Blue 100

EC Blue 100

NISSUI for water analysis
For qualitative and quantitative detection of Coliforms and *E. coli* in particular in water.
Add 100 ml sample water.
WGK 1

Guarantee analysis:
Appearance of the powder. ..... light to dark yellow
Solubility in 100 ml water. ..... complies
pH value. 6,9-7,3
Sterility. ..... complies

0209.1	80 pieces	plastic	639,65 €

For further information, please see page 1414

EC Blue 100P

EC Blue 100P

NISSUI for water analysis
For qualitative and quantitative analysis of coliforms and specifically *E. coli* in water.
Dissolve a single-dose sachet of analysis reagent in 100 ml of test water.
WGK 1

Guarantee analysis:
Appearance of the powder. ..... light to dark yellow
Solubility in 100 ml water. ..... complies
pH value. 6,9-7,3
Sterility. ..... complies

0202.1	100 pieces	plastic	446,15 €

For further information, please see page 1414

EC Blue Comparator

EC Blue Comparator

NISSUI for water analysis
1 bottle of *E. coli* positive control for EC Blue system, colour intensity "1 cfu".
Storage temp.: +4 °C • WGK 1

Guarantee analysis:
Appearance of solution. ..... clear, light green-blue
Absorption (610 nm). ..... complies
pH value. 7,2-7,6

0349.2	10 ml	plastic	143,95 €
0349.1	100 ml	plastic	166,10 €

For further information, please see page 1414

EC Broth

EC Broth
ISO 7251, for microbiology

For detection and enumeration of coliform bacteria in water.

Application: Use 37,4 g for 1 l broth.

E. coli Bouillon

Storage temp.: +20 °C • WGK 1

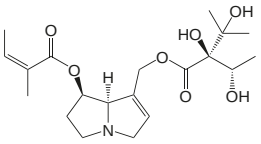
Guarantee analysis:

Tryptose. ..... 20 g/l
Lactose. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Dipotassium phosphate. ..... 4 g/l
Potassium phosphate. ..... 1,5 g/l
Bile salts No. 3. ..... 1,5 g/l
pH value. ..... 6,9 ±0,2

8310.1	500 g	plastic	110,65 €
Original pack 6 x 500 g			105,12/500 g

For further information, please see page 1444

Echimidine



Echimidine
ROTICHROM® HPLC

Reference substance for HPLC.
From *Echium plantagineum*.

7-O-Angelyl-9-O-echimidinylretronecine

$C_{20}H_{31}NO_7$ • M 397,46 g/mol

Storage temp.: -20 °C
Transport temp.: room temp.

[520-68-3]

UN No. 1544 • ADR 6.1 III • WGK 3

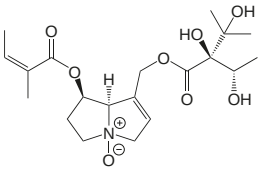
Danger H301+H311+H331-H373

Type analysis:

Purity (HPLC). ..... ≥95 %

7992.1	5 mg	glass	375,20 €

Echimidine N-oxide



Echimidine N-oxide
ROTICHROM® HPLC

Reference substance for HPLC.
From *Echium plantagineum*.

7-O-Angelyl-9-O-echimidinylretronecine N-oxide

$C_{20}H_{31}NO_8$

M 413,46 g/mol • mp 164-165 °C

Storage temp.: -20 °C
Transport temp.: room temp.

[41093-89-4]

UN No. 1544 • ADR 6.1 III • WGK 3

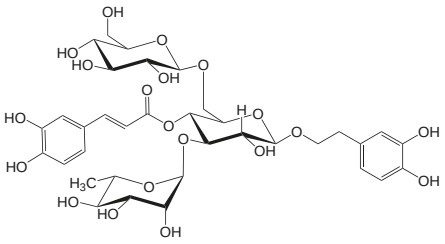
Danger H301+H311+H331-H373

Type analysis:

Purity (HPLC). ..... ≥97 %

8011.1	5 mg	glass	375,20 €

Echinacoside



$C_{35}H_{46}O_{20}$
M 786,70 g/mol
[82854-37-3]
WGK 3

Echinacoside
ROTI®STAR Primary Standard

Type analysis:

Assay (HPLC). ..... ≥90,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤17,0 %
Assay (qNMR). ..... ≥80,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE40.1	10 mg	glass	536,45 €

Echinacoside
ROTICHROM® Working Standard

Type analysis:

Assay (HPLC). ..... ≥80,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC40.1	25 mg	glass	342,95 €

Echinacoside
ROTICHROM® HPLC

Reference substance for HPLC.
From *Echinacea pallida*.

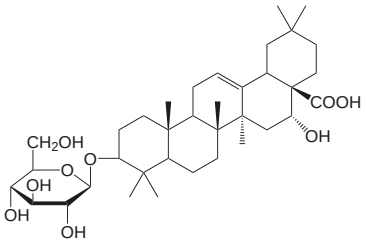
Storage temp.: +4 °C

Type analysis:

Purity (HPLC). ..... >98 %

1135.1	10 mg	glass	407,45 €

Echinocystic acid 3-glucoside



Echinocystic acid 3-glucoside
ROTICHROM® HPLC

Reference substance for HPLC.

$C_{36}H_{58}O_9$
M 634 g/mol

Storage temp.: +4 °C

[78285-90-2]

Type analysis:

Purity (HPLC). ..... ≥92 %

6995.2	10 mg	glass	267,70 €

E. coli Bouillon

▶ EC Broth see p. 1964

Ecosurf™ SA-9

Ecosurf™ SA-9
extra pure

Alternative to Triton X-100, non-ionic detergent.

Mixture of C_6-C_{16} ethoxylated and propoxylated alcohols

D 0,99 • bp >250 °C

WGK 1

Danger H302-H318

Type analysis:

Appearance. ..... colourless to yellow liquid
Cloud point (1%, H_2O). ..... 55-60 °C
pH value (1 % in H_2O). 5-8
Water. ..... ≤0,50 %

0982.1	100 ml	glass	16,70 €
0982.2	500 ml	glass	33,25 €

EDAC Hydrochloride

▶ 1-Ethyl-3-(3-dimethylaminopropyl)carbodiimide hydrochloride (EDC-HCl) see p. 1980

EDC-HCl

▶ 1-Ethyl-3-(3-dimethylaminopropyl)carbodiimide hydrochloride (EDC-HCl) see p. 1980

EDTA

▶ Ethylenediamine tetraacetic acid see p. 1980

EDTAs

Art. No.	Description	Page
8040	Ethylenediamine tetraacetic acid	1981
CN06	Ethylenediamine tetraacetic acid	1981
6506	Ethylenediamine tetraacetic acid calcium disodium salt dihydrate	1981
6499	Ethylenediamine tetraacetic acid copper disodium salt dihydrate	1981
3053	Ethylenediamine tetraacetic acid dipotassium salt dihydrate	1981
1408	Ethylenediamine tetraacetic acid dipotassium salt dihydrate	1981
8043	Ethylenediamine tetraacetic acid disodium salt dihydrate	1982
X986	Ethylenediamine tetraacetic acid disodium salt dihydrate	1982
6498	Ethylenediamine tetraacetic acid iron(III) sodium salt trihydrate	1982
6508	Ethylenediamine tetraacetic acid magnesium disodium salt dihydrate	1982
6510	Ethylenediamine tetraacetic acid manganese disodium salt dihydrate	1982
1410	Ethylenediamine tetraacetic acid tetrasodium salt dihydrate	1983
3619	Ethylenediamine tetraacetic acid tetrasodium salt hydrate	1983
CP87	Ethylenediamine tetraacetic acid tetrasodium salt tetrahydrate	1983
1409	Ethylenediamine tetraacetic acid tripotassium salt dihydrate	1983
6518	Ethylenediamine tetraacetic acid zinc disodium salt dihydrate	1983
1031	Roti®fair 0.5M EDTA	2274

EDTA calcium disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid calcium disodium salt dihydrate see p. 1981

EDTA copper disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid copper disodium salt dihydrate see p. 1981

EDTA Dipotassium salt dihydrate

▶ Ethylenediamine tetraacetic acid dipotassium salt dihydrate see p. 1981

EDTA disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid disodium salt dihydrate see p. 1982

EDTA disodium salt solution (0,01 N)

EDTA disodium salt solution

0,01 mol/l - 0,01 N volumetric standard solution

For metal titration.
Titration complex III solution
[6381-92-6] • EC No. 205-358-3
WGK 1

Type analysis:
Amount-of-substance conc. (20 °C)..... 0,01 mol/l ±0,5 %
Titer. 0,995-1,005

CN34.1	1 l	plastic	24,65 €
Original pack 6 x 1 l			23,42/1 l
CN34.2	5 l	ROTI®CUBE	75,15 €
Original pack 2 x 5 l			71,39/5 l
CN34.3	10 l	ROTI®CUBE	132,80 €

For further information, please see page 1681

EDTA disodium salt solution (0,05 N)

EDTA disodium salt solution

0,05 mol/l - 0,05 N volumetric standard solution

For metal titration.
Titration complex III solution
[6381-92-6] • EC No. 205-358-3 • WGK 1

Type analysis:
Amount-of-substance conc. (20 °C). ..... 0,05 mol/l ±0,4 %
Titer. 0,996-1,004

KK75.1	1 l	plastic	22,05 €
Original pack 6 x 1 l			20,95/1 l
KK75.2	5 l	plastic	67,65 €
Original pack 2 x 5 l			64,27/5 l
KK75.3	5 l	ROTI®CUBE	71,95 €
Original pack 2 x 5 l			68,35/5 l

EDTA disodium salt solution (0,1 N)

EDTA disodium salt solution

0,1 mol/l - 0,1 N volumetric standard solution

For metal titration.
Titration complex III solution
[6381-92-6] • EC No. 205-358-3
UN No. 1824 • ADR 8 III • WGK 1

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C). .. 0,1 mol/l ±0,2 %
Titer. 0,998-1,002

K714.1	1 l	glass	22,50 €
Original pack 6 x 1 l			21,38/1 l
K714.2	5 l	plastic	68,70 €
Original pack 2 x 5 l			65,27/5 l
K714.3	5 l	ROTI®CUBE	74,75 €
Original pack 2 x 5 l			71,01/5 l
K714.4	10 l	ROTI®CUBE	132,15 €

For further information, please see page 1681

EDTA disodium salt solution (0,1 N)

EDTA disodium salt solution

0,1 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.

Titration complex III solution
WGK 1

Type analysis:
Amount-of-substance conc. (20 °C). ..... 0,1 mol/l
Measurement uncertainty. ..... ±0,2 %

6764.1	1 l	plastic	32,15 €
Original pack 6 x 1 l			30,54/1 l

EDTA disodium salt solution (0,1 N)

EDTA disodium salt solution

ROTI®VOLUM 0,1 mol/l - 0,1 N

Ampoule for preparation of 1000 ml volumetric solution.
Titration complex III solution
$C_{10}H_{14}N_2Na_2O_8 \cdot 2\ H_2O$
M 372,24 g/mol
[6381-92-6] • EC No. 205-358-3
WGK 2

Warning H373

Type analysis:
Amount-of-substance conc. (20 °C). ..... 0,1 mol/l ±0,2 %

CN51.1	1 piece	plastic ampoule	28,50 €

For further information, please see page 1683

EDTA disodium salt solution (0,2 N)

EDTA disodium salt solution

0,2 mol/l - 0,2 N volumetric standard solution

Titration complex III solution
[6381-92-6] • EC No. 205-358-3
WGK 2

Type analysis:
Amount-of-substance conc. (20 °C). ..... 0,2 mol/l ±0,2 %
Titer. 0,998-1,002

8084.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l
8084.2	5 l	ROTI®CUBE	74,10 €
Original pack 2 x 5 l			70,40/5 l

EDTA disodium salt solution A (0,1 N)

EDTA disodium salt solution A

0,1 mol/l - 0,1 N volumetric standard solution

For determination of water hardness.
UN No. 1824 • ADR 8 III • WGK 1

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C). ..... 0,1 mol/l ±0,2 %
Titer. 0,998-1,002

T136.1	1 l	glass	30,65 €
Original pack 6 x 1 l			29,12/1 l

For further information, please see page 1681

EDTA disodium salt solution B (0,01783 N)

EDTA disodium salt solution B

0,01783 mol/l - 0,01783 N volumetric standard solution

For determination of water hardness.

WGK 1

Type analysis:

Amount-of-substance conc. (20 °C)..... 0,01783 mol/l ±0,4 %

Titer. 0,996-1,004

T137.1	1 l	glass	24,65 €
Original pack 6 x 1 l			23,42/1 l
T137.2	5 l	ROTI®CUBE	75,15 €
Original pack 2 x 5 l			71,39/5 l
T137.3	10 l	ROTI®CUBE	132,80 €

For further information, please see page 1681

EDTA iron(III) sodium salt trihydrate

▶ Ethylenediamine tetraacetic acid iron(III) sodium salt trihydrate see p. 1982

EDTA magnesium disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid magnesium disodium salt dihydrate see p. 1982

EDTA manganese disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid manganese disodium salt dihydrate see p. 1982

EDTA powder (pouch)

▶ Roti®fair 0.5M EDTA see p. 2274

EDTA solution in DPBS

▶ Roti®-CELL DPBS/EDTA see p. 2268

EDTA solution in PBS

▶ Roti®-CELL PBS/EDTA see p. 2270

EDTA tetrasodium salt dihydrate

▶ Ethylenediamine tetraacetic acid tetrasodium salt dihydrate see p. 1983

EDTA tripotassium salt dihydrate

▶ Ethylenediamine tetraacetic acid tripotassium salt dihydrate see p. 1983

EDTA zinc disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid zinc disodium salt dihydrate see p. 1983

EdU

▶ 5-Ethynyl-2'-deoxyuridine (EdU) see p. 1978

EdU Click-488

EdU Click-488

ROTI®kit for Imaging

For fast and simple detection of cell proliferation through fluorescence microscopy.

Marker: **6-FAM-Azid** ($\lambda_{Abs.}$ = 496 nm, $\lambda_{Em.}$= 516 nm)

For 100 Assays.

Storage temp.: see below, -20 °C/+4 °C

Transport temp.: cooled

UN No. 3077 • ADR 9 III • WGK 2

Warning H315-H319-H400-H410

Components:

EdU. ..... 5 mg
6-FAM-Azide (10 mM in DMSO)..... 130 µl
Buffer Additive. ..... 4 x 200 mg
DMSO. ..... 2 x 2 ml
Catalyst Solution. ..... 2 x 2 ml
Reaction Buffer. ..... 4 x 2 ml
Store at -20 °C (EdU, 6-FAM-Azide, Buffer Additive); +4 °C (DMSO, Catalyst Solution, Reaction Buffer)

7773.1	1 kit	cardboard	375,20 €

EdU Click-555

EdU Click-555

ROTI®kit for Imaging

For fast and simple detection of cell proliferation through fluorescence microscopy.

Marker: **5-TAMRA-PEG3-Azid** ($\lambda_{Abs.}$ = 546 nm, $\lambda_{Em.}$= 579 nm)

For 100 Assays.

Storage temp.: see below, -20 °C/+4 °C

Transport temp.: cooled

UN No. 3077 • ADR 9 III • WGK 2

Warning H315-H319-H400-H410

Components:

EdU. ..... 5 mg
5-TAMRA-PEG3-Azide (10 mM in DMSO)..... 130 µl
Buffer Additive. ..... 4 x 200 mg
DMSO. ..... 2 x 2 ml
Catalyst Solution. ..... 2 x 2 ml
Reaction Buffer. ..... 4 x 2 ml
Store at. -20 °C (EdU, 5-TAMRA-PEG3-Azide, Buffer Additive); +4 °C (DMSO, Catalyst Solution, Reaction Buffer)

7775.1	1 kit	cardboard	375,20 €

EdU Click-594

EdU Click-594

ROTI®kit for Imaging

For fast and simple detection of cell proliferation through fluorescence microscopy.

Marker: **5/6-Sulforhodamine-101-PEG3-Azid** ($\lambda_{Abs.}$ = 584 nm, $\lambda_{Em.}$= 603 nm)

For 100 Assays.

Storage temp.: see below, -20 °C/+4 °C

Transport temp.: cooled

UN No. 3077 • ADR 9 III • WGK 2

Warning H315-H319-H400-H410

Components:

EdU. ..... 5 mg
5/6-Sulforhodamine-101-PEG3-Azide (10 mM in DMSO)..... 130 µl
Buffer Additive. ..... 4 x 200 mg
DMSO. ..... 2 x 2 ml
Catalyst Solution. ..... 2 x 2 ml
Reaction Buffer. ..... 4 x 2 ml
Store at -20 °C (EdU, 5/6-Sulforhodamine-101-PEG3-Azide, Buffer Additive); +4 °C (DMSO, Catalyst Solution, Reaction Buffer)

7776.1	1 kit	cardboard	375,20 €

EdU Click-647

EdU Click-647

ROTI®kit for Imaging

For fast and simple detection of cell proliferation through fluorescence microscopy.

Marker: **Eterneon Red** ($\lambda_{Abs.}$ = 643 nm, $\lambda_{Em.}$= 662 nm)

For 100 Assays.

Storage temp.: see below, -20 °C/+4 °C

Transport temp.: cooled

UN No. 3077 • ADR 9 III • WGK 2

Warning H315-H319-H400-H410

Components:

EdU. ..... 5 mg
Eterneon Red (10 mM in DMSO). ..... 130 µl
Buffer Additive. ..... 4 x 200 mg
DMSO. ..... 2 x 2 ml
Catalyst Solution. ..... 2 x 2 ml
Reaction Buffer. ..... 4 x 2 ml
Store at -20 °C (EdU, Eterneon Red, Buffer Additive); +4 °C (DMSO, Catalyst Solution, Reaction Buffer)

7777.1	1 kit	cardboard	375,20 €

EdU Click FC-488

EdU Click FC-488

ROTI®kit for Flow Cytometry

Kit for detection of cell proliferation through Flow Cytometry.

Marker: **6-FAM-Azid** ($\lambda_{Abs.}$ = 496 nm, $\lambda_{Em.}$= 516 nm)

For 50 assays.

Storage temp.: +4 °C

Transport temp.: cooled

UN No. 3077 • ADR 9 III • WGK 2

H411-EUH208

Components:

EdU. ..... 10 mg
6-FAM-Azide (10 mM in DMSO). ..... 130 µl
DMSO. ..... 5 ml
Fixative Solution. ..... 5 ml
Saponin Reagent. ..... 50 ml
Catalyst Solution. ..... 2 ml
Buffer Additive. ..... 400 mg

7779.1	1 kit	cardboard	385,95 €

EdU Click FC-555

EdU Click FC-555

ROTI®kit for Flow Cytometry

Kit for detection of cell proliferation through Flow Cytometry.
Marker: **5-TAMRA-PEG3-Azid** ($\lambda_{Abs.}$ = 546 nm, $\lambda_{Em.}$= 579 nm)
For 50 assays.
Storage temp.: +4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

H411-EUH208

Components:

EdU. ..... 10 mg
5-TAMRA-PEG3-Azide (10 mM in DMSO). ..... 130 µl
DMSO. ..... 5 ml
Fixative Solution. ..... 5 ml
Saponin Reagent. ..... 50 ml
Catalyst Solution. ..... 2 ml
Buffer Additive. ..... 400 mg

7780.1	1 kit	cardboard	385,95 €

EdU Click FC-594

EdU Click FC-594

ROTI®kit for Flow Cytometry

Kit for detection of cell proliferation through Flow Cytometry.
Marker: **5/6-Sulforhodamine-101-PEG3-Azid** ($\lambda_{Abs.}$ = 584 nm, $\lambda_{Em.}$= 603 nm)
For 50 assays.
Storage temp.: +4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

H411-EUH208

Components:

EdU. ..... 10 mg
5/6-Sulforhodamine-101-PEG3-Azide (10 mM in DMSO). ..... 130 µl
DMSO. ..... 5 ml
Fixative Solution. ..... 5 ml
Saponin Reagent. ..... 50 ml
Catalyst Solution. ..... 2 ml
Buffer Additive. ..... 400 mg

7781.1	1 kit	cardboard	385,95 €

EdU Click FC-647

EdU Click FC-647

ROTI®kit for Flow Cytometry

Kit for detection of cell proliferation through Flow Cytometry.
Marker: **Eterneon Red** ($\lambda_{Abs.}$ = 643 nm, $\lambda_{Em.}$= 662 nm)
For 50 assays.
Storage temp.: +4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

H411-EUH208

Components:

EdU. ..... 10 mg
Eterneon Red (10 mM in DMSO). ..... 130 µl
DMSO. ..... 5 ml
Fixative Solution. ..... 5 ml
Saponin Reagent. ..... 50 ml
Catalyst Solution. ..... 2 ml
Buffer Additive. ..... 400 mg

7783.1	1 kit	cardboard	385,95 €

EdU Click HTS 2-488

EdU Click HTS 2-488

ROTI®kit for High Throughput Screening

For fast and specific detection of cell proliferation in High Throughput Screening.
Marker: **6-FAM-Azid** ($\lambda_{Abs.}$ = 496 nm, $\lambda_{Em.}$= 516 nm)
For 200 reactions or 2 x 96 well plates.
Storage temp.: see below, room temp./+4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

Warning H315-H319-H411-EUH031

Components:

20x EdU. ..... 2 ml
6-FAM-Azide (10 mM in DMSO). ..... 130 µl
Reaction Buffer. ..... 10 ml
Catalyst Solution. ..... 1 ml
Buffer Additive. ..... 200 mg
Rinse Buffer. ..... 6 ml
Store at +4 °C (20x EdU, 6-FAM-Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)

7786.1	1 kit	cardboard	218,15 €

EdU Click HTS 4-488

EdU Click HTS 4-488

ROTI®kit for High Throughput Screening

For fast and specific detection of cell proliferation in High Throughput Screening.
Marker: **6-FAM-Azid** ($\lambda_{Abs.}$ = 496 nm, $\lambda_{Em.}$= 516 nm)
For 400 reactions or 4 x 96 well plates.
Storage temp.: see below, room temp./+4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

Warning H315-H319-H411-EUH031

Components:

20x EdU. ..... 4 ml
6-FAM-Azide (10 mM in DMSO). ..... 2 x 130 µl
Reaction Buffer. ..... 40 ml
Catalyst Solution. ..... 1 ml
Buffer Additive. ..... 400 mg
Rinse Buffer. ..... 2 x 6 ml
Store at +4 °C (20x EdU, 6-FAM-Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)

7787.1	1 kit	cardboard	332,20 €

EdU Click HTS 20-488

EdU Click HTS 20-488

ROTI®kit for High Throughput Screening

For fast and specific detection of cell proliferation in High Throughput Screening.
Marker: **6-FAM-Azid** ($\lambda_{Abs.}$ = 496 nm, $\lambda_{Em.}$= 516 nm)
For 2000 reactions or 20 x 96 well plates.
Storage temp.: see below, room temp./+4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 3

Warning H315-H319-H411-EUH031

Components:

20x EdU. ..... 20 ml
6-FAM-Azide (10 mM in DMSO). ..... 9 x 130 µl
Reaction Buffer. ..... 4 x 50 ml
Catalyst Solution. ..... 5 ml
Buffer Additive. ..... 2 x 1 g
Rinse Buffer. ..... 58 ml
Store at +4 °C (20x EdU, 6-FAM-Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)

7788.1	1 kit	cardboard	1095,45 €

EdU Click HTS 2-555

EdU Click HTS 2-555

ROTI®kit for High Throughput Screening

For fast and specific detection of cell proliferation in High Throughput Screening.
Marker: **5-TAMRA-PEG3-Azid** ($\lambda_{Abs.}$ = 546 nm, $\lambda_{Em.}$= 579 nm)
For 200 reactions or 2 x 96 well plates.
Storage temp.: see below, room temp./+4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

Warning H315-H319-H411-EUH031

Components:

20x EdU. ..... 2 ml
5-TAMRA-PEG3-Azide (10 mM in DMSO). ..... 130 µl
Reaction Buffer. ..... 20 ml
Catalyst Solution. ..... 1 ml
Buffer Additive. ..... 200 mg
Rinse Buffer. ..... 6 ml
Store at +4 °C (20x EdU, 5-TAMRA-PEG3-Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)

7789.1	1 kit	cardboard	218,15 €

EdU Click HTS 4-555

EdU Click HTS 4-555

ROTI®kit for High Throughput Screening

For fast and specific detection of cell proliferation in High Throughput Screening.
Marker: **5-TAMRA-PEG3-Azid** ($\lambda_{Abs.}$ = 546 nm, $\lambda_{Em.}$= 579 nm)
For 400 reactions or 4 x 96 well plates.
Storage temp.: see below, room temp./+4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

Warning H315-H319-H411-EUH031

Components:

20x EdU. ..... 4 ml
5-TAMRA-PEG3-Azide (10 mM in DMSO). ..... 2 x 130 µl
Reaction Buffer. ..... 40 ml
Catalyst Solution. ..... 1 ml
Buffer Additive. ..... 400 mg
Rinse Buffer. ..... 2 x 6 ml
Store at +4 °C (20x EdU, 5-TAMRA-PEG3-Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)

7791.1	1 kit	cardboard	332,20 €

EdU Click HTS 20-555

EdU Click HTS 20-555

ROTI®kit for High Throughput Screening

For fast and specific detection of cell proliferation in High Throughput Screening.
Marker: **5-TAMRA-PEG3-Azid** ($\lambda_{Abs.}$ = 546 nm, $\lambda_{Em.}$ = 579 nm)

For 2000 reactions or 20 x 96 well plates.

Storage temp.: see below, room temp./+4 °C

Transport temp.: cooled

UN No. 3082 • ADR 9 III • WGK 2

Warning H315-H319-H411-EUH031

Components:

20x EdU. ..... 20 ml
5-TAMRA-PEG3-Azide (10 mM in DMSO). ..9 x 130 µl
Reaction Buffer. ..... 4 x 50 ml
Catalyst Solution. ..... 5 ml
Buffer Additive. ..... 2 x 1 g
Rinse Buffer. ..... 58 ml
Store at +4 °C (20x EdU, 5-TAMRA-PEG3-Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)

7792.1	1 kit	cardboard	1095,45 €

EdUTP

▶ 5-Ethynyl-dUTP see p. 1987

EGBEA

▶ 2-Butoxyethyl acetate see p. 1861

Egg Yolk Emulsion (20 %)

Egg Yolk Emulsion (20 %)

ISO 7932, sterile, stabilised, for microbiology

Media supplement for preparation of egg yolk agar for detection of microbial lecithinase activity.

100 ml Egg Yolk Emulsion are sufficient for 1 l agar medium.

Storage temp.: +4 °C
Transport temp.: room temp.

Guarantee analysis:

Colour. ..... yellow
Egg yolk. ..... 20 %
Sterility. ..... complies

0402.1	100 ml	glass	44,00 €

For further information, please see page 1459

Egg Yolk Tellurite Emulsion (20 %)

Egg Yolk Tellurite Emulsion (20 %)

ISO 6888, sterile, stabilised, for microbiology

Media supplement for preparation of egg yolk tellurite agar, for detection of *Staphylococcus aureus*.

100 ml Egg Yolk Tellurite Emulsion is sufficient for 2 l agar medium.

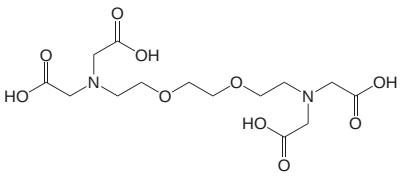
Storage temp.: +4 °C
Transport temp.: room temp.

Guarantee analysis:

Colour. ..... yellow
Egg yolk. ..... 20 %
Sterile saline solution. ..... 80 %
Potassium tellurite. ..... 0,21 %
Sterility. ..... complies

0339.1	100 ml	glass	47,85 €

EGTA



EGTA

≥99 %, p.a.

For molecular biology and biochemistry.

Ethylene glycol bis(β-aminoethyl)-ether) N,N,N',N' tetraacetic acid

$C_{14}H_{24}N_2O_{10}$
M 380,35 g/mol
mp ~240 °C
[67-42-5] • EC No. 200-651-2
WGK 1

Type analysis:

Appearance. ..... white, cryst. powder
Assay (titr.). ..... ≥99,0 %
pH value (saturated sol.). 2,6-3,0
Loss on drying. ..... ≤2,0 %
Iron (Fe). ..... ≤0,001 %
Heavy metals. ..... ≤0,001 %

3054.1	10 g	plastic	35,40 €
3054.2	50 g	plastic	139,65 €
3054.3	100 g	plastic	241,80 €

For further information, please see page 1325

Ehrlich's acid Hematoxylin solution

▶ Hematoxylin solution acid acc. to Ehrlich see p. 2035

Ehrlich's Reagent

▶ 4-(Dimethylamino)-benzaldehyde see p. 1946

Ehtyl-4-hydroxybenzoate

▶ 4-Hydroxybenzoic acid ethyl ester see p. 2056

n-Eicosanoic acid

▶ Arachidic acid see p. 1813

Elastica van Gieson staining kit

Elastica van Gieson staining kit

for microscopy

Staining kit for visualising connective tissue with elastic fibres, incl. instructions for use.

Storage temp.: +20 °C

UN No. 1219 • ADR 3 II • WGK 1

Danger H224-H302+H312+H332-H318-H336-H370-EUH001

Formulation:

Hematoxylin solution A acc. to Weigert (Art. No. X906). ..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907). ..... 500 ml
Van Gieson's Solution (Art.-No. 3925). ..... 500 ml
Resorcinol-Fuchsine-solution acc. to Weigert (Art. No. X877). ..... 500 ml

8275.1	1 kit	glass	133,85 €

For further information, please see page 1513

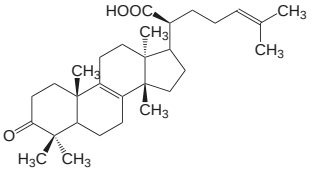
Elatericin B

▶ Cucurbitacin I see p. 1914

α-Elaterin

▶ Cucurbitacin E see p. 1914

β-Elemonic acid



β-Elemonic acid

ROTICHROM® HPLC

Reference substance for HPLC.
From *Boswellia serrata.*

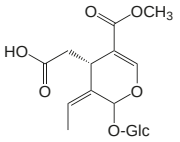
$C_{30}H_{46}O_3$
M 454,70 g/mol
mp 216-220 °C
Storage temp.: +4 °C
[28282-25-9]
WGK 1

Type analysis:

Purity (HPLC). ..... ≥98 %

6491.1	10 mg	glass	504,20 €

Elenolic acid glucoside

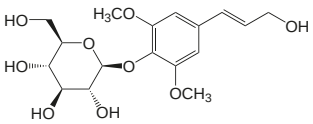


Elenolic acid glucoside
ROTICHROM® HPLC
Reference substance for HPLC.
From *Olea europaea.*
Oleoside-11-methylester
$C_{17}H_{24}O_{11}$ • M 404,38 g/mol
Storage temp.: +4 °C
[60539-23-3]

Type analysis:
Purity (HPLC).....>98 %

1136.1	20 mg	glass	321,45 €

Eleutheroside B



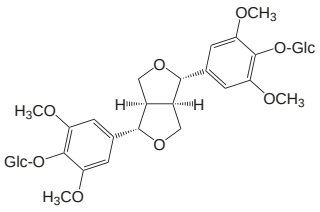
Eleutheroside B
ROTICHROM® HPLC
Reference substance for HPLC.
From *Syringa vulgaris.*
Syringin, Syringoside
$C_{17}H_{24}O_9$ • M 372,36 g/mol
Storage temp.: +4 °C
[118-34-3]

Warning H302

Type analysis:
Purity (HPLC).....>99 %

1137.1	5 mg	glass	256,95 €

Eleutheroside E

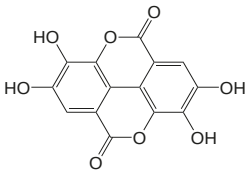


Eleutheroside E
ROTICHROM® HPLC
Reference substance for HPLC.
From *Eleutherococcus.*
Syringaresinol-4',4'-O-bis-β-D-glucoside
$C_{34}H_{46}O_{18}$ • M 742,71 g/mol
Storage temp.: +4 °C
[39432-56-9] • WGK 1

Type analysis:
Purity (HPLC).....>96 %

1138.1	5 mg	glass	256,95 €

Ellagic acid



Ellagic acid
≥97 %, for biochemistry
$C_{14}H_6O_8$
M 302,20 g/mol
mp >350 °C
[476-66-4] • EC No. 207-508-3

Warning H315-H319-H335

Type analysis:
Assay. ..... ≥97 %
Water..... ≤12 %

7263.1	5 g	glass	85,90 €

Ellman's reagent

▶ 5,5'-Dithio-bis-(2-nitrobenzoic acid)
see p. 1955

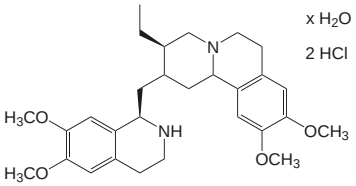
Embedding- / Inclusion Media

Art. No.	Description	Page
9180	Alginic acid sodium salt	1780
8016	Canada balsam	1874
7356	Euparal	1987
A145	Euparal essence	1987
4582	Gelatine	1462
3783	Glycerol	1462
8619	Glycidether 100	1509
9279	Granopent® "P"	1507
6474	Kaiser's glycerol gelatine phenol-free	1531
4233	Methacrylic acid methyl ester	2130
0713	Mowiol®4-88	2148
6478	OCT Embedding Matrix	2171
CN48	Paraffin 50-52 °C	2191
CN49	Paraffin 52-54 °C	2191
X880	Paraplast®	2191
X881	Paraplast PLUS®	2191
X882	Paraplast X-TRA®	2192
6471	Phytohistol® plus	2212
0152	Polyethylene glycol 1500	2217
6638	Roti®-Histokitt	2284
T160	Roti®-Histokitt II	2285
HP68	Roti®-Mount	2290
2848	Roti®-Mount Aqua	2290
HP19	Roti®-Mount FluorCare	2290
HP20	Roti®-Mount FluorCare DAPI	2290
HP21	Roti®-Mount FluorCare PI	2290
6642	Roti®-Plast	2294
6643	Roti®-Plast with DMSO	2294
T200	Solidofix®-Cryo spray	2352

EMEM cell culture medium

▶ Roti®-CELL Eagle's MEM / Hanks'
see p. 2268
▶ Roti®-CELL Eagle's MEM-Alpha
see p. 2268
▶ Roti®-CELL Eagle's MEM / Earle's
see p. 2268

Emetine dihydrochloride



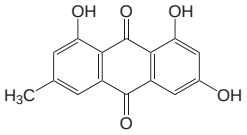
Emetine dihydrochloride
≥99 %, for biochemistry
$C_{29}H_{40}N_2O_4 \cdot 2\ HCl \cdot x\ H_2O$
M 553,58 + x H_2O g/mol
mp 240-250 °C
Storage temp.: +4 °C
[316-42-7] • EC No. 206-259-8
UN No. 1544 • ADR 6.1 I • WGK 3

Danger H300-H315-H319-H335

Type analysis:
Appearance. .....light beige powder
Assay (acidim., dry substance). .....≥99 %
Water (KF). .....≤19,0 %

4116.1	1 g	glass	163,95 €

Emodin



$C_{15}H_{10}O_5$
M 270,23 g/mol
mp ~255 °C (dec.)
Storage temp.: +4 °C
[518-82-1] • EC No. 208-258-8
WGK 1

Warning H315-H319-H335

Emodin
ROTICHROM® HPLC
Reference substance for HPLC.

Type analysis:
Purity (HPLC).....≥99 %

7451.2	20 mg	glass	188,70 €

Emodin
ROTICHROM® ~CHR

7272.1	100 mg	glass	30,65 €
7272.2	500 mg	glass	107,00 €

Emodinrhamnoside

▶ Frangulin A see p. 2007

Empetrin

▶ Delphinidin 3-galactoside chloride
see p. 1925

Endo Agar (Base)

Endo Agar (Base)

for microbiology

For isolation of enteric gram-negative bacteria, especially coliforms, from water, dairy products and foods.

Application: Use 36 g for 1 l agar, add 5 ml basic fuchsin solution.

Storage temp.: +20 °C
WGK 1

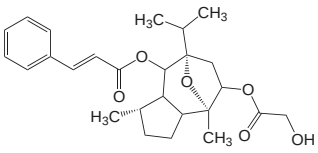
Formulation:

Peptone. ..... 10 g/l
Lactose. ..... 10 g/l
di-Potassium phosphate. ..... 3,5 g/l
Sodium sulphite. ..... 2,5 g/l
Agar. ..... 10 g/l
pH value. ..... 7,5 ±0,2

X920.1	500 g	plastic	82,25 €
Original pack 6 x 500 g			78,14/500 g

For further information, please see page 1445

Englerin A



Englerin A

ROTICHROM® HPLC

Reference substance for HPLC.
From *Phyllanthus engleri.*

$C_{26}H_{34}O_6$
M 442,56 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[1094250-15-3]
WGK 1

Type analysis:

Purity (HPLC)..... ≥96 %

6492.1	10 mg	glass	456,90 €

Enhancer solution

▶ DAB Metal Enhancer see p. 1921
▶ Signal Enhancer Western/ELISA see p. 2314

Enoxolone

▶ 18-β-Glycyrrhetinic acid see p. 2027

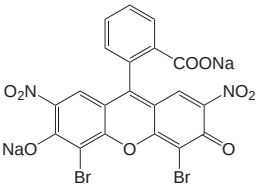
Enterobacter sakazakii Chromogenic Agar

▶ Cronobacter chromogenic Agar see p. 1913

Enzymes

Art. No.	Description	Page
6024	Alkaline phosphatase	1781
8717	β-Amylase	1805
5950	Bromelain	1851
6025	Catalase	1882
0238	Chymotrypsin	1899
6028	Glucose oxidase (GOD)	1316
7512	β-Glucosidase	1316
6052	Glutamate dehydrogenase (GDH, GLDH)	1316
9978	Hyaluronidase	1316
9980	Hyaluronidase	1317
6060	Lactate dehydrogenase (LDH)	2088
CN73	Lipoxygenase	2100
8259	Lysozyme	2109
6062	Malate dehydrogenase (MDH)	2116
8933	Papain	2190
KK38	Pepsin	2197
0230	Pepsin	2197
6055	Peroxidase	2200
7528	Proteinase K	2242
8178	Rennin	2256
7164	Ribonuclease	2260
7156	Ribonuclease A	2260
9350	Roti®-Pol Hot-TaqUltra	2294
9346	Roti®-Pol Hot-TaqHY	2294
9245	Roti®-Pol Hot-TaqS	2294
9248	Roti®-Pol Hot-TaqS Mix (2x)	2294
9256	Roti®-Pol Hot-TaqS Red-Mix (2x)	2294
9344	Roti®-Pol ProofRead	2295
9345	Roti®-Pol TaqHY	2295
9223	Roti®-Pol TaqS	2295
9239	Roti®-Pol TaqS Mix (2x)	2295
9241	Roti®-Pol TaqS Red-Mix (2x)	2295
9347	Roti®-Pol TaqUltra	2295
2193	Trypsin	2424
5455	Trypsin	2424
6065	Urease	2430
7537	Urease	2431
9324	Zymolyase® 20T	2454
9329	Zymolyase® 100T	2454

Eosin B (C.I. 45400)



Eosin B (C.I. 45400)

for microscopy

Eosin scarlet, Eosin bluish, 4',5'-Dibromo-2',7'-dinitrofluoroesceine disodium salt.

$C_{20}H_6Br_2N_2Na_2O_9$
M 624,09 g/mol
Solubility: 300 g/l (H_2O, 25 °C)
[548-24-3] • EC No. 208-943-1
WGK 2

Type analysis:

Appearance. ..... dark red powder
Solubility. ..... soluble in alcohol and water
Maximum absorption. ..... 510-530 nm

0306.1	10 g	glass	17,75 €
0306.2	25 g	glass	28,50 €
0306.3	50 g	glass	44,65 €

For further information, please see page 1529

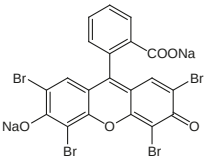
Eosin bluish

▶ Eosin B (C.I. 45400) see p. 1970

Eosin scarlet

▶ Eosin B (C.I. 45400) see p. 1970

Eosin Y (C.I. 45380)



Eosin Y (C.I. 45380)

for microscopy

Eosin yellowish
$C_{20}H_6Br_4Na_2O_5$
M 691,86 g/mol
mp 295-296 °C
Solubility: 300 g/l (H_2O, 20 °C)
[17372-87-1] • EC No. 241-409-6
WGK 1

Warning H319

Type analysis:

Maximum absorption. ..... 510-520 nm
Solubility. ..... in alcohol and water

7089.1	50 g	glass	33,90 €
7089.2	100 g	glass	57,55 €
7089.3	500 g	glass	182,65 €
Original pack 6 x 500 g			173,52/500 g

For further information, please see page 1530

Eosin Y solution 0,5 % in water

Eosin Y solution 0,5 % in water

for microscopy

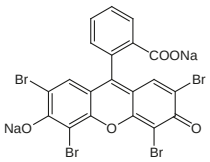
For visualising cell structures during standard staining methods (H&E staining).

[17372-87-1] • EC No. 241-409-6

X883.1	500 ml	glass	21,00 €
X883.2	1 l	glass	29,60 €
Original pack 6 x 1 l			28,12/1 l

For further information, please see page 1511

Eosin Y solution 1 % in methanol



Eosin Y solution 1 % in methanol

for microscopy

For visualising cell structures during standard staining methods (H&E staining).

UN No. 1230 • ADR 3 (6.1) II • WGK 1

Danger

H225-H301+H311+H331-H370

3139.1	500 ml	glass	26,80 €
3139.2	1 l	glass	40,35 €
Original pack 6 x 1 l			38,33/1 l

For further information, please see page 1511

Eosin Y solution 1 % in water

Eosin Y solution 1 % in water

for microscopy

For visualising cell structures during standard staining methods (H&E staining).

3137.1	500 ml	glass	23,15 €
3137.2	1 l	glass	32,80 €
Original pack 6 x 1 l			31,16/1 l

For further information, please see page 1511

Eosin methylene blue solution acc. to Wright

▶ Wright's eosin methylene blue solution see p. 2442
▶ May-Gruenwald's solution see p. 2124

Eosin methylene blue

▶ Wright's stain see p. 2442

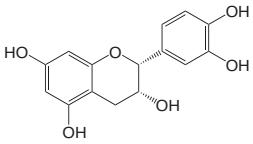
Eosin methylene blue acc. to Leishman

▶ Leishman stain see p. 2097

Eosine Yellowish

▶ Eosin Y (C.I. 45380) see p. 1970

(-)-Epicatechin



(-)-Epicatechol
$C_{15}H_{14}O_6$
M 290,27 g/mol
mp 240-245 °C
[490-46-0] • EC No. 207-710-1

Warning H315-H319-H335

(-)-Epicatechin

>90 %

Storage temp.: +4 °C

Type analysis:

Appearance..... light beige powder
Assay (HPLC)..... >90 %
$[\alpha]_D^{20}$ (c=1 in acetone/H_2O 1:1). ..... -59° to -53°

7293.1	500 mg	glass	115,60 €

(-)-Epicatechin

ROTI®STAR Primary Standard

Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:

Assay (HPLC)..... ≥93,0 %
Residual solvents (GC). ..... ≤3,0 %
Water (KF)..... ≤7,0 %
Assay (qNMR)..... ≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV. The certificate includes all results of analytical tests and validations.

NE41.1	10 mg	glass	536,45 €

(-)-Epicatechin

ROTICHROM® Working Standard

Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:

Assay (HPLC)..... ≥90,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC41.1	50 mg	glass	252,65 €

(-)-Epicatechin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Acacia catechu.*
Storage temp.: +4 °C

Type analysis:

Purity (HPLC). ..... >99 %

1139.1	20 mg	glass	213,95 €

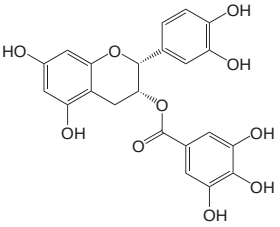
(-)-Epicatechin

ROTICHROM® TLC

Reference substance for thin layer chromatography
Storage temp.: +4 °C

5798.1	50 mg	glass	54,75 €

(-)-Epicatechin gallate



(-)-Epicatechin gallate

ROTICHROM® HPLC

Reference substance for HPLC.
$C_{22}H_{18}O_{10}$
M 442,36 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[1257-08-5]

Type analysis:

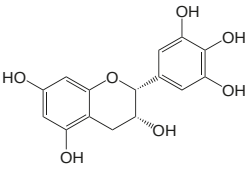
Purity (HPLC).....≥98 %

6358.1	10 mg	glass	251,05 €

(-)-Epicatechol

▶ (-)-Epicatechin see p. 1971

(-)-Epigallocatechin



(-)-Epigallocatechin

ROTICHROM® HPLC

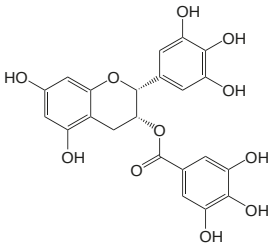
Reference substance for HPLC.
From *Camellia sinensis*.
$C_{15}H_{14}O_7$
M 306,26 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[970-74-1]
WGK 1

Type analysis:

Purity (HPLC).....≥99 %

6359.1	10 mg	glass	267,70 €

(-)-Epigallocatechin gallate

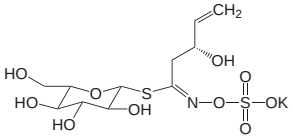


(-)-Epigallocatechin gallate
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{22}H_{18}O_{11}$
M 458,36 g/mol
Storage temp.: +4 °C
[989-51-5]

Type analysis:
Purity (HPLC)..... ≥98 %

6361.1	10 mg	glass	175,15 €

Epiprogoitrin



Epiprogoitrin
ROTICHROM® HPLC
Reference substance for HPLC.
From *Crambe abyssinica*
(2S)-2-Hydroxybut-3-enyl glucosinolate
$C_{11}H_{18}KNO_{10}S_2$
M 427,48 g/mol
Storage temp.: +4 °C
[19237-18-4]
WGK 1

Type analysis:
Purity (HPLC)..... ≥97 %

2273.1	10 mg	glass	278,45 €

Epon 812
▶ Glycidether 100 see p. 2025

1,8-Epoxy-p-menthane
▶ Eucalyptol see p. 1987

N-(trans-epoxysuccinyl)-L-leucine-4-guanidino-butylamide
▶ E-64 see p. 1963

Epson salt
▶ Magnesium sulphate heptahydrate see p. 2113

Erbia
▶ Erbium(III) oxide see p. 1972

Erbium Standards
▶ Erbium ICP Standard Solution see p. 2362
▶ Erbium ICP Standard Solution see p. 2367

Erbium(III) oxide

Erbium(III) oxide
ROTI®REMETIC 99,9 %
Erbium trioxide, Erbia
Er_2O_3
M 382,52 g/mol
bp 3920 °C
mp 2344 °C
Solubility: insoluble (H_2O, 20 °C)
[12061-16-4] • EC No. 235-045-7
WGK 1

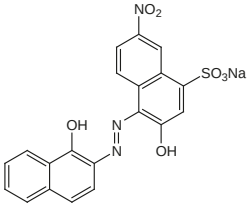
Type analysis:
Assay (TREO*)..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7160.1	5 g	plastic	38,60 €
7160.2	25 g	plastic	88,70 €

Erbium trioxide
▶ Erbium(III) oxide see p. 1972

Ericolin
▶ p-Arbutin see p. 1814

Eriochrome® black T (C.I. 14645)

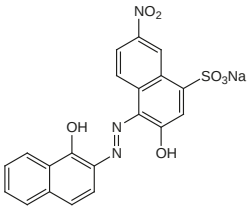


Eriochrome® black T (C.I. 14645)
p.a.
Metal indicator
Mordant black 11
$C_{20}H_{12}N_3NaO_7S$
M 461,38 g/mol
Solubility: 50 mg/l (H_2O, 20 °C)
[1787-61-7] • EC No. 217-250-3
UN No. 3077 • ADR 9 III • WGK 2
Warning H319-H411

Type analysis:
Appearance..... black powder
Loss on drying..... ≤7 %
Suitability as indicator for complexometry. .... complies

0112.1	25 g	glass	16,05 €
0112.2	50 g	glass	27,85 €
0112.3	100 g	glass	50,45 €

Eriochrome® black T (C.I. 14645), trituration

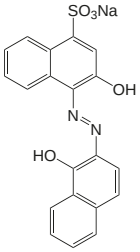


Eriochrome® black T (C.I. 14645), trituration
Indicator 1 % in NaCl, trituration
2-Hydroxy-1-(1-hydroxynaphthyl-2-azo)-6-nitronaphthalene 4-sulphonic acid monosodium salt
$C_{20}H_{12}N_3NaO_7S$
M 461,38 g/mol
Solubility: 50 mg/l (H_2O, 20 °C)
[1787-61-7] • EC No. 217-250-3
WGK 1

Type analysis:
Suitability as indicator. .....complies
Trituration of Eriochrome black T with NaCl p.a., 1:100 simply add to the solution that has to be titrated; 1-4 mg dye in 100 ml.

K860.2	25 g	plastic	21,00 €
K860.1	50 g	plastic	30,00 €
K860.3	100 g	plastic	53,65 €

Eriochrome® blue black B (C.I. 14640)

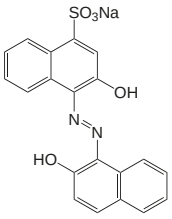


Eriochrome® blue black B (C.I. 14640)
for complexometry
Metal indicator
Mordant black 3
$C_{20}H_{14}N_2O_5S$
M 416,39 g/mol
[3564-14-5] • EC No. 222-639-6
WGK 2
Warning H319

Type analysis:
Appearance. ..... brown to black powder
Appearance of solution (0,1 % in H_2O)..... opaque, dark purple
Absorption max. 528 nm (H_2O + 1 ml 1 M HCl)..... complies

7661.1	5 g	glass	14,95 €
7661.2	25 g	glass	25,70 €
7661.3	100 g	glass	50,45 €

Eriochrome® blue black R (C.I. 15705)



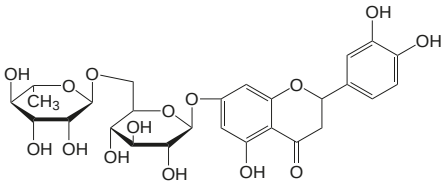
Eriochrome® blue black R (C.I. 15705)

for complexometry
Metal indicator for Al, Fe, Zr, Cu, Ca
Mordant black 17
$C_{20}H_{13}N_2O_5SNa$
M 416,39 g/mol
Solubility: 20 g/l (H_2O, 20 °C)
[2538-85-4] • EC No. 219-810-2
WGK 3

Type analysis:
Appearance. ..... dark brown to black powder
Solubility (water/ethanol). ..... complies

7663.1	5 g	glass	14,95 €
7663.2	25 g	glass	25,70 €
7663.3	100 g	glass	50,45 €

Eriocitrin



Eriodictyol-7-rutinoside
Storage temp.: +4 °C
[13463-28-0] • EC No. 236-668-7
WGK 3

Eriocitrin

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤10,0 %
Assay (qNMR). ..... ≥85,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE42.1	10 mg	glass	536,45 €

Eriocitrin

ROTICHROM® Working Standard

Type analysis:
Assay (HPLC). ..... ≥85,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC42.1	25 mg	glass	267,70 €

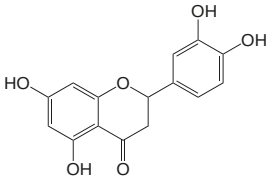
Eriocitrin

ROTICHROM® HPLC
Reference substance for HPLC.
$C_{27}H_{32}O_{15}$
M 596,54 g/mol

Type analysis:
Purity (HPLC). ..... ≥99 %

9327.2	10 mg	glass	289,20 €

Eriodictyol



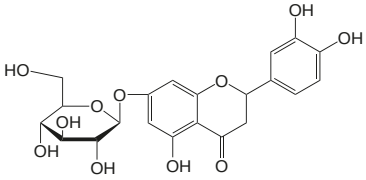
Eriodictyol

ROTICHROM® HPLC
Reference substance for HPLC.
3',4',5,7-Tetrahydroxyflavanone
$C_{15}H_{12}O_6$
M 288,27 g/mol
mp 262-267 °C
Storage temp.: +4 °C
[552-58-9] • EC No. 209-016-4

Type analysis:
Purity (HPLC). ..... ≥99 %

6990.1	10 mg	glass	192,45 €

Eriodictyol-7-glucoside



Eriodictyol-7-glucoside

ROTICHROM® HPLC
Reference substance for HPLC.
$C_{21}H_{22}O_{11}$
M 450,41 g/mol
Storage temp.: +4 °C
[38965-51-4] • EC No. 254-225-6

Type analysis:
Purity (HPLC). ..... ≥99 %

6521.1	10 mg	glass	284,90 €

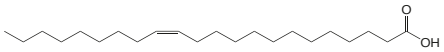
Eriodictyol-7-neohesperidoside

▶ Neoeriocitrin see p. 2155

Eriodictyol-7-rutinoside

▶ Eriocitrin see p. 1973

Erucic acid



Erucic acid

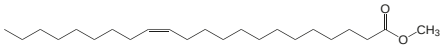
≥99 %
cis-13-Docosenoic acid
$C_{22}H_{42}O_2$
M 338,55 g/mol
D 0,86 • bp 358 °C (533 mbar)
mp 31-33 °C • flp 113 °C
Storage temp.: +4 °C
[112-86-7] • EC No. 204-011-3
WGK 1

Warning H315-H319-H335

Type analysis:
Appearance. ..... white powder
Assay (GC). ..... ≥99,0 %
Solubility (5 % in $CHCl_3$). ..... clear, colourless

7065.2	250 mg	glass	80,55 €
7065.1	1 g	glass	251,05 €

Erucic acid methyl ester



Erucic acid methyl ester

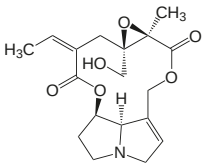
≥90 %
cis-13-Docosenoic acid methyl ester
$C_{23}H_{44}O_2$
M 352,61 g/mol
D 0,87
Storage temp.: +4 °C
[1120-34-9] • EC No. 214-305-3
UN No. 3272 • ADR 3 III • WGK 1

Warning H226

Type analysis:
Assay (GC). ..... ≥90 %
Specific density (20 °C). 0,8710-0,8750
Refractive index n_D^{20}. 1,4550-1,4580

9431.1	10 ml	glass	68,70 €
9431.2	50 ml	glass	256,95 €

(Z)-Erucifoline

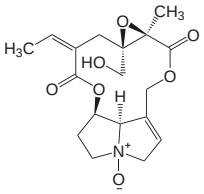


(Z)-Erucifoline
ROTICHROM® HPLC
Reference substance for HPLC.
From *Senecio jacobea*
$C_{18}H_{23}NO_6$
M 349,38 g/mol
mp 185-190 °C
Storage temp.: +4 °C
[40158-95-0]
UN No. 1544 • ADR 6.1 III • WGK 2
Danger H301-H373

Type analysis:
Purity (HPLC).....≥97,0 %

1657.1	5 mg	glass	321,45 €

(Z)-Erucifoline N-oxide

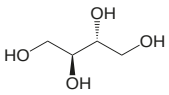


(Z)-Erucifoline N-oxide
ROTICHROM® HPLC
Reference substance for HPLC.
From *Senecio jacobea*
$C_{18}H_{23}NO_7$ • M 356,38 g/mol
Storage temp.: +4 °C • WGK 3

Type analysis:
Purity (HPLC).....≥97,0 %

1664.1	5 mg	glass	338,65 €

meso-Erythritol

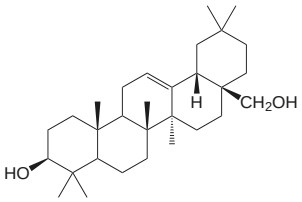


meso-Erythritol
for biochemistry
meso-Erythritol
$C_4H_{10}O_4$ • M 122,12 g/mol
bp 330 °C • mp 117-121 °C
[149-32-6] • EC No. 205-737-3

Type analysis:
Appearance.....white to off-white powder
Solution (10 % in H_2O).....clear, colourless
Water (KF).....≤2,0 %
Melting point.....117-121 °C
Ash content.....≤0,1 %

6241.1	25 g	plastic	109,55 €

Erythrodiol

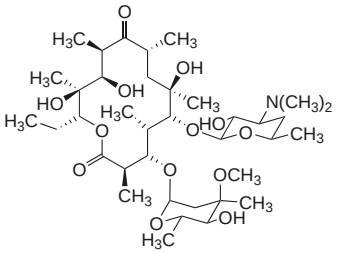


Erythrodiol
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{30}H_{50}O_2$
M 442,68 g/mol
mp 229-237 °C
Storage temp.: +4 °C
[545-48-2] • EC No. 208-890-4

Type analysis:
Purity (HPLC).....≥98 %

7455.1	10 mg	plastic	213,95 €

Erythromycin



Erythromycin
≥93 %, for biochemistry
Macrolide antibiotic
$C_{37}H_{67}NO_{13}$
M 733,95 g/mol
[114-07-8] • EC No. 204-040-1
WGK 1

Type analysis:
Assay (HPLC).....≥93,0 %
Solution (5 % in ethanol 96 %).....colourless to light yellowish
Water (KF).....≤6,5 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in ethanol, after 30 min).....-78° to -71°
Sulphated ash.....≤0,2 %
Thiocyanate (SCN).....≤0,3 %

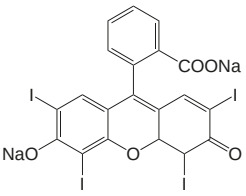
4166.1	5 g	glass	30,00 €
4166.2	10 g	glass	48,95 €

For further information, please see page 1502

Erythrosine Bluish

▶ Erythrosine B (C.I. 45430) see p. 1974

Erythrosine B (C.I. 45430)



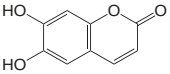
Erythrosine B (C.I. 45430)
for microscopy
Tetraiodine fluorescein disodium salt, Iodine eosin, Erythrosine bluish, Acid red 51
$C_{20}H_6I_4Na_2O_5$
M 879,84 g/mol
Solubility: 100 g/l (H_2O, 20 °C)
[16423-68-0] • EC No. 240-474-8
WGK 2
Warning H302

Type analysis:
Maximum absorption.....520-527 nm
Specific extinction E 1 %/1 cm.....>850
Loss on drying (110 °C).....≤10 %

0331.1	25 g	plastic	46,80 €

For further information, please see page 1530

Esculetin



Esculetin
≥98 %, for biochemistry
6,7-Dihydroxycoumarin
$C_9H_6O_4$
M 178,14 g/mol
mp ~269 °C (dec.)
[305-01-1] • EC No. 206-161-5
WGK 1
Warning H315-H319-H335

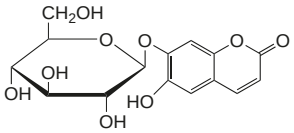
Type analysis:
Assay (NMR).....≥98,0 %
Water (KF).....≤1,0 %

8690.1	1 g	glass	36,45 €

Esculetin dimethyl ether

▶ Scoparone see p. 2308

Esculin sesquihydrate



Esculin sesquihydrate

≥97,5 %, DAB, for biochemistry
6,7-Dihydroxycoumarin-6-glycoside
$C_{15}H_{16}O_9 \cdot 1{,}5\ H_2O$
M 367,31 g/mol
mp 193-210 °C
[66778-17-4] • EC No. 208-517-5
WGK 2

Guarantee analysis:

Appearance. ..... white powder
Assay (HPLC). ..... ≥97,5 %
Identity. ..... complies
pH value (1 % in H_2O). 3,8-4,5
Water (KF). ..... 6,5-8,0 %
Sulphated ash. ..... ≤0,1 %
Heavy metals (as Pb). ..... ≤0,002 %
Specific rotation $[\alpha]_D^{20}$
(1,5 % dioxane/H_2O 1:1, dry substance). ..... -87° to -84°
Related substances. ..... complies

8704.1	5 g	glass	21,40 €
8704.2	25 g	plastic	88,05 €
8704.3	50 g	plastic	152,55 €
8704.4	100 g	plastic	263,40 €

Essential amino acids

▶ Roti®-CELL MEM-AA solution see p. 2270

Essential Oils

Art. No.	Description	Page
4501	Hypericon oil, extra pure	2061
9404	Hypericon oil, pure	2061
6609	Laurel oil, essential, natural	2092
3314	Laurel oil, artificial	2093
3364	Musk oil, artificial	2150
6587	Oil of angelica roots, hungarian, natural	2173
7036	Oil of anise, natural	2173
3278	Oil of anise, artificial	2173
6507	Oil of balm, natural	2173
7039	Oil of basil, natural pure	2173
6501	Oil of bergamot, natural	2173
3282	Oil of bergamot, artificial	2173
6105	Oil of cajeput, natural	2173
3357	Oil of camphor, light	2174
7050	Oil of caraway, natural	2174
3307	Oil of caraway, artificial	2174
6593	Oil of cassia, natural, chinese	2174
6594	Oil of cedar leaf, pure	2174
3291	Oil of cedar leaf, artificial	2174
5308	Oil of cedar wood, for microscopy	1495
7040	Oil of celery	2174
4208	Oil of cembra pine, pure	2174
6504	Oil of chamomile, blue	2175
3354	Oil of chamomile, roman, natural	2175
3305	Oil of chamomile, artificial	2175
A432	Oil of cinnamon, natural	2175
6512	Oil of cinnamon, artificial	2175
6502	Oil of citronella, natural	2175
3292	Oil of citronella, artificial	2175
3355	Oil of clary-sage, natural	2175
8662	Oil of cloves, ≥80 %, natural, rect.	2175
7052	Oil of coriander, natural	2176
6608	Oil of cubeb, natural	2176
6596	Oil of cypress, french, natural	2176
6597	Oil of dill herb, natural pure	2176
3352	Oil of dill seed, extra pure	2176
6602	Oil of estragon, pure	2176
3297	Oil of eucalyptus, nature identical	2176
3299	Oil of fennel, artificial	2176
3301	Oil of fir needles, artificial	2177
7075	Oil of gardensage, natural, Dalmat.	2177
3540	Oil of garlic, natural	2177
7054	Oil of geranium, natural	2177
6718	Oil of grapefruit, natural	2177
7059	Oil of juniper, pure	2177
7057	Oil of juniper wood, natural	2177
6603	Oil of lavandin, french	2177
3367	Oil of lavender, natural	2177
3797	Oil of lemon, italian	2178
5213	Oil of lemon, natural	2177
3346	Oil of lemon, artificial	2178
6625	Oil of lemon, low in terpenes	2178
6606	Oil of lemon-grass, natural pure	2178
6721	Oil of lime, natural	2178
6607	Oil of lovage, pure	2178
3796	Oil of mandarin, italian	2178
6730	Oil of mint, chinese, raw	2178
6731	Oil of mint, japanese, natural	2178
6732	Oil of mint, rectified twice	2178
6610	Oil of niaouli, natural	2178
7064	Oil of nutmeg, volatile	2179
6509	Oil of orange, bitter, italian	2179
3803	Oil of orange, brazil	2179
6728	Oil of orange, floridian	2179
6611	Oil of orange, sweet, natural	2179
3323	Oil of orange flowers, artificial	2179
6612	Oil of origanum, natural	2179
6613	Oil of palmarosa, east indian	2179
7072	Oil of parsley, french	2179
6511	Oil of patchouli, artificial	2180
6616	Oil of pepper, natural	2180
9318	Oil of peppermint, pure	2180
7063	Oil of peppermint, pure	2180
3329	Oil of peppermint, artificial	2180
6614	Oil of petitgrain, south american	2180
4092	Oil of rose, artificial	2180
6514	Oil of rosemary, spanish	2180
3764	Oil of rosemary, morrocan	2181
3336	Oil of rosemary, artificial	2181
3275	Oil of rose-wood, nature identical	2181
6620	Oil of sandal-wood, west indian	2181
3341	Oil of sandal-wood, artificial	2181
7073	Oil of Scotch pine needles, natural	2181
3306	Oil of Scotch pine needles, artificial	2181
3295	Oil of silver fir, artificial	2181
6598	Oil of silver fir cones, natural	2181
3353	Oil of silver fir needles, natural	2181
7079	Oil of spike, natural pure	2182
7081	Oil of tansy, pure	2182
K032	Oil of tea tree, australian, natural	2182
K500	Oil of thyme, natural	2182
6513	Oil of thyme, naturla/nature identical	2182
6588	Oil of valerian, naturla pure	2183
3279	Oil of valerian, artificial	2183
6622	Oil of vetiver, natural	2183
7053	Oil of wintergreen, artificial	2183
6909	Oil of wormwood, natural	2183
6624	Oil of ylang-ylang, comoren, natural	2183
3343	Oil of ylang-ylang, artificial	2183

Estragole

▶ Methylchavicol see p. 2137

Ethanal

▶ Acetaldehyde see p. 1754

Ethanedial

▶ Glyoxal see p. 2028

1,2-Ethanediamine

▶ Ethylenediamine see p. 1980

1,2-Ethanediol

▶ Ethylene glycol see p. 1984

Ethanedioic acid

▶ Oxalic acid dihydrate see p. 2187

Ethanoic acid

▶ Acetic acid Ultra-quality see p. 1755
▶ Acetic acid Supra-quality see p. 1755
▶ Acetic acid 100 % see p. 1756
▶ Acetic acid 96 % see p. 1756
▶ Acetic acid 80 % see p. 1756
▶ Acetic acid 60 % see p. 1756
▶ Acetic acid 25 % see p. 1757
▶ Acetic acid 10 % see p. 1757
▶ Acetic acid D1 see p. 1757
▶ Acetic acid D4 see p. 1757
▶ Acetic acid (1 N) see p. 1757
▶ Acetic acid (2 N) see p. 1757

Ethanol absolut

Ethyl alcohol, EtOH
C_2H_6O
M 46,07 g/mol
D 0,79 • bp 78 °C
mp -114,5 °C • flp 13 °C
[64-17-5] • EC No. 200-578-6
UN No. 1170 • ADR 3 II • WGK 1

Danger H225-H319

Ethanol

ROTISOLV® HPLC Gradient Grade

Guarantee analysis:

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,1 %
Free acid. ..... ≤0,002 %
Free alkali. ..... ≤0,0005 %
Non volatile matter. ..... ≤0,0002 %
Transmission:
260 nm. ..... ≥98 %
240 nm. ..... ≥85 %
225 nm. ..... ≥60 %
Gradient test:
UV absorption of the greatest eluated peak
235 nm. ..... ≤5 mAU
254 nm. ..... ≤2 mAU
Filtered through 0,2 µm membrane and filled under protective gas.
Prices include german tax on alcohol.

P076.1	1 l	glass	95,60 €
Original pack 6 x 1 l			90,82/1 l
P076.2	2,5 l	glass	193,40 €
Original pack 4 x 2,5 l			183,73/2,5 l

For further information, please see page 1650

Ethanol

ROTIPURAN® ≥99,8 %, p.a.

Guarantee analysis:

Assay	≥99,8 %
Identity	complies
Water	≤0,2 %
Solubility	clear, colourless
Density (d 20 °C/20 °C)	0,790-0,793
Acetaldehyde and acetal	≤0,001 %
Acid or alkaline react. substances	≤0,003 %
Evaporation residue	≤0,0025 %
Benzene	≤0,0002 %
Methanol	≤0,01 %
Sum of other impurities	≤0,03 %
Aluminium (Al)	≤0,00005 %
Barium (Ba)	≤0,00001 %
Lead (Pb)	≤0,00001 %
Cadmium (Cd)	≤0,000005 %
Calcium (Ca)	≤0,00005 %
Chromium (Cr)	≤0,000002 %
Iron (Fe)	≤0,00001 %
Cobalt (Co)	≤0,000002 %
Copper (Cu)	≤0,000002 %
Manganese (Mn)	≤0,000002 %
Nickel (Ni)	≤0,000002 %
Zinc (Zn)	≤0,00001 %
Tin (Sn)	≤0,00001 %

Prices include german tax on alcohol.

9065.1	1 l	glass	83,75 €
Original pack 6 x 1 l			79,56/1 l
9065.3	1 l	plastic	82,70 €
Original pack 6 x 1 l			78,57/1 l
9065.2	2,5 l	glass	169,35 €
Original pack 4 x 2,5 l			160,88/2,5 l
9065.4	2,5 l	plastic	167,20 €
Original pack 4 x 2,5 l			158,84/2,5 l
9065.5	5 l	plastic	300,50 €
Original pack 2 x 5 l			285,48/5 l
9065.6	25 l	tinplate	1048,15 €

Ethanol denatured

ROTIPURAN® ≥99,8 %, p.a., denatured

Guarantee analysis:

Appearance	clear, colorless solution
Assay (EtOH, v/v)	≥99,8 %
Water	≤0,2 %
Aldehyde content (as acetaldehyde)	≤0,003 %
Acid content (as CH_3COOH)	≤0,001 %
Evaporation residue	≤0,003 %
Aluminium (Al)	≤0,00005 %
Boron (B)	≤0,00005 %
Barium (Ba)	≤0,00001 %
Calcium (Ca)	≤0,00005 %
Cadmium (Cd)	≤0,000005 %
Cobalt (Co)	≤0,000002 %
Chromium (Cr)	≤0,000002 %
Copper (Cu)	≤0,000002 %
Iron (Fe)	≤0,00001 %
Potassium (K)	≤0,0001 %
Magnesium (Mg)	≤0,0001 %
Manganese (Mn)	≤0,000002 %
Nickel (Ni)	≤0,000002 %
Lead (Pb)	≤0,00001 %
Tin (Sn)	≤0,00001 %
Zinc (Zn)	≤0,00001 %
Denaturing:	
Methyl ethyl ketone (MEK)	1 %
Isopropyl alcohol (IPA)	1 %
Denatonium benzoate	1 g/100 l

0911.1	1 l	plastic	22,05 €
Original pack 6 x 1 l			20,95/1 l
0911.2	2,5 l	glass	34,30 €
Original pack 4 x 2,5 l			32,59/2,5 l
0911.3	2,5 l	plastic	32,15 €
Original pack 4 x 2,5 l			30,54/2,5 l
0911.4	5 l	plastic	55,40 €
Original pack 2 x 5 l			52,63/5 l
0911.5	10 l	tinplate	94,10 €
0911.6	25 l	tinplate	188,15 €

Ethanol

≥99,5 %, Ph.Eur., extra pure

Guarantee analysis:

Assay (V/V)	≥99,5 %
Properties	complies
Identity	complies
Appearance	clear, colorless
Acid or alkaline react. substances	complies
Density (d 20 °C/20 °C)	0,790-0,793
Absorption:	
240 nm	≤0,4
250-260 nm	≤0,3
270-340 nm	≤0,1
Volatile impurities:	
Acetaldehyde and acetal	≤0,001 %
Benzene	≤0,0002 %
Methanol	≤0,01 %
Evaporation residue	≤0,0025 %
Sum of other impurities	≤0,03 %
Disregard limit	≤0,0009 %

Prices include german tax on alcohol.

5054.1	1 l	glass	74,75 €
Original pack 6 x 1 l			71,01/1 l
5054.3	1 l	plastic	73,65 €
Original pack 6 x 1 l			69,97/1 l
5054.2	2,5 l	glass	154,70 €
Original pack 4 x 2,5 l			146,97/2,5 l
5054.4	2,5 l	plastic	152,15 €
Original pack 4 x 2,5 l			144,54/2,5 l
5054.5	5 l	plastic	289,75 €
Original pack 2 x 5 l			275,26/5 l
5054.6	25 l	tinplate	998,70 €

Ethanol denatured

≥99,8 %

Universal alcoholic solvent for laboratory use and histology.

Type analysis:

Assay (EtOH, v/v)	≥99,8 %
Water	≤0,2 %
Appearance	clear, colourless liquid
Aldehyde content (as acetaldehyde)	≤0,003 %
Acid content (as CH_3COOH)	≤0,001 %
Sum of other impurities	≤0,03 %
Methanol	≤0,1 %
Evaporation residue	≤0,003 %
Denaturing:	
Methyl ethyl ketone (MEK)	1 %
Isopropyl alcohol (IPA)	1 %
Denatonium benzoate	1 g/100 l

K928.5	1 l	plastic	13,90 €
Original pack 6 x 1 l			13,21/1 l
K928.1	2,5 l	glass	29,60 €
Original pack 4 x 2,5 l			28,12/2,5 l
K928.3	2,5 l	plastic	27,85 €
Original pack 4 x 2,5 l			26,46/2,5 l
K928.4	5 l	plastic	50,00 €
Original pack 2 x 5 l			47,50/5 l
K928.6	10 l	tinplate	85,90 €
K928.2	25 l	tinplate	165,45 €

Ethanol 96 % from controlled organic cultivation

▶ Bioethanol 96 % see p. 1837

Ethanol 96 %

Ethyl alcohol, EtOH
C_2H_6O
M 46,07 g/mol
D 0,81 • bp 78 °C
mp -114,5 °C • flp 17 °C
[64-17-5] • EC No. 200-578-6
UN No. 1170 • ADR 3 II • WGK 1

Danger H225-H319

Ethanol 96 %

96 %, Ph.Eur., extra pure

Guarantee analysis:

Assay (V/V)	95,1-96,9 %
Properties	complies
Identity	complies
Appearance	complies
Acid or alkaline react. substances	complies
Density (d 20 °C/20 °C)	0,805-0,812
Absorption:	
240 nm	≤0,4
250-260 nm	≤0,3
270-340 nm	≤0,1
Volatile impurities:	
Acetaldehyde and acetal	≤0,001 %
Benzene	≤0,0002 %
Methanol	≤0,01 %
Evaporation residue	≤0,0025 %
Sum of other impurities	≤0,03 %
Disregard limit	≤0,0009 %

Prices include german tax on alcohol.

P075.1	1 l	glass	73,00 €
Original pack 6 x 1 l			69,35/1 l
P075.3	1 l	plastic	71,95 €
Original pack 6 x 1 l			68,35/1 l
P075.2	2,5 l	glass	153,65 €
Original pack 4 x 2,5 l			145,97/2,5 l
P075.4	2,5 l	plastic	150,40 €
Original pack 4 x 2,5 l			142,88/2,5 l
P075.5	5 l	plastic	282,65 €
Original pack 2 x 5 l			268,52/5 l
P075.6	10 l	tinplate	450,45 €

Ethanol 96 % denatured

≥96 %

Universal alcoholic solvent for laboratory use and histology.

Type analysis:

Assay (EtOH, v/v)	≥96 %
Aldehydes (as acetaldehyde)	≤0,03 %
Acid content (as CH_3COOH)	≤0,001 %
Sum of other impurities	≤0,03 %
Methanol (GC)	≤0,1 %
Evaporation residue	≤0,003 %
Denaturing:	
Methyl ethyl ketone (MEK)	1 %
Isopropyl alcohol (IPA)	1 %
Denatonium benzoate	1 g/100 l

T171.5	1 l	plastic	12,80 €
Original pack 6 x 1 l			12,16/1 l
T171.1	2,5 l	glass	24,65 €
Original pack 4 x 2,5 l			23,42/2,5 l
T171.3	2,5 l	plastic	22,50 €
Original pack 4 x 2,5 l			21,38/2,5 l
T171.4	5 l	plastic	41,85 €
Original pack 2 x 5 l			39,76/5 l
T171.6	10 l	tinplate	73,65 €
T171.2	25 l	tinplate	124,60 €

Ethanol 80 %

Ethanol 80 % denatured

≥80 %

C_2H_6O
M 46,07 g/mol
D 0,86 • bp 78 °C
flp 22 °C
[64-17-5] • EC No. 200-578-6
UN No. 1170 • ADR 3 II • WGK 1

Danger H225-H319

Type analysis:

Assay (EtOH, v/v). ..... ≥80 %
Water . ..... ~20 %
Aldehydes (as acetaldehyde). ..... ≤0,003 %
Acid content (as CH_3COOH). ..... ≤0,001 %
Sum of other impurities. ..... ≤0,03 %
Methanol (GC). ..... ≤0,1 %
Evaporation residue. ..... ≤0,003 %
Denaturing:
Methyl ethyl ketone (MEK). ..... 1 %
Isopropyl alcohol (IPA). ..... 1 %
Denatonium benzoate. ..... 1 g/100 l

9474.1	1 l	plastic	12,05 €
Original pack 6 x 1 l			11,45/1 l
9474.2	2,5 l	plastic	21,40 €
Original pack 4 x 2,5 l			20,33/2,5 l
9474.3	5 l	plastic	40,75 €
Original pack 2 x 5 l			38,71/5 l
9474.4	10 l	plastic	70,85 €
9474.5	25 l	plastic	121,40 €

Ethanol 70 %

Ethyl alcohol, EtOH
C_2H_6O
M 46,07 g/mol
D 0,88 • bp ~78 °C
flp 22 °C
[64-17-5] • EC No. 200-578-6
UN No. 1170 • ADR 3 II • WGK 1

Danger H225-H319

Ethanol 70 %

ROTIPURAN® ≥70 %, p.a.

Guarantee analysis:

Assay (V/V). ..... ≥70 %
Water. ..... ~30 %
Aldehydes (as acetaldehyde). ..... ≤0,001 %
Acid or alkaline react. substances. ..... ≤0,003 %
Methanol (GC). ..... ≤0,01 %
Evaporation residue. ..... ≤0,003 %
Prices include german tax on alcohol.

T868.1	1 l	plastic	56,45 €
Original pack 6 x 1 l			53,63/1 l
T868.2	2,5 l	plastic	124,60 €
Original pack 4 x 2,5 l			118,37/2,5 l
T868.3	5 l	plastic	234,25 €
Original pack 2 x 5 l			222,54/5 l
T868.4	10 l	plastic	428,95 €
T868.5	25 l	plastic	848,20 €

Ethanol 70 %

DAB

Guarantee analysis:

Appearance. ..... clear, colourless solution
Assay (V/V). ..... 69,2-70,8 %
Identity. ..... complies
Relative density (20 °C). 0,885-0,889
Prices include german tax on alcohol.

7301.1	500 ml	glass	34,30 €

Ethanol 70 % denatured

≥70 %

Universal alcoholic solvent for laboratory use and histology.

Type analysis:

Assay (EtOH, v/v). ..... ≥70 %
Water ..... ~30 %
Aldehydes (as acetaldehyde). ..... ≤0,003 %
Acid content (as CH_3COOH). ..... ≤0,001 %
Sum of other impurities. ..... ≤0,03 %
Methanol (GC). ..... ≤0,1 %
Evaporation residue. ..... ≤0,003 %
Denaturing:
Methyl ethyl ketone (MEK). ..... 1 %
Isopropyl alcohol (IPA). ..... 1 %
Denatonium benzoate. ..... 1 g/100 l

T913.1	1 l	plastic	12,40 €
Original pack 6 x 1 l			11,78/1 l
T913.2	2,5 l	plastic	21,40 €
Original pack 4 x 2,5 l			20,33/2,5 l
T913.3	5 l	plastic	35,40 €
Original pack 2 x 5 l			33,63/5 l
T913.4	10 l	plastic	57,55 €
T913.5	25 l	plastic	113,45 €

Ethanol denatured

- Bioethanol 96 % denatured see p. 1837
- Ethanol 96 % denatured see p. 1976
- Ethanol 80 % denatured see p. 1977
- Ethanol 70 % denatured see p. 1977
- Rotisol® see p. 2297

Ethanol D1

Ethanol D1

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.
C_2H_5DO
M 47,08 g/mol
D 0,80 • bp 78 °C
mp -130 °C • flp 12 °C
[925-93-9] • EC No. 213-128-9
UN No. 1170 • ADR 3 II • WGK 1

Danger H225-H319

Guarantee analysis:

Deuterising degree. ..... ≥99,5 %
Water (KF, H_2O+D_2O). ..... ≤0,5 %

HN84.1	50 ml	glass	131,05 €

Ethanol D6

Ethanol D6

99 Atom%D

For nuclear magnetic resonance spectroscopy.
Hexadeuteroethanol
C_2D_6O
M 52,11 g/mol
D 0,89 • bp 78 °C
mp -114,5 °C • flp 11 °C
Solubility: ~1000 g/l (H_2O, 20 °C)
[1516-08-1] • EC No. 216-162-2
UN No. 1170 • ADR 3 II • WGK 1

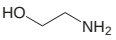
Danger H225-H319

Guarantee analysis:

Deuterising degree. ..... ≥99 %
Water (KF, H_2O+D_2O). ..... ≤1,0 %

CP93.2	1 ml	glass	53,65 €
CP93.1	5 ml	glass	192,45 €

Ethanolamine



2-Aminoethanol, Colamine, Monoethanolamine
C_2H_7NO
M 61,08 g/mol
D ~1,02 • bp 171 °C
mp 10,5 °C • flp 92-93 °C
[141-43-5] • EC No. 205-483-3
UN No. 2491 • ADR 8 III • WGK 1

Danger

H314-H302+H312+H332-H335

Ethanolamine

ROTIPURAN® ≥99,5 %, p.a.

For biochemistry.

Guarantee analysis:

Assay (GC). ..... ≥99,5 %
Colour (APHA). ..... ≤20
Water. ..... ≤0,3 %
Diethanolamine (GC). ..... ≤0,1 %
Triethanol amine (GC). ..... ≤0,1 %
Calcium (Ca). ..... ≤0,00005 %
Cadmium (Cd). ..... ≤0,000005 %
Cobalt (Co). ..... ≤0,000002 %
Chromium (Cr). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,00001 %
Iron (Fe). ..... ≤0,001 %
Magnesium (Mg). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,000005 %
Nickel (Ni). ..... ≤0,00005 %
Lead (Pb). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,0005 %

0342.1	500 ml	plastic	23,15 €
0342.2	1 l	plastic	34,30 €
Original pack 6 x 1 l			32,59/1 l
0342.7	25 l	plastic	332,20 €

Ethanolamine

≥99 %, for synthesis

Type analysis:

Assay (GC). ..... ≥99 %
Water. ..... ≤0,3 %

4376.1	100 ml	plastic	12,40 €
4376.2	500 ml	plastic	19,90 €
4376.3	1 l	plastic	30,00 €
Original pack 6 x 1 l			28,50/1 l

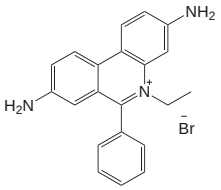
Ether

▶ Diethyl ether see p. 1939

Ether D10

▶ Diethyl ether D10 see p. 1939

Ethidium bromide



Ethidium bromide

≥98 %

For DNA-staining.
Homidium bromide, 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide
$C_{21}H_{20}BrN_3$
M 394,33 g/mol
D 1,01
mp 261-264 °C • flp >100 °C
Solubility: 40 g/l (H_2O, 25 °C)
Storage temp.: +20 °C
[1239-45-8] • EC No. 214-984-6
UN No. 2811 • ADR 6.1 I • WGK 2

Danger H330-H341-H302

Type analysis:

Appearance. ..... red, cryst. powder
Assay. ..... ≥98,0 %
Solubility (in H_2O). ..... clear, red
pH value (2 % in H_2O). 4,0-7,0
Loss on drying. ..... ≤10,0 %

7870.1	1 g	glass	23,55 €
7870.2	5 g	glass	94,10 €

For further information, please see page 1530

Ethidiumbromide absorber bags

▶ Sekuroka® Decon-Bags see p. 2310

Ethidium bromide solution 0,025 % in dropper bottle

Ethidium bromide solution 0,025 % in dropper bottle

aqueous solution (250 µg/ml)

For staining of DNA or RNA in agarose gels during electrophoresis.

HP47.1	15 ml	plastic	30,65 €
HP47.2	5 x 15 ml	plastic	107,40 €

For further information, please see page 1222

Ethidium bromide solution 0,5 % in dropper bottle

Ethidium bromide solution 0,5 % in dropper bottle

aqueous solution (5 mg/ml)

For counterstaining of nuclei in histology and cytology.
For staining of DNA/RNA after electrophoresis.
WGK 1

Warning H332

HP46.1	15 ml	plastic	30,65 €
HP46.2	5 x 15 ml	plastic	107,40 €

For further information, please see page 1530

Ethidium bromide solution 1 %

Ethidium bromide solution 1 %

1 % solution in water (10 mg/ml)

For staining of DNA/RNA after electrophoresis.
Homidium bromide, 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide
D 1,0 • bp 100 °C
mp 0 °C
[1239-45-8] • EC No. 214-984-6
UN No. 2810 • ADR 6.1 III • WGK 2

Warning H332-H341

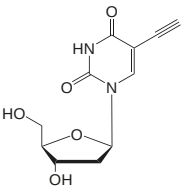
2218.1	10 ml	glass	11,00 €
2218.4	15 ml	dropp. bottle	31,10 €
2218.2	30 ml	glass	23,15 €
2218.3	100 ml	glass	55,80 €

For further information, please see page 1222

Ethidium bromide substitutes

▶ Eva Green® Fluorescent Dye see p. 1988
▶ Roti®-GelStain see p. 2283
▶ Roti®-Load DNAstain see p. 2286

5-Ethynyl-2'-deoxyuridine (EdU)



5-Ethynyl-2'-deoxyuridine (EdU)

≥98 %

EdU
$C_{11}H_{12}N_2O_5$
M 252,23 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[61135-33-9] • WGK 3

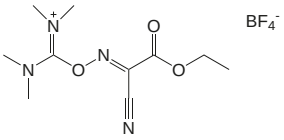
Danger H340-H361

Type analysis:

Appearance. ..... white to off-white solid
Assay (HPLC). ..... ≥98 %

7845.1	5 mg	plastic	28,50 €
7845.2	10 mg	plastic	43,55 €
7845.3	50 mg	plastic	100,55 €
7845.4	100 mg	plastic	160,20 €
7845.5	500 mg	plastic	557,95 €
7845.6	1 g	plastic	1020,20 €

O-[(Ethoxycarbonyl)-cyanomethylenamino]-N,N,N',N'-tetramethyluronium tetrafluoroborate (TOTU)



O-[(Ethoxycarbonyl)-cyanomethylenamino]-N,N,N',N'-tetramethyluronium tetrafluoroborate (TOTU)

PEPTIPURE® ≥99 %

Coupling reagent for peptide synthesis
TOTU
$C_{10}H_{17}BF_4N_4O_3$
M 328,08 g/mol
mp 143-146 °C
[136849-72-4] • WGK 1

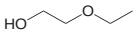
Warning H302-H315-H319-H335

Type analysis:

Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤0,2 %
Solubility (10 % in ACN). ..... clearly soluble
Solubility (10 % in DMF). ..... clearly soluble

2125.1	5 g	glass	31,10 €
2125.2	25 g	glass	96,65 €
2125.3	100 g	glass	342,95 €

2-Ethoxyethanol



2-Ethoxyethanol

≥99 %, for synthesis
Ethylene glycol monoethyl ether
$C_4H_{10}O_2$
M 90,12 g/mol
D 0,93 • bp 135 °C
mp -100 °C • flp 40 °C
[110-80-5] • EC No. 203-804-1
UN No. 1171 • ADR 3 III • WGK 1

Danger
H226-H302-H331-H360FD

Type analysis:
Assay.....≥99 %
Density (20 °C).....0,930-0,934
Water.....≤0,2 %

5127.3	1 l	glass	28,50 €
Original pack 6 x 1 l			27,08/1 l
5127.1	2,5 l	glass	55,80 €
Original pack 4 x 2,5 l			53,01/2,5 l
5127.4	5 l	aluminium	87,00 €
Original pack 2 x 5 l			82,65/5 l
5127.2	10 l	tinplate	161,80 €

2-(2-Ethoxyethoxy)ethanol

▶ Diethylene glycol monoethyl ether see p. 1938

N-(4-Ethoxyphenyl)acetamide

▶ Phenacetin see p. 2204

Ethyl acetate

▶ Acetic acid ethyl ester see p. 1758

Ethyl acetoacetate

▶ Acetoacetic acid ethyl ester see p. 1760

Ethylal

Ethylal

NEW

SOLVAGREEN® ≥99,5 %, for synthesis
Diethoxymethane, (Ethoxymethoxy)ethane, Formaldehyde diethyl acetal
$C_5H_{12}O_2$ • M 104,15 g/mol • D 0,83
[462-95-3] • EC No. 207-330-6
UN No. 2373 • ADR 3 II • WGK 1

Danger H225

Type analysis:
Assay.....≥99,5 %
Water.....≤0,5 %

0787.1	100 ml	glass	17,10 €
0787.2	500 ml	glass	37,55 €
0787.3	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l
0787.4	2,5 l	plastic	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

For further information, please see page 1593

Ethyl alcohol

▶ Ethanol absolut see p. 1975
▶ Ethanol 96 % see p. 1976
▶ Ethanol 80 % see p. 1977
▶ Ethanol 70 % see p. 1977
▶ Bioethanol 96 % see p. 1837

Ethylamine hydrochloride

Ethylamine hydrochloride

≥98 %, for biochemistry
Ethylammonium chloride
$C_2H_7N \cdot HCl$
M 81,55 g/mol
mp 110-115 °C
[557-66-4] • EC No. 209-182-8
WGK 1

Warning H315-H319-H335

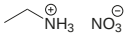
Type analysis:
Assay.....≥98,0 %
Appearance.....white to off-white powder
Water (KF).....≤1,1 %

9745.2	25 g	plastic	14,55 €
9745.3	100 g	plastic	33,25 €
9745.1	500 g	plastic	122,45 €
Original pack 6 x 500 g			116,33/500 g

Ethyl ammoniumchloride

▶ Ethylamine hydrochloride see p. 1979

Ethylammonium-nitrate (EAN)



Ethylammonium-nitrate (EAN)

≥97 %
Ionic liquid
EAN
$C_2H_8N_2O_3$
M 108,10 g/mol
D 1,209
mp 9 °C
[22113-86-6]
WGK 3

Warning H315-H319-H335

Type analysis:
Appearance.....yellowish liquid
Assay.....≥97 %
Water (KF).....≤2 %

2035.1	25 g	glass	160,20 €
2035.2	100 g	glass	349,40 €

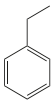
Lit:. "**Ethylammonium nitrate: a protein crystallization reagent**" J. A. Garlitz, C. A. Summers, R. A. Flowers II, G. E. O. Borgstahl, *Acta Cryst.* **1999,** D55, 2037-2038.

For further information, please see page 1590

Ethyl amyl carbinol

▶ 1-Octanol see p. 2171

Ethylbenzene



Ethylbenzene

≥99 %, for synthesis
Phenylethane
C_8H_{10}
M 106,17 g/mol
D 0,87 • bp 136 °C
mp -95 °C • flp >15 °C
[100-41-4] • EC No. 202-849-4
UN No. 1175 • ADR 3 II • WGK 1

Danger H225-H332-H373-H304

Type analysis:
Assay (GC).....≥99,0 %
Benzene.....≤0,5 %
Toluene.....≤0,5 %
Xylene.....≤0,5 %
Water (KF).....≤0,05 %

0272.1	500 ml	glass	22,05 €
0272.2	1 l	glass	33,25 €
Original pack 6 x 1 l			31,59/1 l
0272.3	2,5 l	glass	61,20 €
Original pack 4 x 2,5 l			58,14/2,5 l
0272.4	5 l	plastic	110,65 €
Original pack 2 x 5 l			105,12/5 l

Ethyl benzoate

▶ Benzoic acid ethyl ester see p. 1831

Ethyl bromide

▶ Bromoethane see p. 1853

Ethyl carbonate

▶ Diethyl carbonate see p. 1938

Ethyl cellulose

[9004-57-3]
WGK 1

Ethyl cellulose

~50 cP, extra pure

Type analysis:
Viscosity (25 °C, 5 % in toluene/ethanol 80:20 (w/w)).....45,0-55,0 cP
Ethoxyl assay.....48,0-49,5 %
Chloride (as NaCl).....≤0,05 %
Loss on drying.....≤2,0 %

5023.1	250 g	plastic	41,85 €
5023.3	500 g	plastic	73,00 €
Original pack 6 x 500 g			69,35/500 g
5023.4	1 kg	plastic	128,90 €
Original pack 6 x 1 kg			122,46/1 kg
5023.2	2,5 kg	plastic	299,95 €

Ethyl cellulose

~200 cP, extra pure

Type analysis:

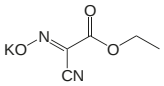
Viscosity (25 °C, 5 % in toluene/ethanol 80:20 (w/w)). ..... 180-220 cP
Ethoxyl assay..... 48,0-49,5 %
Chloride (as NaCl). ..... ≤0,05 %
Loss on drying. ..... ≤2,0 %

9128.1	250 g	plastic	41,85 €
9128.3	500 g	plastic	73,00 €
Original pack 6 x 500 g			69,35/500 g
9128.4	1 kg	plastic	128,90 €
Original pack 6 x 1 kg			122,46/1 kg
9128.2	2,5 kg	plastic	299,95 €

Ethyl cinnamate

▶ Cinnamic acid ethyl ester see p. 1899

Ethyl cyanoglyxylate-2-oxyme potassium salt (K-Oxyma)



Ethyl cyanoglyxylate-2-oxyme potassium salt (K-Oxyma)

PEPTIPURE® ≥99 %

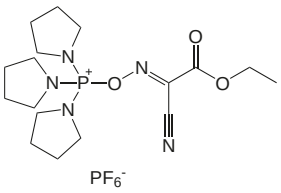
Coupling reagent for peptide synthesis.
K-Oxyma
$C_5H_5KN_2O_3$ • M 180,2 g/mol
mp 145-155 °C • Storage temp.: +4 °C
[158014-03-0] • WGK 3

Type analysis:

Appearance. ..... bright yellow powder
Assay (HPLC). ..... ≥99 %
Water (KF). ..... ≤1,0 %

6891.1	25 g	glass	30,00 €
6891.2	50 g	glass	49,35 €
6891.3	250 g	glass	193,00 €

(Ethylcyano(hydroxyimino)-acetato-O_2)tri-1-pyrrolidinyl-phosphonium hexafluoro-phosphate (PyOxim)



(Ethylcyano(hydroxyimino)-acetato-O_2)tri-1-pyrrolidinyl-phosphonium hexafluoro-phosphate (PyOxim)

PEPTIPURE® ≥99 %

Coupling reagent for peptide synthesis
PyOxim
$C_{17}H_{29}F_6N_5O_3P_2$ • M 527,38 g/mol
mp 167-172 °C
Storage temp.: +4 °C • [153433-21-7]
EUH044

Type analysis:

Assay (HPLC)..... ≥99,0 %
Loss on drying. ..... ≤0,5 %

2120.1	5 g	glass	27,85 €
2120.2	25 g	glass	88,70 €
2120.3	100 g	glass	306,40 €
2120.5	1 kg	glass	1951,15 €
Original pack 6 x 1 kg			1853,59/1 kg

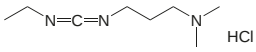
Ethyldiglycol

▶ Diethylene glycol monoethyl ether see p. 1938

N-Ethyldiisopropylamine

▶ N,N-Diisopropylethylamine (DIPEA) see p. 1944

1-Ethyl-3-(3-dimethyl-aminopropyl)carbodiimide hydrochloride (EDC-HCl)



1-Ethyl-3-(3-dimethyl-aminopropyl)carbodiimide hydrochloride (EDC-HCl)

PEPTIPURE® ≥99 %

Coupling reagent for peptide synthesis
EDC-HCl, EDAC hydrochloride,
N-(3-Dimethylaminopropyl)-N'-ethyl-carbodiimide hydrochloride
$C_8H_{17}N_3 \cdot HCl$
M 191,7 g/mol
mp 110-115 °C
Solubility: soluble (H_2O, 20 °C)
Storage temp.: -20 °C
Transport temp.: room temp.
[25952-53-8] • WGK 1

Warning H302-H315-H317-H319

Type analysis:

Assay (titr.). ..... ≥99,0 %
Water (KF)..... ≤2 %

2156.1	5 g	glass	21,00 €
2156.2	25 g	glass	56,45 €
2156.3	100 g	glass	161,80 €
2156.5	1 kg	glass	1138,45 €
Original pack 6 x 1 kg			1081,53/1 kg

Ethylenediamine tetraacetic acid disodium salt solution

▶ EDTA disodium salt solution (0,1 N) see p. 1965

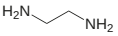
N-Ethyleneamine

▶ Diethylamine see p. 1937

Ethylene chloride

▶ 1,2-Dichloroethane see p. 1934

Ethylenediamine



1,2-Ethanediamine, 1,2-Diaminoethane
$C_2H_8N_2$
M 60,10 g/mol
D 0,90 • bp 116 °C • mp 11 °C • flp 38 °C
[107-15-3] • EC No. 203-468-6
UN No. 1604 • ADR 8 (3) II • WGK 2

Danger H226-H302+H332-H311-H314-H317-H334-H412

Ethylenediamine

ROTIPURAN® ≥99,5 %, p.a., anhydrous

Guarantee analysis:

Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99,5 %
Water . ..... ≤0,5 %
Lead (Pb). ..... ≤0,0001 %
Cadmium (Cd). ..... ≤0,0001 %
Calcium (Ca). ..... ≤0,0005 %
Cobalt (Co). ..... ≤0,0001 %
Chromium (Cr). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,0001 %
Potassium (K). ..... ≤0,002 %
Copper (Cu). ..... ≤0,0001 %
Magnesium (Mg). ..... ≤0,0001 %
Manganese (Mn)..... ≤0,0001 %
Sodium (Na)..... ≤0,002 %
Nickel (Ni). ..... ≤0,0001 %
Zinc (Zn). ..... ≤0,0001 %
Refractive index n_D^{20}..... 1,456-1,458

3049.1	250 ml	glass	55,40 €

Ethylenediamine

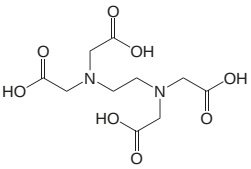
≥99,5 %, for synthesis

Type analysis:

Assay (GC). ..... ≥99,5 %
Water. ..... ≤0,5 %

4218.1	100 ml	glass	13,45 €
4218.2	500 ml	glass	17,75 €
4218.3	1 l	glass	27,85 €
Original pack 6 x 1 l			26,46/1 l
4218.4	2,5 l	glass	54,75 €
Original pack 4 x 2,5 l			52,01/2,5 l
4218.5	10 l	PE/steel	182,65 €

Ethylenediamine tetraacetic acid



EDTA, Ethylenedinitrilo tetraacetic acid, Titration complex II
$C_{10}H_{16}N_2O_8$ • M 292,25 g/mol • D ~0,86
mp >220 °C (dec.)
Solubility: ~0,5 g/l (H_2O, 20 °C)
[60-00-4] • EC No. 200-449-4 • WGK 2

Warning H319

Ethylenediamine tetraacetic acid

≥99 %, p.a., ACS

For molecular biology and biochemistry.

Guarantee analysis:

Assay (compl.).....99,4-100,6 %
Identity.....complies
In NH_4OH insoluble matter.....≤0,005 %
Nitrilotriacetic acid.....≤0,1 %
Chloride (Cl).....≤0,005 %
Heavy metals (as Pb).....≤0,001 %
Calcium (Ca).....≤0,001 %
Copper (Cu).....≤0,001 %
Magnesium (Mg).....≤0,0005 %
Nickel (Ni).....≤0,001 %
Lead (Pb).....≤0,001 %
Iron (Fe).....≤0,001 %
Ash content (as SO_4).....≤0,1 %

8040.1	100 g	plastic	16,05 €
8040.3	500 g	plastic	36,45 €
Original pack 6 x 500 g			34,63/500 g
8040.2	1 kg	plastic	54,75 €
Original pack 6 x 1 kg			52,01/1 kg
8040.4	2,5 kg	plastic	109,55 €
8040.5	25 kg	plastic	854,65 €

Ethylenediamine tetraacetic acid

≥99 %

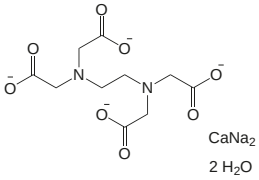
For molecular biology and biochemistry.

Type analysis:

Assay (compl.).....≥99 %
In NH_4OH insoluble matter.....≤0,01 %
Nitrilotriacetic acid.....≤0,5 %
Heavy metals (as Pb).....≤0,01 %
Calcium (Ca).....≤0,05 %
Iron (Fe).....≤0,05 %
Magnesium (Mg).....≤0,005 %
Sulphated ash.....≤0,2 %

CN06.1	250 g	plastic	17,10 €
CN06.2	500 g	plastic	28,50 €
Original pack 6 x 500 g			27,08/500 g
CN06.3	1 kg	plastic	46,15 €
Original pack 6 x 1 kg			43,84/1 kg
CN06.5	2,5 kg	plastic	93,45 €
CN06.4	5 kg	plastic	178,35 €
CN06.6	10 kg	plastic	300,90 €

Ethylenediamine tetraacetic acid calcium disodium salt dihydrate



Ethylenediamine tetraacetic acid calcium disodium salt dihydrate

≥98 %, Ph.Eur., USP

Ca-Titration complex dihydrate
EDTA calcium disodium salt dihydrate,
Calcium EDTA disodium salt dihydrate
$C_{10}H_{12}CaN_2Na_2O_8 \cdot 2\ H_2O$
M 410,31 g/mol
Solubility: ~500 g/l (H_2O, 20 °C)
[6766-87-6] • EC No. 200-529-9 • WGK 2

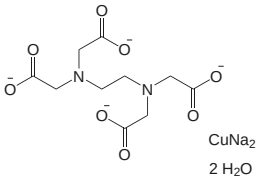
Danger H318

Guarantee analysis:

Appearance.....white to off-white hygroscopic powder
Assay (dry substance).....98,0-102,0 %
Identity.....complies
Appearance of solution.....complies
Nitrilotriacetic acid.....≤0,1 %
Dinatriumedetat.....≤1,0 %
Chloride (Cl).....≤0,1 %
Iron (Fe).....≤0,008 %
Heavy metals (as Pb).....≤0,002 %
pH value (5 % in water).....6,5-8,0
Water.....5,0-13,0 %

6506.1	250 g	plastic	45,70 €
6506.2	500 g	plastic	84,85 €
Original pack 6 x 500 g			80,61/500 g
6506.3	1 kg	plastic	154,30 €
Original pack 6 x 1 kg			146,59/1 kg

Ethylenediamine tetraacetic acid copper disodium salt dihydrate



Ethylenediamine tetraacetic acid copper disodium salt dihydrate

≥99 %, for synthesis

EDTA copper disodium salt dihydrate,
Copper EDTA disodium salt dihydrate
$C_{10}H_{12}CuN_2Na_2O_8 \cdot 2\ H_2O$
M 433,77 g/mol
mp >150 °C (dec.)
Solubility: ~1200 g/l (H_2O, 20 °C)
[61916-40-3] • EC No. 237-864-5 • WGK 2

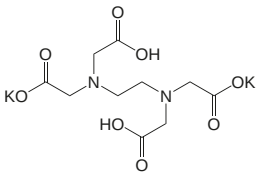
Warning H315-H319-H412

Type analysis:

Appearance.....blue cryst. powder
Assay.....≥99,0 %
Assay (Cu).....14,7-15,3 %

6499.1	250 g	plastic	41,85 €
6499.2	500 g	plastic	74,10 €
Original pack 6 x 500 g			70,40/500 g
6499.3	1 kg	plastic	136,45 €
Original pack 6 x 1 kg			129,63/1 kg

Ethylenediamine tetraacetic acid dipotassium salt dihydrate



EDTA dipotassium salt dihydrate
$C_{10}H_{14}K_2N_2O_8 \cdot 2\ H_2O$
M 404,47 g/mol
mp 272 °C
Solubility: ~40 g/l (H_2O, 20 °C)
[25102-12-9] • EC No. 217-895-0 • WGK 2

Ethylenediamine tetraacetic acid dipotassium salt dihydrate

≥99 %, p.a.

Guarantee analysis:

Assay.....≥99 %
pH value (5 % solution 25 °C).....4-5
In water insoluble matter.....≤0,005 %
Chloride (Cl).....≤0,005 %
Iron (Fe).....≤0,001 %
Copper (Cu).....≤0,0001 %
Heavy metals (as Pb).....≤0,001 %
Loss on drying (150 °C).....8-10 %

3053.1	100 g	plastic	24,20 €
3053.2	250 g	plastic	46,80 €
3053.3	500 g	plastic	80,55 €
Original pack 6 x 500 g			76,52/500 g
3053.4	1 kg	plastic	142,45 €
Original pack 6 x 1 kg			135,33/1 kg
3053.5	5 kg	plastic	568,70 €

Ethylenediamine tetraacetic acid dipotassium salt dihydrate

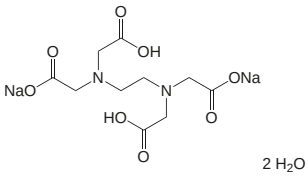
≥99 %, for synthesis

Type analysis:

Appearance.....white powder
Assay (compl., dry substance).....≥99 %
Identity (IR).....complies
pH (5 % in H_2O).....4-5
Loss on drying (150 °C, 6 h).....≤10 %

1408.1	250 g	plastic	25,70 €
1408.2	500 g	plastic	44,65 €
Original pack 6 x 500 g			42,42/500 g
1408.3	1 kg	plastic	80,10 €
Original pack 6 x 1 kg			76,10/1 kg
1408.4	5 kg	plastic	342,95 €

Ethylenediamine tetraacetic acid disodium salt dihydrate



EDTA disodium salt dihydrate,
Titration complex III
$C_{10}H_{14}N_2Na_2O_8 \cdot 2\ H_2O$
M 372,24 g/mol
D 1,019
Solubility: 100 g/l (H_2O, 20 °C)
[6381-92-6] • EC No. 205-358-3 • WGK 2

Warning H332-H373

Ethylenediamine tetraacetic acid disodium salt dihydrate

≥99 %, p.a., ACS

For molecular biology and biochemistry.

Guarantee analysis:

Assay (compl.)	≥99,0 %
pH value (5 % in H_2O)	4,0-5,0
In H_2O insoluble matter	≤0,005 %
Chloride (Cl)	≤0,01 %
Sulphate (SO_4)	≤0,02 %
Lead (Pb)	≤0,0005 %
Calcium (Ca)	≤0,002 %
Iron (Fe)	≤0,0005 %
Copper (Cu)	≤0,0001 %
Nickel (Ni)	≤0,0005 %
Heavy metals (as Pb)	≤0,001 %
Nitrilotriacetic acid	≤0,05 %

8043.3	100 g	plastic	22,05 €
8043.1	250 g	plastic	35,40 €
8043.2	1 kg	plastic	103,75 €
Original pack 6 x 1 kg			98,56/1 kg
8043.6	2,5 kg	plastic	198,35 €
8043.4	5 kg	plastic	375,20 €
8043.5	25 kg	plastic	858,95 €

Ethylenediamine tetraacetic acid disodium salt dihydrate

≥99 %, USP

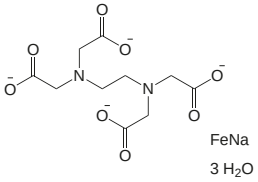
For molecular biology and biochemistry.

Guarantee analysis:

Assay (compl.)	99,0-101,0 %
Identity	complies
pH value (5 % in H_2O)	4,0-6,0
Nitrilotriacetic acid	≤0,1 %
Heavy metals (as Pb)	≤0,005 %
Calcium (Ca)	complies
Loss on drying (150 °C)	8,7-11,4 %

X986.1	250 g	plastic	19,90 €
X986.2	1 kg	plastic	51,10 €
Original pack 6 x 1 kg			48,55/1 kg
X986.4	2,5 kg	plastic	109,55 €
X986.3	5 kg	plastic	208,45 €
X986.5	25 kg	plastic	848,20 €

Ethylenediamine tetraacetic acid iron(III) sodium salt trihydrate



Ethylenediamine tetraacetic acid iron(III) sodium salt trihydrate

≥98 %, for synthesis

EDTA iron(III) sodium salt trihydrate,
Iron(III) EDTA sodium salt trihydrate
$C_{10}H_{12}FeN_2NaO_8 \cdot 3\ H_2O$
M 421,10 g/mol
Solubility: ~90 g/l (H_2O, 20 °C)
[15708-41-5] • EC No. 239-802-2
WGK 2

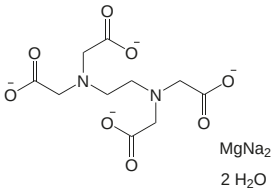
Warning H315-H319-H335

Type analysis:

Appearance	brownish yellow cryst. powder
Assay	≥98,0 %
Assay (Fe)	≥13,0 %
Assay (EDTA-acid)	≥68,0 %
pH value (H_2O)	4,5-5,5

6498.1	250 g	plastic	37,55 €
6498.2	500 g	plastic	68,30 €
Original pack 6 x 500 g			64,89/500 g
6498.3	1 kg	plastic	114,50 €
Original pack 6 x 1 kg			108,78/1 kg

Ethylenediamine tetraacetic acid magnesium disodium salt dihydrate



Ethylenediamine tetraacetic acid magnesium disodium salt dihydrate

≥90 %, for synthesis

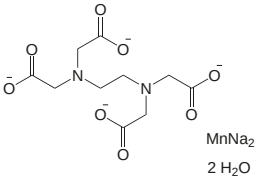
EDTA magnesium disodium salt dihydrate,
Magnesium EDTA disodium salt dihydrate
$C_{10}H_{12}MgN_2Na_2O_8 \cdot 2\ H_2O$
M 394,54 g/mol
mp >275 °C (dec.)
Solubility: ~900 g/l (H_2O, 20 °C)
[14402-88-1] • EC No. 238-372-3
WGK 1

Type analysis:

Appearance	pure white powder
Assay	≥90,0 %
Assay (Mg)	≥5,5 %
Assay (MgO)	~9,5 %
Heavy metals (as Pb)	≤0,001 %
pH value (1 %, H_2O)	6,0-7,5

6508.1	250 g	plastic	33,25 €
6508.2	500 g	plastic	61,20 €
Original pack 6 x 500 g			58,14/500 g
6508.3	1 kg	plastic	107,00 €
Original pack 6 x 1 kg			101,65/1 kg

Ethylenediamine tetraacetic acid manganese disodium salt dihydrate



Ethylenediamine tetraacetic acid manganese disodium salt dihydrate

≥93 %, for synthesis

EDTA manganese disodium salt dihydrate,
Manganese EDTA disodium salt dihydrate
$C_{10}H_{12}MnN_2Na_2O_8 \cdot 2\ H_2O$
M 425,17 g/mol
Solubility: ~900 g/l (H_2O, 20 °C)
[73637-20-4] • EC No. 239-407-5 • WGK 2

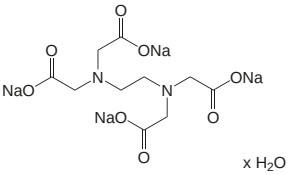
Warning H319

Type analysis:

Appearance	pale pink cryst. powder
Assay	≥93,0 %
Assay (Mn)	12,2-12,8 %
pH value (1 %, H_2O)	6,0-7,0

6510.1	250 g	plastic	42,90 €
6510.2	500 g	plastic	75,80 €
Original pack 6 x 500 g			72,01/500 g
6510.3	1 kg	plastic	137,10 €
Original pack 6 x 1 kg			130,25/1 kg

Ethylenediamine tetraacetic acid tetrasodium salt hydrate



Ethylenediamine tetraacetic acid tetrasodium salt hydrate

86-88 %

$C_{10}H_{12}N_2Na_4O_8 \cdot x\ H_2O$
M 380,17 + x H_2O g/mol
Solubility: 580 g/l (H_2O, 20 °C)
[64-02-8] • EC No. 200-573-9 • WGK 2

Danger H302+H332-H318-H373

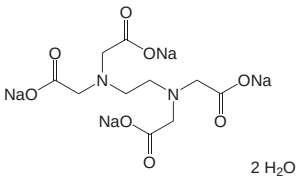
Type analysis:

Appearance	nearly white powder
Assay (titr.)	86,0-88,0 %
pH value (1 %, H_2O)	10,5-12,5
Bulk density	620-760 g/l

Belongs to the group of organic chelating agents which form water soluble complexes with alkaline earth metals and with heavy metals and thus reducing the reactivity of these ions.

3619.2	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
3619.1	1 kg	plastic	31,10 €
Original pack 6 x 1 kg			29,55/1 kg
3619.4	2,5 kg	plastic	59,05 €
3619.3	5 kg	plastic	109,15 €

Ethylenediamine tetraacetic acid tetrasodium salt dihydrate



Ethylenediamine tetraacetic acid tetrasodium salt dihydrate

≥99 %

EDTA tetrasodium salt dihydrate
$C_{10}H_{12}N_2Na_4O_8 \cdot 2\ H_2O$
M 416,2 g/mol
mp 400 °C (dec.)
Solubility: ~580 g/l (H_2O, 20 °C)
[10378-23-1] • EC No. 200-573-9 • WGK 2

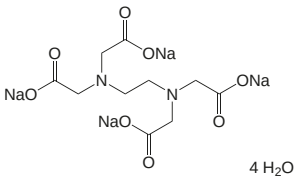
Danger H302-H332-H318

Type analysis:

Appearance. ..... white cryst. powder
Assay. ..... ≥99,0 %
pH value (1 % solution). 10,7-11,7
Heavy metals (as Pb). ..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,008 %
Mercury (Hg). ..... ≤0,0001 %

1410.1	250 g	plastic	21,40 €
1410.2	500 g	plastic	36,45 €
Original pack 6 x 500 g			34,63/500 g
1410.3	1 kg	plastic	65,50 €
Original pack 6 x 1 kg			62,23/1 kg
1410.4	5 kg	plastic	276,85 €

Ethylenediamine tetraacetic acid tetrasodium salt tetrahydrate



Ethylenediamine tetraacetic acid tetrasodium salt tetrahydrate

≥99 %, p.a.

$C_{10}H_{12}N_2Na_4O_8 \cdot 4\ H_2O$
M 452,24 g/mol
mp 400 °C
Solubility: 100 g/l (H_2O, 20 °C)
[13235-36-4] • EC No. 200-573-9 • WGK 2

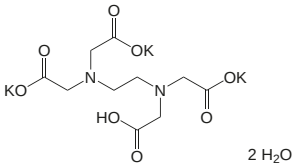
Danger H302+H332-H318

Guarantee analysis:

Assay (compl.). ..... ≥99,0 %
pH value (1 % in H_2O). 10,0-12,0
In H_2O insoluble matter. ..... ≤0,005 %
Nitrilotriacetic acid. ..... ≤0,1 %
Chloride (Cl). ..... ≤0,004 %
Sulphate (SO_4). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,0025 %
Iron (Fe). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,001 %
Copper (Cu). ..... ≤0,0005 %
Sulphated ash. ..... 62,0-63,5 %
Loss of drying (150 °C, 2 h). ..... 15,0-17,0 %

CP87.1	250 g	plastic	19,90 €
CP87.2	500 g	plastic	30,65 €
Original pack 6 x 500 g			29,12/500 g
CP87.3	1 kg	plastic	52,15 €
Original pack 6 x 1 kg			49,54/1 kg
CP87.4	5 kg	plastic	212,75 €

Ethylenediamine tetraacetic acid tripotassium salt dihydrate



Ethylenediamine tetraacetic acid tripotassium salt dihydrate

≥99 %

EDTA tripotassium salt dihydrate
$C_{10}H_{13}K_3N_2O_8 \cdot 2\ H_2O$
M 442,56 g/mol
mp 182 °C
Solubility: ~44 g/l (H_2O, 20 °C)
[65501-24-8] • EC No. 241-543-5
WGK 2

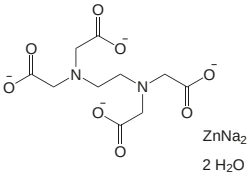
Warning H319

Type analysis:

Appearance. ..... white, cryst. powder
Assay. ..... ≥99 %
Identity. ..... complies
pH value (5 % in water). 7,0-9,0
Heavy metals (as Pb). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,1 %
Chloride (Cl). ..... ≤0,01 %
Water content (KF). ..... 7-9 %

1409.1	100 g	plastic	30,00 €
1409.2	250 g	plastic	55,40 €
1409.3	1 kg	plastic	166,10 €
Original pack 6 x 1 kg			157,80/1 kg
1409.4	5 kg	plastic	654,70 €

Ethylenediamine tetraacetic acid zinc disodium salt dihydrate



Ethylenediamine tetraacetic acid zinc disodium salt dihydrate

≥96 %, for synthesis

EDTA zinc disodium salt dihydrate,
Zinc EDTA disodium salt dihydrate
$C_{10}H_{12}ZnN_2Na_2O_8 \cdot 2\ H_2O$
M 435,64 g/mol
Solubility: ~1000 g/l (H_2O, 20 °C)
[73513-47-0] • EC No. 237-865-0
WGK 2

Warning H319

Type analysis:

Appearance. ..... white cryst. powder
Assay. ..... ≥96,0 %
Assay (Zinc). ..... 14,5-15,1 %
pH value (1 %, H_2O). 6,0-7,0

6518.1	250 g	plastic	42,90 €
6518.2	500 g	plastic	76,90 €
Original pack 6 x 500 g			73,06/500 g
6518.3	1 kg	plastic	138,70 €
Original pack 6 x 1 kg			131,77/1 kg

trans-1,2-Ethylenedicarbonic acid

▶ Fumaric acid see p. 2009

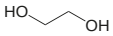
Ethylene dichloride

▶ 1,2-Dichloroethane see p. 1934

Ethylenedinitrilo tetraacetic acid

▶ Ethylenediamine tetraacetic acid see p. 1980

Ethylene glycol



1,2-Ethanediol, Monoethylene glycol
$C_2H_6O_2$
M 62,07 g/mol
D 1,11 • bp 197 °C
mp -12,4 °C • flp 111 °C
Solubility: 1000 g/l (H_2O, 20 °C)
[107-21-1] • EC No. 203-473-3
WGK 1

Warning H302-H373

Ethylene glycol

ROTIPURAN® ≥99,5 %, p.a.

Guarantee analysis:

Assay (GC)	≥99,5 %
Colour (APHA)	≤10
Water (KF)	≤0,1 %
Acidity	≤0,0005 meq/g
Chloride (Cl)	≤0,0005 %
Sulphate (SO_4)	≤0,0005 %
Matter discoloured by H_2SO_4	complies
$KMnO_4$ reducing substances (as O)	≤0,0003 %
Calcium (Ca)	≤0,00005 %
Cadmium (Cd)	≤0,000005 %
Cobalt (Co)	≤0,000002 %
Copper (Cu)	≤0,000002 %
Chromium (Cr)	≤0,000002 %
Iron (Fe)	≤0,00001 %
Magnesium (Mg)	≤0,00001 %
Manganese (Mn)	≤0,000002 %
Nickel (Ni)	≤0,000002 %
Lead (Pb)	≤0,00001 %
Ash content (as SO_4)	≤0,003 %

6881.1	1 l	plastic	42,90 €
Original pack 6 x 1 l			40,76/1 l
6881.2	2,5 l	plastic	87,00 €
Original pack 4 x 2,5 l			82,65/2,5 l
6881.4	5 l	plastic	133,20 €
Original pack 2 x 5 l			126,54/5 l
6881.3	10 l	plastic	247,15 €
6881.5	25 l	plastic	443,90 €

Ethylene glycol

≥99 %, for synthesis

Type analysis:

Assay (GC)	≥99 %
Water	≤0,5 %
Density (20 °C)	1,110-1,116
Refractive index n_D^{20}	1,431-1,433

9516.1	1 l	plastic	24,20 €
Original pack 6 x 1 l			22,99/1 l
9516.3	2,5 l	plastic	46,15 €
Original pack 4 x 2,5 l			43,84/2,5 l
9516.5	5 l	plastic	76,90 €
Original pack 2 x 5 l			73,06/5 l
9516.2	10 l	plastic	118,80 €
9516.4	25 l	plastic	214,50 €

Ethylene glycol

≥98 %, techn.

Type analysis:

Appearance	clear colourless to yellowish liquid
Assay (GC)	≥98 %
Water	≤1 %

2441.1	1 l	plastic	18,20 €
Original pack 6 x 1 l			17,29/1 l
2441.2	2,5 l	plastic	28,50 €
Original pack 4 x 2,5 l			27,08/2,5 l
2441.5	5 l	plastic	52,60 €
Original pack 2 x 5 l			49,97/5 l
2441.3	10 l	plastic	78,40 €
2441.4	25 l	plastic	171,50 €

Ethylene glycol bis(β-amino-ethylether) tetraacetic acid

▶ EGTA see p. 1968

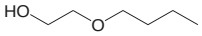
Ethylene glycol dimethyl ether

▶ 1,2-Dimethoxyethane see p. 1945

Ethylene glycol dimethyl ether

▶ 1,2-Dimethoxyethane see p. 1945

Ethylene glycol monobutyl ether



Ethylene glycol monobutyl ether

≥99 %, for synthesis
2-Butoxyethanol, Butylglycol
$C_6H_{14}O_2$
M 118,17 g/mol
D ~0,9 • bp ~170 °C
mp -70 °C • flp ~64 °C
[111-76-2] • EC No. 203-905-0
UN No. 2810 • ADR 6.1 III • WGK 1

Danger H302-H311+H331-H315-H319

Type analysis:

Assay (GC)	≥99,0 %
Density (d 20 °C/4 °C)	0,898-0,907
Water	≤0,2 %

0341.1	1 l	glass	24,20 €
Original pack 6 x 1 l			22,99/1 l
0341.2	2,5 l	glass	46,15 €
Original pack 4 x 2,5 l			43,84/2,5 l

Ethylene glycol monobutyl ether acetate

▶ 2-Butoxyethyl acetate see p. 1861

Ethylene glycol monoethyl ether

▶ 2-Ethoxyethanol see p. 1979

Ethylene glycol monoisopropyl ether

▶ 2-Isopropoxyethanol see p. 2079

Ethylene glycol monomethyl ether

▶ 2-Methoxyethanol see p. 2134

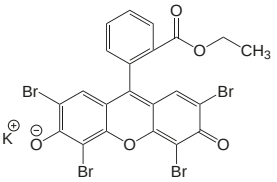
Ethylene glycol monophenyl ether

▶ 2-Phenoxyethanol see p. 2205

Ethylene tetrachloride

▶ Tetrachloroethylene see p. 2399

Ethyl eosin (C.I. 45386)



Ethyl eosin (C.I. 45386)

extra pure
2',4',5',7'-Tetrabromoeosin ethyl ester potassium salt, Solvent Red 45
$C_{22}H_{11}Br_4KO_5$
M 714,07 g/mol
[6359-05-3]
WGK 3

Type analysis:

Appearance	red powder
Appearance of solution (1 g/l in 95 % EtOH)	clear, pink orange

7664.1	5 g	glass	19,25 €
7664.2	25 g	glass	36,45 €
7664.3	100 g	glass	75,15 €

Ethyl ether

▶ Diethyl ether see p. 1939

Ethyl ether D10

▶ Diethyl ether D10 see p. 1939

Ethyl formiate

▶ Formic acid ethyl ester see p. 2006

Ethyl gallate

▶ Gallic acid ethyl ester see p. 2011

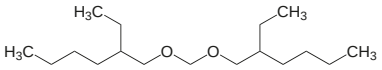
Ethyl green

▶ Brilliant green (C.I. 42040) see p. 1850

Ethyl green zinc chloride double salt

▶ Methyl green (C.I. 42590) see p. 2139

2-Ethylhexylal



2-Ethylhexylal

NEW

SOLVAGREEN® ≥99 %, for synthesis

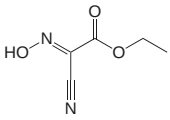
3,3'-[Methylenebis (oxymethylene)]bisheptane, 3-({[(2-Ethylhexyl)oxy] methoxy}methyl)heptane
$C_{17}H_{36}O_2$
M 272,4 g/mol
D 0,85
[22174-70-5] • EC No. 244-815-1
WGK 1
H413

Type analysis:
Assay.....≥99,0 %
Water.....≤0,5 %

0797.1	100 ml	glass	17,10 €
0797.2	500 ml	glass	37,55 €
0797.3	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l
0797.4	2,5 l	plastic	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

For further information, please see page 1593

Ethyl(hydroxyimino)cyano-acetate (Oxyma Pure)



Ethyl(hydroxyimino)cyano-acetate (Oxyma Pure)

PEPTIPURE® ≥99,5 %

Coupling reagent for peptide synthesis
Oxyma Pure, Ethyl isonitrosocyanoacetate
$C_5H_6N_2O_3$
M 142,11 g/mol
mp 128-134 °C
Storage temp.: +4 °C
[3849-21-6] • EC No. 223-351-3
WGK 1

Type analysis:
Assay (HPLC).....≥99,5 %
Water (KF).....≤0,5 %
Melting point.....128-134 °C

2118.1	25 g	glass	28,50 €
2118.2	100 g	glass	82,70 €

Ethyl isonitrosocyanoacetate

▶ Ethyl(hydroxyimino)cyanoacetate (Oxyma Pure) see p. 1985

Ethyl lactate

▶ L(-)-Lactic acid ethyl ester see p. 2089

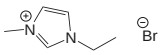
Ethylmercurithiosalicylate sodium salt

▶ Sodium ethylmercurithiosalicylate see p. 2337

Ethyl methanoate

▶ Formic acid ethyl ester see p. 2006

1-Ethyl-3-methyl-imidazolium-bromide (EMIM Br)



1-Ethyl-3-methyl-imidazolium-bromide (EMIM Br)

≥99 %

Ionic liquid
EMIM Br
$C_6H_{11}BrN_2$ • M 191,07 g/mol
bp ~200 °C (dec.) • mp 91 °C
[65039-08-9] • WGK 3

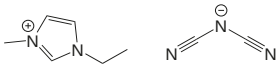
Warning H315-H319-H335

Type analysis:
Appearance.....white solid
Assay.....≥99 %
Water (KF).....≤0,5 %

2037.1	25 g	glass	177,40 €
2037.2	100 g	glass	295,65 €

Lit:. "**1-Alkyl-3-methyl Imidazolium Bromide Ionic Liquids in the Ionothermal Synthesis of Aluminium Phosphate Molecular Sieves**" E. R. Parnham, R. E. Morris, *Chem. Mater.* **2006,** 18, 4882-4887.
For further information, please see page 1590

1-Ethyl-3-methyl-imidazolium-dicyanamide (EMIM DCA)



1-Ethyl-3-methyl-imidazolium-dicyanamide (EMIM DCA)

≥98 %

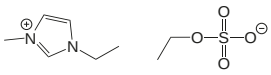
Ionic liquid
EMIM $N(CN)_2$, EMIM DCA
$C_8H_{11}N_5$ • M 177,21 g/mol
D 1,101 • mp -21 °C
[370865-89-7] • WGK 3

Type analysis:
Appearance.....yellow to orange liquid
Assay.....≥98 %
Water (KF).....≤0,2 %
Halogens.....≤2 %
Alkali metals.....≤2 %

2053.1	25 g	glass	278,45 €
2053.2	100 g	glass	622,45 €

Lit:. "**A New Ionic Liquid Electrolyte Enhances the Conversion Efficiency of Dye-Sensitized SolarCells**" P. Wang, S. M. Zakeeruddin, J.-E. Moser, M. Grätzel, *J. Phys. Chem. B* **2003**, 107, 13280-13285.
For further information, please see page 1590

1-Ethyl-3-methyl-imidazolium-ethylsulphate (EMIM $EtOSO_3$)



1-Ethyl-3-methyl-imidazolium-ethylsulphate (EMIM $EtOSO_3$)

≥99 %

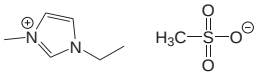
Ionic liquid
EMIM $EtOSO_3$
$C_8H_{16}N_2O_4S$
M 236,29 g/mol
D 1,241
[342573-75-5]
WGK 1

Type analysis:
Appearance.....yellow to orange liquid
Assay.....≥99 %
Water (KF).....≤0,05 %

2054.1	25 g	glass	91,40 €
2054.2	100 g	glass	198,90 €

Lit:. "**Physical Properties of Pure 1-Ethyl-3-methyl-imidazolium Ethylsulfate and Its Binary Mixtures with Ethanol and Water at Several Temperatures**" E. Gomez, B. Gonzalez, N. Calvar, E. Tojo, A. Domınguez, *J. Chem. Eng. Data* **2006,** 51, 2096-2102.
For further information, please see page 1590

1-Ethyl-3-methyl-imidazolium-methanesulphonate (EMIM OMs)



1-Ethyl-3-methyl-imidazolium-methanesulphonate (EMIM OMs)

≥99 %

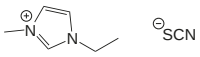
Ionic liquid
EMIM OMs
$C_7H_{14}N_2O_3S$
M 206,26 g/mol
D 1,242
[145022-45-3]
WGK 3

Type analysis:
Appearance.....yellow to brownish liquid
Assay.....≥99 %
Water (KF).....≤0,5 %

2056.1	25 g	glass	213,95 €
2056.2	100 g	glass	547,20 €

Lit.: "**Essential oil terpenless by extraction using organic solvents or ionic liquids**" A. Arce, A. Marchiaro, O. Rodríguez, A. Soto, *AIChE* **2006,** 52, 2089-2097.
For further information, please see page 1590

1-Ethyl-3-methyl-imidazolium-thiocyanate (EMIM SCN)



1-Ethyl-3-methyl-imidazolium-thiocyanate (EMIM SCN)

≥98 %
Ionic liquid
EMIM SCN
$C_7H_{11}N_3S$ • M 169,24 g/mol
D 1,119 • mp -6 °C
[331717-63-6] • WGK 2

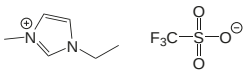
Warning
H302+H312+H332-H412-EUH032

Type analysis:
Appearance. ..... yellow to orange liquid
Assay. ..... ≥98 %
Water (KF). ..... ≤0,2 %
Halogens. ..... ≤2 %

2059.1	25 g	glass	241,90 €
2059.2	100 g	glass	478,40 €

Lit.: "**An efficient organogelator for ionic liquids to prepare stable quasi-solid-state dye-sensitized solar cells**" N. Mohmeyer, D. Kuang, P. Wang, H.-W. Schmidt, S. M. Zakeeruddin, M. Grätzel, *J. Mater. Chem.* **2006,** 16, 2978-2983.
For further information, please see page 1590

1-Ethyl-3-methyl-imidazolium-trifluoromethansulphonate (EMIM OTf)



1-Ethyl-3-methyl-imidazolium-trifluoromethansulphonate (EMIM OTf)

≥99 %
Ionic liquid
EMIM OTf
$C_7H_{11}F_3N_2O_3S$ • M 260,23 g/mol
D 1,386 • mp -9 °C
[145022-44-2] • WGK 3

Warning H315-H319

Type analysis:
Appearance. ..... yellow to brownish liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,05 %

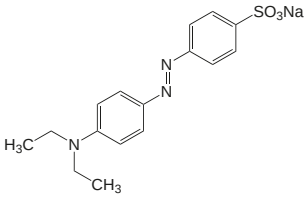
2062.1	25 g	glass	213,95 €
2062.2	100 g	glass	622,45 €

Lit.: "**Electropolymerization of pyrrole in 1-ethyl-3-methylimidazolium trifluoro-methanesulfonate room temperature ionic liquid**" K. Sekiguchi, M. Atobe, T. Fuchigami, *Electrochemistry Communications* **2002,** 4, 881-885.
For further information, please see page 1590

Ethyl methyl ketone

▶ 2-Butanone see p. 1860

Ethyl orange sodium salt



Ethyl orange sodium salt

p.a.
Indicator pH 3,4-4,8
$C_{16}H_{18}N_3NaO_3S$
M 355,39 g/mol
mp >300 °C
[62758-12-7]
WGK 3

Warning H315-H319-H335

Type analysis:
Appearance. ..... orange powder
Appearance of solution (0,1 % in H_2O). ... clear, orange
pH-transition range. ..... 3,4 (rose-red)-4,8 (yellow)

7667.1	5 g	glass	19,25 €
7667.2	25 g	glass	36,45 €
7667.3	100 g	glass	75,15 €

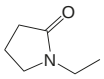
Ethylparaben (Paraben)

▶ 4-Hydroxybenzoic acid ethyl ester see p. 2056

Ethyl purple 6B

▶ Ethyl violet (C.I. 42600) see p. 1986

N-Ethyl-2-pyrrolidone (NEP)



N-Ethyl-2-pyrrolidone (NEP)

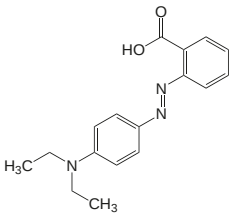
≥98 %, for synthesis
NEP, 1-Ethylpyrrolidin-2-one
$C_6H_{11}NO$ • M 113,2 g/mol
D 0,998 • bp ~212 °C
mp -75 °C • flp 90,5 °C
[2687-91-4] • EC No. 220-250-6 • WGK 1

Danger H318-H360Df

Type analysis:
Assay (GC). ..... ≥98,0 %
Water. ..... ≤0,5 %
Colour (APHA). ..... ≤50

CN19.1	500 ml	glass	28,50 €
CN19.2	1 l	glass	41,85 €
Original pack 6 x 1 l			39,76/1 l
CN19.3	2,5 l	glass	88,70 €
Original pack 4 x 2,5 l			84,27/2,5 l
CN19.5	10 l	tinplate	278,45 €
CN19.4	25 l	tinplate	622,45 €

Ethyl red



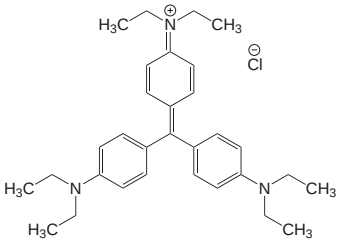
Ethyl red

p.a.
Indicator pH 4,5-6,5
$C_{17}H_{19}N_3O_2$
M 297,36 g/mol
mp 135 °C (dec)
[76058-33-8]
WGK 3

Type analysis:
Appearance. ..... dark red to maroon powder
Appearance of solution (0,1 % in H_2O). ..... clear, dark red
pH-transition range. ..... 4,5 (red)-6,5 (yellow)

7677.1	5 g	glass	19,90 €
7677.2	25 g	glass	45,05 €
7677.3	100 g	glass	121,40 €

Ethyl violet (C.I. 42600)



Ethyl violet (C.I. 42600)

extra pure
Indicator pH 0,0-3,5
Basic violet 4, Ethyl purple 6B
$C_{31}H_{42}N_3Cl$
M 492,15 g/mol
mp >250 °C
[2390-59-2] • EC No. 219-231-5
WGK 1

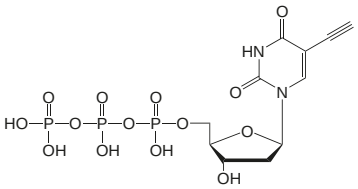
Type analysis:
Appearance. ..... olive green to dark brown cryst. powder
Appearance of solution (0,1 % in H_2O). ..... clear, dark purple
Loss on drying (105 °C). ..... ≤5,0 %

7680.1	5 g	glass	14,95 €
7680.2	25 g	glass	25,70 €
7680.3	100 g	glass	50,45 €

5-Ethynyl-2'-deoxyuridine-5'-triphosphate

▶ 5-Ethynyl-dUTP see p. 1987

5-Ethynyl-dUTP



5-Ethynyl-dUTP

≥98 %, 100 mM in water

5-Ethynyl-2'-deoxyuridine-5'-triphosphate, EdUTP

$C_{11}H_{15}N_2O_{14}P_3$

M 491,97 g/mol

Storage temp.: -20 °C

Transport temp.: cooled

[1004955-96-7]

WGK 3

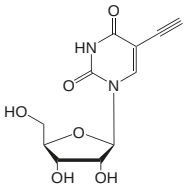
Type analysis:

Appearance. ..... clear solution

Assay (HPLC). ..... ≥98 %

7802.1	0,5 µmol	plastic	95,15 €
7802.2	2,5 µmol	plastic	360,15 €
7802.3	5,0 µmol	plastic	553,65 €

5-Ethynyl uridine (EU)



5-Ethynyl uridine (EU)

≥98 %

EU

$C_{11}H_{12}N_2O_6$

M 268,22 g/mol

Storage temp.: -20 °C

Transport temp.: cooled

[69075-42-9]

WGK 3

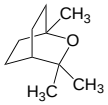
Type analysis:

Appearance. ..... white to off-white solid

Assay (HPLC). ..... ≥98 %

7848.1	5 mg	plastic	59,05 €
7848.2	10 mg	plastic	99,45 €

Eucalyptol



1,8-Cineol, 1,8-Epoxy-p-menthane

$C_{10}H_{18}O$ • M 154,25 g/mol

D 0,92 • bp 175-179 °C

mp 1-2 °C • flp 49 °C

[470-82-6] • EC No. 207-431-5

UN No. 1993 • ADR 3 III • WGK 2

Warning H226

Eucalyptol

≥98 %

Type analysis:

Assay (GC). ..... ≥98,0 %

Density (d 20 °C/4 °C). 0,923-0,928

7244.1	25 ml	glass	28,50 €

Eucalyptol

ROTICHROM® GC

Reference substance for GC.

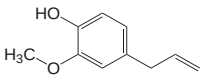
Storage temp.: +4 °C

Type analysis:

Purity (GC). ..... ≥98 %

6938.2	100 mg	glass	83,75 €

Eugenol



4-Allyl-2-methoxyphenol

$C_{10}H_{12}O_2$ • M 164,21 g/mol

D 1,06 • bp 255 °C

mp -9 °C • flp >110 °C

Solubility: ~2,5 g/l (H_2O, 25 °C)

[97-53-0] • EC No. 202-589-1 • WGK 1

Warning H302-H315-H317

Eugenol

extra pure

Type analysis:

Appearance. ..... clear, light yellowish liquid

Density (20 °C). ..... 1,066-1,070 g/cm³

Refractive index (20 °C). 1,540-1,542

Optical rotation (20 °C). ..... -0,5° to +0,5°

7292.1	50 ml	glass	18,85 €

Eugenol

ROTICHROM® GC

Reference substance for GC.

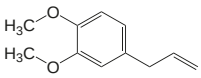
Storage temp.: +4 °C

Type analysis:

Purity (GC). ..... ≥99,0 %

6941.1	1 g	plastic	84,85 €

Eugenol methyl ether



Eugenol methyl ether

ROTICHROM® GC

Reference substance for GC.

4-Allyl-1,2-dimethoxybenzene

$C_{11}H_{14}O_2$

M 178,23 g/mol

D 1,04 • bp 254-255 °C

mp -4 °C

Storage temp.: +4 °C

[93-15-2] • EC No. 202-223-0

WGK 1

Warning H302-H319

Type analysis:

Purity (GC). ..... ≥95 %

5073.1	1 g	plastic	84,85 €

Euparal

Euparal

for microscopy

Mounting agent

D 0,99 • bp >100 °C

flp 41 °C

UN No. 1993 • ADR 3 III • WGK 1

Warning H226-H315-H319

Type analysis:

Appearance. ..... yellowish solution

Solubility (EtOH). ..... soluble

Refractive index (20 °C). 1,480-1,510

7356.1	100 g	glass	52,15 €
7356.2	5 x 100 g	glass	214,50 €

For further information, please see page 1533

Euparal essence

Euparal essence

for microscopy

Diluent and solvent for Euparal (Art. No. 7356).

D 1,0

flp 41 °C

UN No. 1993 • ADR 3 III • WGK 2

Warning H226-H315-H319-H335

Type analysis:

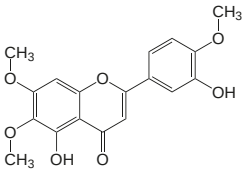
Appearance. ..... yellowish solution

Refractive index (20 °C). 1,450-1,500

A145.1	100 ml	glass	45,05 €

For further information, please see page 1533

Eupatorin



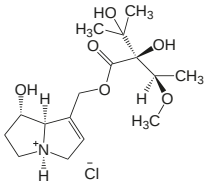
Eupatorin
ROTICHROM® HPLC
Reference substance for HPLC.
From *Orthosiphon stamineus.*
3'5-Dihydroxy-4',6,7-trimethoxyflavone
$C_{18}H_{16}O_7$
M 344,32 g/mol
mp 190-195 °C
Storage temp.: +4 °C
[855-96-9]
WGK 1

Type analysis:
Purity (HPLC)..... ≥99 %

6493.1	20 mg	glass	289,20 €

Europia
▶ Europium(III) oxide see p. 1988

Europine hydrochloride

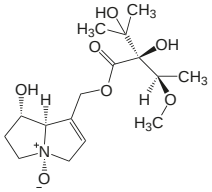


Europine hydrochloride
ROTICHROM® HPLC
Reference substance for HPLC.
From *Heliotropium*
$C_{16}H_{28}ClNO_6$
M 365,84 g/mol
Storage temp.: +4 °C
WGK 3
Warning H302

Type analysis:
Purity (HPLC)..... ≥97,0 %

1676.1	10 mg	glass	418,20 €

Europine-N-oxide



Europine-N-oxide
ROTICHROM® HPLC
Reference substance for HPLC.
From *Heliotropium*
$C_{16}H_{27}NO_7$
M 345,39 g/mol
mp 164-168 °C
Storage temp.: +4 °C
[65582-53-8]
WGK 3
Warning H302

Type analysis:
Purity (HPLC). ..... ≥97,0 %

1687.1	10 mg	glass	418,20 €

Europium Standards
▶ Europium ICP Standard Solution see p. 2362
▶ Europium ICP Standard Solution see p. 2367

Europium(III) oxide

Europium trioxide, Europia
Eu_2O_3
M 351,92 g/mol
D 7,42 • bp 3790 °C
mp 2291 °C
Solubility: insoluble (H_2O, 20 °C)
[1308-96-9] • EC No. 215-165-6
WGK 1

Europium(III) oxide
ROTI®METIC 99,995 % (4N5)

Type analysis:
Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5394.1	5 g	plastic	285,45 €

Europium(III) oxide
ROTI®REMETIC 99,99 %

Type analysis:
Assay (TREO*)..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7187.3	50 g	plastic	665,45 €

Europium trioxide
▶ Europium(III) oxide see p. 1988

Eva Green® Fluorescent Dye

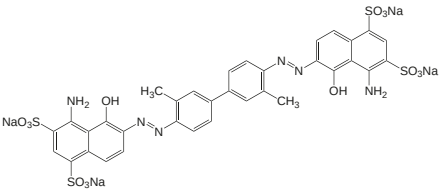
Eva Green® Fluorescent Dye
for electrophoresis, 100x concentrated
For fluorescent staining of nucleic acids in agarose- and polyacrylamide gels.
500 µl is sufficient for running and staining of approx. 500 lanes.
Storage temp.: -20 °C
Transport temp.: room temp.
WGK 3

Type analysis:
Appearance. ..... clear, orange solution

8905.1	500 µl	plastic	90,85 €

For further information, please see page 1221

Evan's blue (C.I. 23860)



Evan's blue (C.I. 23860)
for microscopy
Direct Blue 53
$C_{34}H_{24}N_6Na_4O_{14}S_4$
M 960,82 g/mol
[314-13-6] • EC No. 206-242-5
WGK 3
Danger H350-H361d

Type analysis:
Appearance. ..... black to purple cryst. powder
Appearance of solution (0,1 % in H_2O)..... clear, blue
Loss on drying (110 °C). ..... ≤10 %

7684.1	5 g	glass	27,85 €
7684.2	25 g	glass	56,90 €
7684.3	100 g	glass	188,15 €

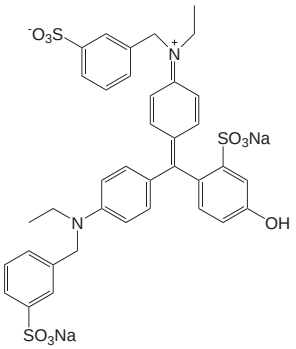
For further information, please see page 1522

FAD disodium salt
▶ Flavine-adenine-dinucleotide disodium salt (FAD) see p. 1994

6-FAM-Azide
▶ 6-Carboxyfluorescein Azide(6-FAM-Azide) see p. 1878

FAME
▶ Fatty acid mixtures see p. 1989

Fast Green FCF



Fast Green FCF

for microscopy
For staining proteins.
Food Green 3
$C_{37}H_{34}N_2Na_2O_{10}S_3$
M 808,84 g/mol
[2353-45-9] • EC No. 219-091-5
WGK 2

Warning H341

Type analysis:
Dye content. ..... ≥85 %
In H_2O insoluble matter. ..... ≤0,2 %
Solubility (0,1 % in H_2O). ..... complies

0301.1	25 g	glass	95,60 €

For further information, please see page 1522

Fast Oxidation reagent

Fast Oxidation reagent

for DNA-Synthesis with ABI™ and PolyGen® Synthesizer
For quick separating phosphoramidites.
Iodine/water/pyridine/tetrahydrofuran-mixture.
0,02 M iodine.
D 0,935 • bp ~65 °C
flp -21 °C
Storage temp.: +20 °C
UN No. 1993 • ADR 3 II • WGK 2

Danger
H225-H315-H319-H335-H351-H373-EUH019

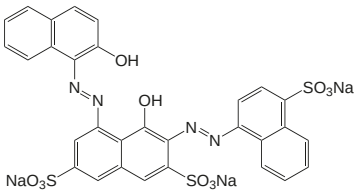
A133.2	450 ml	glass	52,15 €

For further information, please see page 1551

Fast staining kits for histology & cytology

- ▶ Panoptical fast staining kit see p. 2190
- ▶ H&E fast staining kit see p. 2034
- ▶ PAP fast staining kit see p. 2191

Fast sulphon black F (C.I. 26990)



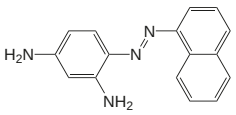
Fast sulphon black F (C.I. 26990)

≥95 %, p.a.
Metal indicator for Cu
Acid black 32
$C_{30}H_{17}N_4O_{11}S_3Na_3$
M 774,6 g/mol
[3682-47-1]
WGK 3

Type analysis:
Appearance. ..... black powder
Assay (TLC). ..... ≥95,0 %
Appearance of solution (0,1 % in H_2O). ..... clear, green
Suitability as indicator. ..... complies

7685.1	5 g	glass	14,55 €
7685.2	25 g	glass	25,30 €
7685.3	100 g	glass	68,70 €

Fat brown RR (C.I. 11285)



Fat brown RR (C.I. 11285)

for microscopy
Liposoluble dye
$C_{16}H_{14}N_4$
M 262,31 g/mol
mp 147-158 °C
[6416-57-5]
WGK 3

Warning H315-H319-H335

Type analysis:
Appearance. ..... dark red to rusty brown powder
Appearance of solution (1 mg/ml in $CHCl_3$). ..... clear to slightly hazy, orange to dark red brown
Loss on drying. ..... ≤0,5 %

7687.1	5 g	glass	13,90 €
7687.2	25 g	glass	24,20 €
7687.3	100 g	glass	62,25 €

Fat-soluble dyes

▶ Chapter histology see p. 1526

Fatty acid mixtures

Storage temp.: +4 °C

Fatty acid methyl ester mixture

ROTICHROM® ME 11
UN No. 1993 • ADR 3 III • WGK 1

Warning H226-H315

Type analysis:
C 6:0 Methyl hexanoate. ..... 20 %
C 7:0 Methyl heptanoate. ..... 20 %
C 8:0 Methyl octanoate. ..... 20 %
C 9:0 Methyl nonanoate. ..... 20 %
C 10:0 Methyl decanoate. ..... 20 %

8632.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture

ROTICHROM® ME 12
WGK 1

Type analysis:
C 11:0 Methyl undecanoate. ..... 20 %
C 12:0 Methyl laurate. ..... 20 %
C 13:0 Methyl tridecanoate. ..... 20 %
C 14:0 Methyl myristate. ..... 20 %
C 15:0 Methyl pentadecanoate. ..... 20 %

8636.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture

ROTICHROM® ME 13
UN No. 1888 • ADR 6.1 III • WGK 3

Danger
H331-H372-H351-H361d-H302-H315-H319

Type analysis:
C 16:0 Methyl hexadecanoate. ..... 20 %
C 17:0 Methyl heptadecanoate. ..... 20 %
C 18:0 Methyl stearate. ..... 20 %
C 19:0 Methyl nonadecanoate. ..... 20 %
C 20:0 Methyl eicosanoate. ..... 20 %
Dissolved in trichloromethane

8642.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture

ROTICHROM® ME 14
UN No. 1888 • ADR 6.1 III • WGK 3

Danger
H331-H372-H351-H361d-H302-H315-H319

Type analysis:
C 18:0 Methyl stearate. ..... 20 %
C 19:0 Methyl nonadecanoate. ..... 20 %
C 20:0 Methyl arachinate. ..... 20 %
C 21:0 Methyl heneicosanoate. ..... 20 %
C 22:0 Methyl behenate. ..... 20 %
Dissolved in trichloromethane

8644.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® ME 15
WGK 1

Type analysis:
C 8:0 Methyl octanoate. 20 %
C 9:0 Methyl nonanoate. 20 %
C 10:0 Methyl decanoate. 20 %
C 11:0 Methyl undecanoate. 20 %
C 12:0 Methyl dodecanoate. 20 %

8650.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® ME 16
WGK 1

Type analysis:
C 13:0 Methyl tridecanoate. 20 %
C 14:0 Methyl myristate. 20 %
C 15:0 Methyl pentadecanoate. 20 %
C 16:0 Methyl palmitate. 20 %
C 17:0 Methyl heptadecanoate. 20 %

8661.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® ME 17
UN No. 1888 • ADR 6.1 III • WGK 3
Danger
H331-H372-H351-H361d-H302-H315-H319

Type analysis:
C 20:0 Methyl arachinate. 20 %
C 21:0 Methyl heneicosanoate. 20 %
C 22:0 Methyl docosanoate. 20 %
C 23:0 Methyl tricosanoate. 20 %
C 24:0 Methyl tetracosanoate. 20 %
Dissolved in trichloromethane

8666.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® ME 18
WGK 1

Type analysis:
C 6:0 Methyl caproate 20 %
C 8:0 Methyl caprylate. 20 %
C 10:0 Methyl caprate 20 %
C 12:0 Methyl laurate. 20 %
C 14:0 Methyl myristate. 20 %

8667.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® ME 19
WGK 1

Type analysis:
C 8:0 Methyl caprylate. 20 %
C 10:0 Methyl caprate 20 %
C 12:0 Methyl laurate. 20 %
C 14:0 Methyl myristate. 20 %
C 16:0 Methyl palmitate. 20 %

8669.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® ME 21
UN No. 1888 • ADR 6.1 III • WGK 3
Danger
H331-H372-H351-H361d-H302-H315-H319

Type analysis:
C 16:0 Methyl palmitate. 20 %
C 18:0 Methyl stearate. 20 %
C 20:0 Methyl arachinate 20 %
C 22:0 Methyl behenate. 20 %
C 24:0 Methyl lignocerate. 20 %
Dissolved in trichloromethane

8676.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® ME 22
WGK 1

Type analysis:
C 12:0 Methyl laurate. 20 %
C 14:0 Methyl myristate. 20 %
C 16:0 Methyl palmitate. 20 %
C 18:0 Methyl stearate. 20 %
C 20:0 Methyl arachinate 20 %

8677.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® ME 24
WGK 1

Type analysis:
C 13:0 Methyl tridecanoate. 20 %
C 15:0 Methyl pentadecanoate. 20 %
C 17:0 Methyl heptadecanoate. 20 %
C 19:0 Methyl nonadecanoate. 20 %
C 21:0 Methyl heneicosanoate. 20 %

8679.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® ME 26
WGK 1

Type analysis:
C 12:0 Methyl laurate. 20 %
C 14:0 Methyl myristate. 20 %
C 14:1 Methyl myristoleate. 20 %
C 16:0 Methyl palmitate. 20 %
C 16:1 Methyl palmitoleate. 20 %

8685.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® ME 28
WGK 1

Type analysis:
C 16:0 Methyl palmitate. ~20 %
C 18:0 Methyl stearate. ~20 %
C 18:1 Methyl oleate. ~20 %
C 18:2 Methyl linoleate. ~20 %
C 18:3 Methyl linolenate. ~20 %

8691.1	100 mg	plastic	177,30 €

Fatty acid methyl ester mixture
ROTICHROM® ME 29
WGK 1

Type analysis:
C 16:1 Methyl palmitoleate 20 %
C 18:1 Methyl oleate. 20 %
C 20:1 Methyl eicosenate 20 %
C 22:1 Methyl erucate. 20 %
C 24:1 Methyl nervonate. 20 %

8692.1	100 mg	plastic	177,30 €

Fatty acid methyl ester mixture
ROTICHROM® ME 30
WGK 1

Type analysis:
C 18:0 Methyl stearate. 20 %
C 18:1 Methyl oleate. 20 %
C 18:2 Methyl linoleate 20 %
C 18:3 Methyl linolenate 20 %
C 20:4 Methyl arachidonate. 20 %

8693.1	100 mg	plastic	177,30 €

Fatty acid methyl ester mixture
ROTICHROM® ME 32
WGK 1

Type analysis:
C 20:0 Methyl eicosanoate ~20 %
C 20:1 Methyl eicosenate ~20 %
C 20:2 Methyl eicosadienoate ~20 %
C 20:3 Methyl eicosatrienoate ~20 %
C 20:4 Methyl arachidonate. ~20 %

8697.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® ME 35
WGK 1

Type analysis:
C 4:0 Methyl butyrate. 4,0 %
C 6:0 Methyl hexanoate. 3,0 %
C 8:0 Methyl octanoate. 2,0 %
C 10:0 Methyl decanoate. 3,0 %
C 12:0 Methyl laurate. 3,0 %
C 14:0 Methyl myristate. 12,0 %
C 16:0 Methyl palmitate. 30,0 %
C 18:0 Methyl stearate. 10,0 %
C 18:1 Methyl oleate. 30,0 %
C 18:2 Methyl linoleate 2,0 %
C 18:3 Methyl linolenate 1,0 %

8701.1	100 mg	plastic	199,85 €

Fatty acid methyl ester mixture
ROTICHROM® ME 36
WGK 1

Type analysis:
C 4:0 Methyl butyrate ~4 %
C 6:0 Methyl caproate ~2 %
C 8:0 Methyl caprylate ~1 %
C 10:0 Methyl caprate ~3 %
C 12:0 Methyl laurate ~4 %
C 14:0 Methyl myristate ~10 %
C 14:1 Methyl myristoleate ~2 %
C 16:0 Methyl palmitate ~25 %
C 16:1 Methyl palmitoleate ~5 %
C 18:0 Methyl stearate ~10 %
C 18:1 Methyl oleate ~25 %
C 18:2 Methyl linoleate ~3 %
C 18:3 Methyl linolenate ~4 %
C 20:0 Methyl arachinate ~2 %

8702.1	100 mg	plastic	199,85 €

Fatty acid methyl ester mixture
ROTICHROM® ME 37
WGK 2
Warning H315

Type analysis:
C 4:0 Methyl butyrate 7,7 %
C 6:0 Methyl caproate 7,7 %
C 8:0 Methyl caprylate 7,7 %
C 10:0 Methyl caprate 7,7 %
C 12:0 Methyl laurate 7,7 %
C 14:0 Methyl myristate 7,7 %
C 16:0 Methyl palmitate 7,7 %
C 18:0 Methyl stearate 7,7 %
C 18:1 Methyl oleate 7,7 %
C 18:2 Methyl linoleate 7,7 %
C 18:3 Methyl linolenate 7,7 %
C 20:0 Methyl arachinate 7,7 %
C 22:0 Methyl behenate 7,7 %

8703.1	100 mg	plastic	199,85 €

Fatty acid methyl ester mixture
ROTICHROM® ME 38
WGK 1

Type analysis:
C 8:0 Methyl octanoate 2,0 %
C 10:0 Methyl decanoate 3,0 %
C 12:0 Methyl dodecanoate 4,0 %
C 14:0 Methyl tetradecanoate 8,0 %
C 16:0 Methyl hexadecanoate 10,0 %
C 18:0 Methyl octadecanoate 7,0 %
C 18:1 Methyl oleate 8,0 %
C 18:2 Methyl linoleate 8,0 %
C 18:3 Methyl linolenate 10,0 %
C 20:0 Methyl eicosanoate 8,0 %
C 22:0 Methyl docosanoate 10,0 %
C 22:1 Methyl erucate 10,0 %
C 24:0 Methyl tetracosanoate 12,0 %

8705.1	100 mg	plastic	199,85 €

Fatty acid methyl ester mixture
ROTICHROM® ME 39
WGK 1

Type analysis:
C 12:0 Methyl laurate 2,0 %
C 14:0 Methyl myristate 2,0 %
C 14:1 Methyl myristoleate 1,0 %
C 16:0 Methyl palmitate 22,0 %
C 16:1 Methyl palmitoleate 5,0 %
C 17:0 Methyl heptadecanoate 10,0 %
C 18:0 Methyl stearate 10,0 %
C 18:1 Methyl oleate 32,0 %
C 18:2 Methyl linoleate 8,0 %
C 18:3 Methyl linolenate 4,0 %
C 20:4 Methyl arachidonate 4,0 %

8709.1	100 mg	plastic	199,85 €

Fatty acid methyl ester mixture
ROTICHROM® ME 46
WGK 1

Type analysis:
C 16:0 Methyl palmitate 10,0 %
C 18:0 Methyl stearate 5,0 %
C 18:1 Methyl oleate 30,0 %
C 18:2 Methyl linoleate 50,0 %
C 18:3 Methyl linolenate 5,0 %

8730.1	100 mg	plastic	177,30 €

Fatty acid methyl ester mixture
ROTICHROM® ME 51
WGK 1

Type analysis:
C 16:0 Methyl palmitate 4,0 %
C 18:0 Methyl stearate 1,0 %
C 18:1 Methyl oleate 58,0 %
C 18:2 Methyl linoleate 20,0 %
C 18:3 Methyl linolenate 10,0 %
C 20:0 Methyl arachinate 1,0 %
C 20:1 Methyl eicosenoate 2,0 %
C 22:0 Methyl behenate 1,0 %
C 22:1 Methyl erucate 2,0 %
C 24:0 Methyl lignocerate 1,0 %

8737.1	100 mg	plastic	222,00 €

Fatty acid methyl ester mixture
ROTICHROM® FO 3
For testing of coconut, rape seed and mustard seed oils.
WGK 1

Type analysis:
C 14:0 Methyl myristate 1,0 %
C 16:0 Methyl palmitate 4,0 %
C 18:0 Methyl stearate 3,0 %
C 18:1 Methyl oleate 45,0 %
C 18:2 Methyl linoleate 15,0 %
C 18:3 Methyl linolenate 3,0 %
C 20:0 Methyl arachinate 3,0 %
C 22:0 Methyl behenate 3,0 %
C 22:1 Methyl erucate 20,0 %
C 24:0 Methyl lignocerate 3,0 %

8756.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® FO 4
For testing of olive and tea seed oils.
WGK 1

Type analysis:
C 16:0 Methyl palmitate 11,0 %
C 18:0 Methyl stearate 3,0 %
C 18:1 Methyl oleate 80,0 %
C 18:2 Methyl linoleate 6,0 %

8758.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® FO 5
For testing of coconut, palm kernel and babassu oils.
WGK 1

Type analysis:
C 8:0 Methyl caprylate ~7 %
C 10:0 Methyl caprate ~5 %
C 12:0 Methyl laurate ~48 %
C 14:0 Methyl myristate ~15 %
C 16:0 Methyl palmitate ~7 %
C 18:0 Methyl stearate ~3 %
C 18:1 Methyl oleate ~12 %
C 18:2 Methyl linoleate ~3 %

8759.1	100 mg	plastic	166,55 €

Fatty acid methyl ester mixture
ROTICHROM® FO 7
For testing of rape seed oil.
WGK 1

Type analysis:
C 14:0 Methyl myristate 1,0 %
C 16:0 Methyl palmitate 4,0 %
C 18:0 Methyl stearate 3,0 %
C 18:1 Methyl oleate 60,0 %
C 18:2 Methyl linoleate 12,0 %
C 18:3 Methyl linolenate 5,0 %
C 20:0 Methyl arachidate 3,0 %
C 20:1 Methyl eicosenoate 1,0 %
C 22:0 Methyl behenate 3,0 %
C 22:1 Methyl erucate 5,0 %
C 24:0 Methyl lignocerate 3,0 %

8761.1	100 mg	plastic	177,30 €

Fatty acid methyl ester mixture
ROTICHROM® FO 8
Suitable for rape seed oil.
WGK 1

Type analysis:
C 16:0 Methyl palmitate 4,0 %
C 18:0 Methyl stearate 1,0 %
C 18:1 Methyl oleate 53,8 %
C 18:1 Methyl vaccenate 4,0 %
C 18:2 Methyl linoleate 20,2 %
C 18:3 Methyl linolenate 10,0 %
C 20:0 Methyl arachidate 2,0 %
C 20:1 Methyl eicosenoate 1,9 %
C 22:0 Methyl behenate 1,0 %
C 22:1 Methyl erucate 2,1 %

6330.1	100 mg	plastic	192,45 €

Free acid mixture

ROTICHROM® FA 1

UN No. 1760 • ADR 8 III • WGK 1

Danger H314-H335

Type analysis:

C 6:0 Caproic acid. ..... 20 %
C 8:0 Caprylic acid. ..... 20 %
C 10:0 Capric acid. ..... 20 %
C 12:0 Lauric acid. ..... 20 %
C 14:0 Myristic acid. ..... 20 %

8792.1	100 mg	plastic	188,05 €

FA Glyceride mixture

ROTICHROM® TLC 8

UN No. 1888 • ADR 6.1 III • WGK 3

Danger

H331-H372-H351-H361d-H302-H315-H319

Type analysis:

Monopalmitin. ..... 20 %
Dipalmitin. ..... 20 %
Tripalmitin. ..... 20 %
Methyl palmitate. ..... 20 %
Palmitic acid. ..... 20 %
Dissolved in trichloromethane

8823.1	100 mg	plastic	177,30 €

FA Glyceride mixture

ROTICHROM® TLC 10

WGK 1

Type analysis:

Monoolein. ..... 20 %
Diolein. ..... 20 %
Triolein. ..... 20 %
Methyl oleate. ..... 20 %
Oleic acid. ..... 20 %

8827.1	100 mg	plastic	199,85 €

Fatty Acids and their Derivatives

Art. No.	Description	Page
8736	Arachidic acid	1813
9264	Arachidic acid calcium salt	1813
4717	Arachidonic acid	1814
5487	Azelaic acid	1821
5466	5-Bromovaleric acid	1855
3277	Butyric acid	1864
5186	Butyric acid methyl ester	1865
8797	Capric acid	1875
3164	Capric acid	1875
3325	Capric acid methyl ester	1875
7547	Capric aldehyde	1875
8799	Caproic acid	1875
3327	Caproic aldehyde	1875
3168	Caprylic acid	1875
3331	Caprylic acid methyl ester	1876
5762	Cetyl alcohol	1888
9229	Cetyl palmitate	1888
3404	Cholesterol palmitate	1895
3405	Cholesterol stearate	1895
3754	Dodecyl aldehyde	1959
7065	Erucic acid	1973
9431	Erucic acid methyl ester	1973
3787	Glyceryl monostearate	2025
5085	Lanolin alcohols	2091
AE81	Lecithin	2096
9812	Lecithin	2096
7514	Lecithin	2096
3976	Levulinic acid	2098
5315	Linoleic acid	2099
3198	Linoleic acid ethyl ester	2099
7217	Linoleic acid methyl ester	2100
3199	Linoleic acid methyl ester	2100
6039	Linolenic acid	2100
5320	Linolenic acid	2100
6469	Myristic acid	2151
5527	Myristic acid isopropyl ester	2151
3753	Myristic acid methyl ester	2151
7213	Oleic acid	2184
5362	Oleic acid	2184
3186	Oleic acid methyl ester	2184
8856	Oleic acid sodium salt	2184
5907	Palmitic acid	2190
4459	Palmitic acid methyl ester	2190
7015	Pelargonic acid	2194
4462	Pelargonic acid vanillylamide	2194
5270	Pimelic acid	2213
9459	Stearic acid	2380
8150	Stearic acid butyl ester	2380
8238	Stearic acid lithium salt	2380
4704	Stearic acid methyl ester	2380
8628	Stearic acid sodium salt	2381
8663	Stearyl alcohol	2381
4813	Tributyrin	2414
7252	Tricaprin	2414
4866	Undecanoic acid methyl ester	2429
4874	n-Valeric acid	2432
4876	n-Valeric acid methyl ester	2432
9295	Zinc stearate	2452

Fatty ponceau

▶ Sudan IV (C.I. 26105) see p. 2385

Fehling's solution I

Fehling's solution I

for sugar determination, reag. Ph.Eur.

Cupric sulphate solution, Copper(II) sulphate solution

D 1,042

UN No. 3082 • ADR 9 III • WGK 3

Danger H318-H410

N055.1	1 l	plastic	32,15 €
Original pack 6 x 1 l			30,54/1 l

Fehling's solution II

Fehling's solution II

for sugar determination, reag. Ph.Eur.

Alkaline potassium sodium tartrate solution

Potassium sodium tartrate solution

D 1,255

UN No. 1824 • ADR 8 II • WGK 1

Danger H290-H314

N056.1	1 l	plastic	45,70 €
Original pack 6 x 1 l			43,42/1 l

Fenamic acid

▶ *N*-Phenylanthranilic acid see p. 2206

(-)-Fenchone

(-)-1,3,3-Trimethyl-2-norbornanone, L-Fenchone

$C_{10}H_{16}O$

M 152,24 g/mol

D 0,948 • bp 192-194 °C

mp 5 °C • flp 68 °C

[7787-20-4] • EC No. 232-107-5

UN No. 1224 • ADR 3 III

Warning H226

(-)-Fenchone

≥98 %

Type analysis:

Appearance. ..... colourless to light yellow liquid
Assay (GC). ..... ≥98,0 %
Optical rotation. ..... -53,5° to -47,5°

7294.1	50 ml	glass	80,55 €

(-)-Fenchone

ROTICHROM® GC

Reference substance for GC

Storage temp.: +4 °C

Type analysis:

Purity (GC). ..... ≥96 %

9377.2	100 mg	glass	121,40 €

Fermentation salt

▶ di-Ammonium hydrogen phosphate see p. 1799

Ferric ammonium citrate

▶ Ammonium iron(III) citrate see p. 1800

Ferric chloride

▶ Iron(III) chloride see p. 2074
▶ Iron(III) chloride hexahydrate see p. 2074

Ferric citrate

▶ Iron(III) citrate hydrate see p. 2074

Ferric orthophosphate

▶ Iron(III) phosphate hydrate see p. 2075

Ferric oxide

▶ Iron(III) oxide see p. 2075

Ferric sulphate

▶ Iron(III) sulphate hydrate see p. 2076

Ferroin

1,10-Phenanthroline iron(II) salt solution
WGK 2
H412

Ferroin indicator solution

for sewage analysis, for determination of COD

According to DIN 38409 part H41, H43 and H44.

T131.1	100 ml	glass	32,15 €

Ferroin solution

1/40 mol/l (1/40 M) Redox indicator

T132.1	100 ml	glass	40,75 €

Ferrous ammonium sulphate

▶ Ammonium iron(II) sulphate hexahydrate see p. 1800

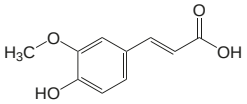
Ferrous chloride hydrate

▶ Iron(II) chloride hydrate see p. 2073

Ferrous sulphate heptahydrate

▶ Iron(II) sulphate heptahydrate see p. 2075

trans-Ferulic acid



trans-Ferulic acid

≥99 %

4-Hydroxy-3-methoxycinnamic acid
$C_{10}H_{10}O_4$
M 194,19 g/mol
mp 169-173 °C
[537-98-4] • EC No. 208-679-7
WGK 1

Warning H315-H319-H335

Type analysis:

Assay (acidim.). ..... ≥99,0 %
Melting range. ..... 169-173 °C
Loss on drying (3 h, 105 °C). ..... ≤0,5 %

9936.1	10 g	plastic	35,40 €
9936.2	100 g	plastic	199,45 €

Ficoll® 400

Ficoll® 400

for molecular biology and biochemistry

For density gradient centrifugation; ingredient of gel loading buffers. Non-ionic polymer of saccharose.
M ~400 000 g/mol
[26873-85-8]
WGK 1

Guarantee analysis:

Appearance. ..... white powder
Solubility (10 % in H_2O). ..... clear, colourless
Loss on drying. ..... ≤3 %
Heavy metals. ..... ≤0,001 %

CN90.1	10 g	plastic	41,40 €
CN90.2	25 g	plastic	87,00 €
CN90.3	100 g	plastic	279,40 €

For further information, please see page 1280

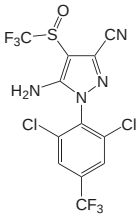
Filter aids

▶ Charcoal see p. 1889
▶ Aluminium oxide, neutral, basic, acidic see p. 1785
▶ Celite® see p. 1884
▶ Cellulose see p. 1886
▶ Florisil® see p. 1995
▶ Glass wool see p. 2018
▶ Infusorial earth see p. 2067
▶ Polyamide see p. 2216
▶ Quarz see p. 2248
▶ Quarz wool see p. 2248
▶ Sea sand see p. 2309

Filter glass wool

▶ Glass wool see p. 2018

Fipronil



Fipronil

≥98 %

$C_{12}H_4Cl_2F_6N_4OS$
M 437,15 g/mol
Storage temp.: +4 °C
[120068-37-3] • EC No. 424-610-5
UN No. 2811 • ADR 6.1 III • WGK 3

Danger

H301+H311+H331-H372-H410

Type analysis:

Purity (HPLC). ..... ≥98 %

0925.1	100 mg	glass	107,40 €

Fipronil Standard Solution

Fipronil Standard Solution

100 µg/ml in acetonitrile

Storage temp.: +4 °C
UN No. 1648 • ADR 3 II • WGK 2

Danger

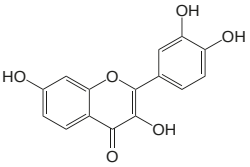
H225-H302+H312+H332-H319

Type analysis:

Fipronil. ..... 100 µg/ml

0935.1	1 ml	glass ampoule	43,55 €

Fisetin



3,3',4',7-Tetrahydroxyflavone
$C_{15}H_{10}O_6$
M 286,23 g/mol
mp 330 °C
Storage temp.: +4 °C
[528-48-3] • EC No. 208-434-4

Fisetin

ROTICHROM® HPLC

Reference substance for HPLC.

Type analysis:

Purity (HPLC). ..... ≥99 %

7457.1	10 mg	plastic	206,30 €

Fisetin

ROTICHROM® ~CHR

7383.1	250 mg	glass	75,80 €

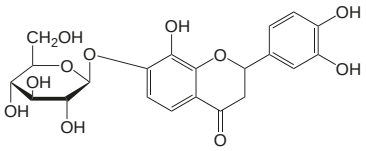
FITC

▶ Fluorescein isothiocyanate Isomer I see p. 1996

Fixation spray

▶ Roti®-Fix spray fixative see p. 2280

Flavanomarein



Flavanomarein

ROTICHROM® HPLC

Reference substance for HPLC.

$C_{21}H_{22}O_{11}$

M 450,29 g/mol

Storage temp.: +4 °C

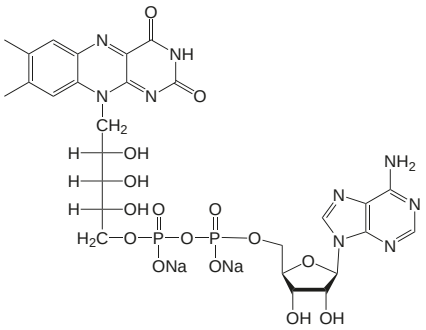
[577-38-8] • EC No. 209-411-1

Type analysis:

Purity (HPLC)..... ≥99 %

7458.1	10 mg	glass	353,70 €

Flavine-adenine-dinucleotide disodium salt (FAD)



FAD disodium salt, Riboflavin-5'-adenosine diphosphate disodium salt

$C_{27}H_{31}O_{15}N_9Na_2P_2$

M 865,55 g/mol

Storage temp.: +4 °C

[84366-81-4] • EC No. 282-733-8

WGK 3

Flavine-adenine-dinucleotide disodium salt (FAD)

CELLPURE® ≥95 %

Type analysis:

Appearance..... orange yellow to pale yellowish brown powder

Assay (dry substance)..... ≥95 %

Endotoxins..... ≤100 E.U./g

Heavy metals (as Pb)..... ≤0,001 %

Arsenic (As_2O_3)..... ≤0,0001 %

Moisture..... ≤10 %

6833.1	10 mg	glass	26,35 €
6833.2	50 mg	glass	38,60 €
6833.3	100 mg	glass	52,15 €

Flavine-adenine-dinucleotide disodium salt (FAD)

≥95 %, for biochemisty

Type analysis:

Appearance..... light orange powder

Assay (dry substance)..... ≥95 %

Water content..... ≤10 %

pH value (1 % in H_2O)..... 5,5-6,5

5581.2	10 mg	glass	18,20 €
5581.3	25 mg	glass	23,55 €
5581.1	100 mg	glass	41,85 €
5581.4	500 mg	glass	64,40 €
5581.5	1 g	glass	96,65 €

Flavonoids

Art. No.	Description	Page
6531	Acacetin	1754
5010	Acacetin	1754
5255	Amentoflavone trihydrate	1786
NE37	Apigenin	1811
NC37	Apigenin	1812
5611	Apigenin	1812
NE19	Apigenin-7-glucoside	1812
NC19	Apigenin-7-glucoside	1812
6348	Apigenin-7-glucoside	1812
5557	Apigenin-7-glucoside	1812
1085	Apiin	1812
1110	Baicalein	1824
1121	Baicalin	1825
8898	Bavachinin A	1828
7010	Butein	1861
6356	(+)-Catechin	1883
6200	(+)-Catechin	1883
8822	DL-Catechin hydrate	1883
6475	Chrysin	1898
6044	Chrysoeriol	1898
0641	Cyanidin 3-arabinoside chloride	1915
4545	Cyanidin chloride	1915
1133	Cyanin chloride	1915
5568	Cyanin chloride	1915
7444	Datiscetin	1922
4537	Delphinidin chloride	1924
0643	Delphinidin 3-galactoside chloride	1925
0644	Delphinidin 3-glucoside chloride	1925
0977	Delphinidin 3-rutinoside chloride	1925
7445	Didymin	1937
T893	(+)-Dihydroquercetin	1941
6960	Dihydrorobinetin	1941
8066	6,7-Dihydroxyflavone	1943
7446	Diosmetin	1951
9326	Diosmetinidin chloride	1951
6736	Diosmin	1951
7293	(-)-Epicatechin	1971
NE41	(-)-Epicatechin	1971
NC41	(-)-Epicatechin	1971
1139	(-)-Epicatechin	1971
5798	(-)-Epicatechin	1971
6358	(-)-Epicatechin gallate	1971
6359	(-)-Epigallocatechin	1971
6361	(-)-Epigallocatechin gallate	1972
NE42	Eriocitrin	1973
NC42	Eriocitrin	1973
6990	Eriodictyol	1973
6521	Eriodictyol-7-glucoside	1973
6493	Eupatorin	1988
7457	Fisetin	1993
7383	Fisetin	1993
7458	Flavanomarein	1994
9570	Formononetin	2007
7460	Galangin	2010
0716	Genistein	2013
9374	Genistin	2014
7743	Hesperetin	2039
7570	Hesperetin	2039
9972	Hesperidin	2039
7577	Hesperidin	2039
5800	Hesperidin	2039
7737	Hesperidin	2039
7585	Homoeriodictyol	2045
6002	Homoorientin	2045
NE23	Hyperoside	2062
NC23	Hyperoside	2062
7932	Hyperoside	2062
4215	Hyperoside	2062
3967	Idaein chloride	2062
NE24	Isoquercitrin	2080
NC24	Isoquercitrin	2080
7586	Isoquercitrin	2080
5573	Isoquercitrin	2080
7589	Isorhamnetin	2080
6528	Isorhamnetin	2080
6989	Isorhoifolin	2081
7498	Isosakuranetin	2081
5883	Isoscopoletin	2081
NE25	Isovitexin	2081
NC25	Isovitexin	2081
6412	Isovitexin	2081
7501	Kaempferide	2082
NE26	Kaempferol	2082
NC26	Kaempferol	2082
7503	Kaempferol	2082
5859	Kaempferol	2082
9321	Kaempferol-3-glucoside	2082
4526	Kaempferol-3-rhamnosidoglucoside	2083
6134	Keracyanine chloride	2085
NE49	Luteolin	2106
4546	Luteolin	2106
4164	Luteolin-7-glucoside	2106
9325	Luteolinidin chloride	2106
6496	(-)-Maackiain	2109
6140	Malvidin chloride	2118
K013	Malvin chloride	2119
4171	Marein	2122
4172	Maritimein	2122
6459	Morin hydrate	2148
6461	Myricetin	2150
4187	Myricetin	2150
9391	Myricitrin	2150
8524	Naringenin	2153
1186	Naringenin	2153
8865	Naringenin-7-glucoside	2154
6481	Naringin	2154
4200	Naringin	2154
4206	Neoeriocitrin	2155
6767	Neohesperidin	2155
K030	Oenin chloride	2173
6151	Orientin	2186
4541	Pelargonidin chloride	2194
6853	Pelargonidin chloride	2194
1646	Pelargonidin 3,5-diglucoside chloride	2194
7406	Peltatoside	2194
1413	Peonidin 3,5-diglucoside chloride	2197
1619	Peonidin 3-glucoside chloride	2197
1469	Petunidin 3-glucoside chloride	2204
4196	Phlorizin dihydrate	2209
7413	Poncirin	2220
K014	Primulin chloride	2237

1210	Quercetin	2249
7138	Quercetin dihydrate (C.I. 75670)	2249
2629	Quercetin dihydrate (C.I. 75670)	2249
NE27	Quercetin dihydrate	2249
NC27	Quercetin dihydrate	2249
7417	Quercetin dihydrate	2249
9419	Quercetin-3-O-glucose-6''-acetate	2249
NE29	Quercitrin	2250
9417	Quercitrin	2250
7418	Rhamnetin	2257
7420	Rhoifolin	2258
7421	Robinetin	2261
6413	Saponarin	2307
9410	Sciadopitysin	2308
5578	Silybin	2329
1216	Spiraeoside	2356
4564	Spiraeoside	2356
7569	Sulfuretin	2386
9432	Syringetin-3-glucoside	2392
7425	Tamarixetin	2393
3268	Tilirosid	2408
NE56	Vitexin	2436
NC56	Vitexin	2436
6418	Vitexin	2437
5579	Vitexin	2437
4173	Vitexin	2437
NE34	Vitexin-2''-O-rhamnoside	2437
NC34	Vitexin-2''-O-rhamnoside	2437
5819	Vitexin-2''-O-rhamnoside	2437
7447		

Florisil®

Magnesium silicate
$MgO \cdot 3{,}6\ SiO_2 \cdot 1{,}53\ OH$
D 2,51
[1343-88-0] • EC No. 215-681-1

Florisil®

for Hydrocarbon Index analysis, 60-100 mesh

For Hydrocarbon Index determination according to EN ISO 9377-2 (H53).

Type analysis:

Magnesium oxide (MgO). ..... ~15,5 %
Silicon dioxide (SiO_2). ..... ~84,0 %
Sodium sulphate (Na_2SO_4). ..... ~0,5 %
Adapted for EN ISO 9377-2 (H53)

CN39.1	100 g	plastic	42,50 €
CN39.3	500 g	plastic	142,45 €
Original pack 6 x 500 g			135,33/500 g
CN39.2	1 kg	plastic	224,70 €
Original pack 6 x 1 kg			213,47/1 kg
CN39.4	2,5 kg	plastic	461,20 €

Florisil® PR

for (pesticides) residue analysis 60-100 mesh

specially activated.

Type analysis:

Magnesium oxide (MgO). ..... ~15,5 %
Silicon dioxide (SiO_2). ..... ~84,0 %
Sodium sulphate (Na_2SO_4). ..... ~0,5 %

T201.1	100 g	plastic	45,05 €
T201.2	500 g	plastic	160,20 €
Original pack 6 x 500 g			152,19/500 g
T201.3	1 kg	plastic	289,20 €
Original pack 6 x 1 kg			274,74/1 kg

Florisil®

for chromatography 60-100 mesh

Standard adsorbent

Type analysis:

Magnesium oxide (MgO). ..... ~15,5 %
Silicon dioxide (SiO_2). ..... ~84,0 %
Sodium sulphate (Na_2SO_4). ..... ~0,5 %

0101.1	100 g	plastic	42,50 €
0101.2	500 g	plastic	139,25 €
Original pack 6 x 500 g			132,29/500 g

Florisil®

for chromatography 100-200 mesh

Type analysis:

Magnesium oxide (MgO). ..... ~15,5 %
Silicon dioxide (SiO_2). ..... ~84,0 %
Sodium sulphate (Na_2SO_4). ..... ~0,5 %

0102.1	100 g	plastic	42,50 €
0102.2	500 g	plastic	139,25 €
Original pack 6 x 500 g			132,29/500 g

Flower of sulphur

▶ Sulphur see p. 2387

Flowers of Antimony

▶ Antimony(III) oxide see p. 1811

Flowers of tin

▶ Tin(IV) oxide see p. 2409

N-(9-Fluorenylmethoxycarbonyl)-L-alanine

▶ Fmoc-L-Alanine monohydrate see p. 1997

N-(9-Fluorenylmethoxycarbonyl)-L-arginine

▶ Fmoc-L-Arginine see p. 1997

N-(9-Fluorenylmethoxycarbonyl)-L-asparagine

▶ Fmoc-L-Asparagine see p. 1998

N-α-(9-Fluorenylmethoxycarbonyl)-L-Aspartic-acid-β-allyl ester

▶ Fmoc-L-Aspartic acid-(OAllyl) see p. 1998

N-α-(9-Fluorenylmethoxycarbonyl)-β-azido-L-alanine

▶ Fmoc-L-β-Azidoalanine see p. 1998

N-α-(9-Fluorenylmethoxycarbonyl)-γ-azido-L-homoalanine

▶ Fmoc-L-γ-Azidohomoalanine see p. 1998

N-α-(9-Fluorenylmethoxycarbonyl)-ε-azido-L-lysine

▶ Fmoc-L-Azidolysine see p. 1999

N-α-(9-Fluorenylmethoxycarbonyl)-δ-azido-L-ornithine

▶ Fmoc-L-Azidoornithine see p. 1999

N-α-(9-Fluorenylmethoxycarbonyl)-4-azido-L-phenylalanine

▶ Fmoc-L-4-Azidophenylalanine see p. 1999

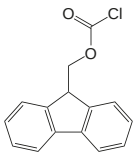
trans-*N*-α-(9-Fluorenylmethoxycarbonyl)-4-azido-L-proline

▶ Fmoc-L-4-Azidoproline (2S,4R) see p. 1999

N_α-9-Fluorenylmethoxycarbonyl-N_δ-tert. butyloxycarbonyl-L-ornithine

▶ Fmoc-L-Ornithine-(Boc) see p. 2002

9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl)



9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl)

PEPTIPURE® ≥ 98%

Protective group reagent
Fmoc-Cl, (9-Fluorenylmethyl) chloroformate
$C_{15}H_{11}ClO_2$
M 258,7 g/mol
Storage temp.: +4 °C
[28920-43-6] • EC No. 249-313-6
UN No. 1759 • ADR 8 II • WGK 1

Danger H302+H332-H314

Type analysis:

Appearance. ..... white to off-white powder
Appearance of solution. ..... clear, colourless
Assay (HPLC). ..... ≥98,0 %
Melting point. ..... 55-70 °C

2201.1	5 g	glass	19,90 €
2201.2	25 g	glass	44,65 €
2201.3	100 g	glass	130,65 €

N-(9-Fluorenylmethoxycarbonyl)-L-glutamine

▶ Fmoc-L-Glutamine see p. 2000

N-(9-Fluorenylmethoxycarbonyl)-glycine

▶ Fmoc-Glycine see p. 2000

N-(9-Fluorenylmethoxy-carbonyl)-L-isoleucine

▶ Fmoc-L-Isoleucine see p. 2001

N-(9-Fluorenylmethoxy-carbonyl)-L-leucine

▶ Fmoc-L-Leucine see p. 2001

N-(9-Fluorenylmethoxy-carbonyl)-L-lysine

▶ Fmoc-L-Lysine see p. 2001

N-(9-Fluorenylmethoxy-carbonyl)-L-methionine

▶ Fmoc-L-Methionine see p. 2001

N-(9-Fluorenylmethoxy-carbonyl)-L-phenylalanine

▶ Fmoc-L-Phenylalanine see p. 2002

N-(9-Fluorenylmethoxy-carbonyl)-L-proline

▶ Fmoc-L-Proline see p. 2002

N-α-(9-Fluorenylmethoxy-carbonyl)-L-propargylglycine

▶ Fmoc-L-Propargylglycine see p. 2002

N-(9-Fluorenylmethoxy-carbonyl)-L-serine

▶ Fmoc-L-Serine monohydrate see p. 2002

N-(9-Fluorenylmethoxy-carbonyl)-L-tryptophane

▶ Fmoc-L-Tryptophan see p. 2003

N-(9-Fluorenylmethoxy-carbonyl)-L-tyrosine

▶ Fmoc-L-Tyrosine see p. 2003

N-(9-Fluorenylmethoxy-carbonyl)-L-valine

▶ Fmoc-L-Valine see p. 2003

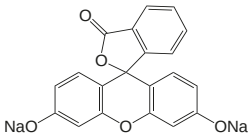
(9-Fluorenylmethyl) chloro formate

▶ 9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl) see p. 1995

Fluorescein complexone

▶ Calcein see p. 1868

Fluorescein disodium salt



Fluorescein disodium salt (C.I. 45350)

extra concentrated

For source staining and for the study of water current.

Uranin, Resorcinophthalein sodium

$C_{20}H_{10}Na_2O_5$

M 376,28 g/mol

mp >300 °C

Solubility: 500 g/l (H_2O, 20 °C)

[518-47-8] • EC No. 208-253-0

WGK 1

Type analysis:

Appearance.....orange-red to brown powder
Water..... ≤5,0 %
Absorption max. (in H_2O). .....~491 nm
Solubilities:
Water .....40 mg/ml
Ethanol. .....70 mg/ml
Soluble in water with a yellow-green fluorescence.

5283.3	25 g	plastic	21,40 €
5283.1	100 g	plastic	34,95 €
5283.2	500 g	plastic	110,65 €
Original pack 6 x 500 g			105,12/500 g

Fluorescein-12-dUTP

Fluorescein-12-dUTP

≥95 %, 1 mM solution

For non-radioactive, enzymatic labelling of DNA.

Fluorescein-6-carboxyaminocaproyl-[5-(3-aminoallyl)-2'-deoxyuridine-5'-triphosphate]

$C_{39}H_{38}N_4O_{21}P_3$

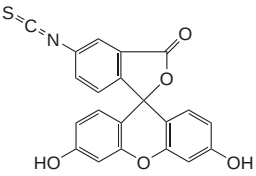
M 991,66 g/mol

Storage temp.: -20 °C
Transport temp.: cooled

1048.1	25 nmol (25 µl)	plastic	185,45 €
1048.2	50 nmol (50 µl)	plastic	328,85 €

For further information, please see page 1304

Fluorescein isothiocyanate Isomer I



Fluorescein isothiocyanate Isomer I

≥90 %, p.a.

For the study of antigen and antibody reactions.

FITC

$C_{21}H_{11}NO_5S$

M 389,39 g/mol

Storage temp.: -20 °C
Transport temp.: room temp.

[3326-32-7] • EC No. 222-042-0

WGK 1

Danger H334-H317

Type analysis:

Appearance. ..... orange-yellow, fine powder
Assay (HPLC). .....≥90,0 %
Sulphated ash. .....≤1,0 %
Loss on drying.....≤5 %

3745.2	100 mg	glass	39,70 €
3745.1	250 mg	glass	76,25 €

For further information, please see page 1530

Fluorescence staining (DNA-Gels)

▶ Roti®-GelStain see p. 2283
▶ Ethidium bromide solution 1 % see p. 1978

Fluorescent preparation Fluoro-4C

▶ Demoslides Fluoro-4C see p. 1925

Fluorexon

▶ Calcein see p. 1868

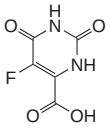
Fluorhydric acid

▶ Hydrofluoric acid Ultra-quality see p. 2052
▶ Hydrofluoric acid Supra-quality see p. 2053

Fluoride-Standards

▶ Fluoride IC Standard Solution see p. 2375

5-Fluoroorotic acid



5-Fluoroorotic acid

≥98 %, for biochemistry

For identification and selection of yeast strains.
5-Fluorouracil-4-carboxylic acid, 5-FOA
$C_5H_3FN_2O_4$
M 174,09 g/mol • mp ~280 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[703-95-7] • EC No. 211-876-0 • WGK 1

Warning H302-H315-H319-H335

Type analysis:
Assay (titr.). ..... ≥98 %
Water (KF). ..... ≤10,5 %

4015.1	500 mg	glass	41,40 €
4015.2	1 g	glass	62,25 €
4015.3	2,5 g	glass	121,40 €

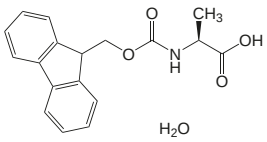
5-Fluorouracil-4-carboxylic acid

▶ 5-Fluoroorotic acid see p. 1997

Fmoc-L-Aha-OH

▶ Fmoc-L-γ-Azidohomoalanine see p. 1998

Fmoc-L-Alanine monohydrate



Fmoc-L-Alanine monohydrate

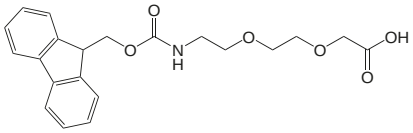
PEPTIPURE® ≥98 %, for biochemistry

Fmoc-L-Ala-OH, N-(9-Fluorenylmethoxy-carbonyl)-L-alanine
$C_{18}H_{17}NO_4 \cdot H_2O$
M 329,35 g/mol • mp 147 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[207291-76-7] • WGK 2

Type analysis:
Appearance. ..... white to off-white powder
Assay (titr., dry substance). ..... 98,0-102,0 %
Purity (HPLC). ..... ≥98,0 %
Water (KF). ..... 5,0-7,0 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF). .... -21,0° to -19,0°
Enantiomeric purity. ..... ≤0,3 % D-enantiomer
Free amino acids. ..... ≤0,2 %

6646.1	10 g	glass	16,05 €
6646.2	50 g	glass	37,55 €
6646.3	250 g	glass	142,90 €
6646.4	500 g	glass	256,95 €
Original pack 6 x 500 g			244,10/500 g
6646.5	1 kg	glass	493,45 €
Original pack 6 x 1 kg			468,78/1 kg

Fmoc-8-Amino-3,6-dioxa-octanoic acid



Fmoc-8-Amino-3,6-dioxa-octanoic acid

PEPTIPURE® ≥99 %, for biochemistry

Linker
{2-[2-(Fmoc-amino)ethoxy]ethoxy}acetic acid, Fmoc-O_2Oc-OH
$C_{21}H_{23}NO_6$
M 385,4 g/mol
mp 85-102 °C
Storage temp.: +4 °C
[166108-71-0]
WGK 3

Type analysis:
Appearance. ..... white cryst. powder
Assay (HPLC). ..... ≥99 %

7400.1	500 mg	glass	75,15 €
7400.2	1 g	glass	121,40 €

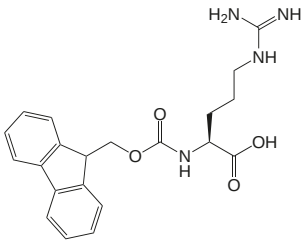
{2-[2-(Fmoc-amino)ethoxy]-ethoxy}acetic acid

▶ Fmoc-8-Amino-3,6-dioxaoctanoic acid see p. 1997

9-Fmoc-amino-xanthen-3-yloxy-Merrifield resin

▶ Sieber amide resin see p. 2314

Fmoc-L-Arginine



Fmoc-L-Arginine

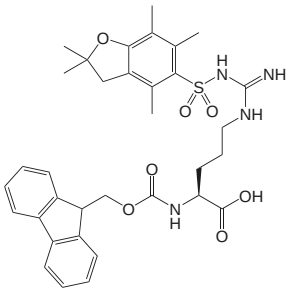
PEPTIPURE® ≥98 %, for biochemistry

Fmoc-L-Arg-OH, N-(9-Fluorenyl-methoxycarbonyl)-L-arginine
$C_{21}H_{24}N_4O_4$
M 396,44 g/mol
mp 145 °C
[91000-69-0]
WGK 3

Type analysis:
Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤2,0 %

6896.1	5 g	glass	32,80 €
6896.2	25 g	glass	126,35 €

Fmoc-L-Arginine-(Pbf)



Fmoc-L-Arginine-(Pbf)

PEPTIPURE® ≥85 %, for biochemistry

N-α-Fmoc-N-ω-(2,2,4,6,7-pentamethyl-dihydrobenzofuran-5-sulfonyl)-L-arginine, Fmoc-L-Arg(Pbf)-OH
$C_{34}H_{40}N_4O_7S$
M 648,77 g/mol
mp 130-136 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[154445-77-9]
WGK 1

Warning H315-H319-H335

Type analysis:
Appearance. ..... white to off-white powder
Assay. ..... ≥85,0 %
Purity (HPLC). ..... ≥95 %
Water (KF). ..... ≤2,0 %
Specific rotation $[\alpha]_D^{25}$ (1 % in DMF). ..... -6,0° to -3,0°
Enantiomeric purity. ..... ≤0,5 % D-Enantiomer

8833.1	5 g	glass	39,70 €
8833.2	25 g	glass	146,75 €
8833.3	100 g	glass	471,95 €

Fmoc-L-Arg-OH

▶ Fmoc-L-Arginine see p. 1997

Fmoc-L-Arg(Pbf)-OH

▶ Fmoc-L-Arginine-(Pbf) see p. 1997

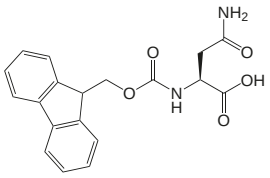
Fmoc-L-Asn-OH

▶ Fmoc-L-Asparagine see p. 1998

Fmoc-L-Asn(Trt)-OH

▶ Fmoc-L-Asparagine-(Trityl) see p. 1998

Fmoc-L-Asparagine



Fmoc-L-Asparagine

PEPTIPURE® ≥98,5 %, for biochemistry

Fmoc-L-Asn-OH, N-(9-Fluorenylmethoxy-carbonyl)-L-asparagine

$C_{19}H_{18}N_2O_5$

M 354,36 g/mol

mp 190 °C

Storage temp.: +4 °C

[71989-16-7] • EC No. 276-252-2

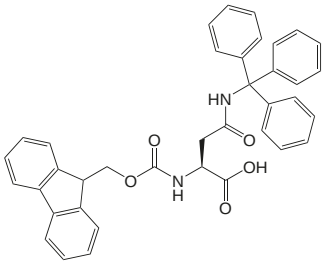
WGK 3

Type analysis:

Appearance. ..... white to off-white powder
Assay ..... ≥98,5 %
Loss on drying. ..... ≤0,5 %

6897.1	5 g	glass	18,85 €
6897.2	25 g	glass	53,65 €
6897.3	100 g	glass	169,35 €

Fmoc-L-Asparagine-(Trityl)



Fmoc-L-Asparagine-(Trityl)

PEPTIPURE® ≥98 %, for biochemistry

Fmoc-L-Asn(Trt)-OH, N-α-(9-Fluorenyl-methyloxycarbonyl)-N-β-trityl-L-asparagine

$C_{38}H_{32}N_2O_5$

M 596,68 g/mol

[132388-59-1]

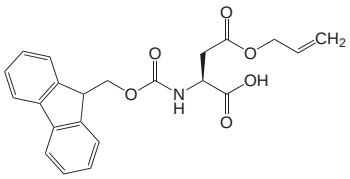
WGK 2

Type analysis:

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98,0 %
Water (KF). ..... ≤1,0 %
Spec. rotation $[\alpha]^{24}_D$ (0,5 % in MeOH). ..... -16,0° to -13,0°
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

9652.1	5 g	glass	21,40 €
9652.2	25 g	glass	65,05 €
9652.3	100 g	glass	214,50 €

Fmoc-L-Aspartic acid-(OAllyl)



Fmoc-L-Aspartic acid-(OAllyl)

PEPTIPURE® ≥98,5 %, for biochemistry

Fmoc-L-Asp(OAll)-OH, N-α-(9-Fluorenyl-methoxycarbonyl)-L-Aspartic-acid-β-allyl ester

$C_{22}H_{21}NO_6$

M 395,41 g/mol

mp 111 °C

Storage temp.: +4 °C

[146982-24-3]

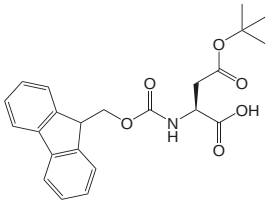
WGK 2

Type analysis:

Assay (HPLC). ..... ≥98,5 %

6641.1	500 mg	glass	20,35 €
6641.2	1 g	glass	31,10 €
6641.3	5 g	glass	126,75 €

Fmoc-L-Aspartic acid-(OtBu)



Fmoc-L-Aspartic acid-(OtBu)

PEPTIPURE® ≥96 %, for biochemistry

Fmoc-L-Asp(OtBu)-OH, N-α-(9-Fluorenyl-methyloxycarbonyl)-L-aspartic acid-β-tert-butyl ester

$C_{23}H_{25}NO_6$

M 411,46 g/mol

Storage temp.: +4 °C

[71989-14-5] • EC No. 276-251-7

WGK 1

Type analysis:

Appearance. ..... white powder
Assay (titr.). ..... ≥96,0 %
Purity (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤1,0 %
Spec. rotation $[\alpha]^{24}_D$ (1 % in DMF). ..... -25,5° to -22,5°
Enantiomeric purity. ..... ≤0,3 % D-enantiomer

9654.1	5 g	glass	23,55 €
9654.2	25 g	glass	71,95 €
9654.3	100 g	glass	235,45 €

Fmoc-L-Asp(OAll)-OH

▶ Fmoc-L-Aspartic acid-(OAllyl) see p. 1998

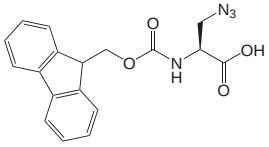
Fmoc-L-Asp(OtBu)-OH

▶ Fmoc-L-Aspartic acid-(OtBu) see p. 1998

Fmoc-L-Aza-OH

▶ Fmoc-L-β-Azidoalanine see p. 1998

Fmoc-L-β-Azidoalanine



Fmoc-L-β-Azidoalanine

PEPTIPURE® ≥98 %, for biochemistry

N-α-(9-Fluorenylmethoxycarbonyl)-β-azido-L-alanine, Fmoc-L-Aza-OH

$C_{18}H_{16}N_4O_4$

M 352,3 g/mol

mp 117-130 °C

Storage temp.: +4 °C

[684270-46-0]

WGK 3

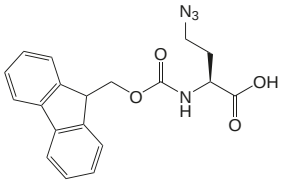
Warning H315-H319-H335

Type analysis:

Appearance. ..... white cryst. powder
Assay (HPLC). ..... ≥98 %
Specific rotation $[\alpha]^{20}_D$ (c=1 in DMF). ..... -11,0° to -8,0°

7369.1	250 mg	glass	110,65 €
7369.2	1 g	glass	364,45 €

Fmoc-L-γ-Azidohomoalanine



Fmoc-L-γ-Azidohomoalanine

PEPTIPURE® ≥99 %, for biochemistry

N-α-(9-Fluorenylmethoxycarbonyl)-γ-azido-L-homoalanine, Fmoc-L-Aha-OH

$C_{19}H_{18}N_4O_4$

M 366,41 g/mol

mp 123-128 °C

Storage temp.: +4 °C

[942518-20-9]

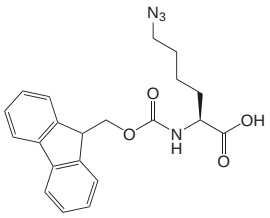
WGK 3

Type analysis:

Appearance. ..... white cryst. powder
Assay (HPLC). ..... ≥99 %
Specific rotation $[\alpha]^{20}_D$ (c=1 in DMF). ..... -29,0° to -26,5°

7363.1	250 mg	glass	89,15 €
7363.2	1 g	glass	306,40 €

Fmoc-L-Azidolysine



Fmoc-L-Azidolysine

PEPTIPURE® ≥98 %, for biochemistry

N-α-(9-Fluorenylmethoxycarbonyl)-ε-azido-L-lysine, Fmoc-L-Lys(N_3)-OH

$C_{21}H_{22}N_4O_4$

M 394,42 g/mol

mp 74-82 °C

Storage temp.: +4 °C

[159610-89-6]

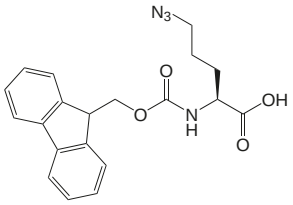
WGK 3

Type analysis:

Appearance. ..... white cryst. powder
Assay (HPLC). ..... ≥98 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF). ..... -14,0° to -12,0°

7357.1	250 mg	glass	105,90 €
7357.2	1 g	glass	342,95 €

Fmoc-L-Azidoornithine



Fmoc-L-Azidoornithine

PEPTIPURE® ≥98 %, for biochemistry

N-α-(9-Fluorenylmethoxycarbonyl)-δ-azido-L-ornithine, Fmoc-L-Orn(N_3)-OH

$C_{20}H_{20}N_4O_4$

M 380,4 g/mol

mp 132-138 °C

Storage temp.: +4 °C

[1097192-04-5]

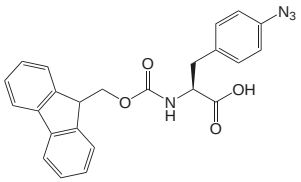
WGK 3

Type analysis:

Appearance. ..... white cryst. powder
Assay (HPLC). ..... ≥98 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF). ..... -15,5° to -13,5°

7362.1	250 mg	glass	110,65 €
7362.2	1 g	glass	364,45 €

Fmoc-L-4-Azidophenylalanine



Fmoc-L-4-Azidophenylalanine

PEPTIPURE® ≥98 %, for biochemistry

N-α-(9-Fluorenylmethoxycarbonyl)-4-azido-L-phenylalanine, Fmoc-L-Phe(4-N_3)-OH

$C_{24}H_{20}N_4O_4$

M 428,5 g/mol

Storage temp.: +4 °C

[163217-43-4]

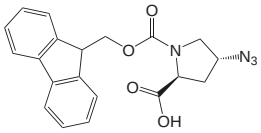
WGK 3

Type analysis:

Appearance. ..... white to off-white powder
Assay (TLC). ..... ≥98 %
Solubility (5 % in MeOH). ..... clear solution

7485.1	100 mg	glass	54,75 €
7485.2	250 mg	glass	117,20 €

Fmoc-L-4-Azidoproline (2S,4R)



Fmoc-L-4-Azidoproline (2S,4R)

PEPTIPURE® ≥98 %, for biochemistry

trans-*N*-α-(9-Fluorenylmethoxycarbonyl)-4-azido-L-proline, Fmoc-L-Pro(4-N_3)-OH

$C_{20}H_{18}N_4O_4$

M 378,38 g/mol

mp 140-145 °C

Storage temp.: +4 °C

[702679-55-8]

WGK 3

Type analysis:

Appearance. ..... white cryst. powder
Assay (HPLC). ..... ≥98 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in methanol). . -37,5° to -34,0°

7367.1	100 mg	glass	99,90 €
7367.2	250 mg	glass	199,45 €
7367.3	1 g	glass	643,95 €

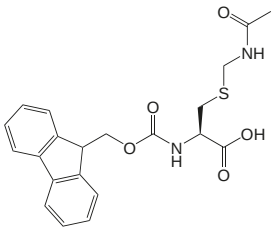
Fmoc-Cl

▶ 9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl) see p. 1995

Fmoc-L-Cys(Acm)-OH

▶ Fmoc-L-Cysteine-(Acetamidomethyl) see p. 1999

Fmoc-L-Cysteine-(Acetamidomethyl)



Fmoc-L-Cysteine-(Acetamidomethyl)

PEPTIPURE® ≥99 %, for biochemistry

N-α-Fmoc-S-acetamidomethyl-L-cysteine, Fmoc-L-Cys(Acm)-OH

$C_{21}H_{22}N_2O_5S$

M 414,48 g/mol

mp 148-154 °C

Storage temp.: +4 °C

[86060-81-3]

WGK 1

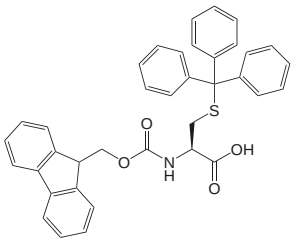
Warning H315-H319-H335

Type analysis:

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥99,0 %
Enantiomeric purity. ..... ≤0,2 % D-enantiomer

8842.1	5 g	glass	35,40 €
8842.2	25 g	glass	104,20 €
8842.3	100 g	glass	321,45 €

Fmoc-L-Cysteine-(Trityl)



Fmoc-L-Cysteine-(Trityl)

PEPTIPURE® ≥98,5 %, for biochemistry

N-α-Fmoc-S-trityl-L-cysteine, Fmoc-L-Cys(Trt)-OH

$C_{37}H_{31}NO_4S$

M 585,71 g/mol

mp 169-179 °C

Storage temp.: +4 °C

[103213-32-7]

WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98,5 %
Enantiomeric purity. ..... ≤0,2 % D-Enantiomer

8841.1	5 g	glass	19,90 €
8841.2	25 g	glass	60,10 €
8841.3	100 g	glass	181,70 €

Fmoc-L-Cys(Trt)-OH

▶ Fmoc-L-Cysteine-(Trityl) see p. 1999

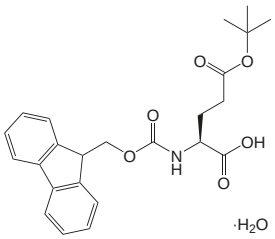
Fmoc-L-Gln-OH

▶ Fmoc-L-Glutamine see p. 2000

Fmoc-L-Gln(Trt)-OH

▶ Fmoc-L-Glutamine-(Trityl) see p. 2000

Fmoc-L-Glutamic acid-(OtBu) monohydrate



Fmoc-L-Glutamic acid-(OtBu) monohydrate

PEPTIPURE® ≥99 %, for biochemistry

Fmoc-L-Glu(OtBu)-OH, N-α-(9-Fluorenylmethyloxycarbonyl)-L-glutamic acid-γ-tert-butyl ester monohydrate

$C_{24}H_{27}NO_6 \cdot H_2O$

M 443,50 g/mol

Storage temp.: +4 °C

[204251-24-1]

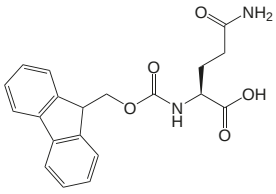
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... 3,0-5,0 %
Spec. rotation $[\alpha]^{24}_D$ (1 % in DMF)..... -19,0° to -17,0°
Foreign amino acids. ..... ≤0,3 %
Enantiomeric purity. ..... ≤0,1 % D-enantiomer

9655.1	5 g	glass	22,50 €
9655.2	25 g	glass	69,80 €
9655.3	100 g	glass	224,70 €

Fmoc-L-Glutamine



Fmoc-L-Glutamine

PEPTIPURE® ≥98 %, for biochemistry

Fmoc-L-Gln-OH, N-(9-Fluorenylmethoxycarbonyl)-L-glutamine

$C_{20}H_{20}N_2O_5$

M 368,39 g/mol

mp 218-226 °C

Storage temp.: +4 °C

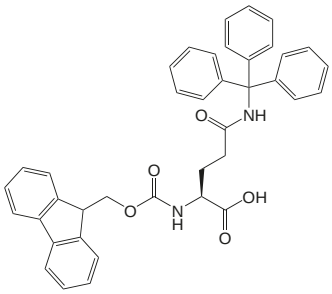
[71989-20-3] • EC No. 276-254-3 • WGK 3

Type analysis:

Appearance. ..... white to off-white powder
Assay (titr.). ..... 95,0-102,0 %
Purity (HPLC). ..... ≥97,0 %
Water (KF). ..... ≤1,0 %
Specific rotation $[\alpha]^{20}_D$ (c=1 in DMF)..... -20,0° to -16,0°
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

6898.1	5 g	glass	18,85 €
6898.2	25 g	glass	53,65 €
6898.3	100 g	glass	169,35 €

Fmoc-L-Glutamine-(Trityl)



Fmoc-L-Glutamine-(Trityl)

PEPTIPURE® ≥98 %, for biochemistry

Fmoc-L-Gln(Trt)-OH, N-α-(9-Fluorenylmethyloxycarbonyl)-N-γ-trityl-L-glutamine

$C_{39}H_{34}N_2O_5$

M 610,71 g/mol

[132327-80-1]

WGK 1

Type analysis:

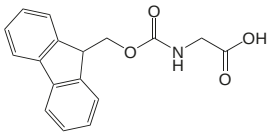
Appearance. ..... white powder
Assay (HPLC). ..... ≥98,0 %
Water (KF). ..... ≤1,0 %
Spec. rotation $[\alpha]^{24}_D$ (1 % in MeOH)..... -3,0° to -1,0°
Foreign amino acids. ..... ≤0,3 %
Enantiomeric purity. ..... ≤0,1 % D-enantiomer

9653.1	5 g	glass	25,70 €
9653.2	25 g	glass	83,35 €
9653.3	100 g	glass	278,45 €

Fmoc-L-Glu(OtBu)-OH

▶ Fmoc-L-Glutamic acid-(OtBu) monohydrate see p. 2000

Fmoc-Glycine



Fmoc-Glycine

PEPTIPURE® ≥99 %, for biochemistry

Fmoc-Gly-OH, N-(9-Fluorenylmethoxycarbonyl)-glycine

$C_{17}H_{15}NO_4$ • M 297,31 g/mol • mp 174 °C

Storage temp.: +4 °C

[29022-11-5] • EC No. 249-373-3 • WGK 3

Type analysis:

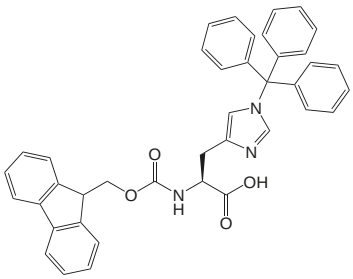
Appearance. ..... white to off-white powder
Assay. ..... ≥99,0 %
Loss on drying. ..... ≤1,0 %

6899.1	5 g	glass	12,40 €
6899.2	25 g	glass	35,40 €
6899.3	100 g	glass	121,40 €

Fmoc-Gly-OH

▶ Fmoc-Glycine see p. 2000

Fmoc-L-Histidine-(Trityl)



Fmoc-L-Histidine-(Trityl)

PEPTIPURE® ≥97 %, for biochemistry

N-α-Fmoc-N-(im)-trityl-L-histidine, Fmoc-L-His(Trt)-OH

$C_{40}H_{33}N_3O_4$

M 619,71 g/mol

mp 150-170 °C

Storage temp.: +4 °C

[109425-51-6] • EC No. 439-640-4 • WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay (titr.). ..... ≥97 %
Purity (HPLC). ..... ≥99 %
Enantiomeric purity. ..... ≤0,2 % D-Enantiomer
Free amino acids. ..... ≤0,2 %
Spec. rotation $[\alpha]^{20}_D$ (c=1 in chloroform). ..... +82,5° to +88,5°
Water (KF). ..... ≤1 %

8843.1	5 g	glass	22,50 €
8843.2	25 g	glass	69,80 €
8843.3	100 g	glass	211,25 €

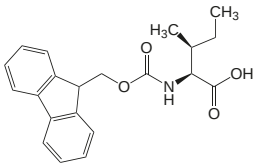
Fmoc-L-His(Trt)-OH

▶ Fmoc-L-Histidine-(Trityl) see p. 2000

Fmoc-L-Ile-OH

▶ Fmoc-L-Isoleucine see p. 2001

Fmoc-L-Isoleucine



Fmoc-L-Isoleucine

PEPTIPURE® ≥98 %, for biochemistry

Fmoc-L-Ile-OH, N-(9-Fluorenylmethoxy-carbonyl)-L-isoleucine

$C_{21}H_{23}NO_4$

M 353,41 g/mol

mp 145 °C

Storage temp.: +4 °C

[71989-23-6]

WGK 2

Type analysis:

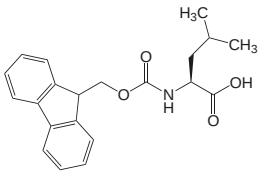
Appearance. ..... white to off-white powder
Assay (titr.). ..... 98,0-102,0 %
Purity (HPLC)..... ≥98,5 %
Water (KF). ..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF). .... -12,5° to -10,5°
Free amino acids. ..... ≤0,2 %

6647.1	10 g	glass	16,05 €
6647.2	50 g	glass	37,55 €
6647.3	250 g	glass	142,45 €

Fmoc-L-Ala-OH

▶ Fmoc-L-Alanine monohydrate see p. 1997

Fmoc-L-Leucine



Fmoc-L-Leucine

PEPTIPURE® ≥95 %, for biochemistry

Fmoc-L-Leu-OH, N-(9-Fluorenylmethoxy-carbonyl)-L-leucine

$C_{21}H_{23}NO_4$

M 353,41 g/mol

mp 152 °C

Storage temp.: +4 °C

[35661-60-0]

WGK 2

Type analysis:

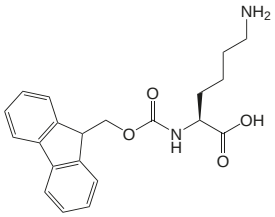
Appearance. ..... white to off-white powder
Assay (titr.). ..... 95,0-105,0 %
Purity (HPLC)..... ≥98,5 %
Free amino acids. ..... ≤0,2 %
Enantiomeric purity. ..... ≤0,3 % D-enantiomer

6654.1	10 g	glass	16,05 €
6654.2	50 g	glass	37,55 €
6654.3	250 g	glass	142,45 €
6654.4	500 g	glass	256,95 €
Original pack 6 x 500 g			244,10/500 g

Fmoc-L-Leu-OH

▶ Fmoc-L-Leucine see p. 2001

Fmoc-L-Lysine



Fmoc-L-Lysine

PEPTIPURE® ≥98 %, for biochemistry

Fmoc-L-Lys-OH, N-(9-Fluorenylmethoxy-carbonyl)-L-lysine

$C_{21}H_{24}N_2O_4$

M 368,44 g/mol

Storage temp.: +4 °C

[105047-45-8]

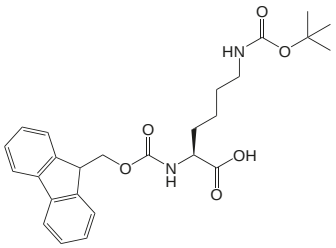
WGK 1

Type analysis:

Appearance..... white to off-white powder
Assay. ..... ≥98,0 %

6900.1	1 g	glass	17,75 €
6900.2	5 g	glass	54,75 €
6900.3	10 g	glass	96,65 €

Fmoc-L-Lysine-(Boc)



Fmoc-L-Lysine-(Boc)

PEPTIPURE® ≥98,5 %, for biochemistry

N-α-Fmoc-N-ε-Boc-L-lysine, Fmoc-L-Lys(Boc)-OH

$C_{26}H_{32}N_2O_6$

M 486,55 g/mol

mp 126-132 °C

Storage temp.: +4 °C

[71989-26-9] • EC No. 276-256-4

WGK 1

Type analysis:

Appearance..... white to off-white powder
Assay (HPLC)..... ≥98,5 %
Water (KF)..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF)..... -13,0° to -11,0°
Enantiomeric purity.....≤0,2 % D-enantiomer

8840.1	5 g	glass	19,90 €
8840.2	25 g	glass	60,10 €
8840.3	100 g	glass	181,70 €

Fmoc-L-Lys-OH

▶ Fmoc-L-Lysine see p. 2001

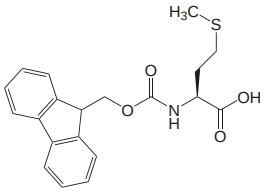
Fmoc-L-Lys(Boc)-OH

▶ Fmoc-L-Lysine-(Boc) see p. 2001

Fmoc-L-Lys(N_3)-OH

▶ Fmoc-L-Azidolysine see p. 1999

Fmoc-L-Methionine



Fmoc-L-Methionine

PEPTIPURE® ≥95 %, for biochemistry

Fmoc-L-Met-OH, N-(9-Fluorenylmethoxy-carbonyl)-L-methionine

$C_{20}H_{21}NO_4S$

M 371,45 g/mol

Storage temp.: +4 °C

[71989-28-1]

WGK 2

Type analysis:

Appearance. ..... white to off-white powder
Assay (titr.)..... 95,0-105,0 %
Purity (HPLC)..... ≥98,5 %
Free amino acids. ..... ≤0,1 %
Enantiomeric purity. ..... ≤0,2 % D-enantiomer

6656.1	10 g	glass	16,05 €
6656.2	50 g	glass	37,55 €
6656.3	250 g	glass	142,90 €

Fmoc-L-Met-OH

▶ Fmoc-L-Methionine see p. 2001

Fmoc-O_2Oc-OH

▶ Fmoc-8-Amino-3,6-dioxaoctanoic acid see p. 1997

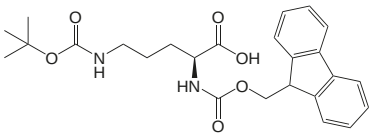
Fmoc-L-Orn(N_3)-OH

▶ Fmoc-L-Azidoornithine see p. 1999

Fmoc-L-Orn(Boc)-OH

▶ Fmoc-L-Ornithine-(Boc) see p. 2002

Fmoc-L-Ornithine-(Boc)



Fmoc-L-Ornithine-(Boc)

PEPTIPURE® ≥98 %, for biochemistry

Fmoc-L-Orn(Boc)-OH, N_α-9-Fluorenylmethoxycarbonyl-N_δ-tert. Butyloxycarbonyl-L-ornithine, N_α-Fmoc-N_δ-t.-Boc-L-Ornithine

$C_{25}H_{30}N_2O_6$

M 454,52 g/mol

mp 100-115 °C

Storage temp.: + 4 °C

[109425-55-0]

WGK 1

Type analysis:

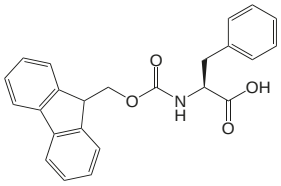
Appearance. ..... white to off-white powder
Purity (HPLC)..... ≥98,0 %
Specific rotation (1 % in DMF). ..... -10,0° to -6,0°
Water (KF). ..... ≤2,0 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

1932.1	1 g	glass	22,05 €
1932.2	5 g	plastic	54,75 €
1932.3	10 g	plastic	98,40 €

Fmoc-L-Phe(4-N_3)-OH

▶ Fmoc-L-4-Azidophenylalanine see p. 1999

Fmoc-L-Phenylalanine



Fmoc-L-Phenylalanine

PEPTIPURE® ≥99 %, for biochemistry

Fmoc-L-Phe-OH, N-(9-Fluorenylmethoxycarbonyl)-L-phenylalanine

$C_{24}H_{21}NO_4$

M 387,43 g/mol

mp 184 °C

Storage temp.: +4 °C

[35661-40-6]

WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay (titr.). ..... 99,0-101,0 %
Purity (HPLC)..... ≥99,0 %
Water (KF). ..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF). .... -40,0° to -38,0°
Melting range. ..... 180-190 °C
Free amino acids. ..... ≤0,1 %
Enantiomeric purity. ..... ≤0,2 % D-enantiomer

6658.1	10 g	glass	17,75 €
6658.2	50 g	glass	44,65 €
6658.3	250 g	glass	169,35 €

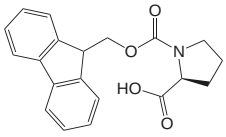
Fmoc-L-Phe-OH

▶ Fmoc-L-Phenylalanine see p. 2002

Fmoc-L-Pra-OH

▶ Fmoc-L-Propargylglycine see p. 2002

Fmoc-L-Proline



Fmoc-L-Proline

PEPTIPURE® ≥99 %, for biochemistry

Fmoc-L-Pro-OH, N-(9-Fluorenylmethoxycarbonyl)-L-proline

$C_{20}H_{21}NO_4$ • M 337,37 g/mol

mp 117 °C

Storage temp.: +4 °C

[71989-31-6]

WGK 1

Type analysis:

Assay (HPLC)..... ≥99 %
Free amino acids. ..... ≤0,1 %
Water (KF)..... ≤6,0 %

6659.1	10 g	glass	17,75 €
6659.2	50 g	glass	44,65 €
6659.3	250 g	glass	169,35 €

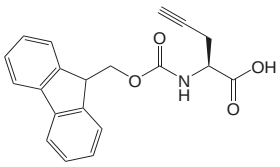
Fmoc-L-Pro-OH

▶ Fmoc-L-Proline see p. 2002

Fmoc-L-Pro(4-N_3)-OH

▶ Fmoc-L-4-Azidoproline (2S,4R) see p. 1999

Fmoc-L-Propargylglycine



Fmoc-L-Propargylglycine

PEPTIPURE® ≥99 %, for biochemistry

N-α-(9-Fluorenylmethoxycarbonyl)-L-propargylglycine, Fmoc-L-Pra-OH

$C_{20}H_{17}NO_4$ • M 335,3 g/mol

Storage temp.: +4 °C

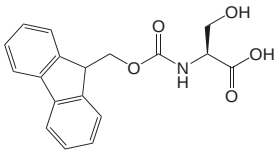
[198561-07-8] • WGK 3

Type analysis:

Appearance..... white powder
Assay. ..... ≥99 %
Enantiomeric purity..... ≥99 %
Identity..... complies
Water (KF)..... ≤0,5 %

7491.1	100 mg	glass	50,45 €
7491.2	250 mg	glass	93,45 €

Fmoc-L-Serine monohydrate



Fmoc-L-Serine monohydrate

PEPTIPURE® ≥98 %, for biochemistry

Fmoc-L-Ser-OH, N-(9-Fluorenylmethoxycarbonyl)-L-serine

$C_{18}H_{19}NO_6$

M 345,35 g/mol

Storage temp.: +4 °C

[73724-45-5]

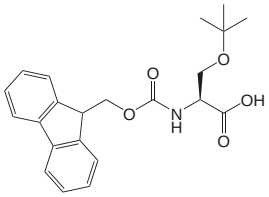
WGK 3

Type analysis:

Appearance. ..... white powder
Assay. ..... ≥98,0 %
Loss on drying..... ≤1,0 %

6901.1	5 g	glass	53,65 €
6901.2	25 g	glass	169,35 €

Fmoc-L-Serine-(tBu)



Fmoc-L-Serine-(tBu)

PEPTIPURE® ≥99 %, for biochemistry

Fmoc-L-Ser(tBu)-OH, N-α-(9-Fluorenylmethyl-oxycarbonyl)-O-tert-butyl-L-serine

$C_{22}H_{25}NO_5$

M 383,44 g/mol

[71989-33-8] • EC No. 276-260-6

WGK 1

Type analysis:

Appearance. ..... white powder
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤1,0 %
Spec. rotation $[\alpha]^{24}_D$ (1 % in EtOAc). . +24,5° to +26,5°
Foreign amino acids..... ≤0,3 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

9666.1	5 g	glass	23,55 €
9666.2	25 g	glass	71,95 €
9666.3	100 g	glass	235,45 €

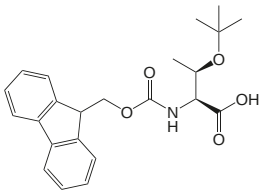
Fmoc-L-Ser-OH

▶ Fmoc-L-Serine monohydrate see p. 2002

Fmoc-L-Ser(tBu)-OH

▶ Fmoc-L-Serine-(tBu) see p. 2002

Fmoc-L-Threonine-(tBu)



Fmoc-L-Threonine-(tBu)

PEPTIPURE® ≥99 %, for biochemistry

Fmoc-L-Thr(tBu)-OH, N-α-(9-Fluorenylmethyl-oxycarbonyl)-O-tert-butyl-L-threonine

$C_{23}H_{27}NO_5$ • M 397,47 g/mol

Storage temp.: +4 °C

[71989-35-0] • EC No. 276-261-1 • WGK 1

Type analysis:

Appearance. ..... white powder
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤1,0 %
Foreign amino acids. ..... ≤0,3 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

9659.1	5 g	glass	23,55 €
9659.2	25 g	glass	71,95 €
9659.3	100 g	glass	235,45 €

Fmoc-L-Thr(tBu)-OH

▶ Fmoc-L-Threonine-(tBu) see p. 2003

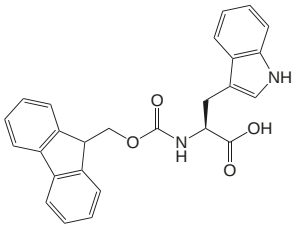
Fmoc-L-Trp-OH

▶ Fmoc-L-Tryptophan see p. 2003

Fmoc-L-Trp(Boc)-OH

▶ Fmoc-L-Tryptophan-(Boc) see p. 2003

Fmoc-L-Tryptophan



Fmoc-L-Tryptophan

PEPTIPURE® ≥98 %, for biochemistry

Fmoc-L-Trp-OH, N-(9-Fluorenylmethoxy-carbonyl)-L-tryptophan

$C_{26}H_{22}N_2O_4$

M 426,46 g/mol

mp 160-170 °C

Storage temp.: +4 °C

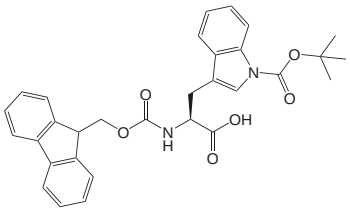
[35737-15-6] • EC No. 252-706-5 • WGK 3

Type analysis:

Appearance. ..... white powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤1,0 %

6903.1	5 g	glass	19,25 €
6903.2	25 g	glass	56,90 €
6903.3	100 g	glass	192,45 €

Fmoc-L-Tryptophan-(Boc)



Fmoc-L-Tryptophan-(Boc)

PEPTIPURE® ≥97 %, for biochemistry

Fmoc-L-Trp(Boc)-OH, N-α-(9-Fluorenylmethyl-oxycarbonyl)-N-(in)-Boc-L-tryptophan

$C_{31}H_{30}N_2O_6$

M 526,59 g/mol

Storage temp.: -20 °C

Transport temp.: room temp.

[143824-78-6]

WGK 1

Type analysis:

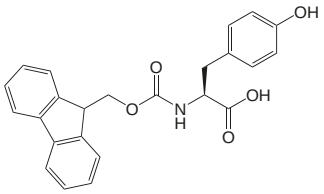
Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥97,0 %
Spec. rotation $[\alpha]^{24}_D$ (1 % in DMF). ..... -22,0° to -18,0°
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

9668.1	5 g	glass	30,00 €
9668.2	25 g	glass	99,90 €
9668.3	100 g	glass	314,45 €

Fmoc-L-Tyr-OH

▶ Fmoc-L-Tyrosine see p. 2003

Fmoc-L-Tyrosine



Fmoc-L-Tyrosine

PEPTIPURE® ≥98 %, for biochemistry

Fmoc-L-Tyr-OH, N-(9-Fluorenylmethoxy-carbonyl)-L-tyrosine

$C_{24}H_{21}NO_5$

M 403,43 g/mol

mp 170-180 °C

Storage temp.: +4 °C

[92954-90-0]

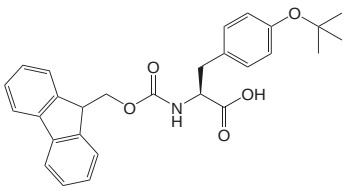
WGK 3

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %
Loss on drying. ..... ≤0,5 %

6906.1	1 g	glass	35,40 €
6906.2	5 g	glass	83,75 €
6906.3	10 g	glass	143,95 €

Fmoc-L-Tyrosine-(tBu)



Fmoc-L-Tyrosine-(tBu)

PEPTIPURE® ≥99 %, for biochemistry

Fmoc-L-Tyr(tBu)-OH, N-α-(9-Fluorenylmethyl-oxycarbonyl)-O-tert-butyl-L-tyrosine

$C_{28}H_{29}NO_5$

M 459,54 g/mol

[71989-38-3] • EC No. 276-262-7

WGK 1

Type analysis:

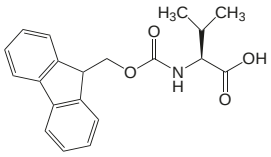
Appearance. ..... white to pale yellow powder
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤1,0 %
Spec. rotation $[\alpha]^{24}_D$ (1 % in DMF). ..... -30,0° to -27,0°
Foreign amino acids. ..... ≤0,3 %
Enantiomeric purity. ..... ≤0,1 % D-enantiomer

9669.1	5 g	glass	23,55 €
9669.2	25 g	glass	71,95 €
9669.3	100 g	glass	235,45 €

Fmoc-L-Tyr(tBu)-OH

▶ Fmoc-L-Tyrosine-(tBu) see p. 2003

Fmoc-L-Valine



Fmoc-L-Valine

PEPTIPURE® ≥95 %, for biochemistry

Fmoc-L-Val-OH, N-(9-Fluorenylmethoxy-carbonyl)-L-valine

$C_{20}H_{21}NO_4$

M 339,39 g/mol

mp 143 °C

Storage temp.: +4 °C

[68858-20-8]

WGK 2

Type analysis:

Appearance. ..... white to off-white powder
Assay (titr.). ..... 95,0-105,0 %
Purity (HPLC). ..... ≥98,5 %
Water (KF). ..... ≤1,0 %
Enantiomeric purity. ..... ≤0,2 % D-enantiomer
Free amino acids. ..... ≤0,1 %

6660.1	10 g	glass	16,05 €
6660.2	50 g	glass	37,55 €
6660.3	250 g	glass	142,45 €
6660.4	500 g	glass	256,95 €
Original pack 6 x 500 g			244,10/500 g

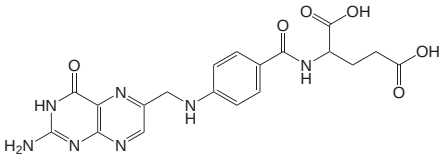
Fmoc-L-Val-OH

▶ Fmoc-L-Valine see p. 2003

5-FOA

▶ 5-Fluoroorotic acid see p. 1997

Folic acid



Folic acid

≥96 %, for biochemistry

Vitamin B_9, Pteroyl glutamic acid
$C_{19}H_{19}N_7O_6$
M 441,4 g/mol
mp 250 °C
Solubility: 2 mg/l (H_2O, 25 °C)
[59-30-3] • EC No. 200-419-0
WGK 1

Type analysis:

Appearance. ..... yellow to orange cryst. powder
Assay (dry substance). ..... 96,0-102,0 %
Water (KF). ..... 5,0-8,5 %
Sulphated ash. ..... ≤0,2 %

T912.1	25 g	plastic	43,55 €
T912.2	50 g	plastic	76,90 €

Food Green 3

▶ Fast Green FCF see p. 1989

Formaldehyde solutions

Formol, Formalin
CH_2O
M 30,03 g/mol
D 1,09 • bp 99 °C
flp 62 °C
Storage temp.: >+15 °C
[50-00-0] • EC No. 200-001-8
UN No. 2209 • ADR 8 III • WGK 2

Danger H301+H311+H331-H314-H317-H341-H350-H370-H335

Formaldehyde solution 37 %

ROTIPURAN® 37 %, p.a., ACS

Stabilised with methanol.

Guarantee analysis:

Assay (acidimetric after oxidation). ..... 36,5-38,0 %
Colour (Hazen). ..... ≤10
Acidity. ..... ≤0,025 %
Methanol (GC). ..... 9,0-14,0 %
Ash content (as SO_4). ..... ≤0,005 %
Chloride (Cl). ..... ≤0,0005 %
Sulphate (SO_4). ..... ≤0,002 %
Heavy metals. ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0001 %
Calcium (Ca). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0001 %
Cobalt (Co). ..... ≤0,0001 %
Chromium (Cr). ..... ≤0,0001 %
Copper (Cu). ..... ≤0,0001 %
Potassium (K). ..... ≤0,001 %
Magnesium (Mg). ..... ≤0,0001 %
Manganese (Mn). ..... ≤0,0001 %
Sodium (Na). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,0001 %
Zinc (Zn). ..... ≤0,0001 %
Stabilised with methanol.
Do not store under 15 °C
Lower temperatures favour the polymerization to paraformaldehyde. The formaldehyde solution can, however, be used after decanting deposit to a clear solution.

4979.1	1 l	plastic	27,45 €
Original pack 6 x 1 l			26,08/1 l
4979.2	2,5 l	plastic	51,10 €
Original pack 4 x 2,5 l			48,55/2,5 l
4979.3	5 l	plastic	67,65 €
Original pack 2 x 5 l			64,27/5 l

For further information, please see page 1506

Formaldehyde solution 37 %

≥37 %, Ph.Eur., BP, USP

Histology, for fixation. Stabilised with methanol.

Guarantee analysis:

Assay (acidim.). ..... 37,0-38,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Sulphated ash. ..... ≤0,05 %
Free acid. ..... complies
Methanol (GC). ..... 9,0-15,0 %
Chloride (Cl). ..... ≤0,003 %
Sulphate (SO_4). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,001 %
Stabilised with methanol
Do not store under 15 °C

CP10.1	1 l	plastic	18,20 €
Original pack 6 x 1 l			17,29/1 l
CP10.2	2,5 l	plastic	32,15 €
Original pack 4 x 2,5 l			30,54/2,5 l
CP10.3	5 l	plastic	46,15 €
Original pack 2 x 5 l			43,84/5 l
CP10.4	10 l	plastic	68,70 €

For further information, please see page 1506

Formaldehyde solution 37 %

≥37 %, for synthesis

Stabilised with methanol.

Type analysis:

Appearance. ..... clear to slightly turbid solution
Assay. ..... 37,0-37,5 %
Methanol. ..... 8,0-12,0 %
Formic acid. ..... ≤0,02 %
Stabilised with methanol.
Do not store under 15 °C

7398.1	1 l	plastic	14,55 €
Original pack 6 x 1 l			13,82/1 l
7398.4	2,5 l	plastic	23,15 €
Original pack 4 x 2,5 l			21,99/2,5 l
7398.5	5 l	plastic	35,40 €
Original pack 2 x 5 l			33,63/5 l
7398.2	10 l	plastic	55,40 €
7398.3	30 l	plastic	112,80 €

For further information, please see page 1506

Formaldehyde solution 35 %

≥35 % DAB, for histology

Stabilised with methanol.

Guarantee analysis:

Appearance. ..... clear to turbid, colourless liquid
Assay. ..... 35,0-37,0 %
Identity. ..... complies
Methanol. ..... 9,0-11,0 %
Formic acid. ..... ≤0,03 %
Sulphated ash. ..... ≤0,1 %
Stabilised with methanol.
Do not store under 15 °C

4980.1	1 l	plastic	16,70 €
Original pack 6 x 1 l			15,87/1 l
4980.5	2,5 l	plastic	24,20 €
Original pack 4 x 2,5 l			22,99/2,5 l
4980.2	5 l	plastic	38,60 €
Original pack 2 x 5 l			36,67/5 l
4980.4	10 l	plastic	61,85 €
4980.3	30 l	plastic	122,05 €

For further information, please see page 1506

Formaldehyde solution 30 %, low-methanol

Formaldehyde solution 30 %, low-methanol

30 %

Concentrated fixative for histology, low in methanol.
Formol, Formalin
CH_2O
M 30,03 g/mol
D 1,09 • bp 99 °C
flp 62 °C
Storage temp.: >+15 °C
[50-00-0] • EC No. 200-001-8
UN No. 2209 • ADR 8 III • WGK 2

Danger H302-H311+H331-H314-H317-H341-H350-H335

Type analysis:

Appearance. ..... clear to turbid, colourless solution
Assay. ..... 29,0-31,0 %
Density (20 °C). 1,080-1,095
Methanol. ..... ≤1,5 %
Formic acid. ..... ≤0,2 %
Do not store under 15 °C

4235.1	1 l	plastic	12,80 €
Original pack 6 x 1 l			12,16/1 l
4235.5	2,5 l	plastic	19,25 €
Original pack 4 x 2,5 l			18,29/2,5 l
4235.2	5 l	plastic	31,10 €
Original pack 2 x 5 l			29,55/5 l
4235.3	10 l	plastic	43,55 €
4235.4	30 l	plastic	102,05 €

For further information, please see page 1506

Formaldehyde solution 23,5 %, low-methanol

Formaldehyde solution 23,5 %, low-methanol

23,5 %
Formol, Formalin
CH_2O
M 30,03 g/mol
D 1,07 • bp 79-85 °C
mp <-15 °C
Storage temp.: >+15 °C
[50-00-0] • EC No. 200-001-8
WGK 2
Danger H302+H312+H332-H315-H317-H319-H335-H341-H350

Type analysis:
Assay.....23,1-23,9 %
Methanol (GC).....≤1,0 %
Formic acid.....≤0,05 %
Density.....1,066-1,076
Do not store under 15 °C

6742.1	1 l	plastic	10,65 €
Original pack 6 x 1 l			10,12/1 l
6742.5	2,5 l	plastic	16,05 €
Original pack 4 x 2,5 l			15,25/2,5 l
6742.2	5 l	plastic	27,45 €
Original pack 2 x 5 l			26,08/5 l
6742.3	10 l	plastic	38,60 €
6742.4	25 l	plastic	75,15 €

Formaldehyde solution, non-acidic

Formaldehyde solution, non-acidic

≥37 %, for histology
Stabilised with methanol and calcium carbonate.
Formol, Formalin
D 1,09 • bp 99 °C
flp 62 °C
Storage temp.: >+15 °C
[50-00-0] • EC No. 200-001-8
UN No. 2209 • ADR 8 III • WGK 2
Danger H301+H311+H331-H341-H350-H314-H317-H370-H335

Type analysis:
Appearance..... clear to turbid, colourless liquid
Assay.....≥37 %
Methanol.....8-12 %
Stabilised with methanol and calcium carbonate
Please note the added acid binding sediment. You can filter it, if necessary, before use.
Do not store under 15 °C

P733.1	1 l	plastic	18,20 €
Original pack 6 x 1 l			17,29/1 l
P733.2	2,5 l	plastic	33,25 €
Original pack 4 x 2,5 l			31,59/2,5 l
P733.3	30 l	plastic	125,25 €

For further information, please see page 1506

Formaldehyde Solutions, Phosphate Buffered

Art. No.	Description	Page
P087	Roti®-Histofix 4 %	1394
3105	Roti®-Histofix 4 %, prefilled containers	1394
2213	Roti®-Histofix 4,5 %	1394
8244	Roti®-Histofix 4,5 %, prefilled containers	1394
A146	Roti®-Histofix 10 %	1394

Formaline

▶ Formaldehyde solutions see p. 2004
▶ Formaldehyde solution, non-acidic see p. 2005

Formalin methanol-free

▶ Formaldehyde solution 30 %, low-methanol see p. 2004
▶ Formaldehyde solution 23,5 %, low-methanol see p. 2005

Formamide

Formic acid amide
CH_3NO
M 45,04 g/mol
D 1,13 • bp 210 °C
mp 2 °C • flp 175 °C
[75-12-7] • EC No. 200-842-0 • WGK 1
Danger H351-H360FD-H373

Formamide

≥99,5 %, p.a.

Guarantee analysis:
Assay. ..... ≥99,5 %
Density (d 20 °C/4 °C). 1,132-1,135
Water (KF)..... ≤0,5 %
Colour (APHA)..... ≤10
Lead (Pb). ..... ≤0,001 %
Cadmium (Cd)..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Copper (Cu). ..... ≤0,001 %
Sulphated ash (600 °C). ..... ≤0,005 %

6749.3	500 ml	glass	27,45 €
6749.1	1 l	glass	46,15 €
Original pack 6 x 1 l			43,84/1 l
6749.2	2,5 l	glass	82,25 €
Original pack 4 x 2,5 l			78,14/2,5 l

Formamide

≥98 %, extra pure

Type analysis:
Assay. ..... ≥98,0 %
Density (20 °C)..... 1,131-1,134
Formic acid..... ≤0,1 %

4095.1	1 l	plastic	31,10 €
Original pack 6 x 1 l			29,55/1 l
4095.2	2,5 l	plastic	63,35 €
Original pack 4 x 2,5 l			60,18/2,5 l
4095.3	5 l	plastic	109,55 €
Original pack 2 x 5 l			104,07/5 l
4095.4	10 l	plastic	188,15 €

Formamide, deionized

≥99,5 %, BioScience-Grade, RNAse / DNAse-free
Storage temp.: -20 °C
Transport temp.: room temp.

Guarantee analysis:
Appearance. ..... clear, colourless to light yellowish
Assay. .....≥99,5 %
pH value.....5,0-6,0
Deionization. .....complies

P040.1	250 ml	plastic	46,80 €

Formate Standards

▶ Formate IC Standard Solution see p. 2376

Formic acid 98 %

Methanoic acid, Formylic acid, Hydrogen carboxylic acid
CH_2O_2
M 46,02 g/mol
D 1,22 • bp 101 °C
mp 9 °C • flp 50 °C
[64-18-6] • EC No. 200-579-1
UN No. 1779 • ADR 8 (3) II • WGK 1
Danger
H226-H290-H302-H331-H314-EUH071

Formic acid 98 %

ROTIPURAN® ≥98 %, p.a., ACS

Guarantee analysis:
Assay (acidim.). .....≥98,0 %
Colour (APHA). .....≤10
In H_2O insoluble matter. .....complies
Non volatile matter. .....≤0,001 %
Acetic acid (CH_3COOH).....≤0,05 %
Chloride (Cl).....≤0,0005 %
Sulphate (SO_4).....≤0,0005 %
Sulphite (SO_3).....≤0,001 %
Aluminium (Al).....≤0,000005 %
Ammonium (NH_4).....≤0,001 %
Barium (Ba).....≤0,000005 %
Beryllium (Be). .....≤0,000002 %
Lead (Pb). .....≤0,000002 %
Cadmium (Cd). .....≤0,000005 %
Calcium (Ca). .....≤0,00002 %
Chromium (Cr). .....≤0,000002 %
Iron (Fe). .....≤0,00001 %
Germanium (Ge). .....≤0,000002 %
Potassium (K). .....≤0,00001 %
Cobalt (Co). .....≤0,000002 %
Copper (Cu). .....≤0,000002 %
Lithium (Li). .....≤0,000002 %
Magnesium (Mg).....≤0,00005 %
Manganese (Mn).....≤0,000005 %
Molybdenum (Mo).....≤0,000002 %
Sodium (Na).....≤0,00005 %
Nickel (Ni). .....≤0,000005 %
Heavy metals (as Pb).....≤0,001 %
Silver (Ag). .....≤0,000002 %
Strontium (Sr).....≤0,000002 %
Thallium (Tl). .....≤0,000002 %
Titanium (Ti).....≤0,000005 %
Vanadium (V). .....≤0,000002 %
Bismuth (Bi). .....≤0,000005 %
Zinc (Zn). .....≤0,000005 %
Zirconium (Zr). .....≤0,000005 %

4724.3	500 ml	glass	21,40 €
4724.1	1 l	glass	35,40 €
Original pack 6 x 1 l			33,63/1 l
4724.2	2,5 l	glass	75,15 €
Original pack 4 x 2,5 l			71,39/2,5 l

Formic acid 98 %

≥98 %, for synthesis

Type analysis:

Assay ≥98,0 %
Colour (APHA) ≤10
Evaporation residue ≤0,002 %
Chloride (Cl) ≤0,0001 %
Iron (Fe) ≤0,0001 %

4742.1	1 l	glass	23,15 €
Original pack 6 x 1 l			21,99/1 l
4742.2	2,5 l	glass	45,70 €
Original pack 4 x 2,5 l			43,42/2,5 l
4742.4	5 l	plastic	65,50 €
Original pack 2 x 5 l			62,23/5 l
4742.3	10 l	plastic	99,90 €

Formic acid 85 %

Methanoic acid, Formylic acid, Hydrogen carboxylic acid
CH_2O_2
M 46,02 g/mol
D 1,19 • bp 101 °C
flp 71 °C
[64-18-6] • EC No. 200-579-1
UN No. 3412 • ADR 8 II • WGK 1

Danger
H290-H302-H314-H331-EUH071

Formic acid 85 %

ROTIPURAN® ≥85 %, p.a.

Guarantee analysis:

Assay (acidim.) ≥85,0 %
Colour (APHA) ≤15
In H_2O insoluble matter complies
Non volatile matter ≤0,002 %
Acetic acid (CH_3COOH) ≤0,4 %
Chloride (Cl) ≤0,001 %
Sulphate (SO_4) ≤0,002 %
Sulphite (SO_3) ≤0,001 %
Ammonium (NH_4) ≤0,005 %
Heavy metals (as Pb) ≤0,0005 %
Aluminium (Al) ≤0,000005 %
Beryllium (Be) ≤0,000002 %
Lead (Pb) ≤0,000002 %
Cadmium (Cd) ≤0,000005 %
Calcium (Ca) ≤0,00005 %
Chromium (Cr) ≤0,000002 %
Iron (Fe) ≤0,00005 %
Germanium (Ge) ≤0,000002 %
Potassium (K) ≤0,00001 %
Cobalt (Co) ≤0,000002 %
Copper (Cu) ≤0,000002 %
Lithium (Li) ≤0,000002 %
Magnesium (Mg) ≤0,00005 %
Manganese (Mn) ≤0,000005 %
Molybdenum (Mo) ≤0,000002 %
Sodium (Na) ≤0,0001 %
Nickel (Ni) ≤0,000005 %
Silver (Ag) ≤0,000002 %
Strontium (Sr) ≤0,000002 %
Titanium (Ti) ≤0,000005 %
Vanadium (V) ≤0,000002 %
Bismuth (Bi) ≤0,000005 %
Zinc (Zn) ≤0,00001 %
Zirconium (Zr) ≤0,000005 %

CP16.1	500 ml	glass	21,40 €
CP16.2	1 l	glass	35,40 €
Original pack 6 x 1 l			33,63/1 l
CP16.3	2,5 l	glass	75,15 €
Original pack 4 x 2,5 l			71,39/2,5 l
CP16.5	5 l	plastic	135,35 €
Original pack 2 x 5 l			128,58/5 l
CP16.4	10 l	plastic	232,10 €

Formic acid 85 %

≥85 %, pure

Type analysis:

Assay ≥85 %

5355.1	1 l	glass	22,05 €
Original pack 6 x 1 l			20,95/1 l
5355.2	2,5 l	glass	37,55 €
Original pack 4 x 2,5 l			35,67/2,5 l
5355.4	5 l	plastic	48,30 €
Original pack 2 x 5 l			45,89/5 l
5355.3	10 l	plastic	68,70 €

Formic acid 45 %

Formic acid 45 %

45 %, pure

Methanoic acid, Formylic acid, Hydrogen carboxylic acid
CH_2O_2
M 46,02 g/mol
D 1,10
[64-18-6] • EC No. 200-579-1
UN No. 3412 • ADR 8 II • WGK 1

Danger
H290-H302+H332-H314-EUH071

Type analysis:

Assay 44,0-46,0 %
Chloride (Cl) ≤0,0005 %
Sulphate (SO_4) ≤0,0005 %
Iron (Fe) ≤0,0005 %
Evaporation residue ≤0,005 %

6739.1	1 l	glass	18,20 €
Original pack 6 x 1 l			17,29/1 l
6739.2	2,5 l	glass	26,35 €
Original pack 4 x 2,5 l			25,03/2,5 l
6739.4	5 l	plastic	34,30 €
Original pack 2 x 5 l			32,59/5 l
6739.3	10 l	plastic	50,45 €
6739.5	25 l	plastic	104,20 €

Formic acid D2, 95 % solution in D_2O

Formic acid D2, 95 % solution in D_2O

98 Atom%D

For nuclear magnetic resonance spectroscopy.
CD_2O_2
M 48,04 g/mol
D ~1,2 • bp 101 °C
mp 5,9 °C • flp 69 °C
[920-42-3] • EC No. 213-057-3
UN No. 1779 • ADR 8 (3) II • WGK 1

Danger
H226-H290-H302-H331-H314-EUH071

Guarantee analysis:

Deuterising degree ≥98 %
Assay (mass %) ≥95 %

HN92.1	5 ml	glass	107,40 €

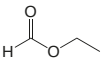
Formic acid amide

▶ Formamide see p. 2005

Formic acid dimethylamide

▶ N,N-Dimethylformamide (DMF) see p. 1948

Formic acid ethyl ester



Formic acid ethyl ester

≥99 %

Ethyl formate, Ethyl methanoate
$C_3H_6O_2$
M 74,08 g/mol
D ~0,92 • bp ~54 °C
mp -80 °C • flp -20 °C
[109-94-4] • EC No. 203-721-0
UN No. 1190 • ADR 3 II • WGK 1

Danger
H225-H302+H332-H319-H335

Type analysis:

Assay (GC) ≥99,0 %
Density (d 25 °C/25 °C) 0,915-0,925
Refractive index (20 °C) 1,359-1,363

3574.2	100 ml	glass	17,75 €
3574.1	1 l	glass	90,20 €
Original pack 6 x 1 l			85,69/1 l
3574.3	2,5 l	glass	170,95 €
Original pack 4 x 2,5 l			162,40/2,5 l

Formic acid sodium salt

▶ Sodium formate see p. 2338

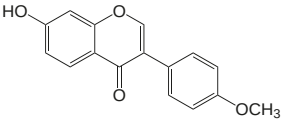
Formol

▶ Formaldehyde solutions see p. 2004
▶ Formaldehyde solution, non-acidic see p. 2005

Formol methanol-free

▶ Formaldehyde solution 30 %, low-methanol see p. 2004
▶ Formaldehyde solution 23,5 %, low-methanol see p. 2005

Formononetin



Formononetin

ROTICHROM® HPLC

Reference substance for HPLC.
Biochanin B, 7-Hydroxy-4'-methoxyisoflavone
$C_{16}H_{12}O_4$
M 268,26 g/mol
mp 257-260 °C
[485-72-3] • EC No. 207-623-9 • WGK 2

Warning H315-H319-H335

Type analysis:
Purity (HPLC)..... ≥99 %

9570.1	10 mg	glass	138,70 €

Formononetin-7-O-glucoside
▶ Ononin see p. 2185

4-Formyl-1,2-dihydroxy-benzene
▶ 3,4-Dihydroxybenzaldehyde see p. 1942

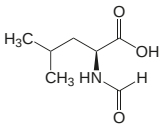
p-Formyldimethylanilin
▶ 4-(Dimethylamino)-benzaldehyde see p. 1946

Formylic acid
▶ Formic acid 98 % see p. 2005
▶ Formic acid 85 % see p. 2006
▶ Formic acid 45 % see p. 2006

3-Formylindole
▶ Indole-3-carboxaldehyde see p. 2067

N-Formyl-L-Leu
▶ N-Formyl-L-Leucine see p. 2007

N-Formyl-L-Leucine



N-Formyl-L-Leucine
PEPTIPURE® ≥98 %, for biochemistry
N-Formyl-L-Leu
$C_7H_{13}NO_3$
M 159,18 g/mol
mp 139-142 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[6113-61-7]
WGK 3

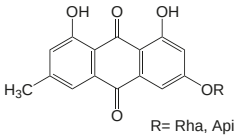
Type analysis:
Assay (HPLC)..... ≥98,0 %
Loss on drying (105 °C)..... ≤0,5 %
Melting point..... 139,0-142,0 °C

6665.1	500 mg	glass	21,40 €
6665.2	1 g	glass	39,70 €
6665.3	5 g	glass	149,45 €

3-Formylphenol
▶ 3-Hydroxybenzaldehyde see p. 2055

Fractured coal
▶ Charcoal see p. 1889

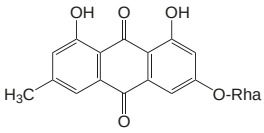
Frangulin (A+B)



Frangulin (A+B)
ROTICHROM® ~CHR
Franguloside
$C_{21}H_{20}O_9$ / $C_{20}H_{18}O_9$
M 416,37 / 402,36 g/mol
mp 203-214 °C
Storage temp.: +4 °C
[60529-33-1]
Warning H302

7404.1	25 mg	glass	41,85 €

Frangulin A

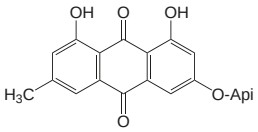


Frangulin A
ROTICHROM® HPLC
Reference substance for HPLC.
From *Rhamnus frangula.*
Emodinrhamnoside, Rhamnoxanthine
$C_{21}H_{20}O_9$ • M 416,40 g/mol • mp ~228 °C
Storage temp.: +4 °C
[521-62-0] • EC No. 208-316-2
Warning H302

Type analysis:
Purity (HPLC)..... >98 %

1140.1	20 mg	glass	295,65 €

Frangulin B



6-O-(Apiofuranosyl)-1,6,8-trihydroxy-3-methylantraquinone
$C_{20}H_{18}O_9$ • M 402,36 g/mol • mp 196 °C
Storage temp.: +4 °C
[14101-04-3] • EC No. 237-953-9
Warning H302

Frangulin B
ROTICHROM® HPLC
Reference substance for HPLC.
From *Rhamnus frangula.*

Type analysis:
Purity (HPLC)..... >98 %

1142.1	10 mg	glass	310,70 €

Frangulin B
ROTICHROM® ~CHR
From *Rhamnus frangula*.

7655.1	10 mg	glass	252,65 €

Franguloside
▶ Frangulin (A+B) see p. 2007

Fraser Broth (Base)

Fraser Broth (Base)
ISO 11290-1, for microbiology
Enrichment medium for detection and isolation of *Listeria* in foods and environmental samples.
Application: Use 57,3 g for 1 l broth. A slight precipitate may appear after autoclaving. Prior to use add sterile filtered ferric(III) ammonium citrate solution ad 0,5 g/l broth (Art. No. 3130.1).
Storage temp.: +20 °C • WGK 1

Guarantee analysis:
Pancreatic digest of casein..... 5 g/l
Meat peptone..... 5 g/l
Beef extract..... 5 g/l
Yeast extract..... 5 g/l
Sodium chloride..... 20 g/l
Disodium phosphate..... 12 g/l
Potassium phosphate..... 1,35 g/l
Lithium chloride..... 3 g/l
Esculin..... 1 g/l
Acriflavine..... 0,025 g/l
Nalidixic acid..... 0,02 g/l
pH value..... 7,2 ±0,2

HP17.1	500 g	plastic	128,90 €
Original pack 6 x 500 g			122,46/500 g

For further information, please see page 1437

Fraser Half Broth (Base)

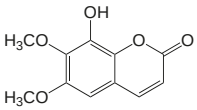
Fraser Half Broth (Base)
ISO 11290-1, for microbiology
Enrichment medium for detection and isolation of *Listeria* in foods and environmental samples.
Application: Use 57,3 g for 1 l broth. A slight precipitate may appear after autoclaving. Prior to use add sterile filtered iron(III) ammonium citrate solution ad 0,5 g/l broth (Art. No. 3130.1).
Storage temp.: +20 °C • WGK 1

Guarantee analysis:
Pancreatic digest of casein..... 5 g/l
Meat peptone..... 5 g/l
Beef extract..... 5 g/l
Yeast extract..... 5 g/l
Sodium chloride..... 20 g/l
Disodium phosphate..... 12 g/l
Potassium phosphate..... 1,3 g/l
Lithium chloride..... 3 g/l
Esculin..... 1 g/l
Acriflavine..... 0,0125 g/l
Nalidixic acid..... 0,01 g/l
pH value..... 7,2 ±0,2

HP18.1	500 g	plastic	100,95 €
Original pack 6 x 500 g			95,90/500 g
HP18.2	1 kg	plastic	180,10 €
Original pack 6 x 1 kg			171,10/1 kg

For further information, please see page 1446

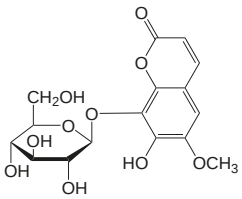
Fraxidin



Fraxidin
ROTICHROM® ~CHR
$C_{11}H_{10}O_5$
M 222 g/mol
mp 196-198 °C
[525-21-3] • EC No. 208-370-7

9369.1	10 mg	glass	171,90 €

Fraxin

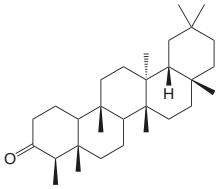


Fraxin
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{16}H_{18}O_{10}$
M 317,31 g/mol
mp 205 °C
Storage temp.: +4 °C
[524-30-1] • EC No. 208-355-5

Type analysis:
Purity (HPLC)..... ≥99 %

9364.1	10 mg	glass	342,95 €

Friedelin

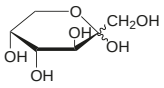


Friedelin
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{30}H_{50}O$
M 426,70 g/mol
mp 262-265 °C
Storage temp.: +4 °C
[559-74-0] • EC No. 209-205-1

Type analysis:
Purity (HPLC)..... ≥98 %

7459.2	20 mg	glass	189,10 €

D(-)-Fructose

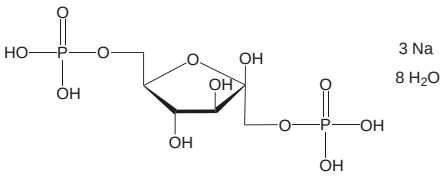


D(-)-Fructose
≥99,5 %, for biochemistry
Fruit sugar, Levulose
$C_6H_{12}O_6$
M 180,16 g/mol
D 1,59
mp 102-104 °C (dec.)
Solubility: 790 g/l (H_2O, 20 °C)
[57-48-7] • EC No. 200-333-3

Type analysis:
Appearance..... white cryst. powder
Assay. ..... ≥99,5 %
pH value. 3,0-6,0
Specific rotation $[\alpha]_D^{20}$. ..... -93,5° to -91,0°
Loss on drying. ..... ≤0,2 %
Ash content. ..... ≤0,1 %

4981.1	500 g	plastic	16,70 €
Original pack 6 x 500 g			15,87/500 g
4981.4	1 kg	plastic	25,70 €
Original pack 6 x 1 kg			24,42/1 kg
4981.2	2,5 kg	plastic	53,65 €
4981.5	5 kg	plastic	70,45 €
4981.6	10 kg	plastic	92,35 €
4981.3	25 kg	plastic	191,25 €

D-Fructose-1,6-diphosphate trisodium salt octahydrate



D-Fructose-1,6-diphosphate trisodium salt octahydrate
≥98 %, for biochemistry
FDP-Na_3H
$C_6H_{11}Na_3O_{12}P_2 \cdot 8\ H_2O$
M 550,18 g/mol
mp ~71-75 °C
Storage temp.: +4 °C
[81028-91-3] • EC No. 253-778-0

Type analysis:
Assay. ..... ≥98,0 %
Loss on drying. ..... 25-28 %
pH value. 5,5-6,5

4982.1	1 g	glass	18,85 €
4982.2	5 g	glass	34,95 €
4982.3	25 g	glass	104,20 €

Fruit sugar

▶ D(-)-Fructose see p. 2008

FTA® Purification Reagent

FTA® Purification Reagent
ready-to-use, for molecular biology
For purification of nucleic acids stored on FTA® Cards. Originally Whatman.
WGK 2

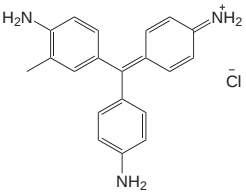
CL99.1	500 ml	plastic	379,00 €

For further information, please see page 1277

Fuchsine acidic

▶ Acid fuchsin (C.I. 42685) see p. 1768

Fuchsine basic (C.I. 42510)



Fuchsine basic (C.I. 42510)
for microscopy
Indicator pH 1,0-3,1
Basic violet, Magenta
$C_{20}H_{20}N_3Cl$
M 337,85 g/mol
mp 235 °C (dec.)
Solubility: 4 g/l (H_2O, 25 °C)
[632-99-5] • EC No. 211-189-6 • WGK 3

Warning H351

Type analysis:
Thin-layer chromatography (TLC). ..... complies
UV-absorption max. (EtOH 50 %). ..... 549-552 nm
Loss on drying (135 °C). ..... ≤15 %

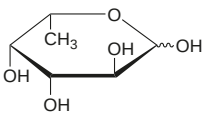
3256.2	25 g	glass	34,30 €
3256.1	50 g	glass	62,25 €
3256.3	100 g	glass	82,70 €

For further information, please see page 1523

Fuchsine sulphurous acid

▶ Schiff's reagent see p. 2308

L(-)-Fucose

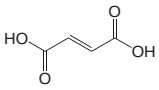


L(-)-Fucose
≥95 %, for biochemistry
6-Desoxy-L-galactose
$C_6H_{12}O_5$
M 164,16 g/mol
mp 150-153 °C
[2438-80-4] • EC No. 219-452-7 • WGK 1

Type analysis:
Assay (HPLC). ..... ≥95 %

KK10.1	1 g	glass	31,10 €
KK10.2	5 g	glass	99,90 €
KK10.3	25 g	glass	418,20 €

Fumaric acid



Fumaric acid

≥99,5 %, for biochemistry
trans-1,2-Ethylene dicarboxylic acid,
2-Butenedioic acid
$C_4H_4O_4$
M 116,08 g/mol
D 1,64
mp ~200 °C (subl.) • flp 273 °C
Solubility: 4,9 g/l (H_2O, 20 °C)
[110-17-8] • EC No. 203-743-0
WGK 1
Warning H319

Type analysis:
Assay (dry substance). ..... 99,5-100,5 %
Maleic acid. ..... ≤0,1 %
Lead (Pb). ..... ≤0,0002 %
Heavy metals (as Pb) ..... ≤0,001 %
Ash content ..... ≤0,1 %

3748.1	500 g	plastic	19,90 €
Original pack 6 x 500 g			18,91/500 g
3748.2	2,5 kg	plastic	66,55 €

Fumarine

▶ Protopine see p. 2243

Fungicidine

▶ Nystatin dihydrate see p. 2170

Fungizone

▶ Amphotericin B see p. 1804

2,5-Furandione

▶ Maleic anhydride see p. 2117

N6-Furfuryladenine

▶ Kinetin see p. 2085

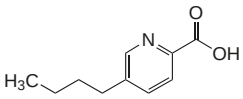
6-Furfurylaminopurine

▶ Kinetin see p. 2085

7-*H*-Furo[3,2-g]benzopyran-7-one

▶ Psoralen see p. 2243

Fusaric acid



Fusaric acid

≥99 %
5-Butylpicolinic acid,
5-Butylpyridine-2-carboxylic acid
$C_{10}H_{13}NO_2$
M 179,22 g/mol
mp 97-101 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[536-69-6] • EC No. 208-643-0 • WGK 1
Warning H302

Type analysis:
Assay (titr.). ..... ≥99,0 %
Solution (1 % in ethanol) ..... colourless, clear
Water (KF) ..... ≤0,5 %
Melting point. ..... 97-101 °C

5561.1	250 mg	glass	36,45 €
5561.2	1 g	glass	114,50 €

G418 solution

▶ Geneticin disulphate (G418)-solution see p. 2013

Gadolinia

▶ Gadolinium(III) oxide see p. 2009

Gadolinium Standards

▶ Gadolinium ICP Standard Solution see p. 2362
▶ Gadolinium ICP Standard Solution see p. 2367

Gadolinium(III) oxide

Gadolinium trioxide, Gadolinia
Gd_2O_3
M 362,49 g/mol
bp 3900 °C
mp 2339 °C
Solubility: insoluble (H_2O, 20 °C)
[12064-62-9] • EC No. 235-060-9 • WGK 1
Warning H319

Gadolinium(III) oxide

ROTI®REMETIC 99,999 %

Type analysis:
Assay (TREO*). ..... 99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7189.1	1 g	plastic	16,70 €
7189.2	5 g	plastic	26,80 €
7189.3	50 g	plastic	213,95 €

Gadolinium(III) oxide

ROTI®REMETIC 99,99 %

Type analysis:
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7136.1	1 g	plastic	32,15 €
7136.2	5 g	plastic	46,15 €
7136.3	25 g	plastic	114,50 €
7136.4	100 g	plastic	299,95 €

Gadolinium trioxide

▶ Gadolinium(III) oxide see p. 2009

Galactitol

▶ Dulcitol see p. 1963

Galactomannan

Galactomannan

for biochemistry
Carubin type
M ~300 000 g/mol
[11078-30-1] • EC No. 234-299-6

Type analysis:
Appearance. ..... white powder

3768.1	5 g	plastic	48,95 €

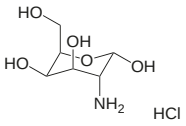
4-O-ß-D-Galactopyranosyl-D-fructose

▶ Lactulose see p. 2090

α-D-Galactopyranosyl phosphat dipotassium salt pentahydrate

▶ α-D-Galactose-1-phosphate dipotassium salt pentahydrate see p. 2010

D-Galactosamine hydrochloride



D-Galactosamine hydrochloride

≥98 %, for biochemistry

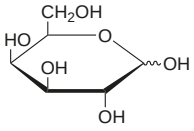
For experimental generation of hepatitis.
Hepasamin®
$C_6H_{14}ClNO_5$
M 215,64 g/mol
mp 182-185 °C (dec.)
Storage temp.: +4 °C
[1772-03-8] • EC No. 217-198-1

Type analysis:

Appearance. ..... white to off-white, cryst. powder
Assay. ..... ≥98,0 %
pH value (1 % in H_2O). 3,5-5,0
Specific rotation $[\alpha]_D^{20}$. ..... +92° to +98°
Solution (1 % in H_2O). ..... clear, colourless to slightly yellowish
Ash content. ..... ≤1,0 %

7411.1	1 g	plastic	84,85 €
7411.2	5 g	plastic	360,05 €
7411.3	25 g	plastic	1392,15 €

D(+)-Galactose



$C_6H_{12}O_6$
M 180,16 g/mol
mp 166-170 °C
Solubility: 650 g/l (H_2O, 20 °C)
[59-23-4] • EC No. 200-416-4
WGK 1

D(+)-Galactose

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤10 E.U./g
Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥99,0 %
Water. ..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (c=10 in H_2O, NH_3). ..... +78,0° to +81,5°
Residue on ignition. ..... ≤0,1 %
Lead (Pb). ..... ≤0,00005 %

8878.1	10 g	plastic	30,00 €
8878.2	25 g	plastic	57,95 €
8878.3	50 g	plastic	105,25 €
8878.4	100 g	plastic	197,30 €

D(+)-Galactose

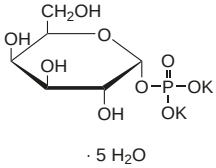
≥98 %, for biochemistry

Type analysis:

Appearance. ..... white to off-white, cryst. powder
Assay (HPLC). ..... ≥98,0 %
Water ..... ≤0,5 %
Chloride (Cl). ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,005 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in H_2O, 5 h). ..... +80° ±2,0°
Solubility (10 % in H_2O). ..... clear, colourless
Glucose (HPLC). ..... ≤0,1 %
Heavy metals (as Pb). ..... ≤0,001 %

4987.1	100 g	plastic	27,45 €
4987.2	500 g	plastic	93,45 €
Original pack 6 x 500 g			88,78/500 g
4987.3	1 kg	plastic	160,10 €
Original pack 6 x 1 kg			152,10/1 kg
4987.7	5 kg	plastic	740,70 €

α-D-Galactose-1-phosphate dipotassium salt pentahydrate



· 5 H_2O

α-D-Galactose-1-phosphate dipotassium salt pentahydrate

≥99 %, for biochemistry

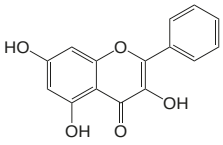
α-D-Galactopyranosyl phosphat dipotassium salt pentahydrate, Phos-α-D-Gal
$C_6H_{11}K_2O_9P$ · 5 H_2O
M 426,40 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[19046-60-7] • EC No. 242-783-3

Type analysis:

Assay (titr.). ..... ≥99,0 %
Solution (5 % in H_2O). ..... colourless
Water (KF). ..... ≤23,0 %
Specific rotation $[\alpha]_D^{20}$. ..... +80,0° to +83,0°

5550.1	25 mg	plastic	30,00 €
5550.2	100 mg	plastic	101,60 €

Galangin



Galangin

ROTICHROM® HPLC

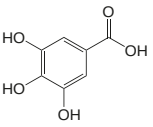
Reference substance for HPLC.
3,5,7-Trihydroxyflavone
$C_{15}H_{10}O_5$
M 270,25 g/mol
mp 214-215 °C
Storage temp.: +4 °C
[548-83-4] • EC No. 208-960-4 • WGK 1

Type analysis:

Purity (HPLC). ..... ≥99 %

7460.2	20 mg	glass	199,85 €

Gallic acid



Gallic acid

≥98 %, p.a., ACS, anhydrous

3,4,5-Trihydroxy benzoic acid
$C_7H_6O_5$
M 170,12 g/mol
mp 251 °C
[149-91-7] • EC No. 205-749-9
WGK 1

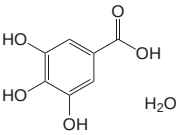
Warning H315-H319-H335

Guarantee analysis:

Assay. ..... ≥98,0 %
In H_2O insoluble matter. ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,02 %
Ash content. ..... ≤0,05 %
Loss on drying (105 °C). ..... ≤0,5 %

2699.1	100 g	glass	51,10 €
2699.2	250 g	glass	93,45 €
2699.3	500 g	glass	149,35 €
Original pack 6 x 500 g			141,88/500 g

Gallic acid monohydrate



3,4,5-Trihydroxybenzoic acid hydrate
$C_7H_6O_5$ · H_2O
M 188,14 g/mol
mp 250 °C
[5995-86-8] • EC No. 205-749-9
WGK 1

Warning H315-H319-H335

Gallic acid monohydrate

≥98 %, p.a., ACS

Guarantee analysis:

Assay. ..... ≥98,0 %
In H_2O insoluble matter. ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,02 %
Ash content. ..... ≤0,05 %
Loss on drying (105 °C). ..... ≤10 %

2698.1	100 g	plastic	47,85 €
2698.2	250 g	plastic	87,00 €
2698.3	500 g	plastic	147,85 €
Original pack 6 x 500 g			140,46/500 g

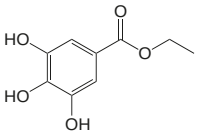
Gallic acid monohydrate

≥99 %

Type analysis:
Appearance. ..... white to off-white powder
Assay ..... ≥99,0 %
Loss on drying (105 °C). ..... ≤10 %

7300.1	50 g	plastic	31,10 €
7300.2	100 g	plastic	44,00 €
7300.3	500 g	plastic	125,70 €
Original pack 6 x 500 g			119,42/500 g

Gallic acid ethyl ester



Gallic acid ethyl ester

≥98 %
Ethyl gallate
$C_9H_{10}O_5$
M 198,18 g/mol
mp 150-152 °C
[831-61-8] • EC No. 212-608-5

Type analysis:
Assay (acidim.). ..... ≥98 %
Melting range. ..... 150-152 °C

3629.1	25 g	plastic	32,15 €

Gallium

Ga
M 69,72 g/mol
D ~5,91 • bp 2403 °C
mp 29,8 °C
[7440-55-3] • EC No. 231-163-8
UN No. 2803 • ADR 8 III • WGK 1

Danger H314

Gallium

ROTI®METIC 99,9999 % (6N)

Type analysis:
Assay (metals basis). ..... 99,9999 %
Particle size. ..... 6-12 mm
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

4507.2	25 g	plastic	267,70 €

Gallium

99,9999 %

Type analysis:
Assay (Ga). ..... 99,9999 %

3761.1	5 g	glass	81,60 €

Gallium Standards

▶ Gallium ICP Standard Solution see p. 2362
▶ Gallium ICP Standard Solution see p. 2367

Gallium(III) nitrate hydrate

Gallium(III) nitrate hydrate

ROTI®METIC 99,9995 % (5N5)
Gallium trinitrate
$Ga(NO_3)_3 \cdot x\ H_2O$
M 255,74 + x H_2O g/mol
mp 110 °C (dec.)
[69365-72-6] • EC No. 236-815-5
UN No. 1477 • ADR 5.1 II • WGK 1

Danger H272-H315-H319

Type analysis:
Assay (metals basis). ..... 99,9995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5548.1	25 g	plastic	274,15 €

Gallium(III) oxide

Gallium(III) oxide

ROTI®METIC 99,999 % (5N)
Ga_2O_3
M 187,44 g/mol
D 5,88
mp 1807 °C
[12024-21-4] • EC No. 234-691-7

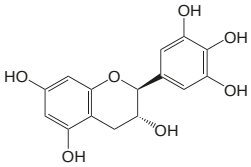
Type analysis:
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5377.1	10 g	plastic	144,60 €

Gallium trinitrate

▶ Gallium(III) nitrate hydrate see p. 2011

(-)-Gallocatechin



(-)-Gallocatechin

ROTICHROM® HPLC
Reference substance for HPLC.
From *Camellia sinensis*.
Gallocatechol
$C_{15}H_{14}O_7$
M 306,27 g/mol
Storage temp.: -20 °C
[3371-27-5]

Warning H315-H319-H335

Type analysis:
Purity (HPLC). ..... ≥99 %

4480.1	10 mg	glass	252,65 €
4480.2	20 mg	glass	403,15 €

Gallocatechol

▶ (-)-Gallocatechin see p. 2011

D-GalNAc

▶ N-Acetyl-D-galactosamine see p. 1766

Gas-leak tester Roth

Gas-leak tester Roth

Special liquid for finding smallest leaks in tubing or hollow spaces.
WGK 1

2686.1	500 ml	pump spray bottle	17,15 €

For further information, please see page 1180

Gasoline

▶ Petroleum benzine 30-50 see p. 2201

GDH

▶ Glutamate dehydrogenase (GDH, GLDH) see p. 2022

Gelatine

Storage temp.: +20 °C
[9000-70-8] • EC No. 232-554-6
WGK 1

Gelatine

platinum, extra pure, 240 Bloom

Type analysis:
Gel strength. ..... 230-250 Bloom
Particle size. ..... 20-30 mesh
Water . ..... <15 %
Ash. ..... <2 %
Peroxides (as H_2O_2). ..... <0,001 %
Sulphur dioxide (SO_2). ..... <0,005 %
Gelatine is produced from porcine skin.

4582.4	100 g	plastic	18,20 €
4582.3	500 g	plastic	32,15 €
Original pack 6 x 500 g			30,54/500 g
4582.1	1 kg	plastic	52,15 €
Original pack 6 x 1 kg			49,54/1 kg
4582.2	5 kg	plastic	186,55 €

Gelatine

gold, extra pure, 180 Bloom

Type analysis:
Gel strength. ..... 170-190 Bloom
Particle size. ..... 20-30 mesh
Water . ..... <15 %
Ash. ..... <2 %
Peroxides (as H_2O_2). ..... <0,001 %
Sulphur dioxide (SO_2). ..... <0,005 %
Gelatine is produced from porcine skin.

4274.4	100 g	plastic	17,10 €
4274.3	500 g	plastic	30,65 €
Original pack 6 x 500 g			29,12/500 g
4274.1	1 kg	plastic	44,00 €
Original pack 6 x 1 kg			41,80/1 kg
4274.2	5 kg	plastic	181,15 €

Gelatine

crystal, extra pure, 160 Bloom

Type analysis:

Gel strength. ..... 150-170 Bloom
Particle size. ..... 20-30 mesh
Protein. ..... 82-91 %
Water . ..... <15 %
Ash. ..... <2 %
Peroxides (as H_2O_2). ..... <0,001 %
Sulphur dioxide (SO_2). ..... <0,005 %
Gelatine is produced from porcine skin.

4308.4	100 g	plastic	16,70 €
4308.3	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
4308.1	1 kg	plastic	42,90 €
Original pack 6 x 1 kg			40,76/1 kg
4308.2	5 kg	plastic	177,30 €

Gelatine

silver, extra pure, 140 Bloom

Type analysis:

Gel strength. ..... 130-150 Bloom
Particle size. ..... 20-30 mesh
Water . ..... ≤15 %
Ash. ..... ≤2 %
Peroxides (as H_2O_2). ..... ≤0,001 %
Sulphur dioxide (SO_2). ..... ≤0,005 %
Gelatine is produced from porcine skin.

4275.4	100 g	plastic	16,05 €
4275.3	500 g	plastic	29,60 €
Original pack 6 x 500 g			28,12/500 g
4275.1	1 kg	plastic	41,85 €
Original pack 6 x 1 kg			39,76/1 kg
4275.2	5 kg	plastic	175,80 €

Gelatin Agar (DEV)

Gelatin Agar (DEV)

DEV, for microbiology

For enumeration of the total microbial population and detection of gelatin-liquefying microorganisms in water samples.
Application: Use 50 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

Guarantee analysis:

Meat peptone. ..... 10 g/l
Meat extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Gelatine. ..... 10 g/l
Agar. ..... 15 g/l
pH value. ..... 7,3 ±0,2

HP07.1	500 g	plastic	149,45 €
Original pack 6 x 500 g			141,98/500 g

For further information, please see page 1446

Gelatine Capsules

Gelatine Capsules

for electron microscopy

No. 0, length 22 mm, diameter 7 mm, vol. 0,68 ml.

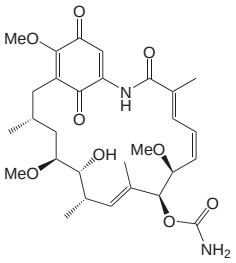
Type analysis:

Loss on drying. ..... ≤16 %
Disintegration time (25 °C). ..... ≤30 min

8641.1	100 pieces	plastic	19,25 €

For further information, please see page 1511

Geldanamycin



Geldanamycin

≥98 %, for biochemistry

HSP90 inhibitor, tyrosine kinase inhibitor. Benzoquinone ansamycin antibiotic. Binds specifically to the heat shock protein HSP90.
$C_{29}H_{40}N_2O_9$
M 560,64 g/mol • mp 260-275 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[30562-34-6] • WGK 1

Type analysis:

Assay (HPLC). ..... ≥98 %
λ max.. ..... 259 nm, 307 nm
Melting point. ..... 258-262 °C

HN71.1	1 mg	glass	69,80 €
HN71.2	5 mg	glass	171,50 €
HN71.3	10 mg	glass	247,15 €

For further information, please see page 1326

Gel Loading Buffer

Art. No.	Description	Page
K929	Roti®-Load 1	2285
K930	Roti®-Load 2	2286
3359	Roti®-Load 3 (LDS)	2286
X905	Roti®-Load DNA (with ficoll)	2286
T847	Roti®-Load DNA (with saccharose)	2286
X904	Roti®-Load DNA (with glycerol)	2286
0100	Roti®-Load DNA 1x (with glycerol)	2286
0095	Roti®-Load DNA short-run (with glycerol)	2286
0099	Roti®-Load DNA short-run 1x (with glycerol)	2286
HP03	Roti®-Load DNA small (with glycerol)	2286
HP04	Roti®-Load DNA orange 1 (with glycerol)	2286
HP05	Roti®-Load DNA-orange 2 (with glycerol)	2286
HP06	Roti®-Load DNA-tricolor (with glycerol)	2286
5783	Roti®-Load DNAstain 1	2286
5784	Roti®-Load DNAstain 2	2286
6472	Roti®-Load DNAstain 3	2286
T848	Roti®-Load RNA	2286

Gel Markers

Art. No.	Description	Page
2805	20 bp-DNA-Ladder	1956
2810	50 bp-DNA-Ladder	1956
T834	100 bp-DNA-Ladder *equimolar*	1956
T833	100 bp-DNA-Ladder *equalized*	1956
T835	100 bp-DNA-Ladder *extended*	1956
8272	200 bp-DNA-Ladder	1956
T918	250 bp-DNA-Ladder	1956
8273	500 bp-DNA-Ladder	1956
Y014	1 kbp DNA-Ladder	1957
CL22	DNA-Ladder combi	1957
0149	DNA-Marker ccc-plasmid	1957
0146	DNA-Marker short-run 1	1957
CL05	DNA-Marker short-run *extended*	1957
CP49	Lambda Hind III / phiX Hae III Marker	1957
X910	Lambda Hind III Marker	1957
T146	pBR328 Mix I	1957
X902	pBR328-Marker ready-to-use	1957
T917	PCR-Marker DNA*score*	1957
X901	pUC19-Marker ready-to-use	1957
T149	pUC19/Msp I	1957
8262	20 bp-DNA-Fluoro-Ladder	1957
8263	50 bp-DNA-Fluoro-Ladder	1957
8264	100 bp-DNA-Fluoro-Ladder	1957
8265	200 bp-DNA-Fluoro-Ladder	1957
8266	500 bp-DNA-Fluoro-Ladder	1958
8267	1 kbp-DNA-Fluoro-Ladder	1958
T850	Roti®-Mark 10-150	2288
X879	Roti®-Mark 10-150 PLUS	2288
9299	Roti®-Mark PETIT	2288
T851	Roti®-Mark STANDARD	2288
2242	Roti®-Mark ALL BLUE	2288
8269	Roti®-Mark BI-PINK	2288
8271	Roti®-Mark TRICOLOR	2288
2244	Roti®-Mark TRICOLOR XTRA	2289
2245	Roti®-Mark WESTERN PLUS	2289

Gel matrix buffer

▶ Rotiphorese®-PAGE Matrix Buffer plus see p. 2292

Gel Media and Additives

Art. No.	Description	Page
5834	Roti®lyte pH 3-5	2287
5835	Roti®lyte pH 3-6	2287
5839	Roti®lyte pH 3-7	2287
5841	Roti®lyte pH 3-10	2287
5845	Roti®lyte pH 4-6	2287
5850	Roti®lyte pH 4-7	2287
5851	Roti®lyte pH 5-6	2287
5856	Roti®lyte pH 5-7	2287
5857	Roti®lyte pH 5-8	2288
5858	Roti®lyte pH 6-7	2288
5860	Roti®lyte pH 6-8	2288
5861	Roti®lyte pH 7-9	2288
5864	Roti®lyte pH 8-10	2288
3029	Rotiphorese® Gel 30 (37,5:1)	2291
A124	Rotiphorese® NF-Acrylamide/ Bis-solution 30 % (29:1)	2291
3030	Rotiphorese® Gel 40 (19:1)	2291
A515	Rotiphorese® Gel 40 (29:1)	2291
T802	Rotiphorese® Gel 40 (37,5:1)	2291
A516	Rotiphorese® NF-Acrylamide/Bis-solution 40 % (19:1)	2292
A121	Rotiphorese® NF-Acrylamide/Bis-solution 40 % (29:1)	2292
3037	Rotiphorese® Gel A	2292
7748	Rotiphorese® Gel A-40	2292
3039	Rotiphorese® Gel B	2292
8996	Rotiphorese®-PAGE Matrix Buffer plus	2292
A431	Rotiphorese® DNA sequencing system	2292
3043	Rotiphorese® Sequencing gel concentrate	2293
3047	Rotiphorese® Sequencing gel diluent	2293
3050	Rotiphorese® Sequencing gel buffer concentrate	2293

GELRITE®

GELRITE®

Gelling agent for microbiological culture media

Alternative to Agar
Storage temp.: +20 °C
[71010-52-1] • EC No. 275-117-5

Type analysis:

Gel strength. ..... 400-700 g/cm²
Loss on drying. ..... ≤15,0 %

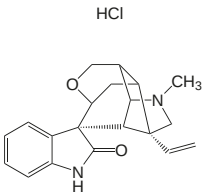
0039.1	500 g	plastic	267,70 €
Original pack 6 x 500 g			254,32/500 g
0039.2	1 kg	plastic	428,95 €
Original pack 6 x 1 kg			407,50/1 kg

For further information, please see page 1498

Gel Running Buffers

Art. No.	Description	Page
1249	Roti®fair SDS-PAGE	2278
1250	Roti®fair SDS-PAGE	2278
1234	Roti®fair 50x TAE	2278
1240	Roti®fair 50x TAE	2278
1241	Roti®fair 1x TBE	2278
1242	Roti®fair 5x TBE	2278
1243	Roti®fair 10x TBE	2278
1269	Roti®fair TG-Western	2279
1276	Roti®fair TG-Western	2279
A118	Rotiphorese® NF 10 x TBE Buffer	2292
3060	Rotiphorese® 10x SDS-PAGE	2292
T845	Rotiphorese® 10x TAE Buffer	2293
0122	Rotiphorese® 10x TAE Buffer *light*	2293
CL86	Rotiphorese® 50x TAE Buffer	2293
3061	Rotiphorese® 10x TBE Buffer	2293

Gelsemine hydrochloride



Gelsemine hydrochloride

~90 %

$C_{20}H_{22}N_2O_2 \cdot HCl$
M 358,87 g/mol • mp ~326 °C
[35306-33-3] • EC No. 252-504-7
UN No. 1544 • ADR 6.1 I

Danger H300+H330

Type analysis:

Appearance. ..... white powder
Melting point. ..... ~326 °C

6571.1	500 mg	glass	57,55 €

Gelseminic acid

▶ Scopoletin see p. 2308

Gel Staining Solutions and Kits

Art. No.	Description	Page
HP47	Ethidium bromide solution 0,025 % in dropper bottle	1978
HP46	Ethidium bromide solution 0,5 % in dropper bottle	1978
2218	Ethidium bromide solution 1 %	1978
8905	Eva Green® Fluorescent Dye	1988
N769	Roti®-Black N	2266
P081	Roti®-Black NSeq	2266
L533	Roti®-Black P	2266
A152	Roti®-Blue	2266
4829	Roti®-Blue quick	2266
3865	Roti®-GelStain	2283
0984	Roti®-GelStain Red	2284
5783	Roti®-Load DNAstain 1	2286
5784	Roti®-Load DNAstain 2	2286
6472	Roti®-Load DNAstain 3	2286
0648	Roti®-Methylene blue staining concentrate	2289
3074	Rotiphorese® Blue R	2291

Geneticin disulphate (G418 Sulphate)

Geneticin disulphate (G418 Sulphate)

≥650 U/mg, for biochemistry

Aminoglycoside antibiotic
Antibiotic G418, Geneticin disulphate, G418 sulphate
$C_{20}H_{40}N_4O_{10} \cdot 2\ H_2SO_4$
M 692,70 g/mol
Storage temp.: +4 °C
[108321-42-2]

Danger H334-H317

Type analysis:

Activity. ..... ≥650 U/mg
Water (KF). ..... ≤10 %

0239.1	250 mg	glass	36,45 €
0239.2	500 mg	glass	47,85 €
0239.3	1 g	glass	88,70 €
0239.4	10 g	glass	618,15 €

For further information, please see page 1502

Geneticin disulphate (G418)-solution

Aqueous G418 sulphate solution, G418 solution
$C_{20}H_{40}N_4O_{10} \cdot 2\ H_2SO_4$
M 692,70 g/mol
Storage temp.: +4 °C
[108321-42-2] • WGK 1

Danger H334-H317

Geneticin disulphate (G418)-solution

CELLPURE® 50 mg/ml, sterile

Aminoglycoside antibiotic. For cell culture, biochemistry and molecular biology.

Type analysis:

Concentration. ..... 50 mg/ml
Activity (powder). ..... >600 µg/mg
Endotoxins. ..... <10 EU/ml
Sterility. ..... complies
Suitability for cell cultur. ..... complies
pH value. 5,0-6,0

CP11.1	10 ml	plastic	69,80 €
CP11.2	20 ml	plastic	93,45 €
CP11.3	100 ml	plastic	332,20 €

For further information, please see page 1502

Geneticin disulphate (G418)-solution

50 mg/ml, BioScience-Grade, sterile

Aminoglycoside antibiotic. For cell culture, biochemistry and molecular biology.

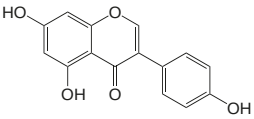
Type analysis:

Concentration. ..... 50 ±10 mg/ml
Active assay. ..... ≥700 µg/mg
Sterility. ..... complies

2039.1	10 ml	plastic	65,05 €
2039.2	20 ml	plastic	85,50 €
2039.3	100 ml	plastic	321,45 €

For further information, please see page 1503

Genistein



Genistein

≥98 %, for biochemistry

Inhibitor of tyrosine specific protein kinases.
Prunetol, Genisteol, 4',5,7-Trihydroxyisoflavone
$C_{15}H_{10}O_5$
M 270,24 g/mol
mp 297-298 °C
Storage temp.: +4 °C
[446-72-0] • EC No. 207-174-9
WGK 3

Type analysis:

Assay (HPLC). ..... ≥98 %
Heavy metals. ..... ≤0,001 %
Loss on drying. ..... ≤1,0 %

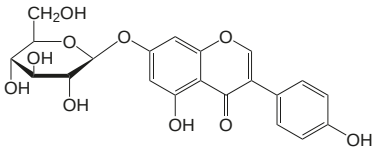
0716.1	25 mg	plastic	64,40 €
0716.2	50 mg	plastic	94,10 €
0716.3	100 mg	plastic	155,80 €

For further information, please see page 1326

Genisteol

▶ Genistein see p. 2013

Genistin



Genistin
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{21}H_{20}O_{10}$
M 432,38 g/mol
mp 254 °C
Storage temp.: +4 °C
[529-59-9]

Type analysis:
Purity (HPLC)..... ≥99 %

9374.2	20 mg	glass	299,95 €

Gentamycin sulphate

Gentamycin sulphate
≥590 I.U./mg, for biochemistry
Aminoglycoside antibiotic
Gentamicin sulphate
$C_{19\text{-}21}H_{39\text{-}43}N_5O_7 \cdot 2,5\ H_2SO_4$
M 694,75-723,75 g/mol
Storage temp.: +4 °C
[1405-41-0] • EC No. 215-778-9 • WGK 1

Danger H334-H317

Type analysis:
Assay (dry substance). ..... ≥590 I.U./mg
pH value (4 % in H_2O)..... 3,5-5,5
Specific rotation $[\alpha]_D^{20}$ (10 % in H_2O)..... +107° to +121°
Sulphate (SO_4). ..... 32-35 %
Water (KF). ..... ≤15,0 %
Sulphated ash..... ≤1,0 %

0233.1	1 g	glass	11,30 €
0233.2	5 g	glass	22,05 €
0233.3	10 g	glass	33,25 €
0233.4	25 g	glass	64,40 €

For further information, please see page 1503

Gentamycin sulphate solution

Aqueous gentamycin sulphate solution
$C_{19\text{-}21}H_{39\text{-}43}N_5O_7 \cdot 2,5\ H_2SO_4$
M 694,75-723,75 g/mol
Storage temp.: +4 °C
[1405-41-0] • EC No. 215-778-9
WGK 1

Danger H334-H317

Gentamycin sulphate solution
CELLPURE® 50 mg/ml, sterile
Aminoglycoside antibiotic. For cell culture and biochemistry.

Type analysis:
Concentration. ..... 50 mg/ml
Endotoxins..... <10 EU/ml
pH value. 4,5-5,5
Sterility..... complies
Suitability for cell cultur. ..... complies

HN09.1	20 ml	plastic	99,90 €
HN09.2	100 ml	plastic	321,45 €

For further information, please see page 1503

Gentamycin sulphate solution
50 mg/ml, BioScience-Grade, sterile
Aminoglycoside antibiotic.
For cell culture and biochemistry.

Type analysis:
Appearance..... clear, colourless to pale yellow
Concentration..... 50 mg/ml
Active assay. ..... ≥590 µg/mg
pH value. 3,5-5,5
Sterility. ..... complies

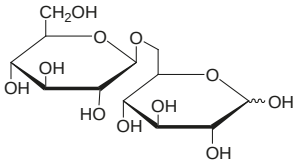
2475.1	20 ml	plastic	99,45 €
2475.2	100 ml	plastic	310,70 €

For further information, please see page 1503

Gentian violet

▶ Crystal violet (C.I. 42555) see p. 1914

β-D-Gentiobiose



β-D-Gentiobiose
≥98 %, for biochemistry
Amygdalose, 6-O-β-D-Glucopyranosyl-D-glucose
$C_{12}H_{22}O_{11}$
M 342,30 g/mol
[554-91-6] • EC No. 209-074-0
WGK 1

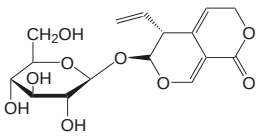
Type analysis:
Assay (HPLC)..... ≥98 %
Solution (5 % in H_2O). ..... almost colourless, clear
Water (KF)..... ≤1 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in H_2O after 6 h)..... +9,5° ±1°

4123.4	100 mg	glass	38,60 €
4123.1	250 mg	glass	87,00 €
4123.2	500 mg	glass	155,90 €
4123.3	1 g	glass	278,45 €

Gentiopicrin

▶ Gentiopicroside see p. 2014

Gentiopicroside

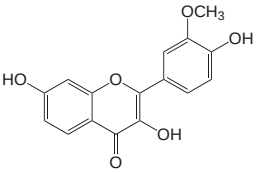


Gentiopicroside
≥95 %, for biochemistry
Gentiopicrin, bitter constituent from *Gentiana*
$C_{16}H_{20}O_9$
M 356,32 g/mol
mp 117-120 °C
[20831-76-9] • EC No. 244-070-2
WGK 1

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥95 %
Melting point. ..... 117-120 °C
Specific rotation $[\alpha]_D^{20}$ (in ethanol). ..... -203° to -193°

0467.2	10 mg	glass	299,95 €

Geraldol



Geraldol
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{16}H_{12}O_6$
M 300,27 g/mol
Storage temp.: +4 °C
[21511-25-1] • EC No. 244-414-1

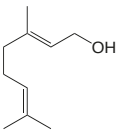
Type analysis:
Purity (HPLC)..... ≥99 %

7461.2	5 mg	glass	310,70 €

Geranial

▶ Citral see p. 1900

Geraniol



Geraniol
≥90 %
3,7-Dimethyl-2,6-octadien-1-ol
$C_{10}H_{18}O$
M 154,25 g/mol
D 0,889 • bp 229-230 °C
flp 76 °C
Storage temp.: +4 °C
[106-24-1] • EC No. 203-377-1 • WGK 1

Danger H318-H315-H317

Type analysis:
Appearance. ..... colourless to yellowish liquid
Assay (GC). ..... ≥90 %

4988.1	25 ml	glass	16,05 €
4988.2	100 ml	glass	47,20 €

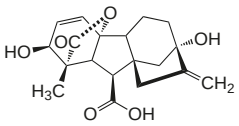
Geranium aldehyde

▶ Citral see p. 1900

Germanium Standards

▶ Germanium ICP Standard Solution see p. 2363
▶ Germanium ICP Standard Solution see p. 2367

Gibberellic acid



Gibberellic acid

90 %, for biochemistry
Gibberellin A_3
$C_{19}H_{22}O_6$
M 346,38 g/mol
mp ~225 °C • flp 111 °C
Solubility: 5 g/l (H_2O, 25 °C)
Storage temp.: +4 °C
[77-06-5] • EC No. 201-001-0
WGK 1

Type analysis:
Appearance. ..... white powder
Assay (Gibberellin in A_3). ..... ≥900 µg/mg
Specific rotation $[\alpha]_D^{20}$. ..... ≥+85°
Loss on drying. ..... ≤0,5 %

7464.1	250 mg	glass	16,05 €
7464.2	1 g	glass	28,50 €

Gibberellin A_3

▶ Gibberellic acid see p. 2015

Giemsa stain

Giemsa stain

for microscopy
mp 300 °C
[51811-82-6] • EC No. 257-438-2 • WGK 3

Warning H319

Type analysis:
Appearance. ..... dark green to black powder
Appearance of solution (0,1 % in MeOH)..... clear, blue to brown
Loss on drying (1 h, 110 °C). ..... ≤10,0 %

7691.1	5 g	glass	14,55 €
7691.2	25 g	glass	25,30 €
7691.3	100 g	glass	64,40 €

For further information, please see page 1523

Giemsa stock solution

Giemsa stock solution

for microscopy
For differential staining of blood and bone marrow smears.
Azure eosin solution
UN No. 1992 • ADR 3 (6.1) II • WGK 2

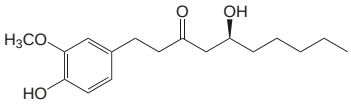
Danger
H225-H301+H311+H331-H370

Type analysis:
Suitability for microscopy (blood smear)..... complies

T862.1	500 ml	plastic	26,80 €
T862.2	1 l	glass	39,70 €
Original pack 6 x 1 l			37,72/1 l
T862.3	2,5 l	plastic	85,50 €
Original pack 4 x 2,5 l			81,23/2,5 l

For further information, please see page 1513

[6]-Gingerol



[6]-Gingerol

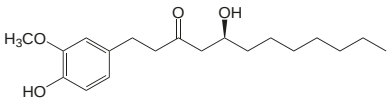
ROTICHROM® HPLC
Reference substance for HPLC.
From *Zingiber officinale.*
$C_{17}H_{26}O_4$
M 294,40 g/mol
Storage temp.: +4 °C
[23513-14-6]
WGK 1

Warning H302-H315-H319-H335

Type analysis:
Purity (HPLC). ..... >98 %

T895.1	10 mg	glass	295,65 €

[8]-Gingerol



[8]-Gingerol

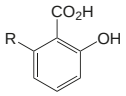
ROTICHROM® HPLC
Reference substance for HPLC.
From *Zingiber officinale.*
$C_{19}H_{30}O_4$
M 322,44 g/mol
Storage temp.: +4 °C
[23513-08-8]
WGK 1

Warning H315-H319-H335

Type analysis:
Purity (HPLC). ..... >98 %

1143.1	10 mg	glass	332,20 €

Ginkgolic acids RN



R= $C_{13}H_{27}$, $C_{15}H_{29}$, $C_{17}H_{33}$

Ginkgolic acids RN

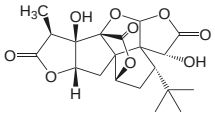
ROTICHROM® HPLC
Reference substance for HPLC.
From *Ginkgo biloba.*
$C_{20}H_{32}O_3/C_{22}H_{34}O_3/C_{24}H_{38}O_3$
M 320,5/ 346,5/ 374,6 g/mol
Storage temp.: +4 °C
WGK 1

Warning H315-H319-H335

Type analysis:
Purity (HPLC). ..... >90 %

1148.1	5 mg	glass	321,45 €

Ginkgolide A



$C_{20}H_{24}O_9$
M 408,41 g/mol
[15291-75-5]
WGK 1

Ginkgolide A

ROTI®STAR Primary Standard
Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤3,0 %
Water (KF). ..... ≤7,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE43.1	10 mg	glass	940,65 €

Ginkgolide A

ROTICHROM® Working Standard
Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:
Assay (HPLC). ..... ≥85,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC43.1	25 mg	glass	310,70 €

Ginkgolide A

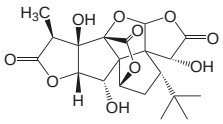
ROTICHROM® HPLC

Reference substance for HPLC.
From *Ginkgo biloba.*
Storage temp.: +4 °C

Type analysis:
Purity (HPLC)..... >98 %

1145.1	20 mg	glass	332,20 €

Ginkgolide B



Ginkgolide B

ROTICHROM® HPLC

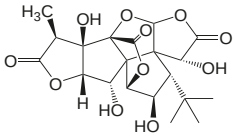
Reference substance for HPLC.
From *Ginkgo biloba.*
1-Hydroxyginkgolide A
$C_{20}H_{24}O_{10}$
M 424,40 g/mol
Storage temp.: +4 °C
[15291-77-7]
WGK 1

Warning H315-H319-H335

Type analysis:
Purity (HPLC)..... >99 %

1146.1	20 mg	glass	375,20 €

Ginkgolide C



Ginkgolide C

ROTICHROM® HPLC

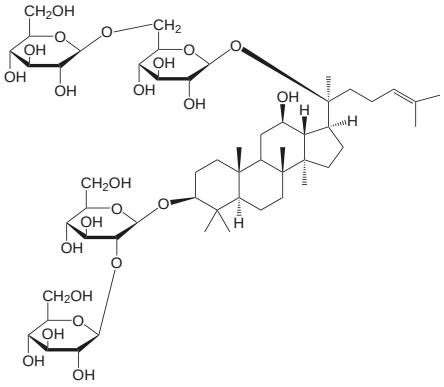
Reference substance for HPLC.
From *Ginkgo biloba.*
1,7-Dihydroxyginkgolide A
$C_{20}H_{24}O_{11}$
M 440,40 g/mol
Storage temp.: +4 °C
[15291-76-6]
WGK 1

Warning H315-H319-H335

Type analysis:
Purity (HPLC)..... >95 %

1147.1	20 mg	glass	403,15 €

Ginsenoside Rb1



$C_{54}H_{92}O_{23}$
M 1109,31 g/mol
[41753-43-9] • EC No. 255-532-8
WGK 1

Warning H302

Ginsenoside Rb1

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC)..... ≥90,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF)..... ≤10,0 %
Assay (qNMR)..... ≥80,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE44.1	10 mg	glass	805,20 €

Ginsenoside Rb1

ROTICHROM® Working Standard

Type analysis:
Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC44.1	25 mg	glass	413,90 €

Ginsenoside Rb1

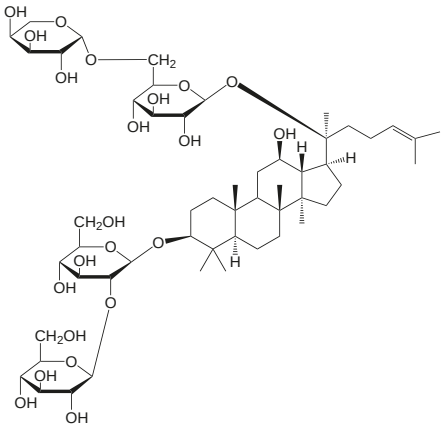
ROTICHROM® HPLC

Reference substance for HPLC.
Storage temp.: -20 °C
Transport temp.: room temp.

Type analysis:
Purity (HPLC). ..... ≥98 %

7462.1	5 mg	glass	176,85 €

Ginsenoside Rb2



Ginsenoside Rb2

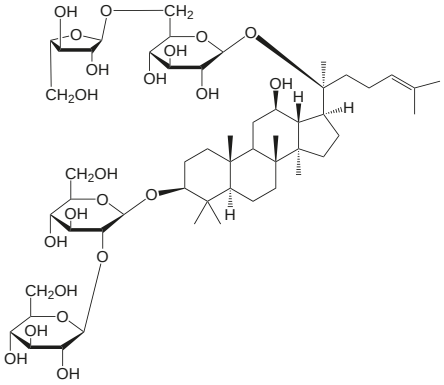
ROTICHROM® HPLC

Reference substance for HPLC.
$C_{53}H_{90}O_{22}$
M 1079,28 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[11021-13-9] • EC No. 234-251-4
WGK 1

Type analysis:
Purity (HPLC)..... ≥94 %

7463.1	5 mg	glass	310,70 €

Ginsenoside Rc



Ginsenoside Rc

ROTICHROM® HPLC

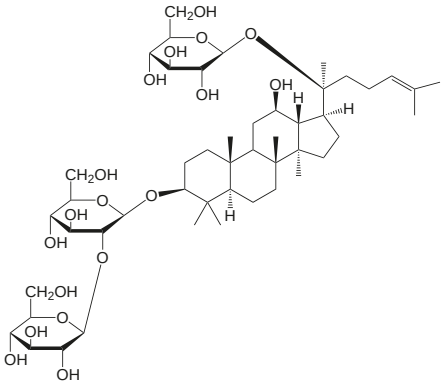
Reference substance for HPLC.
$C_{53}H_{90}O_{22}$
M 1079,28 g/mol
Storage temp.: +4 °C
[11021-14-0] • EC No. 234-253-5
WGK 1

Warning H302+H312+H332

Type analysis:
Purity (HPLC)..... ≥98 %

7465.1	5 mg	glass	210,20 €

Ginsenoside Rd

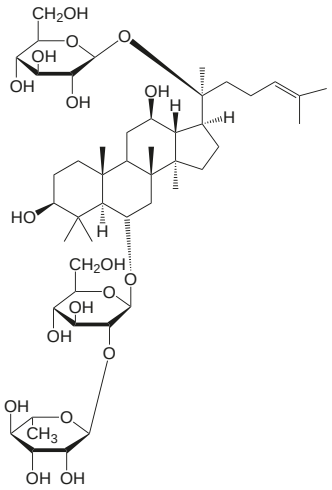


Ginsenoside Rd
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{48}H_{82}O_{18}$
M 947,16 g/mol
Storage temp.: +4 °C
[52705-93-8] • EC No. 258-118-5

Type analysis:
Purity (HPLC)..... ≥98 %

7466.1	5 mg	glass	182,25 €

Ginsenoside Re



[52286-59-6] • EC No. 257-814-6
WGK 3

Ginsenoside Re
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC)..... ≥90,0 %
Residual solvents (GC)..... ≤2,0 %
Water (KF)..... ≤14,0 %
Assay (qNMR)..... ≥80,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE45.1	10 mg	glass	805,20 €

Ginsenoside Re
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC)..... ≥80,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

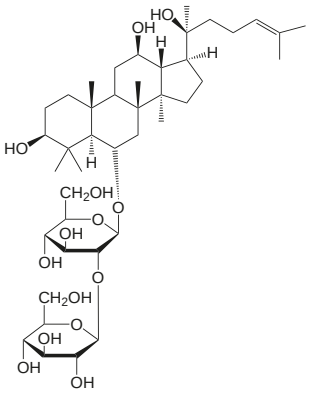
NC45.1	25 mg	glass	256,95 €

Ginsenoside Re
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{48}H_{82}O_{18}$
M 947,16 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.

Type analysis:
Purity (HPLC)..... ≥98 %

7468.1	5 mg	glass	130,65 €

Ginsenoside Rf

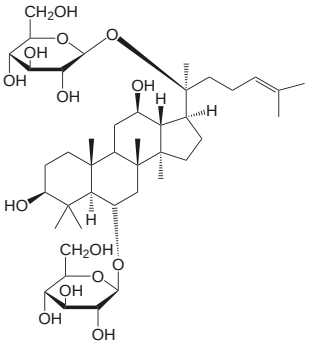


Ginsenoside Rf
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{42}H_{72}O_{14}$
M 801,05 g/mol
Storage temp.: +4 °C
[52286-58-5]

Type analysis:
Purity (HPLC)..... ≥98 %

4552.1	5 mg	glass	385,95 €

Ginsenoside Rg1



$C_{42}H_{72}O_{14}$
M 801,02 g/mol
Storage temp.: -20 °C
[22427-39-0] • EC No. 244-989-9
WGK 3
Warning H302

Ginsenoside Rg1
ROTI®STAR Primary Standard
Transport temp.: cooled

Type analysis:
Assay (HPLC)..... ≥90,0 %
Residual solvents (GC)..... ≤2,0 %
Water (KF)..... ≤10,0 %
Assay (qNMR)..... ≥80,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE62.1	10 mg	glass	805,20 €

Ginsenoside Rg1
ROTICHROM® Working Standard
Transport temp.: cooled

Type analysis:
Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC62.1	25 mg	glass	424,65 €

Ginsenoside Rg1
ROTICHROM® HPLC
Reference substance for HPLC.
Transport temp.: room temp.

Type analysis:
Purity (HPLC)..... ≥98 %

7467.1	5 mg	glass	177,40 €

Glacial acetic acid

▶ Acetic acid 100 % see p. 1756

Glass wool

[65997-17-3] • EC No. 266-046-0
WGK 1

Glass wool, 8 µm

chemically resistant glass according to DIN 1259-1

Filter aid, for laboratory work.

Type analysis:

Fiber diameter. ..... 7,2-8,8 µm
Loss on ignition. ..... ≤0,3 %

0691.1	500 g	plastic	22,05 €
Original pack 6 x 500 g			20,95/500 g
0691.2	1 kg	plastic	36,45 €
Original pack 6 x 1 kg			34,63/1 kg

Glass wool, 11 µm

chemically resistant glass according to DIN 1259-1

Filter aid, for laboratory work.

Type N (filter glass wool)

Type analysis:

Fibre size. ..... 9,9-12,1 µm
Loss on ignition. ..... ≤0,3 %
Transformation temp. ..... ~530 °C

6574.1	500 g	plastic	18,20 €
Original pack 6 x 500 g			17,29/500 g
6574.2	1 kg	plastic	31,10 €
Original pack 6 x 1 kg			29,55/1 kg

Glass wool, 25 µm

chemically resistant glass according to DIN 1259-1

Filter aid, for laboratory work.

Type analysis:

Fiber diameter. ..... 22,0-28,0 µm
Loss on ignition. ..... ≤0,3 %

0700.1	500 g	plastic	21,00 €
Original pack 6 x 500 g			19,95/500 g
0700.2	1 kg	plastic	33,25 €
Original pack 6 x 1 kg			31,59/1 kg

D-GlcA

▶ D-Glucuronic acid see p. 2021

X-β-D-GlcNAc

▶ 5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide see p. 1852

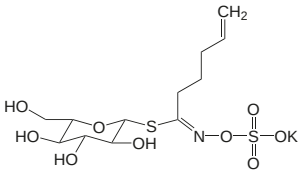
GLDH

▶ Glutamate dehydrogenase (GDH, GLDH) see p. 2022

β-1,3-glucan laminaripentaohydrolase

▶ Zymolyase® 20T see p. 2454
▶ Zymolyase® 100T see p. 2454

Glucobrassicanapin



Glucobrassicanapin

ROTICHROM® HPLC

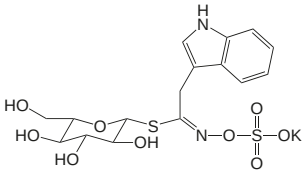
Reference substance for HPLC.
From *Brassica napus*
4-Pentenylglucosinolate potassium salt
$C_{12}H_{20}KNO_9S_2$
M 443,52 g/mol
Storage temp.: +4 °C
[19041-10-2]
WGK 1

Type analysis:

Purity (HPLC). ..... ≥98 %

2276.1	10 mg	glass	306,40 €

Glucobrassicin



Glucobrassicin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Brassica oleracea*
3-Indolylmethylglucosinolate potassium salt
$C_{16}H_{19}KN_2O_9S_2$
M 486,56 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[143231-38-3]
WGK 1

Type analysis:

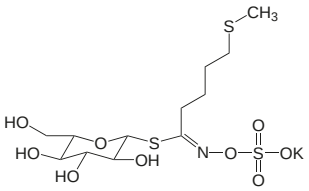
Purity (HPLC). ..... ≥97 %

2279.1	20 mg	glass	482,70 €

α-D-Glucochloralose

▶ α-Chloralose see p. 1890

Glucoerucin



Glucoerucin

ROTICHROM® HPLC

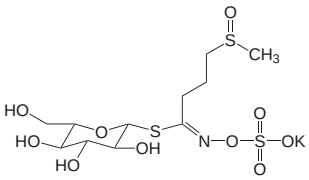
Reference substance for HPLC.
From *Eruca sativa*
4-Methylthiobutylglucosinolate potassium salt
$C_{12}H_{22}KNO_9S_3$
M 459,61 g/mol
Storage temp.: +4 °C
[21973-56-8]
WGK 1

Type analysis:

Purity (HPLC). ..... ≥97 %

2280.1	10 mg	glass	321,45 €

Glucoiberin



Glucoiberin

ROTICHROM® HPLC

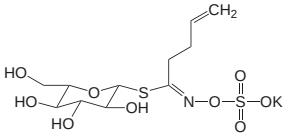
Reference substance for HPLC.
From *Iberis amara*
3-(Methylsulphinyl)propylglucosinolate potassium salt
$C_{11}H_{20}KNO_{10}S_3$
M 461,56 g/mol
Storage temp.: +4 °C
[554-88-1]
WGK 1

Type analysis:

Purity (HPLC). ..... ≥99 %

2281.1	10 mg	glass	256,95 €

Gluconapin

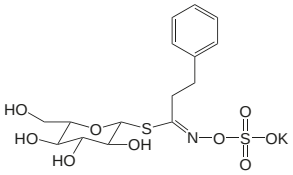


Gluconapin
ROTICHROM® HPLC
Reference substance for HPLC.
From *Brassica napus*
3-Butenylglucosinolate potassium salt
$C_{11}H_{18}KNO_9S_2$
M 411,48 g/mol
Storage temp.: +4 °C
[19041-09-9]
WGK 1

Type analysis:
Purity (HPLC)..... ≥97 %

2282.1	10 mg	glass	267,70 €

Gluconasturtiin



Gluconasturtiin
ROTICHROM® HPLC
Reference substance for HPLC.
From *Nasturtium officinale*
Phenylethylglucosinolate potassium salt
$C_{15}H_{20}KNO_9S_2$
M 461,16 g/mol
Storage temp.: +4 °C
[499-30-9]
WGK 1

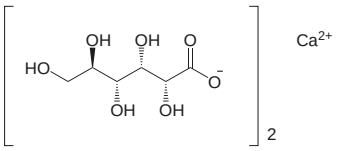
Type analysis:
Purity (HPLC)..... ≥97 %

2357.1	20 mg	glass	461,20 €

D-Gluconate-6-phosphate trisodium salt

▶ 6-Phosphogluconic acid trisodium salt dihydrate see p. 2209

D-Gluconic acid calcium salt monohydrate

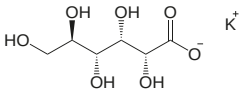


D-Gluconic acid calcium salt monohydrate
≥98,5 %, Ph.Eur.
Calcium gluconate-monohydrate
$C_{12}H_{22}CaO_{14} \cdot H_2O$
M 448,4 g/mol
mp 195 °C
Solubility: 33 g/l (H_2O, 20 °C)
[18016-24-5] • EC No. 206-075-8
WGK 1

Guarantee analysis:
Appearance..... white powder
Assay. ..... 98,5-102,0 %
Identity..... complies
Appearance of solution..... complies
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,01 %
Magnesium and alkali metals. ..... ≤0,4 %
Heavy metals (as Pb). ..... ≤0,001%
Org. substances and boric acid. ..... complies
Sucrose and reducing sugar..... complies
Bioburden (TAMC). .....≤1000 cfu/g
Yeasts/Moulds (TYMC). .....≤100 cfu/g

7502.1	500 g	plastic	32,80 €
Original pack 6 x 500 g			31,16/500 g
7502.2	1 kg	plastic	54,75 €
Original pack 6 x 1 kg			52,01/1 kg
7502.3	2,5 kg	plastic	115,60 €

Gluconic acid potassium salt

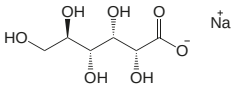


Gluconic acid potassium salt
≥99 %, for synthesis
Potassium gluconate
$C_6H_{11}KO_7$
M 234,24 g/mol
mp 180 °C (dec.)
Solubility: 590 g/l (H_2O, 20 °C)
[299-27-4] • EC No. 206-074-2
WGK 1

Type analysis:
Assay. ..... ≥99,0 %
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,01 %
pH value (10 % solution). 7,0-8,3
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As)..... ≤0,0001 %
Lead (Pb). ..... ≤0,0002 %

2621.1	100 g	plastic	15,60 €
2621.2	500 g	plastic	27,85 €
Original pack 6 x 500 g			26,46/500 g
2621.3	1 kg	plastic	44,00 €
Original pack 6 x 1 kg			41,80/1 kg

Gluconic acid sodium salt



Gluconic acid sodium salt
≥99 %, for synthesis
Sodium gluconate
$C_6H_{11}NaO_7$
M 218,14 g/mol • mp 170-175 °C
Solubility: 590 g/l (H_2O, 25 °C)
[527-07-1] • EC No. 208-407-7 • WGK 1

Type analysis:
Assay. .....≥99,0 %
pH value (10 % solution). 6,5-7,5
Heavy metals (as Pb). .....≤0,002 %
Arsenic (As). .....≤0,0003 %

2622.1	100 g	plastic	14,55 €
2622.2	500 g	plastic	20,35 €
Original pack 6 x 500 g			19,33/500 g
2622.3	1 kg	plastic	31,10 €
Original pack 6 x 1 kg			29,55/1 kg
2622.4	2,5 kg	plastic	49,35 €

4-O-β-D-Glucopyranosyl-D-glucose

▶ D(+)-Cellobiose see p. 1885

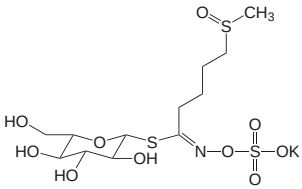
6-O-β-D-Glucopyranosyl-D-glucose

▶ β-D-Gentiobiose see p. 2014

(S)-(β-D-Glucopyranosyloxy)-(4-hydroxyphenyl)acetonitrile

▶ Dhurrin see p. 1931

Glucoraphanin

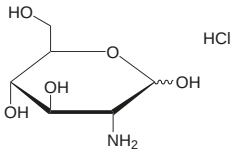


Glucoraphanin
ROTICHROM® HPLC
Reference substance for HPLC.
From *Brassica olevacea*
3-(Methylsulphinyl)butyl-glucosinolate potassium salt
$C_{12}H_{22}KNO_{10}S_2$
M 475,66 g/mol
Storage temp.: +4 °C
[21414-41-5]
WGK 1

Type analysis:
Purity (HPLC).....≥97,0 %

2374.1	10 mg	glass	274,15 €

D(+)-Glucosamine hydrochloride



D(+)-Glucosamine hydrochloride

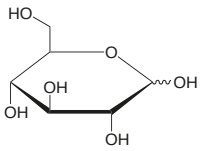
≥99 %, for biochemistry
Chitosamine hydrochloride
$C_6H_{14}ClNO_5$
M 215,64 g/mol
mp >300 °C
[66-84-2] • EC No. 200-638-1

Type analysis:

Appearance. ..... fine white crystals
Assay. ..... ≥99 %

3769.1	100 g	plastic	85,50 €

D(+)-Glucose



Dextrose, Blood sugar
$C_6H_{12}O_6$
M 180,16 g/mol
Solubility: ~470 g/l (H_2O, 20 °C)
[50-99-7] • EC No. 200-075-1

D(+)-Glucose

p.a., ACS, anhydrous
Biochemical and microbiological applications.

Guarantee analysis:

Specific rotation $[\alpha]_D^{25}$ (c=10 in H_2O). ..... +52,5° to +53,0°
In H_2O insoluble matter. ..... ≤0,003 %
Loss on drying (105 °C). ..... ≤0,2 %
Ash content (as SO_4). ..... ≤0,01 %
Acidity (as CH_3COOH). ..... ≤0,002 meq/g
Starch. ..... complies
Chloride (Cl). ..... ≤0,0025 %
Sulphate and sulphite (as SO_4). ..... ≤0,0025 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,00004 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,001 %
Iron (Fe). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %

X997.1	250 g	plastic	14,55 €
X997.2	1 kg	plastic	33,90 €
Original pack 6 x 1 kg			32,21/1 kg
X997.3	2,5 kg	plastic	69,80 €
X997.4	5 kg	plastic	121,40 €
X997.5	25 kg	plastic	551,40 €

D(+)-Glucose

CELLPURE® ≥99,5 %, anhydrous
For cell culture and biochemistry.

Guarantee analysis:

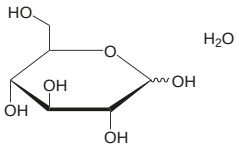
Endotoxins. ..... ≤5,0 I.U./g
Assay. ..... ≥99,5 %
Sulphated ash. ..... ≤0,5 %
Water (KF). ..... ≤1 %
Sulphite (SO_3). ..... ≤0,005 %
Specific rotation $[\alpha]_D^{20}$. ..... +52,5° to +53,3°

HN06.1	250 g	plastic	13,90 €
HN06.2	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
HN06.3	1 kg	plastic	33,25 €
Original pack 6 x 1 kg			31,59/1 kg
HN06.4	5 kg	plastic	107,40 €

D(+)-Glucose

▶ Roti®fair 20% Glucose see p. 2275

D(+)-Glucose monohydrate



Dextrose, blood sugar
$C_6H_{12}O_6 \cdot H_2O$
M 198,17 g/mol
mp 83 °C
Solubility: 1000 g/l (H_2O, 20 °C)
[77938-63-7] • EC No. 200-075-1

D(+)-Glucose monohydrate

≥99,5 %, Ph.Eur.
Suitable for cell culture, tested for endotoxines.

Guarantee analysis:

Appearance. ..... white to off-white, cryst. powder
Assay (dry substance). ..... ≥99,5 %
Identity. ..... complies
Water (KF). ..... 7,5-9,5 %
Appearance of solution. ..... complies
Specific rotation $[\alpha]_D^{20}$. ..... +52,5° to +53,3°
Conductivity (25 °C). ..... ≤20 µS/cm
Soluble starch, sulphite (SO_3). ..... ≤0,0015 %
Dextrine. ..... complies
Endotoxin content. ..... <1,25 I.U./g
Related substances:
Impurities A and B (sum). ..... ≤0,4 %
Impurity C. ..... ≤0,2 %
Impurity D. ..... ≤0,15 %
Related substances (unspecific impurities). ..... ≤0,1 %
Related substances (total). ..... ≤0,5 %
Disregard limit. ..... ≤0,05 %

6780.1	1 kg	plastic	19,90 €
Original pack 6 x 1 kg			18,91/1 kg
6780.2	5 kg	plastic	68,70 €
6780.4	10 kg	plastic	113,45 €
6780.3	50 kg	plastic	332,75 €

D(+)-Glucose monohydrate

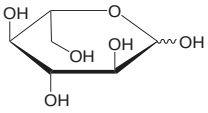
for microbiology
Biochemical and microbiological applications.

Guarantee analysis:

Specific rotation $[\alpha]_D^{20}$. ..... +52,5° to +53,3°
Appearance of solution. ..... clear brownish yellow solution
Water (KF). ..... 7,0-9,5 %
Suitable for microbiology. ..... complies

6887.1	1 kg	plastic	19,25 €
Original pack 6 x 1 kg			18,29/1 kg
6887.2	2,5 kg	plastic	40,75 €
6887.3	5 kg	plastic	65,50 €
6887.5	25 kg	plastic	177,40 €

L(-)-Glucose



L(-)-Glucose

≥98 %, for biochemistry
Mixture of anomers
$C_6H_{12}O_6$
M 180,16 g/mol
mp 140-145 °C
[921-60-8] • EC No. 213-068-3

Type analysis:

Appearance. ..... white powder
Assay (HPLC). ..... ≥98,0 %

7509.1	100 mg	glass	31,10 €
7509.2	500 mg	glass	74,75 €
7509.3	1 g	glass	124,20 €

Glucose oxidase (GOD)

Glucose oxidase (GOD)

~360 U/mg protein
(approx. 280 U/mg material)
From *Aspergillus niger*, freeze-dried.
GOx, GOD
Storage temp.: -20 °C
Transport temp.: room temp.
[9001-37-0] • EC No. 232-601-0
WGK 1

Danger H334

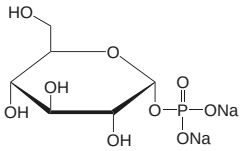
Type analysis:

Appearance. ..... yellow powder
Activity. ..... ~360 U/mg protein
α-Amylase. ..... <0,05 %
Invertase. ..... <0,5 %
Maltase. ..... <0,05 %
Ratio glucose-oxidase/catalase. ..... >2000

6028.1	0,5 MU	plastic	203,20 €

For further information, please see page 1316

α-D-Glucose-1-phosphate disodium salt tetrahydrate



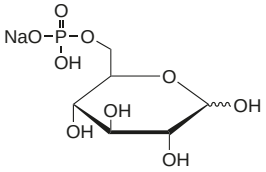
α-D-Glucose-1-phosphate disodium salt tetrahydrate

≥98 %, for biochemistry
$C_6H_{11}Na_2O_9P \cdot 4\ H_2O$
M 376,17 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[56401-20-8] • EC No. 260-154-1

Type analysis:
Assay.....≥98 %

6119.1	1 g	glass	33,25 €
6119.2	10 g	glass	209,65 €

D-Glucose-6-phosphate monosodium salt



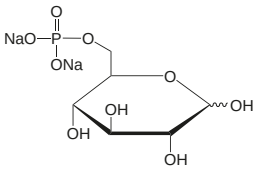
D-Glucose-6-phosphate monosodium salt

≥98 %, for biochemistry
$C_6H_{12}O_9PNa$
M 282,12 g/mol
Storage temp.: +4 °C
[54010-71-8] • EC No. 258-921-0

Type analysis:
Assay (titr.). .....≥98,0 %
Solution (10 % in H_2O).....colourless
Water (KF). .....≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (10 % in H_2O)..... +31° to +35°

5544.1	1 g	glass	47,20 €
5544.2	5 g	plastic	167,20 €

D-Glucose-6-phosphate disodium dihydrate



D-Glucose-6-phosphate disodium dihydrate

≥98 %, for biochemistry
G-6-P-Na_2
$C_6H_{11}Na_2O_9P \cdot 2\ H_2O$
M 340,13 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[3671-99-6] • EC No. 222-938-1 • WGK 1

Type analysis:
Appearance..... white powder
Assay. ..... ≥98 %

CN72.1	1 g	glass	31,75 €
CN72.2	5 g	plastic	107,40 €
CN72.3	10 g	plastic	192,45 €

Glucose powder (pouch)

▶ Roti®fair 20% Glucose see p. 2275

β-Glucosidase

β-Glucosidase

≥1000 U/mg, from almonds
ex amygdal
Storage temp.: -20 °C
Transport temp.: room temp.
[9001-22-3] • EC No. 232-589-7 • WGK 1

Danger H334

Type analysis:
Appearance.....off-white to yellow, lyophilisate powder
Activity.....≥1000 U/mg

7512.1	100 mg	glass	106,45 €
7512.2	1 g	glass	783,70 €

For further information, please see page 1316

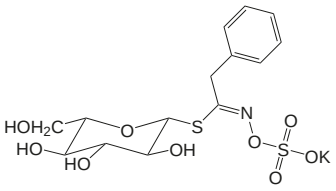
X-β-D-Glucoside

▶ X-Glu see p. 2443

Glucosinolates

Art. No.	Description	Page
2273	Epiprogoitrin	1972
2276	Glucobrassicanapin	2018
2279	Glucobrassicin	2018
2280	Glucoerucin	2018
2281	Glucoiberin	2018
2282	Gluconapin	2019
2357	Gluconasturtiin	2019
2374	Glucoraphanin	2019
2436	Progoitrin	2238
6694	Sinalbin potassium salt	2329
5319	Sinigrin monohydrate	2329

Glucotropaeolin



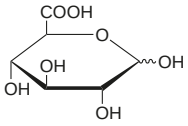
Glucotropaeolin

ROTICHROM® HPLC
Reference substance for HPLC.
From *Tropaeolum majus*.
Benzylglucosinolate potassium salt
$C_{14}H_{18}KNO_9S_2$
M 447,52 g/mol
Storage temp.: +4 °C
[5115-71-9]

Type analysis:
Purity (HPLC).....>99 %

1149.1	50 mg	glass	461,20 €

D-Glucuronic acid



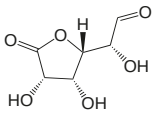
D-Glucuronic acid

≥98 %, for biochemistry
D-GlcA
$C_6H_{10}O_7$
M 194,14 g/mol
mp 159-161 °C
Storage temp.: +4 °C
[6556-12-3] • EC No. 229-486-4
WGK 1

Type analysis:
Assay (titr.).....≥98 %
Solution (20 % in water). ..... colourless, clear
Water (KF). .....≤1 %
Specific rotation $[\alpha]_D^{20}$ (c= 6 in H_2O, after 4 h).....
.....+36,5° ±1°
Chloride (Cl).....≤0,005 %
Sulphate (SO_4).....≤0,01 %

4124.1	1 g	glass	18,85 €
4124.2	5 g	glass	40,75 €
4124.3	10 g	glass	67,65 €
4124.4	25 g	glass	115,60 €

D(+)-Glucuronic acid γ-lactone



D(+)-Glucuronic acid γ-lactone

≥98 %, for biochemistry

D-Glucuronolactone

$C_6H_8O_6$

M 176,13 g/mol • mp 176-180 °C

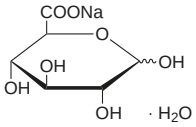
[32449-92-6] • EC No. 251-053-3

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... 98,0-102 %
Specific rotation $[\alpha]_D^{20}$ (10 % in H_2O, 24 h). ..... 18,0° ±1,0°
Loss on drying. ..... ≤0,5 %
Loss on ignition. ..... ≤0,1 %

9946.1	25 g	glass	34,30 €

D-Glucuronic acid sodium salt monohydrate



D-Glucuronic acid sodium salt monohydrate

≥99 %, for biochemistry

Sodium glucuronate hydrate

$C_6H_9NaO_7 \cdot H_2O$

M 234,14 g/mol

[14984-34-0] • EC No. 239-065-7

Type analysis:

Assay (acidim.). ..... ≥99 %
Water (KF). ..... 6,7-8,7 %

4355.1	10 g	glass	42,90 €
4355.2	25 g	glass	74,10 €

D-Glucuronolactone

▶ D(+)-Glucuronic acid γ-lactone see p. 2022

Glutamate dehydrogenase (GDH, GLDH)

Glutamate dehydrogenase (GDH, GLDH)

≥10 U/mg material
(approx. 40 U/mg protein)

From bovine liver, freeze-dried.

GDH, GLDH; L-Glutamic dehydrogenase

Storage temp.: -20 °C
Transport temp.: room temp.

[9029-12-3] • EC No. 232-848-4 • WGK 1

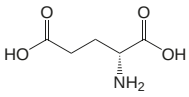
Type analysis:

Appearance. ..... white powder
Activity. ..... ≥10 U/mg material

6052.1	10 KU	plastic	155,80 €

For further information, please see page 1316

D-Glutamic acid



D-Glutamic acid

≥99 %, for biochemistry

(R)-2-Aminopentanedioic acid, H-D-Glu-OH

$C_5H_9NO_4$

M 147,1 g/mol

Storage temp.: +4 °C

[6893-26-1] • EC No. 230-000-8

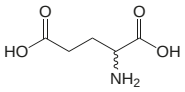
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... 99,0-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c=10 in 2 N HCl). ..... -32,5° to -31,5°
Loss on drying. ..... ≤0,2 %

7879.1	5 g	plastic	25,30 €
7879.2	25 g	plastic	75,15 €
7879.3	100 g	plastic	181,70 €

DL-Glutamic acid



DL-Glutamic acid

≥98,5 %, for biochemistry

$C_5H_9NO_4$

M 147,13 g/mol

Storage temp.: +4 °C

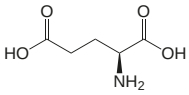
[617-65-2] • EC No. 210-522-2 • WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... ≥98,5 %
Heavy metals (as Pb). ..... ≤0,001 %
Ash content. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

8596.1	25 g	plastic	62,25 €
8596.2	100 g	plastic	198,90 €

L-Glutamic acid



(S)-2-Aminopentanedioic acid, H-L-Glu-OH

$C_5H_9NO_4$

M 147,13 g/mol

mp 160 °C

Solubility: 11 g/l (H_2O, 25 °C)

[56-86-0] • EC No. 200-293-7 • WGK 1

L-Glutamic acid

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,1 %
Specific rotation $[\alpha]_D^{20}$. ..... +31,5° to +32,4°
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As_2O_3). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %

1743.1	25 g	plastic	14,95 €
1743.2	100 g	plastic	23,15 €
1743.3	500 g	plastic	74,75 €
Original pack 6 x 500 g			71,01/500 g

L-Glutamic acid

≥98,5 %, Ph.Eur., for biochemistry

Guarantee analysis:

Appearance. ..... white crystals
Assay. ..... 98,5-100,5 %
Identity. ..... complies
Appearance of solution. ..... complies
pH value (0,67 %, 25 °C). 2,5-4,0
Specific rotation $[\alpha]_D^{20}$ (10 % in HCl 2 N). ..... +31,5° to +32,4°
Light permeability (10 % in HCl 2 N). ..... ≥98 %
Loss on drying. ..... ≤0,1 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,02 %
Ammonium (NH_4). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Heavy metals. ..... ≤0,001 %
Ash content (as SO_4). ..... ≤0,1 %
Foreign amino acids (TLC). ..... ≤0,5 %

3774.1	250 g	plastic	32,80 €
3774.2	1 kg	plastic	91,95 €
Original pack 6 x 1 kg			87,35/1 kg

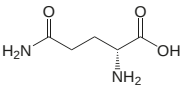
Glutamic acid 5-amide

▶ D-Glutamine see p. 2022
▶ DL-Glutamine see p. 2023
▶ L-Glutamine see p. 2023

L-Glutamic dehydrogenase

▶ Glutamate dehydrogenase (GDH, GLDH) see p. 2022

D-Glutamine



D-Glutamine

≥98,5 %, for biochemistry

D-Glutamic acid 5-amide, H-D-Gln-OH

$C_5H_{10}N_2O_3$

M 146,1 g/mol

Storage temp.: +4 °C

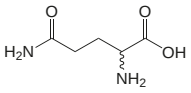
[5959-95-5] • WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$ (c= 2 in 6 N HCl). ..... -38,0° to -33,0°
Loss on drying. ..... ≤0,3 %

7876.1	1 g	glass	25,30 €
7876.2	5 g	plastic	75,15 €
7876.3	25 g	plastic	220,30 €

DL-Glutamine



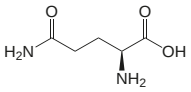
DL-Glutamine

≥98,5 %, for biochemistry
Glutamic acid 5-amide
$C_5H_{10}N_2O_3$
M 146,14 g/mol
Storage temp.: +4 °C
[585-21-7]
WGK 1

Type analysis:
Appearance. ..... white to off-white powder
Assay ..... ≥98,5 %
Identity (IR). ..... complies
Heavy metals (as Pb) ..... ≤0,001 %
Ash content ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

8595.1	1 g	glass	48,30 €
8595.2	5 g	plastic	90,85 €
8595.3	25 g	plastic	289,20 €

L-Glutamine



L-Glutamic acid 5-amide, H-L-Gln-OH
$C_5H_{10}N_2O_3$
M 146,15 g/mol
mp 185-187 °C (dec.)
Solubility: 26 g/l (H_2O, 18 °C)
[56-85-9] • EC No. 200-292-1
WGK 1

L-Glutamine

CELLPURE® ≥99 %
For cell culture and biochemistry.

Guarantee analysis:
Endotoxins ..... ≤50 E.U./g
Assay ..... ≥99 %
Loss on drying. ..... ≤0,3 %
Ammonium (NH_4). ..... ≤0,1 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,02 %
Heavy metals (as Pb) ..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %

HN08.1	25 g	plastic	19,90 €
HN08.2	100 g	plastic	38,20 €
HN08.3	500 g	plastic	131,05 €
Original pack 6 x 500 g			124,50/500 g

L-Glutamine

≥99 %, USP, for biochemistry

Guarantee analysis:
Appearance ..... white, cryst. powder
Assay (titr., dry substance). ..... 99,0-101,0 %
Identity ..... complies
Specific rotation $[\alpha]_D^{20}$ (c=4 in H_2O). ..... +6,3° to +7,3°
Specific rotation $[\alpha]_D^{20}$ (10 % in HCl 2 N) ..... +31,5° to +33,0°
pH value 4,5-6,0
Arsenic (As_2O_3). ..... ≤0,0001 %
Iron (Fe) ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,02 %
Ammonium (NH_4). ..... ≤0,1 %
Sulphate (SO_4). ..... ≤0,02 %
Loss on drying (105 °C) ..... ≤0,3 %
Ash content (as SO_4) ..... ≤0,1 %
Foreign amino acids. ..... complies

3772.1	100 g	plastic	32,15 €
3772.2	500 g	plastic	103,75 €
Original pack 6 x 500 g			98,56/500 g

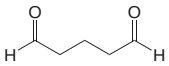
Glutamine solution

▶ Roti®-CELL Glutamine solution see p. 2269

γ-L-Glutamyl-L-cysteinyl-glycine

▶ L-Glutathione reduced see p. 2024

Glutaraldehyde 50 %



Glutaraldehyde 50 %

for electron microscopy
50 % solution in water.
1,5-Pentanedial, Glutaric dialdehyde, Glutaral
$C_5H_8O_2$
M 100,12 g/mol
D 1,13 • bp 100 °C
mp -21 °C • flp >100 °C
[111-30-8] • EC No. 203-856-5
UN No. 2927 • ADR 6.1 (8) II • WGK 2
Danger H301-H314-H317-H330-H334-H335-H410-EUH071

Type analysis:
Appearance ..... clear to pale yellow liquid
Assay. ..... ~50 %

4995.1	500 ml	plastic	73,00 €
4995.2	2,5 l	plastic	299,95 €
Original pack 4 x 2,5 l			284,95/2,5 l

For further information, please see page 1507

Glutaraldehyde 25 %

1,5-Pentanedial, Glutaric dialdehyde, Glutaral
$C_5H_8O_2$
M 100,12 g/mol
D 1,06 • bp 100 °C
flp >100 °C
[111-30-8] • EC No. 203-856-5
UN No. 2927 • ADR 6.1 (8) II • WGK 2
Danger H302-H314-H317-H331-H334-H335-H410-EUH071

Glutaraldehyde 25 %

for electron microscopy
25 % solution in water.

Type analysis:
Assay. ..... 23-27 %
Density (d 20 °C/4 °C) 1,055-1,065

3778.1	1 l	plastic	56,90 €
Original pack 6 x 1 l			54,06/1 l
3778.2	5 l	plastic	222,45 €
Original pack 2 x 5 l			211,33/5 l

For further information, please see page 1507

Glutaraldehyde 25 % Mini Pack

for electron microscopy
25 % solution in water.

Type analysis:
Appearance. ..... colourless to light yellow
Odour ..... characteristic
Assay. ..... 23-27 %
Density (d 20 °C/4 °C) 1,055-1,065

4157.1	25 ml	glass	18,85 €
4157.2	10 x 1 ml (with septum)	cardboard	67,65 €

For further information, please see page 1507

Glutaric dialdehyde

▶ Glutaraldehyde 50 % see p. 2023

Glutathione-agarose beads

▶ Roti®garose-Glu/GST Beads see p. 2280

Glutathione oxidized

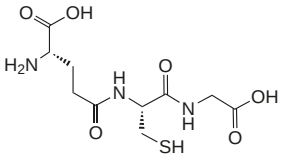
Glutathione oxidized

≥98 %, for biochemistry
Dimer of GSH
GSSG
$C_{20}H_{32}N_6O_{12}S_2$
M 612,6 g/mol
Storage temp.: +4 °C
[27025-41-8]

Type analysis:
Appearance. ..... white powder
Assay. ..... ≥98,0 %
Water. ..... ≤8,0 %
Heavy metals. ..... ≤0,002 %
Specific rotation $[\alpha]_D^{20}$ ..... -106° to -96°

6378.1	1 g	glass	36,45 €
6378.2	5 g	glass	150,40 €

L-Glutathione reduced



γ-L-Glutamyl-L-cysteinyl-glycine, GSH
$C_{10}H_{17}N_3O_6S$
M 307,33 g/mol
mp 177-183 °C
Storage temp.: +4 °C
[70-18-8] • EC No. 200-725-4
WGK 1

L-Glutathione reduced

CELLPURE® ≥99 %

Type analysis:

Appearance. ..... white cryst. powder
Endotoxins. ..... ≤6,0 E.U./g
Assay (dry substance). ..... ≥99 %
Specific rotation $[\alpha]_D^{20}$. ..... -17,5° to -15,5°
Ammonium (NH_4). ..... ≤0,05 %
Sulphate (SO_4). ..... ≤0,05 %
Heavy metals (as Pb) ..... ≤0,001 %
Arsenic (As_2O_3). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Loss on drying. ..... ≤0,5 %
Ash content. ..... ≤0,1 %

6832.1	2,5 g	glass	26,35 €
6832.2	5 g	glass	36,45 €
6832.3	10 g	glass	56,90 €
6832.4	25 g	glass	113,85 €

L-Glutathione reduced

≥98 %, for biochemistry

Type analysis:

Appearance. ..... white powder
Assay (dry substance). ..... ≥98,0 %
Loss on drying (105 °C). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... -17,5° to -15,5°

6382.1	5 g	glass	28,50 €
6382.2	25 g	glass	94,50 €
6382.3	50 g	glass	170,95 €
6382.4	100 g	glass	306,40 €

For further information, please see page 1557

Gluten

Gluten

~80 % protein
From wheat
[8002-80-0] • EC No. 232-317-7

Type analysis:

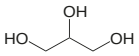
Assay (protein). ..... ~80 %

4601.1	100 g	plastic	24,20 €

Gly

▶ Glycine see p. 2026

Glycerol



1,2,3-Propanetriol
$C_3H_8O_3$
M 92,09 g/mol
D 1,26 • bp 290 °C (dec.)
mp 18,2 °C • flp 199 °C
[56-81-5] • EC No. 200-289-5 • WGK 1

Glycerol

≥99,7 %, p.a., ultra quality, synthetic, anhydrous

Type analysis:

Assay. ..... ≥99,7 %
Water. ..... ≤0,5 %
Chloride (Cl). ..... ≤0,001 %
Sulphate (SO_4). ..... ≤0,002 %
Sulphated ash. ..... ≤0,01 %
Relative density (20/20 °C). 1,260-1,265
Refractive index n_D^{20}. 1,470-1,475
Heavy metals. ..... ≤0,0005 %
Aluminium (Al). ..... ≤0,00005 %
Barium (Ba). ..... ≤0,00001 %
Boron (B). ..... ≤0,000002 %
Calcium (Ca). ..... ≤0,0001 %
Cadmium (Cd). ..... ≤0,000005 %
Cobalt (Co). ..... ≤0,000005 %
Chromium (Cr). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000005 %
Iron (Fe). ..... ≤0,0002 %
Magnesium (Mg). ..... ≤0,0001 %
Manganese (Mn). ..... ≤0,00001 %
Nickel (Ni). ..... ≤0,00002 %
Lead (Pb). ..... ≤0,00001 %
Tin (Sn). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00005 %

6962.1	1 l	plastic	62,90 €
Original pack 6 x 1 l			59,76/1 l
6962.2	2,5 l	plastic	124,60 €
Original pack 4 x 2,5 l			118,37/2,5 l
6962.3	5 l	plastic	199,45 €
Original pack 2 x 5 l			189,48/5 l
6962.4	10 l	plastic	321,45 €

Glycerol

ROTIPURAN® ≥99,5 %, p.a., anhydrous

Guarantee analysis:

Appearance. ..... clear liquid
Assay. ..... ≥99,5 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,5 %
Chloride (Cl). ..... ≤0,001 %
Sulphated ash. ..... ≤0,01 %
Heavy metals. ..... ≤0,0005 %
Relative density (20/20 °C). 1,263-1,265
Refractive index n_D^{20}. 1,470-1,475
Halogen compounds. ..... ≤0,0035 %

3783.3	1 l	glass	57,95 €
Original pack 6 x 1 l			55,05/1 l
3783.1	1 l	plastic	53,65 €
Original pack 6 x 1 l			50,97/1 l
3783.4	2,5 l	glass	102,05 €
Original pack 4 x 2,5 l			96,95/2,5 l
3783.2	2,5 l	plastic	97,75 €
Original pack 4 x 2,5 l			92,86/2,5 l
3783.5	5 l	plastic	148,90 €
Original pack 2 x 5 l			141,46/5 l
3783.6	10 l	plastic	228,90 €

Glycerol

≥99 %, Ph.Eur., USP, synthetic, anhydrous

Guarantee analysis:

Appearance. ..... clear, colourless liquid
Assay (dry substance). ..... 99,0-101,0 %
Identity. ..... complies
Water. ..... ≤2,0 %
Colour. ..... complies
Acidity/alkalinity. ..... complies
Ester. ..... complies
Halogen compounds. ..... ≤0,003 %
Aldehydes. ..... ≤0,001 %
Sugar. ..... complies
Chloride (Cl). ..... ≤0,001 %
Sulphate (SO_4). ..... ≤0,002 %
Heavy metals. ..... ≤0,0005 %
Specific density (25/25 °C). ..... ≥1,249
Refractive index n_D^{20}. 1,470-1,475
Ash content. ..... ≤0,01 %
Sulphated ash. ..... ≤0,01 %
Ethylene and diethylene glycol. ..... complies
Related substances. ..... complies
Impurities A, related substances. ..... complies

6967.1	1 l	plastic	44,00 €
Original pack 6 x 1 l			41,80/1 l
6967.2	2,5 l	plastic	89,15 €
Original pack 4 x 2,5 l			84,69/2,5 l
6967.3	5 l	plastic	143,95 €
Original pack 2 x 5 l			136,75/5 l
6967.4	10 l	plastic	222,00 €

Glycerol

SOLVAGREEN® ≥98 %, Ph.Eur., anhydrous

Guarantee analysis:

Assay. ..... 98,0-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Refractive index n_D^{20}. 1,470-1,475
Relative density (20/20 °C). 1,263-1,265
Acidity/alkalinity. ..... complies
Ester. ..... complies
Colour. ..... complies
Heavy metals. ..... ≤0,0005 %
Sulphated ash. ..... ≤0,01 %
Halogen compounds. ..... ≤0,0035 %
Water (KF). ..... ≤2,0 %
Chloride (Cl). ..... ≤0,001 %
Aldehydes. ..... ≤0,001 %
Sugar. ..... complies
Impurity A, related substances. ..... complies

7530.1	1 l	plastic	37,55 €
Original pack 6 x 1 l			35,67/1 l
7530.4	2,5 l	plastic	61,85 €
Original pack 4 x 2,5 l			58,76/2,5 l
7530.5	5 l	plastic	111,30 €
Original pack 2 x 5 l			105,74/5 l
7530.2	10 l	plastic	205,90 €
7530.3	35 kg	plastic	400,45 €

Glycerol 86 %

1,2,3-Propanetriol
M 92,1 g/mol
D 1,23 • bp 290 °C (dec.)
mp 18,2 °C
[56-81-5] • EC No. 200-289-5 • WGK 1

Glycerol 86 %

ROTIPURAN® ≥86 %, p.a.
For freeze technique.

Guarantee analysis:

Appearance. ..... clear liquid
Assay. ..... 85-87 %

Water (KF). ..... 12,0-16,0 %
Chloride (Cl). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Reducing substances (Aldehydes). ..... ≤0,001 %
Sulphated ash. ..... ≤0,01 %
Halogen compounds. ..... ≤0,003 %

4043.1	1 l	plastic	48,30 €
Original pack 6 x 1 l			45,89/1 l
4043.3	2,5 l	plastic	71,95 €
Original pack 4 x 2,5 l			68,35/2,5 l
4043.2	5 l	plastic	128,90 €
Original pack 2 x 5 l			122,46/5 l

Glycerol 86 %

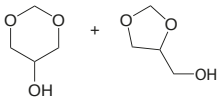
SOLVAGREEN® ~86 %, Ph.Eur., extra pure

Guarantee analysis:

Appearance. ..... clear liquid
Assay. ..... 83,5-88,5 %
Identity. ..... complies
Water (KF). ..... 12,0-16,0 %
Appearance of solution. ..... complies
Acidity/alkalinity. ..... complies
Ester. ..... complies
Refractive index n_D^{20}. 1,449-1,455
Aldehydes, red. substances. ..... complies
Sugar. ..... complies
Sulphated ash. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Halogen compounds. ..... ≤0,003 %
Impurity A, related substances. ..... complies

7533.1	1 l	plastic	34,30 €
Original pack 6 x 1 l			32,59/1 l
7533.3	2,5 l	plastic	62,25 €
Original pack 4 x 2,5 l			59,14/2,5 l
7533.4	5 l	plastic	105,25 €
Original pack 2 x 5 l			99,99/5 l
7533.2	10 l	plastic	185,45 €
7533.5	25 l	plastic	360,15 €

Glycerol formal



NEW

Glycerol formal

SOLVAGREEN® ≥99 %, for synthesis

Mixture of 1,3-Dioxolan-5-ol and 1,3-Dioxolan-4-yl-methanol
2 ($C_4H_8O_3$)
M 104,11 g/mol
D 1,21 • EC No. 911-694-8 • WGK 1

Warning H319-H361

Type analysis:

Assay. ..... ≥99,0 %
Formaldehyde. ..... ≤0,1 %
Water. ..... ≤0,5 %

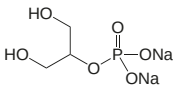
0798.1	100 ml	glass	17,10 €
0798.2	500 ml	glass	37,55 €
0798.3	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l
0798.4	2,5 l	plastic	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

For further information, please see page 1593

Glycerol gelatine

▶ Kaiser's glycerol gelatine phenol-free see p. 2083

β-Glycerophosphate disodium salt pentahydrate



β-Glycerophosphate disodium salt pentahydrate

≥97 %, for biochemistry

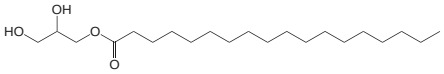
Phosphatase inhibitor
$C_3H_7Na_2O_6P \cdot 5\ H_2O$
M 306,12 g/mol
Solubility: 370 g/l (H_2O, 20 °C)
[13408-09-8] • EC No. 212-464-3
WGK 3

Type analysis:

Appearance. ..... white cryst. powder
Assay. ..... ≥97,0 %
Chloride (Cl). ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,002 %

6847.1	50 g	glass	50,00 €
6847.2	100 g	glass	91,95 €
6847.3	250 g	glass	209,65 €
6847.4	500 g	glass	396,70 €
Original pack 6 x 500 g			376,87/500 g

Glyceryl monostearate



Glyceryl monostearate

pure

$C_{21}H_{42}O_4$
M 358,57 g/mol
mp 54-60 °C
Storage temp.: +4 °C
[31566-31-1] • EC No. 250-705-4
WGK 1

Type analysis:

Monoglyceride. ..... ≥35 %
Acid value (mg KOH/g). ..... ≤6,0
Iodine value (g I_2/100 g). ..... ≤5,0
Melting point. ..... 54-60 °C

3787.1	500 g	plastic	21,40 €
Original pack 6 x 500 g			20,33/500 g

Glyceryl triacetate

▶ Triacetin see p. 2414

Glyceryl tributyrate

▶ Tributyrin see p. 2414

Glyceryl tricaprinate

▶ Tricaprin see p. 2414

Glycidether 100

Glycidether 100

for electron microscopy

Formerly known as Epon 812, Epoxipropyl ether of glycerol.
Epon 812
D ~1,22 • bp >200 °C
flp 118 -135 °C
[90529-77-4] • EC No. 292-011-4
WGK 1

Warning H319-H335

Type analysis:

Appearance. ..... clear, colourless to pale yellow viscous liquid

8619.1	500 g	glass	37,55 €
Original pack 6 x 500 g			35,67/500 g
8619.2	2,5 kg	glass	134,95 €

For further information, please see page 1511

Glycidether Accelerator DMP-30

Glycidether Accelerator DMP-30

for glycidether 100

2,4,6-Tris(dimethylaminomethyl)-phenol
D 0,98 • bp >200 °C
flp 107 °C
[90-72-2] • EC No. 202-013-9
UN No. 2735 • ADR 8 II • WGK 2

Warning H302-H315-H319

8621.1	100 g	glass	25,30 €

Glycidether Hardener DBA

Glycidether Hardener DBA

for glycidether 100

DDSA, 2-Dodecenylsuccinic acid anhydride
bp 160-180 °C
mp 12 °C
[25377-73-5] • EC No. 246-917-1
WGK 1

Warning H315-H319-H335

Type analysis:

Appearance. ..... clear, yellowish viscous liquid

8623.1	100 g	glass	27,45 €
8623.2	1 kg	glass	161,25 €
Original pack 6 x 1 kg			153,19/1 kg

Glycidether Hardener MNA

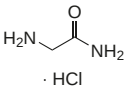
Glycidether Hardener MNA
for glycidether 100

1-Methyl-5-norbornene-2,3-dicarboxylic acid anhydride, Methylnadic anhydride
$C_{10}H_{10}O_3$
M 178,15 g/mol
D 1,23 • bp 295 °C
flp 150 °C
[25134-21-8] • EC No. 246-644-8
UN No. 3265 • ADR 8 II • WGK 2
Danger H334-H302-H335-H315-H319

Type analysis:
Appearance. .....clear, pale yellow viscous liquid

8639.1	100 g	glass	33,25 €
8639.2	1 kg	glass	222,45 €
Original pack 6 x 1 kg			211,33/1 kg

Glycinamide hydrochloride



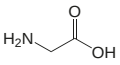
Glycinamide hydrochloride
≥95 %, for biochemistry

H-Gly-NH_2 · HCl, 2-Aminoacetamide hydrochloride
$C_2H_7ClN_2O$
M 110,54 g/mol
mp 193-203 °C
[1668-10-6] • EC No. 216-789-1 • WGK 1

Type analysis:
Assay (titr.). .....≥95,0-105,0 %
Solution (10 % in H_2O). ..... colourless to yellow
Melting point. ..... 193-203 °C
Heavy metals (as Pb).....≤0,0015 %

5543.1	10 g	plastic	23,55 €
5543.2	25 g	plastic	44,00 €
5543.3	50 g	plastic	69,35 €

Glycine



α-Aminoacetic acid, Glycocoll, Gly
$C_2H_5NO_2$
M 75,07 g/mol
D 1,595
mp 232-236 °C (dec.)
Solubility: 225 g/l (H_2O, 20 °C)
[56-40-6] • EC No. 200-272-2 • WGK 1

Glycine
≥99 %, Blotting-Grade

For Western blotting

Type analysis:
Appearance. .....white cryst. powder
Assay.....≥99 %
Loss on drying. .....≤0,2 %
Hydrolysable substances.....complies
pH value (5 % solution).....6,1 ±0,2
Sulphated ash. .....≤0,1 %
Ammonium (NH_4). .....≤0,02 %
Chloride (Cl). .....≤0,007 %
Sulphate (SO_4). .....≤0,006 %
Iron (Fe).....≤0,001 %
Heavy metals (as Pb). .....≤0,0005 %
Arsenic (As).....≤0,0001 %

0079.1	250 g	plastic	26,35 €
0079.2	500 g	plastic	48,95 €
Original pack 6 x 500 g			46,50/500 g
0079.3	1 kg	plastic	77,95 €
Original pack 6 x 1 kg			74,05/1 kg
0079.4	2,5 kg	plastic	154,70 €

For further information, please see page 1554

Glycine
PUFFERAN® ≥99 %, p.a.

Guarantee analysis:
Appearance.....white cryst. powder
Assay. ..... ≥99 %
pH value (5 % in H_2O). 5,9-6,4
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,007 %
Sulphate (SO_4). ..... ≤0,006 %
Arsenic (As).....≤0,0001 %
Iron (Fe).....≤0,001 %
Heavy metals.....≤0,0005 %
Sulphated ash. ..... ≤0,1 %
Loss on drying. ..... ≤0,2 %

3908.1	250 g	plastic	23,15 €
3908.2	1 kg	plastic	74,75 €
Original pack 6 x 1 kg			71,01/1 kg
3908.4	2,5 kg	plastic	137,10 €
3908.3	5 kg	plastic	208,05 €
3908.6	10 kg	plastic	353,70 €
3908.5	25 kg	plastic	736,40 €

For further information, please see page 1554

Glycine
CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:
Endotoxins. .....≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,2 %
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,007 %
Sulphate (SO_4). ..... ≤0,006 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As).....≤0,0001 %
Iron (Fe).....≤0,001 %

HN07.1	100 g	plastic	17,10 €
HN07.2	500 g	plastic	48,30 €
Original pack 6 x 500 g			45,89/500 g
HN07.3	1 kg	plastic	86,55 €
Original pack 6 x 1 kg			82,22/1 kg

Glycine
≥98,5 %, Ph.Eur., USP, JP

Buffer substance

Guarantee analysis:
Assay (perchl. based on dry substance). .....98,5-101,0 %
pH value (5 % solution). 5,9-6,3
Identity. .....complies
Chloride (Cl).....≤0,007 %
Sulphate (SO_4).....≤0,006 %
Loss on drying (105 °C). .....≤0,2 %
Ash content (as SO_4). .....≤0,1 %
Hydrolysable substances. .....complies
Ninhydrin-positive substances. .....≤0,5 %
Heavy metals (as Pb). .....≤0,0005 %
Arsenic (As). .....≤0,0001 %
Residual solvents. .....complies

T873.1	250 g	plastic	25,70 €
T873.3	500 g	plastic	47,20 €
Original pack 6 x 500 g			44,84/500 g
T873.2	1 kg	plastic	81,60 €
Original pack 6 x 1 kg			77,52/1 kg
T873.4	2,5 kg	plastic	177,40 €

Glycine
≥99 %, for biochemistry

Type analysis:
Assay. .....≥99,0 %
pH value (5 % in H_2O). 5,5-6,5
Loss on drying.....≤0,2 %
Heavy metals (as Pb). .....≤0,002 %
Ammonium (NH_4).....≤0,01 %
Chloride (Cl).....≤0,007 %
Sulphate (SO_4).....≤0,006 %
Arsenic (As). .....≤0,0001 %
Iron (Fe). .....≤0,001 %

3187.1	250 g	plastic	19,90 €
3187.2	500 g	plastic	26,35 €
Original pack 6 x 500 g			25,03/500 g
3187.3	1 kg	plastic	40,35 €
Original pack 6 x 1 kg			38,33/1 kg
3187.5	2,5 kg	plastic	85,90 €
3187.4	5 kg	plastic	164,40 €
3187.6	10 kg	plastic	267,70 €
3187.7	25 kg	plastic	514,95 €

For further information, please see page 1554

Glycine
≥99 %, for synthesis

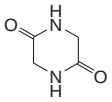
Type analysis:
Assay. .....≥99 %
Loss on drying.....≤0,2 %

3790.1	250 g	plastic	18,20 €
3790.2	1 kg	plastic	36,45 €
Original pack 6 x 1 kg			34,63/1 kg
3790.4	2,5 kg	plastic	71,50 €
3790.3	5 kg	plastic	131,05 €
3790.5	10 kg	plastic	235,45 €
3790.6	25 kg	plastic	482,70 €

Glycine powder (pouch)

▶ Roti®fair Glycine 3.0 see p. 2275

Glycine anhydride



Glycine anhydride

extra pure

2,5-Piperazinedione, 2,5-Diketopiperazine, Cyclo(Gly-Gly)
$C_4H_6N_2O_2$
M 114,10 g/mol
mp >300 °C
Solubility: 142 g/l (H_2O, 20 °C)
[106-57-0] • EC No. 203-411-5

Type analysis:

Appearance. ..... white to off-white, cryst. powder
Appearance of solution (0,1 % in H_2O). ..... colourless, clear
Loss on drying. ..... ≤0,5 %
pH value (0,1 % in H_2O). 5,3-6,3
Elemental analysis:
Carbon (C). ..... 41,80-42,40 %
Hydrogen. ..... 5,00-5,60 %
Nitrogen (N). ..... 24,25-24,85 %
Chloride (Cl). ..... ≤0,1 %

5542.1	25 g	plastic	44,00 €

Glycocholic acid sodium salt

▶ Sodium glycocholate see p. 2338

Glycocoll

▶ Glycine see p. 2026

Glycocoll

▶ Glycine see p. 2026

Glycogen

Glycogen

lyophilised, from oysters

For molecular biology and biochemistry.
[9005-79-2] • EC No. 232-683-8
WGK 1

Type analysis:

Appearance. ..... bright powder
Origin. ..... oysters
Solubility (0,25 %, 1 M NaCl). ..... complies
Loss on drying. ..... ≤15 %
Specific rotation $[\alpha]_D^{20}$. ..... +170° to +200°

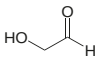
HP51.1	1 g	glass	25,70 €
HP51.2	5 g	plastic	99,90 €
HP51.3	10 g	plastic	171,50 €
HP51.4	25 g	plastic	365,00 €

For further information, please see page 1282

Glycol

▶ Ethylene glycol see p. 1984

Glycolaldehyde



Glycolaldehyde

Dimer

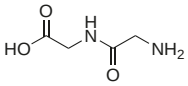
Hydroxyacetaldehyde
$C_4H_8O_4$
M 120,10 g/mol
mp ~85 °C
[141-46-8] • EC No. 205-484-9

Type analysis:

Appearance. ..... white powder
Melting point. ..... 80-90 °C

3801.1	1 g	glass	81,20 €
3801.2	5 g	glass	332,20 €

Glycylglycine



Diglycine, Gly-gly
$C_4H_8N_2O_3$
M 132,12 g/mol
mp 220-230 °C
[556-50-3] • EC No. 209-127-8

Glycylglycine

PUFFERAN® ≥99 %, ultra quality

Guarantee analysis:

Appearance. ..... white cryst. powder
Assay (titr.). ..... 99,0-100,5 %
pH value. 5,5-6,5
Sulphated ash. ..... ≤0,1 %
Heavy metals (as Pb). ..... ≤0,0005 %
Foreign amino acids. ..... non detected
UV-absorption (10 % in H_2O):
405 nm. ..... ≤0,01

3794.1	10 g	plastic	17,10 €
3794.2	100 g	plastic	87,00 €
3794.3	250 g	plastic	186,95 €
3794.4	500 g	plastic	340,70 €
Original pack 6 x 500 g			323,67/500 g

For further information, please see page 1557

Glycylglycine

PUFFERAN® ≥98,5 %, Buffer Grade

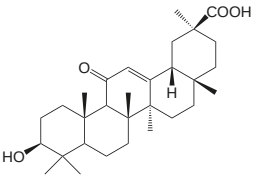
Guarantee analysis:

Assay (titr.). ..... ≥98,5 %
Loss on drying. ..... ≤2,0 %
pH value (0,5 % in H_2O). 5,5-6,0
Residue on ignition. ..... ≤0,1 %
Heavy metals (as Pb). ..... ≤0,001 %

HN74.1	50 g	plastic	34,30 €
HN74.2	100 g	plastic	55,40 €
HN74.3	250 g	plastic	119,90 €
HN74.4	500 g	plastic	214,50 €
Original pack 6 x 500 g			203,78/500 g

For further information, please see page 1557

18-β-Glycyrrhetinic acid



18-β-Glycyrrhetinic acid

ROTICHROM® HPLC

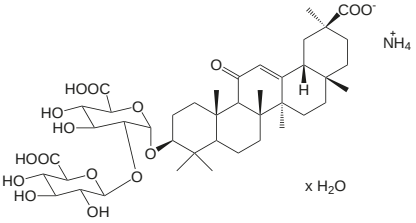
Reference substance for HPLC.
Enoxolone
$C_{30}H_{46}O_4$
M 470,69 g/mol
Storage temp.: +4 °C
[471-53-4] • EC No. 207-444-6
Warning H319

Type analysis:

Purity (HPLC). ..... ≥99 %

7469.2	20 mg	glass	169,35 €

Glycyrrhizic acid ammonium salt hydrate



Glycyrrhizic acid ammonium salt hydrate

≥98 %, for biochemistry

Monoammonium glycyrrhizinate hydrate
$C_{42}H_{65}NO_{16} \cdot x\ H_2O$
M 839,95 + x H_2O g/mol
mp >200 °C
Storage temp.: +4 °C
[53956-04-0] • EC No. 258-887-7
WGK 1

Type analysis:

Assay (dry substance). ..... ≥98 %
Water. ..... ≤6 %
Specific rotation $[\alpha]_D^{20}$. ..... +49° to +54°
Heavy metals. ..... ≤0,002 %
Sulphated ash. ..... ≤0,2 %

6247.1	10 g	glass	44,00 €
6247.2	50 g	glass	168,25 €

Gly-Gly

▶ Glycylglycine see p. 2027

H-Gly-NH_2·HCl

▶ Glycinamide hydrochloride see p. 2026

Glyoxal

Glyoxal
solution 40 %
Ethanedial, Oxaldehyde
$C_2H_2O_2$
M 58,04 g/mol
D ~1,27 • bp 104 °C
mp -14 °C
[107-22-2] • EC No. 203-474-9
WGK 1
Warning
H341-H315-H319-H317-H332-H335

Guarantee analysis:
Assay (titr.). ..... 40 % ±0,5 %
pH value. 2,0-3,5
Colour number (APHA). ..... ≤20

HN49.1	100 ml	glass	14,95 €
HN49.2	1 l	glass	36,05 €
Original pack 6 x 1 l			34,25/1 l
HN49.3	2,5 l	glass	69,80 €
Original pack 4 x 2,5 l			66,31/2,5 l

Glyoxalin
▶ Imidazole see p. 2063

Glyoxyldiureide
▶ Allantoin see p. 1782

GOD
▶ Glucose oxidase (GOD) see p. 2020

Gold shot

Au
M 196,97 g/mol
D 19,3 • bp 2800 °C
mp 1064 °C
[7440-57-5] • EC No. 231-165-9

Gold shot
ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5622.1	1 g	plastic	231,05 €
5622.2	5 g	plastic	1095,45 €

Gold shot
99,99 %

Type analysis:
Purity. ..... 99,99 %
Silver (Ag). ..... ≤0,005 %
Arsenic (As). ..... ≤0,0005 %
Bismuth (Bi). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0001 %
Cobalt (Co). ..... ≤0,0001 %
Chromium (Cr). ..... ≤0,0001 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,0001 %
Manganese (Mn). ..... ≤0,0001 %
Nickel (Ni). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,0005 %
Palladium (Pd). ..... ≤0,001 %
Platinum (Pt). ..... ≤0,0005 %
Tin (Sn). ..... ≤0,0005 %

0882.1	1 g	plastic	181,70 €
0882.2	5 g	plastic	676,20 €

Gold
▶ Sheets of gold see p. 2314

Gold Standards
▶ Gold AAS Standard Solution see p. 2359
▶ Gold ICP Standard Solution see p. 2363
▶ Gold ICP Standard Solution see p. 2367

Gold(III) chloride trihydrate
▶ Tetrachloroauric(III) acid trihydrate see p. 2399

Goldner's staining I

Goldner's staining I
for microscopy
For visualising connective tissue (Masson-Goldner trichrome staining).
Ponceau-Fuchsin solution
WGK 1

3469.1	500 ml	glass	28,95 €
3469.2	1 l	glass	40,75 €
Original pack 6 x 1 l			38,71/1 l

For further information, please see page 1512

Goldner's staining II

Goldner's staining II
for microscopy
For visualising connective tissue (Masson-Goldner trichrome staining).
Phosphotungstic acid-Orange G solution
WGK 1
Danger H315-H318

3470.1	500 ml	glass	52,15 €
3470.2	1 l	glass	88,05 €
Original pack 6 x 1 l			83,65/1 l

For further information, please see page 1512

Goldner's staining III

Goldner's staining III
for microscopy
For visualising connective tissue (Masson-Goldner trichrome staining).
Light green SF yellowish solution

3473.1	500 ml	glass	30,00 €
3473.2	1 l	glass	39,70 €
Original pack 6 x 1 l			37,72/1 l

For further information, please see page 1512

Gold potassium cyanide
▶ Potassium dicyanoaurate see p. 2225

Gold trichloride hydrochloride
▶ Tetrachloroauric(III) acid trihydrate see p. 2399

Gold trichloride trihydrate
▶ Tetrachloroauric(III) acid trihydrate see p. 2399

GoPAGE™ 4-15 % TGN Midi

GoPAGE™ 4-15 % TGN Midi
ready-to-use, 10 x 10 cm, 4-15 % polyacrylamide, 12 wells
Precast mini gels with 4-15 % polyacrylamide, for rapid and easy gel electrophoresis of proteins of 5 to 200 kD.
Storage temp.: +4 °C
Transport temp.: cooled • WGK 2

Type analysis:
Gel type. ..... Tris-Glycine Novel (TGN)
Gel matrix. ..... 4-15 % polyacrylamide
Buffer system. ..... Tris-Glycine
Cassette size (W x L). ..... Midi (10 x 10 cm)
Gel strength. ..... 1 mm
Gel pockets. 12

2236.1	2 gels	45,70 €
2236.2	10 gels	190,20 €

For further information, please see page 1186

GoPAGE™ 10 % TGN Midi

GoPAGE™ 10 % TGN Midi
ready-to-use, 10 x 10 cm, 10 % polyacrylamide, 12 wells
Precast mini gels with 10 % polyacrylamide, for rapid and easy gel electrophoresis of proteins of 25 to 200 kD.
Storage temp.: +4 °C
Transport temp.: cooled • WGK 2

Type analysis:
Gel type. ..... Tris-Glycine Novel (TGN)
Gel matrix. ..... 10 % polyacrylamide
Buffer system. ..... Tris-Glycine
Cassette size (W x L). ..... Midi (10 x 10 cm)
Gel strength. ..... 1 mm
Gel pockets. 12

2235.1	2 gels	45,70 €
2235.2	10 gels	190,20 €

For further information, please see page 1186

GoPAGE™ 4-15 % TGN Mini

GoPAGE™ 4-15 % TGN Mini

NEW

ready-to-use, 10 x 8,3 cm, 4-15 % polyacrylamide, 12 wells

Precast mini gels with 4-15 % polyacrylamide, for rapid and easy gel electrophoresis of proteins of 5 to 200 kD.

Storage temp.: +4 °C
Transport temp.: cooled
WGK 2

Type analysis:

Gel type. ..... Tris-Glycine Novel (TGN)
Gel matrix. ..... 4-15 % polyacrylamide
Buffer system..... Tris-Glycine
Cassette size (W x L)..... Mini (10 x 8,3 cm)
Gel strength. ..... 1 mm
Gel pockets..... 12

2234.1	2 gels	45,70 €
2234.2	10 gels	190,20 €

For further information, please see page 1186

GoPAGE™ 10 % TGN Mini

GoPAGE™ 10 % TGN Mini

NEW

ready-to-use, 10 x 8,3 cm, 10 % polyacrylamide, 12 wells

Precast mini gels with 10 % polyacrylamide, for rapid and easy gel electrophoresis of proteins of 25 to 200 kD.

Storage temp.: +4 °C
Transport temp.: cooled
WGK 2

Type analysis:

Gel type. ..... Tris-Glycine Novel (TGN)
Gel matrix. ..... 10 % polyacrylamide
Buffer system..... Tris-Glycine
Cassette size (W x L)..... Mini (10 x 8,3 cm)
Gel strength. ..... 1 mm
Gel pockets..... 12

2233.1	2 gels	45,70 €
2233.2	10 gels	190,20 €

For further information, please see page 1186

GOx

▶ Glucose oxidase (GOD) see p. 2020

G-6-P-Na$_2$

▶ D-Glucose-6-phosphate disodium dihydrate see p. 2021

Gram's decolourising solution

Gram's decolourising solution

for Gram staining

Ethanolic solution containing 25 % acetone. It is used for differentiation of bacteria during Gram staining.

UN No. 1993 • ADR 3 II • WGK 1

Danger H225-H319-H336-EUH066

CN02.1	500 ml	glass	23,15 €

For further information, please see page 1519

Gram staining kit

Gram staining kit

for microscopy

Kit for differentiation of gram-positive and gram-negative bacteria, incl. instructions for use.

Storage temp.: +20 °C
UN No. 1992 • ADR 3 (6.1) II • WGK 2

Danger
H225-H314-H302+H312+H332-H336-H341

Formulation:

Carbol gentianaviolet solution (Art. No. CN00)..... 500 ml
Iodine-potassium iodide solution acc. to Lugol (Art. No. N052)..... 500 ml
Gram's decolourising solution (Art. No. CN02)..... 500 ml
Carbol fuchsine solution (Art. No. A130). ..... 500 ml

HP02.1	1 kit	glass	90,85 €

For further information, please see page 1519

Granopent® "P"

Granopent® "P"

Paraffin, in pellets, for histology
Melting range: 52-54 °C

D 0,9 • bp >315 °C
flp 200 °C
[8002-74-2] • EC No. 232-315-6

Type analysis:

Appearance..... white, wax-like pellets
Solidification point. ..... 52-54 °C
Needle penetration (25 °C, 1/10 mm). 14-20

9279.1	1 kg	plastic	19,90 €
Original pack 6 x 1 kg			18,91/1 kg
9279.2	2,5 kg	plastic	39,70 €

For further information, please see page 1509

Granulopent

▶ Phosphorus pentoxide see p. 2211

Graphite

Graphite

natural, amorphous

Ideal as lubricant for metals and for metal blacking, absorbent.

D 2,2
[7782-42-5] • EC No. 231-955-3

Type analysis:

Carbon (C). ..... 45-50 %
Ash..... 50-55 %
Humidity..... ≤0,7 %
Sieve analysis:
≥85 % passes 75 µm sieve (200 mesh)

7614.2	500 g	plastic	18,20 €
Original pack 6 x 500 g			17,29/500 g
7614.3	1 kg	plastic	27,45 €
Original pack 6 x 1 kg			26,08/1 kg
7614.1	3 kg	plastic	45,05 €

Graciolon

▶ Betulinic acid see p. 1836

GSH

▶ L-Glutathione reduced see p. 2024

GSSG

▶ Glutathione oxidized see p. 2023

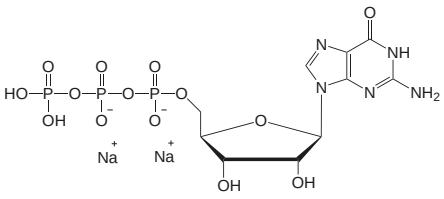
G418 sulphate solution

▶ Geneticin disulphate (G418 Sulphate) see p. 2013

GTC

▶ Guanidine thiocyanate see p. 2030

GTP



GTP

≥90 %, lyophilised

Guanosine-5'-triphosphate di-sodium salt
$C_{10}H_{14}N_5O_{14}P_3Na_2 \cdot 3\ H_2O$
M 621,18 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[56001-37-7]

K056.1	100 mg	plastic	59,70 €
K056.4	1 g	plastic	239,20 €
K056.5	10 g	plastic	955,70 €

For further information, please see page 1305

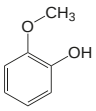
GTP solution

GTP solution
≥99 %, 100 mM solution
Guanosine-5'-triphosphate
$C_{10}H_{13}N_5O_{14}P_3$
M 520,15 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[56001-37-7] • WGK 1

K047.1	25 µmol (250 µl)	plastic	42,50 €

For further information, please see page 1305

Guaiacol



Guaiacol
≥98 %, extra pure
2-Hydroxyanisole
$C_7H_8O_2$
M 124,14 g/mol • D 1,13 • bp 205 °C
mp 27-29 °C • flp 82 °C
[90-05-1] • EC No. 201-964-7 • WGK 1
Warning H302-H315-H319

Type analysis:
Assay (GC). ..... ≥98,0 %

7308.1	100 ml	glass	41,40 €

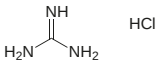
Guaiac (resin)

Guaiac (resin)
soluble in alcohol
mp >90 °C
[9000-29-7] • EC No. 232-535-2

Type analysis:
Appearance. ..... powdered, light brown
Water (KF). ..... ≤3 %
Ash. ..... ≤5 %

6033.1	100 g	plastic	70,85 €

Guanidine hydrochloride



Guanidine HCl, Guanidinium chloride, Iminomethanediamine HCl
$CH_5N_3 \cdot HCl$
M 95,53 g/mol
D 1,345 • mp 185 -188 °C
Solubility: 2150 g/l (H_2O, 20 °C)
[50-01-1] • EC No. 200-002-3 • WGK 1
Warning H302-H315-H319

Guanidine hydrochloride
≥99,7 %, p.a., Protein Grade
Reagent used for reversible denaturation and renaturation of proteins.

Guarantee analysis:
Assay. ..... ≥99,7 %
Appearance of solution (50 % solution). ..... clear, colourless
Dicyandiamide. ..... ≤0,01 %
Ammonium (NH_4). ..... ≤0,01 %
Iron (Fe). ..... ≤0,0001 %
Melamin. ..... ≤0,01 %
Water ..... ≤0,2 %
Melting point. ..... 185-188 °C
pH value (6 M, 50 % sol.). 4,5-7,0
UV-absorption (6 M):
230 nm. ..... ≤0,15
260 nm. ..... ≤0,03
280 nm. ..... ≤0,015
DNAse. ..... none detected
RNAse. ..... none detected
Protease. ..... none detected

0035.1	100 g	plastic	57,95 €
0035.2	500 g	plastic	209,10 €
Original pack 6 x 500 g			198,65/500 g
0035.3	1 kg	plastic	299,95 €
Original pack 6 x 1 kg			284,95/1 kg

For further information, please see page 1353

Guanidine hydrochloride
≥99,5 %, for biochemistry

Type analysis:
Assay. ..... ≥99,5 %
Water ..... ≤0,5 %
Ammonium (NH_4). ..... ≤0,05 %
Iron (Fe). ..... ≤0,0001 %
Melamin. ..... ≤0,01 %
Dicyandiamide. ..... ≤0,1 %
pH value (6 M, 50 % in H_2O). 4,5-7,0
UV-absorption (55 %):
260 nm. ..... ≤0,05
280 nm. ..... ≤0,20

0037.3	250 g	plastic	38,60 €
0037.2	500 g	plastic	66,55 €
0037.1	1 kg	plastic	122,45 €
Original pack 6 x 1 kg			116,33/1 kg

Guanidine hydrochloride
≥98 %
For technical use.

Type analysis:
Appearance. ..... colourless crystals
Assay. ..... ≥98 %
Water ..... ≤1,0 %
Ammonium chloride. ..... ≤0,5 %
Insoluble in water. ..... ≤0,5 %

6069.2	500 g	plastic	31,10 €
Original pack 6 x 500 g			29,55/500 g
6069.1	1 kg	plastic	46,15 €
Original pack 6 x 1 kg			43,84/1 kg
6069.3	2,5 kg	plastic	95,60 €

Guanidine HCl

▶ Guanidine hydrochloride see p. 2030

Guanidine hydrochloride solution

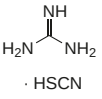
Guanidine hydrochloride solution
55 % in water (6,7 M)
For protein denaturation.
D ~1,16
EC No. 200-002-3
WGK 1
Warning H302-H315-H319

Type analysis:
Assay. ..... 54,0-56,0 %
pH value. 5,0-7,0
Iron (Fe). ..... ≤0,0001 %
Ammonium (NH_4). ..... ≤0,5 %
UV-absorption:
260 nm. ..... ≤0,30
280 nm. ..... ≤0,15
Clear solution. Due to low iron content, substance is excellent e.g. for iron determination in biological solutions.

9465.1	1 l	glass	87,00 €
Original pack 6 x 1 l			82,65/1 l

For further information, please see page 1353

Guanidine thiocyanate



GTC, Guanidinium isothiocyanate
$C_2H_6N_4S$
M 118,16 g/mol
D 1,29
mp 118 °C
Solubility: 1420 g/l (H_2O, 20 °C)
[593-84-0] • EC No. 209-812-1 • WGK 2
Warning
H302+H312+H332-H412-EUH032

Guanidine thiocyanate
≥99 %, for biochemistry
Reagent for denaturation of proteins and for isolation of DNA and RNA.
For a 4 M solution, solubilise 472,64 g in distilled water and fill to 1 l.

Type analysis:
Appearance. ..... colourless crystals
Appearance (33 %, water). ..... colourless, clear
Assay. ..... ≥99,0 %
Melting point. ..... 118-121 °C
Water . ..... ≤0,3 %
Iron (Fe). ..... ≤0,0001 %
Heavy metals. ..... ≤0,001 %
pH value (1 M, H_2O). 5,0-7,0
Absorption:
280 nm. ..... ≤0,40
300 nm. ..... ≤0,05

0017.1	100 g	plastic	30,00 €
0017.3	500 g	plastic	110,20 €
Original pack 6 x 500 g			104,69/500 g
0017.2	1 kg	plastic	177,40 €
Original pack 6 x 1 kg			168,53/1 kg
0017.5	5 kg	plastic	783,70 €

For further information, please see page 1289

Guanidine thiocyanate

≥99 %, extra pure

Type analysis:

Assay (titr.) ..... ≥99,0 %
pH value 5-7
Water (KF) ..... ≤0,5 %
Melting range ..... 118-121 °C
Ash ..... ≤0,1 %
Iron (Fe) ..... ≤0,0001 %
Absorption:
280 nm ..... ≤0,5
300 nm ..... ≤0,1

2628.1	100 g	plastic	24,20 €
2628.2	250 g	plastic	44,00 €
2628.3	500 g	plastic	79,45 €
Original pack 6 x 500 g			75,48/500 g
2628.4	1 kg	plastic	136,00 €
Original pack 6 x 1 kg			129,20/1 kg

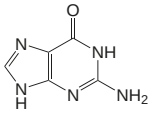
Guanidinium chloride

▶ Guanidine hydrochloride see p. 2030

Guanidinium isothiocyanate

▶ Guanidine thiocyanate see p. 2030

Guanine



Guanine

≥97 %, for biochemistry

4-Aminohypoxanthine
$C_5H_5N_5O$
M 151,13 g/mol
mp 360 °C
Storage temp.: +4 °C
[73-40-5] • EC No. 200-799-8
WGK 1

Warning H315-H319-H335

Type analysis:

Appearance ..... white powder
Assay ..... ≥97,0 %

7505.1	10 g	glass	26,35 €
7505.2	25 g	glass	53,25 €

Guanine hydrochloride

Guanine hydrochloride

≥98 %, for biochemistry

$C_5H_5N_5O \cdot HCl$
M 187,59 g/mol
mp ~300 °C
Storage temp.: +4 °C
[635-39-2] • EC No. 211-235-5
WGK 1

Warning H315-H319-H335

Type analysis:

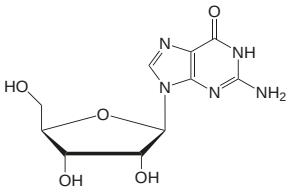
Assay (HPLC) ..... ≥98,0 %
Loss on drying ..... ≤1,0 %

3814.2	5 g	glass	14,95 €
3814.1	10 g	glass	22,05 €
3814.3	50 g	glass	75,15 €

Guanine-9-β-D-ribofuranoside

▶ Guanosine see p. 2031

Guanosine



Guanosine

≥98 %, for biochemistry

Guanine-9-β-D-ribofuranoside
$C_{10}H_{13}N_5O_5$
M 283,24 g/mol
mp 250 °C (dec.)
[118-00-3] • EC No. 204-227-8
WGK 1

Type analysis:

Assay (HPLC) ..... ≥98,0 %
Arsenic (As) ..... ≤0,0001 %
Heavy metals ..... ≤0,001 %
Loss on drying ..... ≤3,0 %

0715.1	10 g	plastic	22,50 €
0715.2	25 g	plastic	39,70 €

Guanosine-BCE-phosphoramidite

Guanosine-BCE-phosphoramidite

for DNA synthesis

For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-dG(N-Bu)P-(OCH_2CH_2CN)-$N(iPr)_2$
$C_{44}H_{54}N_7O_8P$ • M 839,7 g/mol
Storage temp.: +4 °C • [93183-15-4]

K923.1	1 g	glass	35,40 €

For further information, please see page 1550

Guanosine-CPG-Support

Guanosine-CPG-Support

500 Å pore size

Support material for DNA-synthesis.
dG-Icaa-CPG
Storage temp.: +4 °C

Type analysis:

Purity (HPLC) ..... ≥98,0 %
CPG loading ..... 30-40 µmol/g
Coupling efficiency ..... ≥99 %

2320.3	1 g	plastic	58,60 €

For further information, please see page 1550

Guanosine-5'-triphosphate disodium salt

▶ GTP see p. 2029

Guarana powder

Guarana powder

powdered

Guar plant containing ~3-5 % caffeine.
Semen guaranae powdered
[84929-28-2] • EC No. 284-512-1 • WGK 1

Type analysis:

Appearance ..... light brownish powder

A527.1	250 g	plastic	30,65 €
A527.2	1 kg	plastic	89,15 €
Original pack 6 x 1 kg			84,69/1 kg

Guar flour

Guar flour

~5000 cP

[9000-30-0] • EC No. 232-536-8 • WGK 1

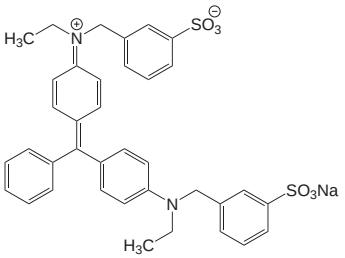
Type analysis:

Viscosity (1 % solution) ..... ~5000 cP
pH value (1 M in H_2O) 5,4-7,0
Moisture ..... ≤12 %
Carbohydrates ..... ≥80 %
Protein ..... ≤5,0 %
Ash ..... ≤0,8 %

Optained from endosperm of the seed of the guar plant *Cyamopsis tetragonolobus* which is mainly cultivated in Asia.

3527.2	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
3527.1	1 kg	plastic	51,10 €
Original pack 6 x 1 kg			48,55/1 kg

Guinea green B (C.I. 42085)



Guinea green B (C.I. 42085)

extra pure
Acid green 3
$C_{37}H_{35}N_2NaO_6S_2$
M 690,82 g/mol
mp 225 °C (dec.)
[4680-78-8] • EC No. 225-132-8
WGK 3

Type analysis:
Appearance. ..... dark green to dark purple powder
Appearance of solution (1 % in H_2O). ..... clear, blue to green

7694.1	5 g	glass	14,95 €
7694.2	25 g	glass	26,80 €
7694.3	100 g	glass	69,80 €

Gum arabic

Gum arabic

spray dried
Acacia
flp >250 °C
[9000-01-5] • EC No. 232-519-5
Warning H319

Guarantee analysis:
Appearance. ..... white powder
Identity. ..... complies
pH value (25 % in H_2O). 4,1-5,8
Specific rotation $[\alpha]_D^{20}$. ..... -36° to -22°
Loss on drying. ..... ≤10 %
Heavy metals (as Pb). ..... ≤0,004 %
Arsenic (As). ..... <0,0003 %
Lead (Pb). ..... ≤0,0002 %
Mercury (Hg). ..... <0,0001 %
Cadmium (Cd). ..... <0,0001 %
Total ash. ..... ≤4 %
Products of hydrolysis. ..... complies
Acid insoluble ash. ..... ≤0,5 %
Insoluble matter. ..... ≤0,5 %

4159.2	100 g	plastic	16,70 €
4159.3	500 g	plastic	40,75 €
Original pack 6 x 500 g			38,71/500 g
4159.1	1 kg	plastic	75,15 €
Original pack 6 x 1 kg			71,39/1 kg

Hafnium Standards

▶ Hafnium ICP Standard Solution see p. 2363
▶ Hafnium ICP Standard Solution see p. 2367

Hafnium(IV) oxide

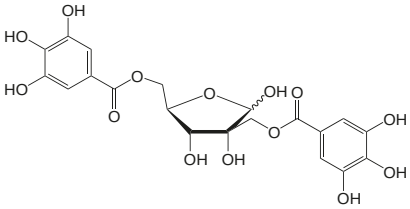
Hafnium(IV) oxide

≥99,3 %
HfO_2
M 210,49 g/mol
D 9,68
mp 2812 °C
[12055-23-1] • EC No. 235-013-2

Type analysis:
Assay. ..... ≥99,3 %

9073.1	1 g	glass	28,50 €
9073.2	10 g	glass	188,70 €

Hamamelitannin



Hamamelitannin

ROTICHROM® HPLC
Reference substance for HPLC.
From *Hamamelis virginiana.*
$C_{20}H_{20}O_{14}$
M 484,37 g/mol
Storage temp.: +4 °C
[469-32-9] • EC No. 207-416-3

Type analysis:
Purity (HPLC). ..... >99 %

1151.1	20 mg	glass	267,70 €

Ham's F12 cell culture medium

▶ Roti®-CELL Ham's F12 see p. 2269

Hanks' salt solution

▶ Roti®-CELL Hanks' BSS see p. 2269

Hanus solution (0,2 N)

Hanus solution

0,1 mol IBr/l - 0,2 N volumetric standard solution
For determination of iodine number
UN No. 2789 • ADR 8 (3) II • WGK 1
Danger H226-H314-H290

Type analysis:
Amount-of-substance conc. (20 °C). ..... 0,1 mol IBr/l ±2 %

KK63.1	1 l	glass	49,35 €
Original pack 6 x 1 l			46,88/1 l

For further information, please see page 1681

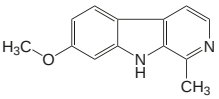
Hardener DBA

▶ Glycidether Hardener DBA see p. 2025

Hardener MNA

▶ Glycidether Hardener MNA see p. 2026

Harmine

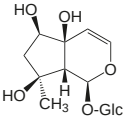


Harmine

ROTICHROM® TLC
Reference substance for thin layer chromatography
$C_{13}H_{12}N_2O$
M 212,25 g/mol
mp 262-264 °C (dec.)
Storage temp.: +4 °C
[442-51-3] • EC No. 207-131-4
UN No. 1544 • ADR 6.1 II
Warning H302+H312+H332-H319

9968.1	500 mg	glass	44,00 €

Harpagid



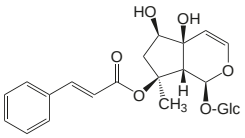
Harpagid

ROTICHROM® HPLC
Reference substance for HPLC.
From *Harpagophytum procumbens.*
$C_{15}H_{24}O_{10}$
M 364,34 g/mol
Storage temp.: +4 °C
[6926-08-5]
Warning H302

Type analysis:
Purity (HPLC). ..... >99 %

1152.1	10 mg	glass	310,70 €

Harpagoside



8'-Cinnamoylharpagide
$C_{24}H_{30}O_{11}$
M 494,48 g/mol
mp 120-129 °C
[19210-12-9] • EC No. 242-881-6
WGK 1

Harpagoside
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC).....≥95,0 %
Residual solvents (GC).....≤2,0 %
Water (KF).....≤5,0 %
Assay (qNMR).....≥80,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE21.1	25 mg	glass	805,20 €

Harpagoside
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC).....≥80,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC21.1	50 mg	glass	439,70 €

Harpagoside
ROTICHROM® HPLC
Reference substance for HPLC.
From *Harpagophytum procumbens.*
Storage temp.: +4 °C

Type analysis:
Purity (HPLC).....>98 %

7471.1	10 mg	glass	102,05 €

Harris Hematoxylin solution
▶ Hematoxylin solution acc. to Harris see p. 2035

HATU
▶ O-(7-Azabenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HATU) see p. 1820

HBBS
▶ Roti®-CELL Hanks' BSS see p. 2269

HBTU
▶ O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HBTU) see p. 1832

HCl-ethanol solution 0,75 %

HCl-ethanol solution 0,75 %
for histology
Differentiating solution for histological staining.
Hydrochloric acid in ethanol
UN No. 2924 • ADR 3 (8) II • WGK 1
Danger H225-H290-H319

Type analysis:
Appearance.....clear, colourless
Density (20 °C).....0,88-0,90

9969.1	500 ml	plastic	16,05 €
9969.2	1 l	plastic	25,70 €
Original pack 6 x 1 l			24,42/1 l
9969.3	5 l	plastic	88,05 €
Original pack 2 x 5 l			83,65/5 l

For further information, please see page 1498

HCl-ethanol solution 3 %

HCl-ethanol solution 3 %
for histology
Differentiating solution for histological staining
Hydrochloric acid in ethanol
D 0,9
UN No. 1170 • ADR 3 II • WGK 1
Danger H225

Type analysis:
Appearance.....clear, colourless
Density (20 °C).....0,896-0,905

6477.1	500 ml	plastic	17,75 €
6477.2	1 l	plastic	30,65 €
Original pack 6 x 1 l			29,12/1 l
6477.3	5 l	plastic	107,00 €
Original pack 2 x 5 l			101,65/5 l

For further information, please see page 1498

0.2 M HCl/KCl Solution, pH 2.2
▶ Legionella Acid Buffer see p. 2096

HCTU
▶ O-(1H-6-Chlorobenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HCTU) see p. 1892

HDMA
▶ 1-[(Dimethylamino)(morpholino)methylene]-1H-[1,2,3]triazolo[4,5-b]pyridine-1-ium 3-oxide hexafluorophosphate (HDMA) see p. 1946

HDMC
▶ 4-((6-Chloro-1H-benzo{d}[1,2,3]triazol-1-yloxy)(dimethylamino)methylene)-morpholin-4-ium hexafluorophosphate (HDMC) see p. 1892

HDPA
▶ Hexadecylphosphonic acid see p. 2040

Heart infusion

Heart infusion
for microbiology
Storage temp.: +20 °C
WGK 1

Type analysis:
Total nitrogen.....≥10 %
Amino nitrogen.....≥3 %
Loss on drying.....≤6 %
Ash.....≤15 %
pH (2 % solution).....6,5-7,5

7596.1	250 g	plastic	59,70 €
7596.2	500 g	plastic	102,05 €
Original pack 6 x 500 g			96,95/500 g

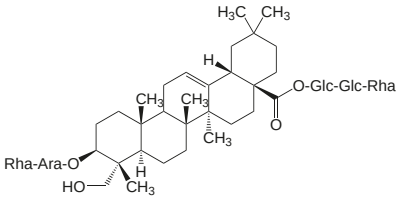
For further information, please see page 1492

Heating Bath Media

Art. No.	Description	Page
1980	Alloy acc. to Wood	1782
0991	Rotitherm® M 220	2300
0990	Rotitherm® M 150	2300
4106	Silicone oil M 3	2322
7844	Silicone oil M 5	2322
4113	Silicone oil M 10	2323
4010	Silicone oil M 20	2323
4020	Silicone oil M 50	2323
4025	Silicone oil M 100	2323
4030	Silicone oil M 200	2323
4035	Silicone oil M 350	2323
4040	Silicone oil M 500	2323
4045	Silicone oil M 1000	2323
4050	Silicone oil M 5000	2323
4055	Silicone oil M 10 000	2323
4060	Silicone oil M 20 000	2323
4080	Silicone oil M 60 000	2323
4085	Silicone oil M 100 000	2324
4112	Silicone oil M 250 000	2324
4109	Silicone oil M 500 000	2324
9375	Silicone oil M 1 000 000	2324
4217	Silicone oil M 3	2324
A413	Silicone oil M 5	2324
2188	Silicone oil M 20	2324
4212	Silicone oil M 50	2324
4130	Silicone oil PN 200	2324
6826	Silicone oil PN 1000	2324

Heavy water
▶ Deuterium oxide see p. 1928

Hederacoside C



$C_{59}H_{96}O_{26}$
M 1221,39 g/mol
mp 218-223 °C
[14216-03-6] • EC No. 238-072-2
UN No. 2811 • ADR 6.1 III • WGK 2
Warning H302

Hederacoside C
≥90 %, for biochemistry
Storage temp.: +4 °C

Type analysis:
Appearance. ..... colourless to light ochre coloured powder
Assay (HPLC, 205 nm). ..... ≥90 %

6775.1	250 mg	glass	155,90 €

Hederacoside C
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤8,0 %
Water (KF). ..... ≤3,0 %
Assay (qNMR). ..... ≥84,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE46.1	10 mg	glass	590,20 €

Hederacoside C
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC). ..... ≥85,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

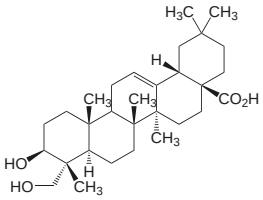
NC46.1	25 mg	glass	332,20 €

Hederacoside C
ROTICHROM® HPLC
Reference substance for HPLC.
From *Hedera helix.*
Storage temp.: +4 °C

Type analysis:
Purity (HPLC). ..... ≥99 %

7472.1	10 mg	glass	125,70 €

Hederagenin



Caulosapogenin, Melanthigenin
$C_{30}H_{48}O_4$
M 472,71 g/mol
mp 310-320 °C
Storage temp.: +4 °C
[465-99-6] • EC No. 207-369-9
WGK 1

Hederagenin
ROTICHROM® HPLC
Reference substance for HPLC.
From *Hedera helix*

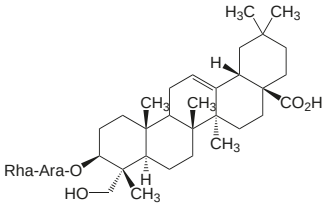
Type analysis:
Purity (HPLC). ..... ≥98 %

7474.2	20 mg	glass	213,95 €

Hederagenin
ROTICHROM® ~CHR

9141.2	250 mg	glass	241,90 €

α-Hederin



α-Hederin
ROTICHROM® HPLC
Reference substance for HPLC.
Helixin
$C_{41}H_{66}O_{12}$
M 750,98 g/mol
mp 256-257 °C
Storage temp.: +4 °C
[27013-91-8] • EC No. 248-166-5
WGK 1

Type analysis:
Purity (HPLC). ..... ≥98 %

7486.1	10 mg	glass	177,40 €

H&E fast staining kit

H&E fast staining kit
for microscopy
Staining kit for fast oversight staining of tissue sections. Hematoxylin-eosin staining, incl. instructions for use.
Storage temp.: +20 °C
UN No. 1230 • ADR 3 II • WGK 3
Danger
H225-H301+H311+H331-H370-H318

Formulation:
Fast staining H&E, solution 1 (Art. No. 8947)
Fast staining H&E, solution 2 (Art. No. 8950)
Contents of this kit may not be bought separately.

9194.1	2 x 250 ml	plastic	54,75 €
9194.2	2 x 500 ml	plastic	80,10 €

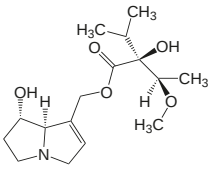
For further information, please see page 1514

Helenien

Helenien
ROTICHROM® ~CHR
Mixture of natural fatty acid esters of lutein.
Storage temp.: -20 °C
Transport temp.: room temp.
[547-17-1] • EC No. 208-916-4

4452.2	10 mg	glass	310,70 €

Heliotrine

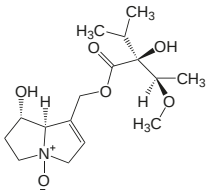


Heliotrine
ROTICHROM® HPLC
Reference substance for HPLC.
From *Heliotropium*
$C_{16}H_{27}NO_5$
M 313,39 g/mol
mp 118-122 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[303-33-3]
WGK 3

Type analysis:
Purity (HPLC). ..... ≥98,0 %

1929.1	20 mg	glass	327,90 €

Heliotrine N-oxide



Heliotrine N-oxide
ROTICHROM® HPLC
Reference substance for HPLC.
From *Heliotropium*
$C_{16}H_{27}NO_6$
M 329,39 g/mol
mp 163-167 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[6209-65-0]
WGK 3

Type analysis:
Purity (HPLC)..... ≥97 %

1944.1	10 mg	glass	284,90 €

Helixin

▶ α-Hederin see p. 2034

Hemalum solution acid acc. to Mayer

Hemalum solution acid acc. to Mayer
for microscopy
For visualising nuclei.
Mayers Hemalum solution
WGK 1

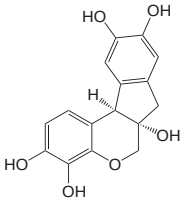
Warning H302-H315-H319

Type analysis:
Suitability for microscopy (tissue section)..... complies

T865.1	500 ml	glass	26,80 €
T865.2	1 l	glass	44,00 €
Original pack 6 x 1 l			41,80/1 l
T865.3	2,5 l	plastic	79,45 €
Original pack 4 x 2,5 l			75,48/2,5 l

For further information, please see page 1514

Hematoxylin (C.I. 75290)



Hematoxylin (C.I. 75290)
for microscopy
Hydroxybrasilin
$C_{16}H_{14}O_6$ • M 302,29 g/mol • mp 145 °C
[517-28-2] • EC No. 208-237-3

Type analysis:
Appearance..... light-brown powder
Maximum absorption..... ~292 nm in methanol
pH value (1 % in H_2O)..... 5,0-7,0

3816.1	10 g	glass	42,50 €
3816.3	50 g	glass	164,40 €
3816.2	100 g	glass	295,65 €

For further information, please see page 1523

Hematoxylin solution acc. to Delafield

Hematoxylin solution acc. to Delafield
20x conc., for microscopy
Delafield's hematoxylin solution
UN No. 1992 • ADR 3 (6.1) II • WGK 1

Danger
H225-H370-H332+H312+H302

Type analysis:
Suitability for microscopy..... complies

CN03.1	500 ml	glass	39,70 €

For further information, please see page 1517

Hematoxylin solution acid acc. to Ehrlich

Hematoxylin solution acid acc. to Ehrlich
for microscopy
Ehrlich's acid hematoxylin solution
UN No. 1993 • ADR 3 II • WGK 1

Danger H225-H319-H336

Type analysis:
Suitability for microscopy..... complies

CN04.1	500 ml	glass	39,70 €

For further information, please see page 1517

Hematoxylin solution acc. to Gill II

Hematoxylin solution acc. to Gill II
for microscopy
WGK 1

Danger
H302-H318-H373-EUH208

Type analysis:
Suitability for microscopy (tissue section)..... complies

T864.1	500 ml	glass	39,70 €
T864.2	1 l	glass	56,90 €
Original pack 6 x 1 l			54,06/1 l
T864.3	2,5 l	plastic	110,65 €
Original pack 4 x 2,5 l			105,12/2,5 l

For further information, please see page 1517

Hematoxylin solution acc. to Harris

Hematoxylin solution acc. to Harris
for microscopy
Harris Hematoxylin solution, Papanicolaou solution 1a
WGK 1

Type analysis:
Suitability for microscopy (tissue section). .....complies

X903.1	500 ml	glass	34,30 €
X903.2	1 l	glass	53,25 €
Original pack 6 x 1 l			50,59/1 l
X903.3	2,5 l	plastic	110,65 €
Original pack 4 x 2,5 l			105,12/2,5 l

For further information, please see page 1517

Hematoxylin solution A acc. to Weigert

Hematoxylin solution A acc. to Weigert
for microscopy
Hematoxylin solution acc. to Weigert
Solution A acc. to Weigert
UN No. 1219 • ADR 3 II • WGK 1

Danger H225-H319-H336

Type analysis:
Suitability for microscopy. .....complies
Working solution:
Mix Weigert's solution A and Weigert's solution B at a ratio of 1:1.

X906.1	500 ml	glass	56,90 €

For further information, please see page 1512

Hematoxylin solution B acc. to Weigert

Hematoxylin solution B acc. to Weigert
for microscopy
Iron(III) chloride solution acc. to Weigert
Solution B acc. to Weigert
WGK 1

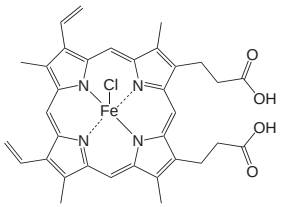
Danger H318

Type analysis:
Suitability for microscopy. .....complies
Working solution:
Mix Weigert's solution A and Weigert's solution B at a ratio of 1:1.

X907.1	500 ml	glass	21,40 €

For further information, please see page 1512

Hemin(chloride)



Hemin(chloride)

≥98 %
$C_{34}H_{32}ClFeN_4O_4$
M 651,96 g/mol
Storage temp.: +4 °C
[16009-13-5] • EC No. 240-140-1
WGK 1

Type analysis:

Appearance. .....dark blue to brown black powder
Assay.....≥98 %
Loss on drying. .....≤1,0 %
Iron (Fe).....≥8,0 %

7629.1	1 g	glass	17,75 €
7629.2	5 g	glass	48,30 €

Heptadeuterodimethyl-formamide

▶ N,N-Dimethylformamide D7 see p. 1948

Heparin sodium salt

Heparin sodium salt

≥180 I.U./mg, Ph.Eur., from porcine intestine mucosa
M ~2x10^4 g/mol
Storage temp.: +4 °C
[9041-08-1]
WGK 1

Guarantee analysis:

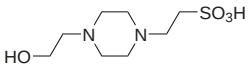
Appearance. ....white to off-white, hygroscopic powder
Assay (dry substance). .....≥180 I.U./mg
Identity. .....complies
Appearance of solution. ..... clear
pH value (1 %, H_2O). 5,5-8,0
Loss on drying. .....≤8,0 %
Endotoxins.....≤0,01 I.U./I.U. Hep.
Protein (in dry substance). .....≤0,5 %
Nitrogen (dry substance). .....1,5-2,5 %
Sodium (dry substance).....10,5-13,5 %
Heavy metals.....≤0,003 %
Nucleotidic impurities (260 nm). .....≤0,15
Related substances:
Sum of dermatan sulphate and chondroitin sulphate. .....≤2,0 %
Any other impurities. .....complies

7692.1	1 g	glass	74,10 €
7692.2	5 g	glass	321,45 €
7692.3	25 g	plastic	1424,40 €

Hepasamin

▶ D-Galactosamine hydrochloride see p. 2010

HEPES



N-2-Hydroxyethyl piperazine-N'-2-ethane sulphonic acid, Good's buffer
$C_8H_{18}N_2O_4S$
M 238,31 g/mol
mp 234-238 °C
[7365-45-9] • EC No. 230-907-9
WGK 3

HEPES

PUFFERAN® CELLPURE® ≥99,5 %
For cell culture, tissue culture and biotechnology.

Guarantee analysis:

Assay (titr.). ..... ≥99,5 %
Water (KF)..... ≤0,2 %
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,01 %
Phosphate (PO_4). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As)..... ≤0,00005 %
Iron (Fe)..... ≤0,0003 %
UV-absorption (1 M in H_2O):
260 nm. ..... ≤0,04
280 nm. ..... ≤0,03
Endotoxins. .....tested
DNases, RNases, Protease.....none detected

HN77.1	50 g	plastic	30,00 €
HN77.2	100 g	plastic	42,90 €
HN77.3	250 g	plastic	82,25 €
HN77.4	500 g	plastic	146,75 €
Original pack 6 x 500 g			139,41/500 g
HN77.5	1 kg	plastic	252,65 €
Original pack 6 x 1 kg			240,02/1 kg

For further information, please see page 1308

HEPES

≥99,5 %, BioScience-Grade
For molecular biology and biotechnology.

Guarantee analysis:

Assay. ..... ≥99,5 %
Solubility (0,1 M in H_2O). ..... clear, complete
pK_a (at 25 °C). 7,45-7,65
UV-absorption (1 M in H_2O):
260 nm. ..... ≤0,02
280 nm. ..... ≤0,02
405 nm. ..... ≤0,01
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,01 %
Phosphate (PO_4). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,003 %
Sodium (Na). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,0005 %
DNases, RNases, Protease.....none detected

6763.1	100 g	plastic	36,45 €
6763.2	500 g	plastic	141,40 €
Original pack 6 x 500 g			134,33/500 g
6763.3	1 kg	plastic	233,85 €
Original pack 6 x 1 kg			222,16/1 kg

For further information, please see page 1308

HEPES

PUFFERAN® ≥99,5 %, p.a.
For biochemistry and molecular biology.

Guarantee analysis:

Assay (titr.).....≥99,5 %
Solubility (0,1 M in H_2O).....clear, complete
pH value (5 % in H_2O).....5,0-6,0
Sulphated ash.....≤0,1 %
Loss on drying (110 °C). .....≤0,5 %
Chloride (Cl).....≤0,005 %
Phosphate (PO_4).....≤0,01 %
Sulphate (SO_4).....≤0,01 %
Lead (Pb).....≤0,0005 %
Cadmium (Cd). .....≤0,0005 %
Calcium (Ca).....≤0,05 %
Iron (Fe). .....≤0,0005 %
Copper (Cu).....≤0,0005 %
Magnesium (Mg).....≤0,0005 %
Nickel (Ni). .....≤0,005 %
Heavy metals (as Pb).....≤0,0005 %
UV-absorption (1 M in H_2O, d = 1 cm):
260 nm.....≤0,05
280 nm.....≤0,04
405 nm.....≤0,03

9105.2	100 g	plastic	34,30 €
9105.4	500 g	plastic	139,65 €
Original pack 6 x 500 g			132,67/500 g
9105.3	1 kg	plastic	231,70 €
Original pack 6 x 1 kg			220,12/1 kg
9105.6	2,5 kg	plastic	461,20 €
9105.5	5 kg	plastic	869,70 €

For further information, please see page 1308

HEPES

PUFFERAN® ≥99,5 %, Buffer Grade
For all standard applications.

Guarantee analysis:

Assay (titr.).....≥99,5 %
Water (KF). .....≤0,5 %
pH value (5 % in H_2O).....5,0-6,5
Chloride (Cl).....≤0,05 %
Sulphate (SO_4).....≤0,05 %
Sulphated ash.....≤0,1 %
Heavy metals (as Pb).....≤0,001 %

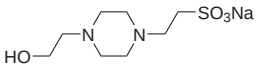
HN78.1	100 g	plastic	28,50 €
HN78.2	500 g	plastic	96,25 €
Original pack 6 x 500 g			91,44/500 g
HN78.3	1 kg	plastic	174,70 €
Original pack 6 x 1 kg			165,97/1 kg
HN78.4	5 kg	plastic	762,20 €

For further information, please see page 1308

HEPES Buffered Saline (tablets)

▶ Roti®fair HBS see p. 2275

HEPES sodium salt



HEPES sodium salt

PUFFERAN® ≥99 %

N-2-Hydroxyethyl piperazine-N'-2-ethane sulphonic acid sodium salt

$C_8H_{17}N_2SO_4Na$

M 260,3 g/mol

[75277-39-3] • EC No. 278-169-7

WGK 1

Type analysis:

Appearance. ..... white powder
Assay (titr., dry substance). ..... ≥99,0 %
Loss on drying. ..... ≤1,5 %
pH value (1 M in H_2O). 10,0-12,0
UV-absorption (0,1 M in H_2O):
260 nm. ..... ≤0,2
280 nm. ..... ≤0,2

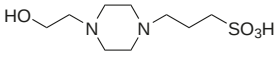
7020.1	25 g	plastic	34,30 €
7020.2	100 g	plastic	107,40 €

For further information, please see page 1308

HEPES solution

▶ Roti®-CELL HEPES solution see p. 2269

HEPPS, EPPS



HEPPS, EPPS

PUFFERAN® ≥98 %

4-(2-Hydroxyethyl)-piperazine-1-propane sulphonic acid

$C_9H_{20}N_2O_4S$

M 252,33 g/mol

mp 231 °C (dec.)

[16052-06-5] • EC No. 240-198-8

WGK 1

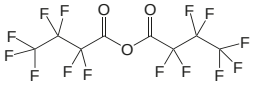
Type analysis:

Appearance. ..... white to off-white powder
Assay (titr.). ..... ≥98,0 %
pH value (1 % solution). 5,0-6,5
Loss on drying. ..... ≤1,0 %
UV-absorption (0,1 M in H_2O):
260 nm. ..... ≤0,1

9164.1	10 g	plastic	20,35 €
9164.2	100 g	plastic	113,85 €

For further information, please see page 1308

Heptafluorobutyric acid anhydride (HFBA)



Heptafluorobutyric acid anhydride (HFBA)

≥98 %, for GC

Acylation reagent

HFBA

$C_8F_{14}O_3$

M 410,06 g/mol

D 1,66 • bp ~110 °C

[336-59-4] • EC No. 206-410-8

UN No. 3265 • ADR 8 III • WGK 2

Danger H314

Type analysis:

Appearance. ..... clear, colourless-yellowish liquid
Assay (GC). ..... ≥98 %

0026.1	5 g	glass	93,00 €

For further information, please see page 1628

Heptamethylene glycol

▶ 1,7-Heptanediol see p. 2038

n-Heptane

n-Methyl hexane

C_7H_{16}

M 100,20 g/mol

D 0,68 • bp 98 °C

mp -90,5 °C • flp -4 °C

[142-82-5] • EC No. 205-563-8

UN No. 1206 • ADR 3 II • WGK 2

Danger

H225-H304-H400-H410-H315-H336

n-Heptane

ROTISOLV® ≥99 %, HPLC

Guarantee analysis:

Assay (GC). ..... ≥99,0 %
Water (KF). ..... ≤0,01 %
Acidity (as CH_3COOH). ..... ≤0,001 %
Evaporation residue. ..... ≤0,0005 %
Transmission:
245 nm. ..... ≥98 %
220 nm. ..... ≥80 %
200 nm. ..... ≥20 %
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb
Filtered through 0,2 µm membrane and filled under protective gas.

6828.1	2,5 l	glass	110,65 €
Original pack 4 x 2,5 l			105,12/2,5 l

For further information, please see page 1650

n-Heptane

ROTISOLV® ≥95 %, HPLC

Guarantee analysis:

Assay (GC). ..... ≥95 %
Water (KF). ..... ≤0,005 %
Free acid. ..... ≤0,001 %
Non volatile matter. ..... ≤0,0001 %
Transmission:
255 nm. ..... ≥99 %
220 nm. ..... ≥80 %
205 nm. ..... ≥50 %
Filtered through 0,2 µm membrane and filled under protective gas.

7337.2	1 l	glass	48,30 €
Original pack 6 x 1 l			45,89/1 l
7337.1	2,5 l	glass	105,90 €
Original pack 4 x 2,5 l			100,61/2,5 l

For further information, please see page 1650

n-Heptane

ROTISOLV® ≥99 %, Pestilyse® plus

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:

Assay (GC). ..... ≥99,0 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,01 %
Free acid (as CH_3COOH). ..... ≤0,001 %
Evaporation residue. ..... ≤0,0001 %
GC/FID suitability (as 2-octanol). ..... ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ..... ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤2 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
GC/ECD volatile impurities (as ethylene dibromide). ..... ≤5 ng/ml
Oil index (any hydrocarbon C_{10}-C_{40}). ..... ≤0,05 mg/l
PAH-test (less than 2 ppb, HPLC). ..... complies
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb

7566.1	2,5 l	glass	104,85 €
Original pack 4 x 2,5 l			99,61/2,5 l

n-Heptane

ROTISOLV® ≥99 %, Pestilyse®

For residue and environmental analysis.

Guarantee analysis:

Assay (GC). ..... ≥99 %
Water (KF). ..... ≤0,005 %
Acidity. ..... ≤0,0005 meg/g
Evaporation residue. ..... 0,0005 %
GC/ECD (individual signal as lindan). ..... ≤5 ng/l
GC/PND (individual signal as ethylparathion). ..... ≤10 ng/l

X878.1	2,5 l	glass	103,10 €
Original pack 4 x 2,5 l			97,95/2,5 l

n-Heptane

ROTISOLV® ≥99 %, UV/IR-Grade

For chromatography and spectroscopy.

Guarantee analysis:

Assay (GC) ≥99 %
Water (KF) ≤0,005 %
Acidity ≤0,0005 meq/g
Evaporation residue ≤0,0005 %
Fluorescence (as quinine):
254 nm ≤1,0 ppb
365 nm ≤1,0 ppb
Transmission:
245 nm ≥98 %
228 nm ≥90 %
220 nm ≥80 %
210 nm ≥50 %
200 nm ≥10 %

CP78.1	2,5 l	glass	110,65 €
Original pack 4 x 2,5 l			105,12/2,5 l

n-Heptane

ROTIPURAN® ≥99 %, p.a.

Guarantee analysis:

Assay (GC) ≥99,0 %
Colour (APHA) ≤10
Water ≤0,01 %
Acidity ≤0,0003 meq/g
Thiophene complies
Calcium (Ca) ≤0,00005 %
Cadmium (Cd) ≤0,000005 %
Cobalt (Co) ≤0,000002 %
Chromium (Cr) ≤0,000002 %
Copper (Cu) ≤0,000002 %
Iron (Fe) ≤0,00001 %
Magnesium (Mg) ≤0,00001 %
Manganese (Mn) ≤0,000002 %
Nickel (Ni) ≤0,000002 %
Lead (Pb) ≤0,00001 %
Zinc (Zn) ≤0,00001 %
Sulphur compounds (as S) ≤0,005 %
Evaporation residue ≤0,001 %
Matter discoloured by H_2SO_4 complies

T174.1	1 l	glass	72,60 €
Original pack 6 x 1 l			68,97/1 l
T174.2	2,5 l	glass	153,65 €
Original pack 4 x 2,5 l			145,97/2,5 l
T174.3	5 l	aluminium	252,65 €
Original pack 2 x 5 l			240,02/5 l

n-Heptane

≥99 %, for synthesis

Type analysis:

Appearance clear, colourless
Assay (GC) ≥99,0 %
Density (15 °C) 0,686-0,690
Aromatic compounds (GC) ≤0,005 %
Evaporation residue ≤1 mg/100 ml

8654.1	1 l	glass	35,40 €
Original pack 6 x 1 l			33,63/1 l
8654.3	2,5 l	glass	70,85 €
Original pack 4 x 2,5 l			67,31/2,5 l
8654.5	5 l	aluminium	121,40 €
Original pack 2 x 5 l			115,33/5 l
8654.2	10 l	tinplate	221,35 €
8654.4	25 l	tinplate	461,20 €

n-Heptane

≥95 %, for synthesis

Typ analysis:

Appearance clear, colourless
Assay (GC) ≥95 %
Density (15 °C) 0,686-0,690
Aromatic compounds (GC) ≤0,02 %
Evaporation residue ≤0,002 %

CP46.1	1 l	glass	32,15 €
Original pack 6 x 1 l			30,54/1 l
CP46.2	2,5 l	glass	61,85 €
Original pack 4 x 2,5 l			58,76/2,5 l
CP46.4	5 l	aluminium	105,90 €
Original pack 2 x 5 l			100,61/5 l
CP46.3	10 l	tinplate	193,00 €
CP46.5	25 l	tinplate	382,20 €

Heptane (isomers)

Heptane (isomers)

≥98,5 %, for synthesis

C_7H_{16}
M 100,21 g/mol
D 0,71 • bp 94-100 °C
flp -4 °C
UN No. 1206 • ADR 3 II • WGK 3

Danger
H225-H304-H315-H336-H410

Type analysis:

Appearance clear, colourless
Assay (GC) ≥98,5 %
Density (15 °C) 0,7050-0,7250
n-Heptane ≥32 %
Methyl cyclohexane (GC) ≤25 %
Benzene ≤0,001 %
Other aromatic compounds <0,002 %
Boiling range 94-100 °C

7725.2	1 l	glass	24,65 €
Original pack 6 x 1 l			23,42/1 l
7725.3	2,5 l	glass	37,55 €
Original pack 4 x 2,5 l			35,67/2,5 l
7725.5	5 l	aluminium	61,20 €
Original pack 2 x 5 l			58,14/5 l
7725.1	10 l	tinplate	106,45 €
7725.4	25 l	tinplate	206,30 €

Heptanedioic acid

▶ Pimelic acid see p. 2213

1,7-Heptanediol

1,7-Heptanediol

≥98 %

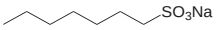
Heptamethylene glycol, 1,7-Dihydroxyheptane
$C_7H_{16}O_2$ • M 132,20 g/mol
D 0,95 • bp 259 °C
mp 17-19 °C • flp 113 °C
[629-30-1] • EC No. 211-085-0

Typ analysis:

Assay (GC) ≥98,0 %
Water (KF) ≤0,5 %
Refractive index n_D^{20} 1,453-1,457

5541.1	5 g	glass	69,80 €
5541.2	10 g	glass	117,75 €

Heptane-1-sulphonic acid sodium salt



Heptane-1-sulphonic acid sodium salt

≥98 %, for ion pair chromatography

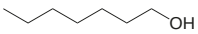
Ion pair reagent for HPLC.
Sodium-1-heptane sulphonate
$C_7H_{15}NaO_3S$
M 202,24 g/mol
mp >300 °C
[22767-50-6] • EC No. 245-210-5
WGK 1

Guarantee analysis:

Assay (acidim.) ≥98,0 %
Water ≤2 %
A 200 nm (0,25 M in water) ≤0,1 AU
A 210 nm (0,25 M in water) ≤0,05 AU
A 220 nm (0,25 M in water) ≤0,04 AU
A 230 nm (0,25 M in water) ≤0,03 AU
A 240 nm (0,25 M in water) ≤0,01 AU
A 250 nm (0,25 M in water) ≤0,01 AU
A 260 nm (0,25 M in water) ≤0,01 AU

KK53.1	10 g	glass	47,20 €
KK53.2	25 g	glass	91,30 €
KK53.3	100 g	glass	272,55 €

1-Heptanol



1-Heptanol

≥99 %, for synthesis

Heptyl alcohol
$C_7H_{16}O$
M 116,20 g/mol
D ~0,82 • bp 175,8 °C
mp -34,6 °C • flp 70 °C
[111-70-6] • EC No. 203-897-9
WGK 1

Warning H302+H312-H319

Type analysis:

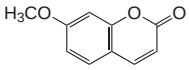
Assay (GC) ≥99 %
Density (d 20 °C/4 °C) 0,822-0,823

3827.1	500 ml	glass	73,00 €

Heptyl alcohol

▶ 1-Heptanol see p. 2038

Herniarin



7-Methoxycoumarin
$C_{10}H_8O_3$
M 176,17 g/mol
mp 116-118 °C
[531-59-9] • EC No. 208-513-3 • WGK 3

Herniarin
≥98 %

Type analysis:
Appearance. ..... white to beige, cryst. powder
Assay (TLC). ..... ≥98 %
Water (KF). ..... ≤1,0 %
Melting temperature. ..... 116-118 °C

7734.1	1 g	glass	30,00 €

Herniarin
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤1,0 %
Assay (qNMR). ..... ≥93,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

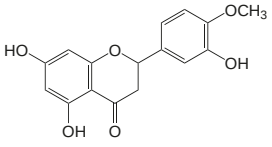
NE47.1	10 mg	glass	532,15 €

Herniarin
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC). ..... ≥95,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC47.1	50 mg	glass	235,45 €

Hesperetin



3',5,7-Trihydroxy-4'-methoxyflavonone
$C_{16}H_{14}O_6$
M 302,28 g/mol • mp 223-229 °C
Storage temp.: +4 °C
[41001-90-5] • EC No. 208-290-2

Hesperetin
≥95 %

Type analysis:
Appearance. ..... yellowish to brownish powder
Assay (HPLC). ..... ≥95 %

7743.1	1 g	glass	62,25 €

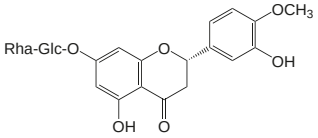
Hesperetin
ROTICHROM® HPLC
Reference substance for HPLC.

Type analysis:
Purity (HPLC). ..... ≥99 %

7570.1	10 mg	glass	160,20 €

Hesperetin-7-rutinoside
▶ Hesperidin see p. 2039

Hesperidin



Hesperetin-7-rutinoside
$C_{28}H_{34}O_{15}$
M 610,55 g/mol
mp 250-255 °C
Storage temp.: +4 °C
[520-26-3] • EC No. 208-288-1

Hesperidin
~90 %

Type analysis:
Assay (HPLC). ..... ~90 %

9972.2	25 g	plastic	36,45 €
9972.1	100 g	plastic	127,95 €

Hesperidin
ROTICHROM® HPLC
Reference substance for HPLC.

Type analysis:
Purity (HPLC). ..... ≥98 %

7577.1	10 mg	glass	188,15 €
7577.2	20 mg	glass	213,95 €

Hesperidin
ROTICHROM® TLC
Reference substance for thin layer chromatography
From *Citrus sinensis*.

5800.1	10 mg	glass	59,05 €

Hesperidin
ROTICHROM® ~CHR

7737.1	10 g	plastic	42,50 €

Heteroauxin
▶ Indolyl 3-acetic acid see p. 2067

Hexaammonium tungstate hydrate
▶ Ammonium metatungstate hydrate see p. 1801

Hexachloroplatinum(IV) acid hydrate
▶ Hydrogen hexachloroplatinate(IV) hydrate see p. 2053

Hexachloroplatinum(IV) acid hexahydrate

Hexachloroplatinum(IV) acid hexahydrate
~40 % Pt
Hydrogen hexachloroplatinate(IV) hexahydrate
$H_2Cl_6Pt \cdot 6\ H_2O$
M 517,88 g/mol
mp 150 °C
[18497-13-7] • EC No. 241-010-7
UN No. 2507 • ADR 8 III • WGK 2
Danger H301-H334-H314-H317

Type analysis:
Assay (on Pt). ..... ~40 %

9014.1	1 g	glass	113,85 €
9014.2	5 g	glass	456,90 €

Hexadecanoic acid
▶ Palmitic acid see p. 2190

1-Hexadecanol
▶ Cetyl alcohol see p. 1888

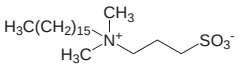
1-Hexadecene

1-Hexadecene
≥90 %
Ceten
$C_{16}H_{32}$
M 224,43 g/mol
D 0,78 • bp 274 °C
mp 4 °C • flp 132 °C
[629-73-2] • EC No. 211-105-8
WGK 1
Danger H304

Type analysis:
Assay (GC). ..... ≥90 %

3834.1	500 ml	glass	75,15 €

N-Hexadecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate



N-Hexadecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate

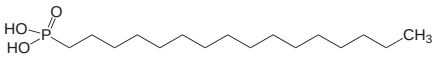
≥98 %, for biochemistry
Zwitterionic detergent
Sulfobetaine-16, SB-16
$C_{21}H_{45}NO_3S$
M 391,7 g/mol
[2281-11-0]
WGK 1

Warning H315-H319-H335

Typ analysis:
Assay (HPLC).....≥98,0 %
pH value (1 % in H_2O).....5,0-8,0
Loss on drying.....≤2,0 %

1823.1	5 g	glass	57,95 €
1823.2	25 g	glass	156,85 €

Hexadecylphosphonic acid



Hexadecylphosphonic acid

Suitable for the production and modification of nanoparticles.
HDPA
$C_{16}H_{35}O_3P$
M 306,42 g/mol
mp 88-93 °C
Storage temp.: +4 °C
[4721-17-9]
WGK 3

Type analysis:
Melting point.....88-93 °C

8466.1	1 g	glass	38,60 €
8466.2	5 g	glass	145,05 €

Hexadecyl-trimethyl-ammoniumbromide

▶ Cetyltrimethylammonium bromide (CTAB) see p. 1888

Hexadeuteroacetone

▶ Acetone D6 see p. 1762

Hexadeuteroethanol

▶ Ethanol D6 see p. 1977

2,4-Hexadienoic acid

▶ Sorbic acid see p. 2355

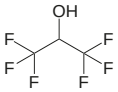
Hexafluoroisopropanol

▶ 1,1,1,3,3,3-Hexafluoro-2-propanol see p. 2040

Hexafluoroisopropanol D2

▶ 1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2) see p. 2040

1,1,1,3,3,3-Hexafluoro-2-propanol



1,1,1,3,3,3-Hexafluoro-2-propanol

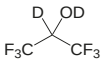
PEPTIPURE® ≥99 %, for (peptide) synthesis
HFIPA, HFIP, Hexafluoroisopropanol
$C_3H_2F_6O$
M 168,04 g/mol
D 1,596 • bp 58 °C
mp -4 °C
[920-66-1] • EC No. 213-059-4
UN No. 3265 • ADR 8 II • WGK 1

Danger H290-H302+H332-H314

Typ analysis:
Assay (GC).....≥99,0 %
Colour (Hazen).....≤10

2473.1	10 ml	glass	39,70 €
2473.2	25 ml	glass	83,75 €
2473.3	100 ml	glass	299,95 €

1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2)



1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2)

99 Atom%D
For nuclear magnetic resonance spectroscopy.
HFIP-D2, Hexafluoroisopropanol D2
$C_3D_2F_6O$
M 170,05 g/mol
D 1,62 • bp 58 °C
mp -4 °C
[38701-74-5] • EC No. 254-091-9
UN No. 3265 • ADR 8 II • WGK 1

Danger H290-H314-H302+H332

Type analysis:
Deuterising degree.....≥99 %
Water (KF, H_2O+D_2O).....≤0,1 %

9909.1	1 ml	glass ampoule	123,10 €

Hexahydrobenzene

▶ Cyclohexane see p. 1916

Hexahydrophenol

▶ Cyclohexanol see p. 1917

Hexahydropyridine

▶ Piperidine see p. 2213

Hexahydrothymol

▶ Menthol see p. 2126
▶ DL-Menthol see p. 2126

1,2,3,5/4,6-Hexahydroxy-cyclohexane

▶ meso-Inositol see p. 2068

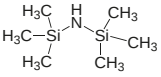
3,3',4',5,5',7-Hexahydroxy-flavone

▶ Myricetin see p. 2150

Hexalin

▶ Cyclohexanol see p. 1917

1,1,1,3,3,3-Hexamethyl-disilazane (HMDS)



1,1,1,3,3,3-Hexamethyl-disilazane (HMDS)

≥98 %, for GC
Silylation reagent
HMDS, Bis(trimethylsilyl)-amine
$C_6H_{19}NSi_2$
M 161,40 g/mol
D ~0,77 • bp 126 °C
mp -82 °C • flp 9 °C
[999-97-3] • EC No. 213-668-5
UN No. 1992 • ADR 3 (6.1) II • WGK 2

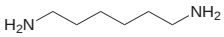
Danger
H225-H302-H311+H331-H412

Type analysis:
Appearance.....clear, colourless-yellowish liquid
Assay (GC).....≥98 %

3840.3	10 ml	glass	13,90 €
3840.1	50 ml	glass	18,20 €
3840.2	250 ml	glass	36,45 €
3840.5	500 ml	glass	50,45 €
3840.4	1 l	glass	88,05 €
Original pack 6 x 1 l			83,65/1 l

For further information, please see page 1628

Hexamethylene diamine



Hexamethylene diamine

≥99,5 %
1,6-Diaminohexane
$C_6H_{16}N_2$
M 116,21 g/mol
D ~0,84
mp 38-42 °C • flp 80 °C
[124-09-4] • EC No. 204-679-6
UN No. 2280 • ADR 8 III • WGK 1

Danger H314-H302+H312-H335

Type analysis:
Assay (titr.). ..... ≥99,5 %
Water (KF). ..... ≤0,1 %
We recommend to melt the product in a heating bath prior to use (mp 38-42 °C).

4465.1	100 g	glass	17,75 €
4465.2	250 g	glass	30,00 €
4465.3	1 kg	glass	57,95 €
Original pack 6 x 1 kg			55,05/1 kg

Hexamethylene pararosaniline chloride

▶ Crystal violet (C.I. 42555) see p. 1914

Hexamethylene tetramine

Urotropin, Methenamine, Hexamine
$C_6H_{12}N_4$
M 140,19 g/mol
D 1,33
mp ~263 °C (subl.) • flp 250 °C
Solubility: 895 g/l (H_2O, 20 °C)
[100-97-0] • EC No. 202-905-8
UN No. 1328 • ADR 4.1 III • WGK 1

Warning H228-H317

Hexamethylene tetramine

ROTIPURAN® ≥99 %, p.a., ACS

Guarantee analysis:
Assay (acidim.). ..... ≥99,0 %
pH (10 % solution). 8,0-9,5
In H_2O insoluble matter. ..... ≤0,01 %
Loss on drying. ..... ≤2,0 %
Ash content (as SO_4). ..... ≤0,05 %
Chloride (Cl). ..... ≤0,002 %
Sulphate (SO_4). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,001 %
Aluminium (Al). ..... ≤0,0005 %
Barium (Ba). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Chromium (Cr). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %
Zinc (Zn). ..... ≤0,0005 %

4366.1	100 g	plastic	16,70 €
4366.2	500 g	plastic	29,60 €
Original pack 6 x 500 g			28,12/500 g
4366.3	1 kg	plastic	48,30 €
Original pack 6 x 1 kg			45,89/1 kg
4366.4	2,5 kg	plastic	96,25 €

Hexamethylene tetramine

≥99 %, extra pure

Type analysis:
Assay (acidim.). ..... 99,0-100,5 %
In H_2O insoluble matter. ..... ≤0,01 %
Loss on drying. ..... ≤2,0 %
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,001 %

4484.1	500 g	plastic	26,35 €
Original pack 6 x 500 g			25,03/500 g
4484.2	1 kg	plastic	40,75 €
Original pack 6 x 1 kg			38,71/1 kg
4484.3	2,5 kg	plastic	82,25 €
4484.7	25 kg	plastic	471,95 €

Hexamine

▶ Hexamethylene tetramine see p. 2041

Hexanal

▶ Caproic aldehyde see p. 1875

n-Hexane

1-Methylpentane
C_6H_{14}
M 86,18 g/mol
D 0,66 • bp 69 °C
mp -95 °C • flp -26 °C
[110-54-3] • EC No. 203-777-6
UN No. 1208 • ADR 3 II • WGK 2

Danger
H225-H315-H304-H336-H361f-H373-H411

n-Hexane

NEW

ROTISOLV® ≥99 %, MOSH/MOAH

Suitable for MOSH/MOAH analysis.

Guarantee analysis:
Assay (GC, TS). ..... ≥99,0 %
Assay (isomers). ..... ≥99,8 %
Colour (APHA). ..... ≤10
MOSH test (GC/FID). ..... ≤5 ng/ml
MOAH test (LC/UV). ..... ≤5 ng/ml
GC/EDC (1,2,4-trichlorobenzene to decachlorobiphenyl as lindane). ..... ≤3 pg/ml
Water (KF). ..... ≤0,02 %
Evaporation residue. ..... ≤0,0003 %
Filtered through a 0,2 µm membrane and filled under protective gas.

0840.1	2,5 l	glass	127,95 €
Original pack 4 x 2,5 l			121,55/2,5 l

n-Hexane

ROTISOLV® HPLC

Guarantee analysis:
Assay (GC). ..... ≥98 %
Water (KF). ..... ≤0,005 %
Free acid. ..... ≤0,001 %
Non volatile matter. ..... ≤0,0003 %
Transmission:
260 nm. ..... ≥99 %
250 nm. ..... ≥98 %
230 nm. ..... ≥95 %
220 nm. ..... ≥85 %
210 nm. ..... ≥50 %
200 nm. ..... ≥25 %
Filtered through 0,2 µm membrane and filled under protective gas.

7339.2	1 l	glass	40,75 €
Original pack 6 x 1 l			38,71/1 l
7339.1	2,5 l	glass	84,40 €
Original pack 4 x 2,5 l			80,18/2,5 l

For further information, please see page 1650

n-Hexane

ROTISOLV® ≥95 %, GC Ultra Grade

For gaschromatographic residue analysis.

Guarantee analysis:
Assay (GC). ..... ≥95 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,005 %
Free acid (as CH_3COOH). ..... ≤0,001 %
Evaporation residue. ..... ≤0,0001 %
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤3 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
PAH-test (less than 2 ppb, HPLC). ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

KK48.1	2,5 l	glass	103,75 €
Original pack 4 x 2,5 l			98,56/2,5 l

n-Hexane

ROTISOLV® ≥99 %, Pestilyse® plus

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:
Assay (GC). ..... ≥99,0 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,005 %
Free acid (as CH_3COOH). ..... ≤0,002 %
Evaporation residue. ..... ≤0,0001 %
GC/FID suitability (as 2-octanol). ..... ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ..... ≤10 ng/l
GC/ECD pesticides (as lindane). ..... ≤2 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
Oil index (any hydrocarbon C_{10}-C_{40}). ..... ≤0,05 mg/l
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD volatile impurities (as ethylene dibromide). ..... ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC). ..... complies
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb

7573.1	2,5 l	glass	122,05 €
Original pack 4 x 2,5 l			115,95/2,5 l

n-Hexane

ROTISOLV® ≥99 %, Pestilyse®

For residue and environmental analysis.

Guarantee analysis:

Assay (GC). ≥99,0 %
Water (KF). ≤0,01 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
GC/ECD (individual signal as lindane). ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l

T861.2	1 l	glass	52,15 €
Original pack 6 x 1 l			49,54/1 l
T861.1	2,5 l	glass	121,40 €
Original pack 4 x 2,5 l			115,33/2,5 l

n-Hexane

ROTISOLV® ≥97,5 %, Pestilyse®

For residue and environmental analysis.

Guarantee analysis:

Assay (GC). ≥97,5 %
Water (KF). ≤0,02 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
GC/ECD (individual signal as lindane). ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l

T165.2	1 l	glass	44,65 €
Original pack 6 x 1 l			42,42/1 l
T165.1	2,5 l	glass	102,05 €
Original pack 4 x 2,5 l			96,95/2,5 l
T165.3	4 l	glass	119,25 €

n-Hexane

ROTISOLV® ≥96 %, Pestilyse® plus

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:

Assay (GC). ≥96,0 %
Colour (APHA). ≤5
Water (KF). ≤0,005 %
Free acid (as CH_3COOH). ≤0,002 %
Evaporation residue. ≤0,0001 %
GC/FID suitability (as 2-octanol). ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤2 ng/l
GC/NPD pesticides (as parathion). ≤5 ng/l
Oil index (any hydrocarbon C_{10}-C_{40}). ≤0,05 mg/l
GC/ECD volatile impurities (as ethylene dibromide). ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC). complies
Fluorescence (as quinine):
254 nm. ≤1 ppb
365 nm. ≤1 ppb

7567.1	2,5 l	glass	98,40 €
Original pack 4 x 2,5 l			93,48/2,5 l

n-Hexane

ROTISOLV® ≥99 %, UV/IR-Grade

For chromatography and spectroscopy.

Guarantee analysis:

Assay (GC). ≥99 %
Water (KF). ≤0,005 %
Acidity. ≤0,005 meq/g
Evaporation residue. ≤0,005 %
Fluorescence (as quinine):
254 nm. ≤1,0 ppb
365 nm. ≤1,0 ppb
Transmission:
245 nm. ≥98 %
225 nm. ≥90 %
217 nm. ≥80 %
210 nm. ≥50 %
195 nm. ≥10 %

T908.1	2,5 l	glass	109,55 €
Original pack 4 x 2,5 l			104,07/2,5 l

n-Hexane

ROTIDRY® Sept ≥99 % (≤30 ppm H_2O)

Dried; in a septum bottle

Guarantee analysis:

Assay (GC). ≥99 %
Colour (APHA). ≤10
Water (KF). ≤0,003 %
Acidity (as CH_3COOH). ≤0,001 %
Evaporation residue. ≤0,0005 %

5180.1	250 ml	glass	44,00 €

n-Hexane

ROTIDRY® ≥99 % (≤50 ppm H_2O)

Dried; for analysis and organic synthesis.

Guarantee analysis:

Assay (GC). ≥99,0 %
Colour (Hazen). ≤10
Water (KF). ≤0,005 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
Filtered through a membrane and filled under protective gas.

AE05.1	1 l	glass	69,35 €
Original pack 6 x 1 l			65,88/1 l

n-Hexane

ROTIPURAN® ≥99 %, p.a., ACS

Guarantee analysis:

Assay (GC). ≥99,0 %
Colour (Hazen). ≤10
Water ≤0,01 %
Alkalinity. ≤0,0002 meq/g
Acidity. ≤0,0002 meq/g
Thiophene. complies
Aromatic compounds (as benzene). ≤0,01 %
Sulphur compounds (as S). ≤0,005 %
Aluminium (Al). ≤0,00005 %
Barium (Ba). ≤0,00001 %
Lead (Pb). ≤0,00001 %
Boron (B). ≤0,000002 %
Cadmium (Cd). ≤0,000005 %
Calcium (Ca). ≤0,00005 %
Chromium (Cr). ≤0,000002 %
Iron (Fe). ≤0,00001 %
Cobalt (Co). ≤0,000002 %
Copper (Cu). ≤0,000002 %
Magnesium (Mg). ≤0,00001 %
Manganese (Mn). ≤0,000002 %
Nickel (Ni). ≤0,000002 %
Zinc (Zn). ≤0,00001 %
Tin (Sn). ≤0,00001 %
Evaporation residue. ≤0,001 %
Matter discoloured by H_2SO_4 (Hazen). ≤10

4723.1	1 l	glass	76,25 €
Original pack 6 x 1 l			72,44/1 l
4723.2	2,5 l	glass	166,10 €
Original pack 4 x 2,5 l			157,80/2,5 l
4723.3	5 l	aluminium	310,70 €
Original pack 2 x 5 l			295,17/5 l
4723.5	10 l	tinplate	579,45 €
4723.4	25 l	tinplate	1321,20 €

n-Hexane

≥99 %, for synthesis

Type analysis:

Appearance. clear, colourless
Assay (GC). ≥99 %
Density (15 °C). 0,662-0,666
Aromatic compounds (GC). ≤0,001 %
Evaporation residue. ≤0,001 %

CP47.1	1 l	glass	46,15 €
Original pack 6 x 1 l			43,84/1 l
CP47.2	2,5 l	glass	102,05 €
Original pack 4 x 2,5 l			96,95/2,5 l
CP47.4	5 l	aluminium	184,40 €
Original pack 2 x 5 l			175,18/5 l
CP47.3	10 l	tinplate	341,75 €
CP47.5	25 l	tinplate	686,95 €

n-Hexane

≥95 %, for synthesis

Type analysis:

Appearance. clear, colourless
Assay (GC). ≥95 %
Aromatic compounds (GC). ≤0,001 %
Evaporation residue. ≤0,001 %
Density (15 °C). 0,663-0,667

3907.1	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l
3907.2	2,5 l	glass	66,55 €
Original pack 4 x 2,5 l			63,22/2,5 l
3907.5	5 l	aluminium	114,50 €
Original pack 2 x 5 l			108,78/5 l
3907.3	10 l	tinplate	214,50 €
3907.4	25 l	tinplate	439,70 €

iso-Hexane

▶ Isohexane see p. 2077

Hexanedioic acid

▶ Adipic acid see p. 1773

Hexane (isomers)

Hexane (isomers)

≥95 % (isomers), for synthesis

C_6H_{14}
M 86,18 g/mol
D ~0,67 • bp 65-70 °C
flp -26 °C
Solubility: 5,9 g/l (H_2O, 20 °C)
UN No. 1208 • ADR 3 II • WGK 2

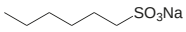
Danger H225-H304-H361-H373-H315-H336-H411-EUH066

Typ analysis:

Appearance. clear, colourless
Assay (isomers). ≥95,0 %
Boiling range. 65-70 °C
n-Hexane. 48-55 %
Aromatic compounds. ≤0,005 %
Benzene. ≤0,001 %
Sulphur (S). ≤0,0001 %
Density (15 °C). 0,670-0,680
Refractive index n_D^{20}. ≥1,3770

7782.1	1 l	glass	23,55 €
Original pack 6 x 1 l			22,37/1 l
7782.3	2,5 l	glass	36,45 €
Original pack 4 x 2,5 l			34,63/2,5 l
7782.5	5 l	aluminium	54,75 €
Original pack 2 x 5 l			52,01/5 l
7782.2	10 l	tinplate	97,75 €
7782.4	25 l	tinplate	193,40 €

Hexane-1-sulphonic acid sodium salt



Hexane-1-sulphonic acid sodium salt

≥98 %, for ion pair chromatography
Ion pair reagent for HPLC.
Sodium-1-hexane sulphonate
$C_6H_{13}NaO_3S$ • M 188,22 g/mol
[2832-45-3] • EC No. 220-601-3 • WGK 2

Guarantee analysis:

Assay (acidim.)	≥98,0 %
Water	≤2 %
A 200 nm (0,25 M in water)	≤0,1 AU
A 210 nm (0,25 M in water)	≤0,05 AU
A 220 nm (0,25 M in water)	≤0,04 AU
A 230 nm (0,25 M in water)	≤0,03 AU
A 240 nm (0,25 M in water)	≤0,01 AU
A 250 nm (0,25 M in water)	≤0,01 AU
A 260 nm (0,25 M in water)	≤0,01 AU

KK54.1	10 g	glass	47,20 €
KK54.2	25 g	glass	91,30 €
KK54.3	100 g	glass	272,55 €

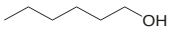
Hexanoic acid

▶ Caproic acid see p. 1875

n-Hexanol

▶ 1-Hexanol see p. 2043

1-Hexanol



1-Hexanol

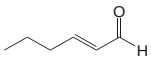
≥98 %, for synthesis
Hexyl alcohol, n-Hexanol
$C_6H_{14}O$ • M 102,18 g/mol
D 0,82 • bp 157 °C
mp -45 °C • flp 60 °C
Solubility: 5,9 g/l (H_2O, 20 °C)
[111-27-3] • EC No. 203-852-3
UN No. 2282 • ADR 3 III • WGK 1
Warning H302-H319-H226

Type analysis:

Appearance	colourless, clear liquid
Assay (GC)	≥98 %
Density (20 °C)	0,817-0,821 g/cm³

3847.1	1 l	glass	45,05 €
Original pack 6 x 1 l			42,80/1 l
3847.2	2,5 l	glass	98,40 €
Original pack 4 x 2,5 l			93,48/2,5 l

trans-Hexen-2-al



trans-Hexen-2-al

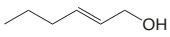
>96 %
$C_6H_{10}O$
M 98,12 g/mol
D 0,846 • bp 146 °C
flp 35 °C
[6728-26-3] • EC No. 229-778-1
UN No. 1988 • ADR 3 (6.1) III • WGK 2
Danger H226-H302-H311

Type analysis:

Assay (GC)	>96 %
Density (20 °C)	0,845-0,847

3757.1	25 ml	glass	67,65 €

trans-2-Hexen-1-ol



trans-2-Hexen-1-ol

≥97 %
$C_6H_{12}O$
M 100,16 g/mol
D 0,84 • bp 158-160 °C
flp 54 °C
[928-95-0] • EC No. 213-191-2
UN No. 1993 • ADR 3 III • WGK 2
Warning H226

Type analysis:

Assay (GC)	≥97 %
Density (d 20 °C/4 °C)	0,842-0,844

3756.1	5 ml	glass	29,60 €

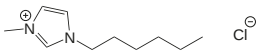
Hexyl alcohol

▶ 1-Hexanol see p. 2043

Hexyleneglucol

▶ 2-Methyl-2,4-pentanediol see p. 2140

1-Hexyl-3-methyl-imidazolium chloride (HMIM Cl)



1-Hexyl-3-methyl-imidazolium chloride (HMIM Cl)

≥98 %
Ionic liquid
HMIM Cl
$C_{10}H_{19}ClN_2$ • M 202,73 g/mol
D 1,041 • mp -75 °C
[171058-17-6] • WGK 3
Warning H315-H319

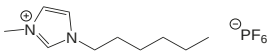
Type analysis:

Appearance	yellowish liquid
Assay	≥98 %
Water (KF)	≤1 %

2064.1	25 g	glass	252,65 €
2064.2	100 g	glass	439,70 €

Lit.: "**Dynamic Viscosities of a Series of 1-Alkyl-3-methylimidazolium Chloride Ionic Liquids and Their Binary Mixtures with Water at Several Temperatures**" E. Gomez, B. Gonzalez, A. Domínguez, E. Tojo, J. Tojo, *J. Chem. Eng. Data* **2006,** 51, 696-701.
For further information, please see page 1590

1-Hexyl-3-methyl-imidazolium-hexafluorophosphate (HMIM PF_6)



1-Hexyl-3-methyl-imidazolium-hexafluorophosphate (HMIM PF_6)

≥99 %
Ionic liquid
HMIM PF_6
$C_{10}H_{19}F_6N_2P$
M 312,24 g/mol
D 1,298
mp -61 °C
[304680-35-1]
WGK 3
Warning H315-H319-H335

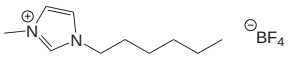
Type analysis:

Appearance	yellow to orange liquid
Assay	≥99 %
Water (KF)	≤0,025 %
Halogens	≤0,01 %

2069.1	25 g	glass	149,45 €
2069.2	100 g	glass	332,20 €

Lit.: "**Use of 1-alkyl-3-methylimidazolium hexafluorophosphate room temperature ionic liquids as chelate extraction solvent with 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione**" I. Naoki; D. Mika; K. Hitomi; H. Takaharu, *Talanta* **2005,** 65, 255-260.
"**On the solubilization of water with ethanol in hydrophobic hexafluoro-phosphate ionic liquids**" R. P. Swatloski, A. E. Visser, W. M. Reichert, G. A. Broker, L. M. Farina, J. D. Holbrey, R. D. Rogers, *Green Chem.* **2002,** 4, 81 – 87.
For further information, please see page 1590

1-Hexyl-3-methyl-imidazolium-tetrafluoroborate (HMIM BF_4)



1-Hexyl-3-methyl-imidazolium-tetrafluoroborate (HMIM BF_4)

≥99 %
Ionic liquid
HMIM BF_4
$C_{10}H_{19}BF_4N_2$
M 254,08 g/mol
D 1,148
mp -82 °C
[244193-50-8]
WGK 3

Warning H315-H319

Type analysis:

Appearance. ..... colourless to orange liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,025 %
Halogens. ..... ≤0,01 %

2070.1	25 g	glass	145,15 €
2070.2	100 g	glass	295,65 €

Lit.: "**Activity Coefficients at Infinite Dilution in 1-Alkyl-3-methylimidazolium Tetrafluoroborate Ionic Liquids**" G. M. Foco, S. B. Bottini, N. Quezada, J. C. de la Fuente, Cor J. Peters, *J. Chem. Eng. Data* **2006,** 51, 1088 –1091. "**Physical and electrochemical properties of 1-alkyl-3-methyl-imidazolium tetrafluoroborate for electrolyte**" T. Nishida; Y. Tashiro; M. Yamamoto, *J. Fluorine Chem.* **2003,** 120, 135-141.
For further information, please see page 1590

HFBA

▶ Heptafluorobutyric acid anhydride (HFBA) see p. 2037

HFIP

▶ 1,1,1,3,3,3-Hexafluoro-2-propanol see p. 2040

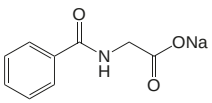
HFIPA

▶ 1,1,1,3,3,3-Hexafluoro-2-propanol see p. 2040

HFIP-D2

▶ 1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2) see p. 2040

Hippuric acid sodium salt hydrate



Hippuric acid sodium salt hydrate

≥99 %, cryst.
N-Benzoylglycine sodium salt
$C_9H_8NNaO_3 \cdot x\ H_2O$
M 201,16 + x H_2O g/mol
[532-94-5] • EC No. 208-548-4 • WGK 1

Type analysis:

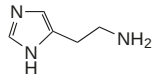
Appearance. ..... white powder
Assay (TLC). ..... ≥99 %

7507.1	25 g	plastic	96,25 €

HIS

▶ L-Histidine see p. 2044

Histamine dihydrochloride



· 2 HCl

Histamine dihydrochloride

≥98,5 %, for biochemistry
2-(4-Imidazolyl) ethylamine dihydrochloride
$C_5H_9N_3 \cdot 2\ HCl$
M 184,07 g/mol
Storage temp.: +4 °C
[56-92-8] • EC No. 200-298-4
WGK 1

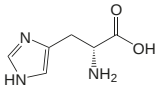
Danger H334-H335-H315-H319-H317

Typ analysis:

Assay (titr.). ..... ≥98,5 %
Solution (5 % in H_2O). ..... colourless
pH value (5 % in H_2O). 2,85-3,60
Loss on drying (105 °C, 3 h). ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %
Histidine. ..... ≤1 %
Sulphate (SO_4). ..... ≤0,1 %

4017.1	5 g	glass	32,80 €
4017.2	10 g	glass	54,75 €
4017.3	25 g	glass	107,40 €

D-Histidine



D-Histidine

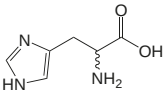
≥98 %, for biochemistry
D-3-Imidazol-4-ylalanine, H-D-His-OH
$C_6H_9N_3O_2$
M 155,2 g/mol
Storage temp.: +4 °C
[351-50-8] • EC No. 206-513-8
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in H_2O). ....+38,0° to +39,0°
Loss on drying. ..... ≤0,5 %

7880.1	5 g	plastic	48,30 €
7880.2	25 g	plastic	143,95 €

DL-Histidine



DL-Histidine

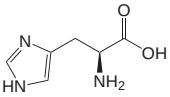
≥98,5 %, for biochemistry
3-Imidazol-4-ylalanine
$C_6H_9N_3O_2$
M 155,15 g/mol
Storage temp.: +4 °C
[4998-57-6] • EC No. 225-660-9
WGK 3

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... ≥98,5 %
Identity (IR). ..... complies
Heavy metals (as Pb). ..... ≤0,001 %
Ash content. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

8597.1	5 g	plastic	32,15 €
8597.2	25 g	plastic	94,50 €
8597.3	100 g	plastic	306,40 €

L-Histidine



L-3-Imidazol-4-yl-alanine, H-L-His-OH, HIS
$C_6H_9N_3O_2$
M 155,16 g/mol
mp 282 °C (dec.)
Solubility: ~32 g/l (H_2O, 20 °C)
[71-00-1] • EC No. 200-745-3
WGK 1

L-Histidine

CELLPURE® ≥99 %
For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. ..... +12,0° to +12,8°
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

1696.1	25 g	plastic	27,45 €
1696.2	100 g	plastic	59,05 €
1696.3	500 g	plastic	241,90 €
Original pack 6 x 500 g			229,81/500 g

L-Histidine

≥98,5 %, Ph.Eur., for biochemistry

Guarantee analysis:

Appearance. ..... white cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... clear, colourless
Specific rotation $[\alpha]_D^{20}$. ..... +11,4° to +12,4°
pH value (1 g, 50 ml H_2O). 7,0-8,5
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,2 %
Sulphated ash. ..... ≤0,1 %

3852.1	25 g	plastic	17,75 €
3852.3	100 g	plastic	48,30 €
3852.2	1 kg	plastic	364,45 €
Original pack 6 x 1 kg			346,23/1 kg

L-Histidine hydrochloride monohydrate

4-Imidazolyl-L-alanine
$C_6H_9N_3O_2 \cdot HCl \cdot H_2O$
M 209,63 g/mol
mp 259 °C (dec.)
Solubility: ~170 g/l (H_2O, 20 °C)
[5934-29-2] • EC No. 211-438-9 • WGK 1

L-Histidine hydrochloride monohydrate

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Specific rotation $[\alpha]_D^{20}$. ..... +9,2° to +10,6°
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... 18,22-18,68 %
Sulphate (SO_4). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Ash content. ..... ≤0,10 %

1697.1	25 g	plastic	23,15 €
1697.2	100 g	plastic	55,40 €
1697.3	500 g	plastic	222,00 €
Original pack 6 x 500 g			210,90/500 g

L-Histidine hydrochloride monohydrate

≥98,5 %, Ph.Eur., for biochemistry

Guarantee analysis:

Appearance. ..... white cryst. powder
Assay (dry substance). ..... 98,5-101 %
Identity. ..... complies
Appearance of solution. ..... clear, colourless
Specific rotation $[\alpha]_D^{20}$. ..... +9,2° to 10,6°
pH value 3,0-5,0
Ammonium (NH_4). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,03 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Sulphated ash. ..... ≤0,1 %
Water. ..... 7,0-10,0 %

9455.1	100 g	plastic	44,00 €
9455.3	250 g	plastic	93,45 €
9455.2	500 g	plastic	171,50 €
Original pack 6 x 500 g			162,93/500 g

HMDS

▶ 1,1,1,3,3,3-Hexamethyldisilazane (HMDS) see p. 2040

H_2N-PEG4-Alkyne

▶ H_2N-PEG4-Alkyne see p. 2193

H_2N-PEG3-Azide

▶ H_2N-PEG3-Azide see p. 2193

H_2N-PEG8-Azide

▶ H_2N-PEG8-Azide see p. 2194

Holmia

▶ Holmium(III) oxide see p. 2045

Holmium Standards

▶ Holmium ICP Standard Solution see p. 2363
▶ Holmium ICP Standard Solution see p. 2367

Holmium(III) oxide

Holmium(III) oxide

ROTI®METIC 99,99 % (4N)

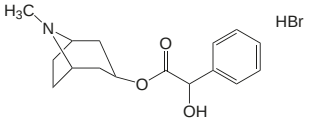
Diholmium trioxide, Holmia
Ho_2O_3
M 377,86 g/mol
D 8,4 • bp 3900 °C
mp 2330 °C
[12055-62-8] • EC No. 235-015-3 • WGK 1

Typ analysis:

Assay (metals basis). ..... 99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5338.1	10 g	plastic	232,10 €
5338.2	50 g	plastic	697,70 €

DL-Homatropine hydrobromide



DL-Homatropine hydrobromide

≥99 %, pure

Tropine mandelate hydrobromide
$C_{16}H_{21}NO_3 \cdot HBr$
M 356,25 g/mol
mp 214-217 °C (dec.)
[51-56-9] • EC No. 200-105-3
UN No. 1544 • ADR 6.1 III • WGK 3

Warning H302+H312+H332

Type analysis:

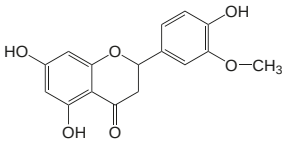
Assay (HPLC). ..... ≥99,0 %
pH (5 % in H_2O). 5,0-6,5
Loss on drying (100 °C, 2 h). ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %
Melting point (dec.). ..... 214-217 °C

7855.1	5 g	glass	69,80 €

Homidium bromide

▶ Ethidium bromide see p. 1978
▶ Ethidium bromide solution 1 % see p. 1978

Homoeriodictyol



Homoeriodictyol

ROTICHROM® HPLC

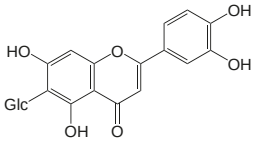
Reference substance for HPLC.
$C_{16}H_{14}O_6$
M 302,27 g/mol
mp 225 °C (dec.)
Storage temp.: +4 °C
[446-71-9] • EC No. 207-173-3

Type analysis:

Purity (HPLC). ..... ≥99 %

7585.1	10 mg	glass	188,15 €

Homoorientin



Homoorientin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Adonis vernalis*
Isoorientin
$C_{21}H_{20}O_{11}$
M 448,38 g/mol
mp ~245 °C
Storage temp.: +4 °C
[4261-42-1]

Type analysis:

Purity (HPLC). ..... ≥99 %

6002.1	5 mg	glass	241,90 €

HO-PEG2-Azide

▶ HO-PEG2-Azide see p. 2193

Hormodin

▶ Indole-3-butyric acid see p. 2066

Horseradish peroxidase

▶ Peroxidase see p. 2200

HOSu

▶ N-Hydroxysuccinimide see p. 2060

HPLC solvents

Art. No.	Description	Page
7336	Acetic acid ethyl ester	1758
7328	Acetone	1760
T195	Acetonitrile	1762
8825	Acetonitrile	1762
HN44	Acetonitrile	1763
7330	Acetonitrile	1763
CN20	Acetonitrile	1763
6827	Acetonitrile	1763
T178	1-Butanol	1859
T175	tert-Butyl methyl ether	1863
7333	Cyclohexane	1916
7334	Dichloromethane	1935
0702	N,N-Dimethylformamide (DMF)	1948
0728	Dimethyl sulphoxide (DMSO)	1950
X949	1,4-Dioxane	1952
P076	Ethanol	1975
6828	n-Heptane	2037
7337	n-Heptane	2037
7339	n-Hexane	2041
T176	Isohexane	2077
7340	Isooctane	2078
X948	Methanol	2131
7342	Methanol	2131
KK39	Methanol	2131
P717	Methanol	2131
CN99	n-Pentane	2195
0731	Petroleum ether 40-60 °C	2203
T177	1-Propanol	2239
7343	2-Propanol	2239
7344	Tetrahydrofuran	2400
7346	Toluene	2411
7331	Trichloromethane/Chloroform	2415
A511	Water	2439

HRP

▶ Peroxidase see p. 2200

HRP detection kit with biotin and streptavidine

▶ Roti®-Strept/HRP-Kit see p. 2299

HRP substrate

▶ Roti®-Lumin see p. 2287
▶ Roti®-Lumin plus see p. 2287
▶ Roti®-Lumin ultra see p. 2287

HRP substrate kit

▶ Roti®-DAB Kit see p. 2272

Hünigs base

▶ N,N-Diisopropylethylamine (DIPEA) see p. 1944

Humic acid

Humic acid

virgin

[1415-93-6] • EC No. 215-809-6

Type analysis:

Appearance..... brown granules
Assay of humic acid. ..... ~30-40 %
Percentage of moisture. ..... ~45 %
Prepared from the sodium salt of humic acid found in fine earthy brown coal (Kassel brown).

7821.1	100 g	plastic	22,50 €
7821.2	500 g	plastic	38,60 €
Original pack 6 x 500 g			36,67/500 g
7821.3	1 kg	plastic	64,40 €
Original pack 6 x 1 kg			61,18/1 kg

Humic acid sodium salt

Humic acid sodium salt

~45-70 %

[68131-04-4] • EC No. 268-608-0
WGK 1

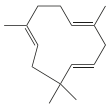
Warning H315-H319

Type analysis:

Assay of humic acid. ..... ~45-70 %
Loss on drying (4 h, 105 °C). ..... ~25 %

7824.5	500 g	plastic	21,40 €
Original pack 6 x 500 g			20,33/500 g
7824.1	1 kg	plastic	34,30 €
Original pack 6 x 1 kg			32,59/1 kg
7824.2	10 kg	plastic	165,05 €
7824.4	25 kg	plastic	322,00 €

α-Humulene



α-Humulene

ROTICHROM® GC

Reference substance for GC
$C_{15}H_{24}$
M 204,36 g/mol
D ~0,89 • bp 106-107 °C
flp 90 °C
Storage temp.: +4 °C
[6753-98-6] • EC No. 229-816-7

Warning H315-H319-H335

Type analysis:

Purity (GC). ..... ≥95 %

9385.1	100 mg	plastic	188,15 €

Hyaluronidase

M ~70000 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[37326-33-3] • EC No. 253-464-3
WGK 1

Danger H334

Hyaluronidase

~300 U/mg, free from salt, lyophilised

ex ovine testes

Type analysis:

Activity. ..... ~300 U/mg

9980.1	250 mg	glass	34,30 €
9980.2	1 g	glass	94,50 €

For further information, please see page 1317

Hyamine® 1622-solution (0,004 M)

▶ Benzethonium chloride solution see p. 1830

Hybridisation buffers

▶ Roti®-Hybri-Quick see p. 2285
▶ Roti®-Stock 20x SSC see p. 2298

Hydrazinium sulphate

Hydrazinium sulphate

≥99 %, p.a., ACS

Reducing agent; reagent for separation of Po and Te.
Hydrazonium sulphate, Hydrazine sulphate
$H_6N_2O_4S$
M 130,12 g/mol
D 1,37
mp 254 °C (dec.)
Solubility: 30 g/l (H_2O, 20 °C)
[10034-93-2] • EC No. 233-110-4
UN No. 3288 • ADR 6.1 III • WGK 3

Danger

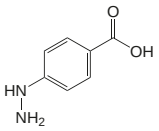
H301+H311+H331-H350-H400-H410-H317

Guarantee analysis:

Assay (iodom.). ..... ≥99,0 %
In H_2O insoluble matter. ..... ≤0,005 %
Ash content (as SO_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Barium (Ba). ..... ≤0,0005 %
Beryllium (Be). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,001 %
Cadmium (Cd). ..... ≤0,0005 %
Cobalt (Co). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,001 %
Indium (In). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,001 %
Manganese (Mn). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,001 %
Silicon (Si). ..... ≤0,0005 %
Strontium (Sr). ..... ≤0,0005 %

HN96.1	100 g	plastic	19,90 €
HN96.2	500 g	plastic	54,30 €
Original pack 6 x 500 g			51,59/500 g

4-Hydrazinobenzoic acid



4-Hydrazinobenzoic acid

≥97 %, for synthesis

$C_7H_8N_2O_2$
M 152,15 g/mol
mp 216-218 °C
[619-67-0] • EC No. 210-609-5
WGK 3

Warning H315-H319-H335

Type analysis:

Appearance. ..... white to yellow-beige powder
Assay. ..... ≥97,0 %
Loss on drying. ..... ≤1,0 %

4539.1	10 g	glass	32,15 €
4539.2	50 g	glass	82,25 €
4539.3	100 g	glass	136,00 €

Hydrazonium sulphate

▶ Hydrazinium sulphate see p. 2046

Hydrobromic acid Ultra-quality

Hydrobromic acid Ultra-quality

ROTIPURAN® Ultra 48 %

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis. The quality for highest demands on purity.

HBr
M 80,91 g/mol
D 1,49 • bp 126 °C
mp ~-11 °C
[10035-10-6] • EC No. 233-113-0
UN No. 1788 • ADR 8 III • WGK 1

Danger H314-H335-H290

Guarantee analysis:

Assay (w/w). ..... 44-49 %
Aluminium (Al). ..... ≤100 ppt
Barium (Ba). ..... ≤100 ppt
Beryllium (Be). ..... ≤100 ppt
Lead (Pb). ..... ≤1 ppt
Cadmium (Cd). ..... ≤100 ppt
Cesium (Cs). ..... ≤10 ppt
Calcium (Ca). ..... ≤100 ppt
Cerium (Ce). ..... ≤10 ppt
Chromium (Cr). ..... ≤100 ppt
Dysprosium (Dy). ..... ≤10 ppt
Iron (Fe). ..... ≤100 ppt
Erbium (Er). ..... ≤10 ppt
Europium (Eu). ..... ≤10 ppt
Gadolinium (Gd). ..... ≤10 ppt
Gallium (Ga). ..... ≤100 ppt
Gold (Au). ..... ≤100 ppt
Hafnium (Hf). ..... ≤10 ppt
Holmium (Ho). ..... ≤10 ppt
Indium (In). ..... ≤10 ppt
Potassium (K). ..... ≤100 ppt
Cobalt (Co). ..... ≤100 ppt
Copper (Cu). ..... ≤100 ppt
Lanthanum (La). ..... ≤10 ppt
Lithium (Li). ..... ≤100 ppt
Lutetium (Lu). ..... ≤10 ppt
Magnesium (Mg). ..... ≤100 ppt
Manganese (Mn). ..... ≤100 ppt
Molybdenum (Mo). ..... ≤100 ppt
Sodium (Na). ..... ≤100 ppt
Neodymium (Nd). ..... ≤10 ppt
Nickel (Ni). ..... ≤100 ppt
Niobium (Nb). ..... ≤10 ppt
Palladium (Pd). ..... ≤100 ppt
Platinum (Pt). ..... ≤100 ppt
Praseodymium (Pr). ..... ≤10 ppt
Rhenium (Re). ..... ≤100 ppt
Rhodium (Rh). ..... ≤100 ppt
Rubidium (Rb). ..... ≤100 ppt
Ruthenium (Ru). ..... ≤100 ppt
Samarium (Sm). ..... ≤10 ppt
Scandium (Sc). ..... ≤100 ppt
Silver (Ag). ..... ≤100 ppt
Strontium (Sr). ..... ≤100 ppt
Tellur (Te). ..... ≤10 ppt
Terbium (Tb). ..... ≤10 ppt
Thallium (Tl). ..... ≤10 ppt
Thorium (Th). ..... ≤1 ppt
Thulium (Tm). ..... ≤10 ppt
Titanium (Ti). ..... ≤100 ppt
Uranium (U). ..... ≤1 ppt
Vanadium (V). ..... ≤100 ppt
Bismuth (Bi). ..... ≤100 ppt
Tungsten (W). ..... ≤100 ppt
Ytterbium (Yb). ..... ≤10 ppt
Yttrium (Y). ..... ≤10 ppt
Zinc (Zn). ..... ≤100 ppt
Tin (Sn). ..... ≤100 ppt
Zirconium (Zr). ..... ≤10 ppt

HN67.3	250 ml	plastic (FEP)	596,65 €
HN67.1	500 ml	plastic (FEP)	811,65 €
HN67.2	1 l	plastic (FEP)	1278,20 €
Original pack 6 x 1 l			1214,29/1 l
HN67.4	2 l	plastic (FEP)	1858,70 €

For further information, please see page 1729

Hydrochloric acid in ethanol

▶ HCl-ethanol solution 0,75 % see p. 2033
▶ HCl-ethanol solution 3 % see p. 2033

Hydrochloric acid Ultra-quality

Hydrochloric acid Ultra-quality

ROTIPURAN® Ultra 34 %

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis.

Hydrogen chloride
HCl
M 36,46 g/mol
D 1,18 • bp 85 °C
mp -26 °C
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

Danger H314-H290-H335

Guarantee analysis:

Assay (w/w). ..... 32-35 %
Aluminium (Al). ..... ≤20 ppt
Antimony (Sb). ..... ≤20 ppt
Arsenic (As). ..... ≤50 ppt
Barium (Ba). ..... ≤10 ppt
Beryllium (Be). ..... ≤10 ppt
Lead (Pb). ..... ≤10 ppt
Boron (B). ..... ≤100 ppt
Cadmium (Cd). ..... ≤10 ppt
Cesium (Cs). ..... ≤10 ppt
Calcium (Ca). ..... ≤10 ppt
Cerium (Ce). ..... ≤10 ppt
Chromium (Cr). ..... ≤10 ppt
Dysprosium (Dy). ..... ≤1 ppt
Iron (Fe). ..... ≤10 ppt
Erbium (Er). ..... ≤1 ppt
Europium (Eu). ..... ≤1 ppt
Gadolinium (Gd). ..... ≤1 ppt
Gallium (Ga). ..... ≤10 ppt
Gold (Au). ..... ≤50 ppt
Hafnium (Hf). ..... ≤10 ppt
Holmium (Ho). ..... ≤1 ppt
Indium (In). ..... ≤1 ppt
Potassium (K). ..... ≤10 ppt
Cobalt (Co). ..... ≤10 ppt
Copper (Cu). ..... ≤10 ppt
Lanthanum (La). ..... ≤1 ppt
Lithium (Li). ..... ≤10 ppt
Lutetium (Lu). ..... ≤10 ppt
Magnesium (Mg). ..... ≤10 ppt
Manganese (Mn). ..... ≤10 ppt
Molybdenum (Mo). ..... ≤10 ppt
Sodium (Na). ..... ≤10 ppt
Neodymium (Nd). ..... ≤1 ppt
Nickel (Ni). ..... ≤20 ppt
Niobium (Nb). ..... ≤1 ppt
Praseodymium (Pr). ..... ≤1 ppt
Mercury (Hg). ..... ≤50 ppt
Rhenium (Re). ..... ≤10 ppt
Rhodium (Rh). ..... ≤10 ppt
Rubidium (Rb). ..... ≤10 ppt
Ruthenium (Ru). ..... ≤10 ppt
Samarium (Sm). ..... ≤1 ppt
Scandium (Sc). ..... ≤10 ppt
Silver (Ag). ..... ≤10 ppt
Strontium (Sr). ..... ≤10 ppt
Tellur (Te). ..... ≤1 ppt
Terbium (Tb). ..... ≤1 ppt
Thallium (Tl). ..... ≤10 ppt
Thorium (Th). ..... ≤1 ppt
Thulium (Tm). ..... ≤1 ppt
Titanium (Ti). ..... ≤10 ppt
Uranium (U). ..... ≤1 ppt
Vanadium (V). ..... ≤10 ppt
Bismuth (Bi). ..... ≤10 ppt
Tungsten (W). ..... ≤10 ppt
Ytterbium (Yb). ..... ≤1 ppt
Yttrium (Y). ..... ≤1 ppt
Zinc (Zn). ..... ≤10 ppt
Tin (Sn). ..... ≤20 ppt
Zirconium (Zr). ..... ≤10 ppt

HN63.1	250 ml	plastic (PFA)	364,45 €
HN63.2	500 ml	plastic (PFA)	547,20 €
HN63.3	1 l	plastic (PFA)	901,95 €
Original pack 6 x 1 l			856,85/1 l
HN63.4	2 l	plastic (PFA)	1321,20 €

For further information, please see page 1729

Hydrochloric acid Supra-quality

Hydrochloric acid Supra-quality

ROTIPURAN® Supra 35 %

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

Hydrogen chloride
HCl
M 36,46 g/mol
D ~ 1,18 • bp 85 °C • mp -26 °C
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

Danger H314-H290-H335

Guarantee analysis:

Assay (w/w)	34-37 %
Colour (APHA)	≤10
Bromide (Br)	≤0,001 %
Free chlorine (Cl_2)	≤0,00005 %
Total Phosphorous (P)	≤0,000001 %
Total Sulfur (S)	≤0,00003 %
Aluminium (Al)	≤1 ppb
Antimony (Sb)	≤0,5 ppb
Arsenic (As)	≤0,5 ppb
Barium (Ba)	≤0,1 ppb
Beryllium (Be)	≤0,1 ppb
Lead (Pb)	≤0,1 ppb
Boron (B)	≤1 ppb
Cadmium (Cd)	≤0,1 ppb
Cesium (Cs)	≤0,1 ppb
Calcium (Ca)	≤1 ppb
Cerium (Ce)	≤0,1 ppb
Chromium (Cr)	≤0,5 ppb
Dysprosium (Dy)	≤0,1 ppb
Iron (Fe)	≤1 ppb
Erbium (Er)	≤0,1 ppb
Europium (Eu)	≤0,1 ppb
Gadolinium (Gd)	≤0,1 ppb
Gallium (Ga)	≤0,1 ppb
Gold (Au)	≤0,5 ppb
Hafnium (Hf)	≤0,1 ppb
Holmium (Ho)	≤0,1 ppb
Indium (In)	≤0,1 ppb
Potassium (K)	≤1 ppb
Cobalt (Co)	≤0,1 ppb
Copper (Cu)	≤0,5 ppb
Lanthanum (La)	≤0,1 ppb
Lithium (Li)	≤0,1 ppb
Lutetium (Lu)	≤0,1 ppb
Magnesium (Mg)	≤0,5 ppb
Manganese (Mn)	≤0,1 ppb
Molybdenum (Mo)	≤0,1 ppb
Sodium (Na)	≤1 ppb
Neodymium (Nd)	≤0,1 ppb
Nickel (Ni)	≤0,5 ppb
Niobium (Nb)	≤0,1 ppb
Praseodymium (Pr)	≤0,1 ppb
Mercury (Hg)	≤0,1 ppb
Rhenium (Re)	≤0,1 ppb
Rhodium (Rh)	≤0,1 ppb
Rubidium (Rb)	≤0,1 ppb
Ruthenium (Ru)	≤0,1 ppb
Samarium (Sm)	≤0,1 ppb
Scandium (Sc)	≤0,1 ppb
Selenium (Se)	≤1 ppb
Silver (Ag)	≤1 ppb
Strontium (Sr)	≤0,1 ppb
Tellur (Te)	≤0,1 ppb
Terbium (Tb)	≤0,1 ppb
Thallium (Tl)	≤0,1 ppb
Thorium (Th)	≤0,1 ppb
Thulium (Tm)	≤0,1 ppb
Titanium (Ti)	≤0,5 ppb
Uranium (U)	≤0,1 ppb
Vanadium (V)	≤0,5 ppb
Bismuth (Bi)	≤0,1 ppb
Tungsten (W)	≤0,1 ppb
Ytterbium (Yb)	≤0,1 ppb
Yttrium (Y)	≤0,1 ppb
Zinc (Zn)	≤1 ppb
Tin (Sn)	≤0,5 ppb
Zirconium (Zr)	≤0,1 ppb

HN53.1	500 ml	plastic	76,90 €
HN53.2	1 l	plastic	117,75 €
Original pack 6 x 1 l			111,86/1 l
HN53.3	2,5 l	plastic	132,15 €
Original pack 4 x 2,5 l			125,54/2,5 l
HN53.4	4 l	plastic	203,20 €

For further information, please see page 1729

Hydrochloric acid Supra-quality

Hydrochloric acid Supra-quality

ROTIPURAN® Supra 30 %

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,14 • bp 85 °C • mp -26 °C
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

Danger H314-H290-H335

Guarantee analysis:

Assay (w/w)	29-31 %
Colour (APHA)	≤10
Ammonium (NH_4)	≤0,00005 %
Bromide (Br)	≤0,001 %
Free chlorine (Cl_2)	≤0,00005 %
Total Phosphorous (P)	≤0,000001 %
Total Sulfur (S)	≤0,00003 %
Aluminium (Al)	≤1 ppb
Antimony (Sb)	≤0,5 ppb
Arsenic (As)	≤0,5 ppb
Barium (Ba)	≤0,1 ppb
Beryllium (Be)	≤0,1 ppb
Lead (Pb)	≤0,1 ppb
Boron (B)	≤1 ppb
Cadmium (Cd)	≤0,1 ppb
Cesium (Cs)	≤0,1 ppb
Calcium (Ca)	≤1 ppb
Cerium (Ce)	≤0,1 ppb
Chromium (Cr)	≤0,5 ppb
Dysprosium (Dy)	≤0,1 ppb
Iron (Fe)	≤1 ppb
Erbium (Er)	≤0,1 ppb
Europium (Eu)	≤0,1 ppb
Gadolinium (Gd)	≤0,1 ppb
Gallium (Ga)	≤0,1 ppb
Germanium (Ge)	≤1 ppb
Gold (Au)	≤0,5 ppb
Hafnium (Hf)	≤0,1 ppb
Holmium (Ho)	≤0,1 ppb
Indium (In)	≤0,1 ppb
Potassium (K)	≤1 ppb
Cobalt (Co)	≤0,1 ppb
Copper (Cu)	≤0,5 ppb
Lanthanum (La)	≤0,1 ppb
Lithium (Li)	≤0,1 ppb
Lutetium (Lu)	≤0,1 ppb
Magnesium (Mg)	≤0,5 ppb
Manganese (Mn)	≤0,1 ppb
Molybdenum (Mo)	≤0,1 ppb
Sodium (Na)	≤1 ppb
Neodymium (Nd)	≤0,1 ppb
Nickel (Ni)	≤0,5 ppb
Niobium (Nb)	≤0,1 ppb
Praseodymium (Pr)	≤0,1 ppb
Mercury (Hg)	≤0,1 ppb
Rhenium (Re)	≤0,1 ppb
Rhodium (Rh)	≤0,1 ppb
Rubidium (Rb)	≤0,1 ppb
Ruthenium (Ru)	≤0,1 ppb
Samarium (Sm)	≤0,1 ppb
Scandium (Sc)	≤0,1 ppb
Selenium (Se)	≤1 ppb
Silver (Ag)	≤1 ppb
Strontium (Sr)	≤0,1 ppb
Tellur (Te)	≤0,1 ppb
Thallium (Tl)	≤0,1 ppb
Thorium (Th)	≤0,1 ppb
Thulium (Tm)	≤0,1 ppb
Titanium (Ti)	≤0,5 ppb
Uranium (U)	≤0,1 ppb
Vanadium (V)	≤0,5 ppb
Bismuth (Bi)	≤0,1 ppb
Tungsten (W)	≤0,1 ppb
Ytterbium (Yb)	≤0,1 ppb
Yttrium (Y)	≤0,1 ppb
Zinc (Zn)	≤1 ppb
Tin (Sn)	≤0,5 ppb
Zirconium (Zr)	≤0,1 ppb

NE57.2	1 l	plastic	101,60 €
Original pack 6 x 1 l			96,52/1 l
NE57.3	2,5 l	plastic	121,40 €
Original pack 4 x 2,5 l			115,33/2,5 l

For further information, please see page 1729

Hydrochloric acid 37 %

Hydrogen chloride
HCl
M 36,46 g/mol • D ~1,19
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

Danger H290-H314-H335

Hydrochloric acid 37 %

37 %, VLSI Grade

Guarantee analysis:

Assay	≥36,5 %
Particle number (≥0,5 µm)	≤250 p/ml
Colour (APHA)	≤10
Free chlorine (Cl_2)	complies
Ammonium (NH_4)	≤0,0001 %
Bromide (Br)	≤0,005 %
Phosphate (PO_4)	≤0,00005 %
Sulphate (SO_4)	≤0,00005 %
Sulphite (SO_3)	≤0,0001 %
Ash content (as SO_4)	≤0,0005 %
Aluminium (Al)	≤50 ppb
Antimony (Sb)	≤10 ppb
Arsenic (As)	≤10 ppb
Barium (Ba)	≤10 ppb
Beryllium (Be)	≤10 ppb
Bismuth (Bi)	≤20 ppb
Lead (Pb)	≤10 ppb
Boron (B)	≤20 ppb
Cadmium (Cd)	≤10 ppb
Calcium (Ca)	≤50 ppb
Chromium (Cr)	≤10 ppb
Iron (Fe)	≤50 ppb
Gallium (Ga)	≤10 ppb
Germanium (Ge)	≤10 ppb
Gold (Au)	≤10 ppb
Indium (In)	≤20 ppb
Potassium (K)	≤50 ppb
Cobalt (Co)	≤10 ppb
Copper (Cu)	≤10 ppb
Lithium (Li)	≤10 ppb
Magnesium (Mg)	≤50 ppb
Manganese (Mn)	≤10 ppb
Molybdenum (Mo)	≤10 ppb
Sodium (Na)	≤200 ppb
Nickel (Ni)	≤10 ppb
Platinum (Pt)	≤50 ppb
Mercury (Hg)	≤5 ppb
Silver (Ag)	≤10 ppb
Strontium (Sr)	≤20 ppb
Thallium (Tl)	≤10 ppb
Titanium (Ti)	≤10 ppb
Vanadium (V)	≤10 ppb
Zinc (Zn)	≤50 ppb
Tin (Sn)	≤20 ppb
Zirconium (Zr)	≤10 ppb

9787.1	2,5 l	plastic	45,70 €
Original pack 4 x 2,5 l			43,42/2,5 l

For further information, please see page 1718

Hydrochloric acid fuming 37 %

ROTIPURAN® 37 %, p.a., ISO, max. 0,005 ppm Hg

Dissolving agent for organic and anorganic samples. For determination of mercury.

Guarantee analysis:

Assay (acidim.)	36,5-38,0 %
Colour (Hazen)	≤10
Free chlorine (Cl)	≤0,0001 %
Bromide (Br)	≤0,005 %
Sulphate (SO_4)	≤0,0001 %
Sulphite (SO_3)	≤0,0001 %
Ammonium (NH_4)	≤0,0003 %
Mercury (Hg)	≤0,0000005 %
Silver (Ag)	≤0,000005 %
Aluminium (Al)	≤0,00001 %
Arsenic (As)	≤0,000001 %
Gold (Au)	≤0,00001 %
Boron (B)	≤0,00002 %
Barium (Ba)	≤0,000005 %
Beryllium (Be)	≤0,000002 %
Bismuth (Bi)	≤0,000005 %
Calcium (Ca)	≤0,00005 %
Cadmium (Cd)	≤0,000001 %
Cobalt (Co)	≤0,000001 %
Chromium (Cr)	≤0,000002 %
Copper (Cu)	≤0,000002 %
Iron (Fe)	≤0,00002 %
Gallium (Ga)	≤0,000005 %
Germanium (Ge)	≤0,000002 %
Indium (In)	≤0,000005 %
Potassium (K)	≤0,00001 %
Lithium (Li)	≤0,000002 %
Magnesium (Mg)	≤0,00001 %
Manganese (Mn)	≤0,000001 %
Molybdenum (Mo)	≤0,000001 %
Sodium (Na)	≤0,00005 %
Nickel (Ni)	≤0,000002 %
Lead (Pb)	≤0,000002 %
Platinum (Pt)	≤0,00001 %
Antimony (Sb)	≤0,000001 %
Silicon (Si)	≤0,00001 %
Tin (Sn)	≤0,00001 %
Strontium (Sr)	≤0,000002 %
Titanium (Ti)	≤0,000002 %
Vanadium (V)	≤0,000001 %
Zinc (Zn)	≤0,000005 %
Zirconium (Zr)	≤0,000002 %
Ash content (as SO_4)	≤0,0005 %

X942.1	1 l	glass	25,30 €
Original pack 6 x 1 l			24,04/1 l
X942.2	2,5 l	glass	33,90 €
Original pack 4 x 2,5 l			32,21/2,5 l

Hydrochloric acid fuming 37 %

ROTIPURAN® 37 %, p.a., ACS, ISO

Solvent and dissolving agent. For acidifying, neutralisation and regeneration of ion exchangers.

Guarantee analysis:

Assay (acidim.)	36,5-38,0 %
Colour (Hazen)	≤10
Free chlorine (Cl)	≤0,00004 %
Ash content (as SO_4)	≤0,0005 %
Heavy metals (as Pb)	≤0,0001 %
Phosphate (PO_4)	≤0,00005 %
Sulphate (SO_4)	≤0,00005 %
Sulphite (SO_3)	≤0,00005 %
Aluminium (Al)	≤0,000005 %
Ammonium (NH_4)	≤0,0001 %
Arsenic (As)	≤0,000001 %
Barium (Ba)	≤0,000001 %
Beryllium (Be)	≤0,000001 %
Bismuth (Bi)	≤0,000005 %
Lead (Pb)	≤0,000001 %
Boron (B)	≤0,00001 %
Bromide (Br)	≤0,005 %
Cadmium (Cd)	≤0,000001 %
Calcium (Ca)	≤0,00003 %
Chromium (Cr)	≤0,000001 %
Iron (Fe)	≤0,00001 %
Gallium (Ga)	≤0,000005 %
Germanium (Ge)	≤0,000002 %
Gold (Au)	≤0,000005 %
Potassium (K)	≤0,00001 %
Cobalt (Co)	≤0,000001 %
Copper (Cu)	≤0,000001 %
Lithium (Li)	≤0,000001 %
Magnesium (Mg)	≤0,000005 %
Manganese (Mn)	≤0,000001 %
Molybdenum (Mo)	≤0,000001 %
Sodium (Na)	≤0,00005 %
Nickel (Ni)	≤0,000002 %
Platinum (Pt)	≤0,00001 %
Mercury (Hg)	≤0,000001 %
Silver (Ag)	≤0,000002 %
Strontium (Sr)	≤0,000002 %
Thallium (Tl)	≤0,000002 %
Vanadium (V)	≤0,000001 %
Zinc (Zn)	≤0,000005 %
Tin (Sn)	≤0,000005 %
Zirconium (Zr)	≤0,000002 %

4625.1	1 l	glass	21,00 €
Original pack 6 x 1 l			19,95/1 l
4625.2	2,5 l	glass	33,25 €
Original pack 4 x 2,5 l			31,59/2,5 l
4625.3	10 l	plastic	82,70 €

Hydrochloric acid fuming 37 %

37 %, Ph.Eur.

Guarantee analysis:

Assay (acidim.)	36,5-39,0 %
Identity	complies
Appearance of solution	complies
Sulphate (SO_4)	≤0,0005 %
Heavy metals (as Pb)	≤0,0002 %
Ash content (as SO_4)	≤0,005 %
Non volatile matter	≤0,01 %

2607.1	1 l	glass	19,90 €
Original pack 6 x 1 l			18,91/1 l
2607.2	2,5 l	glass	32,80 €
Original pack 4 x 2,5 l			31,16/2,5 l
2607.3	10 l	plastic	71,95 €
2607.4	25 l	plastic	149,45 €

Hydrochloric acid 37 %

37 %, extra pure

Type analysis:

Assay	36,5-38,0 %
Density (20 °C)	1,18-1,19
Free chlorine (Cl)	≤0,0001 %
Sulphate (SO_4)	≤0,0002 %
Heavy metals (as Pb)	≤0,0002 %
Arsenic (As)	≤0,0001 %
Iron (Fe)	≤0,0001 %
Arsenic (As)	≤0,0001 %
Ash content (as SO_4)	≤0,0005 %

9277.1	1 l	glass	19,25 €
Original pack 6 x 1 l			18,29/1 l
9277.2	2,5 l	glass	31,75 €
Original pack 4 x 2,5 l			30,16/2,5 l
9277.3	10 l	plastic	71,50 €

Hydrochloric acid 37 %

37 %, techn.

Type analysis:

Assay	≥37,0 %
Density (20 °C)	1,180-1,190
Iron (Fe)	≤0,001 %

7476.1	1 l	glass	15,60 €
Original pack 6 x 1 l			14,82/1 l
7476.2	2,5 l	glass	22,05 €
Original pack 4 x 2,5 l			20,95/2,5 l
7476.3	10 l	plastic	42,90 €
7476.4	25 l	plastic	72,60 €

Hydrochloric acid 32 %

Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,15 • bp 85 °C
mp -40 °C
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

Danger H314-H290-H335

Hydrochloric acid 32 %

ROTIPURAN® ≥32 %, p.a., ISO

Solvent and dissolving agent.
For neutralisation, regeneration and acidifying of ion exchangers.

Guarantee analysis:

Assay (acidim.)	≥32 %
Colour (Hazen)	≤10
Free chlorine (Cl)	≤0,00005 %
Heavy metals (as Pb)	≤0,0001 %
Ash content (as SO_4)	≤0,0005 %
Sulphate (SO_4)	≤0,0001 %
Sulphite (SO_3)	≤0,0001 %
Phosphate (PO_4)	≤0,00005 %
Ammonium (NH_4)	≤0,0001 %
Aluminium (Al)	≤0,000005 %
Arsenic (As)	≤0,000001 %
Barium (Ba)	≤0,000002 %
Beryllium (Be)	≤0,000002 %
Bismuth (Bi)	≤0,000002 %
Lead (Pb)	≤0,000001 %
Bromide (Br)	≤0,005 %
Cadmium (Cd)	≤0,000001 %
Calcium (Ca)	≤0,00002 %
Chromium (Cr)	≤0,000002 %
Iron (Fe)	≤0,00001 %
Gallium (Ga)	≤0,000005 %
Germanium (Ge)	≤0,000002 %
Gold (Au)	≤0,000005 %
Indium (In)	≤0,000005 %
Potassium (K)	≤0,00001 %
Cobalt (Co)	≤0,000001 %
Copper (Cu)	≤0,000002 %
Lithium (Li)	≤0,000001 %
Magnesium (Mg)	≤0,000005 %
Manganese (Mn)	≤0,000001 %
Molybdenum (Mo)	≤0,000001 %
Sodium (Na)	≤0,00005 %
Nickel (Ni)	≤0,000002 %
Platinum (Pt)	≤0,00001 %
Mercury (Hg)	≤0,000001 %
Silver (Ag)	≤0,000005 %
Strontium (Sr)	≤0,000001 %
Thallium (Tl)	≤0,000002 %
Titanium (Ti)	≤0,000002 %
Vanadium (V)	≤0,000001 %
Zinc (Zn)	≤0,000005 %
Zirconium (Zr)	≤0,000002 %

P074.1	1 l	glass	18,20 €
Original pack 6 x 1 l			17,29/1 l
P074.3	1 l	plastic	16,05 €
Original pack 6 x 1 l			15,25/1 l
P074.2	2,5 l	glass	31,75 €
Original pack 4 x 2,5 l			30,16/2,5 l
P074.4	2,5 l	plastic	29,60 €
Original pack 4 x 2,5 l			28,12/2,5 l

Hydrochloric acid 32 %

32 %, extra pure

Type analysis:

Assay.....≥32 %
Colour (Hazen).....≤10
Density (d 15 °C/4 °C).....1,159-1,165
Free chlorine (Cl).....≤0,0001 %
Sulphate (SO_4).....≤0,0002 %
Heavy metals (as Pb).....≤0,0002 %
Iron (Fe).....≤0,0001 %
Arsenic (As).....≤0,0001 %
Ash content (as SO_4).....≤0,0005 %

X896.1	1 l	plastic	14,95 €
Original pack 6 x 1 l			14,20/1 l
X896.2	2,5 l	plastic	23,55 €
Original pack 4 x 2,5 l			22,37/2,5 l
X896.3	10 l	plastic	64,40 €
X896.7	25 l	plastic	149,45 €

Hydrochloric acid 30 %

≥30 %, techn.

Type analysis:

Appearance.....clear, yellowish liquid
Assay.....≥30 %
Iron (Fe).....≤0,001 %
Density (20 °C).....1,148-1,158

9280.3	1 l	plastic	13,90 €
Original pack 6 x 1 l			13,21/1 l
9280.1	10 l	plastic	38,20 €
9280.2	33 kg	plastic	78,40 €

Hydrochloric acid 25 %

Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,12 • bp 107 °C
mp -70 °C
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

Danger H314-H290-H335

Hydrochloric acid 25 %

ROTIPURAN® ≥25 %, p.a., ISO

Solvent, for neutralisation.

Guarantee analysis:

Assay (acidim.).....≥25 %
Colour (Hazen).....≤10
Free chlorine (Cl).....≤0,00005 %
Heavy metals (as Pb).....≤0,0001 %
Ash content (as SO_4).....≤0,0005 %
Sulphate (SO_4).....≤0,0001 %
Sulphite (SO_3).....≤0,0001 %
Aluminium (Al).....≤0,000005 %
Ammonium (NH_4).....≤0,0001 %
Arsenic (As).....≤0,000001 %
Barium (Ba).....≤0,000002 %
Beryllium (Be).....≤0,000002 %
Lead (Pb).....≤0,000002 %
Bromide (Br).....≤0,005 %
Cadmium (Cd).....≤0,000001 %
Calcium (Ca).....≤0,00005 %
Chromium (Cr).....≤0,000002 %
Cobalt (Co).....≤0,000001 %
Iron (Fe).....≤0,00002 %
Germanium (Ge).....≤0,000005 %
Potassium (K).....≤0,00001 %
Copper (Cu).....≤0,000002 %
Lithium (Li).....≤0,000001 %
Magnesium (Mg).....≤0,00001 %
Manganese (Mn).....≤0,000001 %
Molybdenum (Mo).....≤0,000002 %
Sodium (Na).....≤0,00005 %
Nickel (Ni).....≤0,000002 %
Strontium (Sr).....≤0,000001 %
Thallium (Tl).....≤0,000005 %
Titanium (Ti).....≤0,0001 %
Vanadium (V).....≤0,000001 %
Bismuth (Bi).....≤0,00001 %
Zinc (Zn).....≤0,000005 %
Zirconium (Zr).....≤0,00001 %

6331.1	1 l	glass	18,85 €
Original pack 6 x 1 l			17,91/1 l
6331.3	1 l	plastic	16,70 €
Original pack 6 x 1 l			15,87/1 l
6331.2	2,5 l	glass	31,10 €
Original pack 4 x 2,5 l			29,55/2,5 l
6331.4	2,5 l	plastic	28,95 €
Original pack 4 x 2,5 l			27,50/2,5 l
6331.7	25 l	plastic	192,45 €

Hydrochloric acid 25 %

25 %, extra pure

Type analysis:

Assay.....≥25 %
Colour (Hazen).....≤10
Density (d 15 °C/4 °C).....1,12-1,13
Free chlorine (Cl).....≤0,0001 %
Sulphate (SO_4).....≤0,0002 %
Heavy metals (as Pb).....≤0,0002 %
Iron (Fe).....≤0,0001 %
Arsenic (As).....≤0,0001 %
Ash content (as SO_4).....≤0,0005 %

X897.1	1 l	plastic	14,95 €
Original pack 6 x 1 l			14,20/1 l
X897.2	2,5 l	plastic	25,70 €
Original pack 4 x 2,5 l			24,42/2,5 l
X897.3	10 l	plastic	52,60 €

Hydrochloric acid 25 %

25 %, techn.

Type analysis:

Appearance..... clear, colourless, light yellowish liquid
Assay.....24,0-26,0 %
Density (20 °C).....1,118-1,133
Iron (Fe).....≤0,001 %

0992.4	1 l	plastic	12,40 €
Original pack 6 x 1 l			11,78/1 l
0992.1	2,5 l	plastic	21,40 €
Original pack 4 x 2,5 l			20,33/2,5 l
0992.2	10 l	plastic	45,70 €
0992.3	25 l	plastic	84,85 €

Hydrochloric acid 20 %

20 %, techn.

Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,10
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

Warning H290-H335-H315-H319

Type analysis:

Assay.....19,0-21,0 %
Density (20 °C).....1,0929-1,1032
Iron (Fe).....<0,001 %

4326.1	1 l	plastic	13,45 €
Original pack 6 x 1 l			12,78/1 l
4326.2	2,5 l	plastic	21,00 €
Original pack 4 x 2,5 l			19,95/2,5 l
4326.3	5 l	plastic	33,25 €
Original pack 2 x 5 l			31,59/5 l
4326.4	10 l	plastic	46,15 €

Hydrochloric acid 15 %

Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,07
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

Warning H290-H335-H315-H319

Type analysis:

Assay.....14,0-16,0 %
Density (20 °C).....1,0675-1,0776
Iron (Fe).....≤0,001 %

4322.1	1 l	plastic	12,40 €
Original pack 6 x 1 l			11,78/1 l
4322.2	2,5 l	plastic	18,85 €
Original pack 4 x 2,5 l			17,91/2,5 l
4322.3	5 l	plastic	31,10 €
Original pack 2 x 5 l			29,55/5 l
4322.4	10 l	plastic	42,90 €

Hydrochloric acid 10 %

10 %, techn.

Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,05
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

Warning H290-H335-H315-H319

Type analysis:

Assay.....9,0-11,0 %
Density (20 °C).....1,0450-1,0530
Iron (Fe).....≤0,001 %

0710.4	1 l	plastic	11,75 €
Original pack 6 x 1 l			11,16/1 l
0710.1	2,5 l	plastic	21,00 €
Original pack 4 x 2,5 l			19,95/2,5 l
0710.2	5 l	plastic	28,95 €
Original pack 2 x 5 l			27,50/5 l
0710.3	10 l	plastic	38,20 €

Hydrochloric acid 5 %

Hydrochloric acid 5 %

5 %, techn.
Hydrogen chloride
HCl
M 36,46 g/mol • D ~1,02
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III • WGK 1

Warning H290

Type analysis:
Assay..... 4,0-6,0 %
Density (20 °C)..... 1,020-1,028
Iron (Fe)..... ≤0,001 %

4328.1	1 l	plastic	12,40 €
Original pack 6 x 1 l			11,78/1 l
4328.2	2,5 l	plastic	18,85 €
Original pack 4 x 2,5 l			17,91/2,5 l
4328.3	5 l	plastic	27,85 €
Original pack 2 x 5 l			26,46/5 l
4328.4	10 l	plastic	37,10 €

Hydrochloric acid (0,01 N)

Hydrochloric acid

0,01 mol/l - 0,01 N volumetric standard solution
[7647-01-0] • EC No. 231-595-7

Type analysis:
Amount-of-substance conc. (20 °C)..... 0,01 mol/l ±0,5 %
Titer..... 0,9950-1,0050

N075.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l

For further information, please see page 1681

Hydrochloric acid (0,05 N)

Hydrochloric acid

0,05 mol/l - 0,05 N volumetric standard solution
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C)..... 0,05 mol/l ±0,2 %
Titer..... 0,998-1,002

8085.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
8085.2	2,5 l	plastic	35,40 €
Original pack 4 x 2,5 l			33,63/2,5 l
8085.3	5 l	ROTI®CUBE	63,35 €
Original pack 2 x 5 l			60,18/5 l

Hydrochloric acid (0,1 N)

Hydrochloric acid

0,1 mol/l - 0,1 N volumetric standard solution
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C).. 0,1 mol/l ±0,2 %
Titer..... 0,998-1,002

K024.5	500 ml	plastic	15,60 €
K024.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
K024.2	5 l	plastic	58,60 €
Original pack 2 x 5 l			55,67/5 l
K024.3	5 l	ROTI®CUBE	63,35 €
Original pack 2 x 5 l			60,18/5 l
K024.4	10 l	ROTI®CUBE	93,45 €
K024.7	25 l	plastic	153,65 €

For further information, please see page 1681

Hydrochloric acid (0,1 N)

Hydrochloric acid

0,1 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III • WGK 1

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C)..... 0,1 mol/l
Measurement uncertainty..... ±0,1 %

6789.1	1 l	plastic	22,50 €
Original pack 6 x 1 l			21,38/1 l

Hydrochloric acid (0,1 N)

Hydrochloric acid

ROTI®VOLUM 0,1 mol/l - 0,1 N
Ampoule for preparation of 1000 ml volumetric solution.
HCl
M 36,46 g/mol
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III • WGK 1

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C).. 0,1 mol/l ±0,2 %

CN61.1	1 piece	plastic ampoule	19,90 €

For further information, please see page 1683

Hydrochloric acid (0,2 N)

Hydrochloric acid

0,2 mol/l - 0,2 N volumetric standard solution
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8.III • WGK 1

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C).. 0,2 mol/l ±0,2 %
Titer..... 0,998-1,002

4120.1	1 l	plastic	18,85 €
Original pack 6 x 1 l			17,91/1 l

For further information, please see page 1681

Hydrochloric acid (0,5 N)

Hydrochloric acid

0,5 mol/l - 0,5 N volumetric standard solution
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C)... 0,5 mol/l ±0,2 %
Titer..... 0,998-1,002

P708.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
P708.2	5 l	plastic	58,60 €
Original pack 2 x 5 l			55,67/5 l
P708.3	5 l	ROTI®CUBE	63,35 €
Original pack 2 x 5 l			60,18/5 l
P708.4	10 l	ROTI®CUBE	93,45 €

For further information, please see page 1681

Hydrochloric acid (0,5 N)

Hydrochloric acid

ROTI®VOLUM 0,5 mol/l - 0,5 N
Ampoule for preparation of 1000 ml volumetric solution.
HCl
M 36,46 g/mol
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III • WGK 1

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C)... 0,5 mol/l ±0,2 %

CN62.1	1 piece	plastic ampoule	19,90 €

For further information, please see page 1683

Hydrochloric acid (1 N)

Hydrochloric acid

1 mol/l - 1 N volumetric standard solution
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III • WGK 1

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C)..... 1 mol/l ±0,2 %
Titer..... 0,998-1,002

K025.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
K025.2	5 l	plastic	58,60 €
Original pack 2 x 5 l			55,67/5 l
K025.3	5 l	ROTI®CUBE	63,35 €
Original pack 2 x 5 l			60,18/5 l
K025.4	10 l	ROTI®CUBE	93,45 €

For further information, please see page 1681

Hydrochloric acid (1 N)

Hydrochloric acid

1 mol/l - 1 N volumetric standard solution, Reag. Ph.Eur.

[7647-01-0] • EC No. 231-595-7

UN No. 1789 • ADR 8 III • WGK 1

Warning H290

Type analysis:

Amount-of-substance conc. (20 °C).....1 mol/l
Measurement uncertainty. .....±0,1 %

6792.1	1 l	plastic	22,50 €
Original pack 6 x 1 l			21,38/1 l

Hydrochloric acid (1 N)

Hydrochloric acid

ROTI®VOLUM 1 mol/l - 1 N

Ampoule for preparation of 1000 ml volumetric solution.

HCl

M 36,46 g/mol

[7647-01-0] • EC No. 231-595-7

UN No. 1789 • ADR 8 II • WGK 1

Warning H290-H335-H315-H319

Type analysis:

Amount-of-substance conc. (20 °C).....1 mol/l ±0,2 %

CN63.1	1 piece	plastic ampoule	19,90 €

For further information, please see page 1683

Hydrochloric acid (2 N)

Hydrochloric acid

2 mol/l - 2 N volumetric standard solution

[7647-01-0] • EC No. 231-595-7

UN No. 1789 • ADR 8 III • WGK 1

Warning H290

Type analysis:

Amount-of-substance conc. (20 °C).....2 mol/l ±0,2 %
Titer. 0,998-1,002

T134.4	500 ml	plastic	16,05 €
T134.1	1 l	plastic	20,35 €
Original pack 6 x 1 l			19,33/1 l
T134.2	5 l	plastic	60,10 €
Original pack 2 x 5 l			57,10/5 l
T134.3	5 l	ROTI®CUBE	64,40 €
Original pack 2 x 5 l			61,18/5 l

For further information, please see page 1681

Hydrochloric acid (4 N)

Hydrochloric acid

4 mol/l - 4 N volumetric standard solution

[7647-01-0] • EC No. 231-595-7

UN No. 1789 • ADR 8 II • WGK 1

Warning H290-H335-H315-H319

Type analysis:

Amount-of-substance conc. (20 °C). .....4 mol/l ±0,2 %
Titer. 0,998-1,002

N076.1	1 l	plastic	32,15 €
Original pack 6 x 1 l			30,54/1 l

For further information, please see page 1681

Hydrochloric acid (6 N)

Hydrochloric acid

6 mol/l - 6 N volumetric standard solution

[7647-01-0] • EC No. 231-595-7

UN No. 1789 • ADR 8 II • WGK 1

Warning H290-H335-H315-H319

Type analysis:

Amount-of-substance conc. (20 °C). .....6 mol/l ±0,2 %
Titer. 0,998-1,002

0281.1	1 l	plastic	32,15 €
Original pack 6 x 1 l			30,54/1 l

For further information, please see page 1681

Hydrochloric acid (10 N)

Hydrochloric acid

10 mol/l - 10 N volumetric standard solution

[7647-01-0] • EC No. 231-595-7

UN No. 1789 • ADR 8 II • WGK 1

Danger H290-H314-H335

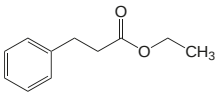
Type analysis:

Amount-of-substance conc. (20 °C). ...10 mol/l ±0,2 %
Titer. 0,998-1,002

0226.1	1 l	plastic	106,35 €
Original pack 6 x 1 l			101,03/1 l

For further information, please see page 1681

Hydrocinnamic acid ethyl ester



Hydrocinnamic acid ethyl ester

≥98,5 %

3-Phenylpropionic acid ethyl ester

$C_{11}H_{14}O_2$

M 178,22 g/mol

D ~1,01

mp ~248 °C

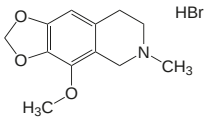
[2021-28-5] • EC No. 217-966-6

Type analysis:

Assay (GC). .....≥98,5 %

7920.1	10 ml	glass	51,50 €

Hydrocotarnine hydrobromide



Hydrocotarnine hydrobromide

ROTICHROM® ~CHR

$C_{12}H_{15}NO_3 \cdot HBr$

M 302,18 g/mol

mp ~237 °C

[5985-00-2]

UN No. 1544 • ADR 6.1 II

Danger H301

4268.1	100 mg	glass	26,80 €

Hydrofluoric acid Ultra-quality

Hydrofluoric acid Ultra-quality

ROTIPURAN® Ultra 48 %

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis.

Fluorhydric acid

HF

M 20,01 g/mol

D 1,18 • bp 108 °C

mp -35 °C

[7664-39-3] • EC No. 231-634-8

UN No. 1790 • ADR 8 (6.1) II • WGK 2

Danger H300+H310+H330-H314

Guarantee analysis:

Assay (w/w).....47-51 %
Total Sulfur (S).....≤0,00001 %
Aluminium (Al).....≤20 ppt
Antimony (Sb).....≤20 ppt
Arsenic (As).....≤50 ppt
Barium (Ba).....≤10 ppt
Beryllium (Be).....≤10 ppt
Lead (Pb).....≤10 ppt
Boron (B).....≤100 ppt
Cadmium (Cd).....≤10 ppt
Cesium (Cs).....≤10 ppt
Calcium (Ca).....≤10 ppt
Cerium (Ce).....≤10 ppt
Chromium (Cr).....≤10 ppt

Dysprosium (Dy). ≤1 ppt
Iron (Fe). ≤10 ppt
Erbium (Er). ≤1 ppt
Europium (Eu). ≤1 ppt
Gadolinium (Gd). ≤1 ppt
Gallium (Ga). ≤10 ppt
Germanium (Ge). ≤10 ppt
Gold (Au). ≤20 ppt
Hafnium (Hf). ≤10 ppt
Holmium (Ho). ≤1 ppt
Indium (In). ≤1 ppt
Potassium (K). ≤10 ppt
Cobalt (Co). ≤10 ppt
Copper (Cu). ≤10 ppt
Lanthanum (La). ≤10 ppt
Lithium (Li). ≤10 ppt
Lutetium (Lu). ≤1 ppt
Magnesium (Mg). ≤10 ppt
Manganese (Mn). ≤10 ppt
Molybdenum (Mo). ≤10 ppt
Sodium (Na). ≤10 ppt
Neodymium (Nd). ≤1 ppt
Nickel (Ni). ≤20 ppt
Niobium (Nb). ≤10 ppt
Palladium (Pd). ≤20 ppt
Platinum (Pt). ≤20 ppt
Praseodymium (Pr). ≤1 ppt
Mercury (Hg). ≤50 ppt
Rhenium (Re). ≤10 ppt
Rhodium (Rh). ≤20 ppt
Rubidium (Rb). ≤20 ppt
Ruthenium (Ru). ≤20 ppt
Samarium (Sm). ≤1 ppt
Scandium (Sc). ≤10 ppt
Silver (Ag). ≤10 ppt
Strontium (Sr). ≤10 ppt
Tellur (Te). ≤1 ppt
Terbium (Tb). ≤1 ppt
Thallium (Tl). ≤10 ppt
Thorium (Th). ≤1 ppt
Thulium (Tm). ≤1 ppt
Titanium (Ti). ≤20 ppt
Uranium (U). ≤1 ppt
Vanadium (V). ≤10 ppt
Bismuth (Bi). ≤10 ppt
Tungsten (W). ≤20 ppt
Ytterbium (Yb). ≤1 ppt
Yttrium (Y). ≤1 ppt
Zinc (Zn). ≤10 ppt
Tin (Sn). ≤20 ppt
Zirconium (Zr). ≤10 ppt

HN64.2	250 ml	plastic (PFA)	478,40 €
HN64.1	500 ml	plastic (PFA)	719,20 €
HN64.3	1 l	plastic (PFA)	1159,95 €
Original pack 6 x 1 l			1101,95/1 l

For further information, please see page 1729

Hydrofluoric acid Supra-quality

Hydrofluoric acid Supra-quality

ROTIPURAN® Supra 48 %

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

Fluorhydric acid
HF
M 20,01 g/mol
D 1,18 • bp 108 °C • mp -35 °C
[7664-39-3] • EC No. 231-634-8
UN No. 1790 • ADR 8 (6.1) II • WGK 2

Danger H300+H310+H330-H314

Guarantee analysis:

Assay (w/w). 47-51 %
Colour (APHA). ≤10
Hexafluorosilicate (SiF_6). ≤0,002 %
Chloride (Cl). ≤0,0004 %
Total Phosphorous (P). ≤0,000005 %
Total Sulfur (S). ≤0,00001 %
Aluminium (Al). ≤1 ppb
Antimony (Sb). ≤0,2 ppb
Arsenic (As). ≤0,5 ppb
Barium (Ba). ≤0,1 ppb
Beryllium (Be). ≤0,1 ppb
Lead (Pb). ≤0,1 ppb
Boron (B). ≤1 ppb
Cadmium (Cd). ≤0,1 ppb
Cesium (Cs). ≤0,1 ppb
Calcium (Ca). ≤1 ppb
Cerium (Ce). ≤0,1 ppb
Chromium (Cr). ≤1 ppb
Dysprosium (Dy). ≤0,1 ppb
Iron (Fe). ≤1 ppb
Erbium (Er). ≤0,1 ppb
Europium (Eu). ≤0,1 ppb
Gadolinium (Gd). ≤0,1 ppb
Gallium (Ga). ≤0,1 ppb
Germanium (Ge). ≤0,1 ppb
Gold (Au). ≤0,2 ppb
Hafnium (Hf). ≤0,1 ppb
Holmium (Ho). ≤0,1 ppb
Indium (In). ≤0,1 ppb
Potassium (K). ≤1 ppb
Cobalt (Co). ≤0,1 ppb
Copper (Cu). ≤0,5 ppb
Lanthanum (La). ≤0,1 ppb
Lithium (Li). ≤0,1 ppb
Lutetium (Lu). ≤0,1 ppb
Magnesium (Mg). ≤1 ppb
Manganese (Mn). ≤0,1 ppb
Molybdenum (Mo). ≤0,1 ppb
Sodium (Na). ≤1 ppb
Neodymium (Nd). ≤0,1 ppb
Nickel (Ni). ≤0,5 ppb
Niobium (Nb). ≤0,1 ppb
Palladium (Pd). ≤0,2 ppb
Platinum (Pt). ≤0,2 ppb
Praseodymium (Pr). ≤0,1 ppb
Mercury (Hg). ≤1 ppb
Rhenium (Re). ≤0,1 ppb
Rhodium (Rh). ≤0,1 ppb
Rubidium (Rb). ≤0,1 ppb
Ruthenium (Ru). ≤0,1 ppb
Samarium (Sm). ≤0,1 ppb
Scandium (Sc). ≤0,1 ppb
Selenium (Se). ≤1 ppb
Silver (Ag). ≤0,5 ppb
Strontium (Sr). ≤0,1 ppb
Tellur (Te). ≤0,1 ppb
Terbium (Tb). ≤0,1 ppb
Thallium (Tl). ≤0,1 ppb
Thorium (Th). ≤0,1 ppb
Thulium (Tm). ≤0,1 ppb
Titanium (Ti). ≤1 ppb
Uranium (U). ≤0,1 ppb
Vanadium (V). ≤0,1 ppb
Bismuth (Bi). ≤0,1 ppb
Tungsten (W). ≤0,5 ppb
Ytterbium (Yb). ≤0,1 ppb
Yttrium (Y). ≤0,1 ppb
Zinc (Zn). ≤1 ppb
Tin (Sn). ≤0,5 ppb
Zirconium (Zr). ≤0,1 ppb

HN54.1	500 ml	LDPE	143,95 €

For further information, please see page 1729

Hydrogen carboxylic acid

- Formic acid 98 % see p. 2005
- Formic acid 85 % see p. 2006
- Formic acid 45 % see p. 2006

Hydrogen chloride

- Hydrochloric acid Ultra-quality see p. 2047
- Hydrochloric acid Supra-quality see p. 2048
- Hydrochloric acid 37 % see p. 2048
- Hydrochloric acid 32 % see p. 2049
- Hydrochloric acid 25 % see p. 2050
- Hydrochloric acid 20 % see p. 2050
- Hydrochloric acid 15 % see p. 2050
- Hydrochloric acid 10 % see p. 2050
- Hydrochloric acid 5 % see p. 2051

Hydrogen hexachloroplatinate(IV) hydrate

Hydrogen hexachloroplatinate(IV) hydrate

ROTI®METIC 99,995 % (4N5)

Chloroplatinic acid hydrate, Hexachloroplatinum(IV) acid hydrate
$H_2PtCl_6 \cdot x\ H_2O$
M 409,79 + x H_2O g/mol
D 2,43
mp 60 °C
[26023-84-7] • EC No. 241-010-7
UN No. 2507 • ADR 8 III • WGK 3

Danger

H301-H314-H317-H334-H411

Type analysis:

Assay (metals basis). 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5626.1	1 g	plastic	176,20 €
5626.2	5 g	plastic	815,95 €

Hydrogen hexachloroplatinate(IV) hexahydrate

- Hexachloroplatinum(IV) acid hexahydrate see p. 2039

Hydrogen peroxide Ultra-quality

Hydrogen peroxide Ultra-quality

ROTIPURAN® Ultra 31 %

Extra highpure reagent (ppt quality) for sample preparation in ultra trace analysis.

H_2O_2

M 34,02 g/mol

D ~1,11 • bp ~107 °C

[7722-84-1] • EC No. 231-765-0

UN No. 2014 • ADR 5.1 (8) II • WGK 1

Danger H318-H302

Guarantee analysis:

Assay (w/w)	30-32 %
Aluminium (Al)	≤50 ppt
Antimony (Sb)	≤10 ppt
Arsenic (As)	≤100 ppt
Barium (Ba)	≤10 ppt
Beryllium (Be)	≤10 ppt
Lead (Pb)	≤10 ppt
Boron (B)	≤100 ppt
Cadmium (Cd)	≤10 ppt
Cesium (Cs)	≤1 ppt
Calcium (Ca)	≤100 ppt
Cerium (Ce)	≤1 ppt
Chromium (Cr)	≤10 ppt
Dysprosium (Dy)	≤1 ppt
Iron (Fe)	≤20 ppt
Erbium (Er)	≤1 ppt
Europium (Eu)	≤1 ppt
Gadolinium (Gd)	≤1 ppt
Gallium (Ga)	≤10 ppt
Germanium (Ge)	≤10 ppt
Gold (Au)	≤10 ppt
Hafnium (Hf)	≤1 ppt
Holmium (Ho)	≤1 ppt
Indium (In)	≤1 ppt
Potassium (K)	≤20 ppt
Cobalt (Co)	≤10 ppt
Copper (Cu)	≤10 ppt
Lanthanum (La)	≤1 ppt
Lithium (Li)	≤10 ppt
Lutetium (Lu)	≤1 ppt
Magnesium (Mg)	≤20 ppt
Manganese (Mn)	≤10 ppt
Molybdenum (Mo)	≤10 ppt
Sodium (Na)	≤50 ppt
Neodymium (Nd)	≤1 ppt
Nickel (Ni)	≤20 ppt
Niobium (Nb)	≤10 ppt
Palladium (Pd)	≤10 ppt
Praseodymium (Pr)	≤1 ppt
Mercury (Hg)	≤50 ppt
Rhenium (Re)	≤10 ppt
Rhodium (Rh)	≤10 ppt
Rubidium (Rb)	≤10 ppt
Ruthenium (Ru)	≤10 ppt
Samarium (Sm)	≤1 ppt
Scandium (Sc)	≤10 ppt
Selenium (Se)	≤100 ppt
Silver (Ag)	≤10 ppt
Strontium (Sr)	≤10 ppt
Tantal (Ta)	≤10 ppt
Tellur (Te)	≤1 ppt
Terbium (Tb)	≤1 ppt
Thallium (Tl)	≤1 ppt
Thorium (Th)	≤1 ppt
Thulium (Tm)	≤1 ppt
Titanium (Ti)	≤20 ppt
Uranium (U)	≤1 ppt
Vanadium (V)	≤10 ppt
Bismuth (Bi)	≤10 ppt
Tungsten (W)	≤20 ppt
Ytterbium (Yb)	≤1 ppt
Yttrium (Y)	≤1 ppt
Zinc (Zn)	≤50 ppt
Tin (Sn)	≤50 ppt
Zirconium (Zr)	≤10 ppt

HN69.1	500 ml	plastic (FEP)	532,15 €

For further information, please see page 1729

Hydrogen peroxide 50 %

Hydrogen peroxide 50 %

50 % techn., stab.

Oxidant

H_2O_2

D 1,19 • bp 109 °C • mp -50 °C

[7722-84-1] • EC No. 231-765-0

UN No. 2014 • ADR 5.1 (8) II • WGK 1

Danger

H272-H302-H314-H335-H412

Type analysis:

Assay	49,0-50,0 %
Density (20 °C)	1,191-1,195

0034.1	500 ml	plastic	17,10 €
0034.2	1 l	plastic	22,50 €
Original pack 6 x 1 l			21,38/1 l
0034.3	2,5 l	plastic	33,90 €
Original pack 4 x 2,5 l			32,21/2,5 l
0034.4	5 l	plastic	57,95 €
Original pack 2 x 5 l			55,05/5 l
0034.5	10 l	plastic	104,20 €

Hydrogen peroxide 35 %

Hydrogen peroxide 35 %

pure, stabilized

Oxidant, bleaching agent

H_2O_2

M 34,02 g/mol • D ~1,13 • bp 108 °C

[7722-84-1] • EC No. 231-765-0

UN No. 2014 • ADR 5.1 (8) II • WGK 1

Danger H318-H335-H315-H302

Type analysis:

Assay	34-36 %
Density (20 °C)	1,127-1,140

9683.4	500 ml	plastic	16,70 €
9683.1	1 l	plastic	21,40 €
Original pack 6 x 1 l			20,33/1 l
9683.3	2,5 l	plastic	32,15 €
Original pack 4 x 2,5 l			30,54/2,5 l
9683.5	5 l	plastic	53,65 €
Original pack 2 x 5 l			50,97/5 l
9683.2	10 l	plastic	81,20 €
9683.8	25 l	plastic	177,40 €

Hydrogen peroxide 30 %

H_2O_2

M 34,01 g/mol • D ~1,11 • bp ~107 °C

[7722-84-1] • EC No. 231-765-0

UN No. 2014 • ADR 5.1 (8) II • WGK 1

Danger H302-H318

Hydrogen peroxide 30 %

30 %, VLSI Grade

Guarantee analysis:

Assay	30-31 %
Particle number (≥0,5 µm)	≤250 p/ml
Colour (APHA)	≤10
Ammonium (NH_4)	≤0,0001 %
Chloride (Cl)	≤0,00005 %
Nitrate (NO_3)	≤0,0002 %
Phosphate (PO_4)	≤0,00005 %
Sulphate (SO_4)	≤0,0001 %
Ash content	≤0,0005 %
Acidity (as H_2SO_4)	≤0,002 %
TOC (Total Organic Carbon)	≤0,002 %
Aluminium (Al)	≤30 ppb
Antimony (Sb)	≤10 ppb
Arsenic (As)	≤10 ppb
Barium (Ba)	≤10 ppb
Beryllium (Be)	≤10 ppb
Bismuth (Bi)	≤20 ppb
Lead (Pb)	≤10 ppb
Boron (B)	≤20 ppb
Cadmium (Cd)	≤10 ppb
Calcium (Ca)	≤50 ppb
Chromium (Cr)	≤10 ppb
Iron (Fe)	≤30 ppb
Gallium (Ga)	≤10 ppb
Gold (Au)	≤20 ppb
Potassium (K)	≤20 ppb
Cobalt (Co)	≤10 ppb
Copper (Cu)	≤10 ppb
Lithium (Li)	≤10 ppb
Magnesium (Mg)	≤20 ppb
Manganese (Mn)	≤10 ppb
Molybdenum (Mo)	≤10 ppb
Sodium (Na)	≤50 ppb
Nickel (Ni)	≤10 ppb
Silver (Ag)	≤10 ppb
Strontium (Sr)	≤10 ppb
Tantal (Ta)	≤20 ppb
Thallium (Tl)	≤20 ppb
Titanium (Ti)	≤10 ppb
Vanadium (V)	≤10 ppb
Zinc (Zn)	≤20 ppb
Tin (Sn)	≤20 ppb
Zirconium (Zr)	≤10 ppb

9790.1	2,5 l	plastic	80,10 €
Original pack 4 x 2,5 l			76,10/2,5 l

For further information, please see page 1718

Hydrogen peroxide 30 %

ROTIPURAN® p.a., ISO, stabilized

Guarantee analysis:

Assay (perm.)	≥30 %
Free acid	≤1 µeq/g
Chloride (Cl)	≤0,00005 %
Phosphate (PO_4)	≤0,0005 %
Sulphate (SO_4)	≤0,00005 %
Nitrate (NO_3)	≤0,00005 %
Aluminium (Al)	≤0,000002 %
Antimony (Sb)	≤0,000002 %
Arsenic (As)	≤0,000002 %
Boron (B)	≤0,000002 %
Cadmium (Cd)	≤0,000002 %
Chromium (Cr)	≤0,000002 %
Gold (Au)	≤0,000002 %
Iron (Fe)	≤0,000002 %
Potassium (K)	≤0,000002 %
Molybdenum (Mo)	≤0,000002 %
Nickel (Ni)	≤0,000002 %
Strontium (Sr)	≤0,000002 %
Silver (Ag)	≤0,000002 %
Lead (Pb)	≤0,000002 %
Calcium (Ca)	≤0,000002 %
Cobalt (Co)	≤0,000002 %
Copper (Cu)	≤0,000002 %
Lithium (Li)	≤0,000002 %
Manganese (Mn)	≤0,000002 %
Sodium (Na)	≤0,000002 %
Titanium (Ti)	≤0,000002 %
Vanadium (V)	≤0,000002 %
Magnesium (Mg)	≤0,000002 %
Tin (Sn)	≤0,000002 %
Zinc (Zn)	≤0,000002 %

Stabilized with phosphate.

8070.2	250 ml	plastic	21,40 €
8070.4	500 ml	plastic	27,85 €
8070.1	1 l	plastic	40,35 €
Original pack 6 x 1 l			38,33/1 l
8070.3	2,5 l	plastic	69,35 €
Original pack 4 x 2,5 l			65,88/2,5 l

Hydrogen peroxide 30 %

Ph.Eur., stabilized

Guarantee analysis:

Assay.....29,0-31,0 %
Identity.....complies
Acid react. substances.....complies
Organic stabilizers.....≤0,05 %
Non volatile matters.....≤0,2 %

9681.4	500 ml	plastic	16,70 €
9681.1	1 l	plastic	22,05 €
Original pack 6 x 1 l			20,95/1 l
9681.3	2,5 l	plastic	32,15 €
Original pack 4 x 2,5 l			30,54/2,5 l
9681.5	5 l	plastic	53,65 €
Original pack 2 x 5 l			50,97/5 l
9681.2	10 l	plastic	82,70 €
9681.8	25 l	plastic	188,15 €

Hydrogen peroxide 30 %

for synthesis, stab.

Oxidant, bleaching agent

Type analysis:

Assay.....29,0-31,0 %
Relative density (20 °C).....1,107-1,120

CP26.5	500 ml	plastic	15,60 €
CP26.1	1 l	plastic	19,25 €
Original pack 6 x 1 l			18,29/1 l
CP26.4	2,5 l	plastic	28,50 €
Original pack 4 x 2,5 l			27,08/2,5 l
CP26.2	10 l	plastic	51,50 €
CP26.3	25 l	plastic	104,20 €

Hydrogen tetrachloroaurate(III) hydrate

Hydrogen tetrachloroaurate(III) hydrate

ROTI®METIC 99,999 % (5N)

Chloroauric acid hydrate
$HAuCl_4 \cdot x\ H_2O$
M 339,79 + x H_2O g/mol
D 3,9
mp 420 °C
[27988-77-8] • EC No. 240-948-4
UN No. 3260 • ADR 8 III • WGK 3

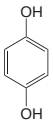
Danger H302-H314-H317

Type analysis:

Assay (metals basis).....99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5628.1	1 g	glass	167,60 €

Hydroquinone



Hydroquinone

≥99,5 %, p.a.

1,4-Dihydroxybenzene
$C_6H_6O_2$
M 110,11 g/mol
D 1,35 • bp 286 °C
mp 171-175 °C • flp 165 °C
Solubility: 70 g/l (H_2O, 25 °C)
[123-31-9] • EC No. 204-617-8
UN No. 3077 • ADR 9 III • WGK 3

Danger
H302-H317-H318-H341-H351-H410

Type analysis:

Appearance.....fine, colourless crystals
Assay (titr.).....≥99,5 %
Iron (Fe).....≤0,002 %
Ash.....≤0,05 %
Heavy metals (as Pb).....≤0,002 %
Melting range.....171-175 °C

3586.1	100 g	plastic	13,45 €
3586.2	250 g	plastic	20,35 €
3586.3	1 kg	plastic	60,10 €
Original pack 6 x 1 kg			57,10/1 kg

Hydroxyacetaldehyde

▶ Glycolaldehyde see p. 2027

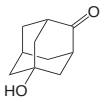
1-Hydroxyadamantane

▶ 1-Adamantanol see p. 1772

2-Hydroxyadamantane

▶ 2-Adamantanol see p. 1772

5-Hydroxy-2-adamantanone



5-Hydroxy-2-adamantanone

≥98 %, for synthesis

$C_{10}H_{14}O_2$
M 166,22 g/mol
mp >300 °C
[20098-14-0]
WGK 3

Type analysis:

Appearance.....white to off-white, cryst. powder
Assay.....≥98,0 %
Identity.....complies

7628.1	1 g	glass	21,00 €
7628.2	5 g	glass	66,55 €

3-Hydroxy-L-alanin

▶ L-Serine see p. 2313

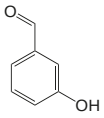
2-Hydroxyanisole

▶ Guaiacol see p. 2030

8-Hydroxy-1-azanaphthalene-β-D-glucuronide, sodium salt

▶ 8-Hydroxyquinoline-β-D-glucuronic acid, sodium salt see p. 2059

3-Hydroxybenzaldehyde



3-Hydroxybenzaldehyde

≥97 %, for synthesis

3-Formylphenol
$C_7H_6O_2$
M 122,12 g/mol
mp 101-105 °C
[100-83-4] • EC No. 202-892-9 • WGK 3

Warning H315-H319-H335

Type analysis:

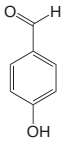
Appearance.....white to off-white, cryst. powder
Assay.....≥97,0 %
Water.....≤0,5 %

4493.1	50 g	plastic	25,30 €
4493.2	100 g	plastic	35,40 €
4493.3	250 g	plastic	75,15 €

2-Hydroxybenzaldehyde

▶ Salicylaldehyde see p. 2304

4-Hydroxybenzaldehyde



4-Hydroxybenzaldehyde

≥99 %, for synthesis

4-Formylphenol
$C_7H_6O_2$
M 122,12 g/mol • D 1,13
mp 117 °C • flp 174 °C
Solubility: 13,8 g/l (H_2O, 30,5 °C)
[123-08-0] • EC No. 204-599-1 • WGK 2

Warning H315-H319-H335

Type analysis:

Melting point.....115-118 °C
Assay (GC).....≥99,0 %

3870.2	50 g	plastic	19,25 €
3870.1	250 g	plastic	80,10 €

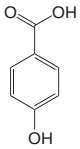
Hydroxybenzene

▶ Phenol see p. 2204

2-Hydroxybenzoic acid

▶ Salicylic acid see p. 2304

4-Hydroxybenzoic acid



4-Hydroxybenzoic acid

≥99 %, for synthesis

$C_7H_6O_3$
M 138,12 g/mol
D 1,46
mp ~215 °C
Solubility: 5 g/l (H_2O, 20 °C)
[99-96-7] • EC No. 202-804-9
WGK 1

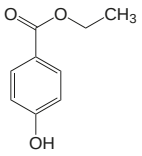
Warning H315-H319-H335

Type analysis:

Assay (dry substance). ..... ≥99,0 %
Melting point. ..... 214-217 °C

3872.1	100 g	plastic	18,85 €
3872.2	500 g	plastic	46,15 €
Original pack 6 x 500 g			43,84/500 g
3872.3	1 kg	plastic	78,40 €
Original pack 6 x 1 kg			74,48/1 kg

4-Hydroxybenzoic acid ethyl ester



Ethylparaben, Ethyl-4-hydroxybenzoate
$C_9H_{10}O_3$
M 166,18 g/mol
bp 297 °C (dec.)
mp 115-118 °C
Solubility: 1,7 g/l (H_2O, 20 °C)
[120-47-8] • EC No. 204-399-4
WGK 1

4-Hydroxybenzoic acid ethyl ester

≥98 %, Ph.Eur., USP

Guarantee analysis:

Appearance. ..... white powder
Assay (HPLC). ..... 98,0-102,0 %
Identity. ..... complies
Melting point. ..... 115-118 °C
Appearance of solution (10 % in ethanol 96 %). ..... clear, colourless to yellowish
Colour of solution (10 % in ethanol 96 %). ..... complies
Acidity (0,1 M NaOH/0,2 g). ..... complies
Related substances (p-HBA). ..... ≤0,5 %
Related substances (unspecific impurities). ..... ≤0,5 %
Related substances (total). ..... ≤1,0 %
Volatile organic impurities. ..... complies
Residual solvents (ethanol). ..... ≤0,5 %
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

6880.1	100 g	plastic	17,10 €
6880.2	250 g	plastic	29,60 €
6880.3	500 g	plastic	51,10 €
Original pack 6 x 500 g			48,55/500 g
6880.4	1 kg	plastic	77,95 €
Original pack 6 x 1 kg			74,05/1 kg

4-Hydroxybenzoic acid ethyl ester

ROTI®STAR Primary Standard

Type analysis:

Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤4,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE07.1	100 mg	glass	751,45 €

4-Hydroxybenzoic acid ethyl ester

ROTICHROM® Working Standard

Type analysis:

Assay (HPLC). ..... ≥90,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC07.1	100 mg	glass	125,70 €

4-Hydroxybenzoic acid ethyl ester

ROTICHROM® HPLC

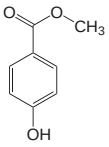
Reference substance for HPLC.

Type analysis:

Purity (HPLC). ..... ≥99 %

4746.1	1 g	glass	31,10 €

4-Hydroxybenzoic acid methyl ester



Methyl-p-hydroxybenzoate, Methylparaben
$C_8H_8O_3$
M 152,15 g/mol
D 1,38 • bp ~275 °C (dec.)
mp 126-127 °C
[99-76-3] • EC No. 202-785-7
WGK 1
H412

4-Hydroxybenzoic acid methyl ester

≥99 %

Type analysis:

Assay (titr.). ..... ≥99 %
Appearance. ..... white to off-white powder

3646.1	100 g	plastic	16,70 €
3646.2	250 g	plastic	22,50 €
3646.3	500 g	plastic	38,20 €
Original pack 6 x 500 g			36,29/500 g
3646.4	1 kg	plastic	67,20 €
Original pack 6 x 1 kg			63,84/1 kg

4-Hydroxybenzoic acid methyl ester

ROTI®STAR Primary Standard

Type analysis:

Assay (HPLC). ..... ≥98,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤2,0 %
Assay (qNMR). ..... ≥95,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE10.1	100 mg	glass	751,45 €

4-Hydroxybenzoic acid methyl ester

ROTICHROM® Working Standard

Type analysis:

Assay (HPLC). ..... ≥91,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC10.1	100 mg	glass	125,70 €

4-Hydroxybenzoic acid methyl ester

ROTICHROM® HPLC

Reference substance for HPLC.

Type analysis:

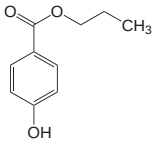
Purity (HPLC)..... ≥99 %

4748.1	1 g	glass	32,15 €

2-Hydroxybenzoic acid methyl ester

▶ Salicylic acid methyl ester see p. 2304

4-Hydroxybenzoic acid propyl ester



Propylparaben, Propyl 4-hydroxybenzoate
$C_{10}H_{12}O_3$
M 180,21 g/mol
D 1,28 • bp 285-317 °C
mp 96-99 °C • flp 180 °C
[94-13-3] • EC No. 202-307-7 • WGK 1

4-Hydroxybenzoic acid propyl ester

≥98 %, Ph.Eur., USP

Guarantee analysis:

Appearance..... white powder
Assay (HPLC)..... 98,0-102,0 %
Identity..... complies
Melting point..... 96-99 °C
Appearance of solution (10 % in ethanol 96 %)..... complies
Acidity (0,1 M NaOH/0,2 g)..... complies
Loss on drying..... ≤0,5 %
Sulphated ash..... ≤0,1 %
Related substances (p-HBA)..... ≤0,5 %
Related substances (unspecific impurities)..... ≤0,5 %
Related substances (total)..... ≤1,0 %
Volatile organic impurities..... complies
Residual solvents (ethanol)..... ≤0,2 %
Residual solvents (propanol)..... ≤0,5 %

6882.1	100 g	plastic	18,85 €
6882.2	250 g	plastic	28,50 €
6882.3	500 g	plastic	49,35 €
Original pack 6 x 500 g			46,88/500 g
6882.4	1 kg	plastic	81,20 €
Original pack 6 x 1 kg			77,14/1 kg

4-Hydroxybenzoic acid propyl ester

ROTI®STAR Primary Standard

Type analysis:

Assay (HPLC)..... ≥97,0 %
Residual solvents (GC)..... ≤1,0 %
Water (KF)..... ≤1,0 %
Assay (qNMR)..... ≥95,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV. The certificate includes all results of analytical tests and validations.

NE13.1	100 mg	glass	751,45 €

4-Hydroxybenzoic acid propyl ester

ROTICHROM® Working Standard

Type analysis:

Assay (HPLC)..... ≥90,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC13.1	100 mg	glass	125,70 €

4-Hydroxybenzoic acid propyl ester

ROTICHROM® HPLC

Reference substance for HPLC.

Type analysis:

Purity (HPLC)..... ≥99 %

4749.1	1 g	glass	31,10 €

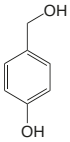
(S)-2-(6-Hydroxy-2-benzothiazolyl)-2-thiazoline-4-carboxylic acid sodium salt

▶ D-Luciferin see p. 2105
▶ D-Luciferin sodium salt see p. 2105

10-p-Hydroxybenzoylaucubin

▶ Agnuside see p. 1777

4-Hydroxybenzyl alcohol



4-Hydroxybenzyl alcohol

≥99,5 %
$C_7H_8O_2$
M 124,14 g/mol
mp 114-122 °C
[623-05-2] • EC No. 210-768-0
WGK 1

Warning H319

Type analysis:

Assay..... ≥99,5 %

6257.1	5 g	glass	38,60 €

2'-Hydroxybenzyl-3-methoxybenzoate-2',4-diglucoside

▶ Leiocarposide see p. 2097

Hydroxybrasilin

▶ Hematoxylin (C.I. 75290) see p. 2035

Hydroxybutanedioic acid

▶ D(+)-Malic acid see p. 2117
▶ DL-Malic acid see p. 2117
▶ L(-)-Malic acid see p. 2117

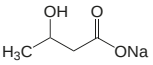
(2S)-2-Hydroxybut-3-enyl glucosinolate

▶ Epiprogoitrin see p. 1972

2-Hydroxybut-3-enyl glucosinolate potassium salt

▶ Progoitrin see p. 2238

DL-3-Hydroxybutyric acid sodium salt



DL-3-Hydroxybutyric acid sodium salt

≥98 %, for biochemistry

Sodium 3-hydroxybutyrate, Hydroxybutanoic acid sodium salt
$C_4H_7NaO_3$
M 126,09 g/mol
mp 164 °C
Storage temp.: +4 °C
[150-83-4] • EC No. 205-774-5
WGK 3

Type analysis:

Appearance..... white to off-white, cryst. powder
Assay (perchloric acid titration)..... ≥98,0 %
Appearance of solution (10 %, H_2O)..... colourless
Water (KF)..... ≤10,0 %

8428.1	5 g	plastic	27,85 €
8428.2	10 g	plastic	47,20 €
8428.3	25 g	plastic	99,90 €

3α-Hydroxy-5ß-cholanic acid

▶ Lithocholic acid see p. 2104

trans-p-Hydroxycinnamic acid

▶ p-Coumaric acid see p. 1912

7-Hydroxycoumarin

▶ Umbelliferone see p. 2429

2-Hydroxy-p-cymene

▶ Carvacrol see p. 1880

3-Hydroxy-p-cymene

▶ Thymol see p. 2406

4-Hydroxy-3,5-dimethoxybenzaldehyde

▶ Syringaldehyde see p. 2392

7-Hydroxy-5,6-dimethoxycoumarin

▶ Umckalin see p. 2429

2-(2-Hydroxy-3,6-disulpho-1-naphthylazo-(1))-benzene-arsonic acid sodium salt

▶ Thorin see p. 2405

Hydroxyethyl agarose

▶ Agarose Low Melt see p. 1776

Hydroxyethyl mercaptan

▶ 2-Mercaptoethanol see p. 2126

N-2-Hydroxyethylpiperazine-N'-2-ethane sulphonic acid

▶ HEPES see p. 2036
▶ HEPES sodium salt see p. 2037

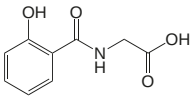
4-(2-Hydroxyethyl) piperazine-1-propane sulphonic acid

▶ HEPPS, EPPS see p. 2037

1-Hydroxyginkolide A

▶ Ginkgolide B see p. 2016

o-Hydroxyhippuric acid



o-Hydroxyhippuric acid

≥95 %, for biochemistry
Salicyluric acid
$C_9H_9NO_4$
M 195,18 g/mol
mp 164-169 °C
[487-54-7] • EC No. 207-661-6
WGK 1

Type analysis:
Assay..... ≥95,0 %

7511.1	1 g	glass	57,95 €

5-Hydroxy-2-(hydroxymethyl)-4H-pyran-4-one

▶ Kojic acid see p. 2087

2-Hydroxy-1-(1-hydroxy-naphthyl-2-azo)-6-nitro-naphthalene 4-sulphonic acid monosodium salt

▶ Eriochrome® black T (C.I. 14645) see p. 1972
▶ Eriochrome® black T (C.I. 14645), trituration see p. 1972

2-Hydroxy-1-(2-hydroxy-4-sulfo-1-naphthylazo)-naphthalene-3-carboxylic acid

▶ Calconcarboxylic acid see p. 1873

(S)-4-Hydroxymandelonitrile-β-D-glucoside

▶ Dhurrin see p. 1931

4-Hydroxy-2-mercapto-pyrimidine

▶ 2-Thiouracil see p. 2405

4-Hydroxy-3-methoxy-benzaldehyde

▶ Vanillin see p. 2434

2-Hydroxy-5-methoxybenzoic acid

▶ 3-Methoxysalicylic acid see p. 2135

4-Hydroxy-3-methoxy benzoic acid

▶ Vanillic acid see p. 2434

4-Hydroxy-3-methoxycinnamic acid

▶ trans-Ferulic acid see p. 1993

7-Hydroxy-6-methoxy-coumarin

▶ Scopoletin see p. 2308

7-Hydroxy-4'-methoxy-isoflavone

▶ Formononetin see p. 2006

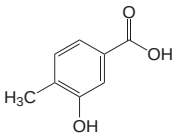
2-Hydroxy-3-methylbenzoic acid

▶ 3-Methylsalicylic acid see p. 2142

2-Hydroxy-5-methylbenzoic acid

▶ 5-Methylsalicylic acid see p. 2142

3-Hydroxy-4-methylbenzoic acid



3-Hydroxy-4-methylbenzoic acid

≥98 %, for synthesis
3-Hydroxy-p-toluic acid, 3,4-Cresotic acid
$C_8H_8O_3$
M 152,15 g/mol
mp 207-212 °C
[586-30-1] • EC No. 209-571-2 • WGK 3

Warning H315-H319-H335

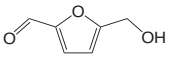
Type analysis:
Appearance..... white to off-white, cryst. powder
Assay. ..... ≥98,0 %

4298.1	1 g	glass	31,10 €
4298.2	5 g	plastic	50,45 €
4298.3	25 g	plastic	142,45 €

7-Hydroxy-4-methylcoumarin

▶ 4-Methylumbelliferone see p. 2143

5-Hydroxymethylfurfural



NEW

5-Hydroxymethylfurfural

≥97 %, for synthesis
5-Hydroxymethyl-2-furaldehyde,
5-Hydroxymethyl-2-furancarboxaldehyde, HMF
$C_6H_6O_3$
M 126,11 g/mol
Storage temp.: +4 °C
[67-47-0] • EC No. 200-654-9
WGK 1

Warning H315-H319

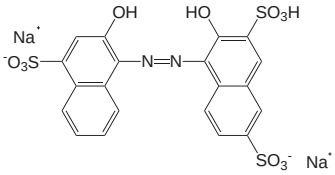
Type analysis:
Appearance. ..... yellow to amber solid melt
Assay (GC). ..... ≥97 %

2295.1	250 mg	glass	16,05 €
2295.2	1 g	glass	32,15 €
2295.3	5 g	glass	107,40 €

1-Hydroxynaphthalene

▶ 1-Naphthol see p. 2152

Hydroxy naphthol blue disodium salt



Hydroxy naphthol blue disodium salt

p.a., ACS
Indicator, microspcopy
2,2'-Dihydroxy-1,1'-azonaphthalene-3',4,6'-trisulfonic acid disodium salt
$C_{20}H_{12}N_2Na_2O_{11}S_3$
M 598,50 g/mol
mp 274 °C
Solubility: soluble (H_2O)
[165660-27-5] • WGK 1

Guarantee analysis:
Appearance. ..... dark blue crystals
Loss on drying..... ≤6 %
Suitable for calcium determination. ..... complies

2556.1	5 g	glass	19,90 €
2556.2	25 g	glass	39,70 €

1-Hydroxy-3-nitrobenzene
▶ 3-Nitrophenol see p. 2164

1-Hydroxy-4-nitrobenzene
▶ 4-Nitrophenol see p. 2164

(3α,4β)-3-Hydroxy-olean-12-en-23-acid
▶ α-Boswellic acid see p. 1848

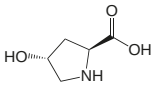
4-Hydroxyphenylalanine
▶ D-Tyrosine see p. 2428
▶ DL-Tyrosine see p. 2428
▶ L-Tyrosine see p. 2428

2-(4-Hydroxyphenyl)-ethylamine
▶ Tyramine see p. 2427

4-Hydroxyphenylethylamine hydrochloride
▶ Tyramine hydrochloride see p. 2428

3-Hydroxy-2-phenylpropionic acid
▶ DL-Tropic acid see p. 2423

L-4-Hydroxyproline

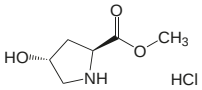


L-4-Hydroxyproline
≥98 %, for biochemistry
$C_5H_9NO_3$
M 131,13 g/mol
mp 274 °C
Solubility: 500 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[51-35-4] • EC No. 200-091-9 • WGK 1

Type analysis:
Assay..... ≥98,0 %

3893.1	5 g	glass	44,00 €

L-Hydroxyproline methylester hydrochloride



L-Hydroxyproline methylester hydrochloride
≥98 %, for biochemistry
H-Hyp-OMe · HCl
$C_6H_{11}NO_3 \cdot HCl$
M 181,62 g/mol
Storage temp.: +4 °C
[40216-83-9] • WGK 3

Type analysis:
Assay (HPLC)..... ≥98,0 %
Water (KF)..... ≤1,0 %

6662.1	500 mg	glass	12,80 €
6662.2	1 g	glass	18,20 €
6662.3	5 g	glass	38,60 €

1-Hydroxypropane
▶ 1-Propanol see p. 2239

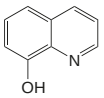
2-Hydroxypropane
▶ 2-Propanol see p. 2239

2-Hydroxypropionic acid
▶ Lactic acid see p. 2088
▶ DL-Lactic acid see p. 2088
▶ L-Lactic acid see p. 2088

6-Hydroxypurin
▶ Hypoxanthine see p. 2062

1-Hydroxy-2,5-pyrrolidinedione
▶ N-Hydroxysuccinimide see p. 2060

8-Hydroxyquinoline

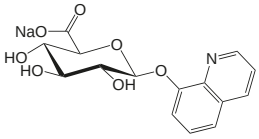


8-Hydroxyquinoline
≥99,5 %, p.a., ACS
Reagent for magnesium.
Oxine, 8-Quinolinol
C_9H_7NO
M 145,16 g/mol
D 1,03 • bp 267 °C
mp 72,5-74 °C
Solubility: 0,5 g/l (H_2O, 20 °C)
[148-24-3] • EC No. 205-711-1
WGK 1
Warning H302-H412

Guarantee analysis:
Assay..... ≥99,5 %
In ethanol insoluble parts..... ≤0,05 %
Melting point..... 72,5-74 °C
Sulphate (SO_4)..... ≤0,02 %
Ash content..... ≤0,05 %
Suitability for magnesium determination..... complies

2557.1	50 g	glass	30,00 €
2557.2	100 g	glass	42,50 €
2557.3	250 g	glass	77,30 €

8-Hydroxyquinoline-β-D-glucuronic acid, sodium salt



8-Hydroxyquinoline-β-D-glucuronic acid, sodium salt
≥98 %, for biochemistry
Substrate for β-glucuronidase.
For detection of *E. coli*.
8-Hydroxy-1-azanaphthalene-β-D-glucuronide, sodium salt
$C_{15}H_{14}NNaO_7$
M 343,27 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[207728-71-0]
WGK 3
Warning H315-H319-H335

Type analysis:
Appearance. ..... white to off-white, cryst. powder
Assay (TLC). ..... ≥98,0 %
Appearance of solution (5 % in H_2O)..... colourless to slightly yellow
Water (KF). ..... ≤12,0 %
Specific rotation $[\alpha]_D^{20}$ (1 % in H_2O, dry substance). ..... -93,0° to -87,0°

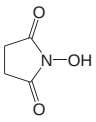
8432.1	100 mg	glass	49,35 €
8432.2	250 mg	glass	83,75 €
8432.3	500 mg	glass	141,80 €

12-Hydroxysenecionan-11,16-dione
▶ Senecionine see p. 2310

12-Hydroxysenecionan-11,16-dione-4-oxide
▶ Senecionine N-oxide see p. 2311

2-Hydroxysuccinic acid
▶ D(+)-Malic acid see p. 2117
▶ DL-Malic acid see p. 2117
▶ L(-)-Malic acid see p. 2117

N-Hydroxysuccinimide



N-Hydroxysuccinimide

≥99 %, for synthesis

Activation agent for carboxylic acids.
Coupling reagent for peptide synthesis.
1-Hydroxy-2,5-pyrrolidinedione, HOSu, NHS
$C_4H_5NO_3$
M 115,09 g/mol
mp 93-100 °C
Solubility: 3 g/l (H_2O, 19 °C)
[6066-82-6] • EC No. 228-001-3
WGK 1

Type analysis:

Appearance. ..... white cryst. powder
Assay (titr., dry substance). ..... ≥99,0 %
Water (KF). ..... ≤2,0 %
Melting range. ..... 93,0-100,0 °C

9670.1	25 g	glass	25,70 €
9670.2	100 g	glass	64,40 €
9670.3	500 g	glass	256,95 €
Original pack 6 x 500 g			244,10/500 g

2-[5-(2-Hydroxy-5-sulfophenyl)-3-phenyl-1-formazyl]-benzoic acid-monosodium salt

▶ Zincon see p. 2451

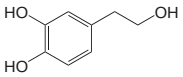
3-Hydroxy-p-toluic acid

▶ 3-Hydroxy-4-methylbenzoic acid see p. 2058

5-Hydroxytryptamine hydrochloride

▶ Serotonin hydrochloride see p. 2313

Hydroxytyrosol



Hydroxytyrosol

ROTICHROM® HPLC

Reference substance for HPLC.
From *Olea europaea*.
3,4-Dihydroxyphenylethanol
$C_8H_{10}O_3$
M 154,17 g/mol
Storage temp.: +4 °C
[10597-60-1]

Warning H302

Type analysis:

Purity (HPLC). ..... >98 %

1153.1	25 mg	glass	274,15 €

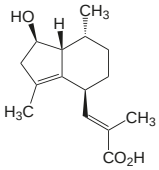
(3α,4β)-3-Hydroxy-urs-12-en-23-acid

▶ β-Boswellic acid see p. 1848

3α-Hydroxy-urs-12-en-11-keto-23-acid

▶ 11-keto-β-Boswellic acid see p. 1848

Hydroxyvalerenic acid



$C_{15}H_{22}O_3$
M 250,34 g/mol
mp 164,5-165,5 °C
[1619-16-5]

Hydroxyvalerenic acid

ROTI®STAR Primary Standard

Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:

Assay (HPLC). ..... ≥90,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF). ..... ≤10,0 %
Assay (qNMR). ..... ≥80,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE48.1	10 mg	glass	532,15 €

Hydroxyvalerenic acid

ROTICHROM® Working Standard

Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:

Assay (HPLC). ..... ≥80,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC48.1	25 mg	glass	375,20 €

Hydroxyvalerenic acid

with analytical records

From *Valeriana officinalis*.
Storage temp.: +4 °C

Type analysis:

Purity (HPLC). ..... >99 %
Analytical records: HPLC, TLC, ^{1}H- NMR, ^{13}C- NMR, UV, IR, MS, elementary analysis, melting point

4710.2	50 mg	glass	385,95 €
4710.1	100 mg	glass	676,20 €

Hydroxyvalerenic acid

ROTICHROM® HPLC

Reference substance for HPLC.
From *Valeriana officinalis*.
Storage temp.: +4 °C

Type analysis:

Purity (HPLC). ..... >99 %

4481.1	25 mg	glass	342,95 €
4481.2	50 mg	glass	568,70 €
4481.3	100 mg	glass	908,40 €

Hygromycin B

Hygromycin B

>950 µg/mg, for biochemistry

Aminoglycoside antibiotic.
$C_{20}H_{37}N_3O_{13}$
M 527,53 g/mol
D 1,16
mp 160-180 °C
Storage temp.: +4 °C
[31282-04-9] • EC No. 250-545-5
UN No. 3462 • ADR 6.1 I • WGK 1

Danger

H300+H310+H330-H318-H334-H317

Type analysis:

Assay (HPLC). ..... >90 %
Activity. ..... >950 µg/mg
Solubility (50 mg/ml, H_2O). ..... complies

CP13.1	250 mg	glass	60,75 €
CP13.2	500 mg	glass	104,85 €
CP13.3	1 g	glass	182,25 €
CP13.4	5 g	glass	628,90 €

For further information, please see page 1504

Hygromycin B solution

$C_{20}H_{37}N_3O_{13}$
M 527,53 g/mol
Storage temp.: +4 °C
[31282-04-9] • EC No. 250-545-5
UN No. 3172 • ADR 6.1 II • WGK 1

Danger

H301-H310+H330-H318-H334-H317

Hygromycin B solution

CELLPURE® 50 mg/ml, sterile

Aminoglycoside antibiotic. For cell culture, biochemistry, molecular biology and microbiology.
Aqueous hygromycin B solution

Type analysis:

Concentration. ..... 50 mg/ml
Activity (powder). ..... >900 U/mg
Assay (Hygromycin). ..... >85 %
Endotoxins. ..... <10 EU/ml
Sterility. ..... complies
Suitability for cell cultur. ..... complies

CP12.1	10 ml	plastic	117,75 €
CP12.2	20 ml	plastic	203,75 €

For further information, please see page 1504

Hygromycin B solution

50 mg/ml, BioScience-Grade, sterile

Aminoglycoside antibiotic. For cell culture, biochemistry, molecular biology and microbiology. **In a septum bottle.**

Hygromycin B solution **in PBS**

Type analysis:

Appearance. ..... clear, colourless to yellowish
Solvent..... PBS
Concentration. ..... 50±10 mg/ml
Purity (HPLC)..... ≥90 %
Sterility..... complies

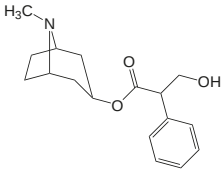
1287.1	10 ml	glass	103,10 €
1287.2	20 ml	glass	160,75 €

For further information, please see page 1504

Hymecromone

▶ 4-Methylumbelliferone see p. 2143

L-Hyoscyamine



L-Hyoscyamine

≥98 %, for biochemistry

$C_{17}H_{23}NO_3$
M 289,36 g/mol • mp 108,5 °C
[101-31-5] • EC No. 202-933-0
UN No. 1544 • ADR 6.1 I • WGK 3

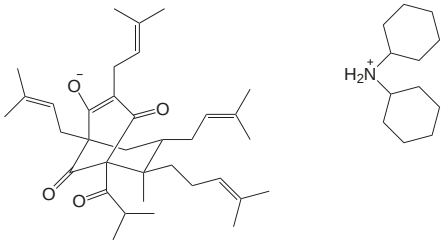
Danger H300+H330

Type analysis:

Appearance. ..... white powder
Assay (HPLC)..... ≥98 %

8914.1	1 g	glass	84,85 €

Hyperforin / Adhyperforin Dicyclohexylammonium salt, Mixture 4:1



Hyperforin / Adhyperforin Dicyclohexylammonium salt, Mixture 4:1

ROTICHROM® HPLC

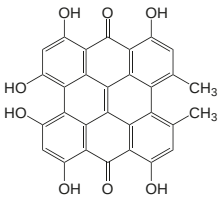
Reference substance for HPLC.
Natural mixture from *Hypericum perforatum.*
$C_{35}H_{51}O_4 \cdot C_{12}H_{24}N$
M 718,11 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[238074-03-8] • WGK 3

Type analysis:

Purity (HPLC)..... ≥95 %

6495.1	5 mg	glass	338,65 €

Hypericin



$C_{30}H_{16}O_8$
M 504,43 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[548-04-9] • EC No. 208-941-0
UN No. 2811 • ADR 6.1 III • WGK 3

Danger H301-H317

Hypericin

ROTI®STAR Primary Standard

Type analysis:

Assay (HPLC)..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF)..... ≤7,0 %
Assay (qNMR)..... ≥75,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE22.1	10 mg	glass	880,45 €

Hypericin

ROTICHROM® Working Standard

Type analysis:

Assay (HPLC)..... ≥70,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC22.1	10 mg	glass	310,70 €

Hypericin

ROTICHROM® HPLC

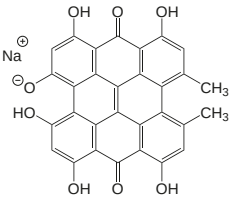
Reference substance for HPLC.

Type analysis:

Purity (HPLC). ..... ≥98 %

L543.1	1 mg	glass	127,95 €

Hypericin sodium salt



Hypericin sodium salt

ROTICHROM® HPLC

Reference substance for HPLC.
From *Hypericum perforatum.*
$C_{30}H_{15}O_8Na$
M 526,45 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.

Warning H302

Type analysis:

Purity (HPLC)..... >98 %

1154.1	5 mg	glass	375,20 €

Hypericon oil, extra pure

Hypericon oil

extra pure

Fatty red oil, from *Hypericum perforatum L.*
Oleum Hyperici
D 0,92
flp >250 °C
[68917-49-7] • EC No. 282-026-4
WGK 1

Type analysis:

Appearance. ..... dark red, viscous oil
Extracted with oil. ..... peanut oil refined
Density. 0,913-0,925
Iodine value. 80-105
Acid value. ..... ≤2
Solidification point. ..... +3 to +10 °C
Refractive index n_D^{20}. 1,468-1,472
Hypericin content . ..... 0,6-10 mg/100 g
Stabilized with. ..... ascorbic acid palmitate, natural Vitamin E

4501.1	250 ml	glass	31,10 €

Hypericon oil, pure

Hypericon oil

pure

Hypericum perforatum
D 0,91
flp ~200 °C
[68917-49-7] • EC No. 282-026-4
WGK 1

Type analysis:

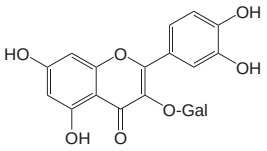
Appearance. ..... red-brown oil
Solubility in ethanol % vol. ..... L96: 1:10 v/v turbid
Density (20 °C). ..... 0,910-0,915 g/cm^3
Refractive index (20 °C). 1,4650-1,4720
Optical rotation (20 °C). ..... -1° to 1°

9404.1	250 ml	glass	26,80 €

Hyperin

▶ Hyperoside see p. 2062

Hyperoside



Quercetin-3-galactoside, Hyperin
$C_{21}H_{20}O_{12}$
M 464,39 g/mol
mp 225-227 °C
[482-36-0] • EC No. 207-580-6
WGK 2

Warning H302

Hyperoside

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC).....≥95,0 %
Residual solvents (GC).....≤2,0 %
Water (KF).....≤7,0 %
Assay (qNMR).....≥85,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE23.1	25 mg	glass	654,70 €

Hyperoside

ROTICHROM® Working Standard

Type analysis:
Assay (HPLC).....≥85,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC23.1	50 mg	glass	385,95 €

Hyperoside

ROTICHROM® HPLC

Reference substance for HPLC.
From *Hypericum perforatum.*
Storage temp.: +4 °C

Type analysis:
Purity (HPLC).....>99 %

7932.1	10 mg	glass	110,65 €

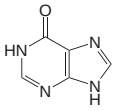
Hyperoside

ROTICHROM® TLC

Reference substance for thin layer chromatography
From *Hypericum perforatum.*
Storage temp.: +4 °C

4215.1	25 mg	glass	51,10 €

Hypoxanthine



Hypoxanthine

≥98 %, for biochemistry
6-Hydroxypurin, Sarcine
$C_5H_4N_4O$
M 136,11 g/mol
[68-94-0] • EC No. 200-697-3

Type analysis:
Appearance.....white to light yellowish powder
Assay (HPLC).....≥98 %

6416.1	5 g	glass	76,90 €

Hypoxanthine-9-β-D-ribofuranoside

▶ Inosine see p. 2068

IBA

▶ Indole-3-butyric acid see p. 2066

ICG

▶ Indocyanine green see p. 2066

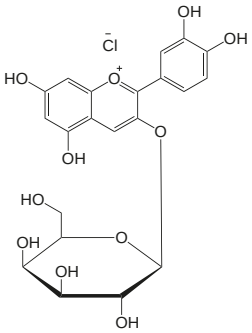
IC standards

▶ Standards for IC (Ion Chromatography): Anionic Standards 1000 mg/l, ready to use see p. 2375
▶ Standards for IC (Ion Chromatography): Ion Multi-Element Standards for IC see p. 2377

ICP standards

▶ Standards for ICP-OES (Inductively Coupled Spectroscopy) Element Standards 1000 mg/l, ready to use see p. 2361
▶ Standards for ICP-OES: (Inductively Coupled Spectroscopy) Element Standards 10000 mg/l, ready to use see p. 2366
▶ Standards for ICP-OES (Inductively Coupled Spectroscopy): Multi-Element Standards see p. 2370
▶ Standards for ICP-MS Element Standards 10 mg/l, ready to use see p. 2373
▶ Standards for ICP-MS Multi Element Standards see p. 2373

Idaein chloride



Idaein chloride

ROTICHROM® HPLC

Reference substance for HPLC.
Cyanidin-3-galactoside chloride
$C_{21}H_{21}ClO_{11}$
M 484,86 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[27661-36-5]

Type analysis:
Purity (HPLC).....≥98 %

3967.1	5 mg	glass	321,45 €

IMAC columns

▶ Roti®garose-His/Ni Cartridges see p. 2281
▶ Roti®garose-His/Ni Columns see p. 2281
▶ Roti®garose-His/Co Columns see p. 2281
▶ Roti®garose-His/Ni NTA-Cartridges see p. 2282

IMAC matrix/cobalt charged

▶ Roti®garose-His/Co Beads see p. 2281
▶ Roti®garose-His/Co HPBeads see p. 2281

IMAC matrix/nickel charged

▶ Roti®garose-His/Ni Beads see p. 2281
▶ Roti®garose-His/Ni NTA-HPBeads see p. 2282
▶ Roti®garose-His/Ni HPBeads plus see p. 2282
▶ Roti®garose-His/Ni NTA-Beads see p. 2282
▶ Roti®garose-His/Ni HPBeads see p. 2282

IMAC matrix/Protein A conjugated

▶ Roti®garose-Protein A Beads see p. 2283

IMAC matrix/uncharged

▶ Roti®garose-His uncharged HPBeads see p. 2282

IMDM cell culture medium

▶ Roti®-CELL Iscove's MDM see p. 2269

Imidazole

Glyoxalin, 1,3-Diaza-2,4-cyclopentadiene
$C_3H_4N_2$
M 68,08 g/mol
bp 256 °C
mp 89-91 °C • flp 145 °C
Solubility: 633 g/l (H_2O, 20 °C)
[288-32-4] • EC No. 206-019-2
UN No. 3263 • ADR 8 III • WGK 1
Danger H302-H314-H360D

Imidazole

PUFFERAN® ≥99 %, p.a., ultra quality

Biological buffer substance, molecular biology, for titration of aspartic acid and glutamic acid.

Guarantee analysis:

Appearance	white crystals
Assay (titr.)	≥99,0 %
Water (KF)	≤1,0 %
Arsenic (As)	≤0,0003 %
Barium (Ba)	≤0,0005 %
Lead (Pb)	≤0,0005 %
Calcium (Ca)	≤0,002 %
Cadmium (Cd)	≤0,0005 %
Chromium (Cr)	≤0,0005 %
Iron (Fe)	≤0,0005 %
Copper (Cu)	≤0,0005 %
Magnesium (Mg)	≤0,0005 %
Manganese (Mn)	≤0,0005 %
Nickel (Ni)	≤0,0005 %
Zinc (Zn)	≤0,0005 %
UV-absorbtion (0,9 % in H_2O):	
260 nm	≤0,02

X998.1	10 g	plastic	17,75 €
X998.2	50 g	plastic	46,80 €
X998.3	100 g	plastic	80,10 €
X998.4	250 g	plastic	181,60 €

For further information, please see page 1308

Imidazole

≥99 %

Type analysis:

Assay (GC)	≥99 %
Water	≤0,2 %
pH value (0,1 M, H_2O)	9,5-11
Melting point	88-91 °C

3899.1	50 g	plastic	18,20 €
3899.2	250 g	plastic	48,95 €
3899.3	500 g	plastic	68,70 €
Original pack 6 x 500 g			65,27/500 g
3899.4	1 kg	plastic	98,80 €
Original pack 6 x 1 kg			93,86/1 kg

3-Imidazol-4-yl-alanine

- D-Histidine see p. 2044
- DL-Histidine see p. 2044
- L-Histidine see p. 2044

2-(4-Imidazolyl) ethylamine dihydrochloride

- Histamine dihydrochloride see p. 2044

4-Imidazolyl-L-alanine

- L-Histidine hydrochloride monohydrate see p. 2045

Iminomethanediamine HCl

- Guanidine hydrochloride see p. 2030

Immersion oil

Immersion oil

for microscopy, fluorescence tested

For use in the space between specimen and objective lens (immersion oil microscopy).
D ~1,03
UN No. 3082 • ADR 9 III • WGK 2
Warning H410

Guarantee analysis:

Density (d 20 °C/4 °C)	1,0245-1,0265
Refractive index (20 °C)	1,5150-1,5170
Viscosity (20 °C)	100-120 mPas
UV-transmission	
450 nm	≥90 %
400 nm	≥78 %
380 nm	≥65 %
Fluorescence (as quinine):	
365 nm	≤1,5 ppm

X899.4	15 ml	dropp. bottle	9,15 €
X899.1	50 ml	glass	14,95 €
X899.2	100 ml	glass	22,50 €
X899.3	500 ml	glass	80,10 €

For further information, please see page 1537

Immersion oil

Immersion oil

for microscopy

A viscous solution of natural oils based on oil of cedar wood.
D ~0,99
flp >100 °C
UN No. 3082 • ADR 9 III • WGK 2
Danger H304-H411

Type analysis:

Appearance	clear, yellow-brownish, viscous oil
Density (20 °C)	0,981-0,998
Refractive index (20 °C)	1,508-1,525

5789.1	50 ml	glass	10,65 €
5789.3	100 ml	glass	14,55 €
5789.2	500 ml	glass	36,45 €

For further information, please see page 1537

Immunochromatography

- RiboFlow® Campylobacter see p. 2259
- RiboFlow® Candida albicans see p. 2259
- RiboFlow® Cosmetics see p. 2259
- RiboFlow® Cronobacter see p. 2259
- RiboFlow® E. coli see p. 2259
- RiboFlow® Enterobacteriaceae see p. 2259
- RiboFlow® Listeria Twin see p. 2259
- RiboFlow® P/En see p. 2260
- RiboFlow® Pseudomonas aeruginosa see p. 2260
- RiboFlow® Salmonella see p. 2260
- RiboFlow® Staphylococcus aureus see p. 2260
- RiboFlow® Vibrio parahaemolyticus see p. 2260

Indantrionehydrate

- Ninhydrin see p. 2159

Indicator buffer tablets

Indicator buffer tablets

for determination of water hardness with EDTA

Dissolve one tablet in 50 ml water sample and bring to pH 11 with approx. 1 ml ammonia solution 30 % (art. CP17). Titrate with EDTA disodium salt volumetric solution (art. T136 or T137) from red to green.
WGK 1
Warning H317

Type analysis:

Suitability as indicator	complies
Disintegration time (25 °C)	100 s

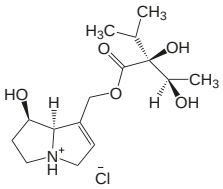
7649.1	100 pieces	20,35 €
7649.2	500 pieces	49,35 €

Indicators and Dyes

Art. No.	Description	Page
4002	Acid blue 93 (C.I. 42780)	1768
T128	Acid fuchsin (C.I. 42685)	1768
7690	Acid fuchsin calcium salt (C.I. 42685)	1768
0249	Acridine orange (C.I. 46005)	1770
7632	Acridine orange base (C.I. 46005)	1770
7633	Acridine orange hydrochloride hydrate (C.I. 46005)	1770
3082	Alcian blue 8 GS (C.I. 74240)	1780
4476	Alizarin (C.I. 58000)	1781
7634	Alizarin complexone dihydrate	1781
0348	Alizarin red S (C.I. 58005)	1781
5155	Alkali blue 6B (C.I. 42750)	1781
9590	Amido black 10 B (C.I. 20470)	1786
KK22	Arsenazo III	1816
5165	Astra blue FM (C.I. 48048)	1819
0319	Auramine O (C.I. 41000)	1819
2670	Aurin tricarboxylic acid ammonium salt	1819
CP99	Azomethine H hydrate	1823
7640	Azure II	1823
7642	Azure II eosinat	1824
7636	Azure A (C.I. 52005)	1824
7637	Azure B (C.I. 52010)	1824
7639	Azure C (C.I. 52002)	1824
2674	Barium diphenylamine sulfonate	1826
0316	Bismarck brown R (C.I. 21010)	1839

0313 Bismarck brown Y (C.I. 21000) 1839
9598 Brilliant blue G 250 (C.I. 42655) 1849
3862 Brilliant blue R 250 (C.I. 42660) 1849
5162 Brilliant cresyl blue (C.I. 51010) 1849
0324 Brilliant green (C.I. 42040) 1850
7643 Brilliant black BN (C.I. 28440) 1850
7645 Brilliant yellow (C.I. 24890) 1850
6558 Bromochlorophenol blue sodium salt 1852
T115 Bromocresol green 1852
9949 Bromocresol green indicator solution 1852
KK18 Bromocresol green sodium salt 1853
0317 Bromocresol purple 1853
9955 Bromocresol purple indicator solution 1853
2555 Bromocresol purple sodium salt 1853
T116 Bromophenol blue 1854
9952 Bromophenol blue indicator solution 1854
A512 Bromophenol blue sodium salt 1854
6573 Bromophenol red free acid 1854
9956 Bromophenol red indicator solution 1854
6579 Bromophenol red sodium salt 1854
T117 Bromothymol blue 1855
9947 Bromothymol blue indicator solution 1855
KK19 Bromothymol blue sodium salt 1855
KK27 Bromoxylenol blue 1855
7688 Calcein 1868
2676 Calconcarboxylic acid 1873
6859 Carmine (C.I. 75470) 1879
7646 Celestine blue (C.I. 51050) 1884
0347 Chlorophenol red 1894
7647 Chromotrope® 2B (C.I. 16575) 1897
4937 Chromotrope® 2R (C.I. 16570) 1897
7648 Chromotrope® FB (C.I. 14720) 1898
KK30 Chromotropic acid disodium salt dihydrate 1898
0322 Congo red (C.I. 22120) 1907
5750 Cotton blue (C.I. 42780) 1911
5160 m-Cresol purple 1913
KK15 o-Cresol red 1913
5534 Cresol red sodium salt 1913
7651 Cresyl violet acetate 1913
7652 Crocein orange G (C.I. 15970) 1913
T123 Crystal violet (C.I. 42555) 1914
9469 Curcumin 1915
6335 DAPI 1922
6843 DAPI 1922
X866 2',7'-Dichlorofluorescein 1935
HN79 2,6-Dichlorophenol-indophenol sodium salt hydrate 1936
7654 Diethyl safranine (C.I. 50206) 1940
2677 Dimethylglyoxim 1949
KK24 Dimethylglyoxime disodium salt octahydrate 1949
9982 Dimethyl yellow (C.I. 11020) 1951
2217 Dimidium bromide 1951
9865 Diphenylamine 1953
2602 Diphenylamine-4-sulphonic acid sodium salt 1953
2696 1,5-Diphenylcarbazide 1953
2678 Diphenylcarbazone 1953
4153 2,2'-Dipyridyl 1954
2697 Dithizone 1955
0306 Eosin B (C.I. 45400) 1970
7089 Eosin Y (C.I. 45380) 1970
0112 Eriochrome® black T (C.I. 14645) 1972
K860 Eriochrome® black T (C.I. 14645), trituration 1972
7661 Eriochrome® blue black B (C.I. 14640) 1972
7663 Eriochrome® blue black R (C.I. 15705) 1973
0331 Erythrosine B (C.I. 45430) 1974
7870 Ethidium bromide 1978
7664 Ethyl eosin (C.I. 45386) 1984
7667 Ethyl orange sodium salt 1986
7677 Ethyl red 1986
7680 Ethyl violet (C.I. 42600) 1986
7684 Evan's blue (C.I. 23860) 1988
0301 Fast Green FCF 1989
7685 Fast sulphon black F (C.I. 26990) 1989
7687 Fat brown RR (C.I. 11285) 1989
T131 Ferroin indicator solution 1993
T132 Ferroin solution 1993
5283 Fluorescein disodium salt (C.I. 45350) 1996
3745 Fluorescein isothiocyanate Isomer I 1996
3256 Fuchsine basic (C.I. 42510) 2008
7691 Giemsa stain 2015
7694 Guinea green B (C.I. 42085) 2032
3816 Hematoxylin (C.I. 75290) 2035
2556 Hydroxy naphthol blue disodium salt 2058
2557 8-Hydroxyquinoline 2059
7649 Indicator buffer tablets 2063
3903 Indigo (C.I. 73000) 2065
2700 Indigo carmine (C.I. 73015) 2065
5156 Indigo carmine (C.I. 73015) 2065
7695 Indocyanine green 2066
7697 Janus green B (C.I. 11050) 2082
7698 Jenner Stain 2082
7699 Lacmoid 2087
7702 Leishman stain 2097
7703 Leuco crystal violet 2098
7706 Light green SF (C.I. 42095) 2098
7707 Lissamine green B (C.I. 44090) 2100
0248 Litmus (C.I. 1242) 2104
4203 Luminol 2105
7708 Luminol sodium salt hemihydrate 2106
7710 Malachite green hydrochloride 2116
5895 Malachite green oxalate (C.I. 42000) 2116
7713 Martius yellow (C.I. 10315) 2123
4231 Metal phthaleine 2129
7714 Metanil yellow (C.I. 13065) 2130
A514 Methylene blue (C.I. 52015) 2137
9953 Methylene blue indicator solution 2137
5159 Methyl green (C.I. 42590) 2139
T118 Methyl orange (C.I. 13025) 2140
T119 Methyl orange indicator solution 2140
T120 Methyl red (C.I. 13020) 2142
2562 Methyl red hydrochloride (C.I. 13020) 2142
T121 Methyl red indicator solution 2142
5003 Methyl red sodium salt (C.I. 13020) 2142
KK17 Methylthymol blue sodium salt 2143
7715 Methyl violet 2B (C.I. 42535) 2144
T125 Mixed indicator 5 2145
6459 Morin hydrate 2148
T124 Murexide (C.I. 56085) 2150
5161 Naphthol green B (C.I. 10020) 2153
T122 Neutral red (C.I. 50040) 2156
7716 Nigrosin, soluble in alcohol (C.I. 50415) 2158
7718 Nigrosin, water soluble (C.I. 50420) 2158
4377 Nile blue A (C.I. 51180) 2158
7723 Nile blue chloride (C.I. 51180) 2158
7726 Nile red 2158
4378 Ninhydrin 2159
7727 Nitrazine yellow (C.I. 14890) 2159
2563 4-(4-Nitrophenylazo)-resorcinol 2165
4421 p-Nitrotetrazolium blue chloride 2167
7728 Nuclear fast red (C.I. 60760) 2169
7729 Orange II sodium salt (C.I. 15510) 2185
7731 Orange IV sodium salt (C.I. 13080) 2185
0318 Orange G (C.I. 16230) 2185
0320 Orcein 2186
7306 Oxazine 720 perchlorate 2188
9113 1,10-Phenanthroline monohydrate 2204
KK21 1,10-Phenanthroline hydrochloride monohydrate 2204
T126 Phenolphthalein (C.I. 764) 2205
8145 Phenolphthalein indicator solution 0,1 % 2205
K034 Phenolphthalein indicator solution 1 % 2205
T127 Phenol red 2205
2566 Phenol red sodium salt 2205
9858 *N*-Phenylanthranilic acid 2206
4538 4-(Phenylazo) diphenylamine 2206
5938 Ponceau S (C.I. 27195) 2220
CN74 Propidiumiodide 2241
KK12 1-(2-Pyridylazo)-2-naphthol 2245
2564 4-(2'-Pyridylazo)-resorcinol 2246
2565 4-(2'-Pyridylazo)-resorcinol monosodium salt 2246
0287 Pyrogallol red 2246
7138 Quercetin dihydrate (C.I. 75670) 2249
7741 Resorcinol yellow (C.I. 14270) 2256
7310 Rhodamine 575 2258
T130 Rhodamine B (C.I. 45170) 2258
0749 Rhodamine 6G (C.I. 45160) 2258
3162 Rose Bengale B (C.I. 45440) 2262
T129 Safranin O (C.I. 50240) 2303
KK25 Silver diethyldithiocarbamate 2326
9370 Silver nitrate 2327
2601 Sodium diethyldithiocarbamate trihydrate 2336
HN34 Sodium nitroprusside dihydrate 2346
7709 Solvent blue 38 (C.I. 74180) 2352
T133 Starch 1 % indicator solution 2380
7732 Sudan II (C.I. 12140) 2385
4711 Sudan III (C.I. 26100) 2385
0327 Sudan IV (C.I. 26105) 2385
0292 Sudan black B (C.I. 26150) 2385
7733 Sudan orange G (C.I. 11920) 2385
4033 Sulfobromophthalein disodium salt 2386
4119 5-Sulphosalicylic acid dihydrate 2387
2624 Tashiro's indicator solution 2394
4176 Tetrazolium blue chloride 2403
7736 Tetrazolium violet 2403
4022 Thiazolyl blue 2404
9937 Thionine (acetate) (C.I. 52000) 2404
KK34 Thorin 2405
KK16 Thymol blue 2407
9954 Thymol blue indicator solution 2407
2606 Thymol blue sodium salt 2407
HN97 Thymolphthalein 2407
8152 Thymolphthalein indicator solution 2407
7302 Tiron 2409
7739 Titan yellow (C.I. 19540) 2410
0300 Toluidine blue O (C.I. 52040) 2413
KK13 2,3,5-Triphenyltetrazolium chloride 2420
CN76 Trypan blue (C.I. 23850) 2423
7742 Victoria blue R (C.I. 44040) 2435
7744 Wright's stain 2442
A513 Xylene cyanole (C.I. 42135) 2444
7746 Xylenolblue 2445
2727 Xylenol orange tetrasodium salt 2445
7747 Xylidine Ponceau 2R (C.I. 16150) 2445
KK35 Xylidyl blue sodium salt 2446
5563 Zincon 2451

Indicine hydrochloride

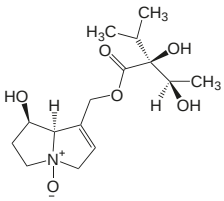


Indicine hydrochloride
ROTICHROM® HPLC
Reference substance for HPLC.
From *Heliotropium indicum*
$C_{15}H_{26}ClNO_6$
M 335,83 g/mol
Storage temp.: +4 °C
[1195140-94-3]
WGK 3

Type analysis:
Purity (HPLC)..... ≥97,0 %

1960.1	10 mg	glass	375,20 €

Indicine N-oxide

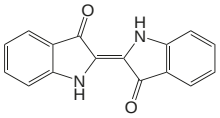


Indicine N-oxide
ROTICHROM® HPLC
Reference substance for HPLC.
From *Heliotropium indicum*
$C_{15}H_{25}NO_6$
M 315,36 g/mol
Storage temp.: +4 °C
[41708-76-3]
WGK 3

Type analysis:
Purity (HPLC)..... ≥96 %

1961.1	10 mg	glass	413,90 €

Indigo (C.I. 73000)

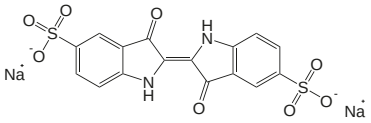


Indigo (C.I. 73000)
synth.
C.I. 73000
$C_{16}H_{10}N_2O_2$
M 262,27 g/mol
mp >300 °C
Solubility: <1 g/l (H_2O, 20 °C)
[482-89-3] • EC No. 207-586-9
WGK 1
Warning H373

Type analysis:
Appearance..... violet powder
Maximum absorption..... 590-615 nm
Solubility (water)..... complies
Solubility (EtOH)..... complies
Loss on drying (110 °C)..... ≤5,0 %

3903.1	50 g	glass	39,70 €
3903.3	100 g	glass	62,25 €
3903.2	500 g	glass	256,95 €
Original pack 6 x 500 g			244,10/500 g

Indigo carmine (C.I. 73015)



$C_{16}H_8N_2Na_2O_8S_2$
M 466,36 g/mol
mp >300 °C
Solubility: 10 g/l (H_2O, 25 °C)
[860-22-0] • EC No. 212-728-8
WGK 1
Warning H302

Indigo carmine (C.I. 73015)
≥80 %, p.a.
Indicator pH 11,5-13,0

Guarantee analysis:
Appearance..... dark blue to purple powder
Dye content..... ≥80 %
Solubility (1 g/100 ml H_2O)..... complies
Loss on drying..... ≤5 %
Heavy metals (as Pb)..... ≤0,004 %
Arsenic (As)..... ≤0,0008 %
Cadmium (Cd)..... ≤0,0001 %
Mercury (Hg)..... ≤0,0001 %

2700.1	25 g	glass	24,65 €
2700.2	100 g	glass	68,70 €

Indigo carmine (C.I. 73015)
for microscopy
Indicator pH 11,5-13,0

Typ analysis:
Absorption max. (in H_2O)..... 596-626 nm
Loss on drying (110 °C)..... ≤5 %
Suitability for microscopy..... complies

5156.1	10 g	glass	14,95 €
5156.2	25 g	glass	22,05 €
5156.3	100 g	glass	64,40 €

Indium

In
M 114,82 g/mol
D 7,31 • bp 2072 °C
mp 157 °C
[7440-74-6] • EC No. 231-180-0

Indium shot
ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis)..... 99,999 %
Particle size..... 3-6 mm
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5629.1	5 g	plastic	55,80 €
5629.2	25 g	plastic	188,15 €

Indium
>99,97 %, granulated

Type analysis:
Assay..... >99,97 %

3906.1	10 g	glass	53,65 €

Indium
99,99 % (4N), foil
Foil 275 mm long, 50 mm wide, 0,1 mm thick.

Type analysis:

9803.1	10 g	plastic	267,70 €

Indium Standards

- Indium AAS Standard Solution see p. 2359
- Indium ICP Standard Solution see p. 2363
- Indium ICP Standard Solution see p. 2367

Indium(III) bromide

Indium(III) bromide
ROTI®METIC 99,999 % (5N)
$InBr_3$
M 354,53 g/mol
D 4,74
mp 420 °C
Solubility: 4140 g/l (H_2O, 20 °C)
[13465-09-3] • EC No. 236-692-8
UN No. 3260 • ADR 8 II • WGK 1

Danger H314

Type analysis:
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5322.1	5 g	plastic	44,65 €
5322.2	25 g	plastic	173,65 €

Indium(III) chloride

Indium(III) chloride
≥99,9 %, p.a.
$InCl_3$
M 221,18 g/mol
D 3,46
mp 586 °C
Solubility: 661 g/l (H_2O, 22 °C)
[10025-82-8] • EC No. 233-043-0
UN No. 3260 • ADR 8 • WGK 1

Danger H302-H314

Guarantee analysis:
Assay..... ≥99,9 %
Aluminium (Al)..... ≤0,0001 %
Bismuth (Bi)..... ≤0,0001 %
Lead (Pb)..... ≤0,0005 %
Cadmium (Cd)..... ≤0,0005 %
Calcium (Ca)..... ≤0,005 %
Chromium (Cr)..... ≤0,0001 %
Iron (Fe)..... ≤0,0005 %
Copper (Cu)..... ≤0,0005 %
Magnesium (Mg)..... ≤0,0005 %
Sodium (Na)..... ≤0,0005 %
Nickel (Ni)..... ≤0,0001 %
Silver (Ag)..... ≤0,0001 %
Silicon (Si)..... ≤0,0005 %
Tin (Sn)..... ≤0,0001 %
Zinc (Zn)..... ≤0,0001 %

0307.1	5 g	plastic	27,85 €
0307.2	10 g	plastic	44,65 €
0307.3	25 g	plastic	88,05 €
0307.4	50 g	plastic	153,65 €

Indium(III) nitrate pentahydrate

Indium(III) nitrate pentahydrate
ROTI®METIC 99,999 % (5N)
$In(NO_3)_3 \cdot 5\ H_2O$
M 390,91 g/mol
mp ~100 °C (dec.)
[207398-97-8]
UN No. 1477 • ADR 5.1 II • WGK 1

Danger H272-H315-H319

Type analysis:
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5384.1	10 g	plastic	93,45 €

Indium(III) oxide

Indium(III) oxide
ROTI®METIC 99,999 % (5N)
In_2O_3
M 277,64 g/mol
D 7,2
mp 1913 °C
[1312-43-2] • EC No. 215-193-9

Type analysis:
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5630.1	5 g	plastic	48,95 €
5630.2	25 g	plastic	163,95 €

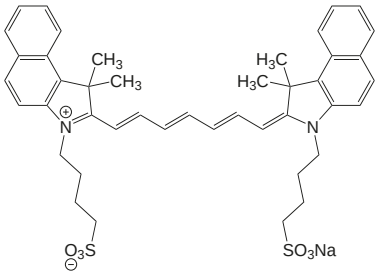
Indium(III) sulphate

Indium(III) sulphate
≥99,99 %, p.a.
$In_2(SO_4)_3$
M 517,82 g/mol
D 3,44
mp 600 °C (dec.)
Solubility: 539 g/l (H_2O, 20 °C)
[13464-82-9] • EC No. 236-689-1
WGK 1

Guarantee analysis:
Assay. ..... ≥99,99 %
Aluminium (Al)..... ≤0,0005 %
Bismuth (Bi)..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd)..... ≤0,0005 %
Iron (Fe)..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Nickel (Ni)..... ≤0,0005 %
Tin (Sn). ..... ≤0,0005 %
Zinc (Zn)..... ≤0,0005 %

0314.1	5 g	plastic	27,45 €
0314.2	10 g	plastic	44,00 €
0314.3	25 g	plastic	77,95 €
0314.4	50 g	plastic	143,95 €

Indocyanine green



Indocyanine green
p.a.
Cardiogreen, ICG
$C_{43}H_{47}N_2NaO_6S_2$
M 774,98 g/mol
[3599-32-4] • EC No. 222-751-5
WGK 3

Warning H315-H319-H335

Type analysis:
Appearance. ..... dark green to black powder
Appearance of solution (1 % in H_2O)..... clear, dark green
Loss on drying..... ≤6 %

7695.1	1 g	glass	37,10 €
7695.2	5 g	glass	155,90 €
7695.3	10 g	glass	289,20 €

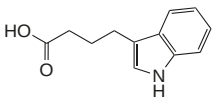
Indol-3-aldehyde

▶ Indole-3-carboxaldehyde see p. 2067

Indole-3-acetic acid

▶ Indolyl 3-acetic acid see p. 2067

Indole-3-butyric acid



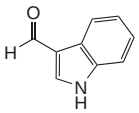
Indole-3-butyric acid
≥99 %, for biochemistry
IBA, Hormodin, 4-(3-Indolyl)butyric acid
$C_{12}H_{13}NO_2$
M 203,24 g/mol
mp ~123 °C
Solubility: 0,25 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[133-32-4] • EC No. 205-101-5
UN No. 2811 • ADR 6.1 III • WGK 1

Danger H301-H315-H319-H335

Typ analysis:
Assay (HPLC). ..... ≥99 %
Water (KF). ..... ≤1 %
Arsenic (As). ..... ≤0,0003 %
Heavy metals (as Pb). ..... ≤0,001 %
Sulphated ash. ..... ≤0,5 %

4143.1	5 g	glass	19,90 €
4143.2	25 g	glass	62,25 €

Indole-3-carboxaldehyde



Indole-3-carboxaldehyde

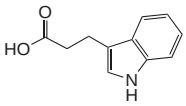
≥98 %
Indol-3-aldehyde, 3-Formylindole
C_9H_7NO
M 145,16 g/mol
mp 194-198 °C • flp 240 °C
[487-89-8] • EC No. 207-665-8

Typ analysis:

Assay (GC).....≥98,0 %
Solution (1 % in ethanol).....colourless to light brown, clear
Water (KF).....≤1,0 %
Melting point.....194-198 °C

5538.1	25 g	plastic	51,50 €
5538.2	50 g	plastic	90,20 €

Indole-3-propionic acid



Indole-3-propionic acid

≥99 %, for biochemistry
IPA, 3-(3-Indolyl)-propionic acid
$C_{11}H_{11}NO_2$
M 189,22 g/mol
mp ~134 °C
Storage temp.: +4 °C
[830-96-6] • EC No. 212-600-1
WGK 1

Typ analysis:

Assay (titr.).....≥99 %
Solution (5 % in ethanol).....slightly yellowish, clear
Water (KF).....≤0,5 %
Sulphated ash.....≤0,1 %

4144.1	10 g	glass	39,70 €
4144.2	50 g	glass	131,05 €

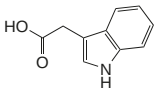
Indole Reagent

▶ Kovacs' Reagent see p. 2087

2,3-Indolinedione

▶ Isatin see p. 2076

Indolyl 3-acetic acid



Indolyl 3-acetic acid

≥99 %, for biochemistry
Heteroauxin, Indole-3-acetic acid
$C_{10}H_9NO_2$
M 175,19 g/mol
mp 163-170 °C
Storage temp.: +4 °C
[87-51-4] • EC No. 201-748-2
WGK 1

Type analysis:

Appearance.....light red to light brown powder
Assay (H-NMR).....≥99,0 %
Water (KF).....≤0,5 %

7280.1	5 g	plastic	18,85 €
7280.2	25 g	plastic	62,25 €
7280.3	50 g	plastic	107,00 €

3-β-Indolylalanine

▶ DL-Tryptophan see p. 2425

4-(3-Indolyl)butyric acid

▶ Indole-3-butyric acid see p. 2066

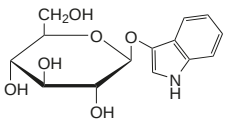
3-Indolylmethylglucosinolate potassium salt

▶ Glucobrassicin see p. 2018

3-(3-Indolyl)-propionic acid

▶ Indole-3-propionic acid see p. 2067

3-Indoxyl-β-D-glucopyranoside



3-Indoxyl-β-D-glucopyranoside

≥99 %, for biochemistry
Glycosidase substrate
Plant Indican
$C_{14}H_{17}NO_6$
M 295,29 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[487-60-5]

Typ analysis:

Assay (HPLC).....≥99 %
Solubility (0,5 % in H_2O).....colourless, clear
Water (KF).....≤0,5 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in water).....-67,5° to -63,5°

4243.1	250 mg	glass	57,95 €
4243.2	500 mg	glass	103,75 €
4243.3	1 g	glass	181,70 €

Inermin

▶ (-)-Maackiain see p. 2109

Infusorial earth

Infusorial earth

natural
For filtration of organic solutions.
Siliceous earth, Diatomaceous earth, Kieselguhr
[61790-53-2] • EC No. 310-127-6

Type analysis:

SiO_2.....~83,7 %
CaO.....~0,9 %
Fe_2O_3.....~2,3 %
Al_2O_3.....~5,6 %
Loss on ignition.....~5,0 %

8019.3	1 kg	plastic	17,75 €
Original pack 6 x 1 kg			16,86/1 kg
8019.4	2,5 kg	plastic	27,85 €
8019.1	5 kg	plastic	44,65 €
8019.5	10 kg	plastic	75,80 €
8019.2	20 kg	plastic	132,80 €

Inhibitor Cocktail Bacteria

Inhibitor Cocktail Bacteria

for biochemistry
Broad range cocktail of protease inhibitors for extracts from bacteria.
Storage temp.: -20 °C
Transport temp.: room temp.
UN No. 3261 • ADR 8 III • WGK 2

Danger H314

Formulation:

Appearance.....white powder
AEBSF hydrochloride.....complies
Bestatin.....complies
E-64.....complies
EDTA-Na_2.....complies
Pepstatin A.....complies

3758.1	1 set	plastic	98,80 €

For further information, please see page 1323

Inhibitor Cocktail BroadRange

Inhibitor Cocktail BroadRange

for biochemistry
Broad range cocktail of protease inhibitors.
Storage temp.: -20 °C
Transport temp.: room temp.
UN No. 3261 • ADR 8 III • WGK 2

Danger H314-H332-H373

Formulation:

Appearance.....white powder
AEBSF hydrochloride.....complies
Aprotinin.....complies
E-64.....complies
EDTA-Na_2.....complies
Leupeptin hemisulphate.....complies

3749.1	1 vial	plastic	55,40 €

For further information, please see page 1322

Inhibitor Cocktail His-tag

Inhibitor Cocktail His-tag

ready-to-use, for biochemistry

Broad range cocktail of protease inhibitors for extraction of His-tagged proteins.

Storage temp.: -20 °C
Transport temp.: cooled
WGK 2

Danger H318-H315

Formulation:

Solution ..... colourless to slightly opaque
AEBSF hydrochloride. ..... complies
Bestatin. ..... complies
E-64. ..... complies
Pepstatin A. ..... complies
Phosphoramidon. ..... complies
Solvent ..... DMSO

3760.1	1 ml	plastic	97,75 €

For further information, please see page 1323

Inhibitor Cocktail Plus

Inhibitor Cocktail Plus

ready-to-use, for biochemistry

Broad range cocktail of protease inhibitors for extracts of mammalian cells or tissue.

Storage temp.: -20 °C
Transport temp.: cooled
WGK 1

Warning H315-H319

Formulation:

Solution ..... colourless to slightly opaque
AEBSF hydrochloride. ..... complies
Aprotinin. ..... complies
Bestatin. ..... complies
E-64. ..... complies
Leupeptin hemisulphate. ..... complies
Pepstatin A. ..... complies
Solvent ..... DMSO

3751.1	1 ml	plastic	89,15 €

For further information, please see page 1323

Inhibitor Cocktail Standard

Inhibitor Cocktail Standard

for biochemistry

General cocktail of protease inhibitors.

Storage temp.: -20 °C
Transport temp.: room temp.
UN No. 3261 • ADR 8 III • WGK 2

Danger H314-H332-H373

Formulation:

Appearance. ..... white powder
AEBSF hydrochloride. ..... complies
EDTA-Na_2 ..... complies
Pepstatin A. ..... complies
Leupeptin hemisulphate. ..... complies

3743.1	1 vial	plastic	128,90 €

For further information, please see page 1322

Inhibitor Cocktail Tissue

Inhibitor Cocktail Tissue

for biochemistry

Cocktail of protease inhibitors for extracts of mammalian cells or tissue.

Storage temp.: -20 °C
Transport temp.: room temp.
UN No. 3261 • ADR 8 III • WGK 3

Danger H314

Formulation:

Appearance. ..... white powder
AEBSF hydrochloride. ..... complies
Aprotinin. ..... complies
E-64. ..... complies
Leupeptin hemisulphate. ..... complies

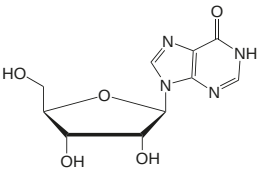
3755.1	1 vial	plastic	47,85 €

For further information, please see page 1323

Inhibitors

Art. No.	Description	Page
2931	AEBSF hydrochloride	1773
CN71	4-Aminobenzamidine dihydrochloride	1788
2933	Antipain dihydrochloride	1811
A162	Aprotinin	1813
5655	Bacitracin	1824
CN38	Benzamidine hydrochloride monohydrate	1829
2937	Bestatin hydrochloride	1835
2935	E-64	1963
3054	EGTA	1968
8043	Ethylenediamine tetraacetic acid disodium salt dihydrate	1982
HN71	Geldanamycin	2012
0716	Genistein	2013
6847	β-Glycerophosphate disodium salt pentahydrate	2025
3758	Inhibitor Cocktail Bacteria	2067
3749	Inhibitor Cocktail BroadRange	2067
3760	Inhibitor Cocktail His-tag	2068
3751	Inhibitor Cocktail Plus	2068
3743	Inhibitor Cocktail Standard	2068
3755	Inhibitor Cocktail Tissue	2068
CN33	Leupeptin hemisulphate	2098
0247	Novobiocin sodium salt	2168
A154	Pefabloc® SC-Protease Inhibitor	2193
2936	Pepstatin A	2197
6367	Phenylmethyl sulphonyl fluoride (PMSF)	2208
HN72	Radicicol	2251
2949	Trypsin inhibitor	2424
5279	Trypsin inhibitor	2424

Inosine



Inosine

≥98 %, for biochemistry

9-β-Ribofuranosylhypoxanthine
$C_{10}H_{12}N_4O_5$
M 268,23 g/mol
mp ~215-220 °C
[58-63-9] • EC No. 200-390-4

Type analysis:

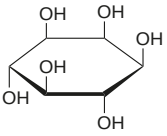
Appearance. ..... white cryst. powder
Assay (dry substance). ..... ≥98,0 %
Sulphated ash. ..... ≤0,2 %
Heavy metals (as Pb). ..... ≤0,001%
Loss on drying (105 °C, 2 h). ..... ≤1,0 %

6770.1	5 g	glass	21,40 €

myo-Inosit

▶ meso-Inositol see p. 2068

meso-Inositol



myo-Inosit, myo-Inositol
$C_6H_{12}O_6$
M 180,16 g/mol
mp 223-225 °C
Solubility: 140 g/l (H_2O, 25 °C)
[87-89-8] • EC No. 201-781-2
WGK 2

meso-Inositol

≥99 %, p.a.

Guarantee analysis:

Assay (HPLC). ..... ≥99,0 %
Chloride (Cl) ..... ≤0,005 %
Sulphate (SO_4) ..... ≤0,005 %
Arsenic (As). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,001 %
Chromium (Cr). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,005 %
Sodium (Na) ..... ≤0,005 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,0005 %
Manganese (Mn) ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Ash content (as SO_4). ..... ≤0,2 %
Loss on drying (110 °C). ..... ≤0,5 %
Solubility (0,1 g/ml H_2O) ..... clear

6329.2	10 g	plastic	25,70 €
6329.1	100 g	plastic	166,55 €

meso-Inositol

≥99 %, for biochemistry

Typ analysis:

Assay (HPLC)..... ≥99,0 %
Solution (10 % in water)..... colourless
Loss on drying (3 h, 105 °C, vacuum)..... ≤0,5 %

4191.1	50 g	glass	25,70 €
4191.2	100 g	glass	40,35 €
4191.3	250 g	glass	84,85 €

myo-Inositol

▶ meso-Inositol see p. 2068

Instant-glue CA 221

Instant-glue CA 221

liquid

one component-instant glue made on a cyanoacrylate basis
[7085-85-0]
WGK 1

Warning H315-H319-H335

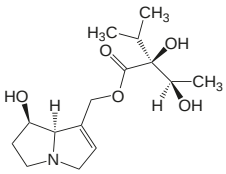
0258.1	Dispenser bottle 10 ml		6,40 €

For further information, please see page 1176

INT

▶ Iodonitrotetrazolium chloride see p. 2070

Intermedine



Intermedine

ROTICHROM® HPLC

Reference substance for HPLC.
From *Symphytum*
$C_{15}H_{25}NO_5$
M 299,36 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[10285-06-0]
WGK 1

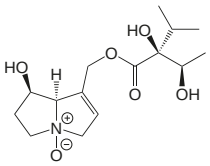
Warning H302

Type analysis:

Purity (HPLC)..... ≥95,0 %

1962.1	5 mg	glass	364,45 €

Intermedine N-oxide



Intermedine N-oxide

ROTICHROM® HPLC

Reference substance for HPLC.
From *Symphythum officinale.*
$C_{15}H_{25}NO_6$
M 315,36 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[95462-14-9]
WGK 1

Warning H302

Type analysis:

Purity (HPLC)..... ≥95 %

8018.1	5 mg	glass	385,95 €

Iodate Standards

▶ Iodate IC Standard Solution see p. 2376

Iodide Standards

▶ Iodide IC Standard Solution see p. 2376

Iodid-iodate solution (1/64 N)

Iodid-iodate solution

1/128 mol I_2/l - 1/64 N volumetric standard solution

Type analysis:

Amount-of-substance conc. (20 °C)..... 1/128 mol I_2/l ±0,2 %
Titer..... 0,998-1,002

KK65.1	1 l	plastic	30,65 €
Original pack 6 x 1 l			29,12/1 l

For further information, please see page 1681

Iodid-iodate solution (0,1 N)

Iodid-iodate solution

0,05 mol I_2/l - 0,1 N volumetric standard solution

WGK 1

Type analysis:

Amount-of-substance conc. (20 °C)..... 0,05 mol I_2/l ±0,2 %
Titer..... 0,998-1,002

0228.1	1 l	plastic	30,65 €
Original pack 6 x 1 l			29,12/1 l

For further information, please see page 1681

Iodine

I_2
M 253,81 g/mol
D 4,93 • bp 184,35 °C
mp 113,6 °C
Solubility: 0,34 g/l (H_2O, 20 °C)
[7553-56-2] • EC No. 231-442-4
UN No. 3495 • ADR 8 (6.1) III • WGK 2

Danger H302+H312+H332-H315-H319-H335-H372-H400

Iodine

≥99,8 %, p.a., ACS, resublimated

Use in iodometry; for iodine compounds.

Guarantee analysis:

Assay (iodom.)..... ≥99,8 %
Chloride and bromide (as Cl)..... ≤0,005 %
Chlorine and bromine (as Cl)..... ≤0,005 %
Lead (Pb)..... ≤0,0005 %
Cadmium (Cd)..... ≤0,0005 %
Calcium (Ca)..... ≤0,001 %
Chromium (Cr)..... ≤0,0005 %
Iron (Fe)..... ≤0,005 %
Potassium (K)..... ≤0,005 %
Cobalt (Co)..... ≤0,0005 %
Copper (Cu)..... ≤0,0005 %
Magnesium (Mg)..... ≤0,0005 %
Manganese (Mn)..... ≤0,0005 %
Sodium (Na)..... ≤0,005 %
Nickel (Ni)..... ≤0,0005 %
Zinc (Zn)..... ≤0,0005 %
Non volatile matter..... ≤0,01 %

X864.1	100 g	glass	67,20 €
X864.2	250 g	glass	122,05 €
X864.3	1 kg	glass	428,95 €
Original pack 6 x 1 kg			407,50/1 kg

Iodine

≥99,5 %, Ph.Eur., resublimated

Guarantee analysis:

Assay..... 99,5-100,5 %
Identity..... complies
Chloride and bromide..... ≤0,025 %
Non volatile matter..... ≤0,05 %

7935.3	100 g	glass	50,00 €
7935.1	250 g	glass	114,95 €
7935.2	1 kg	glass	396,70 €
Original pack 6 x 1 kg			376,87/1 kg

Iodine

≥99,5 %, resublimated

Type analysis:

Assay..... ≥99,5 %
Chloride and bromide..... ≤0,05 %
Non volatile matter..... ≤0,1 %

7335.1	250 g	glass	86,55 €
7335.2	500 g	glass	152,55 €
Original pack 6 x 500 g			144,92/500 g
7335.3	1 kg	glass	289,20 €
Original pack 6 x 1 kg			274,74/1 kg
7335.4	2,5 kg	glass	579,45 €

Iodine eosine

▶ Erythrosine B (C.I. 45430) see p. 1974

Iodine(V) oxide

Iodine(V) oxide

ROTI®METIC 99,99 % (4N)
Diiodine pentoxide
I_2O_5
M 333,81 g/mol
D 4,98
mp ~300 °C (dec.)
[12029-98-0] • EC No. 234-740-2
UN No. 3085 • ADR 5.1 (8) III • WGK 1
Danger H272-H314

Type analysis:
Assay (metals basis)..... 99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5364.1	5 g	plastic	41,40 €
5364.2	25 g	plastic	155,90 €

Iodine-potassium iodide solution acc. to Lugol

Iodine-potassium iodide solution acc. to Lugol

for microscopy
For Gram staining.
Lugol solution
D 1,122
WGK 2
Warning H373

N052.1	250 ml	glass	17,75 €
N052.3	500 ml	glass	24,65 €
N052.2	1 l	glass	30,65 €
Original pack 6 x 1 l			29,12/1 l

For further information, please see page 1519

Iodine solution

▶ Iodine solution (0,1 N) see p. 2070
▶ Iodine solution (0,1 N) see p. 2070
▶ Hanus solution (0,2 N) see p. 2032

Iodine solution (0,1 N)

Iodine solution

0,05 mol I_2/l - 0,1 N volumetric standard solution

Type analysis:
Amount-of-substance conc. (20 °C)..... 0,05 mol I_2/l ±0,2 %
Titer. 0,998-1,002

K016.1	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l
K016.2	2,5 l	glass	71,50 €
Original pack 4 x 2,5 l			67,93/2,5 l

For further information, please see page 1681

Iodine solution (0,1 N)

Iodine solution

0,05 mol I_2/l - 0,1 N, volumetric standard solution, Reag. Ph.Eur.

Type analysis:
Amount-of-substance conc. (20 °C). ..... 0,05 mol/l
Measurement uncertainty. ..... ±0,1 %

6765.1	1 l	glass	42,90 €
Original pack 6 x 1 l			40,76/1 l

Iodine solution (1 N)

Iodine solution

0,5 mol I_2/l - 1 N volumetric standard solution
WGK 2
Warning H373

Type analysis:
Amount-of-substance conc. (20 °C).0,5 mol I_2/l ±0,2 %
Titer. 0,998-1,002

X868.1	1 l	glass	107,40 €
Original pack 6 x 1 l			102,03/1 l

For further information, please see page 1681

Iodine solution acc. to Wijs

▶ Wijs-solution (0.2 N) see p. 2441

Iodoform

Iodoform

≥99 %, extra pure
Triiodmethane
CHI_3
M 393,73 g/mol
D 4,01 • bp 218 °C
mp ~120 °C
Solubility: 0,1 g/l (H_2O, 25 °C)
[75-47-8] • EC No. 200-874-5
WGK 1
Warning
H302+H312+H332-H315-H319-H335

Typ analysis:
Assay. ..... ≥99,0 %
Appearance of solution..... complies
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,02 %
Sulphated ash. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %
Melting point. ..... 120-122 °C

4534.2	50 g	glass	33,25 €
4534.3	100 g	glass	58,60 €
4534.1	1 kg	glass	482,70 €
Original pack 6 x 1 kg			458,57/1 kg

Iodomethane D3

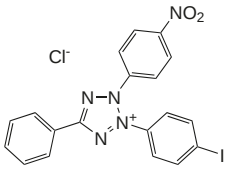
Iodomethane D3

99,5 Atom%D, stab. with Cu
For nuclear magnetic resonance spectroscopy.
Methyliodide D3
CD_3I
M 144,96 g/mol
D 2,33 • bp 42 °C
[865-50-9] • EC No. 212-744-5
UN No. 2644 • ADR 6.1 I • WGK 2
Danger
H301+H331-H351-H312-H315-H335

Guarantee analysis:
Deuterising degree..... ≥99,5 %
Water (KF, H_2O+D_2O)..... ≤0,03 %

HN88.2	5 g	glass	45,05 €
HN88.1	25 g	glass	160,20 €

Iodonitrotetrazolium chloride



Iodonitrotetrazolium chloride

≥97 %, for biochemistry
For the determination of dehydrogenase.
2-(4-Iodophenyl)-3-(4-nitrophenyl)-5-phenyl-2H-tetrazolium chloride, p-Iodonitrotetrazolium Violet, INT
$C_{19}H_{13}ClN_5O_2I$
M 505,70 g/mol
mp >240 °C (dec.)
Storage temp.: +4 °C
[146-68-9] • EC No. 205-676-2
WGK 2

Typ analysis:
Assay (titr.)..... ≥97,0 %
Appearance of solution. ..... yellow to green
Loss on drying..... ≤3,0 %

5536.1	1 g	glass	98,40 €

p-Iodonitrotetrazolium Violet

▶ Iodonitrotetrazolium chloride see p. 2070

2-(4-Iodophenyl)-3-(4-nitrophenyl)-5-phenyl-2H-tetrazolium chloride

▶ Iodonitrotetrazolium chloride see p. 2070

Ion Exchanger

Art. No.	Description	Page
K306	Amberjet™	1786
0303	Dowex® 1 X 2	1960
0304	Dowex® 1 X 2	1960
0310	Dowex® 1 X 8	1960
0311	Dowex® 1 X 8	1961
0312	Dowex® 1 X 8	1961
6800	Dowex® 50 W X 2	1961
0334	Dowex® 50 W X 2	1961
N099	Dowex® 50 W X 2	1961
6821	Dowex® 50 W X 4	1961
0344	Dowex® 50 W X 8	1961
0345	Dowex® 50 W X 8	1961
0346	Dowex® 50 W X 8	1961
6849	Ion exchange resin Roti®change 1 x 4	2071
6851	Ion exchange resin Roti®change 1 x 4	2071
6852	Ion exchange resin Roti®change 1 x 8	2071
6854	Ion exchange resin Roti®change 1 x 8	2071
6855	Ion exchange resin Roti®change 1 x 8	2071
6856	Ion exchange resin Roti®change 1 x 8	2071
6864	Ion exchange resin Roti®change 50 W x 4	2071
6865	Ion exchange resin Roti®change 50 W x 8	2071
6866	Ion exchange resin Roti®change 50 W x 8	2072
6867	Ion exchange resin Roti®change 50 W x 8	2072

Ion exchange resin Roti®change

Ion exchange resin Roti®change 1 x 4

50-100 mesh, analytical grade, Cl^--form

Highly basic anion exchanger

WGK 3

Type analysis:

Appearance. ..... white to light yellow grain
Particle size (mesh). 50-100
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... ≥1,0
Counter ion. ..... Cl^-
Matrix: Polystyrene - DVB; Active group: Quaternary ammonium compound type I

6849.4	25 g	plastic	44,00 €
6849.1	100 g	plastic	155,90 €
6849.2	250 g	plastic	321,45 €
6849.3	500 g	plastic	590,20 €
Original pack 6 x 500 g			560,69/500 g

Ion exchange resin Roti®change 1 x 4

100-200 mesh, analytical grade, Cl^--form

Highly basic anion exchanger

WGK 3

Type analysis:

Appearance. ..... white to light yellow grain
Particle size (mesh). 100-200
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... ≥1,0
Counter ion. ..... Cl^-
Matrix: Polystyrene - DVB; Active group: Quaternary ammonium compound type I

6851.4	25 g	plastic	55,80 €
6851.1	100 g	plastic	209,65 €
6851.2	250 g	plastic	450,45 €
6851.3	500 g	plastic	837,45 €
Original pack 6 x 500 g			795,58/500 g

Ion exchange resin Roti®change 1 x 8

20-50 mesh, analytical grade, Cl^--form

Highly basic anion exchanger

WGK 3

Type analysis:

Appearance. ..... white to light yellow grain
Particle size (mesh). 20-50
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... Cl^-
Matrix: Polystyrene - DVB; Active group: Quaternary ammonium compound type I

6852.4	25 g	plastic	27,85 €
6852.1	100 g	plastic	84,85 €
6852.2	250 g	plastic	177,40 €
6852.3	500 g	plastic	325,65 €
Original pack 6 x 500 g			309,37/500 g

Ion exchange resin Roti®change 1 x 8

50-100 mesh, analytical grade, Cl^--form

Highly basic anion exchanger

WGK 3

Type analysis:

Appearance. ..... white to light yellow grain
Particle size (mesh). 50-100
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... Cl^-
Matrix: Polystyrene - DVB; Active group: Quaternary ammonium compound type I

6854.4	25 g	plastic	50,45 €
6854.1	100 g	plastic	177,40 €
6854.2	250 g	plastic	370,90 €
6854.3	500 g	plastic	686,95 €
Original pack 6 x 500 g			652,60/500 g

Ion exchange resin Roti®change 1 x 8

100-200 mesh, analytical grade, Cl^--form

Highly basic anion exchanger

WGK 3

Type analysis:

Appearance. ..... white to light yellow grain
Particle size (mesh). 100-200
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... Cl^-
Matrix: Polystyrene - DVB; Active group: Quaternary ammonium compound type I

6855.4	25 g	plastic	50,45 €
6855.1	100 g	plastic	177,40 €
6855.2	250 g	plastic	370,90 €
6855.3	500 g	plastic	686,95 €
Original pack 6 x 500 g			652,60/500 g

Ion exchange resin Roti®change 1 x 8

200-400 mesh, analytical grade, Cl^--form

Highly basic anion exchanger

WGK 3

Type analysis:

Appearance. ..... white to light yellow grain
Particle size (mesh). 200-400
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... Cl^-
Matrix: Polystyrene - DVB; Active group: Quaternary ammonium compound type I

6856.4	25 g	plastic	53,65 €
6856.1	100 g	plastic	198,90 €
6856.2	250 g	plastic	411,20 €
6856.3	500 g	plastic	768,65 €
Original pack 6 x 500 g			730,22/500 g

Ion exchange resin Roti®change 50 W x 4

100-200 mesh, analytical grade, H^+-form

Highly acidic cation exchanger

WGK 1

Warning H319

Type analysis:

Appearance. ..... tan to orange-brown grain
Particle size (mesh). 100-200
Extractables. ..... <1 mg/g resin
Capacity (eq/l). 1,1
Counter ion. ..... H^+
Matrix: Polystyrene - DVB; Active group: sulphonate

6864.4	25 g	plastic	50,45 €
6864.1	100 g	plastic	177,40 €
6864.2	250 g	plastic	370,90 €
6864.3	500 g	plastic	686,95 €
Original pack 6 x 500 g			652,60/500 g

Ion exchange resin Roti®change 50 W x 8

50-100 mesh, analytical grade, H^+-form

Highly acidic cation exchanger

WGK 1

Warning H319

Type analysis:

Appearance. ..... tan to orange-brown grain
Particle size (mesh). 50-100
Extractables. ..... <1 mg/g resin
Capacity (eq/l). 1,7
Counter ion. ..... H^+
Matrix: Polystyrene - DVB; Active group: sulphonate

6865.4	25 g	plastic	64,40 €
6865.1	100 g	plastic	246,20 €
6865.2	250 g	plastic	529,45 €
6865.3	500 g	plastic	977,20 €
Original pack 6 x 500 g			928,34/500 g

Ion exchange resin Roti®change 50 W x 8

100-200 mesh, analytical grade, H^+-form

Highly acidic cation exchanger
WGK 1

Warning H319

Type analysis:

Appearance. ..... tan to orange-brown grain
Particle size (mesh). 100-200
Extractables. ..... <1 mg/g resin
Capacity (eq/l). 1,7
Counter ion. ..... H^+
Matrix: Polystyrene - DVB; Active group: sulphonate

6866.4	25 g	plastic	55,80 €
6866.1	100 g	plastic	209,65 €
6866.2	250 g	plastic	450,45 €
6866.3	500 g	plastic	837,45 €
Original pack 6 x 500 g			795,58/500 g

Ion exchange resin Roti®change 50 W x 8

200-400 mesh, analytical grade, H^+-form

Highly acidic cation exchanger
WGK 1

Warning H319

Type analysis:

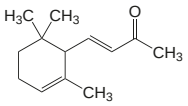
Appearance. ..... tan to orange-brown grain
Particle size (mesh). 200-400
Extractables. ..... <1 mg/g resin
Capacity (eq/l). 1,7
Counter ion. ..... H^+
Matrix: Polystyrene - DVB; Active group: sulphonate

6867.4	25 g	plastic	127,95 €
6867.1	100 g	plastic	493,45 €
6867.2	250 g	plastic	1106,20 €
6867.3	500 g	plastic	2031,75 €
Original pack 6 x 500 g			1930,16/500 g

Ionic Liquids

Art. No.	Description	Page
2010	1-Butyl-3-methyl-imidazolium-chloride (BMIM Cl)	1863
2012	1-Butyl-3-methyl-imidazolium-hexafluorophosphate (BMIM PF_6)	1863
2014	1-Butyl-3-methyl-imidazolium-tetrafluoroborate (BMIM BF_4)	1863
2015	1-Butyl-3-methyl-imidazolium-trifluoromethanesulphonate (BMIM OTf)	1864
2021	1-Butyl-1-methyl-pyrrolidinium-bis-(trifluoromethylsulphonyl)-imide (BMPyrr BTA)	1864
2022	1-Butyl-1-methyl-pyrrolidinium-dicyanamide (BMPyrr DCA)	1864
2025	Butyl-trimethyl-ammonium-bis-(trifluoromethylsulphonyl)-imide (N1114 BTA)	1864
2028	Choline-dihydrogenphosphate (Choline DHP)	1896
2035	Ethylammonium-nitrate (EAN)	1979
2037	1-Ethyl-3-methyl-imidazolium-bromide (EMIM Br)	1985
2053	1-Ethyl-3-methyl-imidazolium-dicyanamide (EMIM DCA)	1985
2054	1-Ethyl-3-methyl-imidazolium-ethylsulphate (EMIM $EtOSO_3$)	1985
2056	1-Ethyl-3-methyl-imidazolium-methanesulphonate (EMIM OMs)	1985
2059	1-Ethyl-3-methyl-imidazolium-thiocyanate (EMIM SCN)	1986
2062	1-Ethyl-3-methyl-imidazolium-trifluoromethansulphonate (EMIM OTf)	1986
2064	1-Hexyl-3-methyl-imidazolium chloride (HMIM Cl)	2043
2069	1-Hexyl-3-methyl-imidazolium-hexafluorophosphate (HMIM PF_6)	2043
2070	1-Hexyl-3-methyl-imidazolium-tetrafluoroborate (HMIM BF_4)	2044
2076	1-Methyl-3-octyl-imidazolium-hexafluorophosphate (OMIM PF_6)	2139
2081	1-Methyl-3-octyl-imidazolium-tetrafluoroborate (OMIM BF_4)	2140
2091	1-Methyl-3-propyl-imidazolium-iodide (PMIM I)	2141
2095	1-Methyl-1-propyl-piperidinium-bis-(trifluoromethylsulphonyl)- imide (PMPip BTA)	2141
2096	Triethylsulfonium-bis-(trifluoromethyl-sulphonyl)-imide (S222 BTA)	2417

α-Ionone



α-Ionone

pure

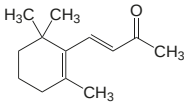
$C_{13}H_{20}O$
M 192,30 g/mol
D ~0,93
[127-41-3] • EC No. 204-841-6
WGK 2

Type analysis:

Appearance. ..... clear, yellowish oil
Density (20 °C). ..... 0,900-0,950 g/cm³
Refractive index (20 °C). 1,4900-1,5100
Optical rotation (20 °C). ..... -2° to +2°

3950.1	25 ml	glass	32,80 €

β-Ionone



β-Ionone

pure

$C_{13}H_{20}O$
M 192,30 g/mol
D 0,95 • bp 267 °C
mp -35 °C • flp 122 °C
Solubility: insoluble (H_2O, 20 °C)
Storage temp.: +4 °C
[79-77-6] • EC No. 201-224-3

Type analysis:

Appearance. ..... clear, yellowish liquid
Relative density (20 °C). 0,935-0,955
Refractive index (20 °C). 1,500-1,5300
Optical rotation (20 °C). ..... -1° to +1°

3951.1	25 ml	glass	16,05 €

Ion Pair Reagents

Art. No.	Description	Page
KK50	Butane-1-sulphonic acid sodium salt	1859
KK51	Decane-1-sulphonic acid sodium salt	1924
KK52	Dodecane-1-sulphonic acid sodium salt	1959
KK53	Heptane-1-sulphonic acid sodium salt	2038
KK54	Hexane-1-sulphonic acid sodium salt	2043
KK55	Octane-1-sulphonic acid sodium salt	2171
KK56	Pentane-1-sulphonic acid sodium salt	2196
KK57	Propane-1-sulphonic acid sodium salt	2239

IPA

▶ Indole-3-propionic acid see p. 2067

IPA

▶ 2-Propanol see p. 2239
▶ 2-Propanol 70 % see p. 2240

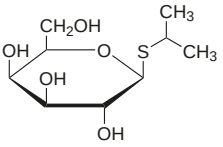
IPE

▶ Diisopropyl ether see p. 1944

IPM

▶ Myristic acid isopropyl ester see p. 2151

IPTG



Isopropyl-β-D-thiogalactopyranoside
$C_9H_{18}O_5S$
M 238,30 g/mol
mp 110-112 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[367-93-1] • EC No. 206-703-0

IPTG

≥99 %, BioScience-Grade, dioxane free, animal free

For molecular biology.

Guarantee analysis:

Appearance. ..... off-white cryst. powder
Assay (HPLC). ..... ≥99 %
Water (KF). ..... ≤1,0 %
pH value (5 % in H_2O). 5,0-7,0
Solution (5 % in H_2O). ..... almost clear, colourless
Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O). ..... -34,5° to -28,5°
Dioxane content . ..... none detected
Animal-free. ..... complies

2316.1	250 mg	glass	21,00 €
2316.2	1 g	glass	45,05 €
2316.3	5 g	glass	128,50 €
2316.4	25 g	plastic	429,50 €
2316.5	100 g	plastic	977,20 €

For further information, please see page 1285

IPTG

≥99 %, for biochemistry

Guarantee analysis:

Assay (HPLC)..... ≥99 %
pH value (5 % in H_2O)..... 5,0-7,0
Water (KF)..... ≤1 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O)..... -34,5° to -28,5°
Dioxane content ..... none detected

CN08.1	1 g	glass	27,45 €
CN08.2	5 g	glass	74,10 €
CN08.3	50 g	glass	521,40 €
CN08.4	100 g	glass	880,45 €

For further information, please see page 1285

Iridium Standards

- Iridium ICP Standard Solution see p. 2363
- Iridium ICP Standard Solution see p. 2368

Iron granules

Iron granules

ROTI®METIC 99,99 % (4N)

Fe
M 55,8 g/mol • bp 4982 °C • mp 1536 °C
[7439-89-6] • EC No. 231-096-4

Type analysis:

Assay (metals basis)..... 99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5631.1	5 g	plastic	42,90 €
5631.2	25 g	plastic	138,70 €

Iron

Iron

≥99,5 %, p.a., powdered

Fe
M 55,80 g/mol
D 7,86 • bp 2861 °C
mp 1535 °C
[7439-89-6] • EC No. 231-096-4
UN No. 3089 • ADR 4.1 III

Danger H228-H251

Guarantee analysis:

Assay..... ≥99,5 %
Carbon (C)..... ≤0,03 %
Oxygen (O_2)..... ≤0,25 %
Nitrogen (N)..... ≤0,01 %
Aluminium (Al)..... ≤0,001 %
Arsenic (As)..... ≤0,0002 %
Lead (Pb)..... ≤0,0001 %
Copper (Cu)..... ≤0,001 %
Manganese (Mn)..... ≤0,001 %
Calcium (Ca)..... ≤0,001 %
Chromium (Cr)..... ≤0,002 %
Cobalt (Co)..... ≤0,001 %
Magnesium (Mg)..... ≤0,001 %
Particle size..... ~10 µm

3718.3	100 g	plastic	18,85 €
3718.1	250 g	plastic	34,30 €
3718.4	1 kg	plastic	88,05 €
Original pack 6 x 1 kg			83,65/1 kg
3718.2	2,5 kg	plastic	182,65 €

Iron, reduced

Iron, reduced

≥96 %, powdered, extra pure

Fe
M 55,80 g/mol
D 7,86 • bp 2861 °C
mp 1535 °C
[7439-89-6] • EC No. 231-096-4

Type analysis:

Assay..... ≥96,0 %
Insoluble matter in acid..... ≤1,5 %
Arsenic (As)..... ≤0,001 %
Lead (Pb)..... ≤0,001 %
Mercury (Hg)..... ≤0,0005 %

9454.1	250 g	plastic	17,75 €
9454.2	1 kg	plastic	44,65 €
Original pack 6 x 1 kg			42,42/1 kg
9454.3	2,5 kg	plastic	84,40 €

Iron foil

Iron foil

99,99 % (4N), foil

Foil 25 mm long, 25 mm wide, 0,25 mm thick.
Fe
M 55,80 g/mol
bp 2861 °C
mp 1535 °C
[7439-89-6] • EC No. 231-096-4

Type analysis:

Purity..... 99,99 %

0540.1	1 pieces	plastic	110,20 €
0540.2	5 pieces	plastic	482,70 €

Iron wool

Iron wool

~97 %

Steel wool
Fe
M 55,80 g/mol
bp 2861 °C
mp 1535 °C
[7439-89-6] • EC No. 231-096-4

Type analysis:

Assay..... ~97 %
Chromium (Cr)..... ≤0,1 %
Carbon (C)..... ≤0,5 %
Copper (Cu)..... ≤0,5 %
Manganese (Mn)..... ≤1,0 %
Molybdenum (Mo)..... ≤0,1 %
Nickel (Ni)..... ≤0,1 %
Phosphorus (P)..... ≤0,1 %
Sulphur (S)..... ≤0,1 %
Silicon (Si)..... ≤0,5 %
Nitrogen (N)..... ≤0,05 %

9588.1	100 g	plastic	11,75 €
9588.2	250 g	plastic	20,35 €

Iron Standards

- Iron AAS Standard Solution see p. 2359
- Iron ICP Standard Solution see p. 2363
- Iron ICP Standard Solution see p. 2368

Iron alum

- Ammonium iron(III) sulphate dodecahydrate see p. 1801

Iron ammonium alum

- Ammonium iron(III) sulphate dodecahydrate see p. 1801

Iron(III) ammonium citrate

- Ammonium iron(III) citrate see p. 1800

Iron ammonium oxalate

- Ammonium iron(III) oxalate trihydrate see p. 1800

Iron(II) ammonium sulphate

- Ammonium iron(II) sulphate hexahydrate see p. 1800

Iron(III) ammonium sulphate

- Ammonium iron(III) sulphate dodecahydrate see p. 1801

Iron(II) chloride hydrate

Iron(II) chloride hydrate

≥98 %, extra pure

Iron dichloride hydrate, Ferrous chloride hydrate
$FeCl_2 \cdot x\ H_2O$
M 126,75 + x H_2O g/mol
D 1,93
mp 105-110 °C
Solubility: 650 g/l (H_2O, 25 °C)
EC No. 231-843-4
WGK 1

Danger H302-H315-H318

Type analysis:

Assay..... ≥98,0 %
Sulphate (SO_4)..... ≤0,05 %
Arsenic (As)..... ≤0,001 %
Lead (Pb)..... ≤0,005 %
Copper (Cu)..... ≤0,005 %

8651.1	100 g	plastic	17,75 €
8651.2	500 g	plastic	48,30 €
Original pack 6 x 500 g			45,89/500 g
8651.3	1 kg	plastic	73,00 €
Original pack 6 x 1 kg			69,35/1 kg
8651.4	2,5 kg	plastic	138,15 €

Iron(III) chloride

Iron(III) chloride
≥98,5 %, extra pure, anhydrous
Catalyst
Ferric chloride, Iron trichloride
$FeCl_3$
M 162,2 g/mol
mp 306 °C (dec.)
Solubility: 920 g/l (H_2O, 20 °C)
[7705-08-0] • EC No. 231-729-4
UN No. 1773 • ADR 8 III • WGK 1
Danger H290-H302-H315-H317-H318

Type analysis:

Assay	≥98,5 %
Insoluble matter	≤0,2 %
Arsenic (As)	≤0,001 %
Chromium (Cr)	≤0,05 %
Copper (Cu)	≤0,01 %
Manganese (Mn)	≤0,2 %
Nickel (Ni)	≤0,03 %
Lead (Pb)	≤0,001 %
Zinc (Zn)	≤0,04 %

5192.1	250 g	glass	21,00 €
5192.2	500 g	glass	28,50 €
Original pack 6 x 500 g			27,08/500 g
5192.3	1 kg	glass	41,40 €
Original pack 6 x 1 kg			39,33/1 kg

Iron(III) chloride hexahydrate

Ferric chloride hexahydrate, Iron trichloride hexyhydrate
$FeCl_3 \cdot 6\ H_2O$
M 270,33 g/mol
D 1,82
mp 37 °C
Solubility: 920 g/l (H_2O, 20 °C)
[10025-77-1] • EC No. 231-729-4
UN No. 3260 • ADR 8 III • WGK 1
Danger H302-H315-H318-H317-H290

Iron(III) chloride hexahydrate
≥99 %, p.a.

Guarantee analysis:

Assay	≥99,0 %
Insoluble matter	≤0,01 %
Nitrate (NO_3)	≤0,01 %
Phosphate (PO_3)	≤0,01 %
Iron II (Fe II)	≤0,005 %
Arsenic (As)	≤0,001 %
Lead (Pb)	≤0,01 %
Copper (Cu)	≤0,01 %
Manganese (Mn)	≤0,05 %
Zinc (Zn)	≤0,01 %

P742.1	250 g	plastic	28,95 €
P742.2	1 kg	plastic	90,20 €
Original pack 6 x 1 kg			85,69/1 kg
P742.5	25 kg	plastic	858,95 €

Iron(III) chloride hexahydrate
≥98 %, extra pure

Type analysis:

Assay	≥98,0 %
Free acid	≤0,1 %
Phosphate (PO_3)	≤0,05 %
Sulphate (SO_4)	≤0,1 %
Iron II (Fe II)	≤0,005 %
Lead (Pb)	≤0,05 %
Copper (Cu)	≤0,01 %

7119.1	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg
7119.2	2,5 kg	plastic	74,10 €
7119.5	25 kg	plastic	557,95 €

Iron(III) chloride solution acc. to Weigert

▶ Hematoxylin solution B acc. to Weigert see p. 2035

Iron(III) chloride spray solution

Iron(III) chloride spray solution
for TLC
Ready-to-use spray solution for detection of acetylsalicylic acid and paracetamol. 2 g Iron(III) chloride dissolved in 100 ml water.
UN No. 2582 • ADR 8 III
Warning H290-H317-H319

Type analysis:

TLC-application	complies

CP34.1	100 ml	glass	38,50 €

Iron(III) chloride solution 40 %

Iron(III) chloride solution 40 %
40 %
D ~1,42
[1313-13-9]
UN No. 2582 • ADR 8, III • WGK 1
Danger H290-H302-H315-H317-H318

Type analysis:

Assay (as $FeCl_3$)	39,0-41,0 %
Density	1,39-1,45

7750.1	1 l	plastic	16,05 €
Original pack 6 x 1 l			15,25/1 l
7750.2	5 l	plastic	50,45 €
Original pack 2 x 5 l			47,93/5 l
7750.3	10 l	plastic	77,95 €
7750.4	25 l	plastic	150,40 €

Iron(III) citrate hydrate

Iron(III) citrate hydrate
pure
Ferric citrate
$C_6H_5O_7Fe \cdot x\ H_2O$
M 244,94 + x H_2O g/mol
Solubility: 5 g/l (H_2O, 20 °C)
[3522-50-7] • EC No. 222-536-6
WGK 1

Type analysis:

Assay Fe(III)	16,5-18,5 %

9435.1	100 g	plastic	17,75 €
9435.2	500 g	plastic	47,85 €
Original pack 6 x 500 g			45,46/500 g
9435.3	1 kg	plastic	84,85 €
Original pack 6 x 1 kg			80,61/1 kg

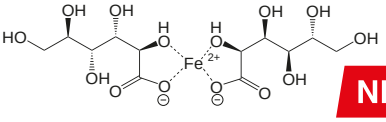
Iron dichloride hydrate

▶ Iron(II) chloride hydrate see p. 2073

Iron(III) EDTA sodium salt trihydrate

▶ Ethylenediamine tetraacetic acid iron(III) sodium salt trihydrate see p. 1982

Iron(II) gluconate dihydrate



NEW

Iron(II) gluconate dihydrate
≥97 %, for synthesis
D-Gluconic acid iron(II) salt dihydrate, Iron(II) D-gluconate dihydrate
$C_{12}H_{22}FeO_{14} \cdot 2H_2O$
M 482,17 g/mol
mp 188 °C
[22830-45-1] • EC No. 206-076-3
WGK 1

Type analysis:

Assay (titr.)	≥97 %
Chloride (Cl)	≤0,5 %
Sulphate (SO_4)	≤0,5 %
Loss on drying	5-12 %

0800.1	250 g	plastic	27,85 €
0800.2	1 kg	plastic	90,20 €
Original pack 6 x 1 kg			85,69/1 kg

Iron(III) nitrate nonahydrate

$Fe(NO_3)_3 \cdot 9\ H_2O$
M 404,0 g/mol
D 1,68 • bp 125 °C (dec.)
mp 47 °C
Solubility: soluble (H_2O, 20 °C)
[7782-61-8] • EC No. 233-899-5
UN No. 3260 • ADR 8 II • WGK 1

Danger H314

Iron(III) nitrate nonahydrate
ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5632.1	5 g	plastic	82,25 €
5632.2	25 g	plastic	311,75 €

Iron(III) nitrate nonahydrate
≥96 %, pure

Type analysis:
Assay..... ≥96 %
Chloride (Cl). ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,03 %

CN84.1	500 g	plastic	21,00 €
Original pack 6 x 500 g			19,95/500 g
CN84.2	1 kg	plastic	33,90 €
Original pack 6 x 1 kg			32,21/1 kg
CN84.4	2,5 kg	plastic	72,60 €
CN84.3	5 kg	plastic	120,30 €

Iron(II) oxalate dihydrate

Iron(II) oxalate dihydrate
≥98 %, extra pure
Ferrous oxalate
$FeC_2O_4 \cdot 2\ H_2O$
M 179,89 g/mol
D 2,3
mp 190 °C (dec.)
Solubility: insoluble (H_2O, 20 °C)
[6047-25-2] • EC No. 208-217-4
WGK 1

Warning H302+H312

Type analysis:
Assay..... ≥98,0 %
Assay Fe(II). ..... ≥30,5 %
Chloride (Cl). ..... ≤0,05 %
Sulphate (SO_4). ..... ≤0,1 %
Arsenic (As). ..... ≤0,0005 %
Heavy metals (as Pb)..... ≤0,01 %
Ash content (800 °C). ..... 44,0-45,0 %

9464.1	100 g	plastic	17,10 €
9464.2	500 g	plastic	41,85 €
Original pack 6 x 500 g			39,76/500 g
9464.3	1 kg	plastic	71,95 €
Original pack 6 x 1 kg			68,35/1 kg

Iron(III) oxide

Ferric oxide
Fe_2O_3
M 159,69 g/mol
Solubility: insoluble (H_2O, 20 °C)
[1309-37-1] • EC No. 215-168-2

Warning H315-H319-H335

Iron(III) oxide
ROTI®METIC 99,98 % (3N8)

Type analysis:
Assay (metals basis). ..... 99,98 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5634.1	5 g	plastic	36,45 €
5634.2	25 g	plastic	116,00 €

Iron(III) oxide
≥96 %, red

Guarantee analysis:
Assay (iodom.). ..... ≥96 %
Substances soluble in H_2O..... ≤1,0 %
Loss on ignition. ..... ≤0,5 %
Phosphate (PO_4). ..... ≤0,3 %
Sulphate (SO_4). ..... ≤0,5 %
Manganese (Mn). ..... ≤0,25 %

4463.2	100 g	plastic	21,40 €
4463.1	250 g	plastic	30,65 €
4463.8	10 kg	plastic	547,20 €

Iron(III) phosphate hydrate

Iron(III) phosphate hydrate
extra pure
Ferric orthophosphate
$FePO_4 \cdot x\ H_2O$
M 150,83 + x H_2O g/mol
Solubility: insoluble (H_2O, 20 °C)
[10045-86-0] • EC No. 233-149-7
WGK 1

Type analysis:
Assay (Fe). ..... 26,0-32,0 %
Arsenic (As)..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Mercury (Hg). ..... ≤0,0005 %
Loss on ignition (1 h, 800 °C). ..... ≤32,5 %

9358.1	100 g	plastic	17,10 €
9358.2	500 g	plastic	47,20 €
Original pack 6 x 500 g			44,84/500 g
9358.3	1 kg	plastic	78,40 €
Original pack 6 x 1 kg			74,48/1 kg

Iron(II) sulphate heptahydrate

Ferrous sulphate heptahydrate
$FeSO_4 \cdot 7\ H_2O$
M 278,02 g/mol
D 1,89
mp >60 °C
Solubility: ~400 g/l (H_2O, 20 °C)
[7782-63-0] • EC No. 231-753-5
WGK 1

Warning H302-H315-H319

Iron(II) sulphate heptahydrate
≥99 %, p.a., ACS
For the detection of nitrites and nitrates, photography.

Guarantee analysis:
Assay (perm.)..... ≥99,0 %
pH value (5 % in water). 3,0-4,0
In H_2O insoluble matter. ..... ≤0,005 %
Total nitrogen (as N). ..... ≤0,001 %
Chloride (Cl)..... ≤0,001 %
Phosphate (PO_4)..... ≤0,0005 %
Arsenic (As). ..... ≤0,00004 %
Cadmium (Cd). ..... ≤0,005 %
Calcium (Ca). ..... ≤0,005 %
Copper (Cu). ..... ≤0,001 %
Potassium (K). ..... ≤0,002 %
Manganese (Mn)..... ≤0,03 %
Lead (Pb). ..... ≤0,0005 %
Chromium (Cr). ..... ≤0,008 %
Iron III (Fe III). ..... ≤0,1 %
Magnesium (Mg)..... ≤0,002 %
Sodium (Na)..... ≤0,002 %
Zinc (Zn). ..... ≤0,002 %

P015.1	500 g	plastic	24,65 €
Original pack 6 x 500 g			23,42/500 g
P015.2	1 kg	plastic	36,45 €
Original pack 6 x 1 kg			34,63/1 kg
P015.3	2,5 kg	plastic	78,40 €
P015.4	5 kg	plastic	138,70 €
P015.6	10 kg	plastic	252,55 €
P015.5	25 kg	plastic	514,95 €

Iron(II) sulphate heptahydrate
≥99,5 %, Ph.Eur., USP

Guarantee analysis:
Assay..... 99,5-104,5 %
Identity. ..... complies
pH value (5 %). 3,0-4,0
Chloride (Cl)..... ≤0,02 %
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0002 %
Chromium (Cr). ..... ≤0,005 %
Iron III (Fe III). ..... ≤0,3 %
Copper (Cu). ..... ≤0,005 %
Manganese (Mn)..... ≤0,1 %
Nickel (Ni). ..... ≤0,005 %
Mercury (Hg)..... ≤0,0001 %
Zinc (Zn). ..... ≤0,005 %

3722.1	1 kg	plastic	21,00 €
Original pack 6 x 1 kg			19,95/1 kg
3722.3	2,5 kg	plastic	38,60 €
3722.2	5 kg	plastic	64,40 €
3722.4	10 kg	plastic	110,65 €
3722.5	25 kg	plastic	221,35 €

Iron(III) sulphate hydrate

Iron(III) sulphate hydrate

80 %, pure

Ferric sulphate
$Fe_2(SO_4)_3 \cdot x\ H_2O$
M 399,88 + x H_2O g/mol
D 3,10
mp 480 °C (dec.)
Solubility: 4400 g/l (anhydr., H_2O, 20 °C)
[15244-10-7] • EC No. 233-072-9
WGK 1

Danger H302-H315-H318

Type analysis:

Assay (dry substance). ..... 78,0-82,0 %
Arsenic (As). ..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %

0492.1	250 g	plastic	22,05 €
0492.2	500 g	plastic	33,25 €
Original pack 6 x 500 g			31,59/500 g
0492.3	1 kg	plastic	50,00 €
Original pack 6 x 1 kg			47,50/1 kg
0492.4	2,5 kg	plastic	98,80 €

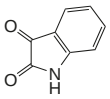
Iron trichloride

▶ Iron(III) chloride see p. 2074
▶ Iron(III) chloride hexahydrate see p. 2074

Isatidine

▶ Retrorsine-N-oxide see p. 2257

Isatin



Isatin

≥98 %, for biochemistry

Reagent for the spectrophotometric determination of thiophene and proline.
2,3-Indolinedione
$C_8H_5NO_2$
M 147,13 g/mol
mp 198-202 °C (dec.) • flp >210 °C
Solubility: 1,9 g/l (H_2O, 20 °C)
[91-56-5] • EC No. 202-077-8

Typ analysis:

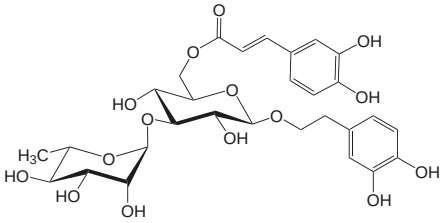
Appearance. ..... orange to reddish
Assay (HPLC). ..... ≥98 %
Solution (1 % in methanol). ..... orange to reddish, clear to almost clear
Water (KF). ..... ≤1,0 %
Sulphated ash. ..... ≤0,1 %

4155.1	25 g	glass	12,80 €
4155.2	100 g	glass	35,40 €

Iscove's Modified Dulbecco's Medium

▶ Roti®-CELL Iscove's MDM see p. 2269

Isoacteoside



Isoacteoside

ROTICHROM® HPLC

From *Harpagophytum procumbens.*
$C_{29}H_{36}O_{15}$
M 624,60 g/mol
Storage temp.: +4 °C
[61303-13-7]

Type analysis:

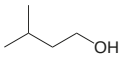
Purity (HPLC). ..... >99 %

T896.1	20 mg	glass	396,70 €

Isoamyl acetate

▶ Acetic acid isoamyl ester see p. 1759

Isoamyl alcohol



3-Methyl-1-butanol, iso-Amyl alcohol, Isopentyl alcohol
$C_5H_{12}O$ • M 88,15 g/mol
D 0,81 • bp 131-132 °C
mp -117,2 °C • flp 42 °C
Solubility: 30 g/l (H_2O, 20 °C)
[123-51-3] • EC No. 204-633-5
UN No. 1105 • ADR 3 III • WGK 1

Danger H226-H332-H335-EUH066

Isoamyl alcohol

ROTIPURAN® ≥98,5 %, p.a., ACS

Guarantee analysis:

Assay (GC). ..... ≥98,5 %
Density (d 20 °C/4 °C). 0,809-0,812
Water ..... ≤0,15 %
Acidity. ..... ≤0,002 meq/g
1-Pentanol (GC). ..... ≤0,5 %
Acids, ester (as pentyl acetate). ..... ≤0,2 %
Carbonylic compounds (as HCHO). ..... ≤0,1 %
Calcium (Ca). ..... ≤0,00005 %
Cadmium (Cd). ..... ≤0,000005 %
Cobalt (Co). ..... ≤0,000002 %
Chromium (Cr). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Lead (Pb). ..... ≤0,000001 %
Zinc (Zn). ..... ≤0,00001 %
Evaporation residue. ..... ≤0,003 %

T870.1	500 ml	glass	41,85 €
T870.2	1 l	glass	79,45 €
Original pack 6 x 1 l			75,48/1 l
T870.3	2,5 l	glass	175,15 €
Original pack 4 x 2,5 l			166,39/2,5 l

Isoamyl alcohol

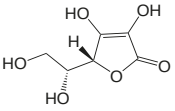
≥98,5 %, for synthesis

Typ analysis:

Assay (GC). ..... ≥98,5 %

8930.1	1 l	glass	48,95 €
Original pack 6 x 1 l			46,50/1 l
8930.2	2,5 l	glass	89,15 €
Original pack 4 x 2,5 l			84,69/2,5 l

D-Isoascorbic acid



D-Isoascorbic acid

≥98 %, cryst.

$C_6H_8O_6$
M 176,13 g/mol
mp 168-172 °C
[89-65-6] • EC No. 201-928-0 • WGK 1

Type analysis:

Assay (titr.). ..... ≥98 %
Specific rotation $[\alpha]_D^{20}$ (c=10 in H_2O). ..... -19° to -16°

6265.1	25 g	plastic	22,05 €

Isobutanol

▶ 2-Methyl-1-propanol see p. 2141

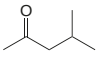
Isobutyl acetate

▶ Acetic acid isobutyl ester see p. 1760

Isobutyl alcohol

▶ 2-Methyl-1-propanol see p. 2141

Isobutyl methylketone



4-Methyl-2-pentanone, MIBK, Isopropylacetone
$C_6H_{12}O$
M 100,16 g/mol
D ~0,80 • bp 116-118 °C
mp -83,5 °C • flp 14 °C
[108-10-1] • EC No. 203-550-1
UN No. 1245 • ADR 3 II • WGK 1

Danger

H225-H319-H332-H335-EUH066

Isobutyl methylketone

≥99,5 %, VLSI Grade

Guarantee analysis:

Assay. ..... ≥99,5 %
Particle number (≥0,5 µm). ..... ≤250 p/ml
Water. ..... ≤0,1 %
Evaporation residue. ..... ≤0,0005 %
Colour (APHA). ..... ≤10
Chloride (Cl). ..... ≤0,0001 %
Sulphate (SO_4). ..... ≤0,00005 %
Aluminium (Al). ..... ≤50 ppb
Antimony (Sb). ..... ≤10 ppb
Arsenic (As). ..... ≤10 ppb

Barium (Ba)	≤20 ppb
Beryllium (Be)	≤10 ppb
Bismuth (Bi)	≤10 ppb
Lead (Pb)	≤10 ppb
Boron (B)	≤20 ppb
Cadmium (Cd)	≤10 ppb
Calcium (Ca)	≤50 ppb
Chromium (Cr)	≤10 ppb
Iron (Fe)	≤50 ppb
Gallium (Ga)	≤10 ppb
Gold (Au)	≤10 ppb
Potassium (K)	≤20 ppb
Cobalt (Co)	≤10 ppb
Copper (Cu)	≤10 ppb
Lithium (Li)	≤10 ppb
Magnesium (Mg)	≤20 ppb
Manganese (Mn)	≤10 ppb
Molybdenum (Mo)	≤10 ppb
Sodium (Na)	≤50 ppb
Nickel (Ni)	≤10 ppb
Silver (Ag)	≤10 ppb
Strontium (Sr)	≤10 ppb
Titanium (Ti)	≤10 ppb
Vanadium (V)	≤10 ppb
Zinc (Zn)	≤20 ppb
Tin (Sn)	≤10 ppb
Zirconium (Zr)	≤10 ppb

0061.1	2,5 l	plastic	76,90 €
Original pack 4 x 2,5 l			73,06/2,5 l

Isobutyl methylketone

ROTIPURAN® ≥99 %, p.a., ACS

Guarantee analysis:

Assay (GC)	≥99,0 %
Density (d 20 °C/4 °C)	0,798-0,802
Colour (APHA)	≤15
Water	≤0,1 %
Acidity	≤0,002 meq/g
Non volatile matter	≤0,005 %
Aluminium (Al)	≤0,00005 %
Barium (Ba)	≤0,00001 %
Calcium (Ca)	≤0,00005 %
Cadmium (Cd)	≤0,000005 %
Cobalt (Co)	≤0,000002 %
Chromium (Cr)	≤0,000002 %
Copper (Cu)	≤0,000002 %
Iron (Fe)	≤0,00001 %
Magnesium (Mg)	≤0,00001 %
Manganese (Mn)	≤0,000002 %
Nickel (Ni)	≤0,000002 %
Lead (Pb)	≤0,00001 %
Zinc (Zn)	≤0,00001 %

0338.1	1 l	glass	37,10 €
Original pack 6 x 1 l			35,25/1 l
0338.2	2,5 l	glass	71,95 €
Original pack 4 x 2,5 l			68,35/2,5 l

Isobutyl methylketone

≥99 %, for synthesis

Type analysis:

Assay (GC)	≥99 %
Density (d 20 °C/4 °C)	0,798-0,802
Evaporation residue	≤0,005 %
Water	≤0,1 %

4371.1	1 l	glass	32,15 €
Original pack 6 x 1 l			30,54/1 l
4371.2	2,5 l	glass	62,25 €
Original pack 4 x 2,5 l			59,14/2,5 l

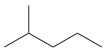
Isobutyltrimethylmethane

▶ Isooctane see p. 2078

Isodulcit

▶ L(+)-Rhamnose monohydrate see p. 2257

Isohexane



iso-Hexane, Hexane isomers
C_6H_{14}-Isomer
M 86,18 g/mol
D 0,65 • bp 60,3 °C
mp -154 °C • flp -20 °C
[64742-49-0] • EC No. 931-254-9
UN No. 1208 • ADR 3 II • WGK 2

Danger
H225-H304-H315-H336-H411

Isohexane

ROTISOLV® HPLC

Guarantee analysis:

Assay C_6H_{14}-isomers (GC)	≥99,0 %
Isohexane (GC)	≥70 %
n-Hexane (GC)	≤0,5 %
Water (KF)	≤0,005 %
Non volatile matter	≤0,0002 %
Transmission:	
245 nm	≥98 %
220 nm	≥80 %
210 nm	≥60 %

Filtered through 0,2 µm membrane and filled under protective gas.

T176.2	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l
T176.1	2,5 l	glass	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

For further information, please see page 1650

Isohexane

ROTISOLV® ≥96 %, Pestilyse® plus

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:

Assay C_6H_{14}-isomers (GC)	≥96,0 %
Colour (APHA)	≤5
Water (KF)	≤0,005 %
Free acid (as CH_3COOH)	≤0,001 %
Evaporation residue	≤0,0001 %
GC/FID suitability (as 2-octanol)	≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide)	≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane)	≤5 ng/l
GC/ECD pesticides (as lindane)	≤2 ng/l
GC/NPD pesticides (as parathion)	≤5 ng/l
GC/ECD volatile impurities (as ethylene dibromide)	≤5 ng/ml
Oil index (any hydrocarbon C_{10}-C_{40})	≤0,05 mg/l
PAH-test (less than 2 ppb, HPLC)	complies
Fluorescence (as quinine):	
254 nm	≤1 ppb
365 nm	≤1 ppb

7576.1	2,5 l	glass	93,00 €
Original pack 4 x 2,5 l			88,35/2,5 l

Isohexane

ROTISOLV® ≥99 %, Pestilyse®

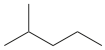
For residue and environmental analysis

Guarantee analysis:

Assay C_6H_{14}-isomers (GC)	≥99,0 %
Water (KF)	≤0,005 %
Free acid (as CH_3COOH)	≤0,002 %
Evaporation residue	≤0,0002 %
GC/ECD (individual signal as lindane)	≤5 ng/l
GC/PND (individual signal as ethylparathion)	≤10 ng/l

T904.1	2,5 l	glass	90,20 €
Original pack 4 x 2,5 l			85,69/2,5 l

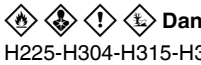
Isohexane



Isohexane

≥98 %, for synthesis

2-Methylpentane
C_6H_{14}-Isomer
M 86,18 g/mol
D 0,65 • bp 0,65
mp -154 °C • flp -32 °C
[107-83-5] • EC No. 203-523-4
UN No. 1208 • ADR 3 II • WGK 2



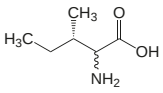
Danger
H225-H304-H315-H336-H411

Type analysis:

Assay	≥98,0 %
Water (KF)	≤0,01 %

2667.1	1 l	glass	31,75 €
Original pack 6 x 1 l			30,16/1 l
2667.2	2,5 l	glass	57,55 €
Original pack 4 x 2,5 l			54,67/2,5 l
2667.4	5 l	aluminium	96,65 €
Original pack 2 x 5 l			91,82/5 l
2667.3	10 l	tinplate	181,70 €

DL-Isoleucine



DL-Isoleucine

≥98,5 %, for biochemistry

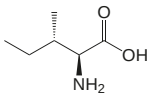
2-Amino-3-methylvaleric acid
$C_6H_{13}NO_2$
M 131,17 g/mol
Storage temp.: +4 °C
[443-79-8] • EC No. 207-139-8 • WGK 3

Type analysis:

Appearance	white to off-white powder
Assay	≥98,5 %
Heavy metals (as Pb)	≤0,001 %
Ash content	≤0,1 %
Loss on drying	≤0,5 %

8598.1	10 g	plastic	25,70 €
8598.2	50 g	plastic	94,50 €
8598.3	100 g	plastic	169,75 €

L-Isoleucine



(2S,3S)-2-Amino-3-methylvaleric acid
$C_6H_{13}NO_2$
M 131,18 g/mol
mp 168-170 °C (subl.) • flp 284 °C
Solubility: ~40 g/l (H_2O, 20 °C)
[73-32-5] • EC No. 200-798-2
WGK 1

L-Isoleucine
CELLPURE® ≥99 %
For cell culture and biochemistry.

Guarantee analysis:
Endotoxins. ≤6,0 E.U./g
Assay. ≥99 %
Loss on drying. ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. +39,5° to +41,5°
Ammonium (NH_4). ≤0,02 %
Chloride (Cl). ≤0,02 %
Sulphate (SO_4). ≤0,02 %
Heavy metals (as Pb). ≤0,001 %
Iron (Fe). ≤0,001 %

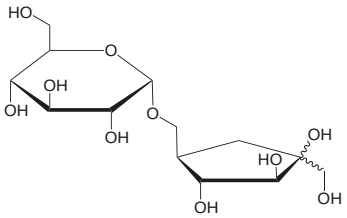
1698.1	25 g	plastic	24,20 €
1698.2	100 g	plastic	59,05 €
1698.3	500 g	plastic	235,45 €
Original pack 6 x 500 g			223,68/500 g

L-Isoleucine
≥98,5 %, USP, for biochemistry

Guarantee analysis:
Appearance. white cryst. powder
Assay (dry substance). 98,5-101,0 %
Identity. complies
Specific rotation $[\alpha]_D^{20}$. +39,5° to +41,5°
pH value 5,5-6,5
Ammonium (NH_4). ≤0,02 %
Chloride (Cl). ≤0,02 %
Sulphate (SO_4). ≤0,02 %
Iron (Fe). ≤0,001 %
Heavy metals (as Pb). ≤0,001 %
Foreign amino acids. complies
Loss on drying. ≤0,2 %
Sulphated ash. ≤0,1 %

3922.1	10 g	glass	14,55 €
3922.2	100 g	plastic	46,15 €
3922.4	500 g	plastic	181,70 €
Original pack 6 x 500 g			172,62/500 g
3922.3	1 kg	plastic	342,95 €
Original pack 6 x 1 kg			325,80/1 kg

Isomaltulose

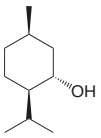


Isomaltulose
≥99 %, for biochemistry
Palatinose®
$C_{12}H_{22}O_{11} \cdot H_2O$
M 350,32 g/mol
mp 122-123 °C
[13718-94-0] • EC No. 237-282-1

Typ analysis:
Assay (HPLC). ≥99,0 %

8400.1	25 g	plastic	30,00 €
8400.2	100 g	plastic	84,85 €

(+)-Isomenthol

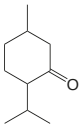


(+)-Isomenthol
ROTICHROM® GC
Reference substance for GC
(1R,3S,4R)-p-Menthan-3-ol
$C_{10}H_{20}O$
M 156,27 g/mol
bp 218-219 °C
mp 77-83 °C
Storage temp.: +4 °C
[23283-97-8] • EC No. 245-554-6 • WGK 1

Type analysis:
Purity (GC, Isomers). ≥90 %

5422.1	50 mg	glass	471,95 €

Isomenthone



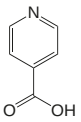
Isomenthone
ROTICHROM® GC
Reference substance for GC
Natural, isolated from oil of peppermint.
$C_{10}H_{18}O$
M 154,24 g/mol
Storage temp.: +4 °C
[491-07-6] • EC No. 207-727-4 • WGK 1

Warning H315-H317

Type analysis:
Purity (GC). ≥85 %

6458.1	1 g	plastic	84,40 €

Isonicotinic acid



NEW

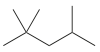
Isonicotinic acid
≥99 %, for synthesis
Pyridine-4-carboxylic acid, 4-Picolinic acid
$C_6H_5NO_2$
M 123,11 g/mol
mp 315-320 °C
[55-22-1] • EC No. 200-228-2
WGK 1

Warning H319

Guarantee analysis:
Assay. ≥99 %
Water. ≤0,5 %

0759.1	25 g	plastic	13,90 €
0759.2	100 g	plastic	32,15 €

Isooctane



2,2,4-Trimethylpentane, iso-Octane, Isobutyltrimethylmethane
C_8H_{18}
M 114,23 g/mol
D 0,69 • bp 99 °C
mp -107 °C • flp -12 °C
[540-84-1] • EC No. 208-759-1
UN No. 1262 • ADR 3 II • WGK 2

Danger
H225-H304-H400-H410-H315-H336

Isooctane
ROTISOLV® HPLC

Guarantee analysis:
Assay (GC). ≥99,9 %
Water (KF). ≤0,005 %
Free acid. ≤0,002 %
Non volatile matter. ≤0,0002 %
Layer thickness d = 1 cm water in comparison
Transmission:
>250 nm. ≥99 %
235 nm. ≥95 %
225 nm. ≥80 %
215 nm. ≥50 %
205 nm. ≥10 %
Filtered through 0,2 µm membrane and filled under protective gas.

7340.1	2,5 l	glass	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

For further information, please see page 1650

Isooctane

ROTISOLV® ≥99,7 %, Pestilyse® plus

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:

Assay (GC). ≥99,7 %
Colour (APHA). ≤5
Water (KF). ≤0,01 %
Free acid (as CH_3COOH). ≤0,001 %
Evaporation residue. ≤0,0001 %
GC/FID suitability (as 2-octanol). ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤5 ng/l
Oil index (any hydrocarbon C_{10}-C_{40}). ≤0,05 mg/l
GC/ECD volatile impurities (as ethylene dibromide). ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC). complies
Fluorescence (as quinine):
254 nm. ≤1 ppb
365 nm. ≤1 ppb

7580.1	2,5 l	glass	110,20 €
Original pack 4 x 2,5 l			104,69/2,5 l

Isooctane

ROTISOLV® ≥99,5 %, Pestilyse®

For residue and environmental analysis.

Guarantee analysis:

Assay (GC). ≥99,5 %
Water (KF). ≤0,02 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
GC/ECD (individual signal as lindane). ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l

T167.1	2,5 l	glass	106,35 €
Original pack 4 x 2,5 l			101,03/2,5 l

Isooctane

ROTISOLV® ≥99,8 %, UV/IR-Grade

For chromatography and spectroscopy.

Guarantee analysis:

Assay (GC). ≥99,8 %
Water (KF). ≤0,005 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
Fluorescence (as quinine):
254 nm. ≤1,0 ppb
365 nm. ≤1,0 ppb
Transmission:
255 nm. ≥98 %
235 nm. ≥90 %
225 nm. ≥80 %
215 nm. ≥50 %
205 nm. ≥10 %

CP80.1	2,5 l	glass	110,65 €
Original pack 4 x 2,5 l			105,12/2,5 l

Isooctane

ROTIPURAN® ≥99,5 %, p.a., ACS

Guarantee analysis:

Assay (GC). ≥99,5 %
Colour (APHA). ≤10
Density (d 20 °C/4 °C). 0,692-0,693
Acidity. ≤0,0003 meq/g
Water (KF). ≤0,01 %
Lead (Pb). ≤0,00001 %
Cadmium (Cd). ≤0,000005 %
Calcium (Ca). ≤0,00005 %
Chromium (Cr). ≤0,000002 %
Iron (Fe). ≤0,00001 %
Cobalt (Co). ≤0,000002 %
Copper (Cu). ≤0,000002 %
Magnesium (Mg). ≤0,00001 %
Manganese (Mn). ≤0,000002 %
Nickel (Ni). ≤0,000002 %
Zinc (Zn). ≤0,00001 %
Evaporation residue. ≤0,001 %
Sulphur compounds (as S). ≤0,005 %

6889.1	1 l	glass	55,80 €
Original pack 6 x 1 l			53,01/1 l
6889.2	2,5 l	glass	118,15 €
Original pack 4 x 2,5 l			112,24/2,5 l

Isooctane

≥99,5 %, for synthesis

Type analysis:

Assay (GC). ≥99,5 %
Density (15 °C). 0,694-0,698
Lead (Pb). ≤0,002 %
n-Heptane. ≤0,1 %

9860.1	1 l	glass	33,25 €
Original pack 6 x 1 l			31,59/1 l
9860.3	2,5 l	glass	67,65 €
Original pack 4 x 2,5 l			64,27/2,5 l
9860.4	5 l	aluminium	121,40 €
Original pack 2 x 5 l			115,33/5 l
9860.2	10 l	tinplate	210,60 €
9860.5	25 l	tinplate	418,20 €

Isoorientin

▶ Homoorientin see p. 2045

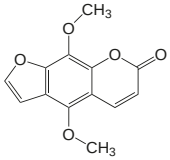
Isopentane

▶ 2-Methylbutane see p. 2136

Isopentyl alcohol

▶ Isoamyl alcohol see p. 2076

Isopimpinellin



Isopimpinellin

ROTICHROM® HPLC

Reference substance for HPLC.
Dimethylpsoralen
$C_{13}H_{10}O_5$
M 246,22 g/mol
mp 147-148 °C
Storage temp.: +4 °C
[482-27-9]
UN No. 2811 • ADR 6.1 II

Danger H301+H311-H330

Type analysis:

Purity (HPLC). ≥99 %

8854.1	10 mg	glass	188,15 €

Isopropanol

▶ 2-Propanol see p. 2239
▶ 2-Propanol 70 % see p. 2240

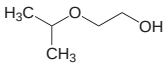
Isopropanol deuterated

▶ 2-Propanol D1 see p. 2241
▶ 2-Propanol D8 see p. 2241

Isopropenyl acetate

▶ Acetic acid isopropenyl ester see p. 1760

2-Isopropoxyethanol



2-Isopropoxyethanol

≥99 %, pure

Ethylene glycol monoisopropyl ether, Isopropylglycol
$C_5H_{12}O_2$
M 104,15 g/mol
D 0,90 • bp 145 °C
mp -60 °C • flp 46 °C
[109-59-1] • EC No. 203-685-6
UN No. 3271 • ADR 3 III • WGK 1

Warning

H226-H312+H332-H315-H319

Type analysis:

Assay. ≥99,0 %
Colour (Hazen). ≤10
Water. ≤0,15 %
Acid content (as CH_3COOH). ≤0,005 %

8706.1	1 l	glass	23,55 €
Original pack 6 x 1 l			22,37/1 l
8706.2	2,5 l	glass	42,90 €
Original pack 4 x 2,5 l			40,76/2,5 l

Isopropylacetone

▶ Isobutyl methylketone see p. 2076

Isopropyl alcohol

▶ 2-Propanol see p. 2239
▶ 2-Propanol 70 % see p. 2240

Isopropyl ether

▶ Diisopropyl ether see p. 1944

Isopropylglycol

▶ 2-Isopropoxyethanol see p. 2079

2-Isopropyl-5-methylphenol

▶ Thymol see p. 2406

5-Isopropyl-2-methyl-phenol

▶ Carvacrol see p. 1880

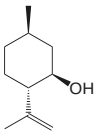
Isopropyl myristate

▶ Myristic acid isopropyl ester see p. 2151

Isopropyl-ß-D-thiogalacto-pyranoside

▶ IPTG see p. 2072

Isopulegol

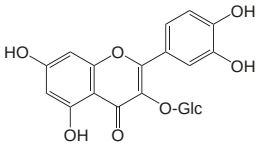


Isopulegol
ROTICHROM® GC
Reference substance for GC.
p-Menth-8-en-3-ol
$C_{10}H_{18}O$
M 154,25 g/mol
D 0,911 • bp 93 °C
flp 78 °C
Storage temp.: +4 °C
[89-79-2] • EC No. 201-940-6
Warning H302-H315-H319-H335

Type analysis:
Purity (GC, Isomers). ..... ≥99 %

8030.2	100 mg	glass	87,00 €

Isoquercitrin



Trifoliin, Quercetin-3-glucoside
$C_{21}H_{20}O_{12}$
M 464,38 g/mol
mp 215-235 °C
[482-35-9] • EC No. 244-488-5
WGK 1

Isoquercitrin
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤10,0 %
Assay (qNMR). ..... ≥85,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE24.1	10 mg	glass	901,95 €

Isoquercitrin
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC). ..... ≥80,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC24.1	25 mg	glass	353,70 €

Isoquercitrin
ROTICHROM® HPLC
Reference substance for HPLC.
From *Tiliae officinalis.*
Storage temp.: +4 °C

Type analysis:
Purity (HPLC). ..... >99 %

7586.1	10 mg	glass	121,40 €

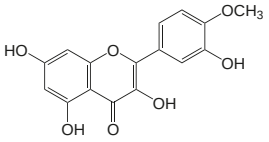
Isoquercitrin
ROTICHROM® TLC
Reference substance for thin layer chromatography
From *Tiliae officinalis.*
Storage temp.: +4 °C

5573.1	50 mg	glass	75,15 €

Isoquercitrin
ROTICHROM® ~CHR
Storage temp.: +4 °C

6527.1	250 mg	glass	209,65 €

Isorhamnetin



$C_{16}H_{12}O_7$
M 316,27 g/mol
mp ~305 °C
Storage temp.: +4 °C
[480-19-3] • EC No. 207-545-5

Isorhamnetin
ROTICHROM® HPLC
Reference substance for HPLC.

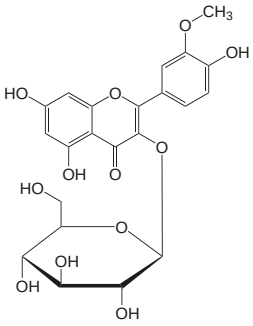
Type analysis:
Purity (HPLC). ..... ≥98 %

7589.1	10 mg	glass	235,45 €

Isorhamnetin
ROTICHROM® CHR

6528.1	100 mg	glass	403,15 €

Isorhamnetin-3-glucoside

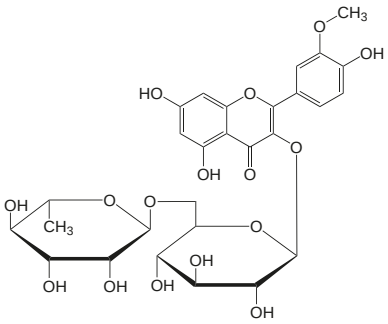


Isorhamnetin-3-glucoside
≥95 %
$C_{22}H_{22}O_{12}$
M 478,41 g/mol
mp 205-207 °C
[5041-82-7]

Type analysis:
Appearance. ..... yellow powder
Assay (HPLC). ..... ≥95 %

9386.2	10 mg	glass	332,20 €

Isorhamnetin-3-rutinoside

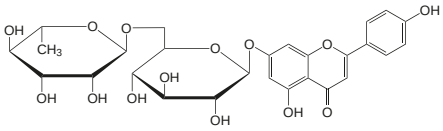


Isorhamnetin-3-rutinoside
ROTICHROM® HPLC
Reference substance for HPLC.
Narcisin
$C_{28}H_{32}O_{16}$
M 624,56 g/mol
mp 173-174 °C
Storage temp.: +4 °C
[604-80-8]

Type analysis:
Purity (HPLC). ..... ≥99 %

9388.2	10 mg	glass	256,95 €

Isorhoifolin

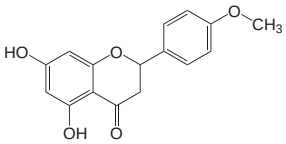


Isorhoifolin
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{27}H_{30}O_{14}$
M 578,53 g/mol
Storage temp.: +4 °C
[552-57-8] • EC No. 209-015-9

Type analysis:
Purity (HPLC)..... ≥98 %

6989.1	10 mg	glass	396,70 €

Isosakuranetin

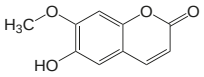


Isosakuranetin
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{16}H_{14}O_5$
M 286,29 g/mol
mp 193-194 °C
Storage temp.: +4 °C
[480-43-3] • EC No. 207-551-8

Type analysis:
Purity (HPLC)..... ≥99 %

7498.1	10 mg	glass	177,40 €

Isoscopoletin



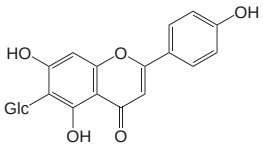
Isoscopoletin
ROTICHROM® CHR
$C_{10}H_8O_4$
M 192,17 g/mol
mp 185 °C
[776-86-3] • EC No. 212-282-4

5883.2	10 mg	glass	181,70 €

Isothymol

▶ Carvacrol see p. 1880

Isovitexin



Saponaretin
$C_{21}H_{20}O_{10}$
M 432,38 g/mol
mp 220-221 °C
[38953-85-4]
WGK 3

Isovitexin
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF)..... ≤5,0 %
Assay (qNMR)..... ≥85,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE25.1	10 mg	glass	880,45 €

Isovitexin
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC)..... ≥80,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC25.1	25 mg	glass	381,65 €

Isovitexin
ROTICHROM® HPLC
Reference substance for HPLC.
From *Saponaria officinalis*
Storage temp.: +4 °C

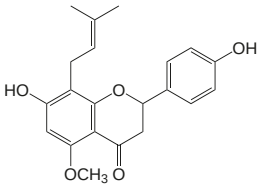
Type analysis:
Purity (HPLC). ..... ≥99 %

6412.1	5 mg	glass	235,45 €

Isovitexin-7-O-glucoside

▶ Saponarin see p. 2307

Isoxanthohumol

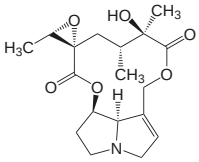


Isoxanthohumol
ROTICHROM® HPLC
Reference substance for HPLC.
From *Humulus lupulus.*
$C_{21}H_{22}O_5$
M 354,40 g/mol
Storage temp.: +4 °C
[70872-29-6]
WGK 1

Type analysis:
Purity (HPLC)..... ≥99 %

2824.1	10 mg	glass	235,45 €

Jacobine



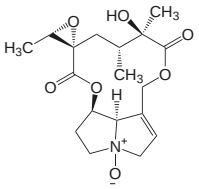
Jacobine
ROTICHROM® HPLC
Reference substance for HPLC.
From *Senecio jacobea*
$C_{18}H_{25}NO_6$
M 351,39 g/mol
mp 218-222 °C
Storage temp.: +4 °C
[6870-67-3]
WGK 1

Warning H302

Type analysis:
Purity (HPLC)..... ≥98,0 %

1963.1	5 mg	glass	327,90 €

Jacobine N-oxide



Jacobine N-oxide

ROTICHROM® HPLC

Reference substance for HPLC.
From *Senecio jacobea*

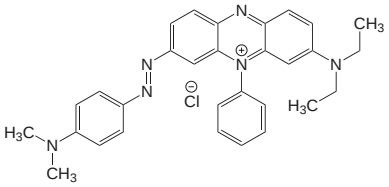
$C_{18}H_{25}NO_7$
M 367,39 g/mol
Storage temp.: +4 °C • WGK 1

Warning H302

Type analysis:
Purity (HPLC)..... ≥96,0 %

1970.1	5 mg	glass	338,65 €

Janus green B (C.I. 11050)



Janus green B (C.I. 11050)

for microscopy

Oxidized indicator blue, reduced indicator pink
Diazin Green S
$C_{30}H_{31}ClN_6$ • M 511,07 g/mol
Solubility: 30 g/l (H_2O)
[2869-83-2] • EC No. 220-695-6 • WGK 3

Type analysis:
Appearance. ..... dark green to black powder

7697.1	5 g	glass	25,70 €
7697.2	25 g	glass	62,25 €
7697.3	100 g	glass	203,20 €

For further information, please see page 1523

Jenner Stain

Jenner Stain

for microscopy

Mixture of eosin, methylene blue, Azure A, B and C
[62851-42-7] • WGK 3

Type analysis:
Appearance. ..... dark green to black powder
Appearance of solution (0,1 % in MeOH).....
..... clear to opaque, dark blue

7698.1	5 g	glass	14,55 €
7698.2	25 g	glass	25,70 €
7698.3	100 g	glass	62,25 €

For further information, please see page 1523

Jodine

▶ Iodine see p. 2069

Jojoba oil

Jojoba oil

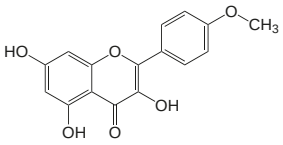
natural pure

D 0,87 • bp 398 °C
mp ~7 °C • flp >295 °C
[90045-98-0] • EC No. 289-964-3

Type analysis:
Appearance..... clear, yellow to brown oil
Density (20 °C). ..... 0,860-0,870 g/cm³
Refractive index (20 °C). 1,450-1,470
Optical rotation (20 °C). ..... -2° to +2°

7526.1	100 ml	glass	23,55 €
7526.2	1 l	glass	145,70 €
Original pack 6 x 1 l			138,42/1 l

Kaempferide



Kaempferide

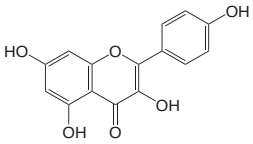
ROTICHROM® HPLC

Reference substance for HPLC.
4'-Methoxy-3,5,7-trihydroxyflavone
$C_{16}H_{12}O_6$ • M 300,27 g/mol
Storage temp.: +4 °C
[491-54-3] • EC No. 207-738-4

Type analysis:
Purity (HPLC). ..... ≥99 %

7501.1	10 mg	glass	177,40 €

Kaempferol



3,4',5,7-Tetrahydroxyflavone, Robigenin, Trifolitin
$C_{15}H_{10}O_6$ • M 286,24 g/mol
mp 250-280 °C (dec.)
[520-18-3] • EC No. 208-287-6 • WGK 3

Warning H315-H319-H335-H341

Kaempferol

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF)..... ≤5,0 %
Assay (qNMR)..... ≥80,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE26.1	25 mg	glass	880,45 €

Kaempferol

ROTICHROM® Working Standard

Type analysis:
Assay (HPLC). ..... ≥80,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC26.1	25 mg	glass	177,40 €

Kaempferol

ROTICHROM® HPLC

Reference substance for HPLC.
From *Aesculus hippocastanum.*
Storage temp.: +4 °C

Type analysis:
Purity (HPLC). ..... >99 %

7503.1	10 mg	glass	115,60 €

Kaempferol

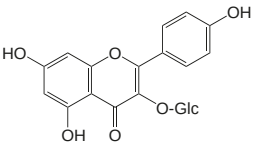
ROTICHROM® ~CHR

Storage temp.: +4 °C

Type analysis:
Appearance. ..... fine yellow powder
Melting point (dec.). ..... 250-280 °C

5859.1	500 mg	glass	252,65 €

Kaempferol-3-glucoside



Kaempferol-3-glucoside

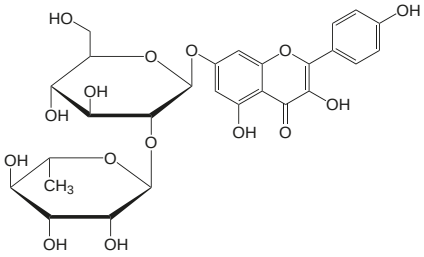
ROTICHROM® HPLC

Reference substance for HPLC.
From *Aesculus hippocastanum*
Astragalin
$C_{21}H_{20}O_{11}$
M 448,39 g/mol
Storage temp.: +4 °C
[480-10-4]

Type analysis:
Purity (HPLC). ..... ≥99 %

9321.1	5 mg	glass	235,45 €

Kaempferol-7-neohesperidoside



Kaempferol-7-neohesperidoside

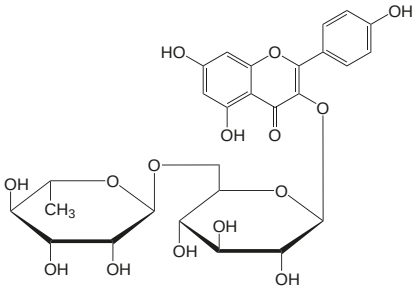
ROTICHROM® ~CHR

Kaempferol-7-O-α-L-rhamnosido-D-glucoside
$C_{27}H_{30}O_{15} \cdot x\ H_2O$
M 594,53 + x H_2O g/mol
mp 255-257 °C
[17353-03-6]

Warning H302

9467.1	10 mg	glass	155,90 €

Kaempferol-3-rhamnosidoglucoside



Kaempferol-3-rhamnosidoglucoside

ROTICHROM® HPLC

Reference substance for HPLC.
$C_{27}H_{30}O_{15}$
M 594,5 g/mol
Storage temp.: +4 °C
[17650-84-9]

Warning H302

Type analysis:

Purity (HPLC)..... ≥98 %

4526.1	10 mg	glass	461,20 €

Kaempferol-7-O-α-L-rhamnosido-D-glucoside

▶ Kaempferol-7-neohesperidoside see p. 2083

Kaiser's glycerol gelatine phenol-free

Kaiser's glycerol gelatine phenol-free

for microscopy

Aqueous mounting medium
D 1,11
WGK 1

Type analysis:

Appearance..... light yellowish coloured, solid medium
Glycerol..... 40-45 %
Gelatine..... 7-9 %
Refractive index (20 °C)..... 1,44-1,47
Density (20 °C)..... 1,11

6474.1	50 ml	glass	18,85 €

For further information, please see page 1535

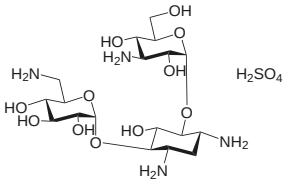
Kanamycin

▶ Kanamycin sulphate see p. 2083

Kanamycin-LB Selective Agar

▶ LB-Agar (Lennox) / Kana50 see p. 2093
▶ LB-Agar (Luria/Miller) / Kana50 see p. 2094

Kanamycin sulphate



Kanamycin sulphate

≥750 I.U./mg, for biochemistry

Bacteriostatic antibiotic
Kanamycin
$C_{18}H_{36}N_4O_{11} \cdot H_2SO_4$
M 582,58 g/mol
mp 250 °C
Storage temp.: +20 °C
[25389-94-0] • EC No. 246-933-9
WGK 1

Danger H360D

Typ analysis:

Assay..... ≥750 I.U./mg
pH value (1 % in H_2O, 25 °C)..... 6,5-8,5
Ash content..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$ ..... +112° to +123°

T832.1	5 g	plastic	22,05 €
T832.2	25 g	plastic	61,20 €
T832.3	50 g	plastic	100,95 €
T832.4	100 g	plastic	168,25 €

For further information, please see page 1504

Kantharidin

▶ Cantharidin see p. 1874

Kaolin

▶ Bolus see p. 1847

Karl Fischer Roti®hydroquant C2

Karl Fischer Roti®hydroquant C2

2 mg H_2O/ml, free of pyridine

Single-component reagent
D 1,2
UN No. 1760 • ADR 8 II • WGK 2

Danger H314-H332-H360D-H373

Guarantee analysis:

Efficiency..... ≥2 mg H_2O/ml
at the time of manufacture

T194.1	1 l	glass	100,55 €
Original pack 6 x 1 l			95,52/1 l

For further information, please see page 1694

Karl Fischer Roti®hydroquant C5

Karl Fischer Roti®hydroquant C5

5 mg H_2O/ml, free of pyridine

Single-component reagent
D 1,2
UN No. 1760 • ADR 8 II • WGK 2

Danger H314-H332-H360D-H372

Guarantee analysis:

Efficiency..... ≥5 mg H_2O/ml
at the time of manufacture

T190.1	1 l	glass	107,40 €
Original pack 6 x 1 l			102,03/1 l

For further information, please see page 1694

Karl Fischer Roti®hydroquant C5 K

Karl Fischer Roti®hydroquant C5 K

5 mg H_2O/ml, for aldehydes and ketones

Single-component reagent
UN No. 1760 • ADR 8 (III) • WGK 2

Danger H314-H360D-H372

Guarantee analysis:

Efficiency..... ≥5 mg H_2O/ml
at the time of manufacture

5211.1	1 l	glass	113,85 €
Original pack 6 x 1 l			108,16/1 l

For further information, please see page 1694

Karl Fischer Roti®hydroquant coulo A

Karl Fischer Roti®hydroquant coulo A

for coulometric KF titration

Anolyte for cells with diaphragm. Use with Karl Fischer Roti®hydroquant coulo CG.

D 1,07 • bp 59 °C

flp 11 °C

UN No. 3286 • ADR 3 (6.1 + 8) II • WGK 3

Danger H225-H302-H311+ H331-H314-H351-H360D-H370-H372

Guarantee analysis:

Application test. ..... complies

9957.1	500 ml	glass	77,95 €

For further information, please see page 1696

Karl Fischer Roti®hydroquant coulo AG

Karl Fischer Roti®hydroquant coulo AG

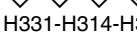
for coulometric KF titration

Single-component reagent for cells without diaphragm

D 0,93 • bp 63 °C

flp 14 °C

UN No. 3286 • ADR 3 (6.1 + 8) II • WGK 1



Danger H225-H301+H311+ H331-H314-H360D-H370-H373

Guarantee analysis:

Application test. ..... complies

9854.1	500 ml	glass	77,95 €

For further information, please see page 1696

Karl Fischer Roti®hydroquant coulo CG

Karl Fischer Roti®hydroquant coulo CG

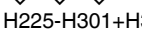
for coulometric KF titration

Catholyte for cells with diaphragm. Use with Karl Fischer Roti®hydroquant coulo A or coulo Oil.

D 1,06 • bp 63 °C

flp 14 °C

UN No. 1230 • ADR 3 (6.1) II • WGK 1



Danger

H225-H301+H311+H331-H319-H370

Guarantee analysis:

Application test. ..... complies

9861.1	100 ml	glass	77,95 €

For further information, please see page 1696

Karl Fischer Roti®hydroquant coulo Oil

Karl Fischer Roti®hydroquant coulo Oil

for coulometric KF titration

Anolyte for cells with diaphragm. Use with Karl Fischer Roti®hydroquant coulo CG.

D 0,98

flp 8 °C

UN No. 3286 • ADR 3 (6.1 + 8) II • WGK 3

Danger H225-H301+H311+ H331-H304-H314-H335-H351-H360D-H370-H372

Guarantee analysis:

Application test. ..... complies

9960.1	100 ml	glass	27,85 €

For further information, please see page 1696

Karl Fischer methanol

Karl Fischer methanol Roti®hydroquant D

dry, for KF titration

Solvent component

Methanol, Methyl alcohol

CH_4O

M 32,04 g/mol

D 0,79 • bp 64,5 °C

flp 11 °C

[67-56-1] • EC No. 200-659-6

UN No. 1230 • ADR 3 (6.1) II • WGK 1

Danger

H225-H301+H311+H331-H370

Guarantee analysis:

Assay (GC). ..... ≥99,5 %

Water (H_2O). ..... ≤0,01 %

T193.1	1 l	glass	27,45 €
Original pack 6 x 1 l			26,08/1 l
T193.2	2,5 l	glass	51,10 €
Original pack 4 x 2,5 l			48,55/2,5 l

For further information, please see page 1694

Karl Fischer Roti®hydroquant S

Karl Fischer Roti®hydroquant S

for KF titration

Solvent component

D 1,09

flp 11 °C

UN No. 3286 • ADR 3 (6.1) (8) II • WGK 1

Danger H225-H301+H311+ H331-H314-H360D-H370

Guarantee analysis:

Application test. ..... complies

T192.1	1 l	glass	46,15 €
Original pack 6 x 1 l			43,84/1 l

For further information, please see page 1694

Karl Fischer Roti®hydroquant S CM

Karl Fischer Roti®hydroquant S CM

for KF titration

Solvent component

For oils and fats

UN No. 1992 • ADR 3 (6.1) III • WGK 3

Danger H226-H302+H312-H315-H319-H331-H351-H360D-H370-H372

Guarantee analysis:

Application test. ..... complies

5218.1	1 l	glass	38,60 €
Original pack 6 x 1 l			36,67/1 l

For further information, please see page 1694

Karl Fischer Roti®hydroquant T

flp 11 °C

UN No. 1992 • ADR 3 (6.1) II • WGK 2

Danger

H225-H301+H311+H331-H370-H373

Karl Fischer Roti®hydroquant T2

2 mg H_2O/ml, free of pyridine

Titrant component

Two-components reagent

Guarantee analysis:

Efficiency. ..... ≥2 mg H_2O/ml at the time of manufacture

X947.1	1 l	glass	53,25 €
Original pack 6 x 1 l			50,59/1 l

For further information, please see page 1694

Karl Fischer Roti®hydroquant T5

5 mg H_2O/ml, free of pyridine

Titrant component

Two-components reagent

Guarantee analysis:

Efficiency. ..... ≥5 mg H_2O/ml at the time of manufacture

T191.1	1 l	glass	47,85 €
Original pack 6 x 1 l			45,46/1 l

For further information, please see page 1694

Karl Fischer Roti®hydroquant Working Medium K

Karl Fischer Roti®hydroquant Working Medium K

for KF titration for aldehydes and ketones

Solvent component

Use with Karl Fischer Roti®hydroquant C5 K.

UN No. 2810 • ADR 6.1 I • WGK 3

Danger H300+H310+H330-H315-H319-H351-H361d-H372

Guarantee analysis:
Application test. ..... complies

5215.1	1 l	glass	71,95 €
Original pack 6 x 1 l			68,35/1 l

For further information, please see page 1694

Karl Fischer Roti®hydroquant standard sodium tartrate dihydrate

Karl Fischer Roti®hydroquant standard sodium tartrate dihydrate

≥99 %, for KF titration
Primary standard substance for Karl Fischer titration
$C_4H_4Na_2O_6 \cdot 2\ H_2O$
M 230,08 g/mol
mp 150 °C
Solubility: 290 g/l (H_2O, 20 °C)
[6106-24-7] • EC No. 212-773-3
WGK 1

Guarantee analysis:
Assay (perchloric acidim). ..... 99,0-101,0 %
Loss on drying (150 °C). ..... 15,66 ±0,05 %

5229.1	100 g	glass	38,60 €

For further information, please see page 1695

Karl Fischer Roti®hydroquant water standard 1.0

Karl Fischer Roti®hydroquant water standard 1.0

1 mg H_2O/g
Water standard for KF coulometry
D 1,02
UN No. 2222 • ADR 3 III • WGK 2
Warning H226

Guarantee analysis:
Water content. ..... 1,0 ±0,03 mg H_2O/g

9971.1	10 x 4 ml	glass	50,45 €

For further information, please see page 1695

Karl Fischer Roti®hydroquant water standard 10.0

Karl Fischer Roti®hydroquant water standard 10.0

10 mg H_2O/g
Water standard
UN No. 1993 • ADR 3 (III) • WGK 2
Danger
H226-H315-H318-H335-H336

Guarantee analysis:
Water content. ..... 10,0 ±0,1 mg H_2O/g

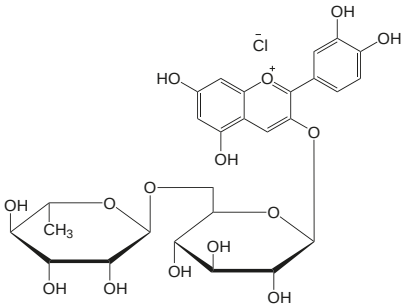
5219.1	10 x 10 ml	glass	61,20 €

For further information, please see page 1695

Karmin

▶ Carmine (C.I. 75470) see p. 1879

Keracyanine chloride



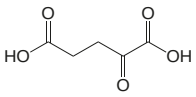
Keracyanine chloride

ROTICHROM® HPLC
Reference substance for HPLC.
$C_{27}H_{31}ClO_{15}$
M 630,98 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[18719-76-1] • EC No. 242-528-6

Type analysis:
Purity (HPLC). ..... ≥96,5 %

6134.2	10 mg	glass	225,25 €

α-Ketoglutaric acid



α-Ketoglutaric acid

≥99 %, for biochemistry
2-Oxoglutaric acid
$C_5H_6O_5$
M 146,10 g/mol
mp 113-117 °C
Storage temp.: +4 °C
[328-50-7] • EC No. 206-330-3
WGK 1
Danger H318

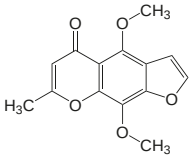
Type analysis:
Assay. ..... ≥99,0 %
Heavy metals. ..... ≤0,001 %
Loss on drying. ..... ≤1,0 %

5901.1	100 g	plastic	59,05 €

α-Ketopropionic acid

▶ Pyruvic acid see p. 2247

Khellin



Khellin

≥98 %, for biochemistry
From *Amni Visnaga*.
$C_{14}H_{12}O_5$
M 260,24 g/mol
mp 150-153 °C
[82-02-0] • EC No. 201-392-8
UN No. 2811 • ADR 6.1 III
Danger H301-H315

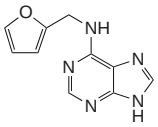
Typ analysis:
Appearance. ..... light yellow powder
Assay (HPLC). ..... ≥98,0 %
Sulphated ash. ..... ≤0,1 %
Heavy metals. ..... ≤0,001 %

5911.1	10 g	glass	47,85 €
5911.2	50 g	glass	185,45 €

Kieselguhr

▶ Celite® see p. 1884

Kinetin



Kinetin

≥98 %, for biochemistry
N6-Furfuryladenine, 6-Furfurylaminopurine
$C_{10}H_9N_5O$
M 215,22 g/mol
mp 269-271 °C (dec.)
Storage temp.: +4 °C
[525-79-1] • EC No. 208-382-2
WGK 1

Typ analysis:
Assay (HPLC). ..... ≥98 %
Solution (1 % in 1 mol/l NaOH). ..... colourless
Solution (1 % in 1 mol/l HCl). ..... colourless
Water (KF). ..... ≤0,5 %

4142.1	1 g	glass	21,00 €
4142.2	5 g	glass	53,25 €

King's B Medium (Base)

King's B Medium (Base)

DEV, EN ISO 16266:2008, for microbiology

For confirmation of *Pseudomonas aeruginosa* in water samples.

Application: Use 38 g for 990 ml agar. Add 10 ml glycerol.

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

Peptone. ..... 20 g/l
di-Potassium hydrogen phosphate. ..... 1,5 g/l
Magnesium sulphate heptahydrate. ..... 1,5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,2

CP64.1	500 g	plastic	166,55 €
Original pack 6 x 500 g			158,22/500 g

For further information, please see page 1446

Kjeldahl tablets antifoam

Kjeldahl tablets antifoam

Tablet 1 g

For determination of nitrogen.

WGK 1

Type analysis:

Appearance. ..... white tablets
Composition: Na_2SO_4, silicone antifoam

8225.1	250 pieces	plastic	90,85 €
8225.2	1000 pieces	plastic	299,95 €

For further information, please see page 1703

Kjeldahl tablets C

Kjeldahl tablets C

Tablet 5,1 g

For determination of nitrogen.

UN No. 3077 • ADR 9 III • WGK 3

Warning H319-H411

Type analysis:

Appearance. ..... light blue tablets
Composition: K_2SO_4, $CuSO_4 \cdot 5\ H_2O$

8241.1	250 pieces	plastic	114,95 €
8241.2	1000 pieces	plastic	342,95 €

For further information, please see page 1703

Kjeldahl tablets CK

Kjeldahl tablets CK

Tablet 3,9 g

For determination of nitrogen.

UN No. 3077 • ADR 9 III • WGK 3

Danger H318-H410

Type analysis:

Appearance. ..... blue tablets
Composition: K_2SO_4, $CuSO_4 \cdot 5\ H_2O$

8243.1	250 pieces	plastic	114,95 €
8243.2	1000 pieces	plastic	342,95 €

For further information, please see page 1703

Kjeldahl tablets CT

Kjeldahl tablets CT

Tablet 5,3 g

For determination of nitrogen.

UN No. 3077 • ADR 9 III • WGK 3

Warning H319-H410

Type analysis:

Appearance. ..... light blue tablets
Composition: K_2SO_4, $CuSO_4 \cdot 5\ H_2O$, TiO_2

9637.1	250 pieces	plastic	114,95 €
9637.2	1000 pieces	plastic	342,95 €

For further information, please see page 1703

Kjeldahl tablets CX

Kjeldahl tablets CX

Tablet 5,5 g

For determination of nitrogen.

UN No. 3077 • ADR 9 III • WGK 3

Danger H318-H410

Type analysis:

Appearance. ..... blue tablets
Composition: K_2SO_4, $CuSO_4 \cdot 5\ H_2O$

8236.1	250 pieces	plastic	114,95 €
8236.2	1000 pieces	plastic	342,95 €

For further information, please see page 1703

Kjeldahl tablets (free of mercury and selenium)

WGK 2

H412

Kjeldahl tablets (free of mercury and selenium)

Tablet 5 g

For determination of nitrogen.

Type analysis:

Appearance. ..... light grey tablets
Composition: TiO_2, $CuSO_4$, K_2SO_4 and Na_2SO_4

HN19.1	250 pieces	plastic	133,85 €
HN19.2	1000 pieces	plastic	467,65 €

For further information, please see page 1703

Kjeldahl tablets (free of mercury and selenium)

Tablet 2,5 g

For determination of nitrogen.

Type analysis:

Appearance. ..... light grey tablets
Composition: TiO_2, $CuSO_4$, K_2SO_4 and Na_2SO_4

HN20.1	250 pieces	plastic	102,70 €
HN20.2	1000 pieces	plastic	322,00 €

For further information, please see page 1703

Kjeldahl tablets (Missouri catalyst)

Kjeldahl tablets (Missouri catalyst)

Tablet 2,5 g

For determination of nitrogen.

WGK 2

H412

Type analysis:

Appearance. ..... blue tablets
Composition: acc. to Missouri (K_2SO_4, Na_2SO_4 and $CuSO_4$)

HN22.1	250 pieces	plastic	92,35 €
HN22.2	1000 pieces	plastic	306,40 €

For further information, please see page 1703

Kjeldahl tablets ST

Kjeldahl tablets ST

Tablet 3,5 g

For determination of nitrogen.

WGK 1

Type analysis:

Appearance. ..... grey tablets
Composition: K_2SO_4, Se

9693.1	250 pieces	plastic	114,95 €
9693.2	1000 pieces	plastic	342,95 €

For further information, please see page 1703

Kjeldahl tablets TCT

Kjeldahl tablets TCT

Tablet 3,71 g

For determination of nitrogen.

UN No. 3077 • ADR 9 III • WGK 3

Warning H319-H410

Type analysis:

Appearance. ..... light blue tablets
Composition: K_2SO_4, $CuSO_4 \cdot 5\ H_2O$, TiO_2

9763.1	250 pieces	plastic	114,95 €
9763.2	1000 pieces	plastic	342,95 €

For further information, please see page 1703

Kjeldahl tablets (Wieninger catalyst)

Kjeldahl tablets (Wieninger catalyst)

Tablet 2,5 g

For determination of nitrogen.

WGK 2

H412

Type analysis:

Appearance. ..... grey tablets
Composition: acc. to Wieninger (Na_2SO_4, $CuSO_4$ and Se)

HN21.1	250 pieces	plastic	104,85 €
HN21.2	1000 pieces	plastic	342,95 €

For further information, please see page 1703

Kligler Iron Agar

Kligler Iron Agar

for microbiology

For differentiation of gram-negative enterobacteria.

Application: Use 52 g for 1 l agar.

Double Sugar Iron Agar, **KIA**

Storage temp.: +20 °C

WGK 1

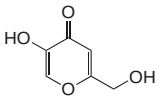
Formulation:

Peptone mixture ..... 20 g/l
Lactose ..... 10 g/l
Sodium chloride ..... 5 g/l
Glucose ..... 1 g/l
Ammonium iron(III) citrate ..... 0,5 g/l
Sodium thiosulphate ..... 0,5 g/l
Phenol red ..... 0,025 g/l
Agar ..... 15 g/l
pH value ..... 7,4 ±0,2

5758.1	500 g	plastic	89,15 €
Original pack 6 x 500 g			84,69/500 g

For further information, please see page 1446

Kojic acid



Kojic acid

>98 %, for biochemistry

5-Hydroxy-2-(hydroxymethyl)-4H-pyran-4-one

$C_6H_6O_4$

M 142,11 g/mol

mp 154-158 °C

[501-30-4] • EC No. 207-922-4

WGK 1

Type analysis:

Assay (titr.) ..... >98,0 %
Melting point ..... 154-158 °C

5927.1	10 g	glass	29,60 €
5927.2	50 g	glass	55,40 €

Komplexon®

▶ Nitrilotriacetic acid see p. 2161

Koser Citrate Agar (modified)

▶ Simmons Citrate Agar see p. 2329

Kovacs' Reagent

Kovacs' Reagent

for microbiology

Media supplement for detection of microbial indole.

100 ml Kovacs' Reagent is sufficient for approx. 2 l medium.

Indole Reagent

Storage temp.: +4 °C

UN No. 2920 • ADR 8 (3) II • WGK 1

Danger

H226-H290-H302-H315-H318-H335-H336

Type analysis:

Appearance ..... yellowish, clear liquid
4-(Dimethylamino)benzaldehyde ..... 50 g/l
1-Butanol ..... 75 %
Hydrochloric acid (37 %) ..... 25 %
pH value ..... >1

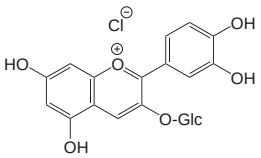
2950.1	100 ml	glass	46,80 €

For further information, please see page 1463

K-Oxyma

▶ Ethyl cyanoglyxylate-2-oxyme potassium salt (K-Oxyma) see p. 1980

Kuromanin chloride



Kuromanin chloride

ROTICHROM® HPLC

Reference substance for HPLC.

Cyanidin-3-O-glucoside

$C_{21}H_{21}ClO_{11}$

M 484,84 g/mol

Storage temp.: -20 °C

Transport temp.: room temp.

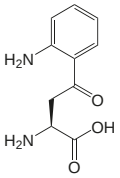
[7084-24-4] • EC No. 230-384-7

Type analysis:

Purity (HPLC) ..... ≥97 %

6136.2	10 mg	glass	228,45 €

L-Kynurenine



L-Kynurenine

≥98 %, for biochemistry

(*S*)-2-Amino-4-(2-aminophenyl)-4-oxo-butanoic acid, (*S*)-Kynurenine

$C_{10}H_{12}N_2O_3$

M 208,22 g/mol

[2922-83-0]

WGK 3

Type analysis:

Appearance ..... slightly yellow to light yellow powder
Assay (titr.) ..... ≥98,0 %
Appearance of solution (50 mg/ml in 0,5 M HCl) ..... dark yellow to yellow orange
Water (KF) ..... ≤5,0 %

8456.1	100 mg	glass	59,05 €
8456.2	250 mg	glass	110,65 €
8456.3	500 mg	glass	198,90 €

(*S*)-Kynurenine

▶ L-Kynurenine see p. 2087

Lab

▶ Rennin see p. 2256

Label remover

Label remover

pure vegetable

Dipentene

D 0,84 • bp 178 °C

flp 52 °C

UN No. 2319 • ADR 3 III • WGK 3

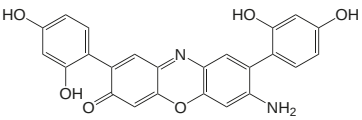
Danger

H226-H304-H315-H317-H410

2958.1	1 l	tinplate	21,40 €

For further information, please see page 1153

Lacmoid



Lacmoid

p.a.

Indicator pH 4,4-6,4

Resorcin blue

$C_{24}H_{16}N_2O_6$

M 428,39 g/mol

[42249-61-6] • EC No. 255-736-7 • WGK 3

Warning H315-H319-H335

Type analysis:

Appearance ..... dark blue to black powder
Appearance of solution (0,1 % in MeOH) ..... opaque, dark blue
pH-transition range ..... 4,4 (red)-6,4 (blue)

7699.1	5 g	glass	14,55 €
7699.2	25 g	glass	25,30 €
7699.3	100 g	glass	62,25 €

Lactalbumin

Lactalbumin

for microbiology

Storage temp.: +20 °C

[68458-87-7] • EC No. 270-615-9 • WGK 3

Type analysis:

Total nitrogen ..... ≥10 %
Amino nitrogen ..... ≥4,8 %
Loss on drying ..... ≤6 %
Ash ..... ≤15 %
pH (2 % solution) 6,5-7,5

7597.1	250 g	plastic	75,15 €
7597.2	500 g	plastic	134,95 €
Original pack 6 x 500 g			128,20/500 g

For further information, please see page 1380

γ-Lactame

▶ 2-Pyrrolidone see p. 2247

Lactate Standards

▶ Lactate IC Standard Solution see p. 2376

Lactate dehydrogenase (LDH)

Lactate dehydrogenase (LDH)

≥290 U/mg protein
From porcine heart, freeze-dried
LDH, LD, Lactic dehydrogenase
Storage temp.: -20 °C
Transport temp.: room temp.
[9001-60-9] • EC No. 232-617-8
WGK 1

Type analysis:

Appearance. ..... white powder
Activity. ..... ≥290 U/mg protein
Pyruvate kinase. ..... ≤0,01 %
Alanine aminotransferase (GPT). ..... ≤0,02 %
Malate dehydrogenase. ..... ≤0,05 %

6060.1	0,05 MU	plastic	128,50 €

For further information, please see page 1317

Lactic acid

Lactic acid

80 %, of that ≥95 % L(+)-lactic acid
2-Hydroxypropionic acid, Sarcolactic acid
$C_3H_6O_3$
M 90,1 g/mol
D 1,2
[79-33-4] • EC No. 201-196-2
WGK 1

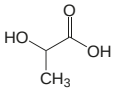
Danger H318-H315

Type analysis:

Appearance. ..... clear, light, viscous, colourless or pale yellow solution
Assay (GC, isomeres) ..... 79,5-80,5 %, of that ≥95 % L(+)-lactic acid
Colour (APHA) ..... ≤50
Density (20 °C). 1,18-1,20
Sulphated ash ..... ≤0,1 %
Arsenic (As). ..... ≤0,0001 %
Calcium (Ca) ..... ≤0,002 %
Iron (Fe). ..... ≤0,001 %
Heavy metals. ..... ≤0,001 %
Chloride (Cl). ..... ≤0,001 %
Sulphate (SO_4). ..... ≤0,002 %
Reducing substances . ..... complies

8460.1	1 l	plastic	35,40 €
Original pack 6 x 1 l			33,63/1 l
8460.2	5 l	plastic	102,05 €
Original pack 2 x 5 l			96,95/5 l

DL-Lactic acid



DL-Lactic acid

90 %, Ph.Eur., synthetic
2-Hydroxypropionic acid, Sarcolactic acid
$C_3H_6O_3$
M 90,08 g/mol
D 1,21
mp 17 °C
[598-82-3] • EC No. 209-954-4
WGK 1

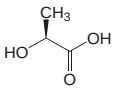
Danger H318-H315

Guarantee analysis:

Appearance. ..... colourless to light yellowish, syrupy liquid
Assay (acidim.). ..... 88,0-92,0 %
Identity. ..... complies
Relative density (20/20 °C). 1,20-1,21
Miscible. ..... water, alcohol, ether
Appearance of the substance. ..... complies
Citric, oxalic and phosphoric acid. ..... complies
Ether insoluble substances. ..... complies
Sulphated ash. ..... ≤0,1 %
Chloride (Cl). ..... complies
Sulphate (SO_4). ..... ≤0,02 %
Calcium (Ca). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Volatile fatty acids. ..... complies
Sugar and other reducing substances. ..... complies

8994.1	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
8994.2	2,5 l	glass	77,95 €
Original pack 4 x 2,5 l			74,05/2,5 l

L-Lactic acid



L-Lactic acid

≥98 %, for biochemistry
2-Hydroxypropionic acid, Sarcolactic acid
$C_3H_6O_3$
M 90,08 g/mol
mp 50-54 °C
Storage temp.: +4 °C
[79-33-4] • EC No. 201-196-2
WGK 1

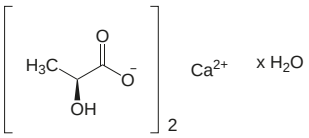
Danger H315-H318

Type analysis:

Appearance. ..... white to off-white, cryst. powder
Assay (titr.). ..... ≥98,0 %
Appearance of solution (20 %, H_2O) ..... colourless to almost colourless
Specific rotation $[\alpha]_D^{20}$ (c=2,5 in 1,5 M NaOH). ..... -15,0° to -13,0°
Magnesium (Mg). ..... ≤0,05 %
Sodium (Na). ..... ≤0,05 %
Water (KF) ..... ≤0,5 %

8360.1	5 g	plastic	36,45 €
8360.2	10 g	plastic	55,40 €
8360.3	25 g	plastic	110,65 €

L(+)-Lactic acid calcium salt hydrate



L(+)-Lactic acid calcium salt hydrate

≥98 %
Calcium L-lactate hydrate
$C_6H_{10}CaO_6 \cdot x\ H_2O$
M 218,23 + x H_2O g/mol
[41372-22-9] • EC No. 248-953-3
WGK 1

Type analysis:

Appearance. ..... white powder
Assay (dry substance). ..... ≥98 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in H_2O). ..... -4,7° to -3,7°
Contains 4 mol water

8795.1	25 g	plastic	22,50 €

L(+)-Lactic acid calcium salt pentahydrate

L(+)-Lactic acid calcium salt pentahydrate

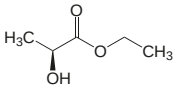
≥98 %
Calcium L-lactate pentahydrate
$C_6H_{10}CaO_6 \cdot 5\ H_2O$
M 308,30 g/mol
[28305-25-1] • EC No. 248-953-3
WGK 1

Guarantee analysis:

Appearance. ..... white powder
Assay (dry substance). ..... 98,0-101,0 %
pH value (5 % in H_2O). 6,0-8,0
Calcium (Ca). ..... 13,4-14,5 %
Chloride (Cl) ..... ≤0,01 %
Sulphate (SO_4) ..... ≤0,05 %
Phosphate (PO_4) ..... ≤0,015 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Mg and alkali salts ..... ≤1,0 %
Loss on drying (125 °C). ..... 22,0-27,0 %

4071.2	500 g	plastic	20,35 €
Original pack 6 x 500 g			19,33/500 g
4071.1	1 kg	plastic	31,10 €
Original pack 6 x 1 kg			29,55/1 kg

L(-)-Lactic acid ethyl ester



Ethyl-(S)-lactate
$C_5H_{10}O_3$
M 118,13 g/mol
D 1,04 • bp 154 °C
mp -25 °C • flp 53 °C
[687-47-8] • EC No. 211-694-1
UN No. 1192 • ADR 3 III • WGK 1
Danger H318-H226-H335

L(-)-Lactic acid ethyl ester
≥97 %, VLSI Grade

Guarantee analysis:

Assay	≥97 %
Particle number (≥0,5 µm)	≤250 p/ml
Water	≤0,05 %
Evaporation residue	≤0,01 %
Acidity	≤0,1 %
Aluminium (Al)	≤50 ppb
Antimony (Sb)	≤50 ppb
Arsenic (As)	≤50 ppb
Lead (Pb)	≤50 ppb
Boron (B)	≤50 ppb
Calcium (Ca)	≤100 ppb
Chromium (Cr)	≤50 ppb
Iron (Fe)	≤100 ppb
Gallium (Ga)	≤50 ppb
Gold (Au)	≤50 ppb
Potassium (K)	≤100 ppb
Cobalt (Co)	≤50 ppb
Copper (Cu)	≤50 ppb
Magnesium (Mg)	≤100 ppb
Manganese (Mn)	≤50 ppb
Sodium (Na)	≤100 ppb
Nickel (Ni)	≤50 ppb
Titanium (Ti)	≤50 ppb
Zinc (Zn)	≤100 ppb
Tin (Sn)	≤20 ppb

0036.1	2,5 l	plastic	111,70 €
Original pack 4 x 2,5 l			106,12/2,5 l

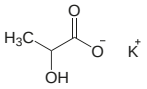
L(-)-Lactic acid ethyl ester
≥96 %

Type analysis:

Assay	≥96 %
Density (20 °C)	1,029-1,038
Refractive index n_D^{20}	1,410-1,420
Free acid	≤0,1 %
Water (KF)	≤0,3 %

5016.1	1 l	plastic	45,70 €
Original pack 6 x 1 l			43,42/1 l
5016.2	5 l	plastic	177,40 €
Original pack 2 x 5 l			168,53/5 l

Lactic acid potassium salt



Lactic acid potassium salt
50 %, extra pure
50 % aqueous solution
$C_3H_5KO_3$
M 128,18 g/mol
[996-31-6] • EC No. 213-631-3
WGK 1

Type analysis:

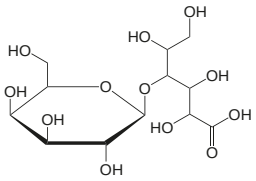
Appearance	clear, almost colourless liquid
Assay	49,0-51,0 %
pH value (10 % in H_2O)	5,0-7,0
Relative density (20 °C)	1,270-1,282
Chloride (Cl)	≤0,005 %
Sulphate (SO_4)	≤0,01 %
Heavy metals (as Pb)	≤0,0005 %
Calcium (Ca)	≤0,01 %
Iron (Fe)	≤0,0005 %

7989.2	500 g	plastic	25,70 €
Original pack 6 x 500 g			24,42/500 g
7989.1	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg
7989.3	5 kg	plastic	120,95 €

Lactic dehydrogenase
▶ Lactate dehydrogenase (LDH) see p. 2088

Lactobacillus Selective Agar acc. to Rogosa
▶ Rogosa Agar see p. 2262

Lactobionic acid



Lactobionic acid
≥98 %
$C_{12}H_{22}O_{12}$
M 358,30 g/mol
mp 113-118 °C
[96-82-2] • EC No. 202-538-3

Type analysis:

Assay	≥98 %

9242.1	10 g	plastic	36,45 €

Lactobiose
▶ α-Lactose monohydrate see p. 2090

Lactoflavine
▶ Riboflavine see p. 2259

Lactol
▶ Lactic acid see p. 2088

Lactophenol blue solution

Lactophenol blue solution
for microscopy
Fungal stain for microbiological material.
UN No. 1760 • ADR 8 II • WGK 2
Danger
H302+H312+H332-H314-H341-H373

3097.1	100 ml	glass	26,35 €

For further information, please see page 1519

Lactose Broth

Lactose Broth
Ph.Eur., for microbiology
For detection and enumeration of coliform bacteria and for enrichment of *Salmonellae*.
Application: Use 13 g for 1 l broth.
Broth medium D (Ph.Eur. 6.0)
Storage temp.: +20 °C
WGK 1

Guarantee analysis:

Gelatin peptone (Pancreas hydrolysate)	5 g/l
Lactose monohydrate	5 g/l
Beef extract	3 g/l
pH value	6,9 ±0,2

X921.1	500 g	plastic	70,85 €
Original pack 6 x 500 g			67,31/500 g

For further information, please see page 1446

Lactose-Broth (DEV)

Lactose-Broth (DEV)
DEV, for microbiology
For confirmation of *Escherichia coli* in water samples by lactose fermentation.
Application: Use 28 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

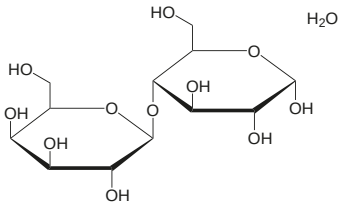
Guarantee analysis:

Meat peptone	10 g/l
Meat extract	3 g/l
Sodium chloride (NaCl)	5 g/l
Lactose	10 g/l
Bromcresol purple	0,02 g/l
pH value	7,2 ±0,2

CL76.1	500 g	plastic	94,10 €
Original pack 6 x 500 g			89,40/500 g

For further information, please see page 1446

α-Lactose monohydrate



Lactobiose
$C_{12}H_{22}O_{11} \cdot H_2O$
M 360,32 g/mol
D 1,525
mp 202 °C
Solubility: 161 g/l (H_2O, 20 °C)
[10039-26-6] • EC No. 200-559-2
WGK 1

α-Lactose monohydrate

Ph.Eur., for biochemistry

Guarantee analysis:

Appearance	white to off-white, odourless cryst. powder
Appearance of solution	complies
Identity	complies
Acid or alkaline react. substances	complies
Specific rotation $[\alpha]_D^{20}$ (dry substance)	+54,4° to +55,9°
Water	4,5-5,5 %
Loss on drying	≤0,5 %
Sulphated ash	≤0,1 %
Heavy metals	≤0,0005 %
Absorption:	
400 nm	≤0,04
270-300 nm	≤0,07
210-220 nm	≤0,25

8921.1	1 kg	plastic	22,50 €
Original pack 6 x 1 kg			21,38/1 kg
8921.2	5 kg	plastic	81,20 €
8921.3	10 kg	plastic	138,70 €
8921.5	25 kg	plastic	321,45 €

α-Lactose monohydrate

for microbiology

Guarantee analysis:

Appearance	white to off-white powder
Heavy metals	≤0,0005 %
Specific rotation $[\alpha]_D^{20}$	+54,4° to +55,9°
Loss on drying	≤0,5 %
Sulphated ash	≤0,1 %
Water	4,5-5,5 %
Absorption:	
400 nm	≤0,04
270-300 nm	≤0,07
210-220 nm	≤0,25

6868.1	1 kg	plastic	25,70 €
Original pack 6 x 1 kg			24,42/1 kg
6868.2	5 kg	plastic	88,05 €
6868.4	10 kg	plastic	148,25 €
6868.3	50 kg	plastic	557,95 €

Lactose Peptone Broth (DEV)

Lactose Peptone Broth (DEV)

DEV, for microbiology

For enrichment and enumeration of coliform bacteria in water samples.

Application: Use 35 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

Meat peptone	17 g/l
Soy peptone	3 g/l
Sodium chloride (NaCl)	5 g/l
Lactose	10 g/l
Bromcresol purple	0,02 g/l
pH value	7,2 ±0,2

CL77.1	500 g	plastic	113,45 €
Original pack 6 x 500 g			107,78/500 g
CL77.2	1 kg	plastic	193,00 €
Original pack 6 x 1 kg			183,35/1 kg

For further information, please see page 1447

Lactose Sulphite Broth (Base)

Lactose Sulphite Broth (Base)

Ph.Eur., for microbiology

For selective detection and enumeration of *C. perfringens*.

Application: Use 20,3 g for 1 l broth. Prior to use add sodium bisulphite solution and iron(III) ammonium citrate solution (Art. No. 3130.1).

Medium R (Ph.Eur. 6.0)

Storage temp.: +20 °C

WGK 1

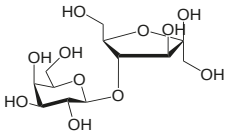
Guarantee analysis:

Casein peptone (Pancreas hydrolysate)	5 g/l
Yeast extract	2,5 g/l
Sodium chloride (NaCl)	2,5 g/l
Lactose monohydrate	10 g/l
Cystein hydrochloride	0,3 g/l
pH value	7,1 ±0,2

AE46.1	500 g	plastic	82,70 €
Original pack 6 x 500 g			78,57/500 g

For further information, please see page 1447

Lactulose



Lactulose

≥98 %, for biochemistry

4-O-β-D-Galactopyranosyl-D-fructose
$C_{12}H_{22}O_{11}$
M 342,20 g/mol • mp ~169 °C
[4618-18-2] • EC No. 225-027-7

Type analysis:

Assay	≥98 %
Water (KF)	≤2,0 %
Specific rotation $[\alpha]_D^{20}$	-50° to -46°

CN98.1	10 g	plastic	26,35 €
CN98.2	25 g	plastic	51,50 €
CN98.3	50 g	plastic	92,35 €

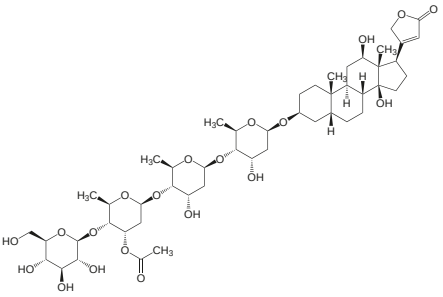
Laevulose

▶ D(-)-Fructose see p. 2008

Lambda DNA-Marker

▶ DNA-Marker, not prestained see p. 1956

Lanatoside C



Lanatoside C

ROTICHROM® HPLC

From *Digitalis lanata.*

$C_{49}H_{76}O_{20}$
M 985,14 g/mol
mp 245-250 °C (dec.)
Storage temp.: +4 °C
[17575-22-3] • EC No. 241-546-1
UN No. 2811 • ADR 6.1 I • WGK 3

Danger H301+H311+H331-H373

Type analysis:

Purity (HPLC)	>99 %

7321.1	50 mg	glass	138,70 €

For further information, please see page 1605

Lanolin

▶ Lanolin see p. 2090

Lanolin

Adeps Lanae anhydricum
D ~0,94
mp 38-50 °C • flp 238 °C
[8006-54-0] • EC No. 232-348-6
WGK 1

Lanolin

Ph.Eur., low in pesticides

Wool fat

Guarantee analysis:

Appearance	light yellow to brownish-yellow, viscous matter
Identity	complies
Acid value	≤1
Saponification value	90-105
Drop point	38-44 °C
Water absorption	≥20 g
Peroxide value	≤10
Butylated hydroxytoluene	≤0,01 %
Loss on drying	≤0,5 %
Sulphated ash	≤0,15 %
Chloride (Cl)	≤0,015 %
Colour (Gardner)	6-8
Acid or alkaline react. substances	complies
Paraffine	≤1,0 %
Water soluble, oxidising substances	complies

Organochlorine pesticides (each pesticide). ..... ≤0,000005 %
Other pesticides (each pesticide). ..... ≤0,00005 %
Pesticide residues total. ..... ≤0,0001 %

5314.2	500 g	plastic	32,15 €
Original pack 6 x 500 g			30,54/500 g
5314.1	1 kg	plastic	51,50 €
Original pack 6 x 1 kg			48,93/1 kg

Lanolin

techn.

Type analysis:
Melting point. ..... 38-50 °C
Loss on drying. ..... ≤0,5 %

5313.2	500 g	plastic	23,55 €
Original pack 6 x 500 g			22,37/500 g
5313.1	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg

Lanolin alcohols

Lanolin alcohols

Ph.Eur.
Lanae alcoholes
D ~0,93
mp ≥56 °C
[8027-33-6] • EC No. 232-430-1
WGK 1

Guarantee analysis:
Appearance of solution. ..... complies
Identity. ..... complies
Alkaline reacting substances. ..... complies
Melting temperature. ..... ≥56 °C
Acid value. ..... ≤2,0 mg KOH/g
Hydroxyl value. ..... 120-180 mg KOH/g
Peroxide value. ..... ≤15 meq O_2/kg
Saponification value. ..... ≤12 mg KOH/g
Loss on drying. ..... ≤0,5 %
BHT. ..... ≤0,02 %
Ash. ..... ≤0,1 %
Content of cholesterol. ..... ≥30 %
Water capacity. ..... complies

5085.2	500 g	plastic	93,00 €
Original pack 6 x 500 g			88,35/500 g
5085.1	1 kg	plastic	163,95 €
Original pack 6 x 1 kg			155,75/1 kg

Lanoxin

▶ Digoxin see p. 1940

Lanthanum trichloride

▶ Lanthanum(III) chloride hydrate see p. 2091

Lanthanum Standards

▶ Lanthanum ICP Standard Solution see p. 2363
▶ Lanthanum ICP Standard Solution see p. 2368

Lanthanum(III) acetate hydrate

Lanthanum(III) acetate hydrate

ROTI®REMETIC 99,9 %
$La(CH_3CO_2)_3 \cdot x\ H_2O$
M 316,04 + x H_2O g/mol
[25721-92-0] • EC No. 213-034-8
WGK 3

Type analysis:
Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7031.1	100 g	plastic	83,75 €
7031.2	250 g	plastic	177,40 €

Lanthanum(III) carbonate hydrate

$La_2(CO_3)_3 \cdot x\ H_2O$
M 457,84 + x H_2O g/mol
Solubility: insoluble (H_2O, 20 °C)
[54451-24-0] • EC No. 209-599-5
WGK 3

Lanthanum(III) carbonate hydrate

ROTI®REMETIC 99,99 %

Type analysis:
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7182.2	100 g	plastic	188,15 €

Lanthanum(III) carbonate hydrate

ROTI®REMETIC 99,9 %

Type analysis:
Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7026.2	250 g	plastic	127,95 €

Lanthanum(III) chloride heptahydrate

Lanthanum(III) chloride heptahydrate

≥99,9 % cryst.
$LaCl_3 \cdot 7\ H_2O$
M 371,37 g/mol
mp 91 °C
[10025-84-0] • EC No. 233-237-5
UN No. 3077 • ADR 9 III • WGK 2

Danger H290-H317-H318-H411

Type analysis:
Assay La_2O_3 (TREO). ..... ≥99,9 %
Assay (TREO*). ..... ~43,0 %
Calcium oxide (CaO). ..... ≤0,01 %
Ferric oxide (Fe_2O_3). ..... ≤0,002 %
Natriumoxide (Na_2O). ..... ≤0,005 %
Total REO impurities. ..... ≤0,1 %
*Total rare earth oxide

3979.1	100 g	glass	66,15 €

Lanthanum(III) fluoride

Lanthanum(III) fluoride

ROTI®REMETIC 99,9 %
Lanthanum trifluoride
LaF_3
M 195,90 g/mol
bp 2327 °C
mp 1493 °C
Solubility: insoluble (H_2O, 20 °C)
[13709-38-1] • EC No. 237-252-8
WGK 3

Type analysis:
Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7028.2	50 g	plastic	177,40 €

Lanthanum(III) nitrate hexahydrate

$La(NO_3)_3 \cdot 6\ H_2O$
M 433,01 g/mol
bp 126 °C
Solubility: 1580 g/l (H_2O, 25 °C)
[10277-43-7] • EC No. 233-238-0
UN No. 1477 • ADR 5.1 II • WGK 3

Danger H272-H318-H410

Lanthanum(III) nitrate hexahydrate

ROTI®METIC 99,995 % (4N5)

Type analysis:
Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5366.1	25 g	plastic	99,45 €
5366.2	100 g	plastic	246,20 €

Lanthanum(III) nitrate hexahydrate

ROTI®REMETIC 99,999 %

Type analysis:
Assay (TREO*). ..... 99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7019.1	25 g	plastic	56,90 €
7019.2	100 g	plastic	155,35 €

Lanthanum(III) nitrate hexahydrate

ROTI®REMETIC 99,99 %

Type analysis:

Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7180.1	50 g	plastic	103,10 €
7180.2	250 g	plastic	332,20 €

Lanthanum(III) nitrate hexahydrate

≥99,99 %, p.a.

Type analysis:

Assay La_2O_3 (TREO). ..... ≥99,99 %
Assay (TREO*). ..... ~37,0 %
Total REO impurities. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,002 %
Ferric oxide (Fe_2O_3). ..... ≤0,0005 %
Natriumoxide (Na_2O). ..... ≤0,001 %
*Total rare earth oxide

8358.2	50 g	plastic	52,60 €
8358.1	100 g	plastic	94,50 €
8358.3	250 g	plastic	201,60 €

Lanthanum(III) oxalate

Lanthanum(III) oxalate

ROTI®REMETIC 99,999 %

$La_2(C_2O_4)_3$
M 541,87 g/mol
[537-03-1] • EC No. 208-656-1
WGK 3

Warning H302+H312

Type analysis:

Assay (TREO*). ..... 99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7191.1	25 g	plastic	50,45 €
7191.2	100 g	plastic	144,60 €

Lanthanum(III) oxide

Lanthanum(III) oxide

Dilanthanum trioxide
La_2O_3
M 325,81 g/mol
bp 3620 °C
mp 2304 °C
[1312-81-8] • EC No. 215-200-5

Lanthanum(III) oxide

ROTI®REMETIC 99,999 %

Type analysis:

Assay (TREO*). ..... 99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7410.1	25 g	plastic	68,70 €
7410.2	100 g	plastic	221,35 €

Lanthanum(III) oxide

≥99,99 %, p.a.

Type analysis:

Assay La_2O_3 (TREO). ..... ≥99,99 %
Assay (TREO*). ..... ~99,0 %
Calcium oxide (CaO). ..... ≤0,006 %
Chromium oxide (Cr_2O_3). ..... ≤0,001 %
Ferric oxide (Fe_2O_3). ..... ≤0,0005 %
Cobalt oxide (Co_3O_4). ..... ≤0,001 %
Copper oxide (CuO). ..... ≤0,001 %
Nickel oxide (NiO). ..... ≤0,001 %
Total REO impurities. ..... ≤0,005 %
Loss on ignition. ..... ≤1,0 %
*Total rare earth oxide

8373.2	50 g	plastic	32,15 €
8373.1	100 g	plastic	53,65 €
8373.3	250 g	plastic	107,40 €

Lanthanum(III) oxide

for atomic absorption spectroscopy

3045.1	5 g	plastic	16,70 €

Lanthanum(III) phosphate hydrate

Lanthanum(III) phosphate hydrate

ROTI®REMETIC 99,99 %

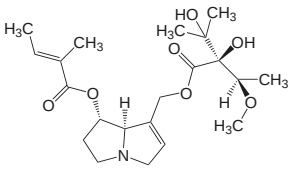
$LaPO_4 \cdot x\ H_2O$
M 233,88 + x H_2O g/mol
[14913-14-5] • EC No. 237-419-5 • WGK 1

Type analysis:

Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7203.2	25 g	plastic	155,90 €

Lasiocarpine



Lasiocarpine

ROTICHROM® HPLC

Reference substance for HPLC.
From *Heliotropium*
7-Angelyleuropine
$C_{21}H_{33}NO_7$ • M 441,49 g/mol • mp 90-95 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[303-34-4]
UN No. 1544 • ADR 6.1 III • WGK 1

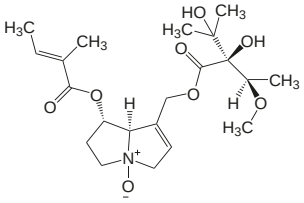
Danger H301

Type analysis:

Purity (HPLC). ..... ≥96,0 %

2090.1	10 mg	glass	332,20 €

Lasiocarpine N-oxide



Lasiocarpine N-oxide

ROTICHROM® HPLC

Reference substance for HPLC.
From *Heliotropium*
7-Angelyleuropine N-oxide
$C_{21}H_{33}NO_8$
M 427,49 g/mol
mp 116-118 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[127-30-0]
WGK 1

Warning H302

Type analysis:

Purity (HPLC). ..... ≥96,0 %

2202.1	10 mg	glass	332,20 €

Lateral Flow Assay

- RiboFlow® Campylobacter see p. 2259
- RiboFlow® Candida albicans see p. 2259
- RiboFlow® Cosmetics see p. 2259
- RiboFlow® Cronobacter see p. 2259
- RiboFlow® E. coli see p. 2259
- RiboFlow® Enterobacteriaceae see p. 2259
- RiboFlow® Listeria Twin see p. 2259
- RiboFlow® P/En see p. 2260
- RiboFlow® Pseudomonas aeruginosa see p. 2260
- RiboFlow® Salmonella see p. 2260
- RiboFlow® Staphylococcus aureus see p. 2260
- RiboFlow® Vibrio parahaemolyticus see p. 2260

Lauraldehyde

- Dodecyl aldehyde see p. 1959

Laurel oil, natural

Laurel oil

essential, natural

Oleum Lauri aetherum
D 0,92
[8002-41-3]
UN No. 1169 • ADR 3 III • WGK 2

Danger

H304-H341-H351-H226-H317-H411

Type analysis:

Appearance. ..... clear yellow to brown oil
Density (20 °C). ..... 0,905-0,929 g/cm³
Refractive index (20 °C). 1,465-1,470
Optical rotation (20 °C). ..... -19° to -10°

6609.1	100 ml	glass	66,15 €

Laurel oil, artificial

Laurel oil
artificial
Oleum Lauri
D ~0,91
UN No. 1169 • ADR 3 III • WGK 2
Danger H226-H315-H317-H318-H341-H351-H304-H411

Type analysis:
Appearance. ..... clear, light yellow brownish oil
Relative density (20 °C). 0,890-0,930
Refractive index (20 °C). 1,4650-1,4750
Optical rotation (20 °C). ..... -15° to 0°

3314.1	250 ml	glass	48,30 €

Lauryl alcohol
▶ 1-Dodecanol see p. 1959

Lauryl Sulphate Broth

Lauryl Sulphate Broth
ISO 4831:2006, for microbiology
For enrichment and detection of coliform bacteria in waters.
Application: Use 35,6 g for 1 l broth.
Flu Broth
Storage temp.: +20 °C
WGK 1

Guarantee analysis:
Tryptose. ..... 20 g/l
Lactose. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Potassium phosphate. ..... 2,75 g/l
di-Potassium phosphate. ..... 2,75 g/l
Sodium lauryl sulphate. ..... 0,1 g/l
pH value. ..... 6,8 ±0,2

CL80.1	500 g	plastic	111,70 €
Original pack 6 x 500 g			106,12/500 g

For further information, please see page 1439

Lauryl sulphate sodium salt
▶ SDS see p. 2309
▶ Roti®fair SDS 0.5g see p. 2278
▶ Roti®fair 10% SDS see p. 2278

Lauth's violet
▶ Thionine (acetate) (C.I. 52000) see p. 2404

LB Agar (Lennox)

Storage temp.: +20 °C
WGK 1

LB Agar (Lennox)
for molecular biology
Application: Use 35 g for 1 l agar.

Formulation:
Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

X965.1	500 g	plastic	75,80 €
Original pack 6 x 500 g			72,01/500 g
X965.2	1 kg	plastic	144,60 €
Original pack 6 x 1 kg			137,37/1 kg
X965.3	2,5 kg	plastic	332,20 €

For further information, please see page 1468

LB-Agar (Lennox), granulated
granulated, for molecular biology
Application: Use 35 g for 1 l agar.

Formulation:
Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2
Granulation. ..... complies

6671.1	500 g	plastic	99,45 €
Original pack 6 x 500 g			94,48/500 g
6671.2	1 kg	plastic	186,95 €
Original pack 6 x 1 kg			177,60/1 kg
6671.3	2,5 kg	plastic	403,70 €

For further information, please see page 1467

LB Agar (Lennox) vegetal
for molecular biology, animal-free
Application: Use 35 g for 1 l agar.

Formulation:
Vegetable peptone . ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

0159.1	500 g	plastic	87,00 €
Original pack 6 x 500 g			82,65/500 g
0159.2	1 kg	plastic	160,75 €
Original pack 6 x 1 kg			152,71/1 kg

For further information, please see page 1470

LB-Agar (Lennox) / Amp100

LB-Agar (Lennox) / Amp100
for molecular biology
For preparation of LB agar with 100 µg/ml ampicillin.
Application: Use 35 g for 1 l agar. Boil for 1 min, do not autoclave.
Ampicillin-LB Selective Agar
Storage temp.: +20 °C
WGK 1
EUH208

Formulation:
Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Ampicillin. ..... 0,1 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

8852.1	500 g	plastic	89,15 €
Original pack 6 x 500 g			84,69/500 g
8852.2	1 kg	plastic	166,65 €
Original pack 6 x 1 kg			158,32/1 kg
8852.3	2,5 kg	plastic	385,95 €

For further information, please see page 1466

LB-Agar (Lennox) / Kana50

LB-Agar (Lennox) / Kana50
for molecular biology
For preparation of LB agar with 50 µg/ml kanamycin.
Application: Use 35 g for 1 l agar. Autoclavable (118 °C, 10 min).
Kanamycin-LB Selective Agar
Storage temp.: +20 °C
WGK 1

Formulation:
Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Kanamycin. ..... 0,05 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

8853.1	500 g	plastic	141,40 €
Original pack 6 x 500 g			134,33/500 g
8853.2	1 kg	plastic	264,35 €
Original pack 6 x 1 kg			251,13/1 kg

For further information, please see page 1466

LB Agar (Luria/Miller)

Storage temp.: +20 °C

LB Agar (Luria/Miller)
for molecular biology
Application: Use 40 g for 1 l agar.

Formulation:
Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

X969.1	500 g	plastic	67,20 €
Original pack 6 x 500 g			63,84/500 g
X969.2	1 kg	plastic	123,10 €
Original pack 6 x 1 kg			116,95/1 kg
X969.3	2,5 kg	plastic	273,60 €

For further information, please see page 1468

LB Agar (Luria/Miller), granulated
granulated, for molecular biology
Application: Use 40 g for 1 l agar.

Formulation:
Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2
Granulation. ..... complies

6675.1	500 g	plastic	89,15 €
Original pack 6 x 500 g			84,69/500 g
6675.2	1 kg	plastic	162,25 €
Original pack 6 x 1 kg			154,14/1 kg
6675.3	2,5 kg	plastic	353,70 €

For further information, please see page 1467

LB-Agar (Luria/Miller) / Amp100

LB-Agar (Luria/Miller) / Amp100

for molecular biology

For preparation of LB agar with 100 µg/ml ampicillin.

Application: Use 40 g for 1 l agar.
Boil for 1 min, do not autoclave.

Ampicillin-LB Selective Agar

Storage temp.: +20 °C

WGK 1

EUH208

Formulation:

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
Ampicillin. ..... 0,1 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

8855.1	500 g	plastic	76,25 €
Original pack 6 x 500 g			72,44/500 g
8855.2	1 kg	plastic	142,45 €
Original pack 6 x 1 kg			135,33/1 kg
8855.3	2,5 kg	plastic	328,45 €

For further information, please see page 1466

LB-Agar (Luria/Miller) / Amp50

LB-Agar (Luria/Miller) / Amp50

for molecular biology

For preparation of LB agar with 50 µg/ml ampicillin.

Application: Use 40 g for 1 l agar.
Boil for 1 min, do not autoclave.

Ampicillin-LB Selective Agar

Storage temp.: +20 °C

WGK 1

EUH208

Formulation:

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
Ampicillin. ..... 0,05 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

8858.1	500 g	plastic	80,10 €
Original pack 6 x 500 g			76,10/500 g
8858.2	1 kg	plastic	149,45 €
Original pack 6 x 1 kg			141,98/1 kg
8858.3	2,5 kg	plastic	343,50 €

For further information, please see page 1466

LB-Agar (Luria/Miller) / Chloramph34

LB-Agar (Luria/Miller) / Chloramph34

for molecular biology

For preparation of LB agar with 34 µg/ml chloroamphenicol.

Application: Use 40 g for 1 l agar.
Autoclavable (118 °C, 10 min).

Chloroamphenicol-LB Selective Agar

Storage temp.: +20 °C

WGK 1

Formulation:

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
Chloroamphenicol. ..... 0,034 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

8861.1	500 g	plastic	74,75 €
Original pack 6 x 500 g			71,01/500 g
8861.2	1 kg	plastic	137,10 €
Original pack 6 x 1 kg			130,25/1 kg
8861.3	2,5 kg	plastic	317,15 €

For further information, please see page 1466

LB-Agar (Luria/Miller) / Kana50

LB-Agar (Luria/Miller) / Kana50

for molecular biology

For preparation of LB agar with 50 µg/ml kanamycin.

Application: Use 40 g for 1 l agar.
Autoclavable (118 °C, 10 min).

Kanamycin-LB Selective Agar

Storage temp.: +20 °C • WGK 1

Formulation:

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
Kanamycin. ..... 0,05 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

8860.1	500 g	plastic	126,35 €
Original pack 6 x 500 g			120,03/500 g
8860.2	1 kg	plastic	232,10 €
Original pack 6 x 1 kg			220,50/1 kg

For further information, please see page 1466

LB Broth (Lennox)

Storage temp.: +20 °C

WGK 1

LB Broth (Lennox)

for molecular biology

Application: Use 20 g for 1 l broth.

Formulation:

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,0 ±0,2

X964.1	500 g	plastic	60,75 €
Original pack 6 x 500 g			57,71/500 g
X964.2	1 kg	plastic	107,40 €
Original pack 6 x 1 kg			102,03/1 kg
X964.3	2,5 kg	plastic	246,75 €
X964.4	5 kg	plastic	446,15 €

For further information, please see page 1468

LB Broth (Lennox), granulated

granulated, for molecular biology

Application: Use 20 g for 1 l broth.

Formulation:

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,0 ±0,2
Granulation. ..... complies

6669.1	500 g	plastic	89,80 €
Original pack 6 x 500 g			85,31/500 g
6669.2	1 kg	plastic	159,00 €
Original pack 6 x 1 kg			151,05/1 kg
6669.3	2,5 kg	plastic	356,40 €
6669.4	5 kg	plastic	644,50 €

For further information, please see page 1467

LB Broth (Lennox) vegetal

for molecular biology, animal-free

Application: Use 20 g for 1 l broth.

Formulation:

Vegetable peptone ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,0 ±0,2

0155.1	500 g	plastic	70,45 €
Original pack 6 x 500 g			66,93/500 g
0155.2	1 kg	plastic	126,35 €
Original pack 6 x 1 kg			120,03/1 kg

For further information, please see page 1470

LB Broth (Luria/Miller)

Storage temp.: +20 °C

WGK 1

LB Broth (Luria/Miller)

for molecular biology

Application: Use 25 g for 1 l broth.

Formulation:

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
pH value. ..... 7,0 ±0,2

X968.1	500 g	plastic	53,65 €
Original pack 6 x 500 g			50,97/500 g
X968.2	1 kg	plastic	100,55 €
Original pack 6 x 1 kg			95,52/1 kg
X968.3	2,5 kg	plastic	217,70 €
X968.4	5 kg	plastic	392,40 €

For further information, please see page 1468

LB Broth (Luria/Miller), granulated

granulated, for molecular biology

Application: Use 25 g for 1 l broth.

Formulation:

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
pH value. ..... 7,0 ±0,2
Granulation. ..... complies

6673.1	500 g	plastic	81,60 €
Original pack 6 x 500 g			77,52/500 g
6673.2	1 kg	plastic	153,20 €
Original pack 6 x 1 kg			145,54/1 kg
6673.3	2,5 kg	plastic	332,20 €
6673.4	5 kg	plastic	604,70 €

For further information, please see page 1467

LCV

▶ Leuco crystal violet see p. 2098

LD

▶ Lactate dehydrogenase (LDH) see p. 2088

LDH

▶ Lactate dehydrogenase (LDH) see p. 2088

Lead

Lead

≥99,9 %, granules
Pb
M 207,21 g/mol
bp 1620 °C
mp 327 °C
[7439-92-1] • EC No. 231-100-4
UN No. 3077 • ADR 9 III

Danger H360FD-H362-H372-H410

Type analysis:

Assay..... ≥99,9 %
Particle size. ..... ~20 mesh

2734.1	50 g	plastic	41,85 €
2734.2	100 g	plastic	70,85 €

Lead Standards

▶ Lead AAS Standard Solution see p. 2359
▶ Lead ICP Standard Solution see p. 2363
▶ Lead ICP Standard Solution see p. 2368

Lead(II) acetate, basic

Lead(II) acetate, basic

≥33 % PbO, p.a., ACS
For the analysis of sugar acc. Horne.
Lead subacetate, Lead(II) hydroxide acetate
$Pb(CH_3COO)_2 \cdot 2\ Pb(OH)_2$
M 807,72 g/mol
Solubility: soluble (H_2O, 20 °C)
[1335-32-6] • EC No. 215-630-3
UN No. 1616 • ADR 6.1 III • WGK 3

Danger H351-H360Df-H373-H410

Guarantee analysis:

Lead oxide (PbO). ..... ≥33,0 %
Loss on drying. ..... ≤1,5 %
In dilute CH_3COOH insoluble matter ..... ≤0,02 %
In H_2O insoluble matter. ..... ≤1,0 %
Chloride (Cl). ..... ≤0,003 %
Nitrate (NO_3). ..... ≤0,003 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,002 %
Potassium (K). ..... ≤0,02 %
Copper (Cu). ..... ≤0,002 %
Sodium (Na). ..... ≤0,05 %

2559.3	25 g	plastic	14,95 €
2559.1	500 g	plastic	38,60 €
Original pack 6 x 500 g			36,67/500 g
2559.2	1 kg	plastic	57,55 €
Original pack 6 x 1 kg			54,67/1 kg

Lead(II) acetate trihydrate

Lead(II) acetate trihydrate

≥99,5 %, p.a., ACS, ISO
Reagent for detection of H_2S and preparation of lead acetate paper.
Sugar of lead
$Pb(CH_3COO)_2 \cdot 3\ H_2O$
M 379,33 g/mol
D 2,55
Solubility: 443 g/l (H_2O, 20 °C)
[6080-56-4] • EC No. 206-104-4
UN No. 1616 • ADR 6.1 III • WGK 3

Danger H360Df-H373-H400-H410

Guarantee analysis:

Assay (compl.). ..... ≥99,5 %
In CH_3COOH insoluble matter. ..... ≤0,005 %
Nitrate and nitrite (as NO_3). ..... ≤0,002 %
Chloride (Cl). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,005 %
Copper (Cu). ..... ≤0,001 %
Magnesium (Mg). ..... ≤0,005 %
Sodium (Na). ..... ≤0,005 %
Zinc (Zn). ..... ≤0,001 %

P739.1	500 g	plastic	80,55 €
Original pack 6 x 500 g			76,52/500 g
P739.2	1 kg	plastic	137,50 €
Original pack 6 x 1 kg			130,63/1 kg
P739.3	2,5 kg	plastic	287,60 €

Lead(II) carbonate

Lead(II) carbonate

≥98 %, p.a., ACS
$PbCO_3$
M 267,20 g/mol
D 6,6
mp 315 °C (dec.)
Solubility: insoluble (H_2O)
[598-63-0] • EC No. 209-943-4
UN No. 3077 • ADR 9 III • WGK 3

Danger
H302+H332-H360D+H373-H410

Guarantee analysis:

Assay (compl.). ..... ≥98,0 %
In dilute CH_3COOH insoluble matter . ..... ≤0,02 %
Chloride (Cl). ..... ≤0,002 %
Nitrate and nitrite (as NO_3). ..... complies
Cadmium (Cd). ..... ≤0,002 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,005 %
Potassium (K). ..... ≤0,02 %
Sodium (Na). ..... ≤0,05 %
Zinc (Zn). ..... ≤0,003 %

2558.1	100 g	plastic	39,25 €
2558.2	250 g	plastic	59,70 €
2558.3	500 g	plastic	95,15 €
Original pack 6 x 500 g			90,39/500 g

Lead(II) chloride

Lead(II) chloride

≥98 %
$PbCl_2$
M 278,1 g/mol
D 5,85 • bp 950 °C
mp 500 °C
Solubility: 10 g/l (H_2O, 20 °C)
[7758-95-4] • EC No. 231-845-5
UN No. 2291 • ADR 6.1 III • WGK 3

Danger
H302+H332-H360Df-H373-H410

Type analysis:

Appearance. .. white to off-white powder and/or pieces
Assay (titr.). ..... ≥98 %
Nitrate (NO_3). ..... ≤0,005 %
Insoluble matter. ..... ≤0,05 %

5299.1	100 g	plastic	14,55 €
5299.2	500 g	plastic	42,90 €
Original pack 6 x 500 g			40,76/500 g
5299.3	1 kg	plastic	77,30 €
Original pack 6 x 1 kg			73,44/1 kg

Lead(II) hydroxide acetate

▶ Lead(II) acetate, basic see p. 2095

Lead(II) nitrate

Lead(II) nitrate

≥99 %, p.a., ACS
$Pb(NO_3)_2$
M 331,21 g/mol
D 4,49
mp 458-459 °C
Solubility: 486 g/l (H_2O, 20 °C)
[10099-74-8] • EC No. 233-245-9
UN No. 1469 • ADR 5.1 (6.1) II • WGK 3

Danger
H302+H332-H360Df-H372-H410

Guarantee analysis:

Assay (compl.). ..... ≥99,0 %
Insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,005 %
Copper (Cu). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... 0,005 %
Sodium (Na). ..... ≤0,02 %

HN32.1	100 g	plastic	18,85 €
HN32.2	250 g	plastic	36,45 €

Lead(II) oxide

Lead(II) oxide

≥99 %, extra pure
PbO
M 223,20 g/mol
bp 1470 °C
mp 888 °C
Solubility: 0,017 g/l (H_2O, 20 °C)
[1317-36-8] • EC No. 215-267-0
UN No. 2291 • ADR 6.1 III • WGK 3
Danger H360Df-H373-H400-H410-H302+H332-EUH201

Type analysis:

Assay (compl.)	99,0-100,5 %
Chloride (Cl)	≤0,05 %
Nitrate (NO_3)	≤0,05 %
Copper (Cu)	≤0,005 %
Iron (Fe)	≤0,005 %
Loss on ignition (700 °C)	≤0,2 %
Insoluble in CH_3COOH	≤0,2 %

4456.1	250 g	plastic	24,65 €

Lead(IV) oxide

Lead(IV) oxide

≥97 %, p.a.
PbO_2
M 239,20 g/mol
D 9,4
mp 290 °C (dec.)
Solubility: 0,14 mg/l (H_2O, 25 °C)
[1309-60-0] • EC No. 215-174-5
UN No. 1872 • ADR 5.1 (6.1) III • WGK 3
Danger H272-H360Df-H373-H400-H410-H302+H332-EUH201

Type analysis:

Assay (titr.)	≥97 %
In HCl insoluble matter	≤0,05 %
Loss on drying (105 °C)	≤0,5 %
Chloride (Cl)	≤0,02 %
Sulphate (SO_4)	≤0,1 %
Manganese (Mn)	≤0,002 %

4479.1	100 g	plastic	63,35 €

Lead subacetate

▶ Lead(II) acetate, basic see p. 2095

Lead(II) sulphate

Lead(II) sulphate

≥98 %, extra pure
$PbSO_4$
M 303,25 g/mol
D 6,2
mp 1170 °C
[7446-14-2] • EC No. 231-198-9
UN No. 3077 • ADR 9 III • WGK 3
Danger
H302+H332-H360Df-H373-H410

Type analysis:

Assay	≥98,0 %
Nitrate (NO_3)	≤0,005 %
Copper (Cu)	≤0,005 %

2560.1	100 g	plastic	25,30 €
2560.2	500 g	plastic	57,55 €
Original pack 6 x 500 g			54,67/500 g
2560.3	1 kg	plastic	95,15 €
Original pack 6 x 1 kg			90,39/1 kg

Lecithin

Phosphatidylcholine
[8002-43-5] • EC No. 232-307-2
WGK 1

Lecithin

≥97 %, made from soybeans, GMO-free, for biochemistry
Fat-free soy-lecithin, made from genetically unmodified plants.

Guarantee analysis:

Appearance	light brownish to brown powder
Phospholipids (Px31,5)	≥97,0 %
Lysophosphatidylcholine	≤10 %
Water	≤2,0 %
Acid value	≤35
Peroxide value	≤5,0
Free fatty acid	≤0,5 %

AE81.1	100 g	plastic	15,60 €
AE81.2	250 g	plastic	25,70 €
AE81.3	1 kg	plastic	66,15 €
Original pack 6 x 1 kg			62,84/1 kg

Lecithin

≥97 %, made from soybeans, for biochemistry
Made from soybeans.

Guarantee analysis:

Appearance	pale yellow to light brownish powder
Phospholipids (Px31,5)	≥97,0 %
Lysophosphatidylcholine	≤3,0 %
Water (KF)	≤2,0 %
Peroxide value	≤3

9812.1	250 g	plastic	21,40 €
9812.3	1 kg	plastic	53,65 €
Original pack 6 x 1 kg			50,97/1 kg
9812.2	2,5 kg	plastic	120,30 €
9812.8	25 kg	plastic	751,45 €

Lecithin

from eggs, for biochemistry
Storage temp.: +4 °C

Guarantee analysis:

Phosphatidylcholine	≥57 %
Phosphatidylethanolamine	≥6 %
Water	≤2 %
Cholesterol	≤8 %
Peroxide value	≤3 meq/kg
Acid value	≤25 mg KOH/g
Iodine value	≥65
Iodine colour number	≤60

7514.1	25 g	plastic	42,90 €
7514.2	100 g	plastic	118,80 €

Legionella Acid Buffer

Legionella Acid Buffer

EN ISO 11731-2, sterile, ready-to-use for microbiology
Sterile acid buffer solution for detection of legionella.
0.2 M HCl/KCl Solution, pH 2.2,
Acid buffer pH 2.2, HCl/KCl-Puffer
Storage temp.: +20 °C
WGK 1

Type analysis:

pH value	2,2 ±0,2
Sterility	complies
Appearance	clear, colourless

9979.1	1 l	plastic	39,70 €
Original pack 6 x 1 l			37,72/1 l

For further information, please see page 1480

Legionella Agar (Base)

Legionella Agar (Base)

EN ISO 11731-2, for microbiology
For selective cultivation of *Legionella.*
Application: Use 2,5 g for 90 ml agar. After autoclaving add 1 vial (10 ml) reconstituted *Legionella* Growth Supplement (Art. No. CL49.1). If required also add reconstituted *Legionella* GVCP Supplement (Art. No. CL50.1).
BCYE Agar (Base), **GVCP Agar** (Base)
Storage temp.: +20 °C

Guarantee analysis:

Yeast extract	10,0 g/l
Charcoal activated	2,0 g/l
Agar	13,0 g/l
pH value	6,9 ±0,2

CL48.1	500 g	plastic	126,35 €
Original pack 6 x 500 g			120,03/500 g

For further information, please see page 1448

Legionella Growth Supplement

Legionella Growth Supplement

lyophilised
Growth supplement for isolation of *Legionella.*
One box of 10 vials Legionella Growth Supplement is sufficient for 10 x 100 ml Legionella Agar.
BCYE additive
Storage temp.: +4 °C
UN No. 1759 • ADR 8 II • WGK 1
Danger H314-H302

Formulation:

ACES Buffer	1,0 g
Potassium hydroxide (KOH)	0,28 g
alpha-Ketoglutarate	0,1 g
L-Cysteine	0,04 g
Ferric pyrophosphate	0,025 g
per vial	

CL49.1	10 vials	glass	192,45 €

For further information, please see page 1474

Legionella GVPC Supplement

Legionella GVPC Supplement

lyophilised

Media supplement for selective isolation of *Legionella.*

One box of 10 vials Legionella GVPC Supplement is sufficient for 10 x 500 ml Legionella Agar.

Storage temp.: +4 °C

UN No. 2811 • ADR 6.1 III • WGK 3

Danger

H301-H341-H360D-H412-EUH208

Formulation:

Glycine. ..... 1,5 g
Polymyxin B. ..... ~39 600 IU
Cycloheximide. ..... 0,04 g
Vancomycin. ..... 0,5 mg
per vial

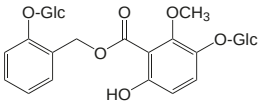
CL50.1	10 vials	glass	188,15 €

For further information, please see page 1474

Leibovitz's cell culture medium

▶ Roti®-CELL Leibovitz's L15 see p. 2269

Leiocarposide



Leiocarposide

ROTICHROM® HPLC

Reference substance for HPLC.
From *Solidago virgaurea.*

2'-Hydroxybenzyl-3-methoxybenzoate-2',4-diglucoside

$C_{27}H_{34}O_{16}$
M 614,56 g/mol
Storage temp.: +4 °C
[71953-77-0] • WGK 1

Type analysis:

Purity (HPLC) ..... ≥99 %

2825.1	5 mg	glass	267,70 €

Leishman stain

Leishman stain

for microscopy

Mixture of methylene blue, Azure A, B and C Eosin methylene blue acc. to Leishman

mp 79-81 °C
[12627-53-1] • EC No. 235-732-1 • WGK 3

Type analysis:

Appearance. ..... dark green to black powder
Appearance of solution (0,1 % in MeOH) ..... clear, blue
Loss on drying (3 h, 105 °C). ..... ≤10 %

7702.1	5 g	glass	14,55 €
7702.2	25 g	glass	25,30 €
7702.3	100 g	glass	62,25 €

For further information, please see page 1523

Letheen Agar modified

Letheen Agar modified

for microbiology

For microbiological analyses of cosmetics, and samples containing disinfectants or preservatives.

Application: Use 59,1 g for 1 l agar.

Storage temp.: +20 °C
WGK 1

Formulation:

Meat peptone. ..... 10 g/l
Casein peptone. ..... 10 g/l
Polysorbate 80. ..... 7 g/l
Sodium chloride. ..... 5 g/l
Beef extract. ..... 3 g/l
Yeast extract. ..... 2 g/l
Glucose. ..... 1 g/l
Lecithin. ..... 1 g/l
Sodium bisulfite. ..... 0,1 g/l
Agar. ..... 20 g/l
pH value. ..... 7,2 ±0,2

5759.1	500 g	plastic	117,75 €
Original pack 6 x 500 g			111,86/500 g

For further information, please see page 1448

Letheen Broth modified

Letheen Broth modified

for microbiology

For microbiological analyses of cosmetics, and samples containing disinfectants or preservatives.

Application: Use 43,8 g for 1 l broth.

Storage temp.: +20 °C
WGK 1

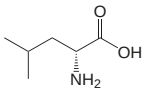
Formulation:

Meat peptone. ..... 20 g/l
Casein peptone. ..... 5 g/l
Polysorbate 80. ..... 5 g/l
Sodium chloride. ..... 5 g/l
Beef extract. ..... 5 g/l
Yeast extract. ..... 2 g/l
Glucose. ..... 1 g/l
Lecithin. ..... 0,7 g/l
Sodium bisulfite. ..... 0,1 g/l
pH value. ..... 7,2 ±0,2

5761.1	500 g	plastic	106,35 €
Original pack 6 x 500 g			101,03/500 g

For further information, please see page 1448

D-Leucine



D-Leucine

≥99 %, for biochemistry

(R)-2-Amino-4-methylpentanoic acid, H-D-Leu-OH

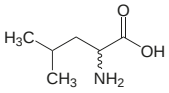
$C_6H_{13}NO_2$
M 131,2 g/mol
Storage temp.: +4 °C
[328-38-1] • EC No. 206-327-7 • WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... 99,0-100,5 %
Specific rotation $[\alpha]_D^{20}$ (c=4 in 6 N HCl). ..... -16,9° to -14,9°
Loss on drying. ..... ≤0,2 %

7882.1	5 g	plastic	31,10 €
7882.2	25 g	plastic	93,00 €
7882.3	100 g	plastic	278,45 €

DL-Leucine



DL-Leucine

≥98,5 %, for biochemistry

2-Amino-4-methylpentanoic acid

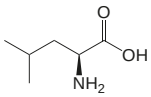
$C_6H_{13}NO_2$
M 131,17 g/mol
Storage temp.: +4 °C
[328-39-2] • EC No. 206-328-2
WGK 1

Type analysis:

Appearance. ..... white cryst. powder
Assay. ..... ≥98,5 %
Identity (IR). ..... complies
Heavy metals (as Pb). ..... ≤0,001 %
Ash content. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

8599.1	25 g	plastic	23,15 €
8599.2	50 g	plastic	39,70 €
8599.3	250 g	plastic	160,20 €

L-Leucine



(S)-2-Amino-4-methylpentanoic acid, H-L-Leu-OH

$C_6H_{13}NO_2$
M 131,18 g/mol
D 1,29
mp 145-148 °C (subl.)
Solubility: ~24 g/l (H_2O, 20 °C)
[61-90-5] • EC No. 200-522-0
WGK 1

L-Leucine

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6,0 E.U./g
Assay (dry substance). ..... ≥99 %
Loss on drying. ..... ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. ..... +14,9° to +16,0°
Foreign amino acids. ..... ≤1,0 %
Ammonium (NH_4). ..... ≤0,05 %
Chloride (Cl). ..... ≤0,05 %
Sulphate (SO_4). ..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

1699.1	25 g	plastic	19,90 €
1699.2	100 g	plastic	44,00 €
1699.3	500 g	plastic	150,00 €
Original pack 6 x 500 g			142,50/500 g

L-Leucine

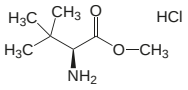
≥98,5 %, Ph.Eur., USP, for biochemistry

Guarantee analysis:

Appearance. ..... white cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Specific rotation $[\alpha]_D^{20}$. ..... +14,5° to +16,5°
Sulphated ash. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %
Foreign amino acids. ..... complies
Ammonium (NH_4). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,03 %

3984.1	100 g	plastic	35,40 €
3984.3	250 g	plastic	65,50 €
3984.4	500 g	plastic	113,85 €
Original pack 6 x 500 g			108,16/500 g
3984.2	1 kg	plastic	212,35 €
Original pack 6 x 1 kg			201,73/1 kg

L-tert-Leucine methylester hydrochloride



L-tert-Leucine methylester hydrochloride

≥98 %, for biochemistry

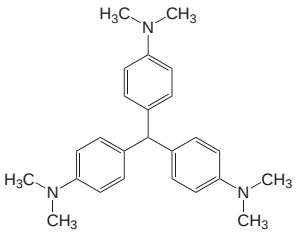
H-L-Tle-OMe · HCl
$C_7H_{15}NO_2$ · HCl
M 181,66 g/mol
mp 183 °C
Storage temp.: +4 °C
[63038-27-7]
WGK 3

Type analysis:

Assay (HPLC). ..... ≥98,0 %
Water (KF). ..... ≤1,0 %

6664.1	500 mg	glass	33,25 €
6664.2	1 g	glass	50,45 €

Leuco crystal violet



Leuco crystal violet

≥98 %, p.a.

LCV
$C_{25}H_{31}N_3$
M 373,53 g/mol
mp 175-180 °C
[603-48-5] • EC No. 210-043-9
UN No. 3077 • ADR 9 III • WGK 2

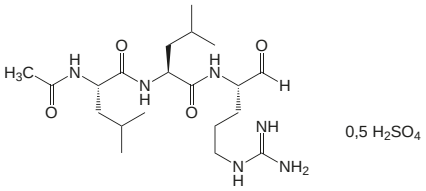
Warning H410

Type analysis:

Appearance. ..... white to pale lavender powder
Assay. ..... ≥98 %
Loss on drying. ..... ≤2 %
Sulphated ash. ..... ≤1 %

7703.1	5 g	glass	14,55 €
7703.2	25 g	glass	25,30 €
7703.3	100 g	glass	62,25 €

Leupeptin hemisulphate



Leupeptin hemisulphate

≥96,5 %, for biochemistry

Reversible inhibitor of serine- and cysteine proteases.
Acetyl-Leu-Leu-argininal
$C_{20}H_{38}N_6O_4$ · 0,5 H_2SO_4
M 475,99 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[103476-89-7]
WGK 1

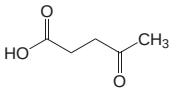
Type analysis:

Assay (HPLC). ..... ≥96,5 %
Solution (1 % in H_2O). ..... clear

CN33.1	10 mg	glass	47,20 €
CN33.2	25 mg	glass	97,75 €
CN33.3	50 mg	glass	174,70 €
CN33.4	100 mg	glass	321,45 €

For further information, please see page 1326

Levulinic acid



Levulinic acid

≥98 %, for synthesis

4-Oxopentanoic acid, 3-Acetopropionic acid
$C_5H_8O_3$
M 116,12 g/mol
D 1,15 • bp 245-246 °C
mp 30-33 °C • flp 98 °C
[123-76-2] • EC No. 204-649-2
WGK 1

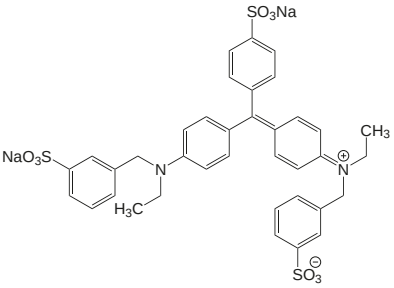
Warning H302-H315-H319-H335

Type analysis:

Appearance. ..... colourless to yellow-brown
Assay (GC). ..... ≥98,0 %
Heavy metals. ..... ≤0,001 %

3976.1	50 g	glass	14,95 €
3976.2	500 g	glass	81,60 €
Original pack 6 x 500 g			77,52/500 g

Light green SF (C.I. 42095)



Light green SF (C.I. 42095)

for microscopy

Acid green 5
$C_{37}H_{34}N_2Na_2O_9S_3$
M 792,86 g/mol
mp 288 °C (dec.)
[5141-20-8] • EC No. 225-906-5
WGK 1

Type analysis:

Appearance. ..... dark purple powder
Assay. ..... ≥80 %
Appearance of solution (H_2O). ..... clear, green

7706.1	5 g	glass	19,90 €
7706.2	25 g	glass	45,05 €
7706.3	100 g	glass	138,70 €

For further information, please see page 1523

Light green SF yellowish solution

▶ Goldner's staining I see p. 2028

Lignoceryl alcohol

Lignoceryl alcohol

>98 %, for biochemistry

1-Tetracosanol
$C_{24}H_{50}O$
M 354,64 g/mol
mp 75-77 °C • flp >110 °C
[506-51-4] • EC No. 208-043-9

Type analysis:

Assay (GC). ..... >98 %

6029.1	250 mg	glass	375,20 €

Lignosulphonic acid calcium salt

Lignosulphonic acid calcium salt

≥93 %, powdered

Calcium lignosulphonate
[8061-52-7]
WGK 1

Type analysis:

Assay (dry substance). ..... ≥93 %
pH value (10 % solution). ..... 4,5 ±0,5
Insoluble matter. ..... ≤0,3 %

Calcium (Ca).....~5 %
Reducing sugar. .....~6 %
Total sulphur. .....~7 %

8208.1	1 kg	plastic	28,50 €
Original pack 6 x 1 kg			27,08/1 kg

Lignosulphonic acid sodium salt

Lignosulphonic acid sodium salt

≥93 %, powdered
Sodium lignosulphonate
[8061-51-6]
WGK 1

Type analysis:
Assay (dry substance). .....≥93 %
pH value (10 % solution).....8,0 ±1,0
Insoluble (v/v). .....≤0,3 %

8999.1	1 kg	plastic	30,00 €
Original pack 6 x 1 kg			28,50/1 kg

Ligroin

▶ Petroleum benzine 50-70 see p. 2201

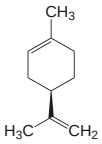
Lime caustic

▶ Calcium oxide see p. 1872

Lime salpetre

▶ Calcium nitrate tetrahydrate see p. 1872

D-(+)-Limonene



(+)-p-Mentha-1,8-diene
$C_{10}H_{16}$
M 136,24 g/mol
D 0,84 • bp 175-178 °C
mp -89 °C • flp 50 °C
Solubility: 14 mg/l (H_2O, 25 °C)
Storage temp.: +4 °C
[5989-27-5] • EC No. 227-813-5
UN No. 2052 • ADR 3 III • WGK 3
Warning
H226-H400-H410-H315-H317

D-(+)-Limonene

Type analysis:
Appearance. ..... colourless oil
Density (20 °C). 0,836-0,848
Refractive index n_D^{20}. 1,468-1,478
Specific rotation $[\alpha]_D^{20}$. ..... +96° to +108°

6722.1	500 ml	glass	35,40 €

D-(+)-Limonene

ROTICHROM® GC
Reference substance for GC.

Type analysis:
Purity (GC). ..... ≥98 %

5198.2	100 mg	glass	126,35 €

DL-Limonene

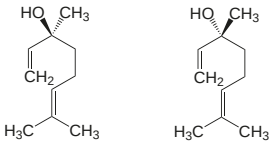
DL-Limonene

≥95 %
Mixture of terpenes
DL-p-Mentha-1,8-diene, Dipentene
$C_{10}H_{16}$
M 136,24 g/mol
D 0,84 • bp 177,6 °C
mp -89 °C • flp 43 °C
Storage temp.: +4 °C
[138-86-3] • EC No. 205-341-0
UN No. 2052 • ADR 3 III • WGK 3
Warning H226-H315-H317-H410

Type analysis:
Appearance..... clear, colourless liquid
Assay (GC)..... ≥95 %
Density (d 20 °C/4 °C). 0,841-0,843

7516.1	250 ml	glass	40,75 €

Linalool



$C_{10}H_{18}O$
M 154,25 g/mol
D 0,86 • bp 199 °C
flp 75 °C
Storage temp.: +4 °C
[78-70-6] • EC No. 201-134-4
WGK 1
Warning H315-H317-H319

Linalool

pure

Type analysis:
Appearance..... clear, almost colourless to pale yellow oil
Density (20 °C). .....0,855-0,868 g/cm³
Refractive index (20 °C). 1,457-1,468
Optical rotation (20 °C).....-1° to +1°

3992.1	100 ml	glass	22,05 €

Linalool

ROTICHROM® GC
Reference substance for GC.

Type analysis:
Purity (GC). .....≥96,5 %

5201.2	100 mg	glass	111,70 €

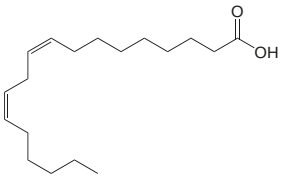
Linalylacetate

▶ Acetic acid linalyl ester see p. 1760

Linarigenin

▶ Acacetin see p. 1754

Linoleic acid



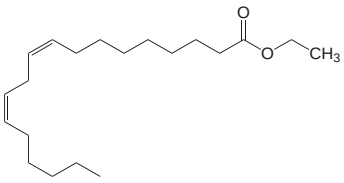
Linoleic acid

ROTICHROM® GC
Reference substance for GC.
$C_{18}H_{32}O_2$
M 280,45 g/mol
D 0,902 • bp 229-230 °C (16 hPa)
mp -12 °C • flp 113 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[60-33-3]
WGK 1

Type analysis:
Purity (GC). .....≥94 %

5315.1	1 g	glass	63,35 €

Linoleic acid ethyl ester



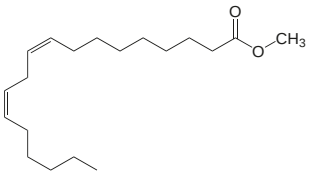
Linoleic acid ethyl ester

ROTICHROM® GC
Reference substance for GC.
$C_{20}H_{36}O_2$
M 308,51 g/mol
D ~0,88 • bp 193 °C
flp 110 °C
Storage temp.: +4 °C
[544-35-4]
WGK 1

Type analysis:
Purity (GC). .....≥98,5 %

3198.1	1 g	glass	33,25 €

Linoleic acid methyl ester



$C_{19}H_{34}O_2$
M 294,48 g/mol
D 0,89
mp -35 °C
Storage temp.: +4 °C
[112-63-0] • EC No. 203-993-0
WGK 1

Linoleic acid methyl ester
≥99 %

Type analysis:
Assay (GC). ..... ≥99,0 %

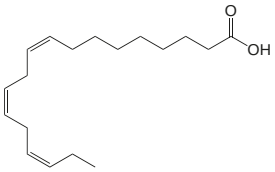
7217.1	5 ml	glass	50,00 €
7217.2	50 ml	glass	418,20 €

Linoleic acid methyl ester
ROTICHROM® GC
Reference substance for GC.

Type analysis:
Purity (GC). ..... ≥99 %

3199.1	1 g	glass	36,45 €

Linolenic acid



9,12,15-Octadecatrienoic acid
$C_{18}H_{30}O_2$
M 278,44 g/mol
D 0,916 • bp 230-232 °C (23 hPa)
mp -10 °C • flp >110 °C
Storage temp.: +4 °C
[463-40-1] • EC No. 207-334-8
WGK 1

Linolenic acid
~94 %
Mixture of isomers.

Type analysis:
Assay (GC). ..... ~94 %

6039.1	5 ml	glass	95,60 €

Linolenic acid
ROTICHROM® GC
Reference substance for GC.
Mixture of isomers.

Type analysis:
Purity (GC). ..... ≥99 %

5320.1	1 g	glass	198,90 €

Linseed oil

Linseed oil
native, cold pressed
Oleum lini
D 0,93
[8001-26-1] • EC No. 232-278-6

Type analysis:
Appearance. ..... clear, gold-yellow or brownish to greenish-yellow oil
Density (20 °C). ..... ~0,931
Water ..... 0,1 %
Cadmium (Cd). ..... ≤0,00005 %
Refractive index n_D^{20}. ..... ~1,480
Acid value. ..... ≤4,5
Peroxide value. ..... ≤15
Iodine value. 160-200
Saponification value. 188-195
Unsaponifiable matter. ..... ≤1,5 %
Fatty acid compound. ..... complies

9338.2	500 ml	glass	27,85 €
9338.1	1 l	glass	42,50 €
Original pack 6 x 1 l			40,38/1 l
9338.3	2,5 l	glass	77,95 €
Original pack 4 x 2,5 l			74,05/2,5 l

α-Lipoic acid
▶ DL-6,8-Dithiooctanoic acid see p. 1955

Lipoxidase
▶ Lipoxygenase see p. 2100

Lipoxygenase

Lipoxygenase
≥100 000 U/mg, for biochemistry
Made from soybeans. For oxidation of arachidonic acid.
Lipoxidase
M ~108 000 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[9029-60-1] • EC No. 232-853-1
WGK 1

Type analysis:
Activity. ..... ≥100 000 U/mg

CN73.1	100 mg	glass	30,00 €
CN73.2	500 mg	glass	96,65 €
CN73.3	1 g	glass	149,45 €

For further information, please see page 1317

Liquid glass
▶ Potassium silicate see p. 2234

Liquid glass
▶ Sodium silicate see p. 2348

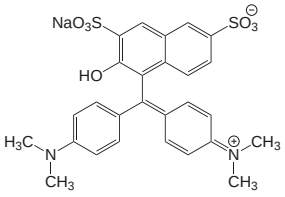
Liquid medium A
▶ CASO Broth see p. 1882

Liquid medium D
▶ Lactose Broth see p. 2089

Liquid medium G
▶ MacConkey Broth see p. 2109

Liquid medium I
▶ Brilliant Green Tetrathionate Bile Broth see p. 1850

Lissamine green B (C.I. 44090)



Lissamine green B (C.I. 44090)
p.a.
Woolgreen S, Acid green 50
$C_{27}H_{25}N_2NaO_7S_2$
M 576,62 g/mol
[3087-16-9] • EC No. 221-409-2
WGK 3

Warning H302-H315-H319-H335

Type analysis:
Appearance. ..... dark red to black powder
Assay. ..... ≥80 %
Appearance of solution (0,1 % in H_2O). ..... clear, dark blue to dark green
Arsenic (As). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0001 %
Mercury (Hg). ..... ≤0,0001 %

7707.1	5 g	glass	14,55 €
7707.2	25 g	glass	25,30 €
7707.3	100 g	glass	62,25 €

Listeria chromogenic Agar (Base)

Listeria chromogenic Agar (Base)

ISO 11290:2004, for microbiology

Selective medium for detection and enumeration of *Listeria monocytogenes* acc. to Ottaviani and Agosti.

Application: Use 70,55 g for 1 l agar. After cooling add 2 vials (10 ml reconstituted) Listeria Chromo Selective Supplement (Art. No. 2947.1) and 2 vials (10 ml each) Listeria Chromo Lipase C Supplement (Art. No. 2948.1).

ALOA

Storage temp.: +4 °C • WGK 3

Warning H315-H319

Guarantee analysis:

Meat peptone	18 g/l
Lithium chloride	10 g/l
Yeast extract	10 g/l
Tryptone	6 g/l
Sodium chloride	5 g/l
di-Sodium hydrogen phosphate	2,5 g/l
Glucose	2 g/l
Sodium pyruvate	2 g/l
Magnesium glycerophosphate	1 g/l
Magnesium sulphate	0,5 g/l
Chromogene Mixture	0,05 g/l
Agar	13,5 g/l
pH value	7,2 ±0,2

3008.1	100 g	plastic	66,55 €

For further information, please see page 1448

Listeria Chromo Lipase C Supplement

Listeria Chromo Lipase C Supplement

0,1 g/ml, sterile, ready-to-use

Media supplement for selective isolation of *Listeria*.

One box of 10 vials Listeria Chromo Lipase C Supplement is sufficient for 10 x 500 ml Listeria chromogenic Agar.

Storage temp.: +4 °C

Formulation:

Phospholipase C substrate	1 g

per vial

2948.1	10 x 10 ml	glass	107,40 €

For further information, please see page 1475

Listeria Chromo Selective Supplement

Listeria Chromo Selective Supplement

lyophilised

Media supplement for selective isolation of *Listeria*.

One box of 10 vials Listeria Chromo Selective Supplement is sufficient for 10 x 500 ml Listeria chromogenic Agar.

Storage temp.: +4 °C

UN No. 2811 • ADR 6.1 I • WGK 3

Danger

H300-H334-H317-H341-H360D-H411

Formulation:

Cycloheximide	0,025 g
Polymyxin B sulphate	38350 I.U.
Nalidixic acid sodium salt	0,01 g
Ceftazidime (Fortam)	0,01 g

per vial

2947.1	10 vials	glass	107,40 €

For further information, please see page 1475

Listeria Oxford Supplement

Listeria Oxford Supplement

lyophilised

Media supplement for selective isolation of *Listeria monocytogenes.*

One box of 10 vials Listeria Oxford Supplement is sufficient for 10 x 500 ml Oxford Listeria Agar.

Oxford Supplement

Storage temp.: +4 °C

UN No. 2811 • ADR 6.1 I • WGK 3

Danger H300-H341-H360D-H411

Formulation:

per vial

Cycloheximide	200 mg
Colistinsulphate	10 mg
Fosfomycin	5 mg
Cefotetan	1 mg
Acriflavinium hydrochloride	2,5 mg

5801.1	10 vials	glass	141,40 €

For further information, please see page 1476

Listeria Palcam Supplement

Listeria Palcam Supplement

lyophilised

Media supplement for selective isolation of *Listeria monocytogenes.*

One box of 10 vials Listeria Palcam Supplement is sufficient for 10 x 500 ml Palcam Listeria Agar.

Palcam Supplement

Storage temp.: +4 °C

WGK 1

Danger H334-H317

Formulation:

Ceftazidime (Fortam)	10 mg
Polymyxin B	5 mg
Acryflavine	2,5 mg

per vial

5803.1	10 vials	glass	103,75 €

For further information, please see page 1476

Lithium Standards

- Lithium AAS Standard Solution see p. 2359
- Lithium ICP Standard Solution see p. 2363
- Lithium ICP Standard Solution see p. 2368
- Lithium IC Standard Solution see p. 2377

Lithium ethanoate

- Lithium acetate see p. 2101
- Lithium acetate dihydrate see p. 2101

Lithium acetate

Lithium acetate

>99 %, cryst.

Lithium ethanoate

Li CH_3COO

M 65,98 g/mol

D 1,25 • mp 280-285 °C

[546-89-4] • EC No. 208-914-3 • WGK 1

Type analysis:

Assay	>99,0 %
Water (KF)	<0,3 %
Chloride (Cl)	<0,02 %
Sulphate (SO_4)	<0,02 %
Sodium (Na)	<0,01 %
Potassium (K)	<0,005 %
Calcium (Ca)	<0,02 %
Magnesium (Mg)	<0,001 %
Heavy metals	<0,002 %
Iron (Fe)	<0,001 %

5447.2	100 g	plastic	30,00 €
5447.1	500 g	plastic	117,75 €
Original pack 6 x 500 g			111,86/500 g

Lithium acetate dihydrate

Lithium acetate dihydrate

≥98 %

$LiCH_3COO \cdot 2\ H_2O$

M 102,02 g/mol

mp 49-58 °C

Solubility: 290 g/l (H_2O, 20 °C)

[6108-17-4] • EC No. 612-081-5 • WGK 1

Type analysis:

Appearance	white cryst. powder
Assay	≥98,0 %
Calcium (Ca)	≤0,01 %
Chloride (Cl)	≤0,05 %
Iron (Fe)	≤0,005 %
Sodium (Na)	≤0,05 %
In water insoluble matter	≤0,1 %

6713.1	50 g	plastic	16,05 €
6713.2	100 g	plastic	24,65 €
6713.3	500 g	plastic	89,15 €
Original pack 6 x 500 g			84,69/500 g

Lithium bromide

LiBr

M 86,85 g/mol

D 3,46 • bp ~1300 °C

mp 552 °C

Solubility: 1810 g/l (H_2O, 25 °C)

[7550-35-8] • EC No. 231-439-8 • WGK 1

Warning H302-H315-H317-H319

Lithium bromide

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis)	99,999 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5062.1	25 g	plastic	125,25 €
5062.2	50 g	plastic	198,90 €

Lithium bromide

≥99 %, anhydrous

Type analysis:

Appearance. ..... white fine powder
Assay. ..... ≥99,0 %
Chlorine (Cl). ..... ≤0,1 %
Sulphate (SO_4). ..... ≤0,05 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,001 %
Sodium (Na). ..... ≤0,1 %
Insoluble matter in acid. ..... ≤0,01 %
Water. ..... ≤0,5 %

6712.1	25 g	plastic	18,85 €
6712.2	100 g	plastic	32,15 €
6712.3	500 g	plastic	104,85 €
Original pack 6 x 500 g			99,61/500 g

Lithium carbonate

Li_2CO_3
M 73,89 g/mol
D 2,11 • bp 1300 °C
mp 720 °C
Solubility: 13 g/l (H_2O, 20 °C)
[554-13-2] • EC No. 209-062-5
WGK 1

Warning H302-H319

Lithium carbonate

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5635.1	10 g	plastic	41,40 €
5635.2	25 g	plastic	72,60 €
5635.3	100 g	plastic	225,25 €

Lithium carbonate

≥99 %, p.a., ACS

Reagent for microscopy; starting material for other lithium compounds.

Guarantee analysis:

Assay (acidim.). ..... ≥99,0 %
In diluted HCl insoluble matter. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,005 %
Nitrate (NO_3). ..... ≤0,0005 %
Sulphur compounds (as SO_4). ..... ≤0,2 %
Heavy metals (as Pb). ..... ≤0,002 %
Iron (Fe). ..... ≤0,002 %
Sodium (Na). ..... ≤0,1 %
Potassium (K). ..... ≤0,01 %
Calcium (Ca). ..... ≤0,01 %
Ammonium (NH_4). ..... ≤0,0005 %

3995.1	250 g	plastic	68,70 €
3995.2	500 g	plastic	121,40 €
Original pack 6 x 500 g			115,33/500 g

Lithium carbonate

≥99 %, extra pure

Type analysis:

Assay. ..... ≥99,0 %
Chloride (Cl). ..... ≤0,05 %
Sulphate (SO_4). ..... ≤0,1 %
Ferric oxide (Fe_2O_3). ..... ≤0,005 %
Insoluble matter. ..... ≤0,05 %
Water. ..... ≤0,5 %
Loss on ignition. ..... ≤1,0 %

7324.1	100 g	plastic	16,05 €
7324.2	500 g	plastic	57,95 €
Original pack 6 x 500 g			55,05/500 g
7324.3	1 kg	plastic	104,20 €
Original pack 6 x 1 kg			98,99/1 kg
7324.4	2,5 kg	plastic	232,75 €
7324.5	5 kg	plastic	439,70 €

Lithium chloride

LiCl
M 42,40 g/mol
D 2,07 • bp 1360 °C
mp 615 °C
Solubility: 830 g/l (H_2O, 20 °C)
[7447-41-8] • EC No. 231-212-3
WGK 1

Warning H302-H315-H319

Lithium chloride

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5079.1	25 g	plastic	125,25 €
5079.2	50 g	plastic	198,90 €

Lithium chloride

≥99,5 %, p.a., ultra quality

For molecular biology: used for salt-precipitation of DNA.

Guarantee analysis:

Assay. ..... ≥99,5 %
Solubility (8M, solution). ..... clear, colourless
Sulphate (SO_4). ..... ≤0,006 %
Heavy metals (as Pb). ..... ≤0,002 %
Barium (Ba). ..... ≤0,003 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,01 %
Sodium (Na). ..... ≤0,06 %
Loss on drying (105 °C). ..... ≤0,6 %

3739.1	250 g	plastic	51,10 €
3739.2	1 kg	plastic	147,85 €
Original pack 6 x 1 kg			140,46/1 kg

Lithium chloride

≥99 %, p.a., ACS

Guarantee analysis:

Appearance. ..... white cryst. powder
Assay (arg. titr.). ..... ≥99,0 %
Titrable base. ..... ≤0,008 meq/g
Nitrate (NO_3). ..... ≤0,001 %
Sulphate (SO_4). ..... ≤0,01 %
Barium (Ba). ..... ≤0,003 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,01 %
Sodium (Na). ..... ≤0,2 %
Heavy metals. ..... ≤0,002 %
Insoluble matter. ..... ≤0,01 %
Loss on drying (105 °C). ..... ≤1,0 %

6698.1	50 g	plastic	19,25 €
6698.2	100 g	plastic	27,85 €
6698.3	500 g	plastic	102,05 €
Original pack 6 x 500 g			96,95/500 g
6698.4	1 kg	plastic	181,70 €
Original pack 6 x 1 kg			172,62/1 kg

Lithium chloride

≥98,5 %, pure

Type analysis:

Assay. ..... ≥98,5 %
Sodium (Na). ..... ≤0,35 %
Water. ..... ≤0,3 %

P007.1	250 g	plastic	27,85 €
P007.2	1 kg	plastic	91,30 €
Original pack 6 x 1 kg			86,74/1 kg
P007.3	2,5 kg	plastic	192,45 €

tri-Lithium citrate tetrahydrate

tri-Lithium citrate tetrahydrate

≥98 %, Ph.Eur.

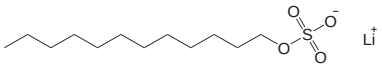
$C_6H_5Li_3O_7 \cdot 4\ H_2O$
M 282,00 g/mol
mp 105 °C
Solubility: 745 g/l (H_2O, 25 °C)
[6080-58-6] • EC No. 213-045-8
WGK 1

Guarantee analysis:

Appearance. ..... white to off-white powder
Assay (titr. dry substance). ..... 98,0-102,0 %
Identity. ..... complies
Appearance of solution (10 %, water). ..... complies
Acidity/alkalinity. ..... complies
Reaction with H_2SO_4. ..... complies
Chloride (Cl). ..... ≤0,01 %
Oxalate (as $C_2H_2O_4$). ..... ≤0,03 %
Sulphate (SO_4). ..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,001 %
Water. ..... 24,0-27,0 %

9443.1	50 g	plastic	24,20 €
9443.2	100 g	plastic	35,40 €
9443.3	500 g	plastic	95,60 €
Original pack 6 x 500 g			90,82/500 g

Lithiumdodecyl sulphate (LDS)



Lithiumdodecyl sulphate (LDS)

≥99 %, for biochemistry
Anionic detergent
LDS, Lithium lauryl sulphate
$C_{12}H_{25}LiO_4S$ • M 272,33 g/mol
[2044-56-6] • EC No. 218-058-2
UN No. 1325 • ADR 4.1 III • WGK 3
Danger H228-H318-H315-H335

Type analysis:

Assay	≥99,0 %
Chloride (Cl)	≤0,01 %
Loss on drying	≤1,0 %
Absorption:	
260 nm	≤0,1
280 nm	≤0,075

CN25.1	10 g	plastic	28,50 €
CN25.2	25 g	plastic	55,80 €
CN25.3	50 g	plastic	100,55 €

For further information, please see page 1312

Lithium fluoride

LiF
M 25,94 g/mol
D 2,64 • bp 1673 °C
mp 848 °C
Solubility: 1,3 g/l (H_2O, 25 °C)
[7789-24-4] • EC No. 232-152-0
UN No. 3288 • ADR 6.1 III • WGK 2
Danger H301-H315-H319-H335

Lithium fluoride

ROTI®METIC 99,99 % (4N)

Type analysis:

Assay (metals basis)	99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5082.1	5 g	plastic	55,80 €
5082.2	25 g	plastic	176,20 €

Lithium fluoride

≥99 %, p.a.

Type analysis:

Appearance	white powder
Assay	≥99,0 %
Chloride (Cl)	≤0,1 %
Sulphate (SO_4)	≤0,1 %
Aluminium (Al)	≤0,05 %
Barium (Ba)	≤0,005 %
Lead (Pb)	≤0,005 %
Calcium (Ca)	≤0,05 %
Iron (Fe)	≤0,005 %
Potassium (K)	≤0,01 %
Copper (Cu)	≤0,005 %
Magnesium (Mg)	≤0,01 %
Sodium (Na)	≤0,05 %
Zinc (Zn)	≤0,001 %

6715.1	25 g	plastic	19,90 €
6715.2	100 g	plastic	35,40 €
6715.3	250 g	plastic	67,65 €

Lithium fluoride

≥98,5 %

Type analysis:

Appearance	white powder
Assay	≥98,5 %
Chloride (Cl)	≤0,1 %
Sulphate (SO_4)	≤0,1 %
Iron (Fe)	≤0,01 %
Lead (Pb)	≤0,005 %

6702.1	25 g	plastic	14,55 €
6702.2	100 g	plastic	32,15 €
6702.3	250 g	plastic	66,55 €

Lithium hydroxide

Lithium hydroxide

≥95 %, anhydrous
LiOH
M 23,95 g/mol
mp 462 °C
Solubility: 71 g/l (H_2O, 20 °C)
[1310-65-2] • EC No. 215-183-4
UN No. 2680 • ADR 8 II • WGK 1
Danger H301-H314

Type analysis:

Appearance	white powder
Assay (LiOH)	≥95,0 %
Carbonate (as Li_2CO_3)	≤3,0 %
Chloride (Cl)	≤0,005 %
Sulphate (SO_4)	≤0,1 %
Calcium oxide (CaO)	≤0,1 %
Ferric oxide (Fe_2O_3)	≤0,01 %
Sodium hydroxide (NaOH)	≤0,1 %
In water insoluble matter	≤0,01 %

6705.1	25 g	plastic	16,70 €
6705.2	100 g	plastic	37,55 €
6705.3	250 g	plastic	74,10 €

Lithium hydroxide monohydrate

Lithium hydroxide monohydrate

≥55 % LiOH
$LiOH \cdot H_2O$
M 41,96 g/mol
D 1,51
mp 462 °C
Solubility: 124 g/l (H_2O, 20 °C)
[1310-66-3] • EC No. 215-183-4
UN No. 2680 • ADR 8 II • WGK 1
Danger H314-H302

Type analysis:

Assay (LiOH)	≥56,5 %
Chloride (Cl)	≤0,01 %
Sulphate (SO_4)	≤0,05 %
Potassium (K)	≤0,01 %
Sodium (Na)	≤0,05 %
Insoluble in HCl	≤0,01 %

3997.1	250 g	plastic	44,00 €
3997.2	1 kg	plastic	132,15 €
Original pack 6 x 1 kg			125,54/1 kg

Lithium metaborate

Lithium metaborate

≥98 %, p.a., ACS, anhydrous
D 2,18
mp 849 °C
[13453-69-5] • EC No. 236-631-5
WGK 1

Guarantee analysis:

Assay (acidim.)	98,0-102,0 %
Insoluble matter	≤0,01 %
Loss on fusion (950 °C, 15 min)	≤2,0 %
Phosphate (PO_4)	≤0,004 %
Aluminium (Al)	≤0,001 %
Calcium (Ca)	≤0,01 %
Iron (Fe)	≤0,002 %
Potassium (K)	≤0,005 %
Magnesium (Mg)	≤0,0005 %
Sodium (Na)	≤0,005 %
Silicon (Si)	≤0,01 %
Heavy metals	≤0,001 %
Bulk density	≥0,25 g/ml

9840.1	50 g	plastic	48,30 €
9840.2	100 g	plastic	83,75 €

Lithium nitrate

$LiNO_3$
M 68,95 g/mol
D 2,38 • bp 600 °C (dec.)
mp 253 °C
Solubility: 522 g/l (H_2O, 20 °C)
[7790-69-4] • EC No. 232-218-9
UN No. 2722 • ADR 5.1 III • WGK 1
Danger H272-H302-H319

Lithium nitrate

ROTI®METIC 99,999 % (5N), anhydrous

Type analysis:

Assay (metals basis)	99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5281.1	10 g	plastic	75,80 €
5281.2	25 g	plastic	149,45 €

Lithium nitrate

≥99,5 %, anhydrous

Type analysis:

Appearance	white hygroscopic powder
Assay	≥99,5 %
Chlorine (Cl)	≤0,01 %
Sulphate (SO_4)	≤0,02 %
Calcium (Ca)	≤0,01 %
Lead (Pb)	≤0,001 %
Iron (Fe)	≤0,001 %
Sodium (Na)	≤0,02 %
Water	≤0,5 %

6699.1	10 g	plastic	14,55 €
6699.2	50 g	plastic	24,20 €
6699.3	250 g	plastic	62,25 €
6699.4	500 g	plastic	100,55 €
Original pack 6 x 500 g			95,52/500 g

Lithium stearate

▶ Stearic acid lithium salt see p. 2380

Lithium sulphate

Lithium sulphate

≥99 %, anhydrous
Li_2SO_4
M 109,94 g/mol
mp 859 °C
[10377-48-7] • EC No. 233-820-4
WGK 1
Warning H302

Type analysis:

Appearance	white cryst. powder
Assay	≥99,0 %
Calcium (Ca)	≤0,1 %
Lead (Pb)	≤0,001 %
Iron (Fe)	≤0,001 %
Sodium (Na)	≤0,1 %
Water	≤0,5 %

6700.1	50 g	plastic	18,85 €
6700.2	100 g	plastic	28,95 €
6700.3	250 g	plastic	55,80 €
6700.4	500 g	plastic	85,90 €
Original pack 6 x 500 g			81,61/500 g

Lithium sulphate monohydrate

Lithium sulphate monohydrate

≥99 %, p.a.
$Li_2SO_4 \cdot H_2O$
M 127,95 g/mol
D 2,06
mp 130 °C (dec.)
Solubility: 340 g/l (H_2O, 25 °C)
[10102-25-7] • EC No. 233-820-4
WGK 1
Warning H302

Guarantee analysis:

Assay	≥99 %
Water	13,0-15,0 %
Iron (Fe)	≤0,01 %
Fe_2O_3	≤0,005 %
Lead (Pb)	≤0,01 %
Calcium (Ca)	≤0,1 %
Potassium (K)	≤0,05 %
Sodium (Na)	≤0,1 %
Magnesium (Mg)	≤0,01 %

4393.1	250 g	plastic	44,00 €
4393.2	500 g	plastic	76,90 €
Original pack 6 x 500 g			73,06/500 g
4393.3	1 kg	plastic	131,70 €
Original pack 6 x 1 kg			125,12/1 kg

Lithium tetraborate

Lithium tetraborate

≥99 %
$Li_2B_4O_7$
M 169,12 g/mol
mp 915-919 °C
Solubility: 50 g/l (H_2O, 20 °C)
[12007-60-2] • EC No. 234-514-3
WGK 3

Type analysis:

Appearance	white cryst. powder
Assay	≥99,0 %
Sulphate (SO_4)	≤0,1 %
Calcium (Ca)	≤0,1 %
Lead (Pb)	≤0,01 %
Iron (Fe)	≤0,01 %
Sodium (Na)	≤0,1 %

6706.1	25 g	plastic	17,10 €
6706.2	100 g	plastic	38,60 €
6706.3	250 g	plastic	81,60 €
6706.4	500 g	plastic	150,00 €
Original pack 6 x 500 g			142,50/500 g

Lithocholic acid

Lithocholic acid

≥98 %
3α-Hydroxy-5β-cholanic acid
$C_{24}H_{40}O_3$
M 376,58 g/mol
mp ~184 °C
[434-13-9] • EC No. 207-099-1

Type analysis:

Appearance	white to off-white powder
Assay (dry substance)	≥98 %
Deoxycholic acid (TLC)	≤2 %
Melting point	182-188 °C
Sulphated ash	≤0,2 %
Loss on drying	≤1,0 %

8147.1	5 g	glass	37,55 €
8147.2	10 g	glass	52,15 €
8147.3	25 g	glass	102,70 €

Litmus (C.I. 1242)

Litmus (C.I. 1242)

p.a.
Indicator pH 4,5-8,3
Lacmus
[1393-92-6] • EC No. 215-739-6

Type analysis:

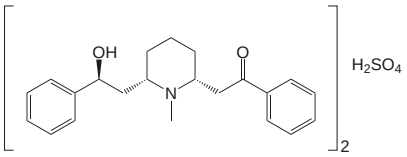
Appearance	bluish-black powder
pH-transition range	4,5 (red)-8,3 (blue)

0248.1	5 g	glass	13,45 €
0248.2	25 g	glass	34,30 €

Litsea

▶ Oil of cubeb see p. 2176

Lobeline sulphate



Lobeline sulphate

ROTICHROM® CHR
$(C_{22}H_{27}NO_2)_2 \cdot H_2SO_4$
M 773,02 g/mol
mp ~140 °C
[134-64-5] • EC No. 205-151-8
UN No. 1544 • ADR 6.1 III • WGK 1
Danger H301

8997.1	100 mg	glass	18,85 €

LOEFFLER's methylene blue solution

LOEFFLER's methylene blue solution

for microscopy and cell counting
For visualising nuclei.
Methylene blue solution 0,5 %
WGK 1
Warning H371

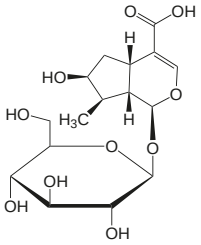
Type analysis:

Suitability for microscopy	complies

AE64.1	500 ml	glass	25,30 €
AE64.2	1 l	glass	31,75 €
Original pack 6 x 1 l			30,16/1 l
AE64.3	2,5 l	plastic	65,50 €
Original pack 4 x 2,5 l			62,23/2,5 l

For further information, please see page 1512

Loganic acid



Loganic acid

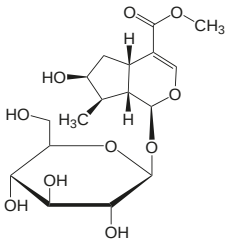
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{16}H_{24}O_{10}$
M 376,35 g/mol
Storage temp.: +4 °C
[22255-40-9] • EC No. 244-875-9

Type analysis:

Purity (HPLC)	≥99 %

4158.2	20 mg	glass	241,90 €

Loganin



Loganin

ROTICHROM® HPLC

Reference substance for HPLC.

$C_{17}H_{26}O_{10}$
M 390,40 g/mol
mp ~222 °C
Storage temp.: +4 °C
[18524-94-2] • EC No. 242-398-0

Type analysis:

Purity (HPLC)..... ≥99 %

4162.1	10 mg	glass	188,15 €

β-Longilobin

▶ Retrorsine see p. 2257

Longilobin

▶ Seneciphylline see p. 2311

D-Luciferin

D-Luciferin

≥99 %, for biochemisty

Substrate of Luciferase
(S)-2-(6-Hydroxy-2-benzothiazolyl)-2-thiazolin-4-carboxyl acid,
D-Luciferin free acid
$C_{11}H_8N_2O_3S_2$
mp ~202-204 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[2591-17-5]
WGK 1

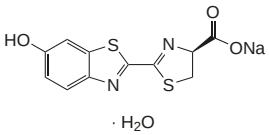
Type analysis:

Purity (HPLC)..... ≥99 %
Water..... ≤2 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF)..... -36° to -32°

CN24.1	10 mg	glass	55,80 €
CN24.2	25 mg	glass	113,85 €
CN24.3	50 mg	glass	203,75 €

For further information, please see page 1335

D-Luciferin sodium salt



D-Luciferin sodium salt

≥99 %, for biochemistry

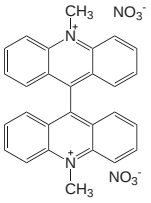
Luciferase substrate
(S)-2-(6-Hydroxy-2-benzothiazolyl)-2-thiazoline-4-carboxylic acid sodium salt
$C_{11}H_7N_2O_3S_2Na \cdot H_2O$
M 320,32 g/mol
Solubility: in H_2O soluble
Storage temp.: -20 °C
Transport temp.: room temp.
[103404-75-7] • WGK 1

Type analysis:

Assay (HPLC)..... ≥99 %
Solution (1 % in water)..... yellowish, clear
Water (KF)..... ≤8 %

4096.1	10 mg	glass	33,25 €
4096.2	25 mg	glass	59,70 €

Lucigenin



Lucigenin

≥97 %, p.a., for chemiluminescence assays

N,N'-Dimethyl-9,9'-biacridinium dinitrate,
Bis-N-methylacridinium nitrate
$C_{28}H_{22}N_4O_6$
M 510,51 g/mol
mp ~250 °C
[2315-97-1] • EC No. 219-023-4 • WGK 2

Guarantee analysis:

Assay (HPLC)..... ≥97,0 %

6272.1	500 mg	glass	104,85 €

LuciPac® Pen

LuciPac® Pen

Kikkoman for hygiene control

For testing for the contamination of surfaces by ATP/AMP measurement using Lumitester PD20 and PD30.
Storage temp.: +4 °C
WGK 1

Guarantee analysis:

Sterility..... complies
Luminescence control..... complies

NC59.1	20 pieces	Aluminium bag	99,90 €
NC59.2	100 pieces	Aluminium bag	427,35 €

For further information, please see page 1409

LuciPac® Pen Aqua

LuciPac® Pen Aqua

Kikkoman for hygiene control

For testing for the contamination of liquids by ATP/AMP measurement using Lumitester PD20 and PD30.
Storage temp.: +4 °C
WGK 1

Guarantee analysis:

Sterility..... complies
Luminescence control..... complies

NC58.1	20 pieces	Aluminium bag	99,90 €
NC58.2	100 pieces	Aluminium bag	427,35 €

For further information, please see page 1410

Luff-Schoorl's solution

Luff-Schoorl's solution

for sugar determination

UN No. 3082 • ADR 9 III • WGK 3

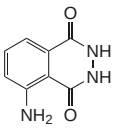
Warning H319-H411

X874.1	1 l	plastic	32,80 €
Original pack 6 x 1 l			31,16/1 l

Lugol solution

▶ Iodine-potassium iodide solution acc. to Lugol see p. 2070

Luminol



Luminol

≥95 %, for synthesis

Fluorescence indicator, peroxidase reagent
3-Aminophthalic hydrazide, 5-Amino-2,3-dihydro-phthalazine-1,4-dione
$C_8H_7N_3O_2$
M 177,16 g/mol
mp ~320 °C
[521-31-3] • EC No. 208-309-4
WGK 1

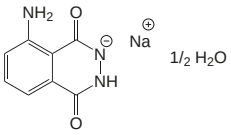
Warning H302-H315-H319-H335

Type analysis:

Appearance..... yellow-green powder
Assay (titr.)..... ≥95 %
Water (KF)..... <1 %
Solubility (0,1 % in 0,1 N NaOH)... completely soluble

4203.1	5 g	plastic	50,45 €
4203.2	25 g	plastic	198,90 €

Luminol sodium salt hemihydrate



Luminol sodium salt hemihydrate

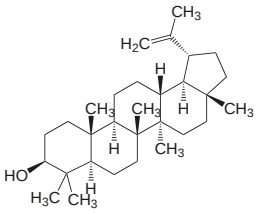
≥98 %, p.a.
$C_8H_6N_3NaO_2 \cdot ½\ H_2O$
M 199,14 + ½ H_2O g/mol
[206658-90-4]
WGK 3

Warning H315-H319-H335

Type analysis:
Appearance. ..... off-white powder
Assay ..... ≥98 %
Appearance of solution (5 % in H_2O). ..... clear, yellow

7708.1	1 g	glass	19,90 €
7708.2	5 g	glass	45,05 €
7708.3	10 g	glass	81,20 €

Lupeol



Lupeol

ROTICHROM® HPLC
Reference substance for HPLC.
β-Viscol
$C_{30}H_{50}O$
M 426,70 g/mol
Storage temp.: +4 °C
[545-47-1] • EC No. 208-889-9

Warning H302

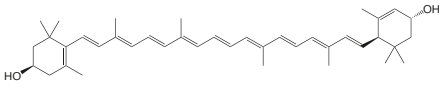
Type analysis:
Purity (HPLC) ..... ≥99 %

8863.2	20 mg	glass	182,25 €

Lupeose

▶ Stachyose Hydrate see p. 2357

Lutein

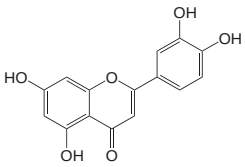


Lutein

ROTICHROM® TLC
Reference substance for thin layer chromatography
Xanthophyll
$C_{40}H_{56}O_2$
M 568,88 g/mol
mp 190 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[127-40-2] • EC No. 204-840-0

5671.1	5 mg	glass	332,20 €

Luteolin



3',4',5,7-Tetrahydroxyflavone
$C_{15}H_{10}O_6$
M 286,23 g/mol
mp 326-330 °C
[491-70-3] • EC No. 207-741-0
WGK 1

Warning H315-H319-H335

Luteolin

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC) ..... ≥90,0 %
Residual solvents (GC). ..... ≤10,0 %
Water (KF) ..... ≤4,0 %
Assay (qNMR) ..... ≥80,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE49.1	25 mg	glass	880,45 €

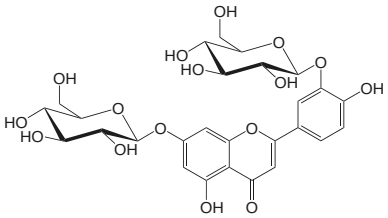
Luteolin

ROTICHROM® HPLC
Reference substance for HPLC.
From *Reseda luteola.*
Storage temp.: +4 °C

Type analysis:
Purity (HPLC). ..... >99 %

4546.1	10 mg	glass	138,70 €

Luteolin-3',7-diglucoside



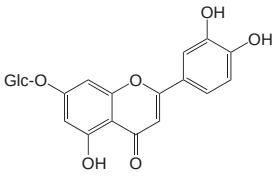
Luteolin-3',7-diglucoside

ROTICHROM® HPLC
Reference substance for HPLC.
$C_{27}H_{30}O_{16}$
M 610,51 g/mol
Storage temp.: +4 °C
[52187-80-1] • EC No. 257-724-7

Type analysis:
Purity (HPLC). ..... ≥96 %

6760.2	10 mg	glass	407,45 €

Luteolin-7-glucoside



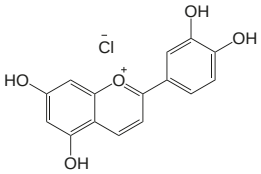
Luteolin-7-glucoside

ROTICHROM® HPLC
Reference substance for HPLC.
Cynaroside
$C_{21}H_{20}O_{11}$ • M 448,39 g/mol
Storage temp.: +4 °C
[5373-11-5] • EC No. 226-365-8 • WGK 1

Type analysis:
Purity (HPLC). ..... ≥98 %

4164.1	10 mg	glass	198,90 €

Luteolinidin chloride



Luteolinidin chloride

ROTICHROM® HPLC
Reference substance for HPLC.
3',4',5,7-Tetrahydroxyflavylium chloride
$C_{15}H_{11}O_5Cl$
M 306,68 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[1154-78-5]

Type analysis:
Purity (HPLC). ..... ≥91 %

9325.1	10 mg	plastic	407,45 €

Lutetium Standards

▶ Lutetium ICP Standard Solution see p. 2363
▶ Lutetium ICP Standard Solution see p. 2368

Lutetium(III) nitrate hydrate

Lutetium(III) nitrate hydrate

ROTI®REMETIC 99,99 %

$Lu(NO_3)_3 \cdot x\ H_2O$
M 360,98 + x H_2O g/mol
[100641-16-5] • EC No. 233-241-7
UN No. 1477 • ADR 5.1 II • WGK 3

Danger H272-H315-H319

Type analysis:
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7265.1	1 g	plastic	78,40 €

Lutetium(III) oxide

Lu_2O_3
M 397,93 g/mol
D 9,41 • bp 3980 °C
mp 2427 °C
[12032-20-1] • EC No. 234-764-3
WGK 1

Warning H315-H319-H335

Lutetium(III) oxide

ROTI®METIC 99,995 % (4N5)

Type analysis:
Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5296.1	1 g	plastic	88,70 €

Lutetium(III) oxide

ROTI®REMETIC 99,99 %

Type analysis:
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7177.1	1 g	plastic	75,15 €
7177.2	5 g	plastic	310,70 €

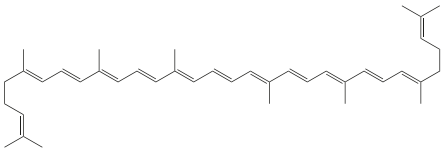
Lutrol®

▶ Polyethylene glycol see p. 2217

Luxol® Fast Blue MBSN

▶ Solvent blue 38 (C.I. 74180) see p. 2352

Lycopene



ψ,ψ-Carotene, all-trans-Lycopene
$C_{40}H_{56}$
M 536,87 g/mol
mp 173 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[502-65-8] • EC No. 207-949-1

Lycopene

ROTICHROM® HPLC

Reference substance for HPLC.
From *Solanum lycopersicum.*

Type analysis:
Purity (HPLC). ..... >90 %

1180.1	5 mg	glass	267,70 €

Lycopene

ROTICHROM® TLC

Reference substance for thin layer chromatography

5670.1	5 mg	glass	385,95 €

Lycopodium

Lycopodium

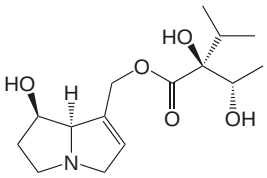
extra pure

Spores of *Lycopodium clavatum L.*
Club-moss spores
[84082-56-4] • EC No. 282-002-3

Type analysis:
Appearance..... fine, yellow powder
Identity..... complies
Ash content. ..... ≤3 %

8253.1	250 g	plastic	53,65 €

Lycopsamine



Lycopsamine

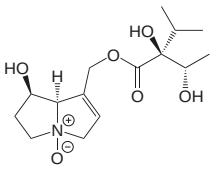
ROTICHROM® HPLC

Reference substance for HPLC.
From *Symphytum*
$C_{15}H_{25}NO_5$
M 299,36 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[10285-07-1]
WGK 1

Type analysis:
Purity (HPLC). ..... ≥95,0 %

2208.1	5 mg	glass	342,95 €

Lycopsamine N-oxide



Lycopsamine N-oxide

ROTICHROM® HPLC

Reference substance for HPLC.
From *Symphythum.*
$C_{15}H_{25}NO_6$
M 315,36 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[95462-15-0]
WGK 1

Warning H302

Type analysis:
Purity (HPLC). ..... ≥95 %

8022.1	5 mg	glass	385,95 €

Lycoricidinol

▶ Narciclasine see p. 2153

Lymphocyte separation medium

▶ Roti®-Sep 1077 human see p. 2297
▶ Roti®-Sep 1077 animal see p. 2297
▶ Roti®-Sep 1086 mouse see p. 2297
▶ Roti®-Sep 1077 human/tube see p. 2297

Lymphocyte separation medium

- Roti®-Sep 1077 human see p. 2297
- Roti®-Sep 1077 animal see p. 2297
- Roti®-Sep 1086 mouse see p. 2297
- Roti®-Sep 1077 human/tube see p. 2297

Lysine Iron Agar

Lysine Iron Agar

for microbiology

For rapid differentiation of *Enterobacteriaceae,* particularly *Salmonella arizonae.*

Application: Use 33 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

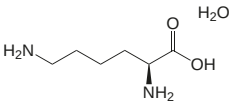
Formulation:

L-Lysin. ..... 10 g/l
Gelatine peptone. ..... 5 g/l
Yeast extract. ..... 3 g/l
Dextrose. ..... 1 g/l
Ammonium iron(III) citrate. ..... 0,5 g/l
Sodium thiosulphate. ..... 0,04 g/l
Bromocresol purple. ..... 0,02 g/l
Agar. ..... 13,5 g/l
pH value. ..... 6,7 ±0,2

8322.1	500 g	plastic	178,35 €
Original pack 6 x 500 g			169,43/500 g

For further information, please see page 1449

L-Lysine monohydrate



$C_6H_{14}N_2O_2 \cdot H_2O$
M 164,21 g/mol
Solubility: 300 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[39665-12-8] • EC No. 200-294-2
WGK 1

L-Lysine monohydrate

CELLPURE® ≥98,5 %

For cell culture and biochemistry.

Type analysis:

Assay (dry substance). ..... ≥98,5 %
Endotoxins. ..... ≤6 I.U./g
Specific rotation $[\alpha]_D^{20}$. ..... +25,5° to +27,0°
Water (KF). ..... 10,5-11,5 %
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,05 %
Sulphate (SO_4). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Sulphated ash. ..... ≤0,1 %

6829.1	25 g	plastic	50,00 €
6829.2	100 g	plastic	90,85 €
6829.3	500 g	plastic	332,20 €
Original pack 6 x 500 g			315,59/500 g

L-Lysine monohydrate

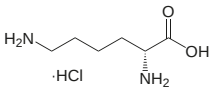
≥98,5 %, for biochemistry

Type analysis:

Assay (dry substance). ..... 98,5-101,5 %
Specific rotation $[\alpha]_D^{20}$. ..... +25,5° to +27,0°
Water (KF). ..... 10,0-11,5 %
Chloride (Cl). ..... ≤0,03 %
Sulphate (SO_4). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %

4207.1	25 g	plastic	46,15 €
4207.2	100 g	plastic	85,90 €

D-Lysine hydrochloride



D-Lysine hydrochloride

≥99 %, for biochemistry

(R)-2,6-Diaminohexanoic acid hydrochloride, H-D-Lys-OH · HCl

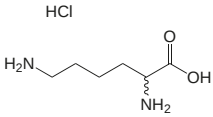
$C_6H_{14}N_2O_2 \cdot HCl$
M 182,7 g/mol
Storage temp.: +4 °C
[7274-88-6] • EC No. 230-691-6
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... 99,0-100,5 %
Specific rotation $[\alpha]_D^{20}$ (1 % in 1,6 N HCl). ..... -21,4° to -20,6°
Loss on drying (105 °C, 3 h). ..... ≤0,4 %

7883.1	1 g	glass	25,30 €
7883.2	5 g	plastic	56,90 €
7883.3	25 g	plastic	136,00 €

DL-Lysine hydrochloride



DL-Lysine hydrochloride

≥98 %, for biochemistry

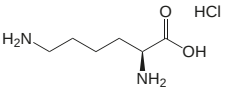
2,6-Diaminohexanoic acid hydrochloride
$C_6H_{14}N_2O_2 \cdot HCl$
M 182,65 g/mol
mp 170 °C
Storage temp.: +4 °C
[70-53-1] • EC No. 200-739-0
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... ≥98 %
Heavy metals (as Pb). ..... ≤0,005 %

8600.1	500 mg	glass	21,00 €
8600.2	1 g	glass	32,80 €
8600.3	5 g	plastic	57,55 €

L-Lysine hydrochloride



α,ε-Diamino-N-caproic acid hydrochloride, *(S)*-2,6-Diaminohexanoic acid hydrochloride, H-L-Lys-OH · HCl

$C_6H_{15}ClN_2O_2$
M 182,65 g/mol
mp 250-260 °C
Solubility: ~420 g/l (H_2O, 20 °C)
[657-27-2] • EC No. 211-519-9
WGK 1

L-Lysine hydrochloride

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,4 %
Specific rotation $[\alpha]_D^{20}$ (dry substance, 20 °C). ..... 20,7° to 21,5°
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... 19,1-19,5 %
Sulphate (SO_4). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As_2O_3). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,003 %

1700.1	25 g	plastic	16,05 €
1700.2	100 g	plastic	29,60 €
1700.3	500 g	plastic	98,80 €
Original pack 6 x 500 g			93,86/500 g

L-Lysine hydrochloride

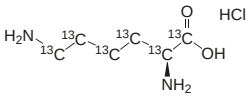
≥98,5 %, Ph.Eur., USP, JP, for biochemistry

Guarantee analysis:

Appearance. ..... white to off-white, cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Specific rotation $[\alpha]_D^{20}$ (dry substance, 20 °C). ..... 20,7° to 21,5°
Specific rotation $[\alpha]_D^{25}$ (dry substance, 25 °C). ..... 20,4° to 21,4°
pH value 5,0-6,0
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... 19,1-19,5 %
Sulphate (SO_4). ..... ≤0,02 %
Arsenic (As_2O_3). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... ≤0,2 %
Related substances (total). ..... ≤1,0 %
Loss on drying (3 h, 105 °C). ..... ≤0,4 %
Sulphated ash. ..... ≤0,1 %

9357.1	100 g	plastic	18,20 €
9357.3	250 g	plastic	37,55 €
9357.4	500 g	plastic	64,40 €
Original pack 6 x 500 g			61,18/500 g
9357.2	1 kg	plastic	115,60 €
Original pack 6 x 1 kg			109,82/1 kg

L-Lysine $^{13}C_6$ hydrochloride



NEW

L-Lysine $^{13}C_6$ hydrochloride

≥98 % ^{13}C

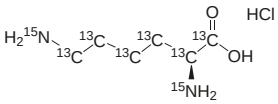
For proteomics by mass spectrometry.
(2S)-2,6-Diaminohexanoic acid $^{13}C_6$ hydrochloride, ^{13}C labelled Lys, ^{13}C labelled lysine hydrochloride, SILAC (Stable Isotope Labelling by Amino acids in Cell culture), H-L-Lys-OH · HCl $^{13}C_6$
$^{13}C_6H_{14}N_2O_2$ · HCl
M 188,7 g/mol
[1228077-86-8]
WGK 1

Type analysis:

Appearance..... white solid
Assay (HPLC)..... ≥95 %
Isotope enrichment (^{13}C)..... ≥98 %

2083.1	100 mg	glass	188,15 €

L-Lysine $^{13}C_6$ $^{15}N_2$ hydrochloride



NEW

L-Lysine $^{13}C_6$ $^{15}N_2$ hydrochloride

≥98 % ^{13}C ^{15}N

For proteomics by mass spectrometry.
(2S)-2,6-Diaminohexanoic acid $^{13}C_6{}^{15}N_2$ hydrochloride, ^{13}C and ^{15}N labelled Lys, ^{13}C and ^{15}N labelled lysine hydrochloride, SILAC (Stable Isotope Labelling by Amino acids in Cell culture), H-L-Lys-OH · HCl $^{13}C_6{}^{15}N_2$
$^{13}C_6H_{14}{}^{15}N_2O_2$ · HCl
M 190,7 g/mol • WGK 1

Type analysis:

Appearance..... white powder
Assay (HPLC)..... ≥95 %
Isotope enrichment (^{13}C, ^{15}N)..... ≥98 %

2085.1	100 mg	glass	188,15 €

H-L-Lys(N_3)-OH · HCl

▶ L-Azidolysine hydrochloride see p. 1822

Lysozyme

Lysozyme

≥35000 FIP U/mg, BioScience-Grade, lyophilised

From chicken egg white, free from albumin.
M ~14000 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[12650-88-3] • EC No. 235-747-3 • WGK 1

Danger H334

Type analysis:

Appearance..... white powder
Activity..... ≥35000 FIP U/mg
Assay..... ≥95,0 %
pH value (2 % in H_2O)..... 3,0-3,8
Water content..... ≤6,0 %
Ash content..... ≤1,5 %
Heavy metals..... ≤0,001 %
Bioburden (TAMC)..... ≤100 cfu/g

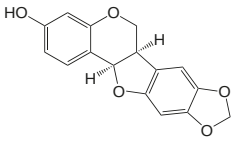
8259.1	1 g	glass	27,85 €
8259.2	10 g	glass	170,95 €
8259.3	25 g	glass	321,45 €

For further information, please see page 1281

Lyticase

▶ Zymolyase® 20T see p. 2454
▶ Zymolyase® 100T see p. 2454

(-)-Maackiain



(-)-Maackiain

ROTICHROM® HPLC

Reference substance for HPLC.
From *Baptisia tinctoria.*
Inermin
$C_{16}H_{12}O_5$
M 284,27 g/mol • mp 175-180 °C
Storage temp.: +4 °C
[2035-15-6] • WGK 3

Type analysis:

Purity (HPLC)..... ≥98 %

6496.1	10 mg	glass	284,90 €

MacConkey Agar

MacConkey Agar

Ph.Eur., EN ISO 21567, for microbiology

For selective isolation and identification of enterobacteria from waste water, foods and other samples.
Application: Use 50 g for 1 l agar.
Agar medium H (Ph.Eur. 6.0), MacConkey Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
Storage temp.: +20 °C
WGK 1

Guarantee analysis:

Gelatin peptone (Pancreas hydrolysate)..... 17 g/l
Meat and casein peptone..... 3 g/l
Lactose monohydrate..... 10 g/l
Bile salt (Cholate)..... 1,5 g/l
Sodium chloride (NaCl)..... 5 g/l
Neutral red..... 0,03 g/l
Crystal Violet..... 0,001 g/l
Agar..... 13,5 g/l
pH value..... 7,1 ±0,2

X922.1	500 g	plastic	84,40 €
Original pack 6 x 500 g			80,18/500 g
X922.2	1 kg	plastic	150,00 €
Original pack 6 x 1 kg			142,50/1 kg

For further information, please see page 1449

MacConkey Agar, granulated

MacConkey Agar, granulated

granulated, Ph.Eur., for microbiology

For selective isolation and identification of enterobacteria from waste water, foods and other samples.
Application: Use 49,53 g for 1 l agar.
Agar medium H (Ph.Eur. 6.0), MacConkey Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
Storage temp.: +20 °C
WGK 1

Guarantee analysis:

Gelatin peptone (Pancreas hydrolysate)..... 17 g/l
Meat and casein peptone..... 3 g/l
Lactose monohydrate..... 10 g/l
Bile salt (Cholate)..... 1,5 g/l
Sodium chloride (NaCl)..... 5 g/l
Neutral red..... 0,03 g/l
Crystal Violet..... 0,001 g/l
Agar..... 13,5 g/l
pH value..... 7,1 ±0,2

1514.1	500 g	plastic	104,85 €
Original pack 6 x 500 g			99,61/500 g

For further information, please see page 1456

MacConkey Agar with sorbitol

▶ Sorbitol MacConkey Agar see p. 2355

MacConkey Broth

MacConkey Broth

Ph.Eur., for microbiology

For detection of coliform bacteria in water, milk and other liquids.
Application: Use 35 g for 1 l broth.
Broth medium G (Ph.Eur. 6.0), MacConkey Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
Storage temp.: +20 °C

Guarantee analysis:

Gelatin peptone (Pancreas hydrolysate)..... 20 g/l
Lactose monohydrate..... 10 g/l
Dehydrated ox bile..... 5 g/l
Bromocresol purple..... 0,01 g/l
pH value..... 7,3 ±0,2

AE47.1	500 g	plastic	83,35 €
Original pack 6 x 500 g			79,18/500 g

For further information, please see page 1449

Macleyine

▶ Protopine see p. 2243

Macrogol

▶ Polyethylene glycol see p. 2217

Madecassoside

Madecassoside
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{48}H_{78}O_{20}$ • M 975,17 g/mol
Storage temp.: +4 °C
[34540-22-2] • EC No. 252-076-1

Type analysis:
Purity (HPLC)..... ≥97 %

6138.1	10 mg	glass	342,95 €

Magenta
▶ Fuchsine basic (C.I. 42510) see p. 2008

Magnesia burnt
▶ Magnesium oxide see p. 2113

Magnesia rods

Magnesia rods
∅ 1,5 mm x L 140 mm
Ideal for flame analysis of sodium, etc. For borax-bead analysis of cobalt. For bead tests.
∅ 1.5 x L 140 mm.

6543.1	25 pieces	cardboard	24,30 €

Magnesia scoops

Magnesia scoops
For annealing and incineration of samples, as well as for the production of oxygen melts for the detection of chromium, manganese etc. and for bead tests. W 9 x L 100 mm.

6537.1	25 pieces	cardboard	21,45 €

Magnesium filings

Magnesium filings
≥99,9 %, acc. to Grignard, for synthesis
For synthesis of organometallic compounds. Application in Gringnard reaction.
Mg
M 24,31 g/mol
D 1,75 • bp 1107 °C • mp 651 °C
[7439-95-4] • EC No. 231-104-6
UN No. 1869 • ADR 4.1 III
Danger H261-H228

Type analysis:
Assay (Mg)..... ≥99,9 %
Aluminium (Al)..... ≤0,05 %
Manganese (Mn)..... ≤0,05 %
Iron (Fe)..... ≤0,05 %
Nickel (Ni)..... ≤0,001 %
Silicon (Si)..... ≤0,05 %

AE61.1	250 g	tin	18,20 €
AE61.2	500 g	tin	27,85 €
Original pack 6 x 500 g			26,46/500 g
AE61.3	1 kg	tin	45,05 €
Original pack 6 x 1 kg			42,80/1 kg

Magnesium powder

Magnesium powder
≥99,8 %, <75 µm
Mg
M 24,31 g/mol
D 1,75 • bp 1107 °C • mp 651 °C
[7439-95-4] • EC No. 231-104-6
UN No. 1418 • ADR 4.3 (4.2) II
Danger H228-H261-H252

Type analysis:
Assay (Mg)..... ≥99,8 %

CP20.1	100 g	plastic	13,90 €
CP20.2	500 g	plastic	39,70 €
Original pack 6 x 500 g			37,72/500 g

Magnesium ribbon

Magnesium ribbon
≥99,5 %, tape
For the detection of sodium.
A coil with about 25 g, band ~0,2 mm thick, 3 mm wide
Mg
M 24,31 g/mol • D 1,738 • bp 1090 °C
mp 649,5 °C • flp 500 °C
[7439-95-4] • EC No. 231-104-6
UN No. 1869 • ADR 4.1 III
Danger H261-H228

Type analysis:
Assay (Mg)..... ≥99,5 %
In HCl insoluble matter..... ≤0,05 %
Lead (Pb)..... ≤0,01 %
Iron (Fe)..... ≤0,05 %
Copper (Cu)..... ≤0,005 %

4468.1	1 roll	box	104,20 €

Magnesium Standards
▶ Magnesium AAS Standard Solution see p. 2359
▶ Magnesium ICP Standard Solution see p. 2363
▶ Magnesium ICP Standard Solution see p. 2368
▶ Magnesium IC Standard Solution see p. 2377

Magnesium acetate tetrahydrate

$Mg(CH_3COO)_2 \cdot 4\ H_2O$
M 214,46 g/mol
D 1,454
mp 80 °C
Solubility: 1200 g/l (H_2O, 15 °C)
[16674-78-5] • EC No. 205-554-9
WGK 1

Magnesium acetate tetrahydrate
≥99,5 %, p.a., ACS
For the detection of sodium.

Guarantee analysis:
Assay (compl.)..... ≥99,5 %
pH value (5 % solution)..... 8-9
In CH_3COOH insoluble matter..... ≤0,005 %
Chloride (Cl)..... ≤0,001 %
Sulphate (SO_4)..... ≤0,005 %
Heavy metals (as Pb)..... ≤0,0005 %
Barium (Ba)..... ≤0,001 %
Calcium (Ca)..... ≤0,01 %
Iron (Fe)..... ≤0,0005 %
Manganese (Mn)..... ≤0,001 %
Strontium (Sr)..... ≤0,005 %
Cadmium (Cd)..... ≤0,0005 %
Copper (Cu)..... ≤0,0005 %
Potassium (K)..... ≤0,005 %
Sodium (Na)..... ≤0,005 %
Lead (Pb)..... ≤0,0005 %
Zinc (Zn)..... ≤0,0005 %

P026.1	500 g	plastic	54,30 €
Original pack 6 x 500 g			51,59/500 g
P026.2	1 kg	plastic	91,30 €
Original pack 6 x 1 kg			86,74/1 kg

Magnesium acetate tetrahydrate
CELLPURE® ≥99 %
For cell culture and biochemistry.

Guarantee analysis:
Endotoxins..... ≤6,0 E.U./g
Assay (dry substance)..... ≥99 %
pH value (5 % solution)..... 7,5-8,5
Chloride (Cl)..... ≤0,033 %
Sulphate (SO_4)..... ≤0,06 %
Nitrate (NO_3)..... complies
Heavy metals (as Pb)..... ≤0,004 %
Aluminium (Al)..... ≤0,0001 %
Calcium (Ca)..... ≤0,01 %
Potassium (K)..... ≤0,1 %
Sodium (Na)..... ≤0,5 %
Easily oxidizable substance..... complies

HN11.1	100 g	plastic	17,75 €
HN11.2	500 g	plastic	47,85 €
Original pack 6 x 500 g			45,46/500 g
HN11.3	1 kg	plastic	79,45 €
Original pack 6 x 1 kg			75,48/1 kg

Magnesium acetate tetrahydrate
≥98 %, Ph.Eur., extra pure
For biochemistry.

Guarantee analysis:
Assay..... 98,0-101,0 %
Identity..... complies
pH value (5 % in H_2O)..... 7,5-8,5
Water..... 33,0-35,0 %
Chloride (Cl)..... ≤0,033 %
Sulphate (SO_4)..... ≤0,06 %
Nitrate (NO_3)..... ≤0,0003 %
Aluminium (Al)..... ≤0,0001 %
Calcium (Ca)..... ≤0,01 %
Potassium (K)..... ≤0,1 %
Sodium (Na)..... ≤0,5 %
Heavy metals (as Pb)..... ≤0,004 %
Easily oxidizable substance..... complies

0275.1	500 g	plastic	23,15 €
Original pack 6 x 500 g			21,99/500 g
0275.2	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg
0275.3	5 kg	plastic	145,05 €

Magnesium carbonate

Magnesium carbonate

Ph.Eur., light

Magnesia alba
$(MgCO_3)_4$ $Mg(OH)_2 \cdot 5\ H_2O$
D 2,16
mp 600 °C (dec.)
[12125-28-9] • EC No. 235-192-7

Guarantee analysis:

Appearance.	white powder
Appearance of solution.	complies
Assay (compl.).	40,0-45,0 %
Identity.	complies
Water-soluble content.	≤1,0 %
Substances insoluble in acetic acid.	≤0,05 %
Chloride (Cl).	≤0,07 %
Sulphate (SO_4).	≤0,3 %
Arsenic (As).	≤0,0002 %
Calcium (Ca).	≤0,75 %
Iron (Fe).	≤0,04 %

3530.2	1 kg	plastic	29,60 €
Original pack 6 x 1 kg			28,12/1 kg
3530.1	2,5 kg	cardboard	40,75 €

Magnesium chloride

Magnesium chloride

≥98,5 %, anhydrous

$MgCl_2$
M 95,22 g/mol
D ~2,32 • bp 1412 °C
mp 708 °C
Solubility: 542 g/l (H_2O, 20 °C)
[7786-30-3] • EC No. 232-094-6
WGK 1

Type analysis:

Assay.	≥98,5 %

KK36.1	100 g	plastic	13,90 €
KK36.2	500 g	plastic	31,10 €
Original pack 6 x 500 g			29,55/500 g
KK36.3	1 kg	plastic	51,50 €
Original pack 6 x 1 kg			48,93/1 kg

Magnesium chloride hexahydrate

$MgCl_2 \cdot 6\ H_2O$
M 203,3 g/mol
D 1,57
mp 117 °C (dec.)
Solubility: 1670 g/l (H_2O, 20 °C)
[7791-18-6] • EC No. 232-094-6
WGK 1

Magnesium chloride hexahydrate

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis).	99,999 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5347.1	25 g	plastic	198,90 €
5347.2	100 g	plastic	590,20 €

Magnesium chloride hexahydrate

≥99 %, p.a., ACS

Reagent for the detection of phosphate, molecular biology.

Guarantee analysis:

Assay (compl.).	≥99,0 %
pH value (5 % in water).	5,0-6,5
In H_2O insoluble matter.	≤0,005 %
Total nitrogen (as N).	≤0,002 %
Phosphate (PO_4).	≤0,0005 %
Nitrate (NO_3).	≤0,001 %
Sulphate (SO_4).	≤0,002 %
Ammonium (NH_4).	≤0,002 %
Barium (Ba).	≤0,005 %
Lead (Pb).	≤0,0005 %
Cadmium (Cd).	≤0,0005 %
Calcium (Ca).	≤0,01 %
Iron (Fe).	≤0,0005 %
Potassium (K).	≤0,005 %
Cobalt (Co).	≤0,0005 %
Copper (Cu).	≤0,0005 %
Manganese (Mn).	≤0,0005 %
Sodium (Na).	≤0,005 %
Nickel (Ni).	≤0,0005 %
Heavy metals (as Pb).	≤0,0005 %
Strontium (Sr).	≤0,005 %
Zinc (Zn).	≤0,001 %

2189.2	250 g	plastic	16,05 €
2189.1	1 kg	plastic	31,10 €
Original pack 6 x 1 kg			29,55/1 kg
2189.3	2,5 kg	plastic	57,55 €
2189.5	25 kg	plastic	450,45 €

Magnesium chloride hexahydrate

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins.	≤3,0 I.U./g
Assay.	≥99 %
Appearance of solution.	clear, colourless
In H_2O insoluble matter.	≤0,05 %
Sulphate (SO_4).	≤0,01 %
Heavy metals (as Pb).	≤0,0005 %
Aluminium (Al).	≤0,00005 %
Arsenic (As).	≤0,0002 %
Cadmium (Cd).	≤0,0001 %
Calcium (Ca).	≤0,01 %
Iron (Fe).	≤0,0005 %
Potassium (K).	≤0,05 %
Mercury (Hg).	≤0,0001 %

HN03.1	250 g	plastic	20,35 €
HN03.2	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
HN03.3	1 kg	plastic	46,15 €
Original pack 6 x 1 kg			43,84/1 kg
HN03.4	2,5 kg	plastic	85,90 €
HN03.5	5 kg	plastic	149,45 €

Magnesium chloride hexahydrate

≥98 %, Ph.Eur.

Guarantee analysis:

Appearance.	fine, white crystals
Assay.	98,0-101,0 %
Identity.	complies
Water .	51,0-55,0 %
Appearance of solution (10 %).	clear, colourless
In H_2O insoluble matter.	≤0,005 %
Acidity (0,01 M NaOH/0,5 g).	≤0,30 ml
Alkalinity (0,01M HCl/0,5 g).	≤0,30 ml
Sulphate (SO_4).	≤0,01 %
Bromide (Br).	≤0,05 %
Heavy metals (as Pb).	≤0,001 %
Aluminium (Al).	≤0,0001 %
Arsenic (As).	≤0,0002 %
Iron (Fe).	≤0,001 %
Calcium (Ca).	≤0,1 %
Barium (Ba).	complies
Potassium (K).	≤0,05 %
Mercury (Hg).	≤0,0001 %

A537.4	500 g	plastic	19,25 €
Original pack 6 x 500 g			18,29/500 g
A537.1	1 kg	plastic	26,35 €
Original pack 6 x 1 kg			25,03/1 kg
A537.5	2,5 kg	plastic	50,45 €
A537.2	10 kg	plastic	158,60 €
A537.3	50 kg	cardboard	686,95 €

Magnesium chloride hexahydrate

techn., flakes

Type analysis:

Appearance.	white-yellowish flakes
$MgCl_2$.	≥46,5 %
$MgSO_4$.	≤0,6 %
pH value (10 % solution).	5,5-9,0 %
Potassium chloride (KCl).	≤0,8 %
Sodium chloride (NaCl).	≤0,9 %
Iron (Fe).	≤0,0025 %

3532.1	1 kg	plastic	17,75 €
Original pack 6 x 1 kg			16,86/1 kg
3532.2	10 kg	plastic	60,10 €
3532.3	50 kg	cardboard	128,50 €

Magnesium citrate

Magnesium citrate

pure

Citric acid magnesium salt
$C_6H_6MgO_7$
M 214,43 g/mol
Solubility: 250 g/l (H_2O, 100 °C)
[7779-25-1] • EC No. 231-923-9
WGK 1

Type analysis:

Assay (Mg).	6,0-8,0 %
pH value (5 % in H_2O).	3,5-4,0
Sulphate (SO_4).	≤1,0 %
Heavy metals (as Pb).	≤0,001 %

9361.1	100 g	plastic	15,60 €
9361.2	500 g	plastic	35,40 €
Original pack 6 x 500 g			33,63/500 g
9361.3	1 kg	plastic	54,75 €
Original pack 6 x 1 kg			52,01/1 kg

Magnesium EDTA disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid magnesium disodium salt dihydrate see p. 1982

Magnesium hexafluorosilicate hexahydrate

Magnesium hexafluorosilicate hexahydrate

≥98 %, pure
$MgSiF_6 \cdot 6\ H_2O$
M 274,47 g/mol
D 1,79
mp 120 °C (dec.)
Solubility: 590 g/l (H_2O, 20 °C)
[18972-56-0] • EC No. 241-022-2
UN No. 2853 • ADR 6.1 III • WGK 2
Danger H301-H318-H412

Type analysis:

Assay	≥98,0 %
In water insoluble matter.	≤0,5 %

0325.1	100 g	plastic	16,70 €
0325.2	500 g	plastic	27,85 €
Original pack 6 x 500 g			26,46/500 g
0325.3	1 kg	plastic	44,00 €
Original pack 6 x 1 kg			41,80/1 kg
0325.4	2,5 kg	plastic	89,15 €

Magnesium hydrogen phosphate trihydrate

Magnesium hydrogen phosphate trihydrate

≥96 %, pure
Magnesium phosphate dibasic
$MgHPO_4$
M 174,33 g/mol
D 2,13
mp 550 °C (dec.)
Solubility: 0,25 g/l (H_2O, 20 °C)
[7782-75-4] • EC No. 231-823-5
WGK 1

Type analysis:

Assay (based on calcinated substance).	≥96,0 %
Arsenic (As).	≤0,001 %
Lead (Pb).	≤0,001 %
Loss on ignition (800 °C)	29,0-36,5 %

0502.1	250 g	plastic	17,75 €
0502.2	1 kg	plastic	43,55 €
Original pack 6 x 1 kg			41,37/1 kg
0502.3	2,5 kg	plastic	93,45 €

Magnesium hydroxide

Magnesium hydroxide

≥95 %, Ph.Eur.
$Mg(OH)_2$
M 58,32 g/mol
D 2,4
mp 350 °C (dec.)
Solubility: 0,009 g/l (H_2O, 18 °C)
[1309-42-8] • EC No. 215-170-3

Guarantee analysis:

Appearance	white powder
Assay (titr.).	95,0-100,5 %
Identity	complies
Appearance of solution	complies
Substances soluble in H_2O.	≤2,0 %
In CH_3COOH insoluble matter.	≤0,1 %
Chloride (Cl).	≤0,1 %
Sulphate (SO_4).	≤1,0 %
Arsenic (As)	≤0,0004 %
Calcium (Ca).	≤1,5 %
Iron (Fe)	≤0,07 %
Loss on ignition (900 °C).	29,0-32,5 %

9453.1	100 g	plastic	14,95 €
9453.2	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
9453.3	1 kg	plastic	47,85 €
Original pack 6 x 1 kg			45,46/1 kg

Magnesium matrix modifier

▶ Matrix modifier solution
Magnesium nitrate see p. 2123

Magnesium nitrate hexahydrate

$Mg(NO_3)_2 \cdot 6\ H_2O$
M 256,41 g/mol
D 1,46
mp ~89 °C
Solubility: 420 g/l (H_2O, 20 °C)
[13446-18-9] • EC No. 233-826-7
UN No. 1474 • ADR 5.1 III • WGK 1
Danger H272

Magnesium nitrate hexahydrate

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis).	99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5420.1	10 g	plastic	50,45 €
5420.2	50 g	plastic	104,85 €

Magnesium nitrate hexahydrate

≥98 %, p.a., ACS
Oxidant

Guarantee analysis:

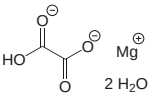
Assay (compl.).	98,0-102,0 %
pH value (5 % in H_2O).	5,0-8,2
In H_2O insoluble matter.	≤0,003 %
Chloride (Cl).	≤0,001 %
Phosphate (PO_4).	≤0,0005 %
Sulphate (SO_4).	≤0,002 %
Ammonium (NH_4).	≤0,003 %
Heavy metals.	≤0,0005 %
Arsenic (As).	≤0,0001 %
Aluminium (Al).	≤0,0005 %
Barium (Ba).	≤0,002 %
Calcium (Ca).	≤0,01 %
Cobalt (Co).	≤0,0005 %
Chromium (Cr).	≤0,0005 %
Copper (Cu).	≤0,0005 %
Iron (Fe).	≤0,0002 %
Potassium (K).	≤0,005 %
Manganese (Mn).	≤0,0005 %
Sodium (Na).	≤0,005 %
Strontium (Sr).	≤0,002 %
Nickel (Ni).	≤0,001 %

HN31.1	500 g	plastic	36,45 €
Original pack 6 x 500 g			34,63/500 g
HN31.2	1 kg	plastic	63,35 €
Original pack 6 x 1 kg			60,18/1 kg
HN31.3	2,5 kg	plastic	139,25 €

Magnesium nitrate matrix modifier solution

▶ Matrix modifier solution
Magnesium nitrate see p. 2123

Magnesium oxalate dihydrate



Magnesium oxalate dihydrate

≥99 %, pure
Oxalic acid magnesium salt
$MgC_2O_4 \cdot 2\ H_2O$
M 148,35 g/mol
D 2,45
mp 150 °C (dec.)
Solubility: 0,7 g/l (H_2O, 20 °C)
[547-66-0] • EC No. 208-932-1
WGK 1
Warning H302+H312

Type analysis:

Assay.	≥99,0 %
Chloride (Cl)	≤0,05 %
Lead (Pb).	≤0,005 %
Calcium (Ca).	≤1,0 %
Iron (Fe).	≤0,05 %

0495.1	100 g	plastic	22,05 €
0495.2	500 g	plastic	61,20 €
Original pack 6 x 500 g			58,14/500 g
0495.3	1 kg	plastic	99,90 €
Original pack 6 x 1 kg			94,91/1 kg
0495.4	2,5 kg	plastic	221,35 €

Magnesium oxide

Magnesia, burnt
MgO
M 40,30 g/mol
D 3,60 • bp 2800 °C
mp 2826 °C
[1309-48-4] • EC No. 215-171-9
WGK 1

Magnesium oxide
ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5639.1	10 g	plastic	109,55 €
5639.2	50 g	plastic	493,45 €

Magnesium oxide
≥98 %, Ph.Eur., light

Guarantee analysis:
Appearance..... white, fine powder
Assay (based on calcinated substance)..... 98,0-100,5 %
Identity..... complies
Appearance of solution..... complies
Soluble substances..... ≤2,0 %
Substances insoluble in acetic acid..... ≤0,1 %
Chloride (Cl)..... ≤0,15 %
Sulphate (SO_4)..... ≤1,0 %
Arsenic (As)..... ≤0,0004 %
Calcium (Ca)..... ≤1,5 %
Iron (Fe)..... ≤0,1 %
Loss on ignition (900 °C)..... ≤8,0 %

8280.2	500 g	plastic	21,00 €
Original pack 6 x 500 g			19,95/500 g
8280.1	1 kg	plastic	30,00 €
Original pack 6 x 1 kg			28,50/1 kg
8280.3	5 kg	plastic	126,35 €

Magnesium phosphate dibasic
▶ Magnesium hydrogen phosphate trihydrate see p. 2112

Magnesium reagent acc. to Mann and Yoe
▶ Xylidyl blue sodium salt see p. 2446

Magnesium silicate
▶ Florisil® see p. 1995
▶ Talcum see p. 2393

Magnesium sulphate

Magnesium sulphate
≥99 %, p.a., anhydrous
$MgSO_4$
M 120,37 g/mol
D 2,66
mp 1124 °C
Solubility: 300 g/l (H_2O, 20 °C)
[7487-88-9] • EC No. 231-298-2
WGK 1

Guarantee analysis:
Appearance..... white to off-white powder
Assay..... ≥99,0 %
Chloride (Cl)..... ≤0,05 %
Arsenic (As)..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Heavy metals (as Pb)..... ≤0,001 %

0682.1	100 g	glass	18,85 €
0682.2	500 g	glass	41,85 €
Original pack 6 x 500 g			39,76/500 g
0682.3	1 kg	glass	71,95 €
Original pack 6 x 1 kg			68,35/1 kg

Magnesium sulphate hydrate

Magnesium sulphate hydrate
≥99 %, dried, extra pure
$MgSO_4 \cdot x\ H_2O$
M 120,4 + x H_2O g/mol
D ~2,45
Solubility: 300 g/l (H_2O, 20 °C)
[22189-08-8] • EC No. 231-298-2
WGK 1

Guarantee analysis:
Assay (in annealed substances)..... 99,0-101,0 %
Chloride (Cl)..... ≤0,022 %
Arsenic (As)..... ≤0,0002 %
Calcium (Ca)..... ≤0,033 %
Iron (Fe)..... ≤0,0014 %
Heavy metals (as Pb)..... ≤0,0015 %
Loss on ignition (400 °C)..... 26,0-32,0 %

0261.1	500 g	plastic	15,60 €
Original pack 6 x 500 g			14,82/500 g
0261.2	1 kg	plastic	20,35 €
Original pack 6 x 1 kg			19,33/1 kg
0261.3	2,5 kg	plastic	36,45 €
0261.7	25 kg	plastic	212,35 €

Magnesium sulphate heptahydrate

Bitter salt
$MgSO_4 \cdot 7\ H_2O$
M 246,48 g/mol
D 1,67
Solubility: 710 g/l (H_2O, 20 °C)
[10034-99-8] • EC No. 231-298-2
WGK 1

Magnesium sulphate heptahydrate
≥99 %, p.a., ACS

Guarantee analysis:
Assay (compl.)..... 99,0-102,0 %
pH value..... 5,0-8,2
In H_2O insoluble matter..... ≤0,005 %
Chloride (Cl)..... ≤0,0005 %
Phosphate (PO_4)..... ≤0,001 %
Nitrate (NO_3)..... ≤0,001 %
Ammonium (NH_4)..... ≤0,002 %
Heavy metals..... ≤0,0005 %
Arsenic (As)..... ≤0,00005 %
Copper (Cu)..... ≤0,0005 %
Potassium (K)..... ≤0,005 %
Sodium (Na)..... ≤0,005 %
Lead (Pb)..... ≤0,0005 %
Strontium (Sr)..... ≤0,005 %
Calcium (Ca)..... ≤0,004 %
Iron (Fe)..... ≤0,0005 %
Manganese (Mn)..... ≤0,0005 %
Nickel (Ni)..... ≤0,0005 %
Silicon (Si)..... ≤0,0005 %
Zinc (Zn)..... ≤0,0005 %

P027.1	500 g	plastic	24,65 €
Original pack 6 x 500 g			23,42/500 g
P027.2	1 kg	plastic	39,70 €
Original pack 6 x 1 kg			37,72/1 kg
P027.3	2,5 kg	plastic	74,10 €

Magnesium sulphate heptahydrate
≥99 %, Ph.Eur., USP, BP

Guarantee analysis:
Assay (compl., dry substance)..... 99,0-100,5 %
Identity..... complies
pH value (5 % in H_2O)..... 5,0-9,2
Appearance of solution..... complies
Acid and alkaline reacting substances..... complies
Chloride (Cl)..... ≤0,03 %
Arsenic (As)..... ≤0,0002 %
Iron (Fe)..... ≤0,002 %
Heavy metals (as Pb)..... ≤0,001 %
Selenium (Se)..... ≤0,003 %
Loss on drying..... 48,0-52,0 %
Loss on ignition..... 40,0-52,0 %

T888.1	500 g	plastic	18,85 €
Original pack 6 x 500 g			17,91/500 g
T888.2	1 kg	plastic	25,70 €
Original pack 6 x 1 kg			24,42/1 kg
T888.3	5 kg	plastic	83,75 €
T888.5	25 kg	plastic	299,95 €

Magnesium sulphate heptahydrate
extra pure

Type analysis:
Appearance..... cryst. powder
Assay ($MgSO_4$)..... ≥48 %
KCl, NaCl..... ≤0,1 %
K_2SO_4, $CaSO_4$..... ≤0,1 %
Water..... ≥51 %

8283.2	1 kg	plastic	17,75 €
Original pack 6 x 1 kg			16,86/1 kg
8283.1	2,5 kg	plastic	27,45 €
8283.3	10 kg	plastic	66,15 €

Magneson
▶ 4-(4-Nitrophenylazo)-resorcinol see p. 2165

Magnetic Beads

Art. No.	Description	Page
1615	MagSi-Direct 1.0	2114
1620	MagSi-Direct 3.0	2114
1540	MagSi-DNA	2114
1549	MagSi-DNA 3.0	2114
1559	MagSi-DNA 3.0 COOH	2114
1542	MagSi-DNA 600	2114
1557	MagSi-DNA 600 COOH	2114
1544	MagSi-DNA allround	2114
1558	MagSi-DNA allround COOH	2115
1552	MagSi-DNA COOH	2115
1648	MagSi-DNA saliva	2115
1560	MagSi-DNA trial kit	2115
1624	MagSi-DNA Vegetal	2115
1630	MagSi-gDNA blood	2115
1561	MagSi-STA 1.0	2115
1563	MagSi-STA 3.0 L	2115
1562	MagSi-STA 600	2115
1566	MagSi-STA Trial kit	2115
1649	MagSi-Wash Buffer III	2116

MagSi-Direct 1.0

MagSi-Direct 1.0

NEW

magtivio for protein biochemistry and molecular biology

Magnetic beads for covalent coupling of chosen ligands.

Magnetic beads

Storage temp.: +4 °C

Type analysis:

Mean particle sizing. ..... 1 µm

1615.1	1 kit (2 ml beads)	cardboard	465,40 €
1615.2	1 kit (10 ml beads)	cardboard	1794,20 €

For further information, please see page 1339

MagSi-Direct 3.0

MagSi-Direct 3.0

NEW

magtivio for protein biochemistry and molecular biology

Magnetic beads for covalent coupling of chosen ligands.

Magnetic beads

Storage temp.: +4 °C

Type analysis:

Mean particle sizing. ..... 3 µm

1620.1	1 kit (2 ml beads)	cardboard	465,40 €
1620.2	1 kit (10 ml beads)	cardboard	1794,20 €

For further information, please see page 1339

MagSi-DNA

MagSi-DNA

NEW

magtivio 300 mg/ml, for molecular biology

Magnetic beads for nucleic acid isolation from various sources.

Magnetic beads

Storage temp.: +4 °C

Type analysis:

Concentration. ..... 300 ±15 mg/ml
Mean particle sizing. ..... 300 nm
DNA yield (20 µl beads). ..... >3 µg

1540.1	2 ml	plastic	93,00 €
1540.2	10 ml	plastic	379,40 €
1540.3	100 ml	plastic	3101,40 €

For further information, please see page 1273

MagSi-DNA 3.0

MagSi-DNA 3.0

NEW

magtivio 20 mg/ml, for molecular biology

Magnetic beads for nucleic acid isolation from various sources.

Magnetic beads

Storage temp.: +4 °C

Type analysis:

Concentration. ..... 20 ±1 mg/ml
Mean particle sizing. ..... 2,4-3,6 µm
Bead number. ..... 2-6 x 10^9 beads/ml
Assay (Iron oxide). ..... ≥55 %
DNA yield (20 µl beads). ..... >3 µg

1549.1	2 ml	plastic	93,00 €
1549.2	10 ml	plastic	379,40 €
1549.3	100 ml	plastic	3101,40 €

For further information, please see page 1273

MagSi-DNA 3.0 COOH

MagSi-DNA 3.0 COOH

NEW

magtivio 20 mg/ml, for molecular biology

Magnetic beads for nucleic acid isolation from various sources.

Magnetic beads

Storage temp.: +4 °C

Type analysis:

Concentration. ..... 20 ±1 mg/ml
Mean particle sizing. ..... 2,4-3,6 µm
Bead number. ..... 2-6 x 10^9 beads/ml
Assay (Iron oxide). ..... ≥55 %
DNA yield (20 µl beads). ..... >3 µg

1559.1	2 ml	plastic	119,90 €
1559.2	10 ml	plastic	495,50 €
1559.3	100 ml	plastic	4008,70 €

For further information, please see page 1273

MagSi-DNA 600

MagSi-DNA 600

NEW

magtivio 20 mg/ml, for molecular biology

Magnetic beads for nucleic acid isolation from various sources.

Magnetic beads

Storage temp.: +4 °C

Type analysis:

Concentration. ..... 20 ±1 mg/ml
Mean particle sizing. ..... 530-600 nm
Bead number. ..... 1,6-4 x 10^{10} beads/ml
Assay (Iron oxide). ..... 35-45 %
DNA yield (20 µl beads). ..... >3 µg

1542.1	2 ml	plastic	93,00 €
1542.2	10 ml	plastic	379,40 €
1542.3	100 ml	plastic	3101,40 €

For further information, please see page 1273

MagSi-DNA 600 COOH

MagSi-DNA 600 COOH

NEW

magtivio 20 mg/ml, for molecular biology

Magnetic beads for nucleic acid isolation from various sources.

Magnetic beads

Storage temp.: +4 °C

Type analysis:

Concentration. ..... 20 ±1 mg/ml
Mean particle sizing. ..... 530-600 nm
Bead number. ..... 1,6-4 x 10^{10} beads/ml
Assay (Iron oxide). ..... 35-45 %
DNA yield (20 µl beads). ..... >3 µg

1557.1	2 ml	plastic	119,90 €
1557.2	10 ml	plastic	495,50 €
1557.3	100 ml	plastic	4008,70 €

For further information, please see page 1273

MagSi-DNA allround

MagSi-DNA allround

NEW

magtivio 20 mg/ml, for molecular biology

Magnetic beads for nucleic acid isolation from various sources.

Magnetic beads

Storage temp.: +4 °C

Type analysis:

Concentration. ..... 20 ±1 mg/ml
Mean particle sizing. ..... 1,1-1,3 µm
Bead number. ..... 0,6-2 x 10^{10} beads/ml
Assay (Iron oxide). ..... ≥50 %
DNA yield (20 µl beads). ..... >3 µg

1544.1	2 ml	plastic	93,00 €
1544.2	10 ml	plastic	379,40 €
1544.3	100 ml	plastic	3101,40 €

For further information, please see page 1273

MagSi-DNA allround COOH

MagSi-DNA allround COOH

magtivio 20 mg/ml, for molecular biology

NEW

Magnetic beads for nucleic acid isolation from various sources.

Magnetic beads

Storage temp.: +4 °C

Type analysis:

Concentration. ..... 20 ±1 mg/ml
Mean particle sizing. ..... 1,1-1,3 µm
Bead number. ..... 0,6-2 x 10^{10} beads/ml
Assay (Iron oxide). ..... ≥50 %
DNA yield (20 µl beads). ..... >3 µg

1558.1	2 ml	plastic	119,90 €
1558.2	10 ml	plastic	495,50 €
1558.3	100 ml	plastic	4008,70 €

For further information, please see page 1273

MagSi-DNA COOH

MagSi-DNA COOH

magtivio 300 mg/ml, for molecular biology

NEW

Magnetic beads for nucleic acid isolation from various sources.

Magnetic beads

Storage temp.: +4 °C

Type analysis:

Concentration. ..... 300 ±15 mg/ml
Mean particle sizing. ..... 300 nm
DNA yield (20 µl beads). ..... >3 µg

1552.1	2 ml	plastic	119,90 €
1552.2	10 ml	plastic	495,50 €
1552.3	100 ml	plastic	4008,70 €

For further information, please see page 1273

MagSi-DNA saliva

MagSi-DNA saliva

magtivio for molecular biology

NEW

Magnetic beads for isolation of genomic DNA from saliva or buccal swabs.

Magnetic beads

Storage temp.: +4 °C

1648.1	96 prep.	cardboard	267,70 €
1648.2	960 prep.	cardboard	1983,40 €

For further information, please see page 1272

MagSi-DNA trial kit

MagSi-DNA trial kit

magtivio for molecular biology

NEW

Magnetic beads for nucleic acid isolation from various sources.

Magnetic beads

Storage temp.: +4 °C

Formulation:

2 ml each of MagSi-DNA, -DNA 600, -DNA allround, -DNA 3.0, DNA COOH, -DNA 600 COOH, -DNA allround COOH, and -DNA 3.0 COOH.

1560.1	1 kit	cardboard	183,75 €

For further information, please see page 1274

MagSi-DNA Vegetal

MagSi-DNA Vegetal

magtivio for molecular biology

NEW

Magnetic beads for nucleic acid isolation from plant tissue.

Magnetic beads

Storage temp.: +20 °C

1624.1	96 prep.	cardboard	260,05 €
1624.2	960 prep.	cardboard	1897,40 €

For further information, please see page 1271

MagSi-gDNA blood

MagSi-gDNA blood

magtivio for molecular biology

NEW

Magnetic beads for isolation of genomic DNA from whole blood.

Magnetic beads

Storage temp.: +4 °C

1630.1	96 prep.	cardboard	267,70 €
1630.2	960 prep.	cardboard	1983,40 €

For further information, please see page 1271

MagSi-STA 1.0

MagSi-STA 1.0

magtivio 10 mg/ ml, for protein biochemistry and molecular biology

NEW

Magnetic beads for capture or purification of biotinylated molecules.

Magnetic beads

Storage temp.: +4 °C

Type analysis:

Concentration. ..... 10±0,5 mg/ml
Mean particle sizing. ..... 0,95-1,05 µm
Bead number. ..... 6-12 x 10^{9} beads/ml
Assay (Iron oxide). ..... ≥50 %
Binding capacity (biotinylated fluorescein). ..... 3,5-5 nmol/mg

1561.2	10 ml	plastic	1589,95 €
1561.1	2 ml	plastic	439,70 €

For further information, please see page 1274

MagSi-STA 3.0 L

MagSi-STA 3.0 L

magtivio 10 mg/ ml, for protein biochemistry and molecular biology

NEW

Magnetic beads for capture or purification of biotinylated molecules.

Magnetic beads

Storage temp.: +4 °C

Type analysis:

Concentration. ..... 10±0,5 mg/ml
Mean particle sizing. ..... 2,4-3,6 µm
Bead number. ..... 1-3 x 10^{9} beads/ml
Assay (Iron oxide). ..... ≥55 %
Binding capacity (biotinylated fluorescein). ..... 0,7-1,2 nmol/mg

1563.1	2 ml	plastic	379,40 €
1563.2	10 ml	plastic	1396,45 €

For further information, please see page 1274

MagSi-STA 600

MagSi-STA 600

magtivio 10 mg/ ml, for protein biochemistry and molecular biology

NEW

Magnetic beads for capture or purification of biotinylated molecules.

Magnetic beads

Storage temp.: +4 °C

Type analysis:

Concentration. ..... 10±0,5 mg/ml
Mean particle sizing. ..... 530-600 nm
Bead number. ..... 8-20 x 10^{9} beads/ml
Assay (Iron oxide). ..... 35-45 %
Binding capacity (biotinylated fluorescein). 3,5-5 nmol/mg

1562.1	2 ml	plastic	484,75 €
1562.2	10 ml	plastic	1757,65 €

For further information, please see page 1274

MagSi-STA Trial kit

MagSi-STA Trial kit

magtivio for protein biochemistry and molecular biology

NEW

Magnetic beads for capture or purification of biotinylated molecules.

Magnetic beads

Storage temp.: +4 °C

Formulation:

1 ml M each of MagSi-STA 600, -STA 600 BI, -STA 1.0 L, -STA 1.0, -STA 1.0 TL, -STA 1.0 TS, -STA 3.0 L, -STA 3.0 TL.

1566.1	1 kit	cardboard	260,05 €

For further information, please see page 1274

MagSi-Wash Buffer III

MagSi-Wash Buffer III

NEW

magtivio for molecular biology

Solution for optimising DNA isolation using MagSi-DNA Kits.

For use with MagSi-gDNA blood-, -saliva- or -Vegetal kit.

Magnetic beads

Storage temp.: +4 °C

WGK 1

Type analysis:

pH value. 6,0-6,5

1649.1	80 ml	plastic	37,55 €
1649.2	800 ml	plastic	267,70 €

For further information, please see page 1272

Mairin

▶ Betulinic acid see p. 1836

Maize oil

Maize oil

Ph.Eur., refined

Oleum Maydis

D 0,92 • bp 321 °C

[8001-30-7] • EC No. 232-281-2

Guarantee analysis:

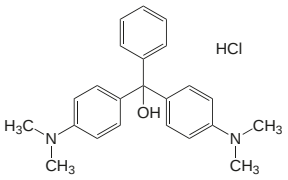
Relative density (20 °C). ..... ~0,920
Refractive index n_D^{20}. ..... ~1,474
Acid value. ..... ≤0,5 mg KOH/g
Peroxide value. ..... ≤10 meq O_2/kg
Water. ..... ≤0,1 %
Alkaline reacting substances. ..... complies
Unsaponifiable matter. ..... ≤2,8 %
Brassicasterol. ..... ≤0,3 %
GC-fatty acid constituents:
<C 16:0. ..... ≤0,6 %
C 16:0 Palmitic acid. ..... 8,6-16,5 %
C 18:0 Stearic acid. ..... ≤3,3 %
C 18:1 Oleic acid. ..... 20,0-42,2 %
C 18:2 Linoleic acid. ..... 39,4-65,6 %
C 18:3 Linolenic acid. ..... 0,5-1,5 %
C 20:0 Arachidic acid. ..... ≤0,8 %
C 20:1 Gadoleic acid. ..... ≤0,5 %
C 22:0 Behenic acid. ..... ≤0,5 %
Other fatty acids. ..... ≤0,5 %

6212.1	1 l	glass	36,45 €
Original pack 6 x 1 l			34,63/1 l
6212.2	2,5 l	glass	59,05 €
Original pack 4 x 2,5 l			56,10/2,5 l
6212.3	5 l	plastic	90,20 €
Original pack 2 x 5 l			85,69/5 l
6212.4	10 l	plastic	150,40 €

Malachite green G

▶ Brilliant green (C.I. 42040) see p. 1850

Malachite green hydrochloride



Malachite green hydrochloride

p.a.

Basic green 4

$C_{23}H_{26}N_2O \cdot HCl$

M 382,94 g/mol

[123333-61-9]

UN No. 2811 • ADR 6.1 III • WGK 3

Danger

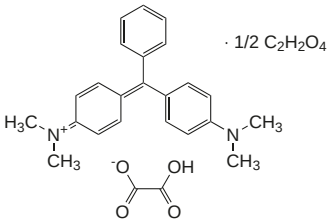
H301-H318-H361-H410

Type analysis:

Appearance. ..... green to brownish powder
Appearance of solution (0,1 % in H_2O). ... green to blue
Loss on drying. ..... ≤6 %

7710.1	5 g	glass	14,55 €
7710.2	25 g	glass	25,30 €
7710.3	100 g	glass	49,35 €

Malachite green oxalate (C.I. 42000)



Malachite green oxalate (C.I. 42000)

for microscopy

Indicator pH 0,0-2,0, for protein analysis.

Basic green 4

$C_{52}H_{54}N_4O_{12}$

M 927,02 g/mol

mp ~159 °C

Solubility: 110 g/l (H_2O, 24 °C)

[2437-29-8] • EC No. 219-441-7

UN No. 2811 • ADR 6.1 III • WGK 3

Danger

H301-H318-H361d-H410

Type analysis:

Dye content. ..... ≥90,0 %
Absorption max. (in H_2O). ..... ~614 nm
Suitability for microscopy. ..... complies

5895.2	25 g	glass	16,70 €
5895.1	100 g	glass	33,25 €
5895.3	250 g	glass	47,85 €

For further information, please see page 1523

Malate dehydrogenase (MDH)

Malate dehydrogenase (MDH)

≥1250 U/mg protein

From porcine heart, freeze-dried

MDH

Storage temp.: -20 °C

Transport temp.: room temp.

[9001-64-3] • EC No. 232-622-5

WGK 1

Type analysis:

Appearance. ..... white powder
Activity. ..... ≥1250 U/mg protein
Alanine aminotransferase (GPT). ..... <0,005 %
Lactate dehydrogenase (LDH). ..... <0,005 %
Aspartate aminotransferase (GOT). ..... <0,005 %

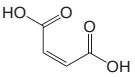
6062.1	0,05 MU	glass	146,75 €

For further information, please see page 1317

Maleate Standards

▶ Maleate IC Standard Solution see p. 2376

Maleic acid



cis-Butenedioic acid, Toxilic acid

$C_4H_4O_4$

M 116,07 g/mol

D 1,59 • bp 160 °C

mp 139-140 °C • flp 127 °C

Solubility: 788 g/l (H_2O, 20 °C)

[110-16-7] • EC No. 203-742-5

WGK 1

Warning

H302+H312-H315-H319-H317-H335

Maleic acid

≥99 %, Ph.Eur., BP

Guarantee analysis:

Assay (acidim., dry substance). ..... 99,0-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
In H_2O insoluble matter. ..... complies
Ash content (as SO_4). ..... ≤0,1 %
Fumaric acid. ..... complies
Water . ..... ≤1,5 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,0005 %

K304.1	500 g	plastic	37,55 €
Original pack 6 x 500 g			35,67/500 g
K304.2	1 kg	plastic	62,30 €
Original pack 6 x 1 kg			59,19/1 kg

Maleic acid

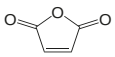
≥99 %, for synthesis

Type analysis:

Assay (acidim.) ≥99 %
Water ≤0,5 %
Heavy metals (as Pb) ≤0,05 %
Iron (Fe) ≤0,005 %
Sulphated ash ≤0,05 %

3538.2	100 g	plastic	17,75 €
3538.1	500 g	plastic	33,25 €
Original pack 6 x 500 g			31,59/500 g
3538.3	1 kg	plastic	53,65 €
Original pack 6 x 1 kg			50,97/1 kg
3538.4	2,5 kg	plastic	106,35 €
3538.5	5 kg	plastic	171,50 €

Maleic anhydride



Maleic anhydride

≥99,5 %, for synthesis

2,5-Furandione, cis-Butenedioic anhydride, Maleic acid anhydride
$C_4H_2O_3$
M 98,06 g/mol
D 1,59 • bp 202 °C
mp 51-54° C • flp 103 °C
Solubility: 550 g/l (H_2O, 20 °C)
[108-31-6] • EC No. 203-571-6
UN No. 2215 • ADR 8 III • WGK 1

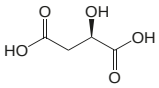
Danger H302-H314-H317-H334

Type analysis:

Appearance white pastilles
Assay (titr.) ≥99,5 %
Melting point 51-54 °C
Maleic acid ≤0,5 %

0975.1	250 g	glass	14,55 €
0975.2	1 kg	glass	28,95 €
Original pack 6 x 1 kg			27,50/1 kg

D(+)-Malic acid



D(+)-Malic acid

≥99 %, for biochemistry

R(+)-2-Hydroxysuccinic acid, D(+)-Hydroxybutanedioic acid
$C_4H_6O_5$
M 134,09 g/mol
mp 101-104 °C
[636-61-3] • EC No. 211-262-2 • WGK 1

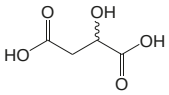
Warning H319

Type analysis:

Assay ≥99,0 %
Melting point 101-104 °C

8633.1	1 g	plastic	40,75 €
8633.2	5 g	plastic	170,95 €

DL-Malic acid



DL-Malic acid

≥99 %, for biochemistry

(±)-2-Hydroxysuccinic acid
$C_4H_6O_5$
M 134,09 g/mol
D 1,60
mp ~130 °C • flp 200 °C
Solubility: ~550 g/l (H_2O, 20 °C)
[6915-15-7] • EC No. 230-022-8
WGK 1

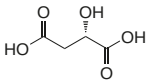
Warning H319

Type analysis:

Assay ≥99,0 %
In H_2O insoluble matter ≤0,1 %
Arsenic (As) ≤0,0002 %
Mercury (Hg) ≤0,0001 %
Heavy metals (as Pb) ≤0,001 %
Fumaric acid ≤1,0 %
Maleic acid ≤0,05 %
Melting point 127-132 °C

3034.1	250 g	plastic	14,85 €
3034.2	1 kg	plastic	33,25 €
Original pack 6 x 1 kg			31,59/1 kg

L(-)-Malic acid



L(-)-Malic acid

≥99 %, for biochemistry

S(-)-2-Hydroxysuccinic acid
$C_4H_6O_5$
M 134,09 g/mol
mp ~103 °C
Solubility: ~160 g/l (H_2O, 20 °C)
[97-67-6] • EC No. 202-601-5
WGK 1

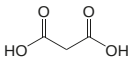
Warning H319

Type analysis:

Appearance white powder
Assay (titr.) ≥99 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in pyridine) -27° to -31°
Melting point 102-106 °C
Heavy metals (as Pb) ≤0,001 %

8684.1	10 g	plastic	23,15 €
8684.2	50 g	plastic	66,15 €

Malonic acid



Malonic acid

≥99 %, for synthesis

Methanedicarboxylic acid, Propanedioic acid
$C_3H_4O_4$
M 104,06 g/mol
D 1,60
mp 133-136 °C • flp 172 °C
Solubility: 1390 g/l (H_2O, 20 °C)
[141-82-2] • EC No. 205-503-0
WGK 1

Danger H302-H318

Type analysis:

Assay ≥99,0 %
Melting point 133-136 °C
Chloride (Cl) ≤0,05 %
Sulphate (SO_4) ≤0,05 %
Heavy metals ≤0,005 %
Loss on drying ≤0,5 %

9851.1	100 g	glass	16,05 €
9851.2	500 g	glass	57,95 €
Original pack 6 x 500 g			55,05/500 g
9851.3	1 kg	glass	103,10 €
Original pack 6 x 1 kg			97,95/1 kg

Malt extract

Storage temp.: +20 °C
[8002-48-0]

Malt extract, standard

powdered, for culture media

Type analysis:

Colour beige
Loss on drying ≤6,0 %
Reducing sugar ≥60,0 %
Ash ≤4,5 %
pH value (3 % aqueous solution) 4,8-5,8

X976.1	500 g	plastic	36,45 €
Original pack 6 x 500 g			34,63/500 g
X976.2	1 kg	plastic	63,35 €
Original pack 6 x 1 kg			60,18/1 kg

For further information, please see page 1492

Malt extract, bacteriological

powdered, for microbiology

Additive to malt containing culture media and agars.

Type analysis:

Colour beige
Loss on drying ≤6 %
Maltose ~70 %
Total nitrogen (TN) ~1,3 %
Amino nitrogen ~0,4 %
Sulphated ash ≤3 %
pH value (1,5 % sol.) 4,5-5,5

AE68.1	500 g	plastic	60,10 €
Original pack 6 x 500 g			57,10/500 g

For further information, please see page 1492

Malt Extract Agar

Malt Extract Agar

for microbiology

For cultivation of fungi and yeasts.
Application: Use 33,6 g for 1 l agar.
Storage temp.: +20 °C

Formulation:

Malt extract. ..... 12,75 g/l
Gelatine peptone. ..... 0,78 g/l
Glycerol. ..... 2,35 g/l
Dextrine. ..... 2,75 g/l
Agar. ..... 15 g/l
pH value. ..... 4,7 ±0,2

X923.1	500 g	plastic	84,40 €
Original pack 6 x 500 g			80,18/500 g
X923.2	1 kg	plastic	150,00 €
Original pack 6 x 1 kg			142,50/1 kg

For further information, please see page 1450

Malt Extract Broth

Malt Extract Broth

for microbiology

For isolation and enumeration of yeasts and moulds, as well as for sterility testing.
Application: Use 19 g for 1 l broth.
Storage temp.: +20 °C

Formulation:

Malt extract. ..... 13,0 g/l
Gelatine peptone. ..... 5,5 g/l
Yeast extract. ..... 0,5 g/l
pH value. ..... 4,7 ±0,2

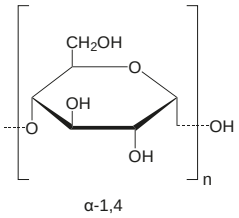
CP75.1	500 g	plastic	90,85 €
Original pack 6 x 500 g			86,31/500 g

For further information, please see page 1450

Maltobiose

▶ D(+)-Maltose monohydrate see p. 2118

Maltodextrin 4,0-7,0



NEW

Maltodextrin 4,0-7,0

for biochemistry

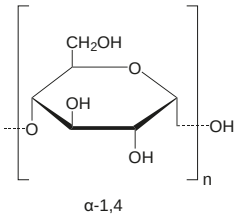
$(C_6H_{10}O_5)_n$
mp 240 °C
[9050-36-6] • EC No. 232-940-4 • WGK 1

Type analysis:

Appearance. ..... white powder
Dextrose equivalent. 4,0-7,0

2260.1	25 g	plastic	16,05 €
2260.2	100 g	plastic	38,60 €
2260.3	250 g	plastic	73,00 €

Maltodextrin 16,5-19,5



NEW

Maltodextrin 16,5-19,5

for biochemistry

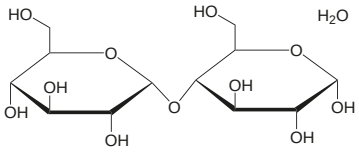
$(C_6H_{10}O_5)_n$
mp 240 °C
[9050-36-6] • EC No. 232-940-4
WGK 1

Type analysis:

Appearance. ..... white powder
Dextrose equivalent. 16,5-19,5

2270.1	25 g	plastic	14,95 €
2270.2	100 g	plastic	32,15 €
2270.3	250 g	plastic	107,40 €

D(+)-Maltose monohydrate



Maltobiose
$C_{12}H_{22}O_{11} \cdot H_2O$
M 360,32 g/mol
mp ~120 °C (dec.)
Solubility: 1080 g/l (H_2O, 20 °C)
[6363-53-7] • EC No. 200-716-5
WGK 1

D(+)-Maltose monohydrate

CELLPURE® ≥97 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤1,0 E.U./g
Appearance. ..... white powder
Assay. ..... ≥97,0 %
pH value (10 % in H_2O). 4,0-5,5
Water (KF). ..... 4,5-6,5 %
Residue on ignition. ..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,0005 %
Ethanol. ..... ≤0,1 %
Methanol. ..... ≤0,05 %

8882.1	25 g	plastic	24,20 €
8882.2	100 g	plastic	54,30 €
8882.3	250 g	plastic	91,30 €
8882.4	500 g	plastic	160,75 €
Original pack 6 x 500 g			152,71/500 g

D(+)-Maltose monohydrate

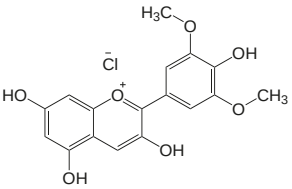
≥92 %, for biochemistry

Type analysis:

Assay (HPLC, dry substance). ..... ≥92 %
pH value (30 % in water). 4,0-5,5
Heavy metals (as Pb). ..... ≤0,001 %
Loss on drying (120 °C). ..... ≤7,0 %
Sulphated ash. ..... ≤0,1 %

8951.1	100 g	plastic	22,05 €
8951.2	250 g	plastic	37,55 €
8951.3	500 g	plastic	67,65 €
Original pack 6 x 500 g			64,27/500 g
8951.4	1 kg	plastic	101,60 €
Original pack 6 x 1 kg			96,52/1 kg

Malvidin chloride



Malvidin chloride

ROTICHROM® HPLC

Reference substance for HPLC.
From *Malva silvestris*
$C_{17}H_{15}ClO_7$
M 366,75 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[643-84-5] • EC No. 211-403-8

Type analysis:

Purity (HPLC). ..... ≥97 %

6140.1	10 mg	glass	321,45 €

Malvidin-3,5-diglucoside chloride

▶ Malvin chloride see p. 2119

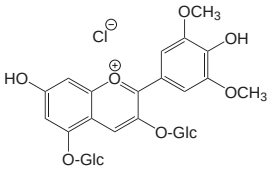
Malvidin 3-galactoside chloride

▶ Primulin chloride see p. 2237

Malvidin 3-glucoside chloride

▶ Oenin chloride see p. 2173

Malvin chloride



Malvin chloride

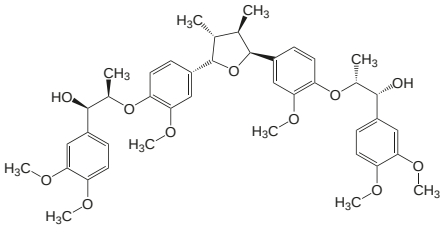
ROTICHROM® HPLC

Reference substance for HPLC.
Malvidin 3,5-diglucoside chloride
$C_{29}H_{35}O_{17}Cl$
M 691,04 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[16727-30-3]

Type analysis:
Purity (HPLC).....≥95 %

K013.1	10 mg	glass	256,95 €

Manassantin A



Manassantin A

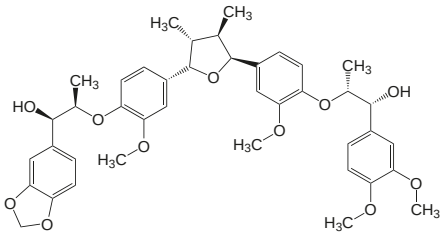
ROTICHROM® HPLC

Reference substance for HPLC.
From *Saururus chinensis.*
$C_{42}H_{52}O_{11}$
M 732,34 g/mol
Storage temp.: +4 °C
[88497-87-4]
WGK 3

Type analysis:
Purity (HPLC).....≥98 %

6497.1	10 mg	glass	413,90 €

Manassantin B



Manassantin B

ROTICHROM® HPLC

Reference substance for HPLC.
From *Saururus chinensis.*
$C_{41}H_{48}O_{11}$
M 716,30 g/mol
Storage temp.: +4 °C
[88497-88-5]
WGK 3

Type analysis:
Purity (HPLC). ..... ≥98 %

6684.1	10 mg	glass	364,45 €

Manchester yellow

▶ Martius yellow (C.I. 10315) see p. 2123

Manganese flakes

Manganese flakes

ROTI®METIC 99,98 % (3N8)

Mn
M 54,94 g/mol
D 7,3 • bp 2097 °C
mp 1246 °C
[7439-96-5] • EC No. 231-105-1

Type analysis:
Assay (metals basis). ..... 99,98 %
Thickness.....<1,5 mm
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

4509.1	25 g	plastic	91,30 €
4509.2	50 g	plastic	133,20 €

Manganese Standards

▶ Manganese AAS Standard Solution see p. 2359
▶ Manganese ICP Standard Solution see p. 2363
▶ Manganese ICP Standard Solution see p. 2368

Manganese dioxide

▶ Manganese(IV) oxide see p. 2120

Manganese(II) acetate tetrahydrate

$Mn(CH_3COO)_2 \cdot 4\ H_2O$
M 245,08 g/mol
D 1,59
mp 80 °C
[6156-78-1] • EC No. 211-334-3 • WGK 1
Warning H315-H319-H335

Manganese(II) acetate tetrahydrate

ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis).....99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5641.1	5 g	plastic	56,90 €
5641.2	25 g	plastic	157,50 €

Manganese(II) acetate tetrahydrate

≥99 %, pure

Type analysis:
Assay.....≥99,0 %
pH value (5 % solution).....6,0-8,0
Chloride (Cl).....≤0,002 %
Sulphate (SO_4).....≤0,01 %
Lead (Pb).....≤0,001 %
Iron (Fe).....≤0,001 %
Zinc (Zn).....≤0,001 %

0277.1	500 g	plastic	21,40 €
Original pack 6 x 500 g			20,33/500 g
0277.2	1 kg	plastic	36,45 €
Original pack 6 x 1 kg			34,63/1 kg
0277.3	2,5 kg	plastic	75,15 €
0277.7	25 kg	plastic	579,45 €

Manganese(II) carbonate

Manganese(II) carbonate

≥44 % Mn, p.a.

$MnCO_3$
M 114,95 g/mol
D 3,12 • mp 730 °C (dec.)
Solubility: 0,06 g/l (H_2O, 25 °C)
[598-62-9] • EC No. 209-942-9 • WGK 1

Guarantee analysis:
Assay (Mn).....≥44 %
Chloride (Cl).....≤0,005 %
Sulphate (SO_4).....≤0,5 %
Manganese dioxide (MnO_2).....≤0,5 %
Aluminium (Al).....≤0,005 %
Arsenic (As).....≤0,001 %
Lead (Pb).....≤0,001 %
Cadmium (Cd).....≤0,001 %
Water.....≤2,5 %
Particle size:
<75 µm.....≥90 %

9927.1	250 g	plastic	21,40 €
9927.2	500 g	plastic	34,30 €
Original pack 6 x 500 g			32,59/500 g
9927.3	1 kg	plastic	56,90 €
Original pack 6 x 1 kg			54,06/1 kg
9927.4	2,5 kg	plastic	116,00 €

Manganese(II) chloride monohydrate

Manganese(II) chloride monohydrate

≥99 %, p.a

$MnCl_2 \cdot H_2O$

M 143,86 g/mol

[64333-01-3] • EC No. 231-869-6 • WGK 2

Warning H302

Guarantee analysis:

Assay	≥99,0 %
Insoluble matter	≤0,005 %
pH value	4,5-6,0
Water	12,5-13,5 %
Sulphate (SO_4)	≤0,05 %
Barium (Ba)	≤0,05 %
Lead (Pb)	≤0,001 %
Calcium (Ca)	≤0,025 %
Cadmium (Cd)	≤0,0005 %
Chromium (Cr)	≤0,00005 %
Iron (Fe)	≤0,001 %
Magnesium (Mg)	≤0,01 %
Nickel (Ni)	≤0,035 %
Mercury (Hg)	≤0,000001 %
Zinc (Zn)	≤0,02 %

4320.1	100 g	plastic	14,55 €
4320.2	500 g	plastic	29,60 €
Original pack 6 x 500 g			28,12/500 g
4320.3	1 kg	plastic	47,20 €
Original pack 6 x 1 kg			44,84/1 kg
4320.4	2,5 kg	plastic	93,45 €

Manganese(II) chloride tetrahydrate

$MnCl_2 \cdot 4\ H_2O$

M 197,91 g/mol

D 2,01

mp 58 °C

Solubility: 1980 g/l (H_2O, 20 °C)

[13446-34-9] • EC No. 231-869-6

UN No. 3077 • ADR 9 III • WGK 1

Warning H302-H411

Manganese(II) chloride tetrahydrate

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis)	99,995 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5304.1	25 g	plastic	114,50 €
5304.2	100 g	plastic	342,95 €

Manganese(II) chloride tetrahydrate

≥99 %, p.a.

Analytical reagent

Guarantee analysis:

Assay (compl.)	≥99,0 %
pH value (5 % in H_2O)	4,0-6,0
In H_2O insoluble matter	≤0,005 %
Sulphate (SO_4)	≤0,02 %
Lead (Pb)	≤0,0005 %
Calcium (Ca)	≤0,001 %
Copper (Cu)	≤0,0005 %
Iron (Fe)	≤0,0005 %
Potassium (K)	≤0,001 %
Magnesium (Mg)	≤0,005 %
Sodium (Na)	≤0,005 %
Nickel (Ni)	≤0,0005 %
Heavy metals (as Pb)	≤0,0005 %
Zinc (Zn)	≤0,001 %
$KMnO_4$ reducing substances (as O)	≤0,0005 %

T881.3	100 g	plastic	16,70 €
T881.1	500 g	plastic	39,70 €
Original pack 6 x 500 g			37,72/500 g
T881.2	1 kg	plastic	63,35 €
Original pack 6 x 1 kg			60,18/1 kg

Manganese(II) chloride tetrahydrate

≥98 %, extra pure

Type analysis:

Assay	≥98,0 %
In H_2O insoluble matter	≤0,01 %
Sulphate (SO_4)	≤0,01 %
Iron (Fe)	≤0,005 %
Heavy metals (as Pb)	≤0,005 %

0276.1	500 g	plastic	23,15 €
Original pack 6 x 500 g			21,99/500 g
0276.2	1 kg	plastic	36,45 €
Original pack 6 x 1 kg			34,63/1 kg
0276.3	2,5 kg	plastic	78,40 €

Manganese dioxide

▶ Manganese(IV) oxide see p. 2120

Manganese EDTA disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid manganese disodium salt dihydrate see p. 1982

Manganese(II) nitrate hydrate

Manganese(II) nitrate hydrate

ROTI®METIC 99,995 % (4N5)

$Mn(NO_3)_2 \cdot x\ H_2O$

M 178,95 + x H_2O g/mol

Solubility: 1610 g/l (H_2O, 20 °C)

[15710-66-4]

UN No. 2724 • ADR 5.1 III • WGK 1

Danger H272-H315-H319-H335

Type analysis:

Assay (metals basis)	99,995 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5392.1	10 g	plastic	99,45 €
5392.2	25 g	plastic	209,65 €

Manganese(II) nitrate tetrahydrate

Manganese(II) nitrate tetrahydrate

≥98 %, p.a.

For preparation of manganese oxides.

$Mn(NO_3)_2 \cdot 4\ H_2O$

M 251,01 g/mol

D 1,82 • bp 129 °C

mp 37 °C

Solubility: ~3800 g/l (H_2O, 20 °C)

[20694-39-7] • EC No. 233-828-8

UN No. 2724 • ADR 5.1 III • WGK 1

Danger H272

Guarantee analysis:

Assay (compl.)	≥98 %
In H_2O insoluble matter	≤0,005 %
Chloride (Cl)	≤0,005 %
Sulphate (SO_4)	≤0,005 %
Ammonium (NH_4)	≤0,05 %
Calcium (Ca)	≤0,005 %
Cadmium (Cd)	≤0,0005 %
Copper (Cu)	≤0,0005 %
Iron (Fe)	≤0,001 %
Potassium (K)	≤0,01 %
Magnesium (Mg)	≤0,005 %
Sodium (Na)	≤0,05 %
Nickel (Ni)	≤0,002 %
Lead (Pb)	≤0,001 %
Zinc (Zn)	≤0,005 %

HN26.1	250 g	plastic	24,20 €
HN26.2	500 g	plastic	39,70 €
Original pack 6 x 500 g			37,72/500 g
HN26.3	1 kg	plastic	70,45 €
Original pack 6 x 1 kg			66,93/1 kg
HN26.4	2,5 kg	plastic	150,00 €

Manganese(IV) oxide

Manganese dioxide

MnO_2

M 86,94 g/mol

D 5,08

mp 535 °C (dec.)

[1313-13-9] • EC No. 215-202-6

WGK 1

Warning H302+H332-H373

Manganese(IV) oxide

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis)	99,995 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5383.1	5 g	plastic	45,05 €
5383.2	25 g	plastic	155,90 €

Manganese(IV) oxide

≥98 %, extra pure

Type analysis:

Assay (compl.)..... ≥98,0 %
Sulphate (SO_4)..... ≤0,5 %
Iron (Fe)..... ≤0,5 %
Heavy metals (as Pb)..... ≤0,005 %

7751.1	100 g	glass	20,35 €
7751.2	250 g	glass	37,55 €
7751.3	1 kg	glass	95,60 €
Original pack 6 x 1 kg			90,82/1 kg
7751.4	2,5 kg	glass	209,65 €

Manganese(IV) oxide

>90 %, precipitated, active

Type analysis:

Assay (iodom., dry substance)..... >90 %
Oxidation activity..... complies

4486.1	250 g	glass	32,80 €

Manganese(II) sulphate monohydrate

$MnSO_4 \cdot H_2O$
M 169,02 g/mol
D 2,95
Solubility: 762 g/l (H_2O, 20 °C)
[10034-96-5] • EC No. 232-089-9
UN No. 3077 • ADR 9 III • WGK 1
Danger H318-H373-H411

Manganese(II) sulphate monohydrate

≥99 %, p.a., ACS

Guarantee analysis:

Assay (compl.)..... ≥99 %
In H_2O insoluble matter..... ≤0,005 %
Loss on ignition..... 10,0-12,0 %
Chloride (Cl)..... ≤0,005 %
Heavy metals (as Pb)..... ≤0,002 %
Calcium (Ca)..... ≤0,005 %
Iron (Fe)..... ≤0,002 %
Potassium (K)..... ≤0,01 %
Magnesium (Mg)..... ≤0,005 %
Copper (Cu)..... ≤0,0005 %
Sodium (Na)..... ≤0,05 %
Nickel (Ni)..... ≤0,02 %
Lead (Pb)..... ≤0,001 %
Zinc (Zn)..... ≤0,005 %
$KMnO_4$ reducing substances (as O)..... ≤0,0005 %

4487.1	250 g	plastic	32,15 €
4487.2	500 g	plastic	56,90 €
Original pack 6 x 500 g			54,06/500 g

Manganese(II) sulphate monohydrate

≥99 %, Ph.Eur.

Guarantee analysis:

Appearance..... light pink cryst. powder
Assay (based on calcinated substance)..... 99,0-101,0 %
Identity..... complies
Appearance of solution..... complies
Chloride (Cl)..... ≤0,01 %
Iron (Fe)..... ≤0,001 %
Zinc (Zn)..... ≤0,005 %
Loss on ignition (500 °C)..... 10,0-12,0 %

X890.1	500 g	plastic	62,25 €
Original pack 6 x 500 g			59,14/500 g
X890.2	1 kg	plastic	111,70 €
Original pack 6 x 1 kg			106,12/1 kg
X890.3	2,5 kg	plastic	246,20 €

Manganese(II) sulphate monohydrate

≥97 %, extra pure

Type analysis:

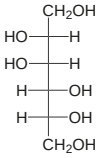
Assay..... ≥97,0 %
Arsenic (As)..... ≤0,0005 %
Cadmium (Cd)..... ≤0,002 %
Mercury (Hg)..... ≤0,0001 %
Lead (Pb)..... ≤0,002 %

7347.1	100 g	plastic	12,80 €
7347.2	500 g	plastic	23,15 €
Original pack 6 x 500 g			21,99/500 g
7347.3	1 kg	plastic	34,30 €
Original pack 6 x 1 kg			32,59/1 kg
7347.4	2,5 kg	plastic	74,10 €

ManNAc

▶ N-Acetyl-D-mannosamine see p. 1767

D(-)-Mannitol



D-Mannitol
$C_6H_{14}O_6$
M 182,18 g/mol
mp 165-170 °C
Solubility: ~213 g/l (H_2O, 20 °C)
[69-65-8] • EC No. 200-711-8
WGK 1

D(-)-Mannitol

CELLPURE® ≥97 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins..... ≤2,5 E.U./g
Appearance..... white to off-white, cryst. powder
Assay..... 97,0-102,0 %
Loss on drying (4 h, 105 °C)..... ≤0,5 %
Melting point..... 165-170 °C
Conductivity..... ≤20 µS/cm
Heavy metals..... ≤0,0005 %
Methanol..... ≤0,01 %
Nickel (Ni)..... ≤0,0001 %
Arsenic (As)..... ≤0,000015 %

8883.1	100 g	plastic	25,70 €
8883.3	250 g	plastic	52,15 €
8883.2	500 g	plastic	92,35 €
Original pack 6 x 500 g			87,73/500 g

D(-)-Mannitol

≥98 %, Ph.Eur., USP, BP, for biochemistry

For biochemistry.

Guarantee analysis:

Appearance..... white, fine powder
Assay (HPLC, dry substance)..... 98,0-101,0 %
Identity..... complies
Appearance of solution (10 %, H_2O)..... complies
Lead (Pb)..... ≤0,00005 %
Nickel (Ni)..... ≤0,0001 %
Heavy metals (as Pb)..... ≤0,0005 %
Sulphated ash..... ≤0,1 %
Reducing sugar..... ≤0,1 %
Related substances..... ≤2,0 %
Loss on drying (105 °C)..... ≤0,3 %
Melting range..... 165-169 °C
Conductivity..... ≤20 µS/cm
Water..... ≤0,5 %
Microbiological assay..... complies

4175.1	1 kg	plastic	71,50 €
Original pack 6 x 1 kg			67,93/1 kg
4175.2	5 kg	plastic	279,00 €

D-Mannitol

▶ D(-)-Mannitol see p. 2121

Mannitol Egg Yolk Polymyxin Agar (Base)

Mannitol Egg Yolk Polymyxin Agar (Base)

for microbiology

For enumeration and isolation of *Bacillus cereus* in food, acc. to Mossel.

Application: Use 43 g for 1 l agar. After cooling add 100 ml Egg Yolk Emulsion (Art. No. 0402.1) and 2 vials (2x5 ml) reconstituted Bacillus cereus Supplement (Art. No. 4856.1).

Bacillus cereus Selective Agar, **MYP Agar**

Storage temp.: +20 °C
WGK 1

Formulation:

Meat peptone..... 10 g/l
Sodium chloride..... 10 g/l
D-Mannitol..... 10 g/l
Beef extract..... 1 g/l
Phenol red..... 0,025 g/l
Agar..... 12 g/l
pH value..... 7,1 ±0,2

5765.1	500 g	plastic	100,55 €
Original pack 6 x 500 g			95,52/500 g

For further information, please see page 1451

Mannitol Salt Agar

Mannitol Salt Agar

Ph.Eur., for microbiology

For isolation of pathogenic *Staphylococci*.

Application: Use 111 g for 1 l agar. Optional: Add egg yolk emulsion (Art. No. 0402.1) to 5 % final concentration.

Chapman Agar, Mannitol Salt Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

Pancreatic digest of casein. ..... 5 g/l
Peptone (peptic digest of animal tissue). ..... 5 g/l
Beef extract. ..... 1 g/l
Sodium chloride. ..... 75 g/l
D-Mannitol. ..... 10 g/l
Phenol red. ..... 0,025 g/l
Agar. ..... 15 g/l
pH value. ..... 7,4 ±0,2

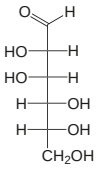
CL81.1	500 g	plastic	65,05 €
Original pack 6 x 500 g			61,80/500 g

For further information, please see page 1451

L-Mannomethylose

▶ L(+)-Rhamnose monohydrate see p. 2257

D(+)-Mannose



$C_6H_{12}O_6$
M 180,16 g/mol
mp 125-129 °C
[3458-28-4] • EC No. 222-392-4
WGK 1

D(+)-Mannose

CELLPURE® ≥98 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤10 E.U./g
Appearance. ..... white to off-white, cryst. powder
Assay. ..... ≥98,0 %
Loss on drying. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... +13,5° to +14,9°
Residue on ignition. ..... ≤0,1 %
Chloride (Cl). ..... ≤0,05 %
Sulphate (SO_4). ..... ≤0,05 %
Ethanol. ..... ≤0,5 %
Methanol. ..... ≤0,5 %

8887.1	10 g	plastic	28,95 €
8887.2	25 g	plastic	56,90 €
8887.3	50 g	plastic	99,90 €
8887.4	100 g	plastic	181,70 €

D(+)-Mannose

≥99,5 %, for biochemistry

Type analysis:

Appearance. ..... white to whitish powder
Assay (HPLC). ..... ≥99,5 %
Specific rotation $[\alpha]_D^{20}$ (1 % in H_2O, 24 h). ..... +13° to +15°
Water (KF). ..... ≤1,0 %
Melting point. ..... 125-129 °C

4220.1	10 g	plastic	21,40 €
4220.2	50 g	plastic	52,15 €

Marble

Marble

pieces, ca. 12-16 mm

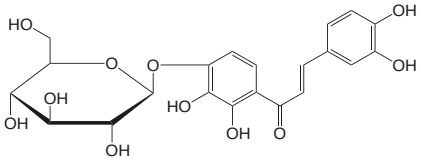
$CaCO_3$
M 100,09 g/mol
[471-34-1] • EC No. 207-439-9

Type analysis:

Appearance. ..... coarse, white pieces
Granulation. ..... ~12-16 mm

7098.1	2,5 kg	plastic	18,85 €

Marein



Marein

ROTICHROM® HPLC

Reference substance for HPLC.
Okanin-4'-glucoside
$C_{21}H_{22}O_{11}$
M 450,40 g/mol
mp 130-132 °C
Storage temp.: +4 °C
[535-96-6]

Type analysis:

Purity (HPLC). ..... ≥99 %

4171.1	5 mg	glass	289,20 €

Marine Broth

Marine Broth

for microbiology

For enumeration and isolation of heterotropic marine bacteria.

Application: Use 40,1 g for 1 l broth. May be slightly opalescent and may present a light precipitation.

Storage temp.: +20 °C

WGK 1

Formulation:

Sodium chloride (NaCl). ..... 19,4 g/l
Magnesium chloride. ..... 8,8 g/l
Peptone. ..... 5 g/l
Sodium sulphate (Na_2SO_4). ..... 3,24 g/l
Calcium chloride. ..... 1,8 g/l
Yeast extract. ..... 1 g/l
Potassium chloride (KCl). ..... 0,55 g/l
Sodium bicarbonate. ..... 0,16 g/l
Ferric citrate. ..... 0,1 g/l
Potassium bromide. ..... 0,08 g/l
Strontium chloride. ..... 0,034 g/l
Boric acid. ..... 0,022 g/l
Sodium silicate. ..... 0,004 g/l
Sodium fluoride. ..... 0,0024 g/l
Ammonium nitrate. ..... 0,0016 g/l
Disodium phosphate. ..... 0,008 g/l
pH value. ..... 7,6 ±0,2

CP73.1	500 g	plastic	94,10 €
Original pack 6 x 500 g			89,40/500 g

For further information, please see page 1451

Maritimein

Maritimein

ROTICHROM® HPLC

Reference substance for HPLC.
$C_{21}H_{20}O_{11}$
M 448,39 g/mol
mp 208-214 °C
Storage temp.: +4 °C
[490-54-0] • EC No. 207-712-2
WGK 1

Type analysis:

Purity (HPLC). ..... ≥98 %

4172.1	5 mg	plastic	413,90 €

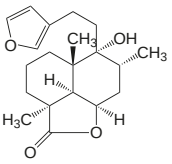
Markers (DNA-gels)

▶ DNA-Marker, not prestained see p. 1956

Markers (protein gels)

▶ Roti®-Mark, prestained see p. 2288

Marrubiin



Marrubiin

ROTICHROM® HPLC

$C_{20}H_{28}O_4$
M 332,42 g/mol
Storage temp.: +4 °C
[465-92-9]
WGK 1

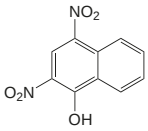
Warning H302

Type analysis:

Purity (HPLC). ..... ≥98 %

3448.2	10 mg	glass	306,40 €

Martius yellow (C.I. 10315)



Martius yellow (C.I. 10315)

extra pure

Indicator pH 2,0-3,2

Manchester yellow, Saffron yellow, 2,4-Dinitro-1-naphthol

$C_{10}H_5N_2O_5$

M 234,17 g/mol

mp 138 °C

[605-69-6]

WGK 1

Warning H315-H319-H335

Type analysis:

Appearance. ..... yellow to orange powder
Appearance of solution (0,1 % in MeOH)..... clear, yellow
Loss on drying (1 h, 110 °C). ..... ≤8,0 %

7713.1	5 g	glass	19,25 €
7713.2	25 g	glass	36,45 €
7713.3	100 g	glass	87,00 €

Masson-Goldner's trichrome staining kit

Masson-Goldner's trichrome staining kit

for microscopy

Staining kit for visualising connective tissue (Masson-Goldner trichrome staining), incl. instructions for use.

Storage temp.: +20 °C

UN No. 1219 • ADR 3 II • WGK 1

Danger H225-H315-H318-H336

Formulation:

Hematoxylin solution A acc. to Weigert (Art. No. X906)..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907)..... 500 ml
Goldner's stain I (Art. No. 3469)..... 500 ml
Goldner's stain II (Art. No. 3470)..... 500 ml
Goldner's stain III (Art. No. 3473)..... 500 ml

3459.1	1 kit	glass	162,25 €

For further information, please see page 1514

Master mix Taq DNA polymerase, recombinant

- Roti®-Pol Hot-TaqS Mix (2x) see p. 2294
- Roti®-Pol Hot-TaqS Red-Mix (2x) see p. 2294
- Roti®-Pol TaqS Mix (2x) see p. 2295
- Roti®-Pol TaqS Red-Mix (2x) see p. 2295

Matrix modifier solution Ammonium dihydrogen phosphate

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Ammonium dihydrogen phosphate matrix modifier solution

20 g/l $NH_4H_2PO_4$ (99,999 %) in 1 % HNO_3

For graphite furnace AAS

Type analysis:

c ($NH_4H_2PO_4$) in 1 % HNO_3. .....20 g/l ±1 %

5150.1	50 ml	plastic	68,70 €

Ammonium dihydrogen phosphate matrix modifier solution

100 g/l $NH_4H_2PO_4$ (99,999 %) in 1 % HNO_3

For graphite furnace AAS

Type analysis:

c ($NH_4H_2PO_4$) in 1 % HNO_3. .....100 g/l ±1 %

5148.1	50 ml	plastic	130,65 €

Matrix modifier solution Ammonium nitrate

Ammonium nitrate matrix modifier solution

50 g/l NH_4NO_3 (99,999 %) in H_2O

For graphite furnace AAS

WGK 1

Type analysis:

c (NH_4NO_3) in H_2O. .....50 g/l ±1 %

5145.1	50 ml	plastic	124,60 €

Matrix modifier solution Magnesium nitrate

Magnesium nitrate matrix modifier solution

10 g/l $Mg(NO_3)_2$ (99,999 %) in H_2O

For graphite furnace AAS

Type analysis:

c ($Mg(NO_3)_2$) in H_2O. .....10 g/l ±1 %

5140.1	50 ml	plastic	75,15 €

Magnesium nitrate matrix modifier solution

20 g/l $Mg(NO_3)_2$ (99,999 %) in H_2O

For graphite furnace AAS

Type analysis:

c ($Mg(NO_3)_2$) in H_2O. .....20 g/l ±1 %

5142.1	50 ml	plastic	122,45 €

Matrix modifier solution Nickel nitrate

Nickel nitrate matrix modifier solution

10 g/l $Ni(NO_3)_2$ (99,999 %) in 1 % HNO_3

UN No. 3264 • ADR 8 III • WGK 2

Danger H290-H315-H317-H319-H334-H341-H350i-H360D-H372-H412

Type analysis:

c ($Ni(NO_3)_2$) in 1 % HNO_3..... 10 g/l ±1 %

5146.1	50 ml	plastic	75,15 €

Matrix modifier solution Palladium nitrate & Magnesium nitrate

Palladium nitrate & Magnesium nitrate matrix modifier solution

2 g/l $Pd(NO_3)_2$ (99,999 %) and 10 g/l $Mg(NO_3)_2$ (99,999 %) in 1 % HNO_3

For graphite furnace AAS

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c ($Pd(NO_3)_2$) in 1 % HNO_3..... 2 g/l ±1 %
c ($Mg(NO_3)_2$) in 1 % HNO_3..... 10 g/l ±1 %

5139.1	50 ml	plastic	168,25 €

Matrix modifier solution Palladium nitrate

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Palladium nitrate matrix modifier solution

2 g/l $Pd(NO_3)_2$ (99,999 %) in 1 % HNO_3

For graphite furnace AAS

Type analysis:

c ($Pd(NO_3)_2$) in 1 % HNO_3..... 2 g/l ±1 %

5143.1	50 ml	plastic	124,20 €

Palladium nitrate matrix modifier solution

5 g/l $Pd(NO_3)_2$ (99,999 %) in 1 % HNO_3

For graphite furnace AAS

Type analysis:

c ($Pd(NO_3)_2$) in 1 % HNO_3..... 5 g/l ±1 %

5144.1	50 ml	plastic	168,25 €

Palladium nitrate matrix modifier solution

10 g/l $Pd(NO_3)_2$ (99,999 %) in 1 % HNO_3

For graphite furnace AAS

Type analysis:

c ($Pd(NO_3)_2$) in 1 % HNO_3. ..... 10 g/l ±1 %

4842.1	50 ml	plastic	278,45 €

Maximum Recovery Solution

Maximum Recovery Solution

DIN 10162, LMBG, DIN EN ISO 6887-1, for microbiology

For homogenization and dilution of microbiological samples.

Application: Use 9,5 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

Sodium chloride. ..... 8,5 g/l
Casein peptone. ..... 1 g/l
pH value. ..... 7,0 ±0,2

5766.1	500 g	plastic	55,40 €
Original pack 6 x 500 g			52,63/500 g

For further information, please see page 1451

Mayer's Hem alum solution

▶ Hemalum solution acid acc. to Mayer see p. 2035

May-Gruenwald's solution

May-Gruenwald's solution

for microscopy

For differential staining of blood smears and cytological specimens.

Eosine methylene blue solution

UN No. 1230 • ADR 3 (6.1) II • WGK 1

Danger H225-H370-H301+H311+H331

Type analysis:

Suitability for microscopy (blood smear). ..... complies

T863.2	1 l	glass	28,50 €
Original pack 6 x 1 l			27,08/1 l
T863.3	2,5 l	plastic	59,70 €
Original pack 4 x 2,5 l			56,72/2,5 l

For further information, please see page 1513

MBAA

▶ N,N'-Methylene bisacrylamide see p. 2137

MBTH

▶ 3-Methyl-2-benzothiazolinone hydrazone hydrochloride see p. 2136

McCoys 5A cell culture medium

▶ Roti®-CELL McCoy's 5A see p. 2270

McFarland BSS 0,5

McFarland BSS 0,5

for microbiology

Turbidity Standard for adjusting the density of a bacterial suspension.

Turbidity Standard, Barium sulphate suspension

Storage temp.: +20 °C

Guarantee analysis:

Turbidity (625 nm, 1 cm cuvette). ..... 0,5 MFU

1307.1	1 vial		26,90 €

For further information, please see page 1490

McFarland PMS 0,5

McFarland PMS 0,5

for microbiology

Turbidity Standard for adjusting the density of a bacterial suspension.

Turbidity Standard, Polymer Microparticle Suspension

Storage temp.: +20 °C

Guarantee analysis:

Turbidity (625 nm, 1 cm cuvette). ..... 0,5 MFU

1440.1	1 vial		26,90 €

For further information, please see page 1490

MCP

▶ m-Cresol purple see p. 1913

m-CP Agar

m-CP Agar

acc. to TWVO 2001, for microbiology

For isolation and enumeration of *Clostridium perfringens.*

Application: Use 71,1 g for 1 l agar. After autoclaving add 2 vials (4 ml) reconstituted Clostridium perfringens Supplement (Art. No. CL52.1) and other supplements.

Storage temp.: +20 °C

Guarantee analysis:

Tryptose. ..... 30 g/l
Yeast extract. ..... 20 g/l
Saccharose. ..... 5 g/l
L-Cysteine hydrochloride. ..... 1 g/l
Magnesium sulphate heptahydrate. ..... 0,1 g/l
Bromocresol purple. ..... 0,04 g/l
Agar. ..... 15 g/l
pH value . ..... 7,6 ±0,2

CL55.1	500 g	plastic	196,20 €
Original pack 6 x 500 g			186,39/500 g

For further information, please see page 1452

MDH

▶ Malate dehydrogenase (MDH) see p. 2116

Meat extract

Solubility: 570 g/l (H_2O, 20 °C)

Storage temp.: +20 °C

[68990-09-0] • EC No. 273-578-7

WGK 1

Meat extract

powder, for nutrient media

Equates Lab-Lemco™

Guarantee analysis:

Total nitrogen (as N). ..... ≥10 %
Loss on drying. ..... ≤6 %
Ash. ..... ≤16 %
pH (2 % solution). ..... 7,0 ±0,5

X975.1	500 g	plastic	127,95 €
Original pack 6 x 500 g			121,55/500 g
X975.2	1 kg	plastic	231,15 €
Original pack 6 x 1 kg			219,59/1 kg

For further information, please see page 1491

Meat extract paste

paste, for nutrient media

Guarantee analysis:

Dry substance. ..... ≥78 %
Ash (dry substance). ..... ≤30 %
Creatinine content. ..... 6,5-6,9 %
In H_2O insoluble matter. ..... ≤1,5 %
NaCl. ..... ≤7 %
Copper (Cu). ..... ≤0,0006 %
Zinc (Zn). ..... ≤0,0001 %
Microbiological assay. ..... complies

5770.1	250 g	plastic	67,65 €
5770.2	1 kg	plastic	214,50 €
Original pack 6 x 1 kg			203,78/1 kg

For further information, please see page 1491

Media plates

▶ Roti®-Aquatest Plates see p. 2265
▶ Roti®-ContiPlates see p. 2271

Medium P

▶ Reinforced Clostridial Medium see p. 2255

Medium Q

▶ Columbia Agar (Base) see p. 1905
▶ Columbia Agar (Base), granulated see p. 1905

Medium R

▶ Lactose Sulphite Broth (Base) see p. 2090

Medium 199 with Earle's salts

▶ Roti®-CELL Medium 199 / Earle's see p. 2270

m-EI-chromogenic Agar (Base)

m-EI-chromogenic Agar (Base)

for microbiology

For detection and enumeration of *Enterococcus* in water via single step membrane filtration.

Application: Use 71,95 g for 1 l agar. After autoclaving add 0,24 g nalidixic acid (Art. No. CN32.1) solubilised in water.

Storage temp.: +4 °C

WGK 1

Warning H302

Formulation:

Yeast extract	30 g/l
Sodium chloride	15 g/l
Peptone	10 g/l
Esculin	1 g/l
Chromogene Mixture	0,75 g/l
Sodium azide	0,15 g/l
Cycloheximide	0,05 g/l
Agar	15 g/l
pH value	7,1 ±0,2

3014.1	100 g	plastic	89,80 €

For further information, please see page 1459

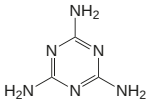
MEK

▶ 2-Butanone see p. 1860

Melaleucin

▶ Betulinic acid see p. 1836

Melamine



Melamine

>99 %, for biochemistry

sym-Triaminotriazine

$C_3H_6N_6$

M 126,12 g/mol

D ~1,57

mp >300 °C (dec.) • flp >280 °C

Solubility: ~3 g/l (H_2O, 20 °C)

[108-78-1] • EC No. 203-615-4

WGK 1

Type analysis:

Assay	≥99 %

6034.1	1 kg	plastic	32,80 €
Original pack 6 x 1 kg			31,16/1 kg

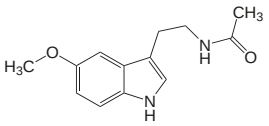
Melampyrit

▶ Dulcitol see p. 1963

Melanthigenin

▶ Hederagenin see p. 2034

Melatonin



Melatonin

≥97 %, for biochemistry

N-Acetyl-5-methoxytryptamine

$C_{13}H_{16}N_2O_2$

M 232,28 g/mol

mp ~117 °C

Storage temp.: -20 °C

Transport temp.: room temp.

[73-31-4] • EC No. 200-797-7

WGK 2

Type analysis:

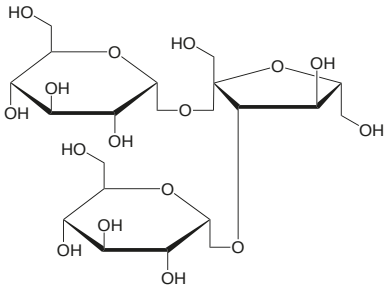
Appearance	white to light yellowish cryst. powder
Assay (HPLC)	≥97 %
Water (KF)	≤0,3 %
Sulphated ash	≤0,1 %
Heavy metals	≤0,002 %

6956.1	250 mg	glass	62,25 €

Meletin

▶ Quercetin see p. 2249
▶ Quercetin dihydrate see p. 2249

D(+)-Melezitose monohydrate



D(+)-Melezitose monohydrate

≥99 %, for biochemistry

$C_{18}H_{32}O_{16} \cdot H_2O$

M 522,48 g/mol

mp ~155 °C

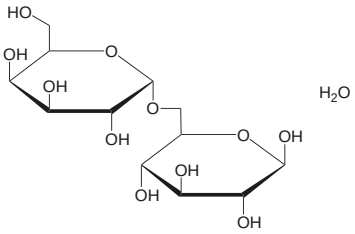
[597-12-6] • EC No. 209-894-9

Type analysis:

Assay (HPLC)	≥99,0 %
Loss on drying	≤3,5 %
Sulphated ash	<0,1 %

4222.1	2,5 g	glass	22,50 €
4222.2	25 g	plastic	84,85 €
4222.3	50 g	plastic	155,90 €
4222.4	100 g	plastic	289,20 €

D(+)-Melibiose monohydrate



D(+)-Melibiose monohydrate

≥99 %, for biochemistry

$C_{12}H_{22}O_{11} \cdot H_2O$

M 360,32 g/mol

mp 175-185 °C

Solubility: 2500 g/l (H_2O, 25 °C)

[66009-10-7] • EC No. 209-568-6

Type analysis:

Appearance	white to yellowish crystals
Assay (HPLC)	≥99,0 %
Specific rotation $[\alpha]_D^{20}$	+133° to +137°
Water (KF)	≤6,0 %
Heavy metals (as Pb)	≤0,0001 %

4223.1	2,5 g	glass	30,65 €
4223.3	10 g	plastic	76,25 €
4223.2	50 g	plastic	267,70 €

Melitose

▶ D(+)-Raffinose pentahydrate see p. 2251

Melitriose

▶ D(+)-Raffinose pentahydrate see p. 2251

Melting point standards

Art. No.	Description	Page
9754	Anthraquinone	1807
9722	Benzoic acid	1830
9709	Benzophenone	1832
9739	Caffeine	1868
9752	Carbazole	1876
9712	p-Nitrotoluene	2167
9728	Phenacetin	2204
9731	Salicylic acid	2304
9734	Sulphanilamide	2386
9714	Vanillin	2434

MEM-NEAA solution

▶ Roti®-CELL MEM-NEAA solution see p. 2270

(-)-p-Mentha-1.8-diene

▶ DL-Limonene see p. 2099

p-Mentha-6,8-dien-2-ol

▶ (-)-Carveol see p. 1880

(1R,3S,4R)-p-Menthan-3-ol

▶ (+)-Isomenthol see p. 2078

p-Menthan-3-one

▶ (-)-Menthone see p. 2126

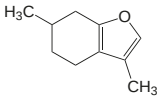
p-Menth-1-en-8-ol

▶ α-Terpineol see p. 2397

p-Menth-8-en-3-ol

▶ Isopulegol see p. 2080

Menthofuran



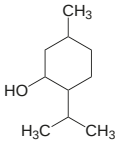
Menthofuran

ROTICHROM® GC
Reference substance for GC.
$C_{10}H_{14}O$
M 150,22 g/mol
D 0,96
flp 76 °C
Storage temp.: +4 °C
[494-90-6] • EC No. 207-795-5
WGK 2

Type analysis:
Purity (GC)..... ≥90 %

5188.1	1 g	plastic	85,90 €

Menthol



Menthol

chinese
Hexahydrothymol
$C_{10}H_{20}O$
M 156,27 g/mol
flp >62 °C
[89-78-1] • EC No. 201-939-0
WGK 1

Warning H315-H319

Type analysis:
Appearance..... white crystals
Specific rotation $[\alpha]_D^{20}$..... -46° to -38°

6725.1	250 g	glass	59,05 €

DL-Menthol

DL-Menthol

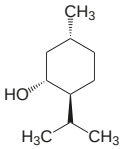
≥99 %, synth.
Hexahydrothymol
$C_{10}H_{20}O$ • M 156,3 g/mol
D 0,89 • bp 216 °C
mp 30-32 °C • flp 93 °C
[89-78-1] • EC No. 201-939-0 • WGK 1

Warning H315-H319

Type analysis:
Appearance..... colourless to white cryst. mass
Assay (GLC)..... ≥99 %
Melting point..... 30,5-32,0 °C
Specific rotation $[\alpha]_D^{20}$ (in ethanol). .....-2° to +2°

8391.1	100 g	glass	30,00 €

(-)-Menthol



(-)-Menthol

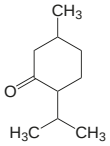
ROTICHROM® GC
Reference substance for GC.
$C_{10}H_{20}O$ • M 156,27 g/mol
D 0,89 • bp 212 °C
mp 43-45 °C • flp 93 °C
Solubility: 490 mg/l (H_2O, 25 °C)
Storage temp.: +4 °C
[2216-51-5] • EC No. 218-690-9 • WGK 1

Danger H318-H315-H335

Type analysis:
Purity (GC). ..... ≥95 %

9061.1	1 g	plastic	84,40 €

Menthone



Menthone

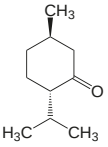
≥96 %, isomers
$C_{10}H_{18}O$
M 154,25 g/mol
D 0,90 • bp 207-210 °C
mp -6 °C • flp 69 °C
[10458-14-7] • EC No. 233-944-9 • WGK 1

Danger H302-H319-H334-H412

Type analysis:
Appearance..... clear, very light yellow liquid
Assay (GC)..... ≥96,0 %

4226.1	50 ml	glass	36,45 €
4226.2	250 ml	glass	113,85 €

(-)-Menthone



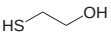
(-)-Menthone

≥88 %
p-Menthan-3-one
$C_{10}H_{18}O$
M 154,25 g/mol
D 0,89 • bp 207-210 °C
mp -6 °C • flp 72 °C
Storage temp.: +4 °C
[14073-97-3] • EC No. 237-926-1

Type analysis:
Appearance. ..... colourless liquid
Assay (GC). .....≥88,0 %
Optical rotation (20 °C).....-30° to -20°

6930.1	25 ml	glass	89,15 €

2-Mercaptoethanol



2-Mercaptoethanol

≥99 %, p.a.
Reducing agent.
Hydroxyethyl mercaptan, Thioglycol
C_2H_6OS
M 78,13 g/mol
D 1,12 • bp 154-161 °C
mp -50 °C • flp 73 °C
Storage temp.: +4 °C
[60-24-2] • EC No. 200-464-6
UN No. 2966 • ADR 6.1 II • WGK 3

Danger H301+H331-H310-H315-H317-H318-H373-H410

Type analysis:
Appearance. ..... colourless to slightly pink liquid
Assay. .....≥99 %

4227.3	100 ml	glass	14,95 €
4227.1	250 ml	glass	21,00 €
4227.2	1 l	glass	47,85 €
Original pack 6 x 1 l			45,46/1 l

β-Mercaptoethanol

▶ 2-Mercaptoethanol see p. 2126

2-Mercaptoethylamine hydrochloride

▶ Cysteamine hydrochloride see p. 1919

Mercurisorb-ROTH®

Mercurisorb-ROTH®

contains silver nitrate

Emergency kit for absorbing and disposing spilled mercury.

UN No. 3260 • ADR 8 II • WGK 3

Danger H314-H410

9461.1	1 Emergency kit in plastic case	89,80 €
9461.4	1 Emergency kit in carton	70,45 €
9461.2	1 Refill pack Mercurisorb-ROTH® 250 g, plastic	116,65 €
9461.3	1 Refill pack Mercurisorb-ROTH® 1 kg, plastic	450,45 €

For further information, please see page 720

Mercury

Hg
M 200,59 g/mol
D 13,54 • bp 356,7 °C
mp -38,9 °C
[7439-97-6] • EC No. 231-106-7
UN No. 2809 • ADR 8 (6.1) III • WGK 3

Danger H330-H360D-H372-H410

Mercury

≥99,9995 %, p.a.

Guarantee analysis:

Assay	≥99,9995 %
Aluminium (Al)	≤0,00001 %
Lead (Pb)	≤0,00001 %
Silver (Ag)	≤0,0001 %
Magnesium (Mg)	≤0,00001 %
Copper (Cu)	≤0,00001 %
Tin (Sn)	≤0,00005 %
Nickel (Ni)	≤0,00001 %
Iron (Fe)	≤0,00002 %
Cadmium (Cd)	≤0,00001 %
Zinc (Zn)	≤0,00005 %

8530.1	100 g	glass	43,55 €
8530.2	1 kg	plastic	212,35 €
Original pack 6 x 1 kg			201,73/1 kg

Mercury

≥99,999 %

Type analysis:

Assay	≥99,999 %

7593.1	100 g	glass	32,15 €
7593.3	500 g	glass	117,20 €
Original pack 6 x 500 g			111,34/500 g
7593.2	1 kg	plastic	199,85 €
Original pack 6 x 1 kg			189,86/1 kg

Mercury

≥99,9 %

Type analysis:

Assay	≥99,9 %

7594.2	100 g	glass	28,50 €
7594.1	1 kg	plastic	188,15 €
Original pack 6 x 1 kg			178,74/1 kg

Mercury standards

- Mercury AAS Standard Solution see p. 2359
- Mercury ICP Standard Solution see p. 2363
- Mercury ICP Standard Solution see p. 2368
- Mercury ICP-MS Standard Solution see p. 2373

Mercury(II) acetate

Mercury(II) acetate

≥99 %, p.a., ACS

Catalyst in org. synthesis.
Mercuric acetate
$Hg(CH_3COO)_2$
M 318,68 g/mol
D 3,27
mp 178-180 °C
Solubility: 400 g/l (H_2O, 20 °C)
[1600-27-7] • EC No. 216-491-1
UN No. 1629 • ADR 6.1 II • WGK 3

Danger

H300+H310+H330-H373-H400-H410

Guarantee analysis:

Assay	≥99,0 %
In H_2O insoluble matter	≤0,01 %
Residue after reduction	≤0,02 %
Chloride (Cl)	≤0,005 %
Nitrate (NO_3)	≤0,005 %
Sulphate (SO_4)	≤0,005 %
Heavy metals (different from Pb)	≤0,002 %
Lead (Pb)	≤0,001 %
Cadmium (Cd)	≤0,0005 %
Iron (Fe)	≤0,001 %
Copper (Cu)	≤0,0005 %
Sodium (Na)	≤0,005 %
Nickel (Ni)	≤0,0005 %
Mercury I (Hg I)	≤0,4 %
Silver (Ag)	≤0,0005 %
Zinc (Zn)	≤0,0005 %

KK05.1	50 g	glass	58,60 €
KK05.2	100 g	glass	105,90 €

Mercury(II) bromide

Mercury(II) bromide

≥98 %, p.a., ACS

Mercuric bromide
$HgBr_2$
M 360,4 g/mol
bp 322 °C
mp 237 °C
Solubility: 6 g/l (H_2O, 20 °C)
[7789-47-1] • EC No. 232-169-3
UN No. 1634 • ADR 6.1 II • WGK 3

Danger

H300+H310+H330-H373-H400-H410

Guarantee analysis:

Appearance	white to very faint yellow powder
Assay	≥98,0 %
Chloride (Cl)	≤0,25 %
Residue after reduction	≤0,02 %
Insoluble in methanol	≤0,05 %

6581.1	50 g	plastic	54,75 €
6581.2	250 g	plastic	212,35 €

Mercury(I) chloride

Mercury(I) chloride

≥99,5 %, p.a., ACS

Calomel, Dimercury dichloride, Mercurous chloride
Hg_2Cl_2
M 472,09 g/mol
Solubility: 2,3 mg/l (H_2O, 20 °C)
[10112-91-1] • EC No. 233-307-5
UN No. 2025 • ADR 6.1 III • WGK 3

Danger

H301-H312-H315-H319-H335-H410

Guarantee analysis:

Appearance	white to off-white powder
Assay	≥99,5 %
Residue after reduction	≤0,02 %
Mercuric chloride ($HgCl_2$)	≤0,01 %
Sulphate (SO_4)	≤0,01 %

6601.1	50 g	glass	56,45 €
6601.2	100 g	glass	92,35 €
6601.3	500 g	glass	357,90 €
Original pack 6 x 500 g			340,01/500 g

Mercury(II) chloride

Sublimate, Mercuric chloride
$HgCl_2$
M 271,50 g/mol • D 5,44 • bp 304 °C
mp 277 °C
Solubility: 550 g/l (H_2O, 20 °C)
[7487-94-7] • EC No. 231-299-8
UN No. 1624 • ADR 6.1 II • WGK 3

Danger

H300+H310-H314-H341-H361f-H372-H410

Mercury(II) chloride

≥99,5 %, p.a., ACS

Catalyst

Guarantee analysis:

Assay (compl.)	≥99,5 %
In H_2O insoluble matter	≤0,01 %
In $C_2H_5OC_2H_5$ insoluble matter	≤0,01 %
Residue after reduction	≤0,02 %
Nitrate (NO_3)	≤0,0005 %
Lead (Pb)	≤0,001 %
Iron (Fe)	≤0,002 %
Potassium (K)	≤0,005 %
Copper (Cu)	≤0,001 %
Magnesium (Mg)	≤0,001 %

KK04.1	50 g	glass	47,20 €
KK04.2	100 g	glass	85,90 €

Mercury(II) chloride

≥99,5 %, pure

Type analysis:

Appearance	white, cryst. powder
Assay	≥99,5 %
Iron (Fe)	≤0,002 %
Residue after reduction	≤0,02 %

7904.1	100 g	plastic	83,75 €
7904.3	500 g	plastic	332,20 €
Original pack 6 x 500 g			315,59/500 g
7904.2	1 kg	plastic	611,70 €
Original pack 6 x 1 kg			581,12/1 kg

Mercury(II) iodide

Mercury(II) iodide

≥99 %, p.a., ACS, red

Mercuric iodide

HgI_2

M 454,4 g/mol

bp 350 °C

mp 259 °C

[7774-29-0] • EC No. 231-873-8

UN No. 1638 • ADR 6.1 (II) • WGK 3

Danger

H300+H310+H330-H373-H400-H410

Guarantee analysis:

Appearance. ..... red powder
Assay (dry substance). ..... ≥99,0 %
Mercury I (Hg I). ..... ≤0,1 %
Solubility in KI solution. ..... complies
Soluble mercury salts (as Hg). ..... ≤0,05 %

6590.1	50 g	plastic	52,60 €
6590.2	100 g	plastic	87,00 €
6590.3	500 g	plastic	332,20 €
Original pack 6 x 500 g			315,59/500 g

Mercury(I) nitrate dihydrate

Mercury(I) nitrate dihydrate

≥97 %, p.a.

Mercurous nitrate

$Hg_2(NO_3)_2 \cdot 2\ H_2O$

M 561,22 g/mol • mp 70 °C (dec.)

[14836-60-3] • EC No. 223-886-4

UN No. 1627 • ADR 6.1 II • WGK 3

Danger

H300+H310+H330-H373-H400-H410

Guarantee analysis:

Appearance. ..... white to yellow cryst. powder
Assay. ..... ≥97,0 %
Insoluble matter. ..... ≤0,005 %
Residue after reduction. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,005 %
Iron (Fe). ..... ≤0,001 %
Mercury (Hg). ..... ≤0,5 %

6605.1	50 g	plastic	40,75 €
6605.2	100 g	plastic	67,20 €
6605.3	500 g	plastic	295,65 €
Original pack 6 x 500 g			280,87/500 g

Mercury(II) nitrate monohydrate

Mercury(II) nitrate monohydrate

≥98 %, p.a., ACS

Mercuric nitrate

$Hg(NO_3)_2 \cdot H_2O$

M 342,62 g/mol • mp 77-79 °C

[7783-34-8] • EC No. 233-152-3

UN No. 1625 • ADR 6.1 II • WGK 3

Danger

H300+H310+H330-H373-H400-H410

Guarantee analysis:

Appearance. ..... white to light yellowish powder
Assay. ..... ≥98,0 %
Residue after reduction. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,002 %
Sulphate (SO_4). ..... ≤0,002 %
Iron (Fe). ..... ≤0,001 %
Mercury (Hg). ..... ≤0,2 %

6595.1	50 g	plastic	41,40 €
6595.2	250 g	plastic	145,05 €
6595.3	1 kg	plastic	525,70 €
Original pack 6 x 1 kg			499,42/1 kg

Mercury(II) nitrate solution (0,1 N)

Mercury(II) nitrate solution

0,05 mol/l - 0,1 N volumetric standard solution

Mercuric nitrate solution

UN No. 1625 • ADR 6.1 II • WGK 2

Danger H301+H311-H330-H373-H412

Type analysis:

Amount-of-substance conc. (20 °C). ..... 0,05 mol/l ±0,2 %

KK72.1	1 l	plastic	41,85 €
Original pack 6 x 1 l			39,76/1 l

For further information, please see page 1681

Mercury(II) oxide

Mercury(II) oxide

≥99 %, p.a., red

Mercuric oxide

HgO

M 216,59 g/mol

D 11,14

mp 500 °C (dec.)

[21908-53-2] • EC No. 244-654-7

UN No. 1641 • ADR 6.1 II • WGK 3

Danger

H300+H310+H330-H373-H400-H410

Guarantee analysis:

Assay. ..... ≥99 %
Insoluble in HCl. ..... ≤0,03 %
Total nitrogen (N). ..... ≤0,005 %
Ash content. ..... ≤0,025 %
Chloride (Cl). ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,005 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,005 %
Copper (Cu). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

4470.2	25 g	plastic	44,65 €
4470.1	50 g	plastic	80,55 €

Mercury(II) sulphate

Mercury(II) sulphate

≥98 %, p.a., ACS

For determination of COD, catalyst in Kjeldahl determination.

Mercuric sulphate

$HgSO_4$

M 296,65 g/mol • D 6,47

Solubility: 50 mg/l (H_2O, 20 °C)

[7783-35-9] • EC No. 231-992-5

UN No. 1645 • ADR 6.1 II • WGK 3

Danger

H300+H310+H330-H373-H400-H410

Type analysis:

Assay (compl.). ..... ≥98,0 %
Chloride (Cl). ..... ≤0,003 %
Nitrate (NO_3). ..... ≤0,005 %
Iron (Fe). ..... ≤0,005 %
Mercury I (Hg I). ..... ≤0,15 %
Residue after reduction. ..... ≤0,02 %

For the preparation of solutions for COD-determination acc. DIN 38403.

T112.1	100 g	plastic	77,30 €
T112.2	500 g	plastic	274,15 €
Original pack 6 x 500 g			260,44/500 g

Mercury(II) sulphate solution 80 g/l

Mercury(II) sulphate solution 80 g/l

in sulphuric acid potassium dichromate standard solution.
0,02 mol/l volumetric solution, for determination of COD

According to DIN 38409 part H41.

Mercuric sulphate solution

UN No. 3289 • ADR 6.1 (8) II • WGK 3

Danger

H290-H300+H310+-H330-H314-H340-H350-H360FD-H373-H411-EUH203

Type analysis:

Titer. 0,998-1,002

X871.1	1 l	glass	89,15 €
Original pack 6 x 1 l			84,69/1 l
X871.2	2,5 l	glass	178,35 €
Original pack 4 x 2,5 l			169,43/2,5 l

For further information, please see page 1681

Mercury(II) thiocyanate

Mercury(II) thiocyanate

≥99%, p.a.

Mercuric sulphocyanate, Mercuric thiocyanate

$Hg(SCN)_2$

M 316,75 g/mol • mp 165 °C (dec.)

Solubility: 0,7 g/l (H_2O, 25 °C)

[592-85-8] • EC No. 209-773-0

UN No. 1646 • ADR 6.1 II • WGK 3

Danger

H300+H310+H330-H373-H400-H410-EUH032

Guarantee analysis:

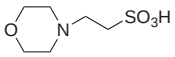
Appearance. ..... white to slightly yellow powder
Assay. ..... ≥99,0 %
Assay (Hg). ..... 61,7-64,9 %
Sodium (Na). ..... ≤0,01 %
Iron (Fe). ..... ≤0,002 %

6600.1	25 g	plastic	35,40 €
6600.2	100 g	plastic	107,40 €
6600.3	500 g	plastic	461,20 €
Original pack 6 x 500 g			438,14/500 g

Merthiolate

▶ Sodium ethylmercurithiosalicylate see p. 2337

MES



2-(N-Morpholino)-ethane sulphonic acid

$C_6H_{13}NO_4S$

M 195,20 g/mol • mp 300 °C

[4432-31-9] • EC No. 224-632-3 • WGK 1

MES

PUFFERAN® ≥99 %

Guarantee analysis:

Appearance. ..... white powder
Assay (titr. dry substance). ..... ≥99,0 %
pH value. 2,5-4,0
Loss on drying. ..... ≤1,0 %
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,001 %
UV-absorption (0,1 M in H_2O):
280 nm. ..... ≤0,02
260 nm. ..... ≤0,02

4256.2	100 g	plastic	64,40 €
4256.5	250 g	plastic	140,75 €
4256.3	500 g	plastic	267,70 €
Original pack 6 x 500 g			254,32/500 g
4256.4	1 kg	plastic	461,20 €
Original pack 6 x 1 kg			438,14/1 kg

For further information, please see page 1308

MES

≥99 %, for biochemistry

Type analysis:

Assay. ..... ≥99 %
pH value. 2,5-4,0
Chloride (Cl). ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,05 %
Loss on drying. ..... ≤1,0 %
Heavy metals (as Pb). ..... ≤0,001 %
UV (0,1 M in H_2O) A280 nm. ..... ≤0,02

4259.1	50 g	plastic	33,25 €
4259.2	100 g	plastic	50,45 €
4259.3	250 g	plastic	89,80 €
4259.4	500 g	plastic	176,85 €
Original pack 6 x 500 g			168,01/500 g
4259.5	1 kg	plastic	317,15 €
Original pack 6 x 1 kg			301,29/1 kg

For further information, please see page 1308

MES monohydrate

MES monohydrate

PUFFERAN® ≥99,5 %

2-(N-Morpholino)-ethane sulphonic acid monohydrate

$C_6H_{13}NO_4S \cdot H_2O$

M 213,2 g/mol

mp >300 °C

[145224-94-8] • EC No. 224-632-3

WGK 1

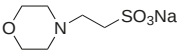
Guarantee analysis:

Appearance. ..... white powder
Assay (titr.). ..... ≥99,5 %
pH value (1 % in H_2O). 3,5-4,1
Loss on drying. ..... 7,9-8,9 %
Solubility (0,1 M in H_2O). ..... clear colourless solution
UV-absorption (0,1 M in H_2O):
260 nm. ..... ≤0,04
280 nm. ..... ≤0,02

6066.1	50 g	plastic	26,80 €
6066.2	100 g	plastic	45,05 €
6066.3	500 g	plastic	174,70 €
Original pack 6 x 500 g			165,97/500 g
6066.4	1 kg	plastic	299,95 €
Original pack 6 x 1 kg			284,95/1 kg

For further information, please see page 1308

MES sodium salt



MES sodium salt

PUFFERAN® ≥99 %

2-(N-Morpholino)-ethanesulphonic acid sodium salt

$C_6H_{12}NaNO_4S$

M 217,2 g/mol

[71119-23-8] • EC No. 275-203-2

WGK 1

Guarantee analysis:

Assay (titr., dry substance). ..... ≥99 %
Loss of drying (140 °C, 30 min). ..... ≤1,0 %
pH value (1 % solution). 8,9-10,1

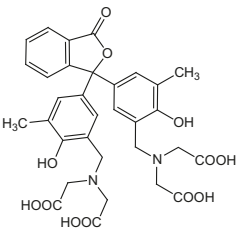
6922.1	25 g	plastic	23,15 €
6922.2	100 g	plastic	85,90 €

For further information, please see page 1308

Metal enhancer

▶ DAB Metal Enhancer see p. 1921

Metal phthaleine



Metal phthaleine

p.a.

Indicator for complexometry.

Phthalein purple, o-Cresolphthalexon, o-Cresolphthalein complexone

$C_{32}H_{32}N_2O_{12}$

M 636,62 g/mol

Solubility: insoluble (H_2O, 20 °C)

[2411-89-4] • EC No. 219-318-8

WGK 2

Type analysis:

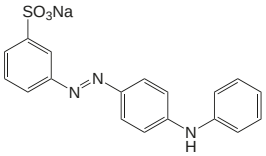
Absorption max. (NaOH 0,1 mol/l). ..... 577-580 nm
Water (KF). ..... ≤10 %
Suitability as indicator for complexometry. ..... complies

4231.1	1 g	glass	24,20 €
4231.2	5 g	glass	48,30 €

Metals

Art. No.	Description	Page
1980	Alloy acc. to Wood	1782
5577	Aluminium granulate, ROTI®METIC	1783
5280	Aluminium granulate	1783
5285	Aluminium powder	1783
4516	Antimony shot, ROTI®METIC	1810
9258	Antimony	1811
2735	Bismuth	1840
2729	Calcium	1868
0886	Chromium shot	1897
5620	Cobalt powder, ROTI®METIC	1902
5621	Copper pellets, ROTI®METIC	1907
2728	Copper beads	1908
8540	Copper sheet	1908
9597	Copper wool	1908
8279	Copper, nano	1908
5386	Copper powder, ROTI®METIC	1908
CP21	Copper powder	1908
4507	Gallium, ROTI®METIC	2011
3761	Gallium	2011
5622	Gold shot, ROTI®METIC	2028
0882	Gold shot	2028
5629	Indium shot, ROTI®METIC	2065
3906	Indium shot	2065
9803	Indium, foil	2065
5631	Iron granules, ROTI®METIC	2073
3718	Iron	2073
9454	Iron, reduced	2073
0540	Iron foil	2073
9588	Iron wool	2073
2734	Lead	2095
AE61	Magnesium filings	2110
CP20	Magnesium powder	2110
4468	Magnesium ribbon	2110
4509	Manganese flakes, ROTI®METIC	2119
8530	Mercury	2127
7593	Mercury	2127
7594	Mercury	2127
5643	Nickel powder, ROTI®METIC	2156
CP22	Nickel powder	2156
0529	Nickel foil	2156
0663	Nickel-aluminium alloy	2156
5648	Palladium powder, ROTI®METIC	2189
8408	Platinum black	2215
5654	Platinum powder, ROTI®METIC	2215
0737	Platinum wire	2215
8415	Platinum wire	2215
0803	Platinum wire	2215
4547	Selenium pellets, ROTI®METIC	2310
7605	Sheets of gold	2314
9367	Sheets of silver	2314
8816	Silver sheet	2325
8819	Silver wire	2325
8821	Silver wire	2325
9373	Silver wool	2325
0884	Silver pellets	2326
4469	Sodium	2330
5097	Tin shot, ROTI®METIC	2408
4016	Tin granules	2408
2731	Tin beads	2408
9296	Tin foil	2408
9835	Tungsten	2426
AE99	Zinc granule	2449
5345	Zinc shot, ROTI®METIC	2449
9524	Zinc dust	2449

Metanil yellow (C.I. 13065)



Metanil yellow (C.I. 13065)

p.a.
Indicator pH 1,2-2,7
Acid yellow 36
$C_{18}H_{14}N_3NaO_3S$
M 375,38 g/mol
mp >250 °C
[587-98-4] • EC No. 209-608-2
WGK 3

Danger H318-H412

Type analysis:
Appearance.....yellow to orange powder
Appearance of solution (0,1 % in MeOH). .....clear, yellow orange
pH-transition range.....1,2 (dark red)-2,7 (yellow)

7714.1	5 g	glass	14,55 €
7714.2	25 g	glass	25,30 €
7714.3	100 g	glass	49,35 €

Methacrylic acid methyl ester

Methacrylic acid methyl ester

≥99 %, extra pure
For electron microscopy.
Methyl methacrylate, MMA
$C_5H_8O_2$
M 100,12 g/mol
D 0,94 • bp ~101 °C
mp -48 °C • flp 10 °C
[80-62-6] • EC No. 201-297-1
UN No. 1247 • ADR 3 II • WGK 1

Danger H225-H315-H317-H335

Type analysis:
Appearance..... clear, colourless liquid
Assay (GC)..... ≥99 %
Acid content. ..... ≤0,005 %
Water (KF)..... ≤0,01 %
Stabilized with 100 ±10 ppm MEHQ (mequinol)

4233.7	250 ml	glass	14,55 €
4233.1	1 l	glass	31,10 €
Original pack 6 x 1 l			29,55/1 l
4233.2	2,5 l	glass	62,25 €
Original pack 4 x 2,5 l			59,14/2,5 l
4233.8	25 l	tinplate	482,70 €

Methanecarboxylic acid

- Acetic acid Ultra-quality see p. 1755
- Acetic acid Supra-quality see p. 1755
- Acetic acid 100 % see p. 1756
- Acetic acid 96 % see p. 1756
- Acetic acid 80 % see p. 1756
- Acetic acid 60 % see p. 1756
- Acetic acid 25 % see p. 1757
- Acetic acid 10 % see p. 1757
- Acetic acid D1 see p. 1757
- Acetic acid D4 see p. 1757
- Acetic acid (1 N) see p. 1757
- Acetic acid (2 N) see p. 1757

Methanedicarboxylic acid

- Malonic acid see p. 2117

Methanesulphonic acid

Methylsulphonic acid, MSA
CH_4O_3S
M 96,10 g/mol
D 1,48 • bp 167 °C (13 mbar)
mp 20 °C • flp 189 °C
[75-75-2] • EC No. 200-898-6
UN No. 2586 • ADR 8 III • WGK 1

Danger
H290-H302+H312-H314-H335

Methanesulphonic acid

≥99,5 %, for synthesis

Type analysis:
Assay.....≥99,5 %
Chloride (Cl).....≤0,001 %
Sulphate (SO_4).....≤0,005 %
Colour (APHA). .....≤150
Heavy metals. .....≤0,0001 %

4090.1	100 ml	glass	20,35 €
4090.2	250 ml	glass	31,10 €
4090.3	1 l	glass	81,60 €
Original pack 6 x 1 l			77,52/1 l
4090.4	2,5 l	glass	166,10 €
Original pack 4 x 2,5 l			157,80/2,5 l

Methanesulphonic acid

70 %, for synthesis

Type analysis:
Assay.....69,5-70,5 %
Colour (APHA). .....≤10
Chloride (Cl).....≤0,001 %
Sulphate (SO_4).....≤0,005 %
Heavy metals. .....≤0,0001 %

4236.1	100 ml	glass	16,05 €
4236.2	1 l	glass	39,70 €
Original pack 6 x 1 l			37,72/1 l
4236.3	2,5 l	glass	79,45 €
Original pack 4 x 2,5 l			75,48/2,5 l

Methanoic acid

▶ Formic acid 98 % see p. 2005

Methanol

Methyl alcohol, Carbinol
CH_3OH
M 32,04 g/mol
D 0,79 • bp 64,7 °C
mp -98 °C • flp 11 °C
[67-56-1] • EC No. 200-659-6
UN No. 1230 • ADR 3 (6.1) II • WGK 2

Danger

H225-H301+H311+H331-H370

Methanol
ROTISOLV® ≥99,98 %, Ultra LC-MS

Guarantee analysis:

Assay (GC). ≥99,98 %
Colour (APHA). ≤5
Water. ≤0,03 %
Acidity (as CH_3COOH). ≤0,002 %
Alkalinity (as NH_3). ≤0,0001 %
Non volatile matter. ≤0,0001 %
Transmission:
260 nm. ≥99 %
230 nm. ≥80 %
220 nm. ≥65 %
210 nm. ≥30 %
Gradient test:
UV-absorption of the greatest eluated peak.
220 nm. ≤0,004 AU
235 nm. ≤0,002 AU
Fluorescence (as quinine):
254 nm. ≤0,5 ppb
365 nm. ≤0,3 ppb
Trace impurities:
Aluminium (Al). ≤20 ppb
Calcium (Ca). ≤100 ppb
Iron (Fe). ≤20 ppb
Potassium (K). ≤50 ppb
Magnesium (Mg). ≤20 ppb
Sodium (Na). ≤100 ppb
Filtered through 0,1 µm membrane and filled under protective gas.

HN41.1	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l
HN41.2	2,5 l	glass	77,30 €
Original pack 4 x 2,5 l			73,44/2,5 l

Methanol
ROTISOLV® ≥99,95 %, LC-MS-Grade

Guarantee analysis:

Assay (GC). ≥99,95 %
Colour (APHA). ≤5
Water (KF). ≤0,03 %
Free acid (as CH_3COOH). ≤0,002 %
Free alkali (as NH_3). ≤0,0001 %
Non volatile matter. ≤0,0001 %
Transmission:
260 nm. ≥98 %
235 nm. ≥85 %
220 nm. ≥60 %
210 nm. ≥40 %
Gradient test:
UV absorption of the greatest eluated peak
235 nm. ≤0,002 AU
254 nm. ≤0,001 AU
Fluorescence (as quinine):
254 nm. ≤0,5 ppb
365 nm. ≤0,5 ppb
Trace impurities:
Aluminium (Al). ≤0,05 ppm
Calcium (Ca). ≤0,05 ppm
Iron (Fe). ≤0,05 ppm
Potassium (K). ≤0,05 ppm
Magnesium (Mg). ≤0,05 ppm
Sodium (Na). ≤0,05 ppm
LC-MS suitability test. complies
Filtered through 0,2 µm membrane and filled under protective gas.

AE71.1	1 l	glass	29,60 €
Original pack 6 x 1 l			28,12/1 l
AE71.2	2,5 l	glass	64,00 €
Original pack 4 x 2,5 l			60,80/2,5 l

Methanol
ROTISOLV® HPLC Ultra Gradient Grade

Guarantee analysis:

Assay (GC). ≥99,95 %
Colour (Hazen). ≤10
Water (KF). ≤0,03 %
Free acid (as CH_3COOH). ≤0,002 %
Non volatile matter. ≤0,0001 %
Layer thickness d = 1 cm water in comparison
Transmission:
>260 nm. ≥99 %
230 nm. ≥80 %
220 nm. ≥60 %
210 nm. ≥40 %
Gradient test:
UV absorption of the greatest eluated peak
220 nm. ≤0,004 AU
235 nm. ≤0,002 AU
Fluorescence (as quinine):
254 nm. ≤1,0 ppb
365 nm. ≤0,5 ppb
Suitability for PAH analysis
(HPLC fluorescence detection). complies
Filtered through 0,2 µm membrane and filled under protective gas.

X948.1	1 l	glass	25,30 €
Original pack 6 x 1 l			24,04/1 l
X948.2	2,5 l	glass	45,70 €
Original pack 4 x 2,5 l			43,42/2,5 l

For further information, please see page 1650

Methanol
ROTISOLV® HPLC Gradient Grade

Guarantee analysis:

Assay (GC). ≥99,9 %
Colour (Hazen). ≤10
Water (KF). ≤0,02 %
Free acid. ≤0,001 %
Non volatile matter. ≤0,0002 %
Transmission:
>260 nm. ≥99 %
235 nm. ≥85 %
220 nm. ≥60 %
210 nm. ≥40 %
Gradient test:
UV-absorption of the greatest eluated peak
235 nm. ≤2,0 mAU
254 nm. ≤1,0 mAU
Fluorescence (as quinine):
254 nm. ≤1,0 ppb
365 nm. ≤0,5 ppb
Filtered through 0,2 µm membrane and filled under protective gas.

7342.2	1 l	glass	22,05 €
Original pack 6 x 1 l			20,95/1 l
7342.1	2,5 l	glass	38,60 €
Original pack 4 x 2,5 l			36,67/2,5 l

For further information, please see page 1650

Methanol
ROTISOLV® HPLC Gradient

Guarantee analysis:

Assay (GC). ≥99,9 %
Water (KF). ≤0,05 %
Free acid (as CH_3COOH). ≤0,002 %
Non volatile matter. ≤0,0003 %
Transmission:
260 nm. ≥98 %
235 nm. ≥85 %
210 nm. ≥30 %
Gradient test:
UV-absorption of the greatest eluated peak.
254 nm. ≤0,005 AU
Filtered through 0,2 µm membrane and filled under protective gas.

KK39.2	2,5 l	glass	30,65 €
Original pack 4 x 2,5 l			29,12/2,5 l

For further information, please see page 1650

Methanol
ROTISOLV® HPLC

Guarantee analysis:

Assay (GC). ≥99,9 %
Water (KF). ≤0,05 %
Free acid. ≤0,002 %
Non volatile matter. ≤0,0003 %
Transmission:
260 nm. ≥99 %
235 nm. ≥85 %
220 nm. ≥60 %
210 nm. ≥30 %
Filtered through 0,2 µm membrane and filled under protective gas.

P717.2	1 l	glass	19,25 €
Original pack 6 x 1 l			18,29/1 l
P717.1	2,5 l	glass	30,65 €
Original pack 4 x 2,5 l			29,12/2,5 l

For further information, please see page 1650

Methanol
ROTISOLV® ≥99,9 %, GC Ultra Grade

For gaschromatographic residue analysis.

Guarantee analysis:

Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,05 %
Free acid (as CH_3COOH). ≤0,003 %
Evaporation residue. ≤0,0002 %
GC/ECD dioxins, furans and PCBs
(as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤5 ng/l
PAH-test (less than 2 ppb, HPLC). complies
Filtered through 0,2 µm membrane and filled under protective gas.

KK44.1	2,5 l	glass	49,35 €
Original pack 4 x 2,5 l			46,88/2,5 l

Methanol

ROTISOLV® ≥99,9 %, Pestilyse® plus

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:

Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,05 %
Free acid (as CH_3COOH). ≤0,002 %
Free alkali (as NH_3). ≤0,0002 %
Evaporation residue. ≤0,0002 %
GC/FID suitability (as 2-octanol). ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤10 ng/l
Oil index (any hydrocarbon C_{10}-C_{40}). ≤0,1 mg/l
GC/ECD volatile impurities (as ethylene dibromide). ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC). complies
Fluorescence (as quinine):
254 nm. ≤0,5 ppb
365 nm. ≤0,5 ppb

7583.1	2,5 l	glass	44,65 €
Original pack 4 x 2,5 l			42,42/2,5 l

Methanol

ROTISOLV® ≥99,9 %, Pestilyse®

For residue and environmental analysis.

Guarantee analysis:

Assay (GC). ≥99,9 %
Water (KF). ≤0,1 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
GC/ECD (individual signal as lindane). ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l

T169.2	1 l	glass	24,20 €
Original pack 6 x 1 l			22,99/1 l
T169.1	2,5 l	glass	34,30 €
Original pack 4 x 2,5 l			32,59/2,5 l
T169.3	4 l	glass	50,00 €

Methanol

ROTISOLV® ≥99,9 %, UV/IR-Grade

For chromatography and spectroscopy.

Guarantee analysis:

Assay (GC). ≥99,9 %
Water (KF). ≤0,02 %
Acidity. ≤0,005 meq/g
Evaporation residue. ≤0,005 %
Fluorescence (as quinine):
254 nm. ≤1,0 ppb
365 nm. ≤1,0 ppb
Transmission:
260 nm. ≥98 %
242 nm. ≥90 %
232 nm. ≥80 %
220 nm. ≥50 %
207 nm. ≥10 %

T909.1	2,5 l	glass	35,40 €
Original pack 4 x 2,5 l			33,63/2,5 l

Methanol

ROTIDRY® Sept ≥99,9 % (≤50 ppm H_2O)

Dried; in a septum bottle

Guarantee analysis:

Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,005 %
Acidity (as CH_3COOH). ≤0,002 %
Evaporation residue. ≤0,0005 %

5181.1	250 ml	glass	36,45 €

Methanol

ROTIDRY® ≥99,9 % (≤50 ppm H_2O)

Dried; for analysis and organic synthesis.

Guarantee analysis:

Assay (GC). ≥99,9 %
Colour (Hazen). ≤10
Water (KF). ≤0,005 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
Filtered through a membrane and filled under protective gas.

AE01.1	1 l	glass	31,10 €
Original pack 6 x 1 l			29,55/1 l
AE01.2	2,5 l	glass	55,40 €
Original pack 4 x 2,5 l			52,63/2,5 l

Methanol

≥99,9 %, Blotting-Grade

For Western blotting

Type analysis:

Appearance. clear
Assay (GC). ≥99,9 %
Colour (Hazen). ≤10
Water. ≤0,1 %
Evaporation residue. ≤0,0005 %
Benzene (GC). ≤0,0002 %
Ethanol (GC). ≤0,05 %
Acetone (GC). ≤0,001 %
Sulphate (SO_4). ≤0,0001 %
Chloride (Cl). ≤0,00005 %
Bismuth (Bi). ≤0,000002 %
Lead (Pb). ≤0,00001 %
Gold (Au). ≤0,000002 %
Molybdenum (Mo). ≤0,000002 %
Silver (Ag). ≤0,000002 %
Platinum (Pt). ≤0,000005 %
Thallium (Tl). ≤0,000002 %

0082.1	500 ml	glass	22,50 €
0082.2	1 l	glass	30,65 €
Original pack 6 x 1 l			29,12/1 l
0082.3	2,5 l	glass	62,90 €
Original pack 4 x 2,5 l			59,76/2,5 l

Methanol

≥99,5 %, VLSI Grade

Guarantee analysis:

Assay. ≥99,5 %
Particle number (≥0,5 µm). ≤250 p/ml
Water. ≤0,1 %
Colour (APHA). ≤10
Alkalinity. 0,5 µeq/g
Acidity. 1 µeq/g
Chloride (Cl). ≤0,00005 %
Nitrate (NO_3). ≤0,0001 %
Sulphate (SO_4). ≤0,0001 %
Ash content. ≤0,001 %
Aluminium (Al). ≤50 ppb
Antimony (Sb). ≤10 ppb
Arsenic (As). ≤10 ppb
Barium (Ba). ≤10 ppb
Bismuth (Bi). ≤10 ppb
Lead (Pb). ≤10 ppb
Boron (B). ≤10 ppb
Cadmium (Cd). ≤10 ppb
Calcium (Ca). ≤50 ppb
Chromium (Cr). ≤10 ppb
Iron (Fe). ≤50 ppb
Gallium (Ga). ≤10 ppb
Gold (Au). ≤10 ppb
Potassium (K). ≤50 ppb
Cobalt (Co). ≤10 ppb
Copper (Cu). ≤20 ppb
Lithium (Li). ≤10 ppb
Magnesium (Mg). ≤20 ppb
Manganese (Mn). ≤10 ppb
Molybdenum (Mo). ≤10 ppb
Sodium (Na). ≤100 ppb
Nickel (Ni). ≤10 ppb
Silver (Ag). ≤10 ppb
Strontium (Sr). ≤10 ppb
Tantal (Ta). ≤10 ppb
Thallium (Tl). ≤10 ppb
Titanium (Ti). ≤10 ppb
Vanadium (V). ≤10 ppb
Zinc (Zn). ≤100 ppb
Tin (Sn). ≤10 ppb

9785.1	2,5 l	plastic	56,90 €
Original pack 4 x 2,5 l			54,06/2,5 l
9785.2	5 l	plastic	102,70 €
Original pack 2 x 5 l			97,57/5 l

For further information, please see page 1718

Methanol

ROTIPURAN® ≥99,9 %, p.a., ACS, ISO

Guarantee analysis:

Assay (GC). ≥99,9 %
Colour (Hazen). ≤10
Solubility in H_2O. complies
Evaporation residue. ≤0,0005 %
Acidity. ≤0,0002 meq/g
Alkalinity. ≤0,0002 meq/g
Water . ≤0,05 %
Density (d 20 °C/20 °C). 0,791-0,793
Ethanol (GC). ≤0,05 %
Acetone (GC). ≤0,001 %
Acetaldehyde. ≤0,001 %
Formaldehyde. ≤0,001 %
Aluminium (Al). ≤0,00005 %
Barium (Ba). ≤0,00001 %
Lead (Pb). ≤0,00001 %
Cadmium (Cd). ≤0,000005 %
Calcium (Ca). ≤0,00005 %
Chromium (Cr). ≤0,000002 %
Iron (Fe). ≤0,00001 %
Cobalt (Co). ≤0,000002 %
Copper (Cu). ≤0,000002 %
Magnesium (Mg). ≤0,00001 %
Manganese (Mn). ≤0,000002 %
Nickel (Ni). ≤0,000002 %
Tin (Sn). ≤0,00001 %
Zinc (Zn). ≤0,00001 %
Carbonylic compounds (as CO). ≤0,001 %
$KMnO_4$ reducing substances (as O). ≤0,00025 %
Matter discoloured by H_2SO_4 (Hazen). complies

4627.1	1 l	glass	26,35 €
Original pack 6 x 1 l			25,03/1 l
4627.4	1 l	plastic	24,65 €
Original pack 6 x 1 l			23,42/1 l
4627.2	2,5 l	glass	45,70 €
Original pack 4 x 2,5 l			43,42/2,5 l
4627.5	2,5 l	plastic	42,50 €
Original pack 4 x 2,5 l			40,38/2,5 l
4627.6	5 l	plastic	77,95 €
Original pack 2 x 5 l			74,05/5 l
4627.3	25 l	tinplate	166,10 €

Methanol

≥99,5 %, Ph.Eur., extra pure

Guarantee analysis:

Assay (GC). ..... ≥99,5 %
Identity. ..... complies
Absorption. ..... complies
Appearance of solution. ..... complies
Acid react. substances. ..... complies
Density (d 20 °C/20 °C). 0,791-0,793
Refractive index n_D^{20}. 1,328-1,330
Reducing substances . ..... complies
Water. ..... ≤0,1 %
Benzene (GC). ..... ≤0,0002 %
Related substances (GC). ..... complies
Non volatile matter. ..... ≤0,001 %

CP43.1	1 l	glass	20,35 €
Original pack 6 x 1 l			19,33/1 l
CP43.2	2,5 l	glass	34,95 €
Original pack 4 x 2,5 l			33,20/2,5 l
CP43.3	2,5 l	plastic	30,65 €
Original pack 4 x 2,5 l			29,12/2,5 l
CP43.4	5 l	plastic	47,85 €
Original pack 2 x 5 l			45,46/5 l
CP43.5	10 l	tinplate	77,95 €
CP43.6	25 l	tinplate	145,05 €

Methanol

≥99 %, for synthesis

Type analysis:

Assay (GC). ..... ≥99 %
Water . ..... ≤0,1 %
Density (20 °C). 0,791-0,793

8388.1	1 l	glass	15,60 €
Original pack 6 x 1 l			14,82/1 l
8388.2	2,5 l	glass	30,65 €
Original pack 4 x 2,5 l			29,12/2,5 l
8388.5	2,5 l	plastic	26,80 €
Original pack 4 x 2,5 l			25,46/2,5 l
8388.6	5 l	plastic	41,85 €
Original pack 2 x 5 l			39,76/5 l
8388.3	10 l	tinplate	67,20 €
8388.4	25 l	tinplate	107,00 €

Methanol 60 %

Methanol 60 %

60 %, for synthesis

UN No. 1230 • ADR 3 (6.1) II • WGK 1

Danger

H225-H301+H311+H331-H370

Type analysis:

Assay (MeOH, v/v). ..... 59-61 %
Density (d 20 °C/20 °C). 0,9060-0,9104

9976.1	1 l	plastic	13,90 €
Original pack 6 x 1 l			13,21/1 l
9976.2	2,5 l	plastic	21,40 €
Original pack 4 x 2,5 l			20,33/2,5 l
9976.3	5 l	plastic	35,40 €
Original pack 2 x 5 l			33,63/5 l
9976.4	10 l	plastic	53,65 €
9976.5	25 l	plastic	95,70 €

Methanol D1

Methanol D1

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.
Methyl alcohol deuterated
CH_3OD
M 33,05 g/mol
D 0,813 • bp 65,5 °C
mp -98 °C • flp 11 °C
[1455-13-6] • EC No. 215-933-0
UN No. 1230 • ADR 3 (6.1) II • WGK 1

Danger

H225-H301+H311+H331-H370

Guarantee analysis:

Deuterising degree. ..... ≥99,5 %
Water (KF, H_2O+D_2O). ..... ≤0,1 %

HN86.1	25 ml	glass	61,20 €
HN86.2	100 ml	glass	206,95 €

Methanol D3

Methanol D3

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.
Methyl alcohol deuterated
CD_3OH
M 35,07 g/mol
bp 65 °C
mp -98 °C • flp 9 °C
[1849-29-2] • EC No. 217-435-9
UN No. 1230 • ADR 3 (6.1) II • WGK 1

Danger

H225-H301-H311-H331-H370

Type analysis:

Deuterising degree. ..... ≥99,5 %
Water (KF, H_2O+D_2O). ..... ≤0,05 %

9910.1	1 ml	glass ampoule	32,15 €
9910.2	5 ml	glass	95,70 €

Methanol D4

Methyl alcohol deuterated
CD_3OD
M 36,07 g/mol
D 0,89 • bp 65,5 °C
mp -99 °C • flp 12 °C
[811-98-3] • EC No. 212-378-6
UN No. 1230 • ADR 3 (6.1) II • WGK 1

Danger

H225-H301+H311+H331-H370

Methanol D4

100 Atom%D

For nuclear magnetic resonance spectroscopy.

Type analysis:

Deuterising degree. ..... ≥99,95 %
Water (KF, H_2O+D_2O). ..... ≤0,02 %

7918.1	10 ml	glass	123,65 €
7918.2	10 x 0,75 ml	glass ampoule	126,75 €

Methanol D4

99,8 Atom%D

For nuclear magnetic resonance spectroscopy.

Guarantee analysis:

Deuterising degree. ..... ≥99,8 %
Water (KF, H_2O+D_2O). ..... ≤0,03 %

AE57.1	10 ml	glass	65,50 €
AE57.4	10 ml	septum bottle	67,65 €
AE57.5	25 ml	glass	149,45 €
AE57.2	50 ml	glass	284,90 €
AE57.3	10 x 0,75 ml	glass ampoule	69,35 €

Methanol D4 with TMS (0,03 vol.%)

Methanol D4 with TMS (0,03 vol.%)

99,8 Atom%D

For nuclear magnetic resonance spectroscopy.
CD_3OD
M 36,07 g/mol
D 0,89 • bp 65,5 °C
mp -99 °C • flp 12 °C
[811-98-3] • EC No. 212-378-6
UN No. 1230 • ADR 3 (6.1) II • WGK 1

Danger

H225-H301+H311+H331-H370

Type analysis:

Deuterising degree. ..... ≥99,8 %
Water (KF, H_2O+D_2O). ..... ≤0,03 %
Trimethylsilane (TMS). ..... 0,02-0,04 %

7919.1	10 ml	glass	61,20 €
7919.2	25 ml	glass	145,15 €
7919.3	10 x 0,75 ml	glass ampoule	63,35 €

Methanol with 0,1 % trifluoroacetic acid

Methanol with 0,1 % trifluoroacetic acid

ROTISOLV® ≥99,95 %, LC-MS Grade

Eluent mixture for high performance liquid chromatography.

Methanol mixture
CH_3OH
M 32,04 g/mol
[67-56-1] • EC No. 200-659-6
UN No. 1230 • ADR 3 (6.1) II • WGK 1

Danger
H225-H370-H301+H311+H331

Guarantee analysis:

Assay (GC)	≥99,9 %
Trifluoroacetic acid (v/v)	0,095-0,105 %
Transmission:	
254 nm	≥90 %
230 nm	≥35 %
210 nm	≥5 %
Trace impurities:	
Aluminium (Al)	≤0,05 ppm
Calcium (Ca)	≤0,05 ppm
Iron (Fe)	≤0,05 ppm
Potassium (K)	≤0,05 ppm
Magnesium (Mg)	≤0,05 ppm
Sodium (Na)	≤0,05 ppm
LC-MS suitability test	complies

Filtered through 0,2 µm membrane and filled under protective gas.

CP06.1	1 l	glass	45,05 €
Original pack 6 x 1 l			42,80/1 l

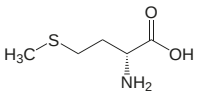
Methanol for water analysis

▶ Karl Fischer methanol see p. 2084

Methenamine

▶ Hexamethylene tetramine see p. 2041

D-Methionine



D-Methionine

≥98 %, for biochemistry

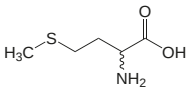
(R)-2-Amino-4-methyl-mercapto butyric acid, H-D-Met-OH
$C_5H_{11}NO_2S$
M 149,2 g/mol
Storage temp.: +4 °C
[348-67-4] • EC No. 206-483-6
WGK 1

Type analysis:

Appearance	white to off-white powder
Assay	98,0-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c= 2 in 6 N HCl)	-24° to -22°
Loss on drying	≤0,5 %

7885.1	5 g	plastic	19,90 €
7885.2	25 g	plastic	60,10 €
7885.3	100 g	plastic	149,45 €

DL-Methionine



DL-Methionine

≥98 %, for biochemistry

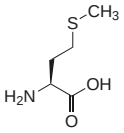
2-Amino-4-methyl-mercapto butyric acid
$C_5H_{11}NO_2S$
M 149,21 g/mol
Storage temp.: +4 °C
[59-51-8] • EC No. 200-432-1
WGK 1

Type analysis:

Appearance	white to off-white powder
Assay	≥98,0 %
Ash content (as SO_4)	≤0,1 %
Loss on drying	≤0,5 %

8602.1	100 g	plastic	30,00 €
8602.2	500 g	plastic	117,20 €
Original pack 6 x 500 g			111,34/500 g

L-Methionine



(S)-2-Amino-4-methyl-mercapto butyric acid, H-L-Met-OH
$C_5H_{11}NO_2S$
M 149,21 g/mol
mp ~284 °C
Solubility: ~48 g/l (H_2O, 20 °C)
[63-68-3] • EC No. 200-562-9
WGK 1

L-Methionine

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins	≤6,0 E.U./g
Assay	≥99 %
Loss on drying	≤0,2 %
Specific rotation $[\alpha]_D^{20}$	+23,0° to +24,0°
Ammonium (NH_4)	≤0,02 %
Chloride (Cl)	≤0,02 %
Sulphate (SO_4)	≤0,02 %
Heavy metals (as Pb)	≤0,001 %
Arsenic (As_2O_3)	≤0,0001 %
Iron (Fe)	≤0,001 %

1702.1	25 g	plastic	17,75 €
1702.2	100 g	plastic	36,45 €
1702.3	500 g	plastic	142,90 €
Original pack 6 x 500 g			135,76/500 g

L-Methionine

≥99 %, for biochemistry

Type analysis:

Appearance	white cryst. powder
Assay (dry substance)	99,0-101,0 %
Specific rotation $[\alpha]_D^{20}$	+23,0° to +24,0°
pH value	5,6-6,1
Chloride (Cl)	≤0,02 %
Sulphate (SO_4)	≤0,02 %
Ammonium (NH_4)	≤0,02 %
Arsenic (As_2O_3)	≤0,0001 %
Iron (Fe)	≤0,001 %
Heavy metals (as Pb)	≤0,001 %
Foreign amino acids	complies
Loss on drying	≤0,2 %
Sulphated ash	≤0,1 %

9359.1	100 g	plastic	30,00 €
9359.3	250 g	plastic	61,20 €
9359.4	500 g	plastic	110,65 €
Original pack 6 x 500 g			105,12/500 g
9359.2	1 kg	plastic	209,65 €
Original pack 6 x 1 kg			199,17/1 kg

Methoxsalen

▶ Xanthotoxin see p. 2442

4-Methoxybenzaldehyde

▶ 4-Anisaldehyde see p. 1807

Methoxybenzene

▶ Anisole see p. 1807

4-Methoxybenzoic acid

▶ 4-Anisic acid see p. 1807

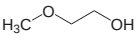
7-Methoxycoumarin

▶ Herniarin see p. 2039

Methoxycyclopentane

▶ Cyclopentyl methyl ether see p. 1918

2-Methoxyethanol



Ethylene glycol monomethyl ether
$C_3H_8O_2$
M 76,10 g/mol
D 0,96 • bp 123,5-125,5 °C
mp -85,1 °C • flp 37 °C
[109-86-4] • EC No. 203-713-7
UN No. 1188 • ADR 3 III • WGK 2

Danger
H360FD-H226-H302+H312+H332

2-Methoxyethanol

ROTIPURAN® ≥99,5 %, p.a., ACS

Guarantee analysis:

Assay (GC)	≥99,5 %
Density (d 20 °C/20 °C)	0,965-0,970
Colour (APHA)	≤10
Water	≤0,1 %
Acidity	≤0,001 meq/g

Calcium (Ca)..... ≤0,00005 %
Cadmium (Cd)..... ≤0,000005 %
Cobalt (Co)..... ≤0,000002 %
Chromium (Cr)..... ≤0,000002 %
Copper (Cu)..... ≤0,000002 %
Iron (Fe)..... ≤0,00005 %
Magnesium (Mg)..... ≤0,00001 %
Manganese (Mn)..... ≤0,000002 %
Nickel (Ni)..... ≤0,000002 %
Lead (Pb)..... ≤0,00001 %
Zinc (Zn)..... ≤0,00001 %
Evaporation residue..... ≤0,005 %

CP08.1	500 ml	glass	35,40 €
CP08.2	1 l	glass	61,20 €
Original pack 6 x 1 l			58,14/1 l
CP08.3	2,5 l	glass	133,85 €
Original pack 4 x 2,5 l			127,16/2,5 l

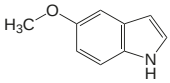
2-Methoxyethanol

≥99 %, for synthesis

Type analysis:
Assay (GC)..... ≥99 %
Water (KF)..... ≤0,2 %
Density (d 20 °C/4 °C)..... 0,964-0,968

8892.1	1 l	glass	41,85 €
Original pack 6 x 1 l			39,76/1 l
8892.2	2,5 l	glass	74,10 €
Original pack 4 x 2,5 l			70,40/2,5 l

5-Methoxyindole



5-Methoxyindole

≥98 %, for synthesis
C_9H_9NO
M 147,18 g/mol
bp 176-178 °C
mp 55-58 °C
[1006-94-6] • EC No. 213-745-3
WGK 1

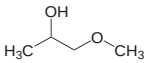
Type analysis:
Assay..... ≥98,0 %
Loss on drying (105 °C)..... ≤0,5 %

6546.1	1 g	glass	30,00 €
6546.2	5 g	glass	53,65 €
6546.3	25 g	glass	171,90 €

(2-Methoxymethyl-ethoxy)-propanol

▶ Dipropylene glycol monomethyl ether see p. 1954

1-Methoxy-2-propanol



1-Methoxy-2-propanol

≥99 %, for synthesis
Propylene glycol methyl ether
$C_4H_{10}O_2$
M 90,12 g/mol
D 0,92 • bp 117-125 °C
mp -97 °C • flp 32 °C
[107-98-2] • EC No. 203-539-1
UN No. 3092 • ADR 3 III • WGK 1
Warning H226-H336

Type analysis:
Appearance..... colourless liquid
Assay (GC)..... ≥99 %
Water..... ≤0,1 %
Density (20 °C)..... 0,921-0,927
Refractive index n_D^{20}..... 1,4020-1,4040
2-Methoxy-1-propanol..... ≤0,3 %

3123.1	1 l	glass	28,50 €
Original pack 6 x 1 l			27,08/1 l
3123.2	2,5 l	glass	47,20 €
Original pack 4 x 2,5 l			44,84/2,5 l

1-Methoxy-4-propenylbenzene

▶ Anethole see p. 1806

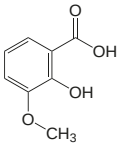
1-Methoxy-2-propyl acetate

▶ Propylene glycol methyl ether acetate see p. 2242

8-Methoxypsoralen

▶ Xanthotoxin see p. 2442

3-Methoxysalicylic acid



3-Methoxysalicylic acid

≥97 %, for synthesis
2-Hydroxy-5-methoxybenzoic acid
$C_8H_8O_4$
M 168,15 g/mol
mp 147-152 °C
[877-22-5] • EC No. 212-888-9
WGK 3

Type analysis:
Appearance..... white to brown powder
Assay (titr.)..... ≥97,0 %

4504.1	5 g	glass	20,35 €
4504.2	25 g	glass	50,45 €

4'-Methoxy-3,5,7-trihydroxy-flavone

▶ Kaempferide see p. 2082

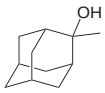
Methyl acetate

▶ Acetic acid methyl ester see p. 1760

Methylacetic acid

▶ Propionic acid see p. 2241

2-Methyl-2-adamantanol



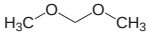
2-Methyl-2-adamantanol

≥98 %, for synthesis
$C_{11}H_{18}O$
M 166,26 g/mol
mp 208-215 °C
[702-98-7]
WGK 3

Type analysis:
Appearance..... white to off-white, cryst. powder
Assay..... ≥98,0 %
Identity..... complies
Sulphated ash..... ≤0,1 %

7630.1	1 g	glass	15,60 €
7630.2	5 g	glass	36,45 €

Methylal



NEW

Methylal

SOLVAGREEN® ≥99,5 %, for synthesis
Acetal and protecting group. Alternative for dichloromethane, acetone, MEK.
Dimethoxymethane, Formaldehyde dimethylacetal, Methylene dimethyl ether
$C_3H_8O_2$
M 76,08 g/mol
D 0,86
[109-87-55] • EC No. 203-714-2
UN No. 1234 • ADR 3 II • WGK 1
Danger H225

Type analysis:
Assay..... ≥99,5 %
Methanol..... ≤0,05 %
Water..... ≤0,5 %

0783.1	100 ml	glass	17,10 €
0783.2	500 ml	glass	37,55 €
0783.3	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l
0783.4	2,5 l	plastic	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

For further information, please see page 1593

2-Methylalanine
▶ 2-Aminoisobutyric acid see p. 1790

Methyl alcohol
▶ Methanol see p. 2131
▶ Karl Fischer methanol see p. 2084

Methyl alcohol deuterated
▶ Methanol D1 see p. 2133
▶ Methanol D3 see p. 2133
▶ Methanol D4 see p. 2133

4-(Methylamino)-phenol sulphate
▶ Metol see p. 2145

2-Methylaniline
▶ o-Toluidine see p. 2413

Methylarecaidin hydrobromide
▶ Arecoline hydrobromide see p. 1814

Methylated spirit

Methylated spirit
ethanol-denatured
For use as a detergent, as fuel additive or as antifreeze agent
Spiritus
UN No. 1170 • ADR 3 II • WGK 1
Danger H225-H319

AL30.1	1 l bottle		8,30 €
AL30.2	10 l canister		56,45 €
AL30.3	20 l canister		103,10 €

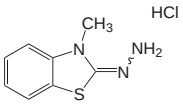
For further information, please see page 1153

Methylbenzene
▶ Toluene see p. 2411

Methylbenzene deuterated
▶ Toluene D8 see p. 2412

Methylbenzoate
▶ Benzoic acid methyl ester see p. 1831

3-Methyl-2-benzothiazolinone hydrazone hydrochloride



3-Methyl-2-benzothiazolinone hydrazone hydrochloride
≥98 %, p.a.
Analytical reagent for the qualitative determination of aldehydes.
MBTH
$C_8H_9N_3S \cdot HCl$ • M 215,71 g/mol
mp 276-278 °C
[4338-98-1] • EC No. 224-393-5
UN No. 2811 • ADR 6.1 III • WGK 1
Danger H301-H319

Type analysis:
Assay (HPLC)..... ≥98 %
Loss on drying..... ≤2,0 %

8413.1	10 g	glass	147,85 €

Methyl blue
▶ Acid blue 93 (C.I. 42780) see p. 1768
▶ Cotton blue (C.I. 42780) see p. 1911

2-Methylbutane

Isopentane, iso-Pentane
C_5H_{12} • M 72,15 g/mol
D 0,62 • bp 27,95 °C
mp -158,5 °C • flp -20 °C
[78-78-4] • EC No. 201-142-8
UN No. 1265 • ADR 3 I • WGK 2
Danger
H224-H304-H336-H411-EUH066

2-Methylbutane
ROTIPURAN® ≥99,5 %, p.a.

Guarantee analysis:
Assay (GC)..... ≥99,5 %
Water ..... ≤0,05 %
Aluminium (Al)..... ≤0,00005 %
Barium (Ba)..... ≤0,00001 %
Bismuth (Bi)..... ≤0,00001 %
Lead (Pb)..... ≤0,00001 %
Calcium (Ca)..... ≤0,00005 %
Cadmium (Cd)..... ≤0,000005 %
Chromium (Cr)..... ≤0,000002 %
Iron (Fe)..... ≤0,00001 %
Manganese (Mn)..... ≤0,000002 %
Cobalt (Co)..... ≤0,000002 %
Potassium (K)..... ≤0,00005 %
Bismuth (Bi)..... ≤0,00001 %
Copper (Cu)..... ≤0,000002 %
Lithium (Li)..... ≤0,00001 %
Magnesium (Mg)..... ≤0,00001 %
Molybdenum (Mo)..... ≤0,00001 %
Sodium (Na)..... ≤0,00005 %
Nickel (Ni)..... ≤0,000002 %
Strontium (Sr)..... ≤0,00002 %
Zinc (Zn)..... ≤0,00001 %

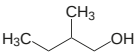
3926.1	250 ml	glass	73,00 €
3926.2	1 l	glass	208,05 €
Original pack 6 x 1 l			197,65/1 l

2-Methylbutane
≥99 %, for synthesis

Type analysis:
Assay (GC)..... ≥99 %
Density (15 °C)..... 0,623-0,627
Aromatic compounds..... ≤0,001 %

3927.1	1 l	glass	38,60 €
Original pack 6 x 1 l			36,67/1 l
3927.2	2,5 l	glass	79,05 €
Original pack 4 x 2,5 l			75,10/2,5 l

2-Methyl-1-butanol



2-Methyl-1-butanol
≥97,5 %, for synthesis
2-Methylbutyl alcohol, sec-Butyl carbinol
$C_5H_{12}O$
M 88,15 g/mol
D ~0,82 • bp 127-130 °C
mp -70 °C • flp 42,5 °C
Solubility: 36 g/l (H_2O, 20 °C)
[137-32-6] • EC No. 205-289-9
UN No. 1105 • ADR 3 III • WGK 1
Warning H226-H332-H335-EUH066

Type analysis:
Assay (GC)..... ≥97,5 %
Density (d 20 °C/4 °C)..... 0,816-0,821

4379.1	100 ml	glass	15,60 €
4379.2	500 ml	glass	50,45 €
4379.3	1 l	glass	85,90 €
Original pack 6 x 1 l			81,61/1 l

3-Methyl-1-butanol
▶ Isoamyl alcohol see p. 2076

3-Methylbutyl acetate
▶ Acetic acid isoamyl ester see p. 1759

2-Methylbutyl alcohol
▶ 2-Methyl-1-butanol see p. 2136

Methyl tert-butyl ether
▶ tert-Butyl methyl ether see p. 1863

Methyl butyrate
▶ Butyric acid methyl ester see p. 1865

Methyl caprylate
▶ Caprylic acid methyl ester see p. 1876

Methyl carbonate
▶ Dimethyl carbonate see p. 1947

Methylcellulose

Methylcellulose

powdered

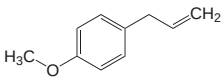
Tylose® 3000 P, MHB, Methylhydroxyethylcellulose
M ~160 000 g/mol
[9032-42-2]
WGK 1

Type analysis:

Appearance. ..... powder
Viscosity (Brookfield, 1,9 % sol., 20 °C). ..... 3300-4500 mPa s
Moisture. ..... ≤7,0 %
NaCl. ..... ≤1,5 %
Particle size:
<0,180 mm. ..... ≥90 %
<0,100 mm. ..... ≥25 %

8421.1	250 g	plastic	32,80 €
8421.2	1 kg	plastic	107,00 €
Original pack 6 x 1 kg			101,65/1 kg

Methylchavicol



Methylchavicol

ROTICHROM® GC

Reference substance for GC.
Allylanisole, Chavicol methyl ether, Estragole
$C_{10}H_{12}O$
M 148,21 g/mol
D 0,965 • bp 215-216 °C
flp 81 °C
Storage temp.: +4 °C
[140-67-0] • EC No. 205-427-8
WGK 3

Warning H302-H315

Type analysis:

Purity (GC). ..... ≥97 %

9413.2	100 mg	glass	85,90 €

Methyl cinnamate

▶ Cinnamic acid methyl ester see p. 1900

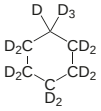
Methyl cyanide

▶ Acetonitrile see p. 1762

Methyl cyanide deuterated

▶ Acetonitrile D3 see p. 1764

Methylcyclohexane D14



Methylcyclohexane D14

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.
C_7D_{14}
M 112,3 g/mol
D 0,88 • bp 101 °C
mp -126 °C • flp -3 °C
[10120-28-2] • EC No. 233-325-3
UN No. 2296 • ADR 3 II • WGK 2

Danger

H225-H304-H315-H336-H410

Type analysis:

Deuterising degree. ..... ≥99,5 %
Water (KF, H_2O+D_2O). ..... ≤0,03 %

9913.1	5 ml	glass ampoule	121,40 €

Methylcyclohexane

NEW

Methylcyclohexane

≥99 %, for synthesis

MCH, Cyclohexylmethane, Hexahydrotoluene
D 0,77 • bp 100 °C
[108-87-2] • EC No. 203-624-3
UN No. 2296 • ADR 3 II • WGK 2

Danger

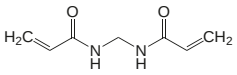
H225-H304-H315-H336-H411

Type analysis:

Assay (GC). ..... ≥99,0 %
Density (20 °C). ..... 0,768-0,770 g/cm³
Water. ..... ≤0,1 %
Refractive index n_D^{20}. 1,420-1,427

0752.1	1 l	glass	21,40 €
Original pack 6 x 1 l			20,33/1 l
0752.2	2,5 l	glass	42,90 €
Original pack 4 x 2,5 l			40,76/2,5 l
0752.3	5 l	aluminium	75,15 €
Original pack 2 x 5 l			71,39/5 l
0752.4	10 l	tinplate	134,30 €
0752.5	25 l	tinplate	246,20 €

N,N'-Methylene bisacrylamide



N,N'-Methylene bisacrylamide

≥98 %, for gel electrophoresis

Bis, Bisacrylamide, MBAA
$C_7H_{10}N_2O_2$
M 154,17 g/mol
D ~1,23
mp 185 °C (dec.)
Solubility: 3 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[110-26-9] • EC No. 203-750-9
WGK 2

Warning H302

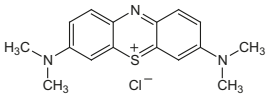
Type analysis:

Assay. ..... ≥98 %
Water. ..... ≤1,0 %

7867.1	50 g	plastic	31,75 €
7867.2	100 g	plastic	50,00 €

For further information, please see page 1191

Methylene blue (C.I. 52015)



Methylene blue (C.I. 52015)

For microscopy and staining of nucleic acids in polyacrylamide gels.
Basic blue 9
$C_{16}H_{18}ClN_3S$
M 319,9 g/mol
Solubility: 40 g/l (H_2O, 20 °C)
[61-73-4] • EC No. 200-515-2
WGK 2

Warning H302-H412

Type analysis:

Maximum absorption. ..... 655-670 nm
Loss on drying (110 °C). ..... ≤18,0 %

A514.1	10 g	glass	20,35 €
A514.2	50 g	glass	48,30 €
A514.3	100 g	glass	78,40 €

For further information, please see page 1523

Methylene blue indicator solution

Methylene blue indicator solution

0,01 mol/l in water

WGK 1

9953.1	100 ml	glass	26,80 €

Methylene blue solution

▶ Neisser's solution I see p. 2154
▶ LOEFFLER's methylene blue solution see p. 2104

Methylene blue solution 0,1 %, aqueous

Methylene blue solution 0,1 %, aqueous

for microscopy

For staining of nuclei.
Gabett solution
Storage temp.: +20 °C
WGK 1

Type analysis:

Appearance. ..... blue-violet liquid
Odour. .....odourless

1433.1	250 ml	glass	20,35 €
1433.2	500 ml	glass	25,30 €
1433.3	1 l	glass	32,80 €
Original pack 6 x 1 l			31,16/1 l

For further information, please see page 1518

Methylene blue staining concentrate

▶ Roti®-Methylene blue staining concentrate see p. 2289

Methylene chloride

▶ Dichloromethane see p. 1935

Methylene chloride D2

▶ Dichloromethane D2 see p. 1936

Methylene violet 3RAX

▶ Diethyl safranine (C.I. 50206) see p. 1940

ß-Methylesculetin

▶ Scopoletin see p. 2308

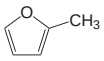
Methyl ethyl glycol

▶ 1,2-Propanediol see p. 2238

Methyl ethyl ketone

▶ 2-Butanone see p. 1860

2-Methylfuran



2-Methylfuran

≥99 %, for synthesis

Silvan
C_5H_6O
M 82,10 g/mol
D 0,91 • bp ~65 °C
mp -89 °C
Solubility: 3 g/l (H_2O, 20 °C)
[534-22-5] • EC No. 208-594-5
UN No. 2301 • ADR 3 II • WGK 1

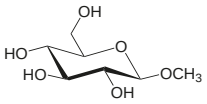
Danger H225-H330-H301+H311

Type analysis:

Assay. ..... ≥99,0 %
Identity (IR). ..... complies
Density (d 20 °C/4 °C). 0,913-0,916
Furfural. ..... ≤0,5 %
Water. ..... ≤0,1 %

7470.1	100 ml	glass	21,00 €
7470.2	500 ml	glass	55,40 €
7470.3	1 l	glass	88,70 €
Original pack 6 x 1 l			84,27/1 l
7470.4	2,5 l	glass	181,70 €
Original pack 4 x 2,5 l			172,62/2,5 l

1-*O*-Methyl-β-D-gluco-pyranoside



1-*O*-Methyl-β-D-gluco-pyranoside

≥99 %, for biochemistry

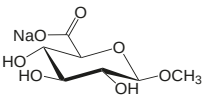
1-*O*-Methyl-glucoside
$C_7H_{14}O_6$
M 194,19 g/mol
Storage temp.: +4 °C
[709-50-2] • EC No. 211-909-9
WGK 3

Type analysis:

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥99,0 %
Appearance of solution (1 % in H_2O). ..... colourless
Specific rotation $[\alpha]_D^{20}$ (1 % in H_2O, dry substance). ..... -35,0° to -31,0°
Water (KF). ..... ≤6,0 %

8356.1	1 g	glass	27,45 €
8356.2	5 g	plastic	96,65 €

1-*O*-Methyl-β-D-glucuronic acid, sodium salt



1-*O*-Methyl-β-D-glucuronic acid, sodium salt

≥99 %, for biochemistry

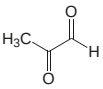
1-OMe-β-D-GlcA, 1-*O*-Methylglucuronide sodium salt
$C_7H_{11}NaO_7$
M 230,15 g/mol
Storage temp.: +4 °C
WGK 3

Type analysis:

Assay (perchloric acid titration). .....≥99,0 %
Appearance. ..... white to brownish cryst. powder
Appearance of solution (5 % in H_2O). ..... colourless to light brown
Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O). .....-62,0° to -58,0°
Water (KF). .....≤1,0 %

8407.1	250 mg	glass	50,45 €
8407.2	500 mg	glass	82,70 €
8407.3	1 g	glass	142,45 €

Methylglyoxal



Methylglyoxal

40 % in water

Pyruvaldehyde
$C_3H_4O_2$
M 72,06 g/mol
D 1,11 • bp 72 °C
mp -20 °C
Storage temp.: +4 °C
[78-98-8] • EC No. 201-164-8
WGK 1

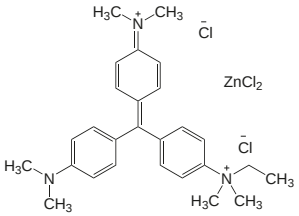
Warning H302-H315-H319-H335

Type analysis:

Appearance. ..... yellow to brown liquid
Assay. .....35-45 %

6399.1	100 ml	glass	149,45 €
6399.2	500 ml	glass	643,95 €

Methyl green (C.I. 42590)



Methyl green (C.I. 42590)

for microscopy
Indicator pH 0,1-2,3
Methyl green zinc chloride double salt, Ethyl green zinc chloride double salt
$C_{27}H_{35}Cl_2N_3 \cdot ZnCl_2$
M 608,78 g/mol
mp >300 °C
Solubility: 60 g/l (H_2O, 20 °C)
[7114-03-6] • EC No. 230-415-4
UN No. 1759 • ADR 8 II • WGK 2
Danger H314-H351-H411

Type analysis:
Appearance. ..... dark red to dark green powder
Absorption max. (in H_2O). ..... 625-635 nm

5159.1	5 g	glass	22,50 €
5159.2	10 g	glass	35,40 €
5159.3	25 g	glass	69,80 €

For further information, please see page 1523

Methyl green zinc chloride double salt

▶ Methyl green (C.I. 42590) see p. 2139

1-Methyl hexane

▶ n-Heptane see p. 2037

Methyl hexane

▶ n-Heptane see p. 2037

2-Methyl hydroquinone

▶ Toluhydroquinone see p. 2412

Methyl-p-hydroxybenzoate

▶ 4-Hydroxybenzoic acid methyl ester see p. 2056

1-Methylimidazole

1-Methylimidazole

≥99 %, for synthesis
N-Methylimidazole
$C_4H_6N_2$
M 82,11 g/mol
D ~1,04 • bp 198 °C
[616-47-7]
UN No. 2922 • ADR 8 (6.1) II • WGK 1
Danger H311-H314-H302

Type analysis:
Assay (GC). ..... ≥99,0 %
Water. ..... ≤0,5 %

N353.1	100 ml	glass	21,40 €
N353.2	1 l	glass	118,15 €
Original pack 6 x 1 l			112,24/1 l

3-Methyl-indol

▶ Skatole see p. 2329

Methyl isobutyl ketone

▶ Isobutyl methylketone see p. 2076

Methyliodide D3

▶ Iodomethane D3 see p. 2070

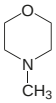
Methyl methacrylate

▶ Methacrylic acid methyl ester see p. 2130

2-Methyl-2-methoxypropane

▶ tert-Butyl methyl ether see p. 1863

N-Methylmorpholine



N-Methylmorpholine

≥99 %, for synthesis
NMM
$C_5H_{11}NO$
M 101,15 g/mol
D 0,92 • bp 115 °C
mp -65 °C • flp 12,5 °C
[109-02-4] • EC No. 203-640-0
UN No. 2535 • ADR 3 (8) II • WGK 1
Danger H225-H302-H314

Type analysis:
Assay (GC). ..... ≥99,0 %
Colour number (APHA). ..... ≤50
Water (KF). ..... ≤0,5 %

9672.1	100 ml	glass	13,45 €
9672.2	250 ml	glass	21,40 €
9672.3	1 l	glass	50,45 €
Original pack 6 x 1 l			47,93/1 l
9672.4	2,5 l	glass	99,90 €
Original pack 4 x 2,5 l			94,91/2,5 l

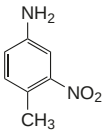
Methyl myristate

▶ Myristic acid methyl ester see p. 2151

Methyl nadic anhydride

▶ Glycidether Hardener MNA see p. 2026

4-Methyl-3-nitroaniline



4-Methyl-3-nitroaniline

≥99 %, for synthesis
3-Nitro-p-toluidine, 3-Nitro-4-methylaniline, 4-Amino-2-nitro-toluene
$C_7H_8N_2O_2$
M 152,15 g/mol
mp 77-79 °C
[119-32-4] • EC No. 204-314-0
UN No. 2660 • ADR 6.1 III • WGK 3
Danger
H301+H311+H331-H373-H411

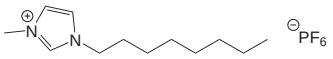
Type analysis:
Assay (HPLC). ..... ≥99,0 %
Melting point. ..... 77-79 °C
Loss on drying. ..... ≤2,0 %

5532.1	25 g	plastic	31,10 €
5532.2	50 g	plastic	52,60 €

1-Methyl-4-nitrobenzene

▶ p-Nitrotoluene see p. 2167

1-Methyl-3-octyl-imidazolium-hexafluorophosphate (OMIM PF_6)



1-Methyl-3-octyl-imidazolium-hexafluorophosphate (OMIM PF_6)

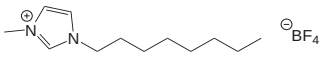
>99 %
Ionic liquid
OMIM PF_6
$C_{12}H_{23}F_6N_2P$
M 340,29 g/mol
D 1,237 • mp -70 °C
[304680-36-2] • WGK 3
Warning H315-H319-H335

Type analysis:
Appearance. ..... yellow to orange liquid
Assay. ..... >99 %
Water (KF). ..... <0,025 %
Halogens. ..... <0,01 %

2076.1	25 g	glass	192,45 €
2076.2	100 g	glass	407,45 €

Lit.: "**Use of 1-alkyl-3-methylimidazolium hexafluorophosphate room temperature ionic liquids as chelate extraction solvent with 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione**"
I. Naoki; D. Mika; K. Hitomi; H. Takaharu, *Talanta* **2005,** 65, 255-260.
"**On the solubilization of water with ethanol in hydrophobic hexafluoro-phosphate ionic liquids**"
R. P. Swatloski, A. E. Visser, W. M. Reichert, G. A. Broker, L. M. Farina, J. D. Holbrey, R. D. Rogers, *Green Chem.* **2002,** 4, 81 – 87.
For further information, please see page 1590

1-Methyl-3-octyl-imidazolium-tetrafluoroborate (OMIM BF_4)



1-Methyl-3-octyl-imidazolium-tetrafluoroborate (OMIM BF_4)

>99 %
Ionic liquid
OMIM BF_4
$C_{12}H_{23}BF_4N_2$
M 282,13 g/mol
D 1,106
mp -81 °C
[244193-52-0]
WGK 3

Warning H315-H319-H335

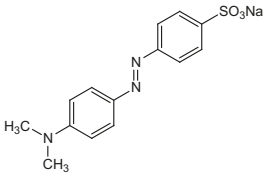
Type analysis:

Appearance. ..... yellow to orange liquid
Assay ..... >99 %
Water (KF). ..... <0,025 %
Halogens. ..... <0,01 %

2081.1	25 g	glass	177,40 €
2081.2	100 g	glass	370,90 €

Lit.: **"Tribological behavior of sialon ceramics sliding against steel lubricated by fluorine-containing oils"** W. Liu, C.Ye, Y. Chen, Z.Ou, D.C. Sun, *Tribology International* **2002,** 35, 503–509.
"High-pressure phase behavior of the binary ionic liquid system 1-octyl-3-methyl-imidazolium tetrafluoroborate plus carbon dioxide"
K. I. Gutkowski, A.Shariati, C. J.Peters, *J. Supercritical Fluids* **2006,** 39, 187-191.
For further information, please see page 1590

Methyl orange (C.I. 13025)



Methyl orange (C.I. 13025)

ACS, for microscopy
Indicator pH 3,2-4,4
4-(Dimethylamino)-azobenzene -4'-sulphonic acid sodium salt, Orange III
$C_{14}H_{14}N_3NaO_3S$
M 327,4 g/mol
mp >300 °C
Solubility: 5 g/l (H_2O, 20 °C)
[547-58-0] • EC No. 208-925-3
UN No. 3143 • ADR 6.1 III • WGK 1

Danger H301

Guarantee analysis:

Appearance. ..... orange powder
Appearance of solution. ..... complies
pH-transition range. ..... 3,2 (pink)-4,4 (yellow)
Loss on drying (110 °C). ..... ≤3,0 %

T118.1	50 g	glass	26,80 €
T118.2	100 g	glass	39,70 €
T118.3	250 g	glass	60,10 €

For further information, please see page 1524

Methyl orange indicator solution

Methyl orange indicator solution

0,1 % in water
WGK 1

T119.1	500 ml	plastic	19,90 €

Methylparaben

▶ 4-Hydroxybenzoic acid methyl ester see p. 2056

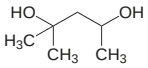
1-Methylpentane

▶ n-Hexane see p. 2041

2-Methylpentane

▶ Isohexane see p. 2077

2-Methyl-2,4-pentanediol



2-Methyl-2,4-pentanediol

≥99 %, for synthesis
Hexyleneglycol
$C_6H_{14}O_2$
M 118,18 g/mol
D ~0,92 • bp ~196 °C
mp -40 °C • flp ~93 °C
[107-41-5] • EC No. 203-489-0
WGK 1

Warning H315-H319

Type analysis:

Assay (GC). ..... ≥99 %
Density (20 °C). 0,919-0,925
Colour (Hazen). ..... ≤15
Water (KF). ..... ≤0,2 %
Refractive index (20 °C). 1,4240-1,4300

CN17.1	100 ml	plastic	12,80 €
CN17.2	1 l	plastic	21,40 €
Original pack 6 x 1 l			20,33/1 l
CN17.3	2,5 l	plastic	38,60 €
Original pack 4 x 2,5 l			36,67/2,5 l
CN17.4	10 l	plastic	105,90 €

4-Methyl-2-pentanone

▶ Isobutyl methylketone see p. 2076

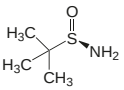
3-Methylphenol

▶ m-Cresol see p. 1912

3-(4-Methylpiperazinyl-iminomethyl)rifamycin SV

▶ Rifampicin see p. 2261

(R)-(+)-2-Methyl-2-propane-sulfinamide



(R)-(+)-2-Methyl-2-propane-sulfinamide

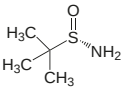
≥97 %
Chiral auxiliar
(R)-(+)-tert-Butyl sulfinamide
$C_4H_{11}NOS$
M 121,20 g/mol
mp 103-107 °C
Storage temp.: +4 °C
[196929-78-9]
WGK 1

Type analysis:

Appearance. ..... white cryst. solid
Assay (HPLC). ..... ≥97 %
Melting point. ..... 103-107 °C

0610.1	1 g	glass	19,25 €
0610.2	5 g	glass	53,65 €
0610.3	25 g	glass	170,95 €

(S)-(-)-2-Methyl-2-propane-sulfinamide



(S)-(-)-2-Methyl-2-propane-sulfinamide

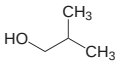
≥98 %
Chiral auxiliar
(S)-(-)-tert-Butyl sulfinamide
$C_4H_{11}NOS$
M 121,20 g/mol
mp 95-101 °C
Storage temp.: +4 °C
[343338-28-3]
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98 %
Enantiomeric purity. ..... ≥98 %
Melting point. ..... 95-106 °C

1442.1	1 g	glass	22,05 €
1442.2	5 g	glass	66,55 €
1442.3	25 g	glass	198,90 €

2-Methyl-1-propanol



Isobutanol, Isobutyl alcohol, iso-Butyl alcohol
$C_4H_{10}O$
M 74,12 g/mol
D 0,80 • bp 108 °C
mp -108 °C • flp 28 °C
Solubility: 100 g/l (H_2O, 20 °C)
[78-83-1] • EC No. 201-148-0
UN No. 1212 • ADR 3 III • WGK 1
Danger
H318-H226-H335-H336-H315

2-Methyl-1-propanol

ROTIPURAN® ≥99 %, p.a., ACS

Guarantee analysis:

Assay (GC)	≥99 %
Acidity	≤0,0005 meq/g
Alkalinity	≤0,0005 meq/g
Colour (APHA)	≤10
In H_2O insoluble matter	complies
Non volatile matter	≤0,001 %
Matter discoloured by H_2SO_4	complies
Water	≤0,1 %
Butanal (GC)	≤0,01 %
iso-Butanal (GC)	≤0,05 %
Butanone (GC)	≤0,02 %
Peroxides (as H_2O_2)	≤0,001 %
Lead (Pb)	≤0,00001 %
Cadmium (Cd)	≤0,000005 %
Calcium (Ca)	≤0,00005 %
Chromium (Cr)	≤0,000002 %
Iron (Fe)	≤0,00001 %
Cobalt (Co)	≤0,000002 %
Copper (Cu)	≤0,000002 %
Magnesium (Mg)	≤0,00001 %
Manganese (Mn)	≤0,000002 %
Nickel (Ni)	≤0,000002 %
Zinc (Zn)	≤0,00001 %

6772.1	1 l	glass	50,00 €
Original pack 6 x 1 l			47,50/1 l
6772.2	2,5 l	glass	98,80 €
Original pack 4 x 2,5 l			93,86/2,5 l

2-Methyl-1-propanol

≥99 %, for synthesis

Type analysis:

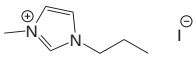
Assay (GC)	≥99,0 %
Density (d 20 °C/4 °C)	0,801-0,802
Water	≤0,5 %

CP09.1	1 l	plastic	27,85 €
Original pack 6 x 1 l			26,46/1 l
CP09.2	2,5 l	plastic	51,10 €
Original pack 4 x 2,5 l			48,55/2,5 l
CP09.3	5 l	plastic	87,00 €
Original pack 2 x 5 l			82,65/5 l

2-Methyl-2-propanol

▶ tert-Butanol see p. 1860

1-Methyl-3-propyl-imidazolium-iodide (PMIM I)



1-Methyl-3-propyl-imidazolium-iodide (PMIM I)

≥98 %
Ionic liquid
PMIM I
$C_7H_{13}N_2I$
M 252,10 g/mol
D 1,542
[119171-18-5]
WGK 3
Warning H315-H319-H335

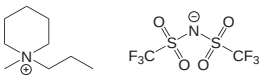
Type analysis:

Appearance	yellow to orange liquid
Assay	≥98 %

2091.1	25 g	glass	155,90 €
2091.2	100 g	glass	310,70 €

Lit.: "**A Quasi-Solid-State Dye-Sensitized Solar Cell Based on a Sol-Gel Nanocomposite Electrolyte Containing Ionic Liquid**" E. Stathatos, P. Lianos, S. M. Zakeeruddin, P. Liska, M. Graetzel, *Chemistry of Materials* **2003,** 15, 1825-1829.
For further information, please see page 1590

1-Methyl-1-propyl-piperidinium-bis-(trifluoromethylsulphonyl)-imide (PMPip BTA)



1-Methyl-1-propyl-piperidinium-bis-(trifluoromethylsulphonyl)-imide (PMPip BTA)

≥99 %
Ionic liquid
PMPip BTA
$C_{11}H_{20}F_6N_2O_4S_2$
M 422,41 g/mol
D 1,413
mp 9 °C
[608140-12-1]
WGK 3
Warning H315-H319-H335

Type analysis:

Appearance	colourless to yellowish liquid
Assay	≥99 %
Water (KF)	≤0,01 %
Halogens	≤0,01 %

2095.1	25 g	glass	198,90 €
2095.2	100 g	glass	424,65 €

Lit.: "**Electrochemical Magnesium Deposition and Dissolution with High Efficiency in Ionic Liquid**" Y.NuLi, J. Yang, J. Wang, J. Xu, P. Wang, *Electrochem. Solid-State Lett.* **2005,** 8, C166-C169.
For further information, please see page 1590

Methyl 3-pyridyl ketone

▶ 3-Acetylpyridine see p. 1768

N-Methyl-2-pyrrolidone (NMP)

NMP
C_5H_9NO
M 99,13 g/mol
D 1,03 • bp 202 °C
mp -24 °C • flp 86 °C
Solubility: 1000 g/l (H_2O, 25 °C)
[872-50-4] • EC No. 212-828-1
WGK 1
Danger H315-H319-H335-H360D

N-Methyl-2-pyrrolidone (NMP)

≥99,8 %, VLSI Grade

Guarantee analysis:

Assay	≥99,8 %
Particle number (≥0,5 µm)	≤250 p/ml
Water	≤0,02 %
Free amines	≤0,005 %
Colour (APHA)	≤25
Chloride (Cl)	≤0,00005 %
Nitrate (NO_3)	≤0,00005 %
Phosphate (PO_4)	≤0,00005 %
Aluminium (Al)	≤10 ppb
Antimony (Sb)	≤10 ppb
Arsenic (As)	≤10 ppb
Barium (Ba)	≤10 ppb
Beryllium (Be)	≤10 ppb
Bismuth (Bi)	≤10 ppb
Lead (Pb)	≤10 ppb
Boron (B)	≤10 ppb
Cadmium (Cd)	≤10 ppb
Calcium (Ca)	≤10 ppb
Chromium (Cr)	≤10 ppb
Iron (Fe)	≤10 ppb
Gallium (Ga)	≤10 ppb
Gold (Au)	≤10 ppb
Potassium (K)	≤10 ppb
Cobalt (Co)	≤10 ppb
Copper (Cu)	≤10 ppb
Lithium (Li)	≤10 ppb
Magnesium (Mg)	≤10 ppb
Manganese (Mn)	≤10 ppb
Molybdenum (Mo)	≤10 ppb
Sodium (Na)	≤10 ppb
Nickel (Ni)	≤10 ppb
Niobium (Nb)	≤10 ppb
Silver (Ag)	≤5 ppb
Strontium (Sr)	≤10 ppb
Tantal (Ta)	≤10 ppb
Thallium (Tl)	≤10 ppb
Titanium (Ti)	≤10 ppb
Vanadium (V)	≤10 ppb
Zinc (Zn)	≤10 ppb
Tin (Sn)	≤10 ppb
Zirconium (Zr)	≤10 ppb

9786.1	2,5 l	plastic	90,20 €
Original pack 4 x 2,5 l			85,69/2,5 l
9786.2	5 l	plastic	157,95 €
Original pack 2 x 5 l			150,05/5 l

For further information, please see page 1718

N-Methyl-2-pyrrolidone (NMP)

≥99,8 %, for synthesis

Type analysis:

Assay (GC). ..... ≥99,8 %
Colour (APHA). ..... ≤50
Water . ..... ≤0,05 %
Butyrolactone ..... ≤0,05 %
Monomethylamine. ..... ≤0,005 %
Dimethyl pyrrolidones, mixture of isomers. ..... ≤0,4 %

4306.1	500 ml	glass	22,05 €
4306.3	1 l	glass	33,25 €
Original pack 6 x 1 l			31,59/1 l
4306.2	2,5 l	glass	63,35 €
Original pack 4 x 2,5 l			60,18/2,5 l
4306.5	25 l	tinplate	482,70 €

N-Methyl-2-pyrrolidone (NMP)

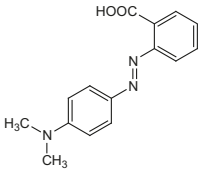
PEPTIPURE® ≥99,8 %, for peptide synthesis

Type analysis:

Assay (GC). ..... ≥99,8 %
Water (KF). ..... ≤0,03 %
Non volatile matter. ..... ≤0,005 %
Free amines. ..... ≤0,001 %
Free acid (as CH_3COOH). ..... ≤0,0006 %

P052.1	2,5 l	glass	118,15 €
Original pack 4 x 2,5 l			112,24/2,5 l

Methyl red (C.I. 13020)



Methyl red (C.I. 13020)

p.a., ACS

Indicator pH 4,2-6,2
2-[(4-Dimethylamino)-phenylazo]-benzoic acid
$C_{15}H_{15}N_3O_2$
M 269,31 g/mol
mp 178-182 °C
Solubility: hardly soluble (H_2O, 20 °C)
[493-52-7] • EC No. 207-776-1
WGK 2

Guarantee analysis:

Appearance. ..... reddish powder
Appearance of solution. ..... complies
Melting point. ..... 179-182 °C
pH-transition range. ..... 4,2 (pink)-6,2 (yellow)
Loss on drying (110 °C). ..... ≤3,0 %

T120.1	10 g	glass	15,60 €
T120.2	25 g	glass	25,70 €

Methyl red hydrochloride (C.I. 13020)

Methyl red hydrochloride (C.I. 13020)

p.a.

Indicator pH 4,2-6,2
2-[(4-Dimethylamino)-phenylazo]-benzoic acid hydrochloride
$C_{15}H_{15}N_3O_2 \cdot HCl$
M 305,77 g/mol
mp 179-182 °C (dec.)
[63451-28-5] • EC No. 264-190-9
WGK 1

Guarantee analysis:

Appearance. ..... dark purple cryst. powder
Appearance of solution. ..... complies
pH transition range. ..... 4,2 (red)-6,2 (yellow)

2562.1	25 g	glass	26,80 €
2562.2	100 g	glass	62,25 €

Methyl red indicator solution

Methyl red indicator solution

0,1 % in ethanol, denatured

UN No. 1170 • ADR 3 II • WGK 1

Danger H225-H319

T121.1	250 ml	glass	27,45 €

Methyl red sodium salt (C.I. 13020)

Methyl red sodium salt (C.I. 13020)

p.a., soluble in water

Indicator pH 4,2-6,2
2-[(4-Dimethylamino)-phenylazo]-benzoic acid sodium salt
$C_{15}H_{14}N_3NaO_2$
M 291,29 g/mol
mp >300 °C
Solubility: 800 g/l (H_2O, 25 °C)
[845-10-3] • EC No. 212-682-9
WGK 1

Type analysis:

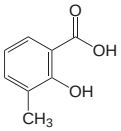
pH-transition range. ..... 4,2 (red)-6,2 (yellow)
Solubility. ..... water-soluble

5003.1	25 g	glass	24,20 €
5003.2	100 g	glass	71,50 €

Methyl salicylate

▶ Salicylic acid methyl ester see p. 2304

3-Methylsalicylic acid



3-Methylsalicylic acid

≥98,5 %, for synthesis

2-Hydroxy-3-methylbenzoic acid
$C_8H_8O_3$
M 152,15 g/mol
mp 164-167 °C
[83-40-9] • EC No. 201-473-8
WGK 1

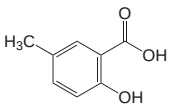
Danger H302-H315-H318-H335

Type analysis:

Appearance. ..... white to pale pink cryst. powder
Assay. ..... ≥98,5 %

4525.1	100 g	glass	25,70 €
4525.2	500 g	glass	83,75 €
Original pack 6 x 500 g			79,56/500 g

5-Methylsalicylic acid



5-Methylsalicylic acid

≥98 %, for synthesis

2-Hydroxy-5-methylbenzoic acid
$C_8H_8O_3$
M 152,15 g/mol
mp 150-155 °C
[89-56-5] • EC No. 201-918-6
WGK 1

Type analysis:

Appearance. ..... white to off-white, cryst. powder
Assay. ..... ≥98,0 %
Ash content. ..... ≤0,1 %

6547.1	1 g	glass	19,25 €
6547.2	5 g	plastic	46,15 €
6547.3	25 g	plastic	90,20 €

3-(Methylsulfinyl)propyl-glucosinolate potassium salt

▶ Glucoiberin see p. 2018

3-(Methylsulphinyl)butyl-glucosinolate potassium salt

▶ Glucoraphanin see p. 2019

Methylsulphonic acid

▶ Methanesulphonic acid see p. 2130

Methyl sulphoxide deuterated

▶ Dimethyl sulphoxide D6 see p. 1950

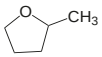
Methyl tert-butyl ether

▶ tert-Butyl methyl ether see p. 1863

Methyl tetradecanoate

▶ Myristic acid methyl ester see p. 2151

2-Methyltetrahydrofuran



2-Methyltetrahydrofuran

SOLVAGREEN® ≥99 %, extra pure

Methyl-THF, Me-THF

$C_5H_{10}O$

M 86,13 g/mol

D 0,86 • bp 78-80 °C

mp -136 °C • flp -12 °C

[96-47-9] • EC No. 202-507-4

UN No. 2536 • ADR 3 II • WGK 2

Danger H225-H319-H335-EUH019

Type analysis:

Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99 %
Water (KF). ..... ≤0,05 %
Density (20 °C). 0,850-0,865
Stabilized with 150-400 ppm BHT

6845.1	250 ml	glass	25,70 €
6845.2	500 ml	glass	42,90 €
6845.3	1 l	glass	59,05 €
Original pack 6 x 1 l			56,10/1 l
6845.4	2,5 l	glass	110,20 €
Original pack 4 x 2,5 l			104,69/2,5 l
6845.5	10 l	tinplate	375,20 €

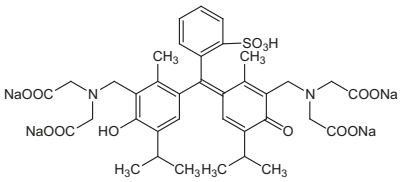
7-Methyltheobromine

▶ Caffeine see p. 1867

4-Methylthiobutylglucosinolate potassium salt

▶ Glucoerucin see p. 2018

Methylthymol blue sodium salt



Methylthymol blue sodium salt

p.a., ACS

Indicator for titration of metal ions (complexometry).

$C_{37}H_{40}N_2Na_4O_{13}S$

M 844,76 g/mol

Solubility: 460 g/l (H_2O, 20 °C)

[1945-77-3] • EC No. 217-743-3

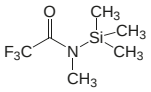
WGK 2

Guarantee analysis:

Clarity of solution (ACS-test). ..... complies
Loss on drying. ..... ≤10,0 %
pH-transition range. ..... 6,5 (yellow)-8,5 (blue)
Suitability as indicator. ..... complies

KK17.1	1 g	glass	15,60 €
KK17.2	5 g	glass	44,65 €

N-Methyl-N-(trimethylsilyl)-trifluoroacetamide (MSTFA)



MSTFA

$C_6H_{12}F_3NOSi$

M 199,25 g/mol

D 1,07 • bp 130-132 °C

mp 98-100 °C • flp 25 °C

[24589-78-4] • EC No. 246-331-6

UN No. 1993 • ADR 3 III • WGK 1

Warning H226-H315-H319-H335

N-Methyl-N-(trimethylsilyl)-trifluoroacetamide (MSTFA)

≥99 %, for GC

Silylation agent

Storage temp.: +4 °C

Type analysis:

Assay (GC). ..... ≥99 %

9933.1	10 ml	septum bottle	94,50 €

For further information, please see page 1628

N-Methyl-N-(trimethylsilyl)-trifluoroacetamide (MSTFA)

≥97 %, for GC

Silylation agent

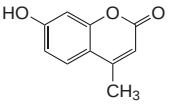
Type analysis:

Appearance. ..... clear, colourless to yellowish liquid
Assay (GC). ..... ≥97 %

8007.1	5 g	glass	54,75 €

For further information, please see page 1628

4-Methylumbelliferone



4-Methylumbelliferone

≥98 %, for biochemistry

7-Hydroxy-4-methylcoumarin, Hymecromone, 4-MU

$C_{10}H_8O_3$

M 176,17 g/mol

mp 187-191 °C

[90-33-5] • EC No. 201-986-7

WGK 1

Warning H315-H319-H335

Type analysis:

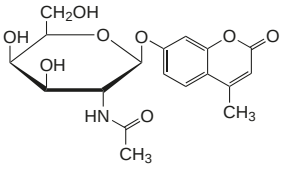
Assay (HPLC). ..... ≥98,0 %
Solution (5 % in ethanol at 50 °C). ..... colourless
Water (KF). ..... ≤1,0 %
Melting point. ..... 187-191 °C

5512.1	50 g	plastic	36,45 €
5512.2	100 g	plastic	61,20 €

4-Methylumbelliferyl-2-acetamido-2-deoxy-β-D-galactopyranoside

▶ 4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide see p. 2143

4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide



4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide

≥98 %, for biochemistry

Glycosidase substrate

MU-N-acetyl-β-D-galactosaminide, 4-Methylumbelliferyl-2-acetamido-2-deoxy-β-D-galactopyranoside, 4-MU-β-D-GalNAc

$C_{18}H_{21}NO_8$

M 379,37 g/mol

Storage temp.: -20 °C
Transport temp.: room temp.

[36476-29-6] • EC No. 253-052-3

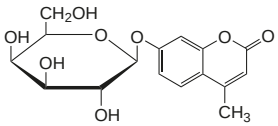
WGK 1

Type analysis:

Assay (HPLC). ..... ≥98 %
Water (KF). ..... ≤3,0 %
Free 4-methylumbelliferone. ..... ≤0,005 %
Specific rotation $[\alpha]_D^{20}$ (c=0,3 in pyridine). ..... -48° to -44°

4083.1	100 mg	glass	42,90 €
4083.2	250 mg	glass	75,15 €
4083.3	500 mg	glass	124,60 €

4-Methylumbelliferyl-β-D-galactopyranoside



4-Methylumbelliferyl-β-D-galactopyranoside

for biochemistry

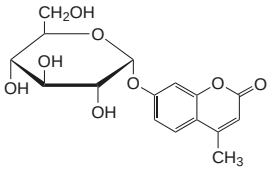
Glycosidase substrate
MUGalactoside, 4-MU-β-D-Gal
$C_{16}H_{18}O_8$
M 338,32 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[6160-78-7] • EC No. 228-185-5
WGK 1

Type analysis:

Solution (0,5 % in DMF)..... colourless, clear
Water (KF)..... ≤1 %
4-Methylumbelliferone..... ≤0,005 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in pyridine, after 24 h)..... -66° to -62°

4084.1	500 mg	glass	31,10 €
4084.2	1 g	glass	47,85 €
4084.3	5 g	glass	188,15 €

4-Methylumbelliferyl-α-D-glucopyranoside



4-Methylumbelliferyl-α-D-glucopyranoside

≥99 %, for biochemistry

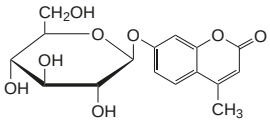
Glycosidase substrate
4-MU-α-D-Glc
$C_{16}H_{18}O_8$
M 338,32 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[17833-43-1] • EC No. 241-794-0
WGK 1

Type analysis:

Assay (TLC)..... ≥99,0 %
Solubility (4 % in pyridine)..... colorless to slightly yellow
Water (KF)..... 4-6 %
4-Methylumbelliferone..... ≤0,001 %
Specific rotation $[\alpha]_D^{20}$ (c=0,8 in pyridine)..... +155° to +161°

4086.1	100 mg	glass	44,00 €
4086.2	250 mg	glass	84,85 €

4-Methylumbelliferyl-β-D-glucopyranoside



4-Methylumbelliferyl-β-D-glucopyranoside

≥99 %, for biochemistry

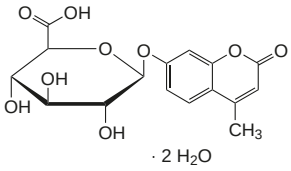
Glycosidase substrate
MUGlucoside, 4-MU-β-D-Glc
$C_{16}H_{18}O_8$
M 338,32 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[18997-57-4] • EC No. 242-736-7
WGK 1

Type analysis:

Assay (TLC)..... ≥99 %
Solution (3 % in water/acetone 1:2)..... colourless, clear
Water (KF)..... ≤2 %
4-Methylumbelliferone..... ≤0,001 %
Specific rotation $[\alpha]_D^{20}$ (c=0,3 in water)..... -102° to -98°

4093.1	500 mg	glass	44,00 €
4093.2	1 g	glass	75,15 €
4093.3	2,5 g	glass	147,85 €

4-Methylumbelliferyl-β-D-glucuronide dihydrate



4-Methylumbelliferyl-β-D-glucuronide dihydrate

≥99 %, p.a.

Substrate for β-glucuronidase.
For detection of *E. coli*.
MUG
$C_{16}H_{16}O_9 \cdot 2\ H_2O$
M 388,33 g/mol
mp 102 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[6160-80-1] • EC No. 228-186-0

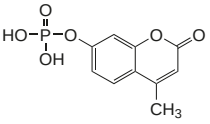
Type analysis:

Assay (titr.)..... ≥99,0 %
Water (KF)..... ≤10,2 %
Free 4-methylumbelliferone..... ≤0,0025 %

6394.1	50 mg	glass	23,55 €
6394.2	250 mg	glass	64,40 €
6394.3	1 g	glass	198,90 €

For further information, please see page 1330

4-Methylumbelliferyl phosphate



4-Methylumbelliferyl phosphate

≥99 %, for biochemistry

Phosphatase substrate
4-MUP phos, free acid
$C_{10}H_9O_6P$
M 256,15 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[3368-04-5] • EC No. 222-137-7
WGK 1

Warning H315-H319-H335

Type analysis:

Assay (titr.)..... ≥99 %
Solution (1 % in H_2O)..... colourless, clear
Water (KF)..... ≤0,5 %
4-Methylumbelliferone..... ≤0,01 %

4103.1	250 mg	glass	34,95 €
4103.2	1 g	glass	103,10 €

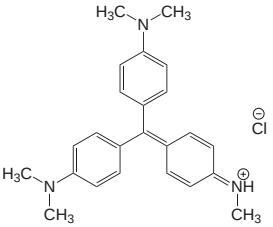
5-Methyluracil

▶ Thymine see p. 2406

Methyl-valerate

▶ n-Valeric acid methyl ester see p. 2432

Methyl violet 2B (C.I. 42535)



Methyl violet 2B (C.I. 42535)

for microscopy

Basic violet
$C_{24}H_{28}N_3Cl$
M 393,96 g/mol
mp 137 °C (dec.)
[8004-87-3]
UN No. 3077 • ADR 9 III • WGK 3

Danger

H302-H318-H351-H410

Type analysis:

Appearance..... green cryst. powder
Loss on drying..... ≤5,0 %

7715.1	5 g	glass	14,55 €
7715.2	25 g	glass	25,30 €
7715.3	100 g	glass	49,35 €

For further information, please see page 1524

Methyl violet 10B

▶ Crystal violet (C.I. 42555) see p. 1914

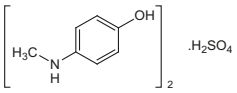
Methyl yellow

▶ Dimethyl yellow (C.I. 11020) see p. 1951

7-Methylquercetin

▶ Rhamnetin see p. 2257

Metol



Metol

≥99 %, ACS, photo quality
For use in photography.
4-Methylaminophenol sulphate
$C_{14}H_{20}N_2O_6S$
M 344,39 g/mol
mp 260 °C (dec.)
Solubility: ~48 g/l (H_2O, 15 °C)
[55-55-0] • EC No. 200-237-1
UN No. 3077 • ADR 9 III • WGK 3
Warning
H373-H400-H410-H302-H317

Type analysis:

Appearance	white to off-white, cryst. powder
Assay	≥99 %
In HCl insoluble matter	complies
2-Aminophenol	complies
Sulphated ash	≤0,1 %
Iron (Fe)	≤0,002 %
Pb (Lead)	≤0,002 %
Sensitivity to phosphate	complies

4315.1	100 g	plastic	42,50 €
4315.2	500 g	plastic	158,60 €
Original pack 6 x 500 g			150,67/500 g

MIBK

▶ Isobutyl methylketone see p. 2076

Milk sugar

▶ α-Lactose monohydrate see p. 2090

Mineral Oil

Mineral Oil

for molecular biology
For overlaying PCR and other enzymatic reactions.
D 0,84 • bp >200 °C
flp >115 °C
[8042-47-5] • EC No. 232-455-8
WGK 1
H413

Type analysis:

Colour	clear, colourless
Density (25 °C)	0,818-0,880
Viscosity (40 °C)	≤33,5 cSt
Readily carbonizable substances	complies
Solid paraffin	complies
Suitable for PCR	complies

HP50.1	10 ml	glass	14,55 €
HP50.4	15 ml	dropp. bottle	24,20 €
HP50.2	50 ml	plastic	28,95 €
HP50.3	250 ml	plastic	85,90 €

For further information, please see page 1306

Minimum Essential Medium acc. to Eagle, Alpha modification

▶ Roti®-CELL Eagle's MEM-Alpha see p. 2268

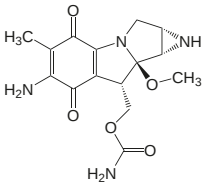
Minimum Essential Medium acc. to Eagle with Earle's salts

▶ Roti®-CELL Eagle's MEM / Earle's see p. 2268

Minimum Essential Medium acc. to Eagle with Hanks' salts

▶ Roti®-CELL Eagle's MEM / Hanks' see p. 2268

Mitomycin C



Mitomycin C

≥98 %, for biochemistry
Mitosis inhibitor
$C_{15}H_{18}N_4O_5$
M 334,30 g/mol
mp >360 °C
Storage temp.: +4 °C
[50-07-7] • EC No. 200-008-6
UN No. 3462 • ADR 6.1 II • WGK 3
Danger H300-H351

Type analysis:

Assay	≥98 %

4150.1	2 mg	glass	100,95 €

For further information, please see page 1504

Mixed bed ion exchangers

▶ Amberjet™ see p. 1786

Mixed indicator 5

Mixed indicator 5

for ammonia titration
UN No. 1170 • ADR 3 II • WGK 1
Danger H225

T125.1	250 ml	glass	57,95 €

MMA

▶ Methacrylic acid methyl ester see p. 2130

Mohr's salt

▶ Ammonium iron(II) sulphate hexahydrate see p. 1800

Molecular sieves

Storage temp.: +20 °C
[1318-02-1] • EC No. 215-283-8

Molecular sieve 3 Å

activated, under argon
Suitable for PolyGen® Synthesizer, 3 Å.

N893.1	100 ml	glass	12,80 €

For further information, please see page 1550

Molecular sieve 3 Å

0,3 nm, type 564, pearls
Metal-aluminium silicates for drying, cleaning or separating of liquids and gases.
Spheres ∅ 1,6-2,5 mm.

Type analysis:

H_2O ads. capacity (10 % R.H./25 °C)	≥15,5 %
Loss on ignition	≤2,5 %
Globe diameter	1,6-2,5 mm
Crush strength	≥15 N

8487.1	250 g	glass	28,50 €
8487.2	750 g	glass	64,00 €
8487.3	2,5 kg	plastic	166,65 €
8487.7	5 kg	plastic	299,95 €

For further information, please see page 1744

Molecular sieve 3 Å

0,3 nm, type 562 C, pearls
Metal-aluminium silicates for drying, cleaning or separating of liquids and gases.
Spheres ∅ 2,5-5,0 mm.

Type analysis:

H_2O ads. capacity (10 % R.H./25 °C)	≥15,5 %
Loss on ignition	≤2,5 %
Globe diameter	2,5-5,0 mm
Crush strength	≥50 N

P729.1	250 g	glass	28,50 €
P729.2	750 g	glass	64,00 €
P729.3	2,5 kg	plastic	166,65 €

For further information, please see page 1744

Molecular sieve 4 Å

0,4 nm, type 514, pearls
Metal-aluminium silicates for drying, cleaning or separating of liquids and gases.
Spheres ∅ 1,6-2,5 mm.

Type analysis:

H_2O ads. capacity (10 % R.H./25 °C)	≥17,5 %
Loss on ignition	≤3,0 %
Globe diameter	1,6-2,5 mm
Crush strength	≥20 N

8471.1	250 g	glass	31,10 €
8471.2	750 g	glass	65,50 €
8471.3	2,5 kg	plastic	171,50 €

For further information, please see page 1744

Molecular sieve 5 Å

0,5 nm, type 522, pearls

Metal-aluminium silicates for drying, cleaning or separating of liquids and gases. Spheres ∅ 1,6-2,5 mm.

Type analysis:

H_2O ads. capacity (10 % R.H./25 °C). ..... ≥17,0 %
Water content. ..... ≤0,9 %
Globe diameter. ..... 1,6-2,5 mm
Crush strength. ..... ≥25 N

8475.1	250 g	glass	31,10 €
8475.2	750 g	glass	65,50 €
8475.3	2,5 kg	plastic	171,50 €

For further information, please see page 1744

Molecular sieve 10 Å

1,0 nm, type 544, pearls

Metal-aluminium silicates for drying, cleaning or separating of liquids and gases. Spheres ∅ 1,6-2,5 mm.

Type analysis:

H_2O ads. capacity (10 % R.H./25 °C). ..... ≥17,0 %
Water content. ..... ≤0,8 %
Globe diameter. ..... 1,6-2,5 mm
Crush strength. ..... ≥35 N

8483.1	250 g	glass	31,10 €
8483.2	750 g	glass	65,50 €
8483.3	2,5 kg	plastic	171,50 €

For further information, please see page 1744

Molybdenum Standards

- Molybdenum AAS Standard Solution see p. 2360
- Molybdenum ICP Standard Solution see p. 2363
- Molybdenum ICP Standard Solution see p. 2368

Molybdenum(VI) oxide

Molybdenum trioxide, Molybdic anhydride
MoO_3
M 143,94 g/mol
D 4,7 • bp 1155 °C
mp 795 °C
Solubility: 0,5 g/l (H_2O, 28 °C)
[1313-27-5] • EC No. 215-204-7
WGK 1

Warning H319-H335-H351

Molybdenum(VI) oxide

ROTI®METIC 99,98 % (3N8)

Type analysis:

Assay (metals basis)..... 99,98 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

4548.1	5 g	plastic	50,00 €
4548.2	10 g	plastic	82,70 €

Molybdenum(VI) oxide

≥99,5 %, p.a.

Type analysis:

Assay (as MoO_3). ..... ≥99,5 %
Ammonium (NH_4). ..... ≤0,01 %
Chloride (Cl). ..... ≤0,005 %
Nitrate (NO_3). ..... ≤0,01 %
Phosphate (PO_4). ..... ≤0,0005 %
Sulphate (SO_4). ..... ≤0,02 %
Lead (Pb). ..... ≤0,001 %
Cadmium (Cd). ..... ≤0,001 %
Iron (Fe). ..... ≤0,005 %
Potassium oxide (K_2O). ..... ≤0,025 %
Silicate (SiO_2). ..... ≤0,005 %

0142.1	50 g	plastic	17,75 €
0142.2	250 g	plastic	44,65 €
0142.3	500 g	plastic	77,95 €
Original pack 6 x 500 g			74,05/500 g
0142.4	1 kg	plastic	142,90 €
Original pack 6 x 1 kg			135,76/1 kg

Molybdenum trioxide

▶ Molybdenum(VI) oxide see p. 2146

Molybdate-Reagent

Molybdate-Reagent

For determination of total phosphate

UN No. 3264 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Suitability for determination of phosphate..... complies
Composition: Ammonium heptamolybdate tetrahydrate, Potassium antimony(III) tartrate, Sulphuric acid, Water distilled

2442.1	1 l	plastic	53,25 €
Original pack 6 x 1 l			50,59/1 l

Molybdatophosphoric acid hydrate

Molybdatophosphoric acid hydrate

≥99,0 %, p.a., ACS

Staining reagent for TLC, biochemical analysis, microscopy.
Phosphormolybdic acid
$H_3[P(Mo_3O_{10})_4] \cdot x\ H_2O$
M 1825,25 + x H_2O g/mol
mp 78-90 °C
Solubility: easily soluble (H_2O, 20 °C)
Storage temp.: +4 °C
[51429-74-4] • EC No. 234-713-5
UN No. 3260 • ADR 8 II • WGK 1

Danger H314

Guarantee analysis:

Appearance..... yellow to orange-yellow crystals
Assay. ..... ≥99,0 %
Water..... 22,0-25,0 %
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,01 %
Ammonium (NH_4). ..... ≤0,003 %
In H_2O insoluble matter. ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,005 %
Calcium (Ca). ..... ≤0,02 %
Iron (Fe)..... ≤0,005 %

4440.1	25 g	glass	38,60 €
4440.2	50 g	plastic	60,10 €
4440.3	100 g	plastic	107,00 €
4440.7	1 kg	plastic	944,95 €
Original pack 6 x 1 kg			897,70/1 kg

Molybdatophosphoric acid spray solution

Molybdatophosphoric acid spray solution

for TLC

Ready-to-use spray solution for detection of reducing compound lipids, fatty acids and steroids. 4 g Molybdatophosphoric acid dissolved in 100 ml ethanol.

UN No. 3316 • ADR 9 II • WGK 1

Danger H225-H315-H318

Type analysis:

TLC-application..... complies

CP31.1	100 ml	glass	38,90 €

Molybdic acid

Molybdic acid

>85 %, p.a., ACS

H_2MoO_4
M 161,96 g/mol
mp 300 °C
[7782-91-4] • EC No. 231-970-5
WGK 1

Warning H319-H335-H373

Guarantee analysis:

Assay (based on MoO_3). ..... >85,0 %
In NH_4OH insoluble matter. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,002 %
Phosphate (PO_4). ..... ≤0,0005 %
Sulphate (SO_4). ..... ≤0,2 %
Heavy metals (as Pb). ..... ≤0,003 %
Arsenate, phosphate and silicate (as SiO_2). ..... ≤0,001 %

2722.1	100 g	plastic	46,80 €
2722.2	250 g	plastic	93,00 €
2722.3	500 g	plastic	153,20 €
Original pack 6 x 500 g			145,54/500 g

Molybdic acid sodium salt

▶ Sodium molybdate dihydrate see p. 2345

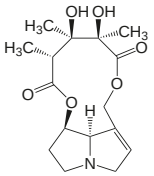
Monoammonium glycyrrhizinate

▶ Glycyrrhizic acid ammonium salt hydrate see p. 2027

Monochlorobenzene

▶ Chlorobenzene see p. 1891

Monocrotaline



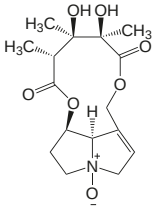
Monocrotaline

≥99 %
Crotaline
$C_{16}H_{23}NO_6$
M 325,35 g/mol
mp 202-203 °C
Storage temp.: +4 °C
[315-22-0]
UN No. 1544 • ADR 6.1 III • WGK 2
Danger H301-H351

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥99,0 %
Melting point. ..... 197-202 °C

3418.1	500 mg	glass	306,40 €

Monocrotaline N-oxide



Monocrotaline N-oxide

ROTICHROM® HPLC
Reference substance for HPLC.
From *Crotalaria*
$C_{16}H_{23}NO_7$
M 341,36 g/mol
mp 134-138 °C
Storage temp.: +4 °C
[35337-98-5]
UN No. 1544 • ADR 6.1 III • WGK 3
Danger H301

Type analysis:
Purity (HPLC)..... ≥98,0 %

2249.1	10 mg	glass	413,90 €

Monoethanolamine

▶ Ethanolamine see p. 1977

Monoethylene glycol

▶ Ethylene glycol see p. 1984

Monomethylthionin

▶ Azure C (C.I. 52002) see p. 1824

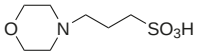
Monopotassium phosphate

▶ Potassium dihydrogen phosphate see p. 2225

Monorhein

▶ Rhein see p. 2257

MOPS



MOPS

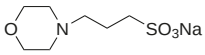
PUFFERAN® ≥99,5 %
3-(N-Morpholino) propane sulphonic acid
$C_7H_{15}NO_4S$
M 209,27 g/mol
mp 277-281 °C
Solubility: 1440 g/l (H_2O, 20 °C)
[1132-61-2] • EC No. 214-478-5
WGK 1

Guarantee analysis:
Assay (dry substance). ..... ≥99,5 %
pH value (10 % in water). 3,0-5,0
pK_a (at 25 °C). 7,0-7,4
Loss on drying (110 °C). ..... ≤1,0 %
UV-absorption (1 M in H_2O):
260 nm. ..... ≤0,05

6979.2	250 g	plastic	76,25 €
6979.4	500 g	plastic	131,70 €
Original pack 6 x 500 g			125,12/500 g
6979.3	1 kg	plastic	252,10 €
Original pack 6 x 1 kg			239,50/1 kg
6979.5	2,5 kg	plastic	532,15 €

For further information, please see page 1308

MOPS sodium salt



MOPS sodium salt

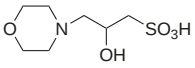
PUFFERAN® ≥99 %
3-(N-Morpholino)-propane sulphonic acid sodium salt
$C_7H_{14}NaNO_4S$
M 231,2 g/mol
[71119-22-7]
WGK 1

Guarantee analysis:
Assay (titr. dry substance). ..... ≥99,0 %
Loss on drying. ..... ≤3,0 %
pH value (1 M, H_2O). 10,0-12,0
UV-absorption (0,1 M in H_2O):
260 nm. ..... ≤0,1
280 nm. ..... ≤0,1

6927.1	25 g	plastic	28,50 €
6927.2	100 g	plastic	87,00 €

For further information, please see page 1308

MOPSO



MOPSO

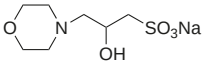
PUFFERAN® ≥99 %
3-(N-Morpholino)-2-hydroxypropane sulphonic acid
$C_7H_{15}NO_5S$
M 225,27 g/mol
mp 280 °C
[68399-77-9] • EC No. 269-989-6
WGK 1
Warning H315-H319-H335

Guarantee analysis:
Assay (titr.). ..... ≥99,0 %
Solubility (10 % in H_2O). ..... clear
Loss on drying. ..... ≤1,0 %
Absorption:
260 nm. ..... ≤0,04
280 nm. ..... ≤0,04

7117.1	25 g	plastic	32,15 €
7117.2	100 g	plastic	97,75 €
7117.3	1 kg	plastic	719,20 €
Original pack 6 x 1 kg			683,24/1 kg

For further information, please see page 1308

MOPSO sodium salt



MOPSO sodium salt

PUFFERAN® ≥98 %
3-(N-Morpholino)-2-hydroxypropane sulphonic acid sodium salt
$C_7H_{14}NaNO_5S$
M 247,28 g/mol
[79803-73-9]

Type analysis:
Assay (titr.). ..... ≥98 %
Water (KF). ..... ≤1,0 %
pH value (1 % solution). 8,9-9,7
UV-absorption (5 % in H_2O):
280 nm. ..... ≤0,05
260 nm. ..... ≤0,06

7101.1	25 g	plastic	38,60 €
7101.2	100 g	plastic	124,60 €

For further information, please see page 1308

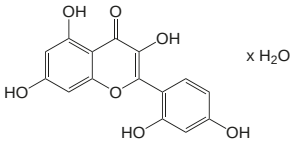
Mordant Black 3

▶ Eriochrome® blue black B (C.I. 14640) see p. 1972

Mordant Black 17

▶ Eriochrome® blue black R (C.I. 15705) see p. 1973

Morin hydrate



Morin hydrate

for microscopy

Fluorescence indicator
2',3,4',5,7-Pentahydroxyflavone
$C_{15}H_{10}O_7 \cdot x\ H_2O$
M 302,24 + x H_2O g/mol
mp ~295 °C
[654055-01-3] • EC No. 207-542-9 • WGK 2

Warning H315-H319-H335

Type analysis:

Appearance. ..... powder
Reagent for:. ..... Al, Be, Zn, Ga, In, Sc
Fluorescence indicator

6459.1	5 g	plastic	107,40 €
6459.2	50 g	plastic	891,20 €

Morpholine

Morpholine

≥99 %, for synthesis

1,4-Oxazinane, Tetrahydro-1,4-oxazine
C_4H_9NO
M 87,12 g/mol
D 1,00 • bp 128-130 °C
mp -5 °C • flp 32 °C
[110-91-8] • EC No. 203-815-1
UN No. 2054 • ADR 8 (3) I

Danger

H226-H302-H311+H331-H314-EUH208

Type analysis:

Assay (GC). ..... ≥99,0 %
Water (KF). ..... ≤0,3 %
2-Methoxyethanol (GC). ..... <0,3 %
1,2-Ethanediamine (GC). ..... ≤0,3 %
Ethylmorpholine (GC). ..... ≤0,2 %

9691.1	100 ml	glass	13,90 €
9691.2	500 ml	glass	19,90 €
9691.3	1 l	glass	30,00 €
Original pack 6 x 1 l			28,50/1 l
9691.4	2,5 l	glass	46,15 €
Original pack 4 x 2,5 l			43,84/2,5 l
9691.5	10 l	PE/steel	160,20 €

2-(N-Morpholino)-ethane sulphonic acid

- MES see p. 2129
- MES monohydrate see p. 2129
- MES potassium salt see p.
- MES sodium salt see p. 2129

3-(N-Morpholino)-2-hydroxy-propane sulphonic acid

- MOPSO see p. 2147
- MOPSO sodium salt see p. 2147

3-(N-Morpholino)-propane sulphonic acid

- MOPS see p. 2147
- MOPS sodium salt see p. 2147

Mossel EE Broth

Mossel EE Broth

Ph.Eur., for microbiology

For selective enrichment of enterobacteria in foods, particularly *Salmonella* and Coliforms.

Application: Use 45 g for 1 l broth.

Enriched broth medium E (Ph.Eur. 6.0), Enterobacteria enrichment broth-Mossel (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C
WGK 1

Guarantee analysis:

Pancreas hydrolysate made from gelatin. ..... 10 g/l
Glucose monohydrate. ..... 5 g/l
Dehydrated ox bile. ..... 20 g/l
Potassium dihydrogen phosphate. ..... 2 g/l
di-Sodium hydrogenphosphate dihydrate. ..... 8 g/l
Brilliant green. ..... 0,015 g/l
pH value. ..... 7,2 ±0,2

AE65.1	500 g	plastic	181,70 €
Original pack 6 x 500 g			172,62/500 g

For further information, please see page 1452

Mowiol®4-88

Mowiol®4-88

granulated

Aqueous mounting medium in histology.
Polyvinyl alcohol
$(-CH_2CHOH-)_n$
M ~31,000 g/mol
D ~1,27
mp ~300 °C • flp ~113 °C
[9002-89-5]
WGK 1

Type analysis:

Appearance. ..... colourless to light yellow granules
Viscosity (4 %, H_2O, 20 °C). ..... 3,0-5,0 mPas
Degree of hydrolysis, Mol.- %. 86,7-88,7
Ester value (mg KOH/g). 130-150
Residual acetate. ..... 10,0-11,6 %
Ash content (as Na_2O). ..... ≤0,5 %

0713.1	50 g	plastic	11,75 €
0713.2	100 g	plastic	17,75 €

For further information, please see page 1534

MRSA Cefoxitin Supplement

MRSA Cefoxitin Supplement

lyophilised

Media supplement for selective detection of methicillin resistent *Staphylococcus aureus*.

One box of 10 vials MRSA Cefoxitin Supplement is sufficient for 10 x 500 ml MRSA chromogenic Agar.

Storage temp.: +4 °C

Formulation:

Cefoxitin. ..... 0,002 g per vial

2975.1	10 vials	glass	75,15 €

For further information, please see page 1476

MRSA chromogenic Agar (Base)

MRSA chromogenic Agar (Base)

for microbiology

For detection of methicillin resistant staphylococci.

Application: Use 103,4 g for 1 l agar. Do not overheat! After cooling add 2 vials (10 ml) reconstituted MRSA Cefoxitin Supplement (Art. No. 2975.1).

Storage temp.: +4 °C
WGK 1

Formulation:

Nutrients. ..... 78 g/l
Peptone. ..... 11 g/l
Chromogene Mixture. ..... 1,9 g/l
Agar. ..... 12,5 g/l
pH value. ..... 7,2 ±0,2

3026.1	100 g	plastic	77,95 €

For further information, please see page 1452

MRS Agar

MRS Agar

for microbiology

For cultivation of lactobacilli. According to deMan, Rogosa and Sharpe.

Application: Use 62 g for 1 l agar.

Storage temp.: +4 °C
WGK 1

Formulation:

Peptone. ..... 10 g/l
Yeast extract. ..... 4 g/l
Beef extract. ..... 8 g/l
Glucose. ..... 20 g/l
Dipotassium phosphate. ..... 2 g/l
Sodium acetate. ..... 5 g/l
Ammonium citrate. ..... 2 g/l
Magnesium sulphate ($MgSO_4$). ..... 0,2 g/l
Manganese sulphate. ..... 0,05 g/l
Polysorbate 80. ..... 1 g/l
Agar. ..... 10 g/l
pH value. ..... 6,2 ±0,2

X924.1	500 g	plastic	79,45 €
Original pack 6 x 500 g			75,48/500 g
X924.2	1 kg	plastic	138,15 €
Original pack 6 x 1 kg			131,24/1 kg

For further information, please see page 1453

MRS Agar pH 5.7

MRS Agar pH 5.7

ISO 15214, for microbiology

For cultivation of pH sensitive lactobacilli from foods and feeding stuff. According to deMan, Rogosa and Sharpe.

Application: Use 64 g for 1 l agar.

Storage temp.: +4 °C

WGK 1

Guarantee analysis:

Casein peptone.	10 g/l
Yeast extract.	4 g/l
Beef extract.	10 g/l
Glucose.	20 g/l
Dipotassium phosphate.	2 g/l
Sodium acetate.	5 g/l
Triammonium citrate.	2 g/l
Magnesium sulphate heptahydrate.	0,20 g/l
Mangansulphate tetrahydrate.	0,05 g/l
Polysorbate 80.	1,08 g/l
Agar.	10 g/l
pH value.	5,7 ±0,1

HP65.1	500 g	plastic	86,55 €
Original pack 6 x 500 g			82,22/500 g

For further information, please see page 1453

MRS Broth

MRS Broth

for microbiology

For cultivation of lactobacilli. According to deMan, Rogosa and Sharpe.

Application: Use 52 g for 1 l broth.

Storage temp.: +4 °C

WGK 1

Formulation:

Peptone.	10 g/l
Yeast extract.	4 g/l
Beef extract.	8 g/l
Glucose.	20 g/l
Dipotassium phosphate.	2 g/l
Sodium acetate.	5 g/l
Ammonium citrate.	2 g/l
Magnesium sulphate ($MgSO_4$)	0,2 g/l
Manganese sulphate.	0,05 g/l
Polysorbate 80.	1 g/l
pH value.	6,2 ±0,2

X925.1	500 g	plastic	75,15 €
Original pack 6 x 500 g			71,39/500 g
X925.2	1 kg	plastic	126,35 €
Original pack 6 x 1 kg			120,03/1 kg
X925.3	2,5 kg	plastic	271,45 €

For further information, please see page 1453

MRS Broth pH 5.7

MRS Broth pH 5.7

ISO 15214, for microbiology

For cultivation of pH sensitive lactobacilli from foods and feeding stuff. According to deMan, Rogosa and Sharpe.

Application: Use 54 g for 1 l broth.

Storage temp.: +4 °C

WGK 1

Guarantee analysis:

Casein peptone.	10 g/l
Yeast extract.	4 g/l
Beef extract.	10 g/l
Glucose.	20 g/l
Dipotassium phosphate.	2 g/l
Sodium acetate.	5 g/l
Triammonium citrate.	2 g/l
Magnesium sulphate heptahydrate.	0,20 g/l
Mangansulphate tetrahydrate.	0,05 g/l
Polysorbate 80.	1,08 g/l
pH value.	5,7 ±0,1

HP64.1	500 g	plastic	79,45 €
Original pack 6 x 500 g			75,48/500 g

For further information, please see page 1453

MSA

▶ Methanesulphonic acid see p. 2130

MSTFA

▶ N-Methyl-N-(trimethylsilyl)-trifluoroacetamide (MSTFA) see p. 2143

MTAB

▶ Tetradecyltrimethylammonium bromide (MTAB) see p. 2400

MTBE

▶ tert-Butyl methyl ether see p. 1863

MTT

▶ Thiazolyl blue see p. 2404

4-MU

▶ 4-Methylumbelliferone see p. 2143

MU-N-acetyl-β-D-galactosaminide

▶ 4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide see p. 2143

Mucin

Mucin

75-95 %, for biochemistry

Isolated from porcine stomach lining.

Storage temp.: +4 °C

[91053-71-3] • EC No. 282-357-4

WGK 1

Type analysis:

Assay.	75,0-95,0 %
Sulphated ash.	<7,0 %
Total nitrogen.	7,5-9,9 %
Nitrogen (in alcoholic extract).	7,0-9,9 %
pH value (2 %, water).	3,0-6,5
Loss on drying.	≤6,0 %
Viscosity (rel. to H_2O).	≥2,0 %

8494.1	100 g	plastic	57,95 €
8494.7	1 kg	plastic	493,45 €
Original pack 6 x 1 kg			468,78/1 kg

Mueller Hinton Agar

Mueller Hinton Agar

for microbiology

For testing of organism susceptibility to antimicrobial agents by disk diffusion method. Also for cultivation of *Neisseria*.

Application: Use 38 g for 1 l agar.
Slightly opalescent.

Storage temp.: +20 °C

Formulation:

Beef Infusion.	2 g/l
Casein peptone (acidic hydrolysate).	17,5 g/l
Corn starch.	1,5 g/l
Agar.	17 g/l
pH value.	7,4 ±0,2

X926.1	500 g	plastic	95,60 €
Original pack 6 x 500 g			90,82/500 g

For further information, please see page 1454

Mueller Hinton Broth

Mueller Hinton Broth

for microbiology

For cultivation of microorganisms and for antibiotic-sensitivity testing.

Application: Use 21 g for 1 l broth.
Slightly opalescent.

Storage temp.: +20 °C

WGK 1

Formulation:

Beef Infusion.	2 g/l
Casein peptone (acidic hydrolysate).	17,5 g/l
Corn starch.	1,5 g/l
pH value.	7,4 ±0,2

X927.1	500 g	plastic	125,25 €
Original pack 6 x 500 g			118,99/500 g

For further information, please see page 1454

Mueller Kauffmann Broth (Base)

Mueller Kauffmann Broth (Base)

for microbiology

For selective enrichment of *Salmonella* from meat and other foods.

Application: Use 82 g for 1 l broth.
Add iodine and brilliant green.

Tetrathionate Broth, Tetrathionate Enrichment Broth

Storage temp.: +20 °C

WGK 1

Formulation:

Sodium thiosulphate.	40,7 g/l
Calcium carbonate.	25 g/l
Dehydrated ox bile.	4,75 g/l
Sodium chloride (NaCl).	4,5 g/l
Meat peptone.	4,5 g/l
Yeast extract.	1,8 g/l
Meat extract.	0,9 g/l
pH value.	7,6 ±0,2

8323.1	500 g	plastic	85,50 €
Original pack 6 x 500 g			81,23/500 g

For further information, please see page 1454

MUG
▶ 4-Methylumbelliferyl-β-D-glucuronide dihydrate see p. 2144

4-MU-β-D-GalNAc
▶ 4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide see p. 2143

4-MU-β-D-Gal
▶ 4-Methylumbelliferyl-β-D-galactopyranoside see p. 2144

MUGalactoside
▶ 4-Methylumbelliferyl-β-D-galactopyranoside see p. 2144

4-MU-α-D-Glc
▶ 4-Methylumbelliferyl-α-D-glucopyranoside see p. 2144

4-MU-β-D-Glc
▶ 4-Methylumbelliferyl-β-D-glucopyranoside see p. 2144

MUGlucoside
▶ 4-Methylumbelliferyl-β-D-glucopyranoside see p. 2144

MultiTag-Protein

MultiTag-Protein
0,1 mg/ml, affinity purified
Recombinant protein with His-tag, GST-tag, Myc- and DYKDDDDK anchor sequence.
Recommended application: 100 ng / lane (Western blotting), dilution 1:100 (ELISA)
M 31,6 g/mol
Storage temp.: -20 °C
Transport temp.: cooled

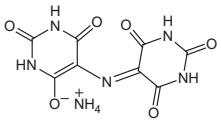
Type analysis:
Concentration. ..... 0,09-0,11 mg/ml
Appearance. ..... clear, colourless liquid
Host. ..... E. coli BL21 (DE3)
PAGE (12 % PAA). ..... complies
Western Blot. ..... complies

3999.1	100 µl	plastic	250,40 €

For further information, please see page 1369

4-MUP phos, free acid
▶ 4-Methylumbelliferyl phosphate see p. 2144

Murexide (C.I. 56085)



Murexide (C.I. 56085)
ACS, for complexometry
Indicator
Ammonium purpurate
$C_8H_8N_6O_6$
M 284,19 g/mol
Solubility: 1 g/l (H_2O, 20 °C)
[3051-09-0] • EC No. 221-266-6
WGK 2

Guarantee analysis:
Loss on drying. ..... ≤2,0 %
Sulphated ash. ..... ≤1,0 %
Suitability as indicator for complexometry. .... complies

T124.1	5 g	glass	25,70 €
T124.2	25 g	glass	60,10 €
T124.3	50 g	glass	98,80 €

Musculamine
▶ Spermine see p. 2356

Musk oil

Musk oil
artificial
D 1,0
WGK 2
Warning H412-H317

Type analysis:
Appearance..... clear, colourless to light yellowish oil
Relative density (20 °C)..... 1,000-1,100
Refractive index (20 °C). 1,4500-1,4600
Optical rotation (20 °C)..... -2° to +2°

3364.1	100 ml	glass	40,75 €

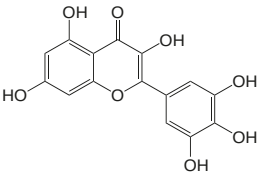
Mycoplasm eradication solution
▶ Roti®-CELL Myco-Free see p. 2270

Mycose
▶ D(+)-Trehalose dihydrate see p. 2413

Mycostatin
▶ Nystatin dihydrate see p. 2170

MYP Agar
▶ Mannitol Egg Yolk Polymyxin Agar (Base) see p. 2121

Myricetin



3,3',4',5,5',7-Hexahydroxyflavone, Cannabiscetin
$C_{15}H_{10}O_8$
M 318,24 g/mol
mp >300 °C
Storage temp.: +4 °C
[529-44-2] • EC No. 208-463-2

Myricetin
≥95 %

Type analysis:
Assay (HPLC). ..... ≥95 %

6461.1	25 mg	glass	31,10 €

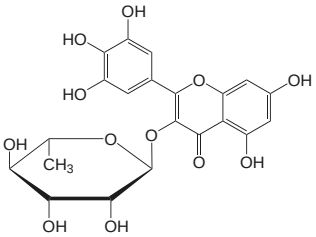
Myricetin
ROTICHROM® HPLC
Reference substance for HPLC.

Type analysis:
Purity (HPLC). ..... ≥99 %

4187.2	20 mg	glass	235,45 €

Myricetin-3-rhamnoside
▶ Myricitrin see p. 2150

Myricitrin

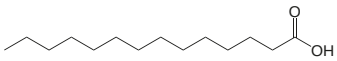


Myricitrin
ROTICHROM® HPLC
Reference substance for HPLC.
From *Myrica cerifera*
Myricetin-3-rhamnoside
$C_{21}H_{20}O_{12}$
Storage temp.: +4 °C
[17912-87-7] • EC No. 241-856-7

Type analysis:
Purity (HPLC). ..... ≥99 %

9391.1	10 mg	glass	198,90 €

Myristic acid



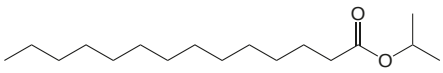
Myristic acid

≥98 %, for biochemistry
Tetradecanoic acid
$C_{14}H_{28}O_2$
M 228,38 g/mol
bp 326 °C
mp ~53 °C • flp >160 °C
Solubility: ~1 mg/l (H_2O, 25 °C)
Storage temp.: +4 °C
[544-63-8] • EC No. 208-875-2
Warning H315

Type analysis:
Assay (GC). ..... 98-100 %
Acid value (mg KOH/g). 244-248

6469.2	100 g	plastic	12,80 €
6469.3	500 g	plastic	32,15 €
Original pack 6 x 500 g			30,54/500 g
6469.1	1 kg	plastic	50,45 €
Original pack 6 x 1 kg			47,93/1 kg

Myristic acid isopropyl ester



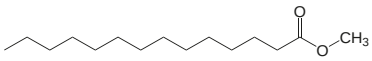
Myristic acid isopropyl ester

≥92 %, extra pure
Isopropyl myristate, IPM
$C_{17}H_{32}O_2$
M 270,46 g/mol
D 0,85 • bp 140 °C (3 mbar)
mp 1 °C • flp >150 °C
Solubility: <0,05 mg/l (H_2O, 20 °C)
[110-27-0] • EC No. 203-751-4

Type analysis:
Assay. ..... ≥92 %
Saponification value. 205-211
Iodine value. ..... ≤0,5
Acid value. ..... ≤0,1
Viscosity. ..... 5-6 mPa s
Relative density (20 °C). 0,850-0,855
Refractive index n_D^{20}. 1,4335-1,4355

5527.1	500 ml	glass	35,40 €

Myristic acid methyl ester



Myristic acid methyl ester

≥99 %
Methyl myristate, Methyl tetradecanoate
$C_{15}H_{30}O_2$
M 242,40 g/mol
D 0,867 • bp 161-163 °C (17,3 hPa)
mp 17-19 °C • flp 112 °C
[124-10-7] • EC No. 204-680-1
WGK 1

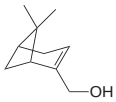
Type analysis:
Assay (GC, area %). ..... ≥99 %

3753.1	50 ml	glass	36,45 €

Myristyltrimethylammonium bromide

▶ Tetradecyltrimethylammonium bromide (MTAB) see p. 2400

(1R)-(-)-Myrtenol



(1R)-(-)-Myrtenol

≥95 %
$C_{10}H_{16}O$
M 152,24 g/mol
D 0,95 • bp 221-222 °C
[19894-97-4] • EC No. 243-409-1
WGK 1

Type analysis:
Assay (GC). ..... ≥95,0 %
Specific rotation $[\alpha]_D^{20}$. ..... -53° to -49°
Refractive index (20 °C). 1,494-1,498

7123.1	10 ml	glass	47,85 €

Myrtillin

▶ Delphinidin 3-glucoside chloride see p. 1925

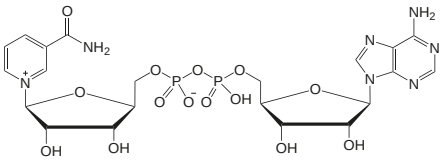
NAA

▶ 1-Naphthyl acetic acid see p. 2153

NAC

▶ N-Acetyl-L-cysteine see p. 1766

NAD



NAD

≥97,5 %, for biochemistry
NAD free acid, β-Nicotinamide adenine dinucleotide, DPN, Coenzyme I, β-NAD
$C_{21}H_{27}N_7O_{14}P_2$
M 663,4 g/mol
Storage temp.: +4 °C
[53-84-9] • EC No. 200-184-4
WGK 1

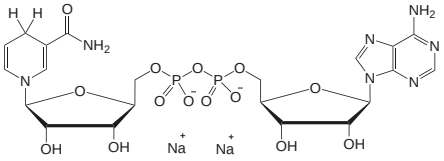
Type analysis:
Assay (encym., dry substance). ..... ≥97,5 %
Water (KF). ..... ≤3,5 %
UV-absorption:
A_{280}/A_{260} 0,20-0,24
A_{250}/A_{260} 0,81-0,85

AE11.1	1 g	glass	30,65 €
AE11.2	5 g	glass	123,10 €
AE11.3	10 g	glass	214,50 €

NAD free acid

▶ NAD see p. 2151

NADH disodium salt



NADH disodium salt

≥98 %, for biochemistry
NADH-Na_2, β-Nicotinamide adenine dinucleotide disodium salt, $DPNH_2$-Na_2
$C_{21}H_{27}N_7O_{14}P_2Na_2$
M 709,4 g/mol
mp 140-142 °C
Storage temp.: +4 °C
[606-68-8] • EC No. 210-123-3
WGK 1

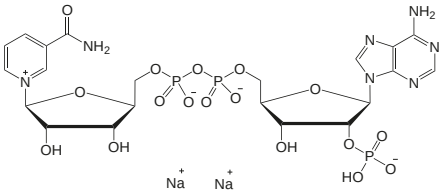
Type analysis:
Assay (encym., dry substance). ..... ≥98 %
Water (KF). ..... ≤6,0 %
UV-absorption:
A_{260}/A_{340} ..... ≤2,40
A_{260}/A_{240} 1,57-2,17

AE12.1	1 g	glass	45,70 €
AE12.2	5 g	glass	203,20 €
AE12.3	10 g	glass	364,45 €

NADH-Na_2

▶ NADH disodium salt see p. 2151

NADP disodium salt



NADP disodium salt

≥97 %, for biochemistry

NADP-Na_2, β-Nicotinamide adenine dinucleotide phosphate disodium salt.

$C_{21}H_{26}N_7O_{17}P_3Na_2$ • M 787,4 g/mol

Storage temp.: +4 °C

[24292-60-2] • EC No. 246-129-8 • WGK 1

Type analysis:

Assay (encym., dry substance)..... ≥97 %
Water (KF)..... ≤6,0 %
UV-absorption:
A_{360} (H_2O)..... ≤0,6
A_{340} (c=0,01 mg/l buffer, pH 7,0)..... ≤0,005

AE13.1	250 mg	glass	37,10 €
AE13.2	500 mg	glass	66,55 €
AE13.3	1 g	glass	124,60 €

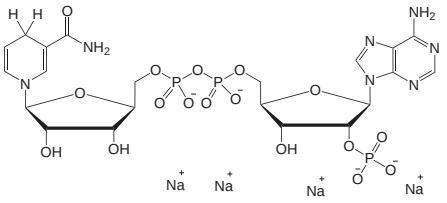
NADP-Na_2

▶ NADP disodium salt see p. 2152

NADPH-Na_4

▶ NADPH tetrasodium salt see p. 2152

NADPH tetrasodium salt



NADPH tetrasodium salt

≥97 %, for biochemistry

NADPH-Na_4, β-Nicotinamide adenine dinucleotide phosphate tetrasodium salt.

$C_{21}H_{26}N_7O_{17}P_3Na_4$

M 833,4 g/mol

Storage temp.: +4 °C

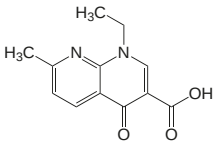
[2646-71-1] • EC No. 220-163-3 • WGK 1

Type analysis:

Assay (encym., dry substance)..... ≥97 %
Water (KF)..... ≤6,0 %
UV-absorption:
A_{260}/A_{340}..... 2,32-2,65

AE14.1	100 mg	glass	83,75 €
AE14.2	250 mg	glass	181,70 €
AE14.3	500 mg	glass	331,00 €

Nalidixic acid



Nalidixic acid

≥99 %, for biochemistry

Quinolon antibiotic

1,4-Dihydro-1-ethyl-7-methyl-1,8-naphthyridin-4-on-3-carbolic acid

$C_{12}H_{12}N_2O_3$

M 232,23 g/mol

mp 228-230 °C

Solubility: 0,1 g/l (H_2O, 23 °C)

[389-08-2] • EC No. 206-864-7

WGK 1

Danger H334-H317

Type analysis:

Assay (HPLC, dry substance)..... ≥99 %
Sulphated ash..... ≤0,1 %
Heavy metals..... ≤0,002 %
Loss on drying..... ≤0,5 %

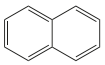
CN32.1	10 g	plastic	17,75 €
CN32.2	25 g	plastic	34,30 €
CN32.3	100 g	plastic	103,10 €

For further information, please see page 1505

Nanoparticles

Art. No.	Description	Page
8250	Aluminium oxide, nano	1785
8256	Cadmium telluride	2247
8257	Cadmium telluride	2247
8258	Cadmium telluride	2247
8260	Cadmium telluride	2247
8261	Cadmium telluride	2247
8279	Copper, nano	1908
8251	Copper(II) oxide, nano	1910
8254	Titanium(IV) oxide, nano	2409
8278	Zinc oxide, nano	2452
8255	Zirconium(IV) oxide, nano	2452
2097	Zirconium(IV) oxide, nano, hydrophilic	2453
1776	Zirconium(IV) oxide, nano, hydrophobic	2453
8609	Zn-Cu-In-S/ZnS	2248
8610	Zn-Cu-In-S/ZnS	2248
8618	Zn-Cu-In-S/ZnS	2248
8614	Zn-Cu-In-S/ZnS	2248
8616	Zn-Cu-In-S/ZnS	2248
8615	Zn-Cu-In-S/ZnS	2248

Naphthalene



Naphthalene

≥99 %, for synthesis

$C_{10}H_8$

M 128,17 g/mol

bp 218 °C

mp 79-82 °C • flp 80 °C

Solubility: 0,03 g/l (H_2O, 25 °C)

[91-20-3] • EC No. 202-049-5

UN No. 1334 • ADR 4.1 III • WGK 3

Warning

H228-H302-H351-H410

Type analysis:

Assay..... ≥99,0 %
Melting range..... 79-81 °C

6714.1	100 g	plastic	14,55 €
6714.2	500 g	plastic	31,10 €
Original pack 6 x 500 g			29,55/500 g
6714.3	1 kg	plastic	51,50 €
Original pack 6 x 1 kg			48,93/1 kg
6714.4	2,5 kg	plastic	93,45 €
6714.5	5 kg	plastic	147,85 €

1-Naphthaleneacetic acid

▶ 1-Naphthyl acetic acid see p. 2153

1-Naphthol

1-Naphthol

≥99,5 %, p.a.

Reagent for carbohydrates.

α-Naphthol, 1-Hydroxynaphthalene

$C_{10}H_8O$

M 144,17 g/mol

D 1,28 • bp ~288 °C

mp 94-97 °C • flp 125 °C

Solubility: 0,1 g/l (H_2O, 20 °C)

[90-15-3] • EC No. 201-969-4

UN No. 2811 • ADR 6.1 III • WGK 1

Danger

H318-H302+H312-H335-H315

Guarantee analysis:

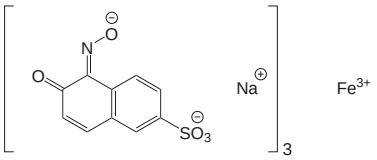
Assay (GC)..... ≥99,5 %
Sulphated ash..... ≤0,05 %
Chloride (Cl)..... ≤0,005 %
Iron (Fe)..... ≤0,001 %
Heavy metals (as Pb)..... ≤0,001 %
Water (KF)..... ≤0,2 %

KK14.1	50 g	glass	40,75 €
KK14.2	100 g	glass	63,35 €

Naphthol blue black

▶ Amido Black 10 B (C.I. 20470) see p. 1786

Naphthol green B (C.I. 10020)



Naphthol green B (C.I. 10020)

for microscopy

Acid green 1
$(C_{10}H_5NNaO_5S)_3Fe$
M 878,47 g/mol
Solubility: 160 g/l (H_2O, 20 °C)
[19381-50-1] • EC No. 243-010-2
WGK 1

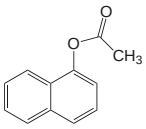
Type analysis:

Appearance..... dark green powder
Absorption max. (in H_2O)..... 710-720 nm
Loss on drying (110 °C)..... ≤15 %

5161.1	25 g	glass	19,90 €
5161.2	100 g	glass	48,30 €

For further information, please see page 1524

α-Naphthyl acetate



α-Naphthyl acetate

≥99 %

For determination of esterase.
$C_{12}H_{10}O_2$
M 186,21 g/mol
mp ~45 °C
Storage temp.: +4 °C
[830-81-9] • EC No. 212-599-8
WGK 1

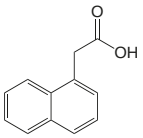
Danger H318

Type analysis:

Appearance..... off-white, fine crystals
Assay (GC)..... ≥99 %

8509.1	25 g	plastic	121,40 €

1-Naphthyl acetic acid



1-Naphthyl acetic acid

≥99 %, p.a.

1-Naphthaleneacetic acid, NAA
$C_{12}H_{10}O_2$
M 186,21 g/mol
mp ~130 °C
Solubility: 0,42 g/l (H_2O, 20 °C)
[86-87-3] • EC No. 201-705-8
WGK 2

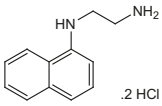
Warning H302-H319-H412

Type analysis:

Appearance..... white to off-white powder
Assay (acidim., titr.)..... ≥99,0 %
Melting point..... 127-132 °C

4343.2	25 g	plastic	20,35 €
4343.1	100 g	plastic	64,40 €

N-(1-Naphthyl)ethylenediamine dihydrochloride



N-(1-Naphthyl)ethylenediamine dihydrochloride

≥99 %, p.a.

For the detection of sulphonamide and the determination of nitrite.
$C_{12}H_{14}N_2 \cdot 2\ HCl$
M 259,18 g/mol
mp 188-190 °C
[1465-25-4] • EC No. 215-981-2
WGK 2

Warning H315-H319-H335

Guarantee analysis:

Assay (dry substance)..... ≥99 %
Loss on drying..... ≤5,0 %
Appearance of solution..... nearly clear, colourless to yellowish
Suitability for the detection of sulphonamide. complies

4342.2	10 g	glass	35,40 €
4342.1	25 g	glass	84,85 €
4342.3	50 g	glass	143,95 €

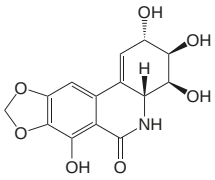
Naramycin A

▶ Cycloheximide see p. 1918

Narangetol

▶ Naringenin see p. 2153

Narciclasine



Narciclasine

ROTICHROM® HPLC

Reference substance for HPLC.
From *Narcissus pseudonarcissus.*
Lycoricidinol
$C_{14}H_{13}NO_7$
M 307,26 g/mol
Storage temp.: +4 °C
[29477-83-6]
UN No. 1544 • ADR 6.1 II • WGK 3

Danger H302-H340

Type analysis:

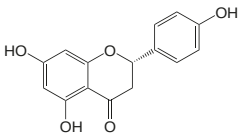
Purity (HPLC)..... ≥97 %

6689.1	10 mg	glass	428,95 €

Narcisin

▶ Isorhamnetin-3-rutinoside see p. 2080

Naringenin



Narangetol, Pelarginadon,
4',5,7-Trihydroxyflavan
$C_{15}H_{12}O_5$
M 272,26 g/mol
mp 247-250 °C
Storage temp.: +4 °C
[480-41-1] • EC No. 207-550-2

Warning H302

Naringenin

≥95 %, for biochemistry

Guarantee analysis:

Appearance..... cryst. powder
Assay (HPLC)..... ≥95,0 %
Loss on drying..... ≤2 %

8524.1	2,5 g	glass	73,00 €

Naringenin

ROTICHROM® HPLC

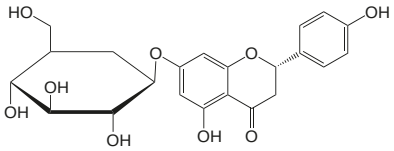
Reference substance for HPLC.
From *Citrus paradisi.*

Type analysis:

Purity (HPLC)..... >98 %

1186.1	50 mg	glass	456,90 €

Naringenin-7-glucoside



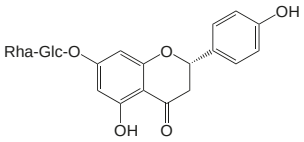
Naringenin-7-glucoside
ROTICHROM® HPLC
Reference substance for HPLC.
Prunin
$C_{21}H_{22}O_{10}$
M 434,4 g/mol
mp 150-170 °C
Storage temp.: +4 °C
[529-55-5] • EC No. 208-464-8
Warning H302

Type analysis:
Purity (HPLC)..... ≥99 %

8865.1	10 mg	glass	177,40 €

Naringenin-7-O-rutinoside
▶ Narirutin see p. 2154

Naringin



$C_{27}H_{32}O_{14}$
M 580,53 g/mol
mp 171 °C
Storage temp.: +4 °C
[10236-47-2] • EC No. 233-566-4

Naringin
≥98 %

Type analysis:
Appearance..... light yellow, cryst. powder
Assay (HPLC)..... ≥98 %
Heavy metals (as Pb)..... ≤0,001 %
Arsenic (As)..... ≤0,0005 %

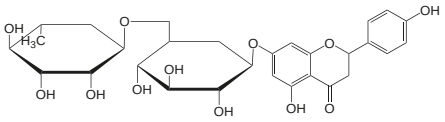
6481.1	10 g	plastic	29,60 €
6481.2	50 g	plastic	94,50 €
6481.3	100 g	plastic	171,90 €

Naringin
ROTICHROM® HPLC
Reference substance for HPLC.

Type analysis:
Purity (HPLC)..... ≥99 %

4200.2	20 mg	glass	155,90 €

Narirutin

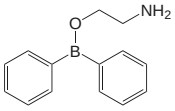


Narirutin
ROTICHROM® HPLC
Reference substance for HPLC.
Naringenin-7-O-rutinoside
$C_{27}H_{32}O_{14}$
M 580,61 g/mol
Storage temp.: +4 °C
[14259-46-2] • EC No. 238-138-0

Type analysis:
Purity (HPLC)..... ≥99 %

5185.2	10 mg	glass	306,40 €

Natural product reagent A



Natural product reagent A
≥98 %, p.a.
Biochemical analytical reagent for determination of flavonoids and vegetable acids.
Diphenylboric acid β-aminoethyl ester complex
$C_{14}H_{16}BNO$
M 225,10 g/mol
mp ~191 °C
Storage temp.: +4 °C
[524-95-8]
WGK 3
Warning H315-H319-H335

Type analysis:
Appearance..... white cryst. powder
Assay..... ≥98 %
Melting point..... 190-194 °C

9920.1	5 g	plastic	58,60 €
9920.2	25 g	plastic	158,60 €
9920.3	50 g	plastic	275,10 €

For further information, please see page 1640

Natural Red 28
▶ Orcein see p. 2186

NBS
▶ N-Bromosuccinimide see p. 1854

NBT
▶ p-Nitrotetrazolium blue chloride see p. 2167

NDF solution (neutral detergent solution)

NDF solution (neutral detergent solution)
For determination of neutral detergent fibre (NDF)
acc. to VDLUFA method book, volume 3.
D 1,02
WGK 2
Danger H360FD

9943.1	1 l	plastic	104,85 €
Original pack 6 x 1 l			99,61/1 l

Neisser's solution I

Neisser's solution I
for microscopy
Solution for diphtheria staining acc. to Neisser.
Neisser's solution Ia, Methylene blue solution 0,1 % acid
WGK 1

3463.1	100 ml	glass	19,90 €
3463.2	500 ml	glass	37,55 €

For further information, please see page 1465

Neisser's solution Ia
▶ Neisser's solution I see p. 2154

Neisser's solution Ib
▶ Neisser's solution II see p. 2154

Neisser's solution II

Neisser's solution II
for microscopy
Solution for diphtheria staining acc. to Neisser.
Neisser's solution Ib, Crystal violet solution 0,3 %
WGK 2
Warning H302-H371-H412

3464.1	100 ml	glass	19,90 €
3464.2	500 ml	glass	37,55 €

For further information, please see page 1465

Neisser's solution III

Neisser's solution III
for microscopy
Solution for diphtheria staining acc. to Neisser.
Neisser's solution II, Chrysoidine solution 0,3 %
WGK 1
Warning H302-H371-H412

3466.1	100 ml	glass	19,90 €
3466.2	500 ml	glass	37,55 €

For further information, please see page 1465

Neodymium Standards

▶ Neodymium ICP Standard Solution see p. 2364
▶ Neodymium ICP Standard Solution see p. 2368

Neodymium(III) acetate hydrate

Neodymium(III) acetate hydrate

ROTI®REMETIC 99,9 %
$Nd(CH_3CO_2)_3 \cdot x\ H_2O$
M 321,37 + x H_2O g/mol
[6192-13-8] • EC No. 228-244-5 • WGK 3

Type analysis:
Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7107.1	50 g	plastic	95,70 €
7107.2	100 g	plastic	163,30 €

Neodymium(III) nitrate hexahydrate

Neodymium(III) nitrate hexahydrate

ROTI®REMETIC 99,9 %
$Nd(NO_3)_3 \cdot 6\ H_2O$
M 438,35 g/mol
Solubility: 1520 g/l (H_2O, 25 °C)
[16454-60-7] • EC No. 233-153-9
UN No. 1477 • ADR 5.1 III • WGK 3
Danger H272

Type analysis:
Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7097.1	25 g	plastic	69,35 €
7097.2	100 g	plastic	159,00 €

Neodymium(III) oxide

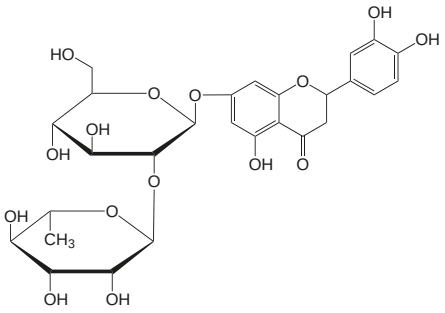
Neodymium(III) oxide

ROTI®REMETIC 99,999 %
Dineodym trioxide
Nd_2O_3
M 336,48 g/mol
bp 3760 °C
mp 2233 °C
Solubility: insoluble (H_2O, 20 °C)
[1313-97-9] • EC No. 215-214-1 • WGK 1

Type analysis:
Assay (TREO*). ..... 99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7092.1	5 g	plastic	55,80 €
7092.2	25 g	plastic	220,40 €

Neoeriocitrin



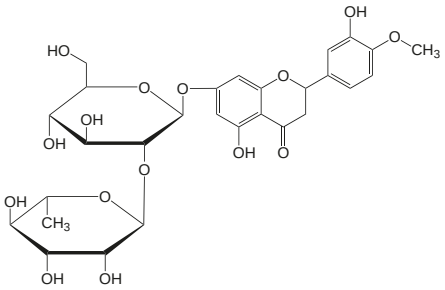
Neoeriocitrin

ROTICHROM® HPLC
Reference substance for HPLC.
Eriodictyol-7-neohesperidoside
$C_{27}H_{32}O_{15}$
M 596,54 g/mol
Storage temp.: +4 °C
[13241-32-2] • EC No. 236-215-3

Type analysis:
Purity (HPLC). ..... ≥99 %

4206.1	10 mg	glass	342,95 €

Neohesperidin



Neohesperidin

ROTICHROM® HPLC
Reference substance for HPLC.
$C_{28}H_{34}O_{15}$
M 610,56 g/mol
Storage temp.: +4 °C
[13241-33-3] • EC No. 236-216-9

Type analysis:
Purity (HPLC). ..... ≥99 %

6767.1	10 mg	glass	263,40 €

Neomycin sulphate

Neomycin sulphate

≥600 I.U./mg, for biochemistry
Inhibitor for protein biosynthesis, aminoglycoside antibiotic.
$C_{23}H_{46}N_6O_{13} \cdot 3\ H_2SO_4$
Storage temp.: +4 °C
[1405-10-3] • EC No. 215-773-1
WGK 1
Danger H317-H334

Type analysis:
Assay (microbiol. activity). ..... ≥600 µg/mg
Specific rotation $[\alpha]_D^{20}$ ..... +53,0° to +59,0°
pH value (10 % in H_2O). 5,0-7,5
Sulphated ash. ..... ≤1,0 %
Water content. ..... ≤8,0 %

8668.1	10 g	plastic	14,55 €
8668.2	100 g	plastic	66,55 €

For further information, please see page 1505

Neopentyl glycol

▶ 2,2-Dimethyl-1,3-propanediol see p. 1949

NEP

▶ N-Ethyl-2-pyrrolidone (NEP) see p. 1986

Neptune black

▶ Sudan black B (C.I. 26150) see p. 2385

Nessler's Reagent

Nessler's Reagent

For determination of ammonium
Potassium tetraiodomercurate(II), Potassium mercuric iodide
$K_2[HgI_4]$
D 1,16
[7783-33-7] • EC No. 231-990-4
UN No. 2922 • ADR 8(6.1) I • WGK 2
Danger
H290-H301+H311-H314-H330-H373-H412

Type analysis:
Suitability for determination of ammonium. ....complies

8132.1	100 ml	plastic	33,25 €

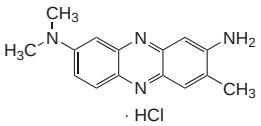
Neuridine

▶ Spermine see p. 2356

Neutral acriflavine

▶ Trypaflavine see p. 2423

Neutral red (C.I. 50040)



Neutral red (C.I. 50040)

p.a.
Indicator pH 6,8-8,0
Toluylene red
$C_{15}H_{17}ClN_4$
M 288,78 g/mol
Solubility: 50 g/l (H_2O, 25 °C)
[553-24-2] • EC No. 209-035-8
WGK 1

Type analysis:
pH-transition range. .....6,8 (red)-8,0 (orange-yellow)
Absorption max. (ethanol 50 %)..... 538-544 nm
Loss on drying (135 °C). .....≤12 %

T122.2	1 g	glass	22,05 €
T122.1	10 g	glass	55,80 €
T122.3	25 g	glass	110,65 €

For further information, please see page 1391

NHS

▶ N-Hydroxysuccinimide see p. 2060

NHS-PEG5-Alkyne

▶ NHS-PEG5-Alkyne see p. 2193

NHS-PEG4-Azide

▶ NHS-PEG4-Azide see p. 2193

Niacin

▶ Nicotinic acid see p. 2158

Nickel powder

Ni
M 58,71 g/mol
D 8,90 • bp 2832 °C
mp 1453 °C
[7440-02-0] • EC No. 231-111-4
WGK 2

Danger H372-H351-H317-H412

Nickel powder

ROTI®METIC 99,995 % (4N5)
Catalyst

Type analysis:
Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5643.1	25 g	plastic	78,40 €
5643.2	100 g	plastic	246,20 €

Nickel powder

≥99 %, <63 µm
Catalyst

Type analysis:
Assay (Ni)..... ≥99 %

CP22.1	100 g	plastic	30,00 €

Nickel foil

Nickel foil

99,99 % (4N), foil
Foil 50 mm long, 25 mm wide, 0,25 mm thick.
Ni
M 58,71 g/mol
D 8,90 • bp 2832 °C
mp 1453 °C
[7440-02-0] • EC No. 231-111-4
WGK 2

Danger H317-H351-H372

Type analysis:
Purity. ..... 99,99 %

0529.1	1 piece	plastic	94,50 €
0529.2	5 pieces	plastic	428,95 €

Nickel Standards

▶ Nickel AAS Standard Solution see p. 2360
▶ Nickel ICP Standard Solution see p. 2364
▶ Nickel ICP Standard Solution see p. 2368

Nickel agarose beads

▶ Roti®garose-His/Ni Beads see p. 2281

Nickel-aluminium alloy

Nickel-aluminium alloy

50/50 % Ni/Al powder, for synthesis
For the production of Raney® nickel.
Aluminium-nickel alloy
Ni:Al
D 4,3
mp ~1460 °C
Solubility: insoluble (H_2O)
[12635-29-9]
UN No. 1396 • ADR 4.3 III • WGK 2

Danger
H261-H317-H351-H372-H412

Guarantee analysis:
Appearance..... grey to grey black cryst. powder
Aluminium (Al). ..... 47,0-52,0 %
Nickel (Ni)..... 48,0-53,0 %
Particle size. .....100-160 mesh

0663.1	50 g	plastic	21,00 €
0663.2	250 g	plastic	78,40 €
0663.3	500 g	plastic	138,70 €
Original pack 6 x 500 g			131,77/500 g

Nickel(II) bromide hydrate

Nickel(II) bromide hydrate

pure
$NiBr_2 \cdot x\ H_2O$
M 218,51 + x H_2O g/mol
mp 300 °C (dec.)
[207569-11-7]
UN No. 3077 • ADR 9 III • WGK 3

Danger
H317-H334-H341-H350-H360D-H372-H410

Type analysis:
Appearance. .....yellow to green crystals
Nickel (Ni). .....19,0-23,0 %

8680.2	25 g	plastic	69,80 €

Nickel charged IMAC columns

▶ Roti®garose-His/Ni Cartridges see p. 2281
▶ Roti®garose-His/Ni Columns see p. 2281

Nickel(II) chloride hexahydrate

Nickelous chloride
$NiCl_2 \cdot 6\ H_2O$
M 237,70 g/mol
D 1,92
mp 140 °C (dec.)
Solubility: 553 g/l (H_2O, 20 °C)
[7791-20-0] • EC No. 231-743-0
UN No. 3288 • ADR 6.1 III • WGK 3

Danger H301+H331-H315-H317-H334-H341-H350i-H360D-H372-H410

Nickel(II) chloride hexahydrate

ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis). .....99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5373.1	50 g	plastic	338,65 €

Nickel(II) chloride hexahydrate

≥98 %, p.a.

Guarantee analysis:
Assay (compl.). .....≥98 %
pH value (5 % solution 25 °C). 4,0-6,0
Sulphate (SO_4).....≤0,005 %
Lead (Pb). .....≤0,001 %
Sodium (Na).....≤0,005 %
Magnesium (Mg). .....≤0,001 %
Cadmium (Cd). .....≤0,001 %
Calcium (Ca). .....≤0,005 %
Iron (Fe). .....≤0,001%
Cobalt (Co). .....≤0,01 %
Copper (Cu). .....≤0,001 %
Zinc (Zn). .....≤0,001 %

4489.1	100 g	plastic	45,70 €
4489.2	250 g	plastic	95,60 €

Nickel(II) chloride hexahydrate

≥97 %, extra pure

Type analysis:

Assay ≥97,0 %
Arsenic (As) ≤0,001 %
Iron (Fe) ≤0,001 %
Copper (Cu) ≤0,001 %
Insoluble matter ≤0,01 %

7312.1	250 g	plastic	22,50 €
7312.2	500 g	plastic	38,60 €
Original pack 6 x 500 g			36,67/500 g
7312.3	1 kg	plastic	68,70 €
Original pack 6 x 1 kg			65,27/1 kg
7312.4	2,5 kg	plastic	149,45 €

Nickel matrix modifier

▶ Nickel nitrate matrix modifier solution
see p. 2123

Nickel monoxide

▶ Nickel(II) oxide see p. 2157

Nickel(II) nitrate hexahydrate

Nickelous nitrate
$Ni(NO_3)_2 \cdot 6\ H_2O$
M 290,81 g/mol
bp 136 °C • mp 56,7 °C
Solubility: 940 g/l (H_2O, 20 °C)
[13478-00-7] • EC No. 236-068-5
UN No. 2725 • ADR 5.1 III • WGK 3

Danger
H272-H334-H341-H350i-H360D-H372-H318-H410-H302+H332-H315-H317

Nickel(II) nitrate hexahydrate

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis) 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5387.1	100 g	plastic	224,70 €
5387.2	500 g	plastic	762,20 €
Original pack 6 x 500 g			724,09/500 g

Nickel(II) nitrate hexahydrate

≥99 %, p.a.

For manufacturing of Ni/Cd batteries.

Guarantee analysis:

Assay (compl.) ≥99 %
In H_2O insoluble matter ≤0,005 %
Chloride (Cl) ≤0,002 %
Sulphate (SO_4) ≤0,01 %
Ammonium (NH_4) ≤0,5 %
Lead (Pb) ≤0,003 %
Cadmium (Cd) ≤0,002 %
Calcium (Ca) ≤0,1 %
Iron (Fe) ≤0,002 %
Cobalt (Co) ≤0,001 %
Copper (Cu) ≤0,005 %
Zinc (Zn) ≤0,03 %

4395.1	100 g	plastic	27,85 €
4395.2	250 g	plastic	57,95 €
4395.3	500 g	plastic	105,25 €
Original pack 6 x 500 g			99,99/500 g

Nickel(II) nitrate hexahydrate

≥98 %, extra pure

Type analysis:

Assay ≥98,0 %
Chloride (Cl) ≤0,001 %
Sulphate (SO_4) ≤0,001 %
Iron (Fe) ≤0,005 %
Copper (Cu) ≤0,005 %
pH (5 % H_2O, 25 °C) 4,0-6,5

0337.1	100 g	plastic	17,75 €
0337.2	500 g	plastic	33,25 €
Original pack 6 x 500 g			31,59/500 g
0337.3	1 kg	plastic	60,10 €
Original pack 6 x 1 kg			57,10/1 kg
0337.4	2,5 kg	plastic	133,20 €

Nickel nitrate matrix modifier solution

▶ Matrix modifier solution Nickel nitrate see p. 2123

Nickelous chloride

▶ Nickel(II) chloride hexahydrate see p. 2156

Nickel(II) oxide

Nickel monoxide, Oxonickel
NiO
M 74,69 g/mol
D 6,72
mp 1955 °C
Solubility: insoluble
[1313-99-1] • EC No. 215-215-7
WGK 1

Danger H317-H350i-H372-H413

Nickel(II) oxide

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis) 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5388.1	50 g	plastic	231,15 €
5388.2	100 g	plastic	428,95 €

Nickel(II) oxide

≥78 % Ni, p.a., green, 325 mesh

Guarantee analysis:

Appearance green powder
Assay (Ni) ≥78 %
Aluminium (Al) ≤0,05 %
Iron (Fe) ≤0,1 %
Cobalt (Co) ≤0,1 %
Copper (Cu) ≤0,05 %
Manganese (Mn) ≤0,1 %

9996.1	100 g	plastic	22,50 €
9996.2	500 g	plastic	67,20 €
Original pack 6 x 500 g			63,84/500 g
9996.3	1 kg	plastic	110,65 €
Original pack 6 x 1 kg			105,12/1 kg

Nickel(II) oxide

≥75 % Ni, p.a., black, 400 mesh

Guarantee analysis:

Appearance black powder
Assay (Ni) ≥75,0 %
Iron (Fe) ≤0,01 %
Cobalt (Co) ≤0,05 %
Copper (Cu) ≤0,01 %
Manganese (Mn) ≤0,01 %
Particle size:
<37 µm ≥99 %

9925.1	100 g	plastic	22,05 €
9925.2	500 g	plastic	67,20 €
Original pack 6 x 500 g			63,84/500 g
9925.3	1 kg	plastic	110,65 €
Original pack 6 x 1 kg			105,12/1 kg

Nickel(II) sulphate hexahydrate

$NiSO_4 \cdot 6\ H_2O$
M 262,86 g/mol
D 2,07
mp >100 °C (dec.)
Solubility: 650 g/l (H_2O, 20 °C)
[10101-97-0] • EC No. 232-104-9
UN No. 3077 • ADR 9 III • WGK 3

Danger H302+H332-H315-H334-H317-H341-H350i-H360D-H372-H400-H410

Nickel(II) sulphate hexahydrate

≥99 %, p.a., ACS

Guarantee analysis:

Assay (compl.) ≥99,0 %
In H_2O insoluble matter ≤0,005 %
Total nitrogen (as N) ≤0,002 %
Chloride (Cl) ≤0,001 %
Lead (Pb) ≤0,002 %
Calcium (Ca) ≤0,005 %
Iron (Fe) ≤0,001 %
Potassium (K) ≤0,01 %
Cobalt (Co) ≤0,002 %
Copper (Cu) ≤0,002 %
Magnesium (Mg) ≤0,005 %
Manganese (Mn) ≤0,002 %
Sodium (Na) ≤0,05 %
Zinc (Zn) ≤0,002 %

T111.1	250 g	plastic	69,35 €
T111.2	1 kg	plastic	240,30 €
Original pack 6 x 1 kg			228,29/1 kg

Nickel(II) sulphate hexahydrate

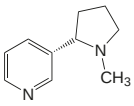
≥98 %, extra pure

Type analysis:

Assay ≥98,0 %
Lead (Pb) ≤0,001 %
Iron (Fe) ≤0,001 %
Copper (Cu) ≤0,001 %

7322.1	250 g	plastic	25,70 €
7322.2	500 g	plastic	37,10 €
Original pack 6 x 500 g			35,25/500 g
7322.3	1 kg	plastic	62,90 €
Original pack 6 x 1 kg			59,76/1 kg
7322.4	2,5 kg	plastic	125,25 €

(-)-Nicotine



(-)-Nicotine

≥99 %, for biochemistry
$C_{10}H_{14}N_2$ • M 162,24 g/mol
D 1,01 • bp 247 °C • mp -79 °C • flp 101 °C
[54-11-5] • EC No. 200-193-3
UN No. 1654 • ADR 6.1 II • WGK 3
Danger H301-H310-H410

Type analysis:
Assay (GC).....≥99 %
Specific rotation $[\alpha]_D^{20}$.....-168° to -164°

8746.1	10 g	glass	28,95 €

ß-Nicotine amide adenine dinucleotide

▶ NAD see p. 2151

ß-Nicotine amide adenine dinucleotide disodium salt

▶ NADH disodium salt see p. 2151

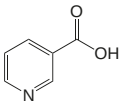
ß-Nicotine amide adenine dinucleotide phosphate disodium salt

▶ NADP disodium salt see p. 2152

ß-Nicotine amide adenine dinucleotide phosphate tetrasodium salt

▶ NADPH tetrasodium salt see p. 2152

Nicotinic acid



Nicotinic acid

≥99,5 %, for biochemistry
3-Pyridinecarboxylic acid, Niacin, Vitamin B_3
$C_6H_5NO_2$ • M 123,11 g/mol
D 1,47 • mp 236 °C • flp 193 °C
Solubility: 18 g/l (H_2O, 20 °C)
[59-67-6] • EC No. 200-441-0 • WGK 1
Warning H319

Type analysis:
Appearance.....white to off-white, cryst. powder
Assay.....≥99,5 %
Chloride (Cl).....≤0,05 %
Heavy metals.....≤0,005 %
Loss on drying (105 °C, 1 h).....≤1,0 %
Sulphated ash.....≤0,1 %
Melting temperature.....234-240 °C

3815.1	100 g	plastic	32,80 €
3815.2	250 g	plastic	66,55 €

Nigrosin, soluble in alcohol (C.I. 50415)

Nigrosin, soluble in alcohol (C.I. 50415)

extra pure
[11099-03-9]
WGK 3

Type analysis:
Appearance.....black powder

7716.1	5 g	glass	14,55 €
7716.2	25 g	glass	25,70 €
7716.3	100 g	glass	51,10 €

Nigrosin, water soluble (C.I. 50420)

Nigrosin, water soluble (C.I. 50420)

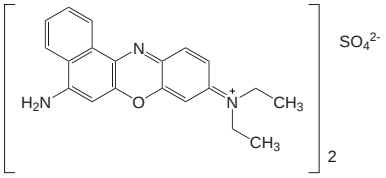
for microscopy
Acid black 2
[8005-03-6]
WGK 3

Type analysis:
Appearance.....black powder
Appearance of solution (0,1 % in H_2O).....black to purple

7718.1	25 g	glass	14,55 €
7718.2	100 g	glass	36,45 €

For further information, please see page 1524

Nile blue A (C.I. 51180)



Nile blue A (C.I. 51180)

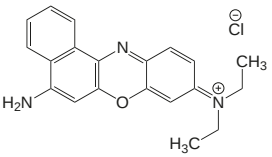
~80 %
Nile blue sulphate
$C_{40}H_{40}N_6O_6S$
M 732,84 g/mol
mp >300 °C (dec.)
Solubility: ~50 g/l (H_2O, 25 °C)
[3625-57-8] • EC No. 222-832-5
WGK 2

Type analysis:
Appearance.....dark green powder
Dye content.....~80 %
Suitability for microscopy.....complies

4377.2	5 g	glass	17,75 €
4377.1	10 g	glass	30,00 €
4377.3	25 g	glass	47,85 €

For further information, please see page 1524

Nile blue chloride (C.I. 51180)



Nile blue chloride (C.I. 51180)

extra pure
Indicator pH 9,4-11,0
$C_{20}H_{20}ClN_3O$
M 353,85 g/mol
[2381-85-3]
WGK 3

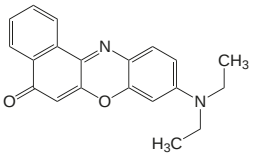
Type analysis:
Appearance.....dark green to black powder
Solubility (0,2 % in H_2O).....complies
Loss on drying (1 h, 110 °C).....≤10 %

7723.1	5 g	glass	25,70 €
7723.2	25 g	glass	75,15 €
7723.3	100 g	glass	182,25 €

Nile blue sulphate

▶ Nile blue A (C.I. 51180) see p. 2158

Nile red



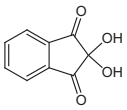
Nile red

extra pure
Fluorescent dye
$C_{20}H_{18}N_2O_2$
M 318,38 g/mol
mp 203-205 °C
[7385-67-3]
WGK 3

Type analysis:
Appearance.....brown to green cryst. powder

7726.1	1 g	glass	36,45 €
7726.2	5 g	glass	150,00 €
7726.3	10 g	glass	246,75 €

Ninhydrin



Ninhydrin

≥99 %, p.a., ACS

For the detection of amino acids.

2,2-Dihydroxyindane-1,3-dione, Indanetrione hydrate

$C_9H_6O_4$

M 178,15 g/mol

mp ~250 °C (dec.)

Solubility: 20 g/l (H_2O, 20 °C)

[485-47-2] • EC No. 207-618-1

WGK 1

Warning H302-H315-H319-H335

Guarantee analysis:

Appearance. ..... yellowish crystals or cryst. powder
Assay. ..... ≥99,0 %
Solubility (0,1 g/10 ml H_2O). ..... conforms to ACS
Loss on drying (105 °C). ..... ≤11,0 %
Melting point. ..... conforms to ACS
Sensitivity. ..... conforms to ACS
Application: 0,1 % in ethanol for determination of amino acids in chromatography.

4378.1	25 g	glass	40,35 €
4378.2	100 g	glass	104,20 €
4378.3	500 g	glass	375,20 €
Original pack 6 x 500 g			356,44/500 g

For further information, please see page 1640

Ninhydrin spray solution

Ninhydrin spray solution

for TLC

Ready-to-use spray solution for detection of amino acids, amines and amino sugars. 0,5 g Ninhydrin dissolved in 100 ml ethanol.

UN No. 1993 • ADR 3 II • WGK 1

Danger H225

Type analysis:

TLC-application. ..... complies

CP30.1	100 ml	glass	38,50 €

Niobium Standards

▶ Niobium ICP Standard Solution see p. 2364
▶ Niobium ICP Standard Solution see p. 2368

Niobium(V) oxide

Niobium(V) oxide

≥99,9 %

Nb_2O_5

M 265,81 g/mol

D 4,55

Solubility: insoluble (H_2O, 20 °C)

[1313-96-8] • EC No. 215-213-6

Type analysis:

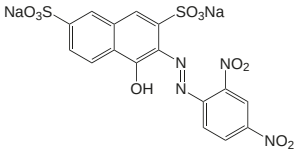
Appearance. ..... white powder
Assay. ..... ≥99,9 %
Loss on ignition. ..... ≤0,4 %
Iron (Fe). ..... ≤0,003 %
Nickel (Ni). ..... ≤0,002 %
Silicon (Si). ..... ≤0,003 %
Tantal (Ta). ..... ≤0,015 %
Titanium (Ti). ..... ≤0,0002 %
Tungsten (W). ..... ≤0,0005 %
Zirconium (Zr). ..... ≤0,0002 %

4381.1	50 g	plastic	103,10 €
4381.2	250 g	plastic	450,45 €

Nitrate Standards

▶ Nitrate IC Standard Solution see p. 2376

Nitrazine yellow (C.I. 14890)



Nitrazine yellow (C.I. 14890)

p.a.

Indicator pH 6,0-7,2

$C_{16}H_8N_4Na_2O_{11}S_2$

M 542,36 g/mol

mp >250 °C

[5423-07-4]

WGK 3

Type analysis:

Appearance. ..... brown to orange powder
Appearance of solution ($0,1$ % in H_2O). ..... clear, yellow to brown
pH-transition range. ..... 6,0 (yellow)-7,2 (blue)

7727.1	1 g	glass	16,70 €
7727.2	5 g	glass	60,10 €
7727.3	10 g	glass	107,40 €

Nitric acid Ultra-quality

Nitric acid Ultra-quality

ROTIPURAN® Ultra 69 %

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis.

HNO_3

M 63,01 g/mol • D 1,41 • bp 120 °C

[7697-37-2] • EC No. 231-714-2

UN No. 2031 • ADR 8 (5.1) II • WGK 1

Danger

H272-H290-H314-H331-EUH071

Guarantee analysis:

Assay (w/w). ..... 67-69 %
Aluminium (Al). ..... ≤20 ppt
Antimony (Sb). ..... ≤10 ppt
Arsenic (As). ..... ≤20 ppt
Barium (Ba). ..... ≤10 ppt
Beryllium (Be). ..... ≤10 ppt
Lead (Pb). ..... ≤10 ppt
Boron (B). ..... ≤10 ppt
Cadmium (Cd). ..... ≤10 ppt
Cesium (Cs). ..... ≤10 ppt
Calcium (Ca). ..... ≤10 ppt
Cerium (Ce). ..... ≤10 ppt
Chromium (Cr). ..... ≤10 ppt
Dysprosium (Dy). ..... ≤1 ppt
Iron (Fe). ..... ≤10 ppt
Erbium (Er). ..... ≤1 ppt
Europium (Eu). ..... ≤1 ppt
Gadolinium (Gd). ..... ≤1 ppt
Gallium (Ga). ..... ≤10 ppt
Germanium (Ge). ..... ≤10 ppt
Gold (Au). ..... ≤20 ppt
Hafnium (Hf). ..... ≤10 ppt
Holmium (Ho). ..... ≤1 ppt
Indium (In). ..... ≤1 ppt
Potassium (K). ..... ≤10 ppt
Cobalt (Co). ..... ≤10 ppt
Copper (Cu). ..... ≤10 ppt
Lanthanum (La). ..... ≤1 ppt
Lithium (Li). ..... ≤10 ppt
Lutetium (Lu). ..... ≤1 ppt
Magnesium (Mg). ..... ≤10 ppt
Manganese (Mn). ..... ≤10 ppt
Molybdenum (Mo). ..... ≤10 ppt
Sodium (Na). ..... ≤10 ppt
Neodymium (Nd). ..... ≤1 ppt
Nickel (Ni). ..... ≤20 ppt
Niobium (Nb). ..... ≤1 ppt
Palladium (Pd). ..... ≤20 ppt
Platinum (Pt). ..... ≤20 ppt
Praseodymium (Pr). ..... ≤1 ppt
Mercury (Hg). ..... ≤50 ppt
Rhenium (Re). ..... ≤10 ppt
Rhodium (Rh). ..... ≤10 ppt
Rubidium (Rb). ..... ≤10 ppt
Ruthenium (Ru). ..... ≤20 ppt
Samarium (Sm). ..... ≤1 ppt
Scandium (Sc). ..... ≤10 ppt
Silver (Ag). ..... ≤10 ppt
Strontium (Sr). ..... ≤10 ppt
Tellur (Te). ..... ≤1 ppt
Terbium (Tb). ..... ≤1 ppt
Thallium (Tl). ..... ≤10 ppt
Thorium (Th). ..... ≤1 ppt
Thulium (Tm). ..... ≤1 ppt
Titanium (Ti). ..... ≤10 ppt
Uranium (U). ..... ≤1 ppt
Vanadium (V). ..... ≤10 ppt
Bismuth (Bi). ..... ≤10 ppt
Tungsten (W). ..... ≤10 ppt
Ytterbium (Yb). ..... ≤1 ppt
Yttrium (Y). ..... ≤1 ppt
Zinc (Zn). ..... ≤10 ppt
Tin (Sn). ..... ≤20 ppt
Zirconium (Zr). ..... ≤10 ppt

HN60.1	250 ml	plastic (FEP)	385,95 €
HN60.2	500 ml	plastic (FEP)	532,15 €
HN60.3	1 l	plastic (FEP)	854,65 €
Original pack 6 x 1 l			811,92/1 l
HN60.4	2 l	plastic (FEP)	1310,45 €

For further information, please see page 1729

Nitric acid Supra-quality

Nitric acid Supra-quality

ROTIPURAN® Supra 69 %

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

HNO_3

M 63,01 g/mol • D 1,41 • bp 120 °C

[7697-37-2] • EC No. 231-714-2

UN No. 2031 • ADR 8 (5.1) II • WGK 1

Danger

H272-H290-H314-H331-EUH071

Guarantee analysis:

Assay (w/w)	67-69 %
Colour (APHA)	≤10
Chloride (Cl)	≤0,00002 %
Total Phosphorous (P)	≤0,000001 %
Total Sulfur (S)	≤0,00003 %
Aluminium (Al)	≤1 ppb
Antimony (Sb)	≤0,5 ppb
Arsenic (As)	≤0,5 ppb
Barium (Ba)	≤0,1 ppb
Beryllium (Be)	≤0,1 ppb
Lead (Pb)	≤0,1 ppb
Boron (B)	≤1 ppb
Cadmium (Cd)	≤0,5 ppb
Cesium (Cs)	≤0,1 ppb
Calcium (Ca)	≤1 ppb
Cerium (Ce)	≤0,1 ppb
Chromium (Cr)	≤1 ppb
Dysprosium (Dy)	≤0,1 ppb
Iron (Fe)	≤1 ppb
Erbium (Er)	≤0,1 ppb
Europium (Eu)	≤0,1 ppb
Gadolinium (Gd)	≤0,1 ppb
Gallium (Ga)	≤0,1 ppb
Germanium (Ge)	≤0,1 ppb
Gold (Au)	≤0,1 ppb
Hafnium (Hf)	≤0,1 ppb
Holmium (Ho)	≤0,1 ppb
Indium (In)	≤0,1 ppb
Potassium (K)	≤1 ppb
Cobalt (Co)	≤0,5 ppb
Copper (Cu)	≤0,5 ppb
Lanthanum (La)	≤0,1 ppb
Lithium (Li)	≤0,1 ppb
Lutetium (Lu)	≤0,1 ppb
Magnesium (Mg)	≤1 ppb
Manganese (Mn)	≤0,1 ppb
Molybdenum (Mo)	≤0,1 ppb
Sodium (Na)	≤1 ppb
Neodymium (Nd)	≤0,1 ppb
Nickel (Ni)	≤0,5 ppb
Niobium (Nb)	≤0,1 ppb
Palladium (Pd)	≤0,5 ppb
Platinum (Pt)	≤0,5 ppb
Praseodymium (Pr)	≤0,1 ppb
Mercury (Hg)	≤0,1 ppb
Rhenium (Re)	≤0,1 ppb
Rhodium (Rh)	≤0,5 ppb
Rubidium (Rb)	≤0,1 ppb
Ruthenium (Ru)	≤0,5 ppb
Samarium (Sm)	≤0,1 ppb
Scandium (Sc)	≤0,1 ppb
Selenium (Se)	≤1 ppb
Silver (Ag)	≤0,1 ppb
Strontium (Sr)	≤0,1 ppb
Tellur (Te)	≤0,1 ppb
Terbium (Tb)	≤0,1 ppb
Thallium (Tl)	≤0,1 ppb
Thorium (Th)	≤0,1 ppb
Thulium (Tm)	≤0,1 ppb
Titanium (Ti)	≤0,5 ppb
Uranium (U)	≤0,1 ppb
Vanadium (V)	≤0,5 ppb
Bismuth (Bi)	≤0,1 ppb
Tungsten (W)	≤0,1 ppb
Ytterbium (Yb)	≤0,1 ppb
Yttrium (Y)	≤0,1 ppb
Zinc (Zn)	≤0,5 ppb
Tin (Sn)	≤0,5 ppb
Zirconium (Zr)	≤0,1 ppb

HN50.1	500 ml	plastic	78,40 €
HN50.2	1 l	plastic	121,40 €
Original pack 6 x 1 l			115,33/1 l
HN50.3	2,5 l	plastic	143,95 €
Original pack 4 x 2,5 l			136,75/2,5 l

For further information, please see page 1729

Nitric acid 68 %

Nitric acid 68 %

68 %, extra pure

HNO_3

M 63,0 g/mol

D 1,41

[7697-37-2] • EC No. 231-714-2

UN No. 2031 • ADR 8 (5.1) II • WGK 1

Danger

H272-H290-H314-H331-EUH071

Type analysis:

Assay	67,5-68,5 %
Chloride (Cl)	≤0,001 %
Sulphate (SO_4)	≤0,005 %
Lead (Pb)	≤0,0005 %
Iron (Fe)	≤0,0005 %
Ash content	≤0,005 %

2616.1	250 ml	glass	14,55 €
2616.2	1 l	glass	25,70 €
Original pack 6 x 1 l			24,42/1 l
2616.3	2,5 l	glass	41,40 €
Original pack 4 x 2,5 l			39,33/2,5 l

Nitric acid 65 %

HNO_3

M 63,0 g/mol

D 1,3-1,4

[7697-37-2] • EC No. 231-714-2

UN No. 2031 • ADR 8 (5.1) II • WGK 1

Danger

H272-H290-H314-H331-EUH071

Nitric acid 65 %

ROTIPURAN® 65 %, p.a., ISO, max. 0,005 ppm Hg

Dissolving agent for organic and anorganic samples. For determination of mercury.

Guarantee analysis:

Assay (acidim.)	≥65 %
Chloride (Cl)	≤0,00005 %
Sulphate (SO_4)	≤0,0002 %
Phosphate (PO_4)	≤0,0001 %
Mercury (Hg)	≤0,0000005 %
Silver (Ag)	≤0,000002 %
Aluminium (Al)	≤0,000005 %
Arsenic (As)	≤0,000001 %
Barium (Ba)	≤0,000002 %
Beryllium (Be)	≤0,000002 %
Calcium (Ca)	≤0,00005 %
Cadmium (Cd)	≤0,000001 %
Cobalt (Co)	≤0,000002 %
Chromium (Cr)	≤0,00001 %
Copper (Cu)	≤0,000001 %
Iron (Fe)	≤0,00002 %
Potassium (K)	≤0,00001 %
Lithium (Li)	≤0,000002 %
Magnesium (Mg)	≤0,00001 %
Manganese (Mn)	≤0,000001 %
Sodium (Na)	≤0,00005 %
Nickel (Ni)	≤0,000005 %
Lead (Pb)	≤0,000002 %
Strontium (Sr)	≤0,000002 %
Zinc (Zn)	≤0,000005 %
Ash content (as SO_4)	≤0,0005 %

X943.1	1 l	glass	31,75 €
Original pack 6 x 1 l			30,16/1 l
X943.2	2,5 l	glass	62,25 €
Original pack 4 x 2,5 l			59,14/2,5 l

Nitric acid 65 %

ROTIPURAN® ≥65 %, p.a., ISO

Guarantee analysis:

Assay (acidim.)	≥65,0 %
Heavy metals (as Pb)	≤0,0002 %
Test with dithizone	complies
Ash content (as SO_4)	≤0,0005 %
Chloride (Cl)	≤0,00005 %
Sulphate (SO_4)	≤0,00005 %
Phosphate (PO_4)	≤0,00005 %
Silver (Ag)	≤0,000001 %
Aluminium (Al)	≤0,000005 %
Arsenic (As)	≤0,000001 %
Barium (Ba)	≤0,000001 %
Beryllium (Be)	≤0,000001 %
Bismuth (Bi)	≤0,00001 %
Calcium (Ca)	≤0,00001 %
Cadmium (Cd)	≤0,000001 %
Cobalt (Co)	≤0,000001 %
Chromium (Cr)	≤0,000002 %
Copper (Cu)	≤0,000001 %
Iron (Fe)	≤0,00001 %
Germanium (Ge)	≤0,000005 %
Potassium (K)	≤0,00001 %
Lithium (Li)	≤0,000001 %
Magnesium (Mg)	≤0,00001 %
Manganese (Mn)	≤0,000001 %
Molybdenum (Mo)	≤0,000002 %
Sodium (Na)	≤0,00005 %
Nickel (Ni)	≤0,000002 %
Lead (Pb)	≤0,000001 %
Titanium (Ti)	≤0,00001 %
Thallium (Tl)	≤0,000005 %
Vanadium (V)	≤0,000001 %
Zinc (Zn)	≤0,000005 %
Zirconium (Zr)	≤0,00001 %

4989.3	250 ml	glass	19,25 €
4989.1	1 l	glass	30,65 €
Original pack 6 x 1 l			29,12/1 l
4989.2	2,5 l	glass	60,10 €
Original pack 4 x 2,5 l			57,10/2,5 l

Nitric acid 65 %

65 %, pure

Type analysis:

Assay	64,0-66,0 %
Density (20 °C)	1,386-1,395

X898.1	1 l	glass	25,30 €
Original pack 6 x 1 l			24,04/1 l
X898.2	2,5 l	glass	40,35 €
Original pack 4 x 2,5 l			38,33/2,5 l

Nitric acid 60 %

Nitric acid 60 %

60 %, pure

HNO_3

M 63,0 g/mol

D 1,36

[7697-37-2] • EC No. 231-714-2

UN No. 2031 • ADR 8 II • WGK 1

Danger H290-H314-H331-EUH071

Type analysis:
Assay.....59,0-61,0 %
Chloride (Cl).....≤0,001 %
Iron (Fe).....≤0,0005 %
Heavy metals (as Pb).....≤0,001 %
Evaporation residue.....≤0,01 %

6745.1	1 l	glass	22,05 €
Original pack 6 x 1 l			20,95/1 l
6745.5	2,5 l	glass	34,30 €
Original pack 4 x 2,5 l			32,59/2,5 l

Nitric acid 53 %

Nitric acid 53 %

53 %, pure
HNO_3
M 63,0 g/mol
D 1,3-1,4
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 II • WGK 1
Danger H290-H314-H331-EUH071

Type analysis:
Assay.....51,5-54,5 %
Density (20 °C).....1,3219-1,3336
Chloride (Cl).....≤0,001 %
Iron (Fe).....≤0,0005 %

9274.1	1 l	glass	22,05 €
Original pack 6 x 1 l			20,95/1 l
9274.2	10 l	plastic	69,35 €

Nitric acid 40 %

Nitric acid 40 %

40 %, pure
HNO_3
M 63,0 g/mol
D 1,25
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 II • WGK 1
Danger H290-H314-H331-EUH071

Type analysis:
Assay.....39,0-41,0 %
Chloride (Cl).....≤0,001 %
Iron (Fe).....≤0,0005 %
Ash.....≤0,005 %

6748.1	1 l	glass	19,25 €
Original pack 6 x 1 l			18,29/1 l
6748.2	5 l	plastic	48,30 €
Original pack 2 x 5 l			45,89/5 l
6748.3	10 l	plastic	61,85 €
6748.4	25 l	plastic	117,75 €

Nitric acid 25 %

Nitric acid 25 %

25 %, pure
HNO_3
M 63,0 g/mol
D ~1,15
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 II • WGK 1
Danger H290-H314-H332-EUH071

Type analysis:
Assay.....24,0-26,0 %
Density (20 °C).....1,1404-1,1534
Chloride (Cl).....≤0,001 %
Iron (Fe).....≤0,0005 %
Ash content.....≤0,005 %

4339.1	1 l	plastic	17,10 €
Original pack 6 x 1 l			16,25/1 l
4339.2	5 l	plastic	44,00 €
Original pack 2 x 5 l			41,80/5 l
4339.3	10 l	plastic	60,75 €
4339.4	25 l	plastic	114,95 €

Nitric acid 20 %

Nitric acid 20 %

20 %, pure
HNO_3
M 63,0 g/mol • D ~1,12
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 II • WGK 1
Danger H290-H314-H332-EUH071

Type analysis:
Assay.....19,0-21,0 %
Density (20 °C).....1,1088-1,1213
Chloride (Cl).....≤0,0005 %
Iron (Fe).....≤0,0003 %
Ash content.....≤0,003 %

4337.1	1 l	plastic	17,75 €
Original pack 6 x 1 l			16,86/1 l
4337.2	2,5 l	plastic	25,30 €
Original pack 4 x 2,5 l			24,04/2,5 l
4337.3	5 l	plastic	38,60 €
Original pack 2 x 5 l			36,67/5 l
4337.4	10 l	plastic	51,10 €

Nitric acid (0,1 N)

Nitric acid

0,1 mol/l - 0,1 N volumetric standard solution

Type analysis:
Amount-of-substance conc. (20 °C).....0,1 mol/l ±0,2 %
Titer.....0,998-1,002

KK73.1	1 l	plastic	19,25 €
Original pack 6 x 1 l			18,29/1 l

For further information, please see page 1681

Nitric acid (1 N)

Nitric acid

1 mol/l - 1 N volumetric standard solution
HNO_3
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 II • WGK 1
Danger H290-H314-EUH071

Type analysis:
Amount-of-substance conc. (20 °C).....1 mol/l ±0,2 %
Titer.....0,998-1,002

N070.1	1 l	glass	22,05 €
Original pack 6 x 1 l			20,95/1 l

For further information, please see page 1681

Nitric acid (2 N)

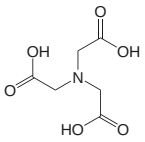
Nitric acid

2 mol/l - 2 N volumetric standard solution
HNO_3
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 II • WGK 1
Danger H290-H314-EUH071

Type analysis:
Amount-of-substance conc. (20 °C).....2 mol/l ±0,2 %
Titer.....0,9980-1,0020

9887.1	500 ml	plastic	26,80 €
9887.2	1 l	plastic	38,60 €
Original pack 6 x 1 l			36,67/1 l

Nitrilotriacetic acid



Tri-(carboxymethyl)amine, Komplexon®
$C_6H_9NO_6$
M 191,14 g/mol
mp 242 °C (dec.) • flp 100 °C
Solubility: 1,28 g/l (H_2O, 22 °C)
[139-13-9] • EC No. 205-355-7
WGK 2
Warning H351-H302-H319

Nitrilotriacetic acid

≥99 %, p.a., ACS

Guarantee analysis:
Assay (titr. NaOH).....≥99,0 %
Appearance of solution.....clear, colorless
Ash content (as SO_4).....≤0,1 %
Loss on drying.....≤0,1 %
Chloride (Cl).....≤0,01 %
Lead (Pb).....≤0,0005 %
Cadmium (Cd).....≤0,0005 %
Calcium (Ca).....≤0,001 %
Chromium (Cr).....≤0,0005 %
Iron (Fe).....≤0,0007 %
Potassium (K).....≤0,005 %
Cobalt (Co).....≤0,0005 %
Copper (Cu).....≤0,0005 %
Magnesium (Mg).....≤0,0005 %
Manganese (Mn).....≤0,0005 %
Sodium (Na).....≤0,05 %
Nickel (Ni).....≤0,0005 %
Zinc (Zn).....≤0,0005 %

4384.1	100 g	plastic	69,35 €

Nitrilotriacetic acid

≥99 %, extra pure

Type analysis:

Assay.....≥99,0 %
Chloride (Cl).....≤0,01 %
Iron (Fe).....≤0,005 %
Heavy metals.....≤0,001 %
Sulphated ash.....≤0,1 %

8653.1	100 g	plastic	22,05 €
8653.2	500 g	plastic	69,35 €
Original pack 6 x 500 g			65,88/500 g
8653.3	1 kg	plastic	128,90 €
Original pack 6 x 1 kg			122,46/1 kg

Nitrilotriacetic acid trisodium salt monohydrate

Nitrilotriacetic acid trisodium salt monohydrate

≥99 %, extra pure

Sodium nitrilotriacetate tribasic monohydrate, NTA-3 Na
$C_6H_6NO_6Na_3 \cdot H_2O$
M 275,10 g/mol
D 1,77
mp >340 °C (dec.)
Solubility: 457 g/l (H_2O, 20 °C)
[18662-53-8] • EC No. 225-768-6
WGK 2

Warning H302-H319-H351

Type analysis:

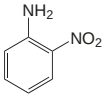
Assay.....≥99,0 %
pH (2 % solution).....10,5-11,5
Iron (Fe).....≤0,001 %
Heavy metals (as Pb).....≤0,001 %
Water.....6,0-7,0 %

8242.1	100 g	plastic	20,35 €
8242.2	500 g	plastic	57,95 €
Original pack 6 x 500 g			55,05/500 g
8242.3	1 kg	plastic	93,00 €
Original pack 6 x 1 kg			88,35/1 kg
8242.4	2,5 kg	plastic	212,35 €

Nitrite Standards

▶ Nitrite IC Standard Solution see p. 2376

2-Nitroaniline



2-Nitroaniline

≥98 %, for synthesis
o-Nitroaniline, 1-Amino-2-nitrobenzene
$C_6H_6N_2O_2$
M 138,12 g/mol
D 1,42 • bp 284 °C
mp 68-71 °C • flp 167 °C
Solubility: 1,1 g/l (H_2O, 20 °C)
[88-74-4] • EC No. 201-855-4
UN No. 1661 • ADR 6.1 II • WGK 3

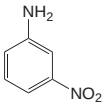
Danger H301-H311-H330-H373-H412

Type analysis:

Assay.....≥98,0 %
Melting point.....68-71 °C

9878.1	100 g	plastic	17,10 €
9878.2	500 g	plastic	40,75 €
Original pack 6 x 500 g			38,71/500 g
9878.3	1 kg	plastic	64,00 €
Original pack 6 x 1 kg			60,80/1 kg

3-Nitroaniline



3-Nitroaniline

≥99 %, for synthesis
m-Nitroaniline, 1-Amino-3-nitrobenzene
$C_6H_6N_2O_2$
M 138,12 g/mol
D 0,90 • bp 306 °C
mp 109-112 °C • flp 196 °C
Solubility: 1,25 g/l (H_2O, 25 °C)
[99-09-2] • EC No. 202-729-1
UN No. 1661 • ADR 6.1 II • WGK 3

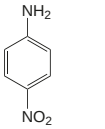
Danger H301-H311-H331-H373-H412

Type analysis:

Assay.....≥99,0 %
Melting point.....109-112 °C

9867.1	100 g	plastic	19,25 €
9867.2	500 g	plastic	52,60 €
Original pack 6 x 500 g			49,97/500 g
9867.3	1 kg	plastic	87,00 €
Original pack 6 x 1 kg			82,65/1 kg

4-Nitroaniline



4-Nitroaniline

≥98,5 %, for synthesis
p-Nitroaniline, 1-Amino-4-nitrobenzene
$C_6H_6N_2O_2$ • M 138,12 g/mol
D 1,44 • bp 336 °C
mp 146-149 °C • flp 199-213 °C
Solubility: 0,5 g/l (H_2O, 25 °C)
[100-01-6] • EC No. 202-810-1
UN No. 1661 • ADR 6.1 II • WGK 3

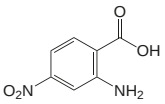
Danger
H301+H311+H331-H373-H412

Type analysis:

Assay.....≥98,5 %
Melting point.....146-149 °C
Sulphated ash.....≤0,05 %

9850.1	100 g	plastic	22,50 €
9850.2	500 g	plastic	46,15 €
Original pack 6 x 500 g			43,84/500 g
9850.3	1 kg	plastic	83,75 €
Original pack 6 x 1 kg			79,56/1 kg

4-Nitroanthranilic acid



4-Nitroanthranilic acid

≥98 %, for synthesis
$C_7H_6N_2O_4$
M 182,13 g/mol
mp 269-272 °C
[619-17-0] • EC No. 210-583-5 • WGK 3

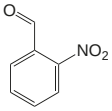
Warning H315-H319-H335

Type analysis:

Appearance.....orange powder
Assay (titr.).....≥98,0 %
Loss on drying.....≤0,5 %

4543.1	1 g	glass	46,15 €
4543.2	5 g	glass	90,20 €

2-Nitrobenzaldehyde



2-Nitrobenzaldehyde

≥98 %, for synthesis
o-Nitrobenzaldehyde
$C_7H_5NO_3$
M 151,12 g/mol
mp 41-46 °C
[552-89-6] • EC No. 209-025-3 • WGK 2

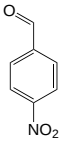
Warning H315-H319-H335

Type analysis:

Appearance.....
.....yellow to light gold cryst. powder or pieces
Assay.....≥98,0 %
Loss on drying.....≤0,5 %

4224.1	25 g	plastic	33,25 €
4224.2	100 g	plastic	65,50 €
4224.3	250 g	plastic	113,85 €

4-Nitrobenzaldehyde



4-Nitrobenzaldehyde

≥98 %, for synthesis
p-Nitrobenzaldehyde
$C_7H_5NO_3$
M 151,12 g/mol
mp 102-106 °C
[555-16-8] • EC No. 209-084-5 • WGK 2

Warning H315-H319-H335

Type analysis:
Appearance. ..... yellow to light gold cryst. powder
Assay. ..... ≥98,0 %
Loss on drying. ..... ≤1,0 %

5667.1	25 g	plastic	26,35 €
5667.2	100 g	plastic	51,50 €
5667.3	250 g	plastic	95,60 €

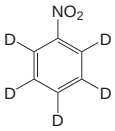
Nitrobenzene

Nitrobenzene
≥99 %, for synthesis
$C_6H_5NO_2$
M 123,11 g/mol
D 1,20 • bp 205-210 °C
mp 5-6 °C • flp 88 °C
Solubility: 1,9 g/l (H_2O, 20 °C)
[98-95-3] • EC No. 202-716-0
UN No. 1662 • ADR 6.1 II • WGK 3
Danger H301+H311+H331-H351-H360F-H372-H412

Type analysis:
Assay (GC). ..... ≥99 %
Density (d 20 °C/4 °C). 1,201-1,205
Freezing point. ..... 5-6 °C

4394.2	500 ml	glass	34,30 €
4394.1	1 l	glass	57,55 €
Original pack 6 x 1 l			54,67/1 l

Nitrobenzene D5

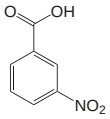


Nitrobenzene D5
99,5 Atom%D
For nuclear magnetic resonance spectroscopy.
$C_6D_5NO_2$
M 128,15 g/mol
D 1,253 • bp 211 °C
mp 6 °C • flp 87 °C
[4165-60-0] • EC No. 224-014-3
UN No. 1662 • ADR 6.1 II • WGK 3
Danger
H301+H311+H331-H351-H360F-H372-H412

Type analysis:
Deuterising degree. ..... ≥99,5 %
Water (KF, H_2O+D_2O). ..... ≤0,03 %

9914.1	5 ml	glass	68,70 €
9914.2	10 ml	glass	123,55 €

3-Nitrobenzoic acid

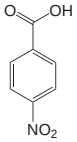


3-Nitrobenzoic acid
≥99 %, for synthesis
m-Nitrobenzoic acid, meta-Nitrobenzoic acid
$C_7H_5NO_4$
M 167,12 g/mol
D 1,49
mp 140-143 °C • flp 190 °C
Solubility: 3 g/l (H_2O, 25 °C)
[121-92-6] • EC No. 204-508-5
WGK 1
Warning H302-H319

Type analysis:
Assay (HPLC). ..... ≥99,0 %
Melting point. ..... 140-143 °C
Water (KF). ..... ≤0,5 %

0445.1	100 g	plastic	14,55 €
0445.2	500 g	plastic	44,65 €
Original pack 6 x 500 g			42,42/500 g
0445.3	1 kg	plastic	80,55 €
Original pack 6 x 1 kg			76,52/1 kg

4-Nitrobenzoic acid

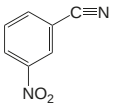


4-Nitrobenzoic acid
≥99,5 %, for synthesis
p-Nitrobenzoic acid, para-Nitrobenzoic acid
$C_7H_5NO_4$
M 167,12 g/mol
D 1,61
mp 239-242 °C • flp 237 °C
Solubility: 0,42 g/l (H_2O, 20 °C)
[62-23-7] • EC No. 200-526-2
WGK 1
Warning H302-H319

Type analysis:
Assay (acidim.). ..... ≥99,5 %
Melting point. ..... 239-242 °C
Water (KF). ..... ≤0,5 %
Ash content. ..... ≤0,01 %
Iron (Fe). ..... ≤0,005 %

0450.1	100 g	plastic	13,90 €
0450.2	500 g	plastic	33,25 €
Original pack 6 x 500 g			31,59/500 g
0450.3	1 kg	plastic	55,80 €
Original pack 6 x 1 kg			53,01/1 kg

3-Nitrobenzonitrile

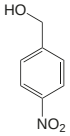


3-Nitrobenzonitrile
≥98 %, for synthesis
3-Cyano-1-nitrobenzene
$C_7H_4N_2O_2$
M 148,12 g/mol
mp 115-117 °C
[619-24-9] • EC No. 210-587-7
WGK 2
Warning H302+H312+H332-H412

Type analysis:
Appearance. ..... pale yellow cryst. powder
Assay. ..... ≥98,0 %
Loss on drying. ..... ≤0,5 %

4530.1	25 g	glass	46,15 €
4530.2	100 g	glass	97,75 €

4-Nitrobenzylalcohol

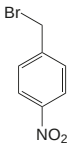


4-Nitrobenzylalcohol
≥99 %, for synthesis
$C_7H_7NO_3$
M 153,14 g/mol
bp 185 °C
mp 93-96 °C
[619-73-8] • EC No. 210-611-6
WGK 1

Type analysis:
Appearance. ..... pale yellow cryst. powder
Assay. ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %

6522.1	25 g	glass	31,10 €
6522.2	100 g	glass	62,25 €
6522.3	250 g	glass	111,70 €

4-Nitrobenzyl bromide



4-Nitrobenzyl bromide

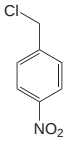
≥99 %, for synthesis
α-Bromo-4-nitrotoluene
$C_7H_6NO_2Br$
M 216,03 g/mol
mp 96-100 °C
[100-11-8] • EC No. 202-820-6
UN No. 3261 • ADR 8 II • WGK 3

Danger H314-H335

Type analysis:
Appearance. ..... off-white to light yellow to beige cryst. powder
Assay. ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %

5680.1	25 g	glass	27,45 €
5680.2	100 g	glass	52,60 €
5680.3	250 g	glass	96,25 €

4-Nitrobenzyl chloride



4-Nitrobenzyl chloride

≥98 %, for synthesis
α-Chloro-4-nitrotoluene
$C_7H_6NO_2Cl$
M 171,58 g/mol
mp 70-73 °C
[100-14-1] • EC No. 202-822-7
UN No. 3261 • ADR 8 II • WGK 3

Danger H302-H314

Type analysis:
Appearance. ..... off-white to light yellow cryst. powder
Assay. ..... ≥98,0 %

5697.1	10 g	glass	17,75 €
5697.2	50 g	glass	39,25 €

Nitro-BT

▶ p-Nitrotetrazolium blue chloride see p. 2167

Nitromethane

CH_3NO_2
M 61,04 g/mol
D 1,14 • bp 101,2 °C
mp -29,2 °C • flp 36 °C
Solubility: 105 g/l (H_2O, 20 °C)
[75-52-5] • EC No. 200-876-6
UN No. 1261 • ADR 3 II • WGK 2

Warning H226-H302

Nitromethane

≥98,5 %, for synthesis

Type analysis:
Assay (GC). ..... ≥98,5 %
Colour (APHA). ..... ≤20
Water ..... ≤0,1 %
Acidity (as CH_3COOH). ..... ≤0,1 %

4406.1	500 ml	glass	32,15 €
4406.2	25 l	tinplate	654,70 €

Nitromethane

≥97 %

Type analysis:
Assay. ..... ≥97,0 %

5173.1	1 l	glass	48,30 €
Original pack 6 x 1 l			45,89/1 l
5173.8	10 l	tinplate	321,45 €
5173.7	25 l	tinplate	633,20 €

Nitromethane D3

Nitromethane D3

99 Atom%D
For nuclear magnetic resonance spectroscopy.
CD_3NO_2
M 64,06 g/mol
D ~1,19 • bp 100 °C
mp -29,2 °C • flp 36 °C
[13031-32-8] • EC No. 235-892-2
UN No. 1261 • ADR 3 II • WGK 1

Warning H226-H302

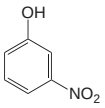
Guarantee analysis:
Deuterising degree. ..... ≥99 %
Water (KF, H_2O+D_2O). ..... ≤0,05 %

HN91.2	5 ml	glass	69,80 €
HN91.1	10 ml	glass	125,70 €

3-Nitro-4-methylaniline

▶ 4-Methyl-3-nitroaniline see p. 2139

3-Nitrophenol



3-Nitrophenol

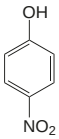
≥99 %, for synthesis
Indicator pH 6,8-8,6
1-Hydroxy-3-nitrobenzene
$C_6H_5NO_3$
M 139,11 g/mol
mp 96-98 °C
[554-84-7] • EC No. 209-073-5
UN No. 1663 • ADR 6.1 III • WGK 2

Warning H302-H319

Type analysis:
Appearance. ..... yellow to tan cryst. powder
Assay. ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %
pH-transition range. ..... 6,8 (colourless)-8,6 (yellow)

4533.1	25 g	glass	55,40 €
4533.2	100 g	glass	137,10 €
4533.3	250 g	glass	299,95 €

4-Nitrophenol



4-Nitrophenol

≥99 %, for synthesis
1-Hydroxy-4-nitrobenzene
$C_6H_5NO_3$
M 139,11 g/mol
bp 279 °C
mp 112-115 °C
[100-02-7] • EC No. 202-811-7
UN No. 1663 • ADR 6.1 III • WGK 2

Danger H301-H312+H332-H373

Type analysis:
Appearance. ..... white to yellow-brown cryst. powder
Assay. ..... ≥99,0 %

6524.1	25 g	glass	13,45 €
6524.2	100 g	glass	21,00 €
6524.3	500 g	glass	49,35 €
Original pack 6 x 500 g			46,88/500 g

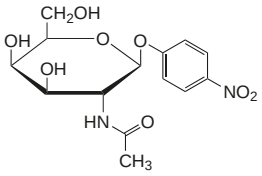
p-Nitrophenyl-2-acetamido-2-deoxy-β-D-galactoside

▶ 4-Nitrophenyl-N-acetyl-β-D-galactosaminide see p. 2165

4-Nitrophenyl-2-acetamido-2-deoxy-β-D-glucosaminide

▶ 4-Nitrophenyl-N-acetyl-β-D-glucosaminide see p. 2165

4-Nitrophenyl-N-acetyl-β-D-galactosaminide



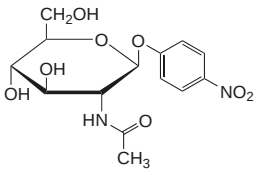
4-Nitrophenyl-N-acetyl-β-D-galactosaminide

≥98 %, for biochemistry
Glycosidase substrate
p-Nitrophenyl-2-acetamido-2-deoxy-β-D-galactoside, PNP-β-D-GalNAc
$C_{14}H_{18}N_2O_8$
M 342,31 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[14948-96-0] • EC No. 239-024-3 • WGK 1

Type analysis:
Assay (TLC)..... ≥98 %
Solution (0,5 % in DMF/water 1:1)..... nearly colourless, clear
Solution (5 % in DMF)..... yellow to greenish yellow, clear
Water (KF)..... ≤6,0 %
p-Nitrophenol..... ≤0,1 %
Specific rotation $[\alpha]_D^{20}$ (c=0,1 in water)..... +19,0° ±2°

4058.1	250 mg	glass	73,00 €
4058.2	500 mg	glass	124,60 €

4-Nitrophenyl-N-acetyl-β-D-glucosaminide



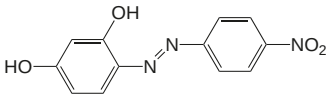
4-Nitrophenyl-N-acetyl-β-D-glucosaminide

≥99 %, for biochemistry
Glycosidase substrate
4-Nitrophenyl-2-acetamido-2-deoxy-β-D-glucosaminide, PNAG, PNP-β-D-GlcNAc
$C_{14}H_{18}N_2O_8$
M 342,31 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[3459-18-5] • EC No. 222-398-7 • WGK 1

Type analysis:
Assay (TLC)..... ≥99 %
Solution (0,5 % in water, gently warmed)..... colourless, clear
Water (KF)..... ≤0,5 %
p-Nitrophenol..... ≤0,1 %
Specific rotation $[\alpha]_D^{20}$ (c=0,5 in water)..... -16,0° ±1,0°

4062.1	100 mg	glass	27,45 €
4062.2	500 mg	glass	77,30 €
4062.3	1 g	glass	147,85 €

4-(4-Nitrophenylazo)-resorcinol



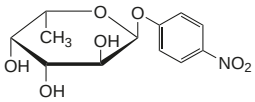
4-(4-Nitrophenylazo)-resorcinol

p.a.
Metal indicator, pH indicator 11,0-13,0
Magneson, Azo violet
$C_{12}H_9N_3O_4$
M 259,22 g/mol
mp 185 °C (dec.)
Solubility: insoluble (H_2O, 20 °C)
[74-39-5] • EC No. 200-808-5
WGK 1

Guarantee analysis:
Appearance..... red-orange powder
Loss on drying..... ≤10 %

2563.1	10 g	glass	26,80 €
2563.2	25 g	glass	40,35 €

4-Nitrophenyl-α-L-fucopyranoside



4-Nitrophenyl-α-L-fucopyranoside

≥98 %, for biochemisty
Glycosidase substrate
p-Nitrophenyl-α-L-fucoside, PNP-α-L-Fuc
$C_{12}H_{15}NO_7$
M 285,26 g/mol
mp ~195 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[10231-84-2] • EC No. 233-553-3
WGK 1

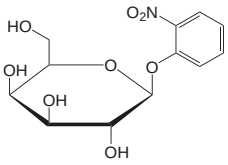
Type analysis:
Assay (TLC)..... ≥98 %
Water (KF)..... ≤1,0 %
p-Nitrophenol..... ≤0,1 %
Specific rotation $[\alpha]_D^{20}$ (c=0,2 in ethanol)..... -245,0° ±2°

4018.1	100 mg	glass	59,70 €
4018.2	250 mg	glass	117,75 €

p-Nitrophenyl-α-L-fucoside

▶ 4-Nitrophenyl-α-L-fucopyranoside
see p. 2165

2-Nitrophenyl-β-D-galactopyranoside



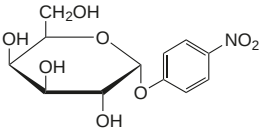
2-Nitrophenyl-β-D-galactopyranoside

≥99 %, for biochemistry
Substrate of β-galactosidase.
ONPG, ortho-Nitrophenyl-β-D-galactopyranoside
$C_{12}H_{15}NO_8$
M 301,23 g/mol
mp 189-192 °C
Storage temp.: +4 °C
[369-07-3] • EC No. 206-716-1
WGK 1

Type analysis:
Assay..... ≥99 %
Water..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O)..... -67° to -71°

CN22.1	5 g	glass	32,80 €
CN22.2	10 g	glass	56,90 €

4-Nitrophenyl-α-D-galactopyranoside



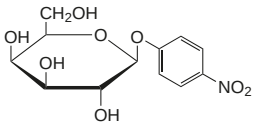
4-Nitrophenyl-α-D-galactopyranoside

for biochemistry
Glycosidase substrate
p-Nitrophenyl-α-D-galactoside, PNP-α-D-Gal, PNPG
$C_{12}H_{15}NO_8$
M 301,26 g/mol
mp 161-169 °C
Storage temp.: +4 °C
[7493-95-0] • EC No. 231-343-6
WGK 1

Type analysis:
Identity (TLC)..... complies
Solution (5 % in H_2O)..... colourless to nearly colourless
Water (KF)..... ≤1,0 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in water)..... +242° to +248°

4063.1	100 mg	glass	21,00 €
4063.2	500 mg	glass	48,30 €
4063.3	1 g	glass	77,30 €

4-Nitrophenyl-β-D-galactopyranoside



4-Nitrophenyl-β-D-galactopyranoside

≥98 %, for biochemistry

Glycosidase substrate

p-Nitrophenyl-β-D-galactoside, PNPG, PNP-β-D-Gal

$C_{12}H_{15}NO_8$ • M 301,26 g/mol • mp ~180 °C

Storage temp.: -20 °C

Transport temp.: room temp.

[3150-24-1] • EC No. 221-584-5 • WGK 1

Type analysis:

Assay (HPLC)..... ≥98 %

Solution (1 % in H_2O)..... clear, colourless to slightly yellowish

Water (KF)..... ≤7,0 %

p-Nitrophenol..... ≤0,05 %

Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O)..... -84° ±2°

4081.1	1 g	glass	32,80 €
4081.2	2,5 g	glass	77,30 €
4081.3	5 g	glass	139,25 €

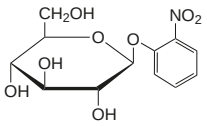
p-Nitrophenyl-α-D-galactoside

▶ 4-Nitrophenyl-α-D-galactopyranoside see p. 2165

p-Nitrophenyl-β-D-galactoside

▶ 4-Nitrophenyl-β-D-galactopyranoside see p. 2166

2-Nitrophenyl-β-D-glucopyranoside



2-Nitrophenyl-β-D-glucopyranoside

≥99 %, for biochemistry

Glycosidase substrate

o-Nitrophenyl-β-D-glucoside, ONP-β-D-Glc

$C_{12}H_{15}NO_8$ • M 301,26 g/mol • mp ~143 °C

Storage temp.: -20 °C

Transport temp.: room temp.

[2816-24-2] • EC No. 220-568-5 • WGK 1

Type analysis:

Assay (HPLC)..... ≥99 %

Solution (5 % in methanol)..... clear, colourless to light yellowish

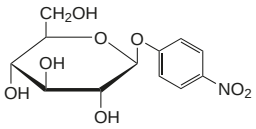
Water (KF)..... ≤0,5 %

o-Nitrophenol..... ≤0,05 %

Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O)..... -105° ±2°

4077.1	500 mg	glass	40,75 €
4077.2	1 g	glass	68,70 €

4-Nitrophenyl-β-D-glucopyranoside



4-Nitrophenyl-β-D-glucopyranoside

≥99 %, for biochemistry

Glycosidase substrate

p-Nitrophenyl-β-D-glucoside, PNP-β-D-Glc

$C_{12}H_{15}NO_8$

M 301,26 g/mol

mp 161-167 °C

Storage temp.: -20 °C

Transport temp.: room temp.

[2492-87-7] • EC No. 219-661-3

WGK 1

Type analysis:

Assay (HPLC)..... ≥99 %

Solution (1 % in H_2O)..... colourless

Water (KF)..... ≤6,0 %

p-Nitrophenol..... ≤0,1 %

Spec. rotation $[\alpha]_D^{20}$ (c=1 in water, dry substance)..... -109° to -105°

4082.1	500 mg	glass	37,55 €
4082.2	1 g	glass	64,00 €
4082.3	5 g	glass	256,95 €

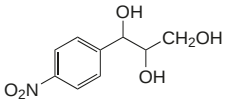
o-Nitrophenyl-β-D-glucoside

▶ 2-Nitrophenyl-β-D-glucopyranoside see p. 2166

p-Nitrophenyl-β-D-glucoside

▶ 4-Nitrophenyl-β-D-glucopyranoside see p. 2166

4-Nitrophenylglycerol



4-Nitrophenylglycerol

>98 %, for biochemistry

1-(4-Nitrophenyl)-1,2,3-propanetriol

$C_9H_{11}O_5N$

M 213,19 g/mol

mp 95-101 °C

[2207-68-3] • EC No. 218-624-9

Warning H315-H319-H335

Type analysis:

Appearance..... white to yellow crystals

Assay..... >98 %

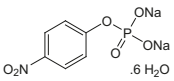
Melting point..... 98-101 °C

9240.1	250 mg	glass	66,55 €
9240.2	1 g	glass	155,90 €

p-Nitrophenyl phosphate

▶ Roti®fair pNPP 5mg see p. 2277
▶ Roti®fair pNPP 20mg see p. 2277

4-Nitrophenyl phosphate disodium salt hexahydrate



4-Nitrophenyl phosphate disodium salt hexahydrate

≥99 %, p.a.

Substrate for alkaline phosphatase, particularly for ELISA.

p-Nitrophenyl phosphate, pNPP

$C_6H_4NNa_2O_6P \cdot 6\ H_2O$

M 371,12 g/mol • mp ~300 °C

Storage temp.: +4 °C

[4264-83-9] • EC No. 224-246-5

Guarantee analysis:

Assay (HPLC)..... ≥99,0 %

Solution (5 % in H_2O)..... clear, colourless to yellow

Free 4-nitrophenol..... ≤0,01 %

4165.1	2,5 g	glass	16,05 €
4165.9	25 g	glass	65,05 €
4165.7	100 g	plastic	177,40 €

For further information, please see page 1330

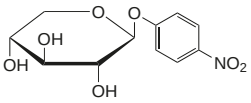
1-(4-Nitrophenyl)-1,2,3-propanetriol

▶ 4-Nitrophenylglycerol see p. 2166

p-Nitrophenyl-β-D-xylopyranoside

▶ 4-Nitrophenyl-β-D-xyloside see p. 2166

4-Nitrophenyl-β-D-xyloside



4-Nitrophenyl-β-D-xyloside

≥99 %, for biochemistry

Glycosidase substrate

p-Nitrophenyl-β-D-xylopyranoside, PNP-β-D-Xyl, PNPX

$C_{11}H_{13}NO_7$ • M 271,23 g/mol • mp ~160 °C

Storage temp.: -20 °C

Transport temp.: room temp.

[2001-96-9] • EC No. 217-897-1 • WGK 1

Type analysis:

Assay (TLC)..... ≥99 %

Solution (1 % in H_2O)..... colourless

Water (KF)..... ≤1 %

p-Nitrophenol..... ≤0,05 %

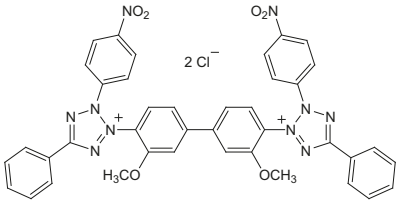
Specific rotation $[\alpha]_D^{20}$ (c=0,4 in H_2O)..... -57° to -53°

4079.1	100 mg	glass	26,80 €
4079.2	500 mg	glass	81,60 €
4079.3	1 g	glass	146,10 €

Nitroprusside sodium

▶ Sodium nitroprusside dihydrate see p. 2346

p-Nitrotetrazolium blue chloride



p-Nitrotetrazolium blue chloride

≥98 %, p.a.
Nitro-BT, NBT, Nitroblue tetrazolium chloride
$C_{40}H_{30}Cl_2N_{10}O_6$
M 817,65 g/mol
mp 205 °C
Storage temp.: +4 °C
[298-83-9] • EC No. 206-067-4
WGK 2

Type analysis:
Assay (NT).....≥98 %
Water (KF).....≤5,0 %

4421.1	100 mg	glass	17,75 €
4421.2	500 mg	glass	44,65 €
4421.3	1 g	glass	84,85 €
4421.4	5 g	glass	306,40 €

For further information, please see page 1330

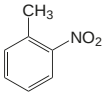
Nitro thinner

Nitro thinner

tech.
D 0,830 • bp 57-132 °C
mp <-95 °C • flp -18 °C
UN No. 1993 • ADR 3 II • WGK 2
Danger H225-H304-H315-H318-H335-H336-H361d-H373-EUH066

3036.5	1 l	tinplate	14,55 €
Original pack 6 x 1 l			13,82/1 l
3036.3	10 l	tinplate	77,30 €
3036.4	25 l	tinplate	142,45 €

o-Nitrotoluene



NEW

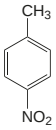
o-Nitrotoluene

≥99 %, for synthesis
2-Nitrotoluene, ortho-Nitrotoluene, 1-Methyl-2-nitrobenzene
$C_7H_7NO_2$
M 137,13 g/mol
[88-72-2] • EC No. 201-853-3
UN No. 1664 • ADR 6.1 II • WGK 3
Danger
H302-H340-H350-H361f-H411

Type analysis:
Assay (GC).....≥99 %
Density (d 20 °C/4 °C).....1,161-1,164
Refractive index (20 °C).....1,5445-1,5455

0961.1	100 ml	glass	13,90 €
0961.2	1 l	glass	39,70 €
Original pack 6 x 1 l			37,72/1 l

p-Nitrotoluene



4-Nitrotoluene, para-Nitrotoluene, 1-Methyl-4-nitrobenzene
$C_7H_7NO_2$
M 137,13 g/mol
bp 239 °C
mp 52-54 °C • flp 106 °C
[99-99-0] • EC No. 202-808-0
UN No. 3446 • ADR 6.1 II • WGK 3
Danger
H301+H311+H331-H373-H411

p-Nitrotoluene

NEW

≥98 %, for synthesis

Type analysis:
Assay (GC).....≥98 %
Melting range.....50-53 °C
Sulphated ash.....≤0,1 %

0881.1	100 g	plastic	13,90 €
0881.2	1 kg	plastic	42,90 €
Original pack 6 x 1 kg			40,76/1 kg

p-Nitrotoluene

ROTI®CALIPURE Melting point standard 52-54 °C

Type analysis:
Meniscus formation.....52-54 °C
Complete liquefaction.....52-54 °C

9712.1	1 g	glass	31,10 €

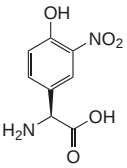
3-Nitro-p-toluidine

▶ 4-Methyl-3-nitroaniline see p. 2139

H-3-Nitro-Tyr-OH

▶ 3-Nitro-L-tyrosine see p. 2167

3-Nitro-L-tyrosine



3-Nitro-L-tyrosine

≥98 %, for biochemistry
H-3-Nitro-Tyr-OH
$C_9H_{10}N_2O_5$
M 226,19 g/mol
mp 233-235 °C
[621-44-3] • EC No. 210-688-6 • WGK 1

Type analysis:
Assay (titr.).....≥98,0 %
Solution (5 % in 1 N HCl).....slightly yellow, clear
Water (KF).....≤0,5 %

5275.1	5 g	plastic	60,10 €
5275.2	10 g	plastic	107,00 €

NMM

▶ N-Methylmorpholine see p. 2139

NMP

▶ N-Methyl-2-pyrrolidone (NMP) see p. 2141

NMR solvents

▶ Deuterated Compounds see p. 1928

n-Nonane

n-Nonane

≥99 %, for synthesis
C_9H_{20}
M 128,26 g/mol
D 0,72 • bp 151 °C
mp -53 °C • flp 31 °C
[111-84-2] • EC No. 203-913-4
UN No. 1920 • ADR 3 III • WGK 3
Danger
H226-H304-H315-H319-H332-H336-H410

Type analysis:
Appearance.....clear, colourless liquid
Assay (GC).....≥99,0 %

4310.2	100 ml	glass	24,20 €
4310.1	250 ml	glass	44,00 €
4310.3	500 ml	glass	72,60 €
4310.4	1 l	glass	118,15 €
Original pack 6 x 1 l			112,24/1 l

Nonanedioic acid
▶ Azelaic acid see p. 1821

Nonanoic acid
▶ Pelargonic acid see p. 2194

Non-essential amino acids
▶ Roti®-CELL MEM-NEAA solution see p. 2270

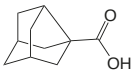
Non-ionic polymer of saccharose
▶ Ficoll® 400 see p. 1993

Nonivamide
▶ Pelargonic acid vanillylamide see p. 2194

Nonylvanylamide
▶ Pelargonic acid vanillylamide see p. 2194

NOP
▶ N-Octyl-2-pyrrolidone (NOP) see p. 2172

3-Noradamantanecarboxylic acid



3-Noradamantanecarboxylic acid
≥99 %, for synthesis
$C_{10}H_{14}O_2$
M 166,22 g/mol • mp 102-107 °C
[16200-53-6] • WGK 3

Type analysis:
Appearance. ..... white, cryst. powder
Assay (GC). ..... ≥99,0 %
Identity (GC). ..... complies
Sulphated ash. ..... ≤0,1 %

7631.1	1 g	glass	22,05 €
7631.2	5 g	glass	67,20 €

2,5-Norbornadiene

2,5-Norbornadiene
~97 %
Bicyclo-[2,2,1]-hepta-2,5-diene
C_7H_8
M 92,14 g/mol • D 0,91 • bp 90 °C
mp -20 °C • flp -11 °C
[121-46-0] • EC No. 204-472-0
UN No. 2251 • ADR 3 II • WGK 2
Danger H225

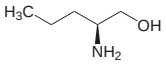
Type analysis:
Assay (GC). ..... ~97 %

3201.1	50 ml	glass	75,15 €

Norgine
▶ Alginic acid see p. 1780

Norkanugin
▶ Robinetin see p. 2261

L-Norvalinol



L-Norvalinol
≥98 %, for biochemistry
(S)-(+)-2-Amino-1-pentanol
$C_5H_{13}NO$
M 103,16 g/mol
bp 137 °C
mp 44 °C
Storage temp.: +4 °C
[22724-81-8]
WGK 1
Warning H315-H319-H335

Type analysis:
Assay (GC). ..... ≥98,0 %
Water (KF). ..... ≤2,0 %

6663.1	500 mg	glass	33,25 €
6663.2	1 g	glass	51,50 €

Nourseothricin dihydrogen sulphate

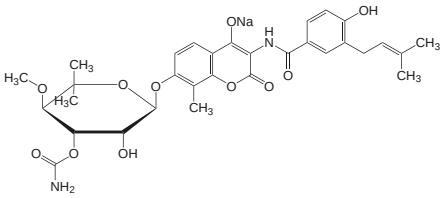
Nourseothricin dihydrogen sulphate
≥85 %, for biochemistry and microbiology
Broad-band antibiotic and antimycotic of viruses, bacteria and fungi.
Streptothricine
Storage temp.: +4 °C
[96736-11-7]
WGK 1
Warning H302-H315-H319-H335

Type analysis:
Appearance. ..... beige powder
Streptothricine D, F. ..... ≥85 %
Streptothricine C, E. ..... <15 %
Ash. ..... ≤3,0 %
Packed under argon.

3011.1	25 mg	plastic	42,90 €
3011.2	100 mg	plastic	100,95 €
3011.3	1 g	plastic	514,95 €

For further information, please see page 1505

Novobiocin sodium salt



Novobiocin sodium salt
≥850 µg/mg, for biochemistry
Bacteriostatic antibiotic, HSP90 inhibitor.
$C_{31}H_{35}N_2NaO_{11}$
M 634,62 g/mol
Storage temp.: +4 °C
[1476-53-5] • EC No. 216-023-6
WGK 1
Warning H319-H317

Type analysis:
Activity. ..... ≥850 µg/mg
Specific rotation $[\alpha]_D^{20}$ (dry substance). ..... -58° to -50°
pH value (2,5 % in H_2O). 6,5-8,5
Sulphated ash. ..... ≤12,0 %
Water. ..... ≤6,0 %

0247.1	1 g	glass	30,00 €
0247.2	5 g	glass	115,60 €
0247.3	10 g	glass	167,60 €

For further information, please see page 1505

NTA-3 Na
▶ Nitrilotriacetic acid trisodium salt monohydrate see p. 2162

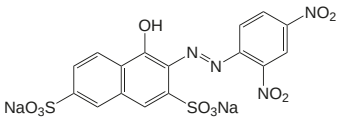
NTP-set

NTP-set
≥99 %, ATP, CTP, GTP, UTP
NTP-Set, consisting of the single nucleotide solutions:
ATP, CTP, GTP, UTP.
Concentration: 100 mM per NTP.
Ribonucleoside triphosphate-set
Storage temp.: -20 °C
Transport temp.: cooled
WGK 1

K049.1	4 x 25 µmol (250 µl), 100 mM	plastic	133,20 €
K049.2	5 x 4 x 25 µmol (250 µl), 100 mM	plastic	439,70 €

For further information, please see page 1305

Nuclear fast red (C.I. 60760)



Nuclear fast red (C.I. 60760)

for microscopy

$C_{14}H_8NNaO_7S$
M 357,28 g/mol
[6409-77-4] • EC No. 229-088-0
WGK 3

Type analysis:

Appearance. ..... dark red to brown powder
Appearance of solution (0,1 % in H_2O). ..... dark red

7728.1	1 g	glass	24,65 €
7728.2	5 g	glass	74,10 €
7728.3	10 g	glass	122,05 €

For further information, please see page 1524

Nuclear fast red aluminium sulphate solution

Nuclear fast red aluminium sulphate solution

for microscopy

For visualising nuclei e.g. during Elastica Staining.
WGK 1

Danger H318

N069.1	500 ml	glass	33,25 €

For further information, please see page 1513

Nucleic Acid Removal

- DNA AWAY® see p. 1956
- RNase AWAY® see p. 2261
- Roti® Nucleic Acid-free see p. 2290
- Roti® Nucleic Acid-free eXtra see p. 2290

Nucleotides / Nucleosides

Art. No.	Description	Page
6122	Adenosine	1772
HN35	Adenosin-5'-triphosphate disodium salt (ATP)	1773
K054	ATP	1819
K045	ATP solution	1819
1047	Biotin-11-dUTP	1838
3243	5-Bromo-2'-deoxyuridine	1853
K057	CTP	1914
K048	CTP solution	1914
0717	Cytidine	1920
K050	dATP	1922
K035	dATP solution	1922
K053	dCTP	1922
K038	dCTP solution	1922
K040	ddATP solution	1922
K043	ddCTP solution	1922
K042	ddGTP solution	1922
K044	ddNTP-Set	1923
K041	ddTTP solution	1923
K052	dGTP	1931
K037	dGTP solution	1931
P732	dITP solution	1955
K039	dNTP-Set 1	1958
0178	dNTP-Set 1 (pH 7)	1958
L540	dNTP-Set 2	1958
P731	dNTP-Set 3	1958
K051	dTTP	1962
K036	dTTP solution	1962
L539	dUTP solution	1963
7845	5-Ethynyl-2'-deoxyuridine (EdU)	1978
7802	5-Ethynyl-dUTP	1987
7848	5-Ethynyl uridine (EU)	1987
1048	Fluorescein-12-dUTP	1996
K056	GTP	2029
K047	GTP solution	2030
0715	Guanosine	2031
K049	NTP-set	2168
1049	Rhodamine-12-dUTP	1300
L541	Roti®-Mix PCR 1	1299
L542	Roti®-Mix PCR 2	1299
L785	Roti®-Mix PCR 3	1299
0179	Roti®-Mix PCR 3 (pH 7)	1299
L786	Roti®-Mix PCR 4	1299
3005	Thymidine	2406
0714	Uridine	2431
K055	UTP	1302
K046	UTP solution	1302

Nutrient Agar

Storage temp.: +20 °C

Nutrient Agar

EN ISO 6579, ISO 10273, for microbiology

For cultivation of non-fastidious microorganisms.
Application: Use 23 g for 1 l agar.

Guarantee analysis:

Gelatine peptone. ..... 5 g/l
Beef extract. ..... 3 g/l
Agar ..... 15 g/l
pH value. ..... 6,8 ±0,2

X928.1	500 g	plastic	91,95 €
Original pack 6 x 500 g			87,35/500 g
X928.2	1 kg	plastic	162,90 €
Original pack 6 x 1 kg			154,76/1 kg

For further information, please see page 1454

Nutrient Agar (DEV/ISO)

DEV, EN ISO 16266:2008, for microbiology

For confirmation of *Pseudomonas aeruginosa* in water samples.
Application: Use 28 g for 1 l agar.

Guarantee analysis:

Peptone. ..... 5 g/l
Meat extract. ..... 1 g/l
Yeast extract. ..... 2 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar ..... 15 g/l
pH value. ..... 7,4 ±0,2

CP66.1	500 g	plastic	115,60 €
Original pack 6 x 500 g			109,82/500 g

For further information, please see page 1454

Nutrient Agar (DEV)

DEV, DIN 38 411, for microbiology

For biochemical analysis of *E.coli* and Coliforms in water samples and other sample material.
Application: Use 43 g for 1 l agar.

Guarantee analysis:

Meat peptone. ..... 10 g/l
Meat extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 18 g/l
pH value. ..... 7,3 ±0,2

CL02.1	500 g	plastic	105,25 €
Original pack 6 x 500 g			99,99/500 g
CL02.2	1 kg	plastic	188,15 €
Original pack 6 x 1 kg			178,74/1 kg
CL02.7	5 kg	plastic	826,70 €

For further information, please see page 1454

Nutrient Broth

Nutrient Broth

for microbiology

For cultivation of non-fastidious microorganisms.
Application: Use 8 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

Formulation:

Beef extract. ..... 3 g/l
Gelatine peptone ..... 5 g/l
pH value. ..... 6,8 ±0,2

X929.1	500 g	plastic	78,40 €
Original pack 6 x 500 g			74,48/500 g
X929.2	1 kg	plastic	139,25 €
Original pack 6 x 1 kg			132,29/1 kg

For further information, please see page 1454

Nutrient Media Additives for Cell Biology

Art. No.	Description	Page
9165	Roti®-CELL Bicarbonate solution	2266
9124	Roti®-CELL DPBS	2267
9130	Roti®-CELL 10x DPBS	2267
9131	Roti®-CELL DPBS	2268
9135	Roti®-CELL DPBS/EDTA	2268
9183	Roti®-CELL Glutamine solution	2269
9117	Roti®-CELL Hanks' BSS	2269
9118	Roti®-CELL Hanks' BSS	2269
9119	Roti®-CELL Hanks' BSS	2269
9122	Roti®-CELL Hanks' BSS	2269
9157	Roti®-CELL HEPES solution	2269
9185	Roti®-CELL MEM-NEAA solution	2270
9830	Roti®-CELL Myco-Free	2270
9143	Roti®-CELL PBS	2270
9150	Roti®-CELL 10x PBS	2270
9152	Roti®-CELL PBS/EDTA	2270
9182	Roti®-CELL Pyruvate solution	2270
9186	Roti®-CELL Water	2271

Nutrient Media for Cell Biology

Art. No.	Description	Page
9031	Roti®-CELL DMEM : F12	2267
9005	Roti®-CELL DMEM High Glucose	2267
9006	Roti®-CELL DMEM High Glucose	2267
9007	Roti®-CELL DMEM High Glucose	2267
9010	Roti®-CELL DMEM High Glucose	2267
9011	Roti®-CELL DMEM High Glucose	2267
9019	Roti®-CELL DMEM High Glucose	2267
9023	Roti®-CELL DMEM High Glucose	2267
9027	Roti®-CELL DMEM Low Glucose	2267
9030	Roti®-CELL DMEM Low Glucose	2267
9058	Roti®-CELL Eagle's MEM-Alpha	2268
9082	Roti®-CELL Eagle's MEM-Alpha	2268
9044	Roti®-CELL Eagle's MEM / Earle's	2268
9047	Roti®-CELL Eagle's MEM / Earle's	2268
9048	Roti®-CELL Eagle's MEM / Earle's	2268
9049	Roti®-CELL Eagle's MEM / Earle's	2268
9056	Roti®-CELL Eagle's MEM / Hanks'	2268
9108	Roti®-CELL Ham's F12	2269
9033	Roti®-CELL Iscove's MDM	2269
9035	Roti®-CELL Iscove's MDM	2269
9109	Roti®-CELL Leibovitz's L15	2269
9111	Roti®-CELL McCoy's 5A	2270
9112	Roti®-CELL Medium 199 / Earle's	2270
0647	Roti®-CELL MEM-AA solution	2270
9085	Roti®-CELL RPMI-1640	2270
9086	Roti®-CELL RPMI-1640	2271
9091	Roti®-CELL RPMI-1640	2271
9093	Roti®-CELL RPMI-1640	2271
9094	Roti®-CELL RPMI-1640	2271
9099	Roti®-CELL RPMI-1640	2271
9104	Roti®-CELL RPMI-1640	2271
9114	Roti®-CELL TC100	2271
9116	Roti®-CELL William's E	2271

Nystatin dihydrate

Nystatin dihydrate

≥4400 I.U./mg, for biochemistry

Broad-range fungizide, polyene.
Mycostatin, Fungicidin
$C_{47}H_{75}NO_{17} \cdot 2\ H_2O$
M 962,14 g/mol • Storage temp.: +4 °C
[1400-61-9] • EC No. 215-749-0 • WGK 1

Type analysis:

Activity. ..... ≥4400 I.U./mg
pH value (3 % aqueous solution). 6,0-8,0
Loss on drying. ..... ≤5,0 %

0241.1	5 g	glass	36,45 €
0241.2	10 g	glass	62,25 €

For further information, please see page 1505

NZamine

NZamine

for molecular biology

Component of nutrition media for molecular biological assays, particularly LB Broth.
Storage temp.: +20 °C

Guarantee analysis:

Total nitrogen. ..... ≥10 %
Amino nitrogen. ..... ≥3,9 %
Loss on drying. ..... ≤6 %
Ash. ..... ≤15 %
pH value (2 % solution). ..... 7,0 ±0,5

CP76.2	250 g	plastic	47,20 €
CP76.1	500 g	plastic	75,15 €
Original pack 6 x 500 g			71,39/500 g

For further information, please see page 1493

NZCYM Broth

NZCYM Broth

for molecular biology

Application: Use 22 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

Formulation:

Casein, enzymatically digested. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Casamino Acids. ..... 1 g/l
Magnesium sulphate ($MgSO_4$), anhydrous. ..... 0,98 g/l
pH value. ..... 7,0 ±0,2

X974.1	500 g	plastic	61,20 €
Original pack 6 x 500 g			58,14/500 g

For further information, please see page 1486

NZYM Broth

NZYM Broth

for molecular biology

Application: Use 21 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

Formulation:

Casein, enzymatically digested. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Magnesium sulphate ($MgSO_4$), anhydrous. ..... 0,98 g/l
pH value. ..... 7,0 ±0,2

X973.1	500 g	plastic	61,20 €
Original pack 6 x 500 g			58,14/500 g

For further information, please see page 1486

Octaacetyl-α-D-cellobiose

▶ α-D-Cellobiose octaacetate see p. 1886

Octacedyl modified silica - endcapped

▶ Silica gel 60 modified phases see p. 2316

Octacosane

Octacosane

≥98 %

$C_{28}H_{58}$
M 394,74 g/mol
mp 61-62 °C
[630-02-4] • EC No. 211-125-7

Type analysis:

Assay (GC). ..... ≥98,0 %

4441.1	5 g	glass	42,90 €

1-Octadecanol

▶ Stearyl alcohol see p. 2381

9,12,15-Octadecatrienoic acid

▶ Linolenic acid see p. 2100

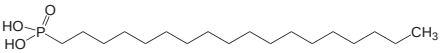
cis-9-Octadecenoic acid

▶ Oleic acid see p. 2184

Octadecyl-modified silica gel

▶ Silica gel C_{18} see p. 2317

Octadecylphosphonic acid



Octadecylphosphonic acid

Suitable for the production and modification of nanoparticles.
ODPA
$C_{18}H_{39}O_3P$
M 334,47 g/mol
mp 95-100 °C
Storage temp.: +4 °C
[4724-47-4] • WGK 3

Type analysis:

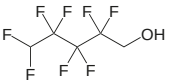
Melting point. ..... 95-100 °C

8468.1	1 g	glass	39,70 €
8468.2	5 g	glass	143,95 €

Octadeutero tetrahydrofurane

▶ Tetrahydrofuran D8 see p. 2401

2,2,3,3,4,4,5,5-Octafluoro-1-pentanol



2,2,3,3,4,4,5,5-Octafluoro-1-pentanol

≥99,5 %

OFP, 1H,1H,5H-Perfluoropentanol
$C_5H_4F_8O$ • M 232,07 g/mol
D 1,67 • bp 140-142 °C
mp ≥120 °C • flp 75 °C
[355-80-6] • EC No. 206-593-4 • WGK 1

Warning H315-H319-H335

Type analysis:

Appearance. ..... clear colourless liquid
Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,1 %

7297.1	10 ml	glass	17,75 €
7297.2	100 ml	glass	91,95 €

4,4,4',4',5,5,5',5'-Octamethyl-2,2'-bi-(1,3,2-dioxaborolane)

▶ Bis(pinacolato)diboron see p. 1841

Octamethylene glycol

▶ 1,8-Octanediol see p. 2171

iso-Octane

▶ Isooctane see p. 2078

n-Octane

n-Octane

≥99 %, for synthesis
C_8H_{18}
M 114,22 g/mol
D 0,703 • bp 125-127 °C
mp -57 °C • flp 13 °C
[111-65-9] • EC No. 203-892-1
UN No. 1262 • ADR 3 II • WGK 2

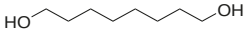
Danger
H225-H304-H315-H336-H410

Type analysis:

Appearance.	clear, colourless liquid
Assay.	≥99,0 %
Density (15 °C).	0,706-0,710
Aromatic compounds.	≤0,01 %

8753.1	100 ml	glass	23,55 €
8753.2	500 ml	glass	60,10 €
8753.3	1 l	glass	107,40 €
Original pack 6 x 1 l			102,03/1 l
8753.4	2,5 l	glass	209,65 €
Original pack 4 x 2,5 l			199,17/2,5 l

1,8-Octanediol



1,8-Octanediol

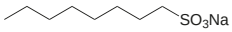
≥98 %
Octamethylene glycol
$C_8H_{18}O_2$
M 146,23 g/mol
bp 274 °C
mp 63 °C • flp 148 °C
[629-41-4] • EC No. 211-090-8
WGK 1

Type analysis:

Assay (GC).	≥98,0 %
Water (KF).	≤1,0 %
Melting point.	59-61 °C

5273.1	25 g	plastic	19,25 €
5273.2	50 g	plastic	32,15 €

Octane-1-sulphonic acid sodium salt



Octane-1-sulphonic acid sodium salt

≥98 %, for ion pair chromatography
Ion pair reagent for HPLC.
Sodium-1-octane sulphonate
$C_8H_{17}NaO_3S$
M 216,27 g/mol
[5324-84-5] • EC No. 226-195-4
WGK 1

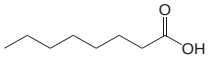
Warning H315-H319-H335

Guarantee analysis:

Assay (acidim.).	≥98,0 %
Water.	≤2 %
A 200 nm (0,25 M in water).	≤0,1 AU
A 210 nm (0,25 M in water).	≤0,05 AU
A 220 nm (0,25 M in water).	≤0,03 AU
A 230 nm (0,25 M in water).	≤0,02 AU
A 240 nm (0,25 M in water).	≤0,01 AU
A 250 nm (0,25 M in water).	≤0,01 AU
A 260 nm (0,25 M in water).	≤0,01 AU

KK55.1	10 g	glass	47,20 €
KK55.2	25 g	glass	91,30 €
KK55.3	100 g	glass	272,55 €

Octanoic acid



Octanoic acid

≥99,5 %, for synthesis
Caprylic acid
$C_8H_{16}O_2$
M 144,21 g/mol
D 0,91 • bp 237 °C
mp 12-16 °C • flp 127 °C
[124-07-2] • EC No. 204-677-5
UN No. 3265 • ADR 8, III • WGK 1

Danger H314-H412

Type analysis:

Assay.	≥99,5 %
Water.	≤0,2 %
Melting point.	12-16 °C

2613.1	100 ml	glass	14,55 €
2613.2	500 ml	glass	24,20 €
2613.3	1 l	glass	31,75 €
Original pack 6 x 1 l			30,16/1 l
2613.4	2,5 l	glass	62,90 €
Original pack 4 x 2,5 l			59,76/2,5 l

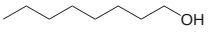
n-Octanoic acid

▶ Caprylic acid see p. 1875

Octanoic acid methylester

▶ Caprylic acid methyl ester see p. 1876

1-Octanol



Caprylic alcohol, n-Octyl alcohol
$C_8H_{18}O$
M 130,23 g/mol
D 0,82 • bp 194,4 °C
mp -16,3 °C • flp 81 °C
Solubility: 0,3 g/l (H_2O, 20 °C)
[111-87-5] • EC No. 203-917-6
WGK 1

Warning H319-H412

1-Octanol

≥99 %, for synthesis

Type analysis:

Assay (GC).	≥99,0 %
Density (d 20 °C/4 °C).	0,824-0,826
Water.	≤0,1 %

4439.1	100 ml	glass	14,95 €
4439.2	500 ml	glass	25,70 €
4439.3	1 l	glass	39,25 €
Original pack 6 x 1 l			37,29/1 l

1-Octanol

ROTICHROM® GC
Reference substance for GC.
Storage temp.: +4 °C

Type analysis:

Purity (GC).	≥98 %

3182.1	1 g	plastic	84,40 €

OCT Embedding Matrix

OCT Embedding Matrix

for histology
Embedding medium for frozen tissue sections.
Storage temp.: +20 °C
WGK 1

Type analysis:

Appearance.	viscous, colourless liquid
Spec. gravity.	1,032-1,040
Micro examination.	free of undissolved matter
Film.	hazy

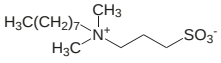
6478.1	125 ml	plastic	25,70 €
6478.2	3 x 125 ml	plastic	70,45 €

For further information, please see page 1510

n-Octylalcohol

▶ 1-Octanol see p. 2171

N-Octyl-N,N-dimethyl-3-ammonio-1-propane sulphonate



N-Octyl-N,N-dimethyl-3-ammonio-1-propane sulphonate

≥98 %, for biochemistry
Zwitterionic detergent
Sulfobetaine-8, SB-8
$C_{13}H_{29}NO_3S$
M 279,4 g/mol
[15178-76-4]
WGK 1

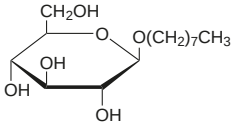
Warning H315-H319-H335

Type analysis:
Assay (HPLC).....≥98,0 %
Loss on drying. .....≤2,0 %
Ash. .....≤0,1 %

1800.1	5 g	glass	52,60 €
1800.2	25 g	glass	139,65 €

For further information, please see page 1314

n-Octyl-β-D-glucopyranoside (OGP)



n-Octyl-β-D-glucopyranoside (OGP)

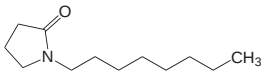
≥98 %, for biochemistry
Non-ionic detergent.
OGP, Octylglucoside
$C_{14}H_{28}O_6$
M 292,38 g/mol
mp 98-103 °C
Storage temp.: +4 °C
[29836-26-8] • EC No. 249-887-8
WGK 1

Type analysis:
Assay.....≥98 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in H_2O). ..... -28° to -35°

CN23.1	1 g	glass	27,85 €
CN23.2	5 g	glass	100,55 €
CN23.3	10 g	glass	166,55 €

For further information, please see page 1312

N-Octyl-2-pyrrolidone (NOP)



N-Octyl-2-pyrrolidone (NOP)

≥99 %, for synthesis
NOP, 1-Octyl-2-pyrrolidone
$C_{12}H_{23}NO$
M 197,32 g/mol
D 0,92 • bp 306 °C
mp -26 °C • flp 142 °C
[2687-94-7] • EC No. 403-700-8
UN No. 3267 • ADR 8 II • WGK 2

Danger H314-H411

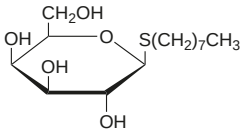
Type analysis:
Assay (GC).....≥99,0 %
Water.....≤0,5 %

0358.1	100 ml	glass	22,05 €
0358.2	500 ml	plastic	49,35 €
0358.3	1 l	plastic	77,30 €
Original pack 6 x 1 l			73,44/1 l
0358.4	2,5 l	plastic	142,90 €
Original pack 4 x 2,5 l			135,76/2,5 l

n-Octyl-1-thio-β-D-Gal

▶ n-Octyl-β-D-thiogalactopyranoside see p. 2172

n-Octyl-β-D-thiogalacto-pyranoside



n-Octyl-β-D-thiogalacto-pyranoside

≥98 %, for biochemistry
Non-ionic detergent.
Octyl-β-D-thiogalactoside, n-Octyl-1-thio-β-D-Gal
$C_{14}H_{28}O_5S$
M 308,44 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[42891-16-7]
WGK 1

Type analysis:
Assay (GC).....≥98,0 %
Solution (5 % in methanol).....colourless, clear
Water (KF).....≤2 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in methanol). ..... -35° to -31°

4133.1	500 mg	glass	53,65 €
4133.2	1 g	glass	92,35 €

For further information, please see page 1312

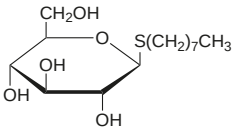
Octyl-β-D-thiogalactoside

▶ n-Octyl-β-D-thiogalactopyranoside see p. 2172

n-Octyl-1-thio-β-D-Glc

▶ n-Octyl-β-D-thioglucopyranoside see p. 2172

n-Octyl-β-D-thiogluco-pyranoside



n-Octyl-β-D-thiogluco-pyranoside

≥95 %, for biochemistry
Non-ionic detergent.
Octyl-β-D-thioglucoside, n-Octyl-1-thio-β-D-Glc
$C_{14}H_{28}O_5S$
M 308,44 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[85618-21-9]
WGK 1

Type analysis:
Assay (GC). .....≥95 %
Solution (5 % in methanol). ..... colourless, clear to slightly turbid
Water (KF). .....≤4 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in ethanol).....-49° ±2°

4139.3	500 mg	glass	36,45 €
4139.1	1 g	glass	56,90 €
4139.2	5 g	glass	209,65 €

For further information, please see page 1312

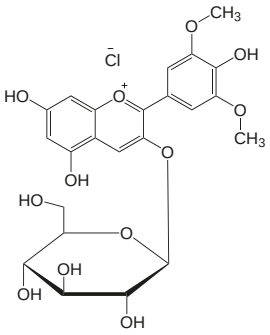
Octyl-β-D-thioglucoside

▶ n-Octyl-β-D-thioglucopyranoside see p. 2172

ODPA

▶ Octadecylphosphonic acid see p. 2170

Oenin chloride



Oenin chloride
ROTICHROM® HPLC
Reference substance for HPLC.
Malvidin-3-glucoside chloride
$C_{23}H_{25}O_{12}Cl$
M 528,87 g/mol
Storage temp.: +4 °C
[7228-78-6]

Type analysis:
Purity (HPLC).....≥97 %

K030.1	5 mg	glass	317,15 €

OFP
▶ 2,2,3,3,4,4,5,5-Octafluoro-1-pentanol
see p. 2170

Oil of angelica

Oil of angelica roots
hungarian, natural
Oleum Angelicae e seminis
D ~0,9
flp 44-48 °C
[8015-64-3] • EC No. 283-871-1
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H411-H317

Type analysis:
Appearance. ..... clear, yellowish to brownish oil
Density (20 °C). .....0,850-0,880 g/cm³
Refractive index (20 °C).....1,473-1,487
Optical rotation (20 °C). ..... 0° to +46°

6587.1	10 ml	glass	69,80 €

Oil of anise, natural

Oil of anise
natural
Oleum Anisi
mp ~17 °C • flp 98 °C
[84650-59-9] • EC No. 283-518-1
UN No. 3082 • ADR 9 III • WGK 2
Warning H317-H411-H341-H351

Type analysis:
Appearance. .....clear, almost colourless to yellow oil
Relative density (20 °C). 0,979-0,990
Refractive index (20 °C).....1,553-1,556

7036.1	100 ml	glass	33,25 €

Oil of anise, artificial

Oil of anise
artificial
Oleum Anisi
flp 46 °C
UN No. 1169 • ADR 3 III • WGK 3
Danger H304-H341-H351-H226-H400-H410-H315-H317

Type analysis:
Appearance.. clear almost colourless to pale yellow oil
Density (20 °C). .....0,880-0,920 g/cm³
Refractive index (20 °C). 1,49-1,50
Optical rotation (20 °C).....+0° to +30°

3278.2	100 ml	glass	15,60 €
3278.1	500 ml	glass	46,15 €

Oil of balm

Oil of balm
natural
Oleum Melissae indicum
D ~0,9 • bp ~220 °C
flp 63 °C
[91771-61-8] • EC No. 294-954-7
UN No. 3082 • ADR 9 III • WGK 2
Danger
H318-H317-H315-H304-H411

Type analysis:
Appearance.....clear, colourless to yellowish oil
Density (20 °C). .....0,880-0,896 g/cm³
Refractive index (20 °C). 1,4630-1,4750
Optical rotation (20 °C).....-4° to +1°

6507.1	100 ml	glass	18,85 €

Oil of basil

Oil of basil
natural pure
Oleum Basilici
bp ~215 °C
flp 74 °C
[8015-73-4] • EC No. 283-900-8
WGK 2
Warning
H302-H317-H341-H351-H412

Type analysis:
Appearance..... clear yellow to brownish oil
Density (20 °C). .....0,920-0,960 g/cm³
Refractive index (20 °C). 1,495-1,515
Optical rotation (20 °C).....-10° to 0°

7039.1	25 ml	glass	47,20 €

Oil of bergamot, natural

Oil of bergamot
natural
Oleum Bergamottae
D 0,88
flp 58 °C
[8007-75-8] • EC No. 289-612-9
UN No. 1169 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. .... clear, green-yellow to green-amber oil
Relative density (20 °C). 0,870-0,880
Refractive index (20 °C).....1,464-1,468
Optical rotation (20 °C).....+15° to +35°

6501.1	50 ml	glass	34,30 €

Oil of bergamot, artificial

Oil of bergamot
artificial
Oleum Bergamottae
D 0,88
flp 58 °C
UN No. 1993 • ADR 3 III • WGK 3
Danger H304-H226-H400-H410-H315-H319-H317-H335

Type analysis:
Appearance. ..... clear, green-yellow oil
Density (20 °C)..... 0,875-0,885 g/cm³
Refractive index (20 °C).....1,450-1,470
Optical rotation (20 °C).....+20° to +40°

3282.2	100 ml	glass	23,55 €
3282.1	250 ml	glass	39,70 €

Oil of cajeput

Oil of cajeput
natural
Oleum Cajeput
D ~0,92
flp 48 °C
[85480-37-1] • EC No. 287-316-4
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H317-H411

Type analysis:
Appearance. .....clear, colourless to yellow oil
Density (20 °C)..... 0,910-0,925 g/cm³
Refractive index (20 °C).....1,462-1,472
Optical rotation (20 °C).....-5° to 0°
1,8-Cineole. .....50-70 %
α-Terpineol. .....5-15 %

6105.1	100 ml	glass	26,80 €
6105.2	500 ml	glass	67,20 €

Oil of camphor

Oil of camphor
light
Oleum Camphorae
D 0,89
flp 53 °C
[8008-51-3] • EC No. 294-760-2
UN No. 1130 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. ..... clear, pale yellow to yellowish to brownish oil
Density (20 °C). ..... 0,870-0,920 g/cm³
Refractive index (20 °C)..... 1,465-1,475
Optical rotation (20 °C). ..... +5° to 15°

3357.1	1 l	glass	57,55 €
Original pack 6 x 1 l			54,67/1 l

Oil of caraway, natural

Oil of caraway
natural
Oleum Carvi
D ~0,95
flp 53 °C
[8000-42-8] • EC No. 288-921-6
UN No. 1169 • ADR 3 III • WGK 3
Danger H304-H226-H400-H410-H312-H315-H317

Type analysis:
Appearance. ..... clear, almost colourless to light yellowish oil
Solubility in ethanol % vol.. ... L96: 1:1 v/v clear soluble
Miscible. ..... ethanol 90 %, ether
Relative density (20 °C). 0,920-0,980
Refractive index (20 °C)..... 1,484-1,490
Optical rotation (20 °C). ..... +65° to +81°

7050.1	25 ml	glass	21,00 €

Oil of caraway, artificial

Oil of caraway
artificial
Oleum Carvi
D ~0,87
UN No. 1993 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. ..... clear, yellowish to brownish oil
Relative density (20 °C). 0,850-0,890
Refractive index (20 °C)..... 1,470-1,480
Optical rotation (20 °C). ..... +65° to +95°

3307.1	250 ml	glass	37,10 €

Oil of cassia

Oil of cassia
natural, chinese
Oleum Cassiae
D ~1,06
[8007-80-5] • EC No. 284-635-0
WGK 2
Warning H312-H315-H317

Type analysis:
Appearance..... clear, yellow to brown oil
Relative density (20 °C)..... 1,052-1,070
Refractive index (20 °C). 1,600-1,614
Optical rotation (20 °C). ..... -1° to +1°

6593.1	100 ml	glass	40,75 €

Oil of cedar leaf, pure

Oil of cedar leaf
pure
Oleum Foliorum cedri
D ~0,91
flp 48 °C
[8007-20-3] • EC No. 290-370-1
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H302-H317-H411

Type analysis:
Appearance..... yellow to brown oil
Density (20 °C). ..... 0,900-0,940 g/cm³
Refractive index (20 °C). 1,450-1,470
Optical rotation (20 °C). ..... -14° to -4°

6594.1	100 ml	glass	81,20 €

Oil of cedar leaf, artificial

Oil of cedar leaf
artificial
Oleum Foliorum cedri
D ~0,91
flp 51 °C
UN No. 1993 • ADR 3 III • WGK 2
Danger
H304-H226-H302-H317-H411

Type analysis:
Appearance..... clear, yellowish to brownish oil
Density (20 °C). ..... 0,880-0,920 g/cm³
Refractive index (20 °C). 1,4640-1,4740
Optical rotation (20 °C). ..... +5° to +15°

3291.2	50 ml	glass	20,35 €
3291.1	250 ml	glass	59,05 €

Oil of cedar wood

Oil of cedar wood
for microscopy
Oleum Ligni cedri
D 0,99 • bp 279 °C
flp 110-113 °C
UN No. 3082 • ADR 9 III • WGK 2
Danger H304-H410

Type analysis:
Appearance. . yellow to brownish, translucent, viscous
Solubility in ether..... 1:1
Solubility in toluene. 1:1
Solubility in chloroform. 1:1
Odour..... characteristic
Density (20 °C)..... 0,985-0,998
Refractive index n_D^{20}..... 1,51-1,525

5308.1	100 ml	glass	16,05 €
5308.2	250 ml	glass	24,20 €
5308.3	500 ml	glass	41,85 €

For further information, please see page 1536

Oil of celery

Oil of celery
Oleum Apii, from seeds
Apium graveoleus oil
D 0,89
flp 56 °C
[89997-35-3] • EC No. 289-668-4
UN No. 1169 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. ..... clear, light yellow-brownish oil
Relative density (20 °C). 0,880-0,905
Refractive index (20 °C). 1,4780-1,4860
Optical rotation (20 °C)..... +50° to +70°

7040.2	5 ml	glass	23,55 €
7040.1	25 ml	glass	59,70 €

Oil of cembra pine

Oil of cembra pine
pure
Oleum Cembrae
D ~0,86
[92202-04-5] • EC No. 296-036-1
UN No. 1272 • ADR 3 III • WGK 3
Danger
H226-H315-H319-H317-H304-H410

Type analysis:
Appearance. ..... clear, light yellowish oil
Density (20 °C)..... 0,850-0,890 g/cm³
Refractive index (20 °C). 1,4700-1,4800
Optical rotation (20 °C)..... -15° to -5°

4208.2	25 ml	glass	17,75 €
4208.1	100 ml	glass	45,05 €

Oil of chamomile, blue

Oil of chamomile
blue
Oleum Chamomillae
D 0,94
flp 63 °C
[8002-66-2] • EC No. 282-006-5
WGK 1
H412

Typ analysis:
Appearance. ..... blue oil
Density (20 °C). ..... 0,922-0,964 g/cm³

6504.1	10 ml	glass	68,70 €

Oil of chamomile, natural

Oil of chamomile
roman, natural
Oleum Chamomillae romanae
D ~0,90
flp 70 °C
[84649-86-5] • EC No. 283-467-5
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H317-H411

Type analysis:
Appearance. ..... clear, yellowish oil
Relative density (20 °C). 0,890-0,930
Refractive index (20 °C)..... 1,440-1,455
Optical rotation (20 °C). ..... -5° to +5°

3354.1	5 ml	glass	40,35 €

Oil of chamomile, artificial

Oil of chamomile
artificial
Oleum Chamomillae
D 0,94
flp 51 °C
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H400-H410-H315-H319-H317

Typ analysis:
Appearance. ..... clear, blue to green oil
Density (20 °C). ..... 0,900-1,000 g/cm³
Refractive index (20 °C)..... 1,500-1,520
Optical rotation (20 °C). ..... -10° to 0°

3305.1	50 ml	glass	56,45 €

Oil of cinnamon, natural

Oil of cinnamon
natural
Oleum Cinnamomi ceylanici
D ~1,03
flp 80 °C
WGK 2
Danger
H304-H312-H315-H319-H317-H412

Type analysis:
Appearance..... clear, yellowish to yellow-brownish oil
Density (20 °C). ..... 1,000-1,050 g/cm³
Refractive index (20 °C). 1,570-1,590
Optical rotation (20 °C). ..... -2° to +2°

A432.2	10 ml	glass	17,75 €
A432.1	50 ml	glass	59,05 €

Oil of cinnamon, artificial

Oil of cinnamon
artificial
Oleum Cinnamomi ceylanici
D ~1,03
flp 63 °C
WGK 2
Danger
H304-H312-H315-H317-H319-H412

Type analysis:
Appearance.....clear, light yellow to medium yellow oil
Density (20 °C). ..... 1,020-1,040 g/cm³
Refractive index (20 °C). 1,590-1,596
Optical rotation (20 °C). ..... -1° to +1°

6512.1	50 ml	glass	29,60 €

Oil of citronella, natural

Oil of citronella
natural
Oleum Citronellae
D 0,89
flp 63 °C
[91771-61-8] • EC No. 294-954-7
UN No. 3082 • ADR 9 III • WGK 2
Danger
H318-H317-H315-H411-H304

Type analysis:
Appearance.....clear, colourless to yellow-brownish oil
Density (20 °C). ..... 0,881-0,895 g/cm³
Refractive index (20 °C). 1,4630-1,4750
Optical rotation (20 °C). ..... -4° to +1°

6502.1	250 ml	glass	40,75 €

Oil of citronella, artificial

Oil of citronella
artificial
Oleum Citronellae
D 0,89 • bp ~180 °C
flp 53 °C
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H318-H226-H400-H410-H317-H315

Type analysis:
Appearance. ..... clear, yellowish to brownish oil
Density (20 °C)..... 0850-0,900 g/cm³
Refractive index n_D^{20}..... 1,4650-1,4750
Optical rotation (20 °C)..... +30° to +50°

3292.1	500 ml	glass	34,30 €

Oil of clary-sage

Oil of clary-sage
natural
Oleum Salviae sclareae
[84775-83-7] • EC No. 283-911-8
WGK 1
Warning H315-H317-H412

Type analysis:
Appearance. ..... clear, light yellow oil
Density (20 °C)..... 0,890-0,920 g/cm³
Refractive index (20 °C)..... 1,456-1,468
Optical rotation (20 °C)..... -20° to -5°

3355.1	25 ml	glass	44,65 €

Oil of cloves

Oil of cloves
≥80 %, natural, rect.
Oleum Caryophyllorum
D 1,05
flp 117 °C
[8000-34-8] • EC No. 284-638-7
WGK 2
Danger
H302+H312-H304-H317-H319-H412

Guarantee analysis:
Appearance. ..... colourless to yellow
Assay (eugenol). ..... ≥80 %
Density (20 °C)..... 1,028-1,053 g/cm³
Refractive index (20 °C). 1,5280-1,5370
Optical rotation (20 °C)..... -2° to 0°

8662.1	250 ml	glass	38,60 €
8662.2	1 l	glass	121,40 €
Original pack 6 x 1 l			115,33/1 l

Oil of coriander

Oil of coriander
natural
Oleum Coriandri
D 0,87 • bp 193 °C
flp 59 °C
[8008-52-4] • EC No. 283-880-0
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H315-H317-H411

Type analysis:
Appearance. ..... clear, colourless to light yellowish oil
Relative density (20 °C). 0,860-0,880
Refractive index (20 °C)..... 1,4620-1,4700
Optical rotation (20 °C). ..... +7° to +13°

7052.1	25 ml	glass	22,50 €

Oil of cubeb

Oil of cubeb
natural
Litsea, Oleum Cubebarum
D 0,89
[90063-59-5] • EC No. 290-018-7
UN No. 3082 • ADR 9 III • WGK 2
Danger H304-H315-H317-H411

Type analysis:
Appearance. .clear, yellowish to yellowish-brownish oil
Density (20 °C). ..... 0,850-0,900 g/cm³
Refractive index (20 °C)..... 1,4750-1,4850
Optical rotation (20 °C). ..... +5° to +20°

6608.1	100 ml	glass	26,80 €

Oil of cypress

Oil of cypress
french, natural
Oleum Cupressi
D 0,87
flp 41 °C
[8013-86-3] • EC No. 283-626-9
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H400-H410-H317

Guarantee analysis:
Appearance. ..... clear, yellow to brown oil
Density (20 °C). ..... 0,850-0,890 g/cm³
Refractive index (20 °C)..... 1,450-1,480
Optical rotation (20 °C). ..... +10° to +30°

6596.1	100 ml	glass	45,70 €

Oil of dill herb, natural purity

Oil of dill herb
natural pure
Oleum Anethi e herba
D ~0,90
flp 53 °C
[8006-75-5] • EC No. 289-790-8
UN No. 1169 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. ..... clear, yellow to brown oil
Density (20 °C). ..... 0,880-0,920 g/cm³
Refractive index (20 °C). 1,4800-1,4900
Optical rotation (20 °C). ..... +70° to +90°

6597.1	100 ml	glass	47,20 €

Oil of dill seed

Oil of dill seed
extra pure
Oleum Anethi e seminis
D 0,90
flp 56 °C
[8006-75-5] • EC No. 289-790-8
UN No. 1169 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. ..... clear, colourless to yellow oil
Density (20 °C). ..... 0,895-0,925 g/cm³
Refractive index (20 °C). 1,481-1,492
Optical rotation (20 °C). ..... +70° to +80°

3352.1	100 ml	glass	44,65 €

Oil of estragon

Oil of estragon
pure
Oleum Dracunculi
D 0,95
[90131-45-6] • EC No. 290-356-5
UN No. 3082 • ADR 9 III • WGK 2
Danger
H304-H302-H317-H341-H351-H411-EUH066

Type analysis:
Appearance. ..... clear light yellow green to brownish oil
Relative density (20 °C). 0,920-0,980
Refractive index (20 °C). 1,510-1,520
Optical rotation (20 °C). ..... 0° to +10°

6602.1	50 ml	glass	77,30 €

Oil of eucalyptus, nature identical

Oil of eucalyptus
nature identical
Oleum Eucalypti
D 0,88
flp 31 °C
UN No. 1169 • ADR 3 III • WGK 3
Danger
H304-H226-H317-H410-H315-H319

Type analysis:
Appearance. clear, colourless to yellowish to yellow oil
Density (20 °C)..... 0,850-0,900 g/cm³
Refractive index (20 °C). 1,4650-1,4750
Optical rotation (20 °C)..... +5° to +15°

3297.2	500 ml	glass	32,15 €
3297.1	1 l	glass	50,45 €
Original pack 6 x 1 l			47,93/1 l

Oil of evening primrose

Oil of evening primrose
refined
Oleum Oenotherae
[90028-66-3] • EC No. 289-859-2

Type analysis:
Appearance. ..... clear, yellowish to yellow oil
Density (20 °C)..... 0,920-0,930
Refractive index n_D^{20}..... 1,475-1,480

3691.1	50 ml	glass	15,60 €
3691.2	500 ml	glass	69,80 €

Oil of fennel

Oil of fennel
artificial
Oleum Foeniculi
D ~0,89
UN No. 1993 • ADR 3 III • WGK 3
Danger H304-H341-H351-H226-H400-H410-H315-H317

Type analysis:
Appearance. ..... clear, yellowish to yellow-brownish oil
Density (20 °C)..... 0,871-0,921 g/cm³
Refractive index (20 °C)..... 1,480-1,500
Optical rotation (20 °C)..... +5° to +20°

3299.2	100 ml	glass	17,75 €
3299.1	500 ml	glass	45,70 €

Oil of fir needles

Oil of fir needles
artificial
Oleum Pini
UN No. 1993 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H319-H317

Type analysis:
Appearance. ... clear, almost colourless to yellowish oil
Miscible. ..... ethanol 96 %
Density (20 °C). .....0,850-0,900 g/cm³
Refractive index (20 °C)..... 1,465-1,475
Optical rotation (20 °C). ..... -35° to -15°

3301.1	500 ml	glass	32,80 €

Oil of gardensage

Oil of gardensage
natural, Dalmat.
Oleum Salviae
D ~0,92
flp 47 °C
[8022-56-8] • EC No. 282-025-9
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H371-H226-H302-H317-H411

Type analysis:
Appearance. ...clear, pale yellow to green-yellowish oil
Density (20 °C). .....0,905-0,925 g/cm³
Refractive index (20 °C)..... 1,457-1,473
Optical rotation (20 °C). ..... -3° to +15°

7075.1	50 ml	glass	26,80 €

Oil of garlic

Oil of garlic
natural
Oleum Allii sativi
D 1,05
Storage temp.: +4 °C
[8008-99-9] • EC No. 232-371-1
UN No. 1197 • ADR 3 III • WGK 2
Warning
H226-H302-H317-H304-H412

Type analysis:
Appearance. ..... clear, yellow to brown oil
Density (20 °C). .....1,050-1,200 g/cm³
Refractive index (20 °C)..... 1,570-1,590

3540.2	50 ml	glass	65,50 €
3540.1	100 ml	glass	120,95 €

Oil of geranium, natural

Oil of geranium
natural
Oleum Geranii
D 0,91
flp 90 °C
[90082-51-2] • EC No. 290-140-0
UN No. 3082 • ADR 9 III • WGK 2
Danger
H304-H318-H317-H315-H411

Type analysis:
Appearance. ..... clear, colourless to brown oil
Density (20 °C). .....0,870-0,910 g/cm³
Refractive index (20 °C)..... 1,460-1,470
Optical rotation (20 °C). ..... -10° to +10°

7054.1	25 ml	glass	23,55 €

Oil of grapefruit

Oil of grapefruit
natural
D ~0,85
flp 50 °C
[8016-20-4] • EC No. 289-904-6
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance..... yellow-brown oil
Density (20 °C). 0,846-0,864
Refractive index n_D^{20}. 1,470-1,482
Rotation $[\alpha]_D^{20}$. .....+90,0° to +104,0°
Aldehyde (calc. as decanal). ..... 0,8-1,6 %

6718.1	250 ml	glass	73,65 €

Oil of juniper

Oil of juniper
pure
Oleum Juniperi e baccis
D ~0,87
flp 39 °C
[8002-68-4] • EC No. 283-268-3
UN No. 1169 • ADR 3 III • WGK 3
Danger
H304-H226-H411-H317-EUH066

Type analysis:
Appearance..... clear, colourless to yellow oil
Density (20 °C). .....0,857-0,876 g/cm³
Refractive index (20 °C). 1,470-1,485
Optical rotation (20 °C). .....-15° to 0°

7059.1	25 ml	glass	28,95 €

Oil of juniper wood

Oil of juniper wood
natural
Oleum Juniperi e ligno
D ~0,87
flp 36 °C
[84603-69-0] • EC No. 283-268-3
UN No. 1993 • ADR 3 III • WGK 3
Danger
H226-H304-H315-H317-H410

Type analysis:
Appearance..... clear, colourless to yellowish oil
Relative density (20 °C). 0,8400-0,8800
Refractive index (20 °C). 1,4650-1,4750
Optical rotation (20 °C). ..... -12° to -2°

7057.1	25 ml	glass	20,35 €

Oil of lavandin

Oil of lavandin
french
Lavendula hybrida
D 0,91
[8022-15-9] • EC No. 294-470-6
WGK 1
Danger H304-H315-H317-H412

Type analysis:
Appearance. ..... clear, pale yellow oil
Relative density (20 °C). 0,87-0,91
Refractive index (20 °C). 1,455-1,465
Optical rotation (20 °C)..... -10° to -2°

6603.1	100 ml	glass	30,65 €

Oil of lavender

Oil of lavender
natural
Oleum Lavendulae
D 0,88
flp 53 °C
WGK 2
Danger H304-H315-H317-H319-H412

Type analysis:
Appearance. ..... clear, pale yellow oil
Density (20 °C)..... 0,870-0,910 g/cm³
Refractive index (20 °C). 1,4600-1,4700
Optical rotation (20 °C)..... -5° to +5°

3367.1	250 ml	glass	50,45 €

Oil of lemon, natural

Oil of lemon
natural
Oleum Citri
D ~0,85
flp 48 °C
[8008-56-8] • EC No. 284-515-8
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. .....clear, yellow oil
Solubility in ethanol % vol..... L96: 1:1
Relative density (20 °C). 0,848-0,854
Refractive index (20 °C). 1,470-1,4770
Optical rotation (20 °C)..... +55° to +65°

5213.1	100 ml	glass	30,65 €

Oil of lemon, italian

Oil of lemon
italian
Oleum Citri
D 0,85 • bp 175 °C • flp 48 °C
[8008-56-8] • EC No. 284-515-8
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. ..... yellow oil
Refractive index n_D^{20}. 1,468-1,480
Density (20 °C). 0,845-0,865
Specific rotation $[\alpha]_D^{20}$. ..... +58° to +70°

3797.2	50 ml	glass	54,30 €
3797.1	100 ml	glass	99,90 €

Oil of lemon, artificial

Oil of lemon
artificial
Oleum Citri
D ~0,85 • flp 48 °C
UN No. 1993 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. .... clear, light yellow to medium yellow oil
Density (20 °C). ..... 0,840-0,860 g/cm³
Refractive index (20 °C)..... 1,4710-1,4760
Optical rotation (20 °C). ..... +55° to +75°

3346.1	500 ml	glass	44,65 €

Oil of lemon, low in terpenes

Oil of lemon
low in terpenes
Oleum Citri
D 0,88 • mp 228 °C • flp 58 °C
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. ..... clear, yellowish oil
Miscible. ..... ethanol 96 %
Density (20 °C). ..... 0,860-0,890 g/cm³
Refractive index (20 °C)..... 1,475-1,485
Optical rotation (20 °C). ..... +30° to +50°

6625.1	50 ml	glass	61,85 €

Oil of lemon-grass

Oil of lemon-grass
natural pure
Cochin, Oleum Lemon-grass
D 0,9 • flp 73 °C
[8007-02-1] • EC No. 295-161-9
UN No. 3082 • ADR 9 III • WGK 2
Warning H315-H317-H411-H319

Guarantee analysis:
Appearance.....clear, light yellow to medium yellow oil
Relative density (20 °C)..... 0,880-0,920
Refractive index (20 °C). 1,480-1,490
Optical rotation (20 °C).....-5° to +5°

6606.1	100 ml	glass	27,45 €

Oil of lime

Oil of lime
natural
Oleum Limettae, Lime oil
D 0,86
UN No. 1993 • ADR 3 III • WGK 2
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Density (20 °C). 0,855-0,870
Refractive index (20 °C). 1,470-1,482
Optical rotation (20 °C).....+30° to +40°

6721.1	50 ml	glass	25,70 €

Oil of lovage

Oil of lovage
pure
Oleum Levistici
D 0,97
flp 63 °C
[8016-31-7] • EC No. 284-292-7
WGK 2
Danger H317-H341-H351-H304-H412

Type analysis:
Appearance.....clear, yellowish to brownish oil
Solubility in ethanol % vol.. .....
.....L80: 1:4 v/v almost clear sol.
Relative density (20 °C)..... 0,970-1,030
Refractive index (20 °C). 1,5050-1,5350
Optical rotation (20 °C).....+5° to +25°

6607.1	10 ml	glass	106,45 €

Oil of mandarin

Oil of mandarin
italian
Oleum Mandarinae
D 0,85
[84929-38-4] • EC No. 284-521-0
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Relative density (20 °C)..... 0,840-0,860
Refractive index (20 °C). 1,470-1,480
Optical rotation (20 °C).....+70° to +80°

3796.1	100 ml	glass	47,85 €

Oil of mint

Oleum Menthae arvensis
D ~0,9
flp ~80 °C
[90063-97-1] • EC No. 290-058-5
UN No. 3082 • ADR 9 III • WGK 2
Warning H315-H317-H411

Oil of mint
chinese, raw

Type analysis:
Appearance. ..... pale oil
Density (20 °C).....0,885-0,905
Refractive index n_D^{20}.....1,450-1,470
Specific rotation $[\alpha]_D^{20}$.....-25° to -15°

6730.2	50 ml	glass	17,75 €
6730.1	250 ml	glass	53,65 €

Oil of mint
japanese, natural

Type analysis:
Appearance. .....
..... clear, colourless-yellow to green-yellow oil
Density (20 °C)..... 0,888-0,910 g/cm³
Refractive index (20 °C).....1,456-1,470
Optical rotation (20 °C).....-34° to -16°

6731.2	50 ml	glass	20,35 €
6731.1	250 ml	glass	53,65 €

Oil of mint
rectified twice

Type analysis:
Appearance. .....colourless to slightly yellow oil
Refractive index n_D^{20}.....1,458-1,465
Optical rotation $[\alpha]_D^{20}$. .....-23° to -16°
Density (20 °C).....0,895-0,905

6732.1	50 ml	glass	23,55 €
6732.2	250 ml	glass	57,95 €

Oil of niaouli

Oil of niaouli
natural
Melaleuca viridiflora
D 0,92 • bp 175 °C
mp ~7-8 °C • flp 46 °C
[8014-68-4] • EC No. 310-217-5
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H315-H317-H411

Type analysis:
Appearance. ..... clear, yellowish oil
Density (20 °C)..... 0,904-0,925 g/cm³
Refractive index (20 °C).....1,4630-1,4720
Optical rotation (20 °C).....-4° to +1°

6610.1	100 ml	glass	31,75 €

Oil of nutmeg

Oil of nutmeg
volatile
Oleum Myristicae aethereum
D 0,89 • bp 165 °C
flp 36 °C
Solubility: 1,07 mg/l (H_2O, 25 °C)
[8008-45-5] • EC No. 282-013-3
UN No. 1169 • ADR 3 III • WGK 3
Danger
H350-H304-H341-H226-H400-H410-H317

Type analysis:
Appearance. ..... clear, colourless to yellow oil
Density (20 °C). ..... 0,885-0,920 g/cm³
Refractive index (20 °C)..... 1,475-1,489
Optical rotation (20 °C). ..... +8° to +18°

7064.1	50 ml	glass	29,60 €

Oil of orange, bitter

Oil of orange
bitter, italian
Oleum Aurantii amari
[68916-04-1] • EC No. 232-433-8
UN No. 1169 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. ..... clear, yellow to brownish oil
Density (20 °C). ..... 0,840-0,860 g/cm³
Refractive index (20 °C)..... 1,470-1,480
Optical rotation (20 °C). ..... +85° to +95°

6509.1	100 ml	glass	38,60 €

Oil of orange, Brazil

Oil of orange
brazil
With analysis.
Oleum Aurantii
D 0,85 • bp 175 °C
flp 50 °C
[8028-48-6] • EC No. 232-433-8
UN No. 1169 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Relative density (20 °C). 0,840-0,850
Refractive index (20 °C)..... 1,468-1,478
Optical rotation (20 °C). ..... +95° to +101°

3803.1	100 ml	glass	67,20 €

Oil of orange, Florida

Oil of orange
floridian
From orange peel, cold-pressed.
[8028-48-6] • EC No. 232-433-8
UN No. 1169 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Specific rotation $[\alpha]_D^{20}$. ..... +92° to +102°
Refractive index n_D^{20}. 1,468-1,480
Aldehydes (as decanal)..... 1,2-1,8 %

6728.2	250 ml	glass	24,20 €
6728.3	500 ml	glass	40,35 €
6728.1	1 l	glass	65,05 €
Original pack 6 x 1 l			61,80/1 l

Oil of orange, sweet

Oil of orange
sweet, natural
Oleum Aurantii dulcis
[8008-57-9] • EC No. 232-433-8
UN No. 1993 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance..... clear, yellowish to brownish oil
Relative density (20 °C)..... 0,840-0,860
Refractive index (20 °C). 1,4680-1,4760
Optical rotation (20 °C)..... +75° to +100°

6611.1	100 ml	glass	46,15 €

Oil of orange flowers artificial

Oil of orange flowers
artificial
Oleum Neroli
D 0,87
flp 70 °C
[84929-31-7] • EC No. 284-515-8
UN No. 3082 • ADR 9 III • WGK 3
Danger
H304-H400-H410-H315-H317

Type analysis:
Appearance..... clear, yellow to brownish oil
Density (20 °C). ..... 0,860-0,920 g/cm³
Refractive index (20 °C). 1,460-1,480

3323.1	50 ml	glass	66,15 €

Oil of origanum

Oil of origanum
natural
Oleum Origani cretici
D 0,915
flp 66 °C
[84012-24-8] • EC No. 281-670-3
WGK 2
Danger
H302+H312-H304-H315-H317-H412

Type analysis:
Appearance. ..... clear, yellow to red-brown oil
Density (20 °C)..... 0,915-0,975 g/cm³
Refractive index (20 °C)..... 1,500-1,520
Optical rotation (20 °C)..... -5° to +1°

6612.2	25 ml	glass	22,50 €
6612.1	100 ml	glass	58,60 €

Oil of palmarosa

Oil of palmarosa
east indian
Oleum Palmae rosae
D 0,89
[8014-19-5] • EC No. 283-461-2
WGK 1
Danger H318-H317-H315-H412

Guarantee analysis:
Appearance. ..... clear, yellow to brown oil
Density (20 °C)..... 0,880-0,900 g/cm³
Refractive index (20 °C)..... 1,465-1,475
Optical rotation (20 °C)..... -5° to +3°

6613.2	25 ml	glass	23,55 €
6613.1	100 ml	glass	46,15 €

Oil of parsley

Oil of parsley
french
Oleum Petroselini
D ~1,06
flp 52 °C
[8000-68-8] • EC No. 281-677-1
UN No. 1169 • ADR 3 III • WGK 2
Danger
H304-H226-H315-H317-H411

Type analysis:
Appearance. ..... clear, yellow to yellow brown greenish oil
Relative density (20 °C). 1,037-1,095
Refractive index (20 °C)..... 1,492-1,522
Optical rotation (20 °C)..... -9° to -4°

7072.1	10 ml	glass	23,55 €

Oil of patchouli

Oil of patchouli
artificial
Oleum Patchouli
D 0,92
flp >100 °C
[8014-09-3] • EC No. 282-493-4

Type analysis:
Appearance. .....clear medium to dark brown oil
Density (20 °C). .....0,955-0,980 g/cm³
Refractive index (20 °C).....1,505-1,515
Optical rotation (20 °C). .....-60° to -30°

6511.2	25 ml	glass	22,50 €
6511.1	100 ml	glass	57,95 €

Oil of pepper

Oil of pepper
natural
Oleum Piperis
D 0,89
[84929-41-9] • EC No. 284-524-7
UN No. 1169 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. .....clear, yellow to yellow-brownish oil
Miscible. .....abs. ethanol
Relative density (20 °C). 0,864-0,915
Refractive index (20 °C).....1,4700-1,4900
Optical rotation (20 °C). .....-23° to -1°

6616.2	25 ml	glass	33,25 €
6616.1	100 ml	glass	93,45 €

Oil of peppermint, pure

Oil of peppermint
pure
Oleum Menthae piperitae
D 0,91
flp 80 °C
[8006-90-4] • EC No. 282-015-4
UN No. 3082 • ADR 9 III • WGK 3
Danger
H315-H317-H318-H335-H411

Type analysis:
Appearance. .....colourless to light yellowish oil
Density (20 °C). 0,898-0,908
Refractive index (20 °C).....1,455-1,465
Optical rotation (20 °C). .....-30° to -20°

9318.1	50 ml	glass	24,20 €

Oil of peppermint italian

Oil of peppermint italian
pure
Oleum Menthae piperitae
D 0,91
flp 62 °C
[8006-90-4] • EC No. 282-015-4
UN No. 3082 • ADR 9 III • WGK 1
Danger H304-H315-H317-H411

Type analysis:
Appearance..... colourless to yellow oil
Relative density (20 °C)..... 0,900-0,916
Refractive index (20 °C). 1,4570-1,4670
Optical rotation (20 °C)..... -30° to -10°
Acid value..... ≤1,4

7063.1	25 ml	glass	28,95 €

Oil of peppermint, artificial

Oil of peppermint
artificial
Oleum Menthae piperitae
[68917-18-0] • EC No. 290-058-5
UN No. 1169 • ADR 3 III • WGK 2
Warning
H226-H302-H315-H317-H411

Type analysis:
Appearance..... clear, yellowish to light brownish oil
Density (20 °C). .....0,850-0,900 g/cm³
Refractive index (20 °C). 1,4600-1,4800
Optical rotation (20 °C).....+10° to +25°

3329.2	100 ml	glass	17,75 €
3329.1	500 ml	glass	45,70 €

Oil of petitgrain

Oil of petitgrain
south american
Oleum Petitgrain americ.
D 0,87 • bp 156 °C
[8014-17-3] • EC No. 277-143-2
UN No. 3082 • ADR 9 III • WGK 2
Warning H315-H317-H412

Type analysis:
Appearance..... clear, yellow to yellow brownish oil
Density (20 °C). .....0,870-0,910 g/cm³
Refractive index (20 °C). 1,455-1,495
Optical rotation (20 °C).....-5° to +10°

6614.1	100 ml	glass	45,70 €

Oil of rose, bulgarian, natural

Oil of rose
bulgarian, natural
Oleum Rosae
D 0,86
flp 59 °C
[90106-38-0] • EC No. 290-260-3
UN No. 1169 • ADR 3 III • WGK 2
Danger
H226-H315-H318-H317-H341-H351-H411

Type analysis:
Appearance. .....yellowish oil
Density (20 °C)..... 0,847-0,877 g/cm³
Refractive index (20 °C).....1,447-1,467
Optical rotation (20 °C).....-4° to -1°

5733.1	1 ml	glass	45,05 €
5733.2	10 ml	glass	321,45 €

Oil of rose, artificial

Oil of rose
artificial
Oleum Rosae
D 0,89
flp 90 °C
UN No. 3082 • ADR 9 III • WGK 2
Danger
H304-H341-H351-H318-H317-H315-H411

Type analysis:
Appearance. .....clear, pale yellow to yellowish to brownish oil
Density (20 °C)..... 0,860-0,920 g/cm³
Refractive index (20 °C).....1,4700-1,4800
Optical rotation (20 °C).....-2° to +2°

4092.1	10 ml	glass	27,45 €

Oil of rosemary, spanish

Oil of rosemary
spanish
Oleum Rosmarini
D 0,91
flp 38 °C
UN No. 1993 • ADR 3 III • WGK 3
Danger
H226-H317-H371-H304-H400-H410

Type analysis:
Appearance. ..... clear, colourless to pale yellow oil
Density (20 °C)..... 0,891-0,917 g/cm³
Refractive index (20 °C).....1,4650-1,4750
Optical rotation (20 °C).....-5° to +15°

6514.1	100 ml	glass	28,95 €

Oil of rosemary, morrocan

Oil of rosemary
morrocan
Oleum Rosmarini
D 0,91
flp 40 °C
[8000-25-7] • EC No. 283-291-9
UN No. 1169 • ADR 3 III • WGK 2
Danger
H226-H304-H315-H317-H410

Type analysis:
Appearance. ..... clear, colourless to pale yellow oil
Relative density (20 °C). 0,891-0,917
Refractive index (20 °C)..... 1,4650-1,4750
Optical rotation (20 °C). ..... -5° to +15°

3764.1	100 ml	glass	25,30 €

Oil of rosemary, artificial

Oil of rosemary
artificial
Oleum Rosmarini
D 0,91
flp 35 °C
UN No. 1992 • ADR 3 (6.1) III • WGK 3
Danger
H304-H371-H226-H400-H410-H315-H317

Type analysis:
Appearance. ..... clear, light yellow oil
Density (20 °C). ..... 0,890-0,920 g/cm³
Refractive index (20 °C)..... 1,4650-1,4750
Optical rotation (20 °C). ..... -10° to +10°

3336.2	100 ml	glass	17,10 €
3336.1	500 ml	glass	45,05 €

Oil of rose-wood

Oil of rose-wood
nature identical
Oleum Ligni Rhodii
D 0,90
[8015-77-8] • EC No. 281-093-7
WGK 1
Warning H315-H317-H412

Type analysis:
Appearance. .. clear, pale yellow to yellow-brownish oil
Relative density (20 °C). 0,850-0,900
Refractive index (20 °C)..... 1,460-1,490
Optical rotation (20 °C). ..... -20° to 0°

3275.2	50 ml	glass	36,05 €
3275.1	100 ml	glass	66,15 €

Oil of sandal-wood

D 0,97 • bp 276 °C
flp >100 °C
[84787-70-2] • EC No. 284-111-1 • WGK 2

Oil of sandal-wood
west indian
Oleum Santali

Type analysis:
Appearance..... clear, yellowish to brownish oil
Relative density (20 °C)..... 0,935-0,975
Refractive index (20 °C). 1,5000-1,5150
Optical rotation (20 °C)..... +15° to +40°

6620.2	25 ml	glass	17,75 €
6620.1	100 ml	glass	45,05 €

Oil of sandal-wood
artificial
Oleum Ligni Santali artificiale

Type analysis:
Appearance..... clear, yellowish oil
Miscible. ..... ethanol 96 %
Density (20 °C). ..... 0,950-1,000 g/cm³
Refractive index (20 °C). 1,500-1,510
Optical rotation (20 °C)..... -5° to +5°

3341.2	50 ml	glass	20,35 €
3341.1	250 ml	glass	53,65 €

Oil of Scotch pine needles, natural

Oil of Scotch pine needles
natural
Oleum Pini silvestris
D 0,88
[8023-99-2] • EC No. 281-679-2
UN No. 1272 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H317

Type analysis:
Appearance..... clear, colourless to light yellow oil
Density (20 °C). ..... 0,855-0,875 g/cm³
Refractive index (20 °C). 1,465-1,480
Optical rotation (20 °C)..... -30° to -9°

7073.1	100 ml	glass	31,10 €

Oil of Scotch pine needles, artificial

Oil of Scotch pine needles
artificial
Oleum Pini silvestris
D 0,88
UN No. 1993 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H319-H317

Type analysis:
Appearance. ..... clear, light yellowish oil
Density (20 °C)..... 0,855-0,885 g/cm³
Refractive index (20 °C)..... 1,4700-1,4850
Optical rotation (20 °C)..... -25° to -5°

3306.2	250 ml	glass	23,55 €
3306.1	500 ml	glass	44,00 €

Oil of silver fir

Oil of silver fir
artificial
Oleum Abietis
D 0,90
UN No. 1993 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H319-H317

Type analysis:
Appearance. ..... clear, almost colourless to yellowish to brownish oil
Relative density (20 °C). 0,850-0,900
Refractive index (20 °C). 1,4700-1,4800
Optical rotation (20 °C)..... -70° to -30°

3295.1	250 ml	glass	30,65 €

Oil of silver fir cones

Oil of silver fir cones
natural
Oleum Templini
D 0,88 • [90028-76-5]
UN No. 1272 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. ..... clear, yellow to brown oil
Density (20 °C)..... 0,840-0,880 g/cm³
Refractive index (20 °C). 1,470-1,480
Optical rotation (20 °C)..... -90° to -50°

6598.1	100 ml	glass	52,60 €

Oil of silver fir needles

Oil of silver fir needles
natural
Oleum Abietis
D 0,86 • flp 37 °C
[8021-27-0]
UN No. 1272 • ADR 3 III • WGK 3
Danger
H304-H226-H400-H410-H315-H317

Type analysis:
Appearance. ..... clear, light yellow-brownish oil
Density (20 °C)..... 0,850-0,890 g/cm³
Refractive index (20 °C). 1,465-1,475
Optical rotation (20 °C)..... -60° to -30°

3353.1	100 ml	glass	40,75 €

Oil of spike

Oil of spike
natural pure
Oleum Spicae
D ~0,893
flp 58 °C
[84837-04-7] • EC No. 284-290-6
UN No. 1169 • ADR 3 III • WGK 2
Warning
H226-H371-H315-H317-H411

Type analysis:
Appearance. .....clear, light yellow oil
Density (20 °C). .....0,893-0,909 g/cm³
Refractive index (20 °C)..... 1,4630-1,4680
Optical rotation (20 °C). ..... -5° to +5°

7079.1	50 ml	glass	27,85 €

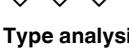
Oil of sweet almond

Oil of sweet almond
refined
Oleum Amygdalae dulcis
D 0,91
[8007-69-0]
WGK 1

Type analysis:
Appearance. ..... clear, yellow liquid
Relative density (20 °C). ..... ~0,916
Acid value (mg KOH/g). ..... ≤1,0
Peroxide value. ..... ≤5 meq O_2/kg
Unsaponifiable matter..... ≤1,0 %

9342.1	1 l	glass	40,75 €
Original pack 6 x 1 l			38,71/1 l
9342.3	2,5 l	glass	84,40 €
Original pack 4 x 2,5 l			80,18/2,5 l
9342.2	10 l	tinplate	278,45 €

Oil of tansy

Oil of tansy
pure
Oleum Tanaceti
D 0,94
flp 59 °C
[84961-64-8] • EC No. 284-653-9
UN No. 1169 • ADR 3 III • WGK 2
 **Warning** H226-H302-H411

Type analysis:
Appearance. ..... clear, yellow to brown oil
Relative density (20 °C). .....0,910-0,950 g/cm³
Refractive index (20 °C)..... 1,450-1,470
Optical rotation (20 °C). ..... +40° to +70°

7081.2	5 ml	glass	17,10 €
7081.1	25 ml	glass	45,05 €

Oil of tea tree

Oil of tea tree
australian, natural
Melaleuca alternifolia aetheroleum
D 0,89
flp 53 °C
[85085-48-9] • EC No. 285-377-1
UN No. 1169 • ADR 3 III • WGK 2
Danger
H226-H302+H332-H304-H15-H317-H411

Type analysis:
Appearance..... clear, colourless to light yellowish oil
Relative density (20 °C)..... 0,885-0,906
Refractive index (20 °C). 1,475-1,482
Optical rotation (20 °C)..... +0° to +15°

K032.1	50 ml	glass	26,80 €

Oil of theobroma

Oil of theobroma
pure, filtered twice
Oleum Cacao
D 0,96
mp 30-34 °C
[8002-31-1] • EC No. 310-127-6

Type analysis:
Appearance.....light yellow pellets
Refractive index (40 °C). 1,456-1,459
Melting point..... 30-34 °C
Saponification value. 192-198
Iodine value..... 33-42

3515.2	100 g	plastic	17,75 €
3515.1	500 g	plastic	55,80 €
Original pack 6 x 500 g			53,01/500 g

Oil of thyme, natural

Oil of thyme
natural
ex *Thymus serpyllum*
D ~0,92
flp 53 °C
[84776-98-7] • EC No. 284-023-3
UN No. 2924 • ADR 3 (8) III • WGK 2
Danger
H304-H314-H226-H302-H317-H411

Type analysis:
Appearance.....clear, brown oil
Relative density (20 °C)..... 0,880-0,940
Refractive index (20 °C). 1,480-1,500
Optical rotation (20 °C)..... -10° to +1°

K500.1	50 ml	glass	41,40 €

Oil of thyme, natural/nature-identical

Oil of thyme
natural/nature identical
Oleum Thymi
D ~0,9
flp 58 °C
UN No. 2924 • ADR 3 (8) III • WGK 3
Danger
H304-H314-H226-H302-H317-H335-H411

Type analysis:
Appearance. .....clear, yellowish to red-brownish oil
Miscible..... ethanol 96 %
Density (20 °C)..... 0,915-0,935 g/cm³
Refractive index (20 °C)..... 1,490-1,505
Optical rotation (20 °C)..... -10° to 0°

6513.1	100 ml	glass	22,50 €

Oil of turpentine

Oil of turpentine
rect., DAB
D 0,86 • bp 154-170 °C
mp -55 °C • flp 35 °C
[8006-64-2] • EC No. 232-350-7
UN No. 1299 • ADR 3 III • WGK 2
Danger H304-H226-H312+H332-H315-H319-H317-H411

Guarantee analysis:
Identity (TLC). .....complies
Solubility. L90: 1,5:10,5
Relative density (20 °C). 0,856-0,867
Optical rotation (20 °C)..... -40° to +48°
Refractive index n_D^{20}..... 1,467-1,478
Non volatile matter. .....≤1,0 %
Water-soluble content. .....complies
Boiling behaviour. .....complies
Heavy metals. .....complies
Pine oil. .....complies
Fatty oils, resinified volatile oils. .....complies
Foreign ester. .....complies
Boiling behaviour. .....complies
Pine oil. .....complies
Halogen-containing impurities..... complies
Acid reacting impurities. .....complies

T139.1	1 l	glass	70,45 €
Original pack 6 x 1 l			66,93/1 l
T139.2	2,5 l	glass	144,60 €
Original pack 4 x 2,5 l			137,37/2,5 l
T139.3	10 l	tinplate	450,45 €

Oil of valerian

Oil of valerian
natural pure
Oleum Valerianae
D ~0,97
flp 84 °C
[8008-88-6] • EC No. 232-501-7
UN No. 3082 • ADR 9 III • WGK 2
Danger H304-H317-H411

Type analysis:
Appearance. ..... clear, yellowish to brownish oil
Density (20 °C). ..... 0,890-0,990 g/cm³
Refractive index (20 °C)..... 1,4700-1,4800
Optical rotation (20 °C). ..... -35° to -15°

6588.2	10 ml	glass	47,20 €
6588.3	25 ml	glass	102,70 €
6588.1	50 ml	glass	181,70 €

Oil of valerian, artificial

Oil of valerian
artificial
Oleum Valerianae artificiale
D ~0,97
flp 85 °C
UN No. 3082 • ADR 9 III • WGK 3
Warning
H302+H332-H315-H319-H317-H411

Type analysis:
Appearance. ..... clear yellowish to brownish oil
Miscible. ..... Ethanol 96 %
Relative density (20 °C). 0,950-1,050
Refractive index (20 °C)..... 1,5000-1,5200
Optical rotation (20 °C). ..... -20° to 0°

3279.1	100 ml	glass	33,25 €

Oil of vetiver

Oil of vetiver
natural
Oleum Vetiverae
D ~1,02
flp 88 °C
[8016-96-4] • EC No. 282-490-8
WGK 2

Type analysis:
Appearance. ..... clear brownish oil
Density (20 °C). ..... 0,980-1,040 g/cm³
Refractive index (20 °C)..... 1,515-1,535
Optical rotation (20 °C). ..... +10° to +30°

6622.2	10 ml	glass	17,75 €
6622.1	50 ml	glass	45,05 €

Oil of wintergreen

Oil of wintergreen
artificial
Main constituent: methyl salicylate
Oleum Gaultheriae
flp >100 °C
WGK 1
Warning H302-H315-H319-H335

Type analysis:
Appearance. ..... clear, yellowish to brownish oil
Density (20 °C). ..... 1,181-1,188 g/cm³
Refractive index (20 °C). 1,530-1,540
Optical rotation (20 °C). ..... -0,5° to +0,5°

7053.1	100 ml	glass	32,80 €

Oil of wormwood

Oil of wormwood
natural
Oleum Absinthii
[8008-93-3] • EC No. 284-503-2
WGK 3
Warning H302-H317-H412

Type analysis:
Appearance. ..... clear green to brown oil
Density (20 °C). ..... 0,850-0,950 g/cm³
Refractive index (20 °C). 1,465-1,485

6909.1	10 ml	glass	21,40 €

Oil of ylang-ylang, natural

Oil of ylang-ylang
comoren, natural
Oleum Anonae
D 0,95
[8006-81-3] • EC No. 281-092-1
WGK 2
Danger H304-H315-H317-H412

Type analysis:
Appearance. ..... clear yellow to brown oil
Density (20 °C). ..... 0,935-0,980 g/cm³
Refractive index (20 °C). 1,495-1,515
Optical rotation (20 °C). ..... -50° to -20°

6624.2	25 ml	glass	42,90 €
6624.1	100 ml	glass	153,65 €

Oil of ylang-ylang, artificial

Oil of ylang-ylang
artificial
Oleum Anonae
D 0,95
UN No. 3082 • ADR 9 III • WGK 2
Danger
H304-H315-H317-H318-H411

Type analysis:
Appearance. ..... clear yellow to brown oil
Density (20 °C). ..... 0,940-0,980 g/cm³
Refractive index (20 °C). 1,5000-1,5200
Optical rotation (20 °C). ..... -20° to 0°

3343.2	50 ml	glass	17,75 €
3343.1	250 ml	glass	59,05 €

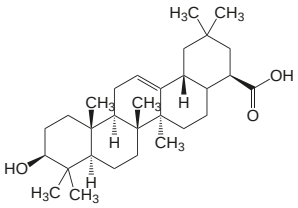
Oil soluble red A
▶ Rhodamine B (C.I. 45170) see p. 2258

Oil standards
▶ Standards for Determination of the Hydrocarbon Oil Index see p. 2379

Okanin-4'-glucoside
▶ Marein see p. 2122

Oleanol
▶ Oleanolic acid see p. 2183

Oleanolic acid



Oleanol, Caryophylline
$C_{30}H_{48}O_3$
M 456,71 g/mol
mp 306-308 °C
[508-02-1] • EC No. 208-081-6

Oleanolic acid
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤4,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE50.1	10 mg	glass	590,20 €

Oleanolic acid
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC). ..... ≥85,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC50.1	50 mg	glass	267,70 €

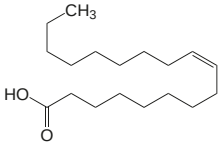
Oleanolic acid

ROTICHROM® HPLC
Reference substance for HPLC.
Storage temp.: +4 °C

Type analysis:
Purity (HPLC)..... ≥99 %

7402.2	20 mg	glass	160,20 €

Oleic acid



cis-9-Octadecenoic acid
$C_{18}H_{34}O_2$
M 282,47 g/mol
D 0,9 • bp 360 °C
mp 17 °C • flp 189 °C
Storage temp.: +4 °C
[112-80-1] • EC No. 204-007-1 • WGK 1

Oleic acid

≥99%, natural

Type analysis:
Assay (GC)..... ≥99 %

7213.1	5 ml	glass	34,30 €
7213.2	50 ml	glass	238,55 €

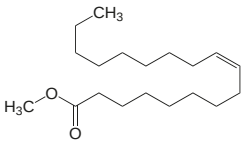
Oleic acid

ROTICHROM® GC
Reference substance for GC.

Type analysis:
Purity (GC)..... ≥99 %

5362.1	1 g	glass	38,20 €

Oleic acid methyl ester



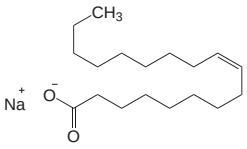
Oleic acid methyl ester

ROTICHROM® GC
Reference substance for GC.
Methyl oleate
$C_{19}H_{36}O_2$
M 296,50 g/mol
D 0,879 • bp 202-210 °C (20 hPa)
mp -20 °C • flp 113 °C
Storage temp.: +4 °C
[112-62-9] • EC No. 203-992-5 • WGK 1

Type analysis:
Purity (GC)..... ≥99 %

3186.1	1 g	glass	34,30 €

Oleic acid sodium salt



Oleic acid sodium salt

~90 %
Sodium oleate
$C_{18}H_{33}NaO_2$
M 304,47 g/mol
[143-19-1] • EC No. 205-591-0
WGK 1

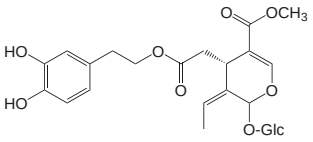
Type analysis:
Appearance..... white to yellowish
Total fatty acids. ..... 88,0-92,0 %
Moisture. ..... 1,0-4,0 %
Free NaOH. ..... 0,2-0,6 %

8856.1	500 g	plastic	36,45 €
Original pack 6 x 500 g			34,63/500 g

Oleoside-1-methylester

▶ Elenolic acid glucoside see p. 1969

Oleuropein



$C_{25}H_{32}O_{13}$
M 540,53 g/mol
mp 89-90 °C
[32619-42-4] • EC No. 251-129-6

Oleuropein

≥90 %

Type analysis:
Appearance..... powder, coloured like ivory
Assay. ..... ≥90 %

7018.2	1 g	glass	499,90 €

Oleuropein

ROTICHROM® HPLC
Reference substance for HPLC.
From *Olea europaea.*
Storage temp.: +4 °C

Type analysis:
Purity (HPLC). ..... >98 %

1191.1	20 mg	glass	284,90 €

Oligo Click S Reload

Oligo Click S Reload

ROTI®kit for DNA labelling
For DNA labeling assays.
Storage temp.: see below, room temp./-20 °C
Transport temp.: cooled
UN No. 1120 • ADR 3 III • WGK 3
Warning H226-H319

Components:
Activator..... 35 µl
Reactor S..... 9 x 2,5 mg
Store at -20 °C (Activator); room temp. (Reactor S)

7764.1	1 kit	cardboard	64,40 €

Oligo Click M Reload

Oligo Click M Reload

ROTI®kit for DNA labelling
For DNA labeling assays.
Storage temp.: see below, room temp./-20 °C
Transport temp.: cooled
WGK 3
Warning H319

Components:
Activator..... 50 µl
Reactor M. ..... 9 x 5 mg
Store at -20 °C (Activator); room temp. (Reactor M)

7765.1	1 kit	cardboard	80,55 €

Olive oil

Olive oil

Ph.Eur., virgin
Oleum Olivarum
D 0,91
[8001-25-0] • EC No. 232-277-0

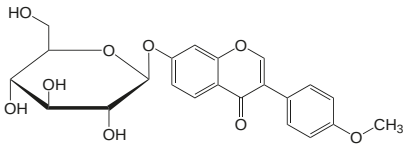
Guarantee analysis:
Identity. ..... complies
Relative density..... ~0,913
Absorption..... complies
Acid value. ..... ≤2,0
Peroxide value. ..... ≤20
Unsaponifiable matter. ..... ≤1,5 %
Water. ..... ≤0,1 %
Campesterol. ..... ≤4,0 %
Cholesterol..... ≤0,5 %
delta-7-Stigmastenol. ..... ≤0,5 %
Other sterols. ..... ≥93,0 %
Sesame oil. ..... not existing
GC-fatty acid constituents:
C <16 Saturated fatty acid..... ≤0,1 %
C 16:0 Palmitic acid. ..... 7,5-20,0 %
C 16:1 Palmitoleic acid..... ≤3,5 %
C 18:0 Stearic acid..... 0,5-5,0 %
C 18:1 Oleic acid..... 56,0-85,0 %
C 18:2 Linoleic acid..... 3,5-20,0 %
C 18:3 Linolenic acid..... ≤1,2 %
C 20:0 Arachidic acid. ..... ≤0,7 %
C 20:1 Eicosenoic acid. ..... ≤0,4 %
C 22:0 Behenic acid..... ≤0,2 %
C 24:0 Lignoceric acid. ..... ≤0,2 %

8873.1	500 ml	glass	25,70 €
8873.2	2,5 l	glass	87,00 €
Original pack 4 x 2,5 l			82,65/2,5 l

1-OMe-β-D-GlcA

▶ 1-*O*-Methyl-β-D-glucuronic acid, sodium salt see p. 2138

Ononin



Ononin

ROTICHROM® HPLC

Reference substance for HPLC.
Formononetin-7-O-glucoside
$C_{22}H_{22}O_9$
M 430,43 g/mol
Storage temp.: +4 °C
[486-62-4]

Type analysis:

Purity (HPLC)..... ≥99 %

9411.2	10 mg	glass	299,95 €

ONPG

▶ 2-Nitrophenyl-β-D-galactopyranoside see p. 2165

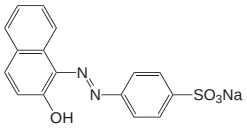
ONP-β-D-Glc

▶ 2-Nitrophenyl-β-D-glucopyranoside see p. 2166

OPA

▶ o-Phthaldialdehyde see p. 2212

Orange II sodium salt (C.I. 15510)



Orange II sodium salt (C.I. 15510)

for microscopy

Indicator pH 7,4-8,6 and pH 10,2-11,8
Acid orange 7
$C_{16}H_{11}N_2NaO_4S$
M 350,33 g/mol
mp >300 °C
[633-96-5] • EC No. 211-199-0 • WGK 3

Type analysis:

Appearance..... orange to brown powder
pH-transition range..... 7,4 (amber)-8,6 (orange)
pH-transition range..... 10,2 (orange)-11,8 (red)

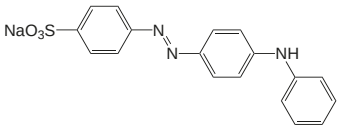
7729.1	5 g	glass	14,55 €
7729.2	25 g	glass	25,70 €
7729.3	100 g	glass	61,20 €

For further information, please see page 1524

Orange III

▶ Methyl orange (C.I. 13025) see p. 2140

Orange IV sodium salt (C.I. 13080)



Orange IV sodium salt (C.I. 13080)

for microscopy

Indicator pH 1,2-2,7
Tropaeolin OO
$C_{18}H_{14}N_3NaO_3S$
M 375,39 g/mol
mp >300 °C
[554-73-4] • EC No. 209-071-4
WGK 3

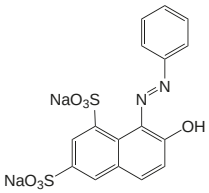
Type analysis:

Appearance..... orange powder
pH-transition range..... 1,2 (red)-2,7 (yellow)

7731.1	5 g	glass	14,55 €
7731.2	25 g	glass	25,70 €
7731.3	100 g	glass	61,20 €

For further information, please see page 1524

Orange G (C.I. 16230)



Orange G (C.I. 16230)

for microscopy and electrophoresis

Acid orange 10
$C_{16}H_{10}N_2Na_2O_7S_2$
M 452,37 g/mol
Solubility: 70 g/l (H_2O, 20 °C)
[1936-15-8] • EC No. 217-705-6
WGK 2

Type analysis:

Appearance..... orange powder
Maximum absorption..... ≥440 nm
Loss on drying..... ≤10 %

0318.1	10 g	glass	13,90 €
0318.2	25 g	glass	19,90 €
0318.3	100 g	glass	47,20 €

For further information, please see page 1525

Orange Serum Agar

Orange Serum Agar

for microbiology

For isolation, detection and enumeration of acid-tolerant pathogens in fruit juices and fruit juice concentrates, particularly citrus products.
Application: Use 40 g for 1 l agar.
Storage temp.: +20 °C
UN No. 3077 • ADR 9 III • WGK 1

Warning H315-H317-H411-EUH208

Formulation:

Casein peptone..... 10 g/l
Orange extract..... 5 g/l
Glucose..... 4 g/l
Potassium phosphate..... 3 g/l
Yeast extract..... 3 g/l
Agar..... 15 g/l
pH value..... 5,5 ±0,2

HP09.1	500 g	plastic	169,35 €
Original pack 6 x 500 g			160,88/500 g

For further information, please see page 1455

Orange Serum Agar, granulated

Orange Serum Agar, granulated

granulated, for microbiology

For isolation, detection and enumeration of acid-tolerant pathogens in fruit juices and fruit juice concentrates, particularly citrus products.
Application: Use 45,5 g for 1 l agar.
Storage temp.: +20 °C
UN No. 3077 • ADR 9 III • WGK 3

Warning H315-H317-H411-EUH208

Formulation:

Casein peptone..... 10 g/l
Orange extract..... 9 g/l
Glucose..... 4 g/l
Potassium phosphate..... 2,5 g/l
Yeast extract..... 3 g/l
Agar..... 17 g/l
pH value..... 5,5 ±0,2

1520.1	500 g	plastic	198,90 €
Original pack 6 x 500 g			188,96/500 g

For further information, please see page 1456

Orange terpenes

Orange terpenes

pure

Natural solvent
D 0,84
flp 52 °C
UN No. 2319 • ADR 3 III • WGK 3

Danger

H226-H304-H315-H317-H410

Type analysis:

Appearance..... colourless oil
Density (20 °C)..... 0,836-0,850
Specific rotation $[\alpha]_D^{20}$..... +96° to +105°
Refractive index n_D^{20}..... 1,468-1,478

3098.1	2,5 l	glass	59,05 €
Original pack 4 x 2,5 l			56,10/2,5 l

Orcein

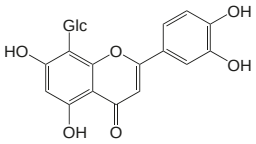
Orcein
for microscopy
Natural red 28
[1400-62-0] • EC No. 215-750-6 • WGK 2

Type analysis:
Absorption max. (NaOH 0,01 mol/l)..... 575-580 nm
Specific extinction E 1 %/1 cm..... >500

0320.1	25 g	plastic	385,95 €

For further information, please see page 1525

Orientin



Orientin
ROTICHROM® HPLC
Reference substance for HPLC.
From *Adonis vernalis*
$C_{21}H_{20}O_{11}$ • M 448,38 g/mol
Storage temp.: +4 °C • [28608-75-5]

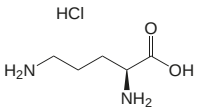
Type analysis:
Purity (HPLC)..... ≥99 %

6151.1	5 mg	glass	267,70 €

Orientosid

▶ Vitexin see p. 2436

L-Ornithine monohydrochloride



L(+)-2,5-Diamino valeric acid hydrochloride
$C_5H_{12}N_2O_2 \cdot HCl$
M 168,62 g/mol • mp 245 °C
Solubility: ~100 g/l (H_2O, 20 °C)
[3184-13-2] • EC No. 221-678-6 • WGK 1

L-Ornithine monohydrochloride
CELLPURE® ≥99 %
For cell culture and biochemistry.

Guarantee analysis:
Endotoxins..... ≤6,0 E.U./g
Assay (dry substance)..... ≥99 %
Loss on drying..... ≤0,2 %
Specific rotation $[\alpha]_D^{20}$..... +23,3° to +25,0°
Ammonium (NH_4)..... ≤0,02 %
Sulphate (SO_4)..... ≤0,02 %
Heavy metals (as Pb)..... ≤0,001 %
Arsenic (As_2O_3)..... ≤0,0001 %
Iron (Fe)..... ≤0,001 %

1703.1	25 g	plastic	24,20 €
1703.2	100 g	plastic	55,80 €
1703.3	500 g	plastic	213,95 €
Original pack 6 x 500 g			203,25/500 g

L-Ornithine monohydrochloride
≥99 %, for biochemistry

Type analysis:
Appearance..... white cryst. powder
Assay (dry substance)..... 99,0-101,0 %
Appearance of solution..... clear, colourless
Specific rotation $[\alpha]_D^{20}$..... +23,3° to +25,0°
pH value 5,0-6,0
Ammonium (NH_4)..... ≤0,02 %
Sulphate (SO_4)..... ≤0,02 %
Arsenic (As_2O_3)..... ≤0,0001 %
Iron (Fe)..... ≤0,001%
Heavy metals (as Pb)..... ≤0,001 %
Loss on drying..... ≤0,2 %
Sulphated ash..... ≤0,1 %

T204.1	25 g	plastic	14,95 €
T204.2	100 g	plastic	39,25 €
T204.3	500 g	plastic	138,70 €
Original pack 6 x 500 g			131,77/500 g

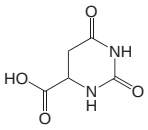
H-D-Orn(N_3)-OH · HCl

▶ D-Azidoornithine hydrochloride see p. 1822

H-L-Orn(N_3)-OH · HCl

▶ L-Azidoornithine hydrochloride see p. 1822

Orotic acid



Orotic acid
≥99 %, anhydrous
Uracil-6-carboxylic acid
$C_5H_4N_2O_4$
M 156,10 g/mol • mp 345-346 °C
[65-86-1] • EC No. 200-619-8

Warning H302-H315-H319-H335

Type analysis:
Assay..... ≥99,0 %
Heavy metals (as Pb)..... ≤0,002 %
Sulphated ash..... ≤0,1 %
Loss on drying..... ≤0,5 %

6820.2	25 g	plastic	34,30 €
6820.1	100 g	plastic	75,15 €

Orotic acid Monohydrate

Orotic acid Monohydrate
≥96,5 %
Uracilacid-6-carboxylic acid
$C_5H_4N_2O_4 \cdot H_2O$
M 174,11 g/mol
mp >334 °C
[50887-69-9] • EC No. 200-619-8

Warning H315-H319-H335

Type analysis:
Appearance..... white cryst. powder
Assay (HPLC)..... ≥99,0 %
Water..... ≤12,0 %

7285.1	10 g	plastic	18,20 €
7285.2	50 g	plastic	36,45 €
7285.3	250 g	plastic	111,70 €

Orthophosphoric acid

▶ ortho-Phosphoric acid 85 % see p. 2210
▶ ortho-Phosphoric acid 75 % see p. 2210
▶ ortho-Phosphoric acid 50 % see p. 2210
▶ ortho-Phosphoric acid 40 % see p. 2210
▶ ortho-Phosphoric acid 25 % see p. 2211
▶ ortho-Phosphoric acid D3, 85 % solution in D_2O see p. 2211
▶ ortho-Phosphoric acid (0,3 N) see p. 2211
▶ ortho-Phosphoric acid (0,5 N) see p. 2211
▶ ortho-Phosphoric acid (3 N) see p. 2211

Orthotungstic acid

▶ Tungstic acid see p. 2426

Osmium Standards

▶ Osmium ICP Standard Solution see p. 2364

Osmium(IV) ammonium chloride

▶ Ammonium hexachloroosmate (IV) see p. 1797

Osmic acid

▶ Osmium tetraoxide see p. 2186

Osmium(VIII) oxide

▶ Osmium tetraoxide see p. 2186

Osmium tetraoxide

Osmium tetraoxide
≥99,95 %, p.a., for electron microscopy
In sealed off glass ampoules.
Osmium(VIII) oxide, Osmic acid
OsO_4
M 254,20 g/mol • D 4,9 • bp 130 °C
mp 40 °C • Solubility: 65 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[20816-12-0] • EC No. 244-058-7
UN No. 2471 • ADR 6.1 I • WGK 2

Danger H300+H310+H330-H314

Guarantee analysis:
Appearance..... pale yellow crystals
Assay..... ≥99,95 %
Osmium (Os)..... 74-76 %
Aluminium (Al)..... ≤0,001 %
Calcium (Ca)..... ≤0,001 %
Lead (Pb)..... ≤0,001 %
Sodium (Na)..... ≤0,001 %
Nickel (Ni)..... ≤0,001 %
Non volatile matter..... ≤0,02 %

8371.1	100 mg	glass	42,50 €
8371.2	500 mg	glass	103,10 €
8371.3	1 g	glass	160,10 €

For further information, please see page 1508

Osmium tetraoxide solution

OsO_4
D 1,0
Storage temp.: +4 °C
[20816-12-0] • EC No. 244-058-7
UN No. 3287 • ADR 6.1 II • WGK 1
Danger
H301+H331-H310-H315-H318

Osmium tetraoxide solution 2 %

for electron microscopy
In sealed off glass ampoules.

Type analysis:
Assay (OsO_4).....~2 % in water

7436.1	5 ml	glass	39,25 €

For further information, please see page 1508

Osmium tetraoxide solution 4 %

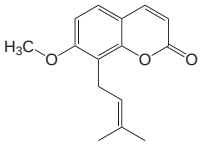
for electron microscopy
In sealed off glass ampoules.

Type analysis:
Assay (OsO_4).....~4 % in water

8088.1	5 ml	glass	59,05 €

For further information, please see page 1508

Osthol



$C_{15}H_{16}O_3$
M 244,28 g/mol
[484-12-8]
WGK 3

Osthol

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC).....≥95,0 %
Residual solvents (GC).....≤1,0 %
Water (KF).....≤1,0 %
Assay (qNMR).....≥95,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE51.1	10 mg	glass	880,45 €

Osthol

ROTICHROM® Working Standard

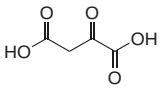
Type analysis:
Assay (HPLC).....≥90,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC51.1	50 mg	glass	235,45 €

Ouabin octahydrate

▶ g-Strophanthin see p. 2382

Oxalacetic acid



Oxalacetic acid

≥98 %, for biochemistry
2-Oxosuccinic acid
$C_4H_4O_5$
M 132,07 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[328-42-7] • EC No. 206-329-8
UN No. 3261 • ADR 8 III • WGK 2
Danger H314

Type analysis:
Assay (titr.).....≥98,0 %
Solution (10 % in water).....
.....colourless to almost colourless
Water (KF).....≤2,0 %
Sulphated ash.....≤0,1 %

4032.1	5 g	glass	32,15 €
4032.2	10 g	glass	54,75 €
4032.3	25 g	glass	113,85 €

Oxalane

▶ Tetrahydrofuran see p. 2400

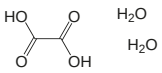
Oxalate Standards

▶ Oxalate IC Standard Solution see p. 2376

Oxaldehyde

▶ Glyoxal see p. 2028

Oxalic acid dihydrate



Ethanedioic acid
$C_2H_2O_4 \cdot 2\ H_2O$
M 126,07 g/mol
D 1,65 • bp 149-160 °C (dec.)
mp 101 °C
Solubility: 95 g/l (H_2O, 20 °C)
[6153-56-6] • EC No. 205-634-3
WGK 1
Danger H302+H312-H318

Oxalic acid dihydrate

≥99,5 %, p.a., ACS, ISO
Titrimetric standard substance in manganometry.

Guarantee analysis:
Assay (perm.).....≥99,5 %
In H_2O insoluble matter.....≤0,005 %
Ash content (as SO_4).....≤0,01 %
Reaction with H_2SO_4.....complies
Total nitrogen (as N).....≤0,001 %
Chloride (Cl).....≤0,0005 %
Sulphate (SO_4).....≤0,005 %
Lead (Pb).....≤0,0005 %
Calcium (Ca).....≤0,001 %
Iron (Fe).....≤0,0002 %
Copper (Cu).....≤0,0005 %
Magnesium (Mg).....≤0,001 %
Nickel (Ni).....≤0,0005 %
Heavy metals.....≤0,0005 %

T113.1	500 g	plastic	32,15 €
Original pack 6 x 500 g			30,54/500 g
T113.2	1 kg	plastic	53,65 €
Original pack 6 x 1 kg			50,97/1 kg
T113.3	2,5 kg	plastic	122,45 €

Oxalic acid dihydrate

≥99 %, cryst.

Type analysis:
Appearance.....white, crystal. powder
Assay.....≥99,0 %
Ash content.....≤0,03 %

8879.1	1 kg	plastic	21,00 €
Original pack 6 x 1 kg			19,95/1 kg
8879.3	5 kg	plastic	69,80 €
8879.2	10 kg	plastic	131,70 €

Oxalic acid ammonium salt monohydrate

▶ di-Ammonium oxalate monohydrate see p. 1802

Oxalic acid calcium salt monohydrate

▶ Calcium oxalate monohydrate see p. 1872

Oxalic acid magnesium salt

▶ Magnesium oxalate dihydrate see p. 2112

Oxalic acid di-potassium salt monohydrate

▶ di-Potassium oxalate monohydrate see p. 2232

Oxalic acid disodium salt

▶ di-Sodium oxalate see p. 2346

Oxalic acid solution (0,1 N)

Oxalic acid solution

0,05 mol/l - 0,1 N volumetric standard solution
EC No. 205-634-3
WGK 1

Type analysis:
Amount-of-substance conc. (20 °C).....
..... 0,05 mol/l ±0,2 %
Titer.....0,998-1,002

CN35.1	1 l	plastic	24,20 €
Original pack 6 x 1 l			22,99/1 l

For further information, please see page 1681

Oxalic acid solution (0,1 N)

Oxalic acid solution

ROTI®VOLUM 0,05 mol/l - 0,1 N

Ampoule for preparation of 1000 ml volumetric solution.

$C_2H_2O_4 \cdot 2\ H_2O$

M 126,07 g/mol

[6153-56-6] • EC No. 205-634-3

WGK 1

Type analysis:

Amount-of-substance conc. (20 °C)..... 0,05 mol/l ±0,2 %

CN59.1	1 piece	plastic ampoule	19,90 €

For further information, please see page 1683

Oxalic acid solution (0,2 N)

Oxalic acid solution

NEW

0,1 mol/l - 0,2 N volumetric standard solution

WGK 1

Warning H319

Type analysis:

Titer. 0,998-1,002

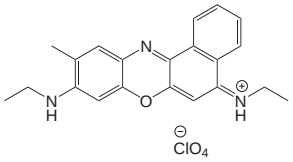
Amount-of-substance conc. (20 °C)..... 0,1 mol/l ±0,2 %

0764.1	1 l	plastic	45,05 €
Original pack 6 x 1 l			42,80/1 l

Oxazine 170 perchlorate

▶ Oxazine 720 perchlorate see p. 2188

Oxazine 720 perchlorate



Oxazine 720 perchlorate

≥96 %

Laser and scintillation dye

Oxazine 170 perchlorate

$C_{21}H_{22}N_3O \cdot ClO_4$

M 431,88 g/mol

mp 298-300 °C

Solubility: insoluble (H_2O, 20 °C)

[62669-60-7] • EC No. 263-682-0

UN No. 2811 • ADR 6.1 II • WGK 3

Danger H301

Type analysis:

Appearance. ..... dark-green cryst. powder

Assay (HPLC). ..... ≥96 %

Maximum absorption. ..... 626 ±1 nm (EtOH)

7306.1	100 mg	glass	25,30 €
7306.2	500 mg	glass	50,45 €
7306.3	1 g	glass	75,15 €

Ox Bile, bacteriological

Ox Bile, bacteriological

for microbiology

Storage temp.: +20 °C

[8008-63-7] • EC No. 232-369-0 • WGK 1

Type analysis:

Cholic acid..... ≥45 %

Loss on drying..... ≤6 %

pH (2 % solution)..... 6,0-8,5

Solubility (2 % solution). ..... clear

7595.1	250 g	plastic	124,60 €
7595.2	500 g	plastic	222,00 €
Original pack 6 x 500 g			210,90/500 g

For further information, please see page 1493

Oxford Agar

▶ Oxford Listeria Agar (Base) see p. 2188

Oxford Listeria Agar (Base)

Oxford Listeria Agar (Base)

ISO 11290-1, for microbiology

Selective medium for detection of *Listeria monocytogenes*.

Application: Use 55,5 g for 1 l agar. After cooling add 2 vials (2 x 2 ml) reconstituted Listeria Oxford Supplement (Art. No. 5801.1).

Oxford Agar

Storage temp.: +20 °C • WGK 3

Warning H302-H315-H319

Guarantee analysis:

Peptone mixture. ..... 23 g/l

Sodium chloride. ..... 5 g/l

Starch. ..... 1 g/l

Lithium chloride. ..... 15 g/l

Esculin. ..... 1 g/l

Ammonium iron(III) citrate. ..... 0,5 g/l

Agar. ..... 10 g/l

pH value. ..... 7,0 ±0,2

5767.1	500 g	plastic	158,60 €
Original pack 6 x 500 g			150,67/500 g

For further information, please see page 1455

Oxford Supplement

▶ Listeria Oxford Supplement see p. 2101

Oxidation reagent

Oxidation reagent

for DNA-Synthesis with ABI™ and PolyGen® Synthesizer

Iodine/water/pyridine/tetrahydrofuran-mixture. 0,05 M iodine.

D 0,8 • bp ~65 °C • flp -21 °C

UN No. 1993 • ADR 3 II • WGK 2

Danger

H225-H315-H319-H335-H351-H373-EUH019

2254.1	200 ml	glass	28,50 €
2254.2	450 ml	glass	52,60 €
2254.3	2,5 l	glass	220,40 €
Original pack 4 x 2,5 l			209,38/2,5 l

For further information, please see page 1551

Oxidation-Reagent, Fast

▶ Fast Oxidation reagent see p. 1989

Oxine

▶ 8-Hydroxyquinoline see p. 2059

2-Oxoglutaric acid

▶ α-Ketoglutaric acid see p. 2085

5-((3aS,4S,6aR)-2-oxohexahydro-1*H*-thieno-[3,4-d]imidazol-4-yl)-N-(3,6,9,12-tetraoxapentadec-14-yn-1-yl)pentanamide

▶ Biotin-PEG4-Alkyne see p. 1838

Oxonickel

▶ Nickel(II) oxide see p. 2157

4-Oxopentanoic acid

▶ Levulinic acid see p. 2098

2-Oxopropanoic acid

▶ Pyruvic acid see p. 2247

2-Oxosuccinic acid

▶ Oxalacetic acid see p. 2187

5'-Oxyfisetin

▶ Robinetin see p. 2261

Oxyma Pure

▶ Ethyl(hydroxyimino)cyanoacetate (Oxyma Pure) see p. 1985

PABA

▶ 4-Aminobenzoic acid see p. 1788

PAGE gel solutions

▶ Rotiphorese® Gel solution 30 % see p. 1188
▶ Rotiphorese® Gel solution 40 % see p. 1188

Palatinose®

▶ Isomaltulose see p. 2078

Palcam Agar

▶ Palcam Listeria Agar (Base) see p. 1445

Palcam Listeria Agar (Base)

Palcam Listeria Agar (Base)

ISO 11290-1, for microbiology

Differential medium for detection of *Listeria ssp.*, particularly *L. monocytogenes.*

Application: Use 68,8 g for 1 l agar. After cooling add 2 vials (2x2 ml) reconstituted Listeria Palcam Supplement (Art. No. 5803.1).

Palcam Agar

Storage temp.: +20 °C

WGK 3

Warning H315-H319

Guarantee analysis:

Peptone mixture	23 g/l
Sodium chloride	5 g/l
Starch	1 g/l
Lithium chloride	15 g/l
D-Mannitol	10 g/l
Yeast extract	3 g/l
Esculin	0,8 g/l
Glucose	0,5 g/l
Phenol red	0,08 g/l
Ammonium iron(III) citrate	0,5 g/l
Agar	10 g/l
pH value	7,2 ±0,2

5768.1	500 g	plastic	147,85 €
Original pack 6 x 500 g			140,46/500 g

For further information, please see page 1445

Palcam Supplement

▶ Listeria Palcam Supplement see p. 2101

Palladium powder

Palladium powder

ROTI®METIC 99,999 % (5N)

Pd

M 106,42 g/mol

D 12,02 • bp 2963 °C

mp 1555 °C

[7440-05-3] • EC No. 231-115-6

UN No. 3089 • ADR 4.1 II

Danger H228-H315-H319-H335

Type analysis:

Assay (metals basis) 99,999 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5648.1	1 g	plastic	220,40 €

Palladium Standards

▶ Palladium AAS Standard Solution see p. 2360
▶ Palladium ICP Standard Solution see p. 2364
▶ Palladium ICP Standard Solution see p. 2368

Palladium (10 %) on activated carbon

Palladium (10 %) on activated carbon

10 % Pd/C with approx. 60 % water

Catalyst

Pd/C 10 %

bp 2963 °C

mp 1554 °C

[7440-05-03] • EC No. 231-115-6

Warning H315-H319

Type analysis:

Appearance	black wet powder
Assay (Pd)	≥10 %
Water	50-70 %
Specific surface	900-1300 m^2/g
Mean particle sizing	30,0 µm
Aluminium (Al)	≤0,05 %
Copper (Cu)	≤0,01 %
Iron (Fe)	≤0,01 %
Magnesium (Mg)	≤0,05 %
Manganese (Mn)	≤0,01 %
Tin (Sn)	≤0,05 %

Store under inert gas.

1446.1	1 g	glass	22,05 €
1446.2	2,5 g	glass	44,65 €
1446.3	5 g	glass	78,40 €

Palladium(II) chloride

Palladium(II) chloride

ROTI®METIC 99,999 % (5N)

$PdCl_2$

M 177,31 g/mol

D 4,0

mp 590 °C (subl.)

[7647-10-1] • EC No. 231-596-2

WGK 1

Warning H315-H317-H319

Type analysis:

Assay (metals basis) 99,999 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5653.1	1 g	plastic	134,40 €
5653.2	5 g	plastic	568,70 €

Palladium & Magnesium matrix modifier

▶ Palladium nitrate & Magnesium nitrate matrix modifier solution see p. 2123

Palladium matrix modifier

▶ Matrix modifier solution Palladium nitrate see p. 2123

Palladium monoxide

▶ Palladium(II) oxide see p. 2189

Palladium(II) nitrate dihydrate

Palladium(II) nitrate dihydrate

~40 % Pd

$Pd(NO_3)_2 \cdot 2\ H_2O$

M 266,44 g/mol

[32916-07-7] • EC No. 233-265-8

UN No. 3085 • ADR 5.1 (8) II • WGK 3

Danger

H272-H301-H314-H400-H410

Type analysis:

Palladium (Pd)	39,9-42,0 %
Lead (Pb)	≤0,01 %
Calcium (Ca)	≤0,005 %
Iron (Fe)	≤0,02 %
Gold (Au)	≤0,02 %
Copper (Cu)	≤0,005 %
Magnesium (Mg)	≤0,005 %
Silver (Ag)	≤0,005 %
Silicon (Si)	≤0,005 %

9026.1	1 g	glass	78,40 €
9026.2	10 g	glass	633,20 €

Palladium nitrate & Magnesium nitrate matrix modifier solution

▶ Matrix modifier solution Palladium nitrate & Magnesium nitrate see p. 2123

Palladium(II) oxide

Palladium(II) oxide

ROTI®METIC 99,995 % (4N5)

Palladium monoxide

PdO

M 122,42 g/mol

D 8,3

mp 750 °C (dec.)

[1314-08-5] • EC No. 215-218-3

WGK 1

Warning H315-H319-H335

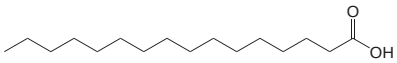
Type analysis:

Assay (metals basis) 99,995 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5393.1	1 g	plastic	166,65 €
5393.2	5 g	plastic	618,15 €

Palmitic acid

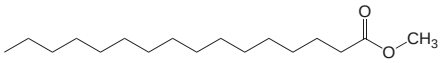


Palmitic acid
≥98 %, extra pure
Hexadecanoic acid
$C_{16}H_{32}O_2$
M 256,43 g/mol
D 0,85 • bp 351 °C
mp 61-63 °C • flp >160 °C
[57-10-3] • EC No. 200-312-9

Type analysis:
Appearance. ..... white fatty tablets
Assay. ..... ≥98,0 %
Iodine value. ..... ≤0,8
Acid value. 217-221
Melting point. ..... 61-63 °C

5907.3	500 g	plastic	21,00 €
Original pack 6 x 500 g			19,95/500 g
5907.1	1 kg	plastic	29,60 €
Original pack 6 x 1 kg			28,12/1 kg
5907.2	5 kg	plastic	103,75 €

Palmitic acid methyl ester



Palmitic acid methyl ester
≥97 %
Methyl palmitate
$C_{17}H_{34}O_2$
M 270,46 g/mol
D 0,85 • bp 185 °C (10 mbar)
flp >113 °C
[112-39-0] • EC No. • 203-966-3WGK 1

Type analysis:
Assay (GC). ..... ≥97 %

4459.1	25 g	glass	19,90 €
4459.2	100 g	glass	35,40 €
4459.3	500 g	glass	97,75 €
Original pack 6 x 500 g			92,86/500 g

PAN
▶ 1-(2-Pyridylazo)-2-naphthol see p. 2245

Panoptical fast staining kit

Panoptical fast staining kit
for microscopy
Staining kit for fast oversight staining of blood smears and other cytological preparations (modified method acc. to Pappenheim), incl. instructions for use.
Pappenheim fast staining
Storage temp.: +20 °C
UN No. 1230 • ADR 3 (6.1) II • WGK 1
Danger
H225-H301+H311+H331-H370

Formulation:
Panoptical fast staining solution 1 (Art. No. 8934)
Panoptical fast staining solution 2 (Art. No. 8935)
Panoptical fast staining solution, fixatif (Art. No. 8939)
Contents of this kit may not be bought separately.

6487.1	1 kit (3 x 250 ml)	plastic	80,10 €
6487.2	1 kit (3 x 500 ml)	plastic	144,60 €

For further information, please see page 1513

D(+)-Pantothenic acid calcium salt
▶ Calcium D(+)-pantothenate see p. 1872

Papain

Papain
>30 000 USP-U/mg, for biochemistry
Made from *Carica papaya.*
Storage temp.: +4 °C
[9001-73-4] • EC No. 232-627-2
WGK 1
Danger H334-H335-H315-H319

Type analysis:
Identity. ..... complies
Activity (casein, pH 6,0, 40 °C). ..... >30 000 USP-U/mg
pH value (2 % in H_2O). 4,8-6,2
Loss on drying. ..... <5 %

8933.1	25 g	plastic	52,15 €
8933.2	100 g	plastic	142,90 €

For further information, please see page 1317

Papanicolaou solution 1
▶ Hematoxylin solution acc. to Harris see p. 2035

Papanicolaou-orange solution 2a (OG 6)

Papanicolaou-orange solution 2a (OG 6)
for microscopy
UN No. 1170 • ADR 3 II • WGK 1
Danger H225

Type analysis:
Suitability for microscopy. ..... complies

T867.1	500 ml	glass	24,20 €
T867.2	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l
T867.3	2,5 l	plastic	75,15 €
Original pack 4 x 2,5 l			71,39/2,5 l

For further information, please see page 1517

Papanicolaou solution 2b Orange II solution

Papanicolaou solution 2b Orange II solution
for microscopy
UN No. 1230 • ADR 3 (6.1) II • WGK 1
Danger
H225-H301+H311+H331-H370-H319

Type analysis:
Suitability for microscopy. ..... complies

AE62.1	500 ml	glass	32,15 €
AE62.2	1 l	glass	42,50 €
Original pack 6 x 1 l			40,38/1 l
AE62.3	2,5 l	plastic	77,30 €
Original pack 4 x 2,5 l			73,44/2,5 l

For further information, please see page 1517

Papanicolaou polychrome solution 3a (EA31)

Papanicolaou polychrome solution 3a (EA31)
for microscopy
UN No. 1230 • ADR 3 (6.1) II • WGK 1
Danger
H225-H301+H311+H331-H370-H319

Type analysis:
Suitability for microscopy. ..... complies

AE63.1	500 ml	glass	26,80 €
AE63.2	1 l	glass	40,35 €
Original pack 6 x 1 l			38,33/1 l
AE63.3	2,5 l	plastic	85,90 €
Original pack 4 x 2,5 l			81,61/2,5 l

For further information, please see page 1517

Papanicolaou polychrome solution 3b (EA 50)

Papanicolaou polychrome solution 3b (EA 50)
for microscopy
UN No. 1230 • ADR 3 (6.1) II • WGK 1
Danger
H225-H301+H311+H331-H370-H319

Type analysis:
Suitability for microscopy. ..... complies

T866.1	500 ml	glass	28,50 €
T866.2	1 l	glass	38,20 €
Original pack 6 x 1 l			36,29/1 l
T866.3	2,5 l	plastic	79,45 €
Original pack 4 x 2,5 l			75,48/2,5 l

For further information, please see page 1517

PAP fast staining kit

PAP fast staining kit
for microscopy
Staining kit for fast staining of cytological smears (fast staining acc. to Papanicolaou), incl. instructions for use.
Storage temp.: +20 °C
UN No. 1987 • ADR 3 II • WGK 2
Danger H225-H302+H312+H332-H319-H370-H373-EUH208

Formulation:
PAP fast staining, solution 1 (Art. No. 9197)
PAP fast staining, solution 2 (Art. No. 9199)
Contents of this kit may not be bought separately.

9195.1	2 x 250 ml	plastic	61,20 €
9195.2	2 x 500 ml	plastic	94,50 €

For further information, please see page 1517

Pappenheim fast staining
▶ Panoptical fast staining kit see p. 2190

PAR
▶ 4-(2'-Pyridylazo)-resorcinol see p. 2246

Paraffin 50-52 °C

Paraffin 50-52 °C
extra pure, for histology
D 0,9 • bp >350 °C
mp 50-52 °C • flp 220 °C
[8002-74-2] • EC No. 232-315-6

Type analysis:
Appearance. ..... pastilles
Solidification point ..... 50-52 °C

CN48.1	500 g	plastic	21,40 €
Original pack 6 x 500 g			20,33/500 g
CN48.2	1 kg	plastic	32,80 €
Original pack 6 x 1 kg			31,16/1 kg

For further information, please see page 1509

Paraffin 52-54 °C

Paraffin 52-54 °C
extra pure, for histology
D 0,9 • bp >300 °C
mp 52-54 °C • flp 220 °C
[8002-74-2] • EC No. 232-315-6

Type analysis:
Appearance. ..... pastilles
Solidification point ..... 52-54 °C

CN49.1	500 g	plastic	21,00 €
Original pack 6 x 500 g			19,95/500 g
CN49.2	1 kg	plastic	33,25 €
Original pack 6 x 1 kg			31,59/1 kg

For further information, please see page 1509

Paraffin 52-54 °C
▶ Granopent® "P" see p. 2029

Paraffin in droplets
▶ Roti®-Plast see p. 2293
▶ Paraplast® see p. 2191

Paraffin oil high viscosity

Paraffin oil high viscosity
Ph.Eur.
D 0,88 • bp ≥375 °C
flp 221 °C
[8042-47-5] • EC No. 232-455-8

Guarantee analysis:
Identity ..... complies
Relative density (20 °C) 0,827-0,890
Dynamic viscosity (20 °C). ..... 110,0-230,0 mPas
Refractive index n_D^{20}. 1,478-1,481
Reaction with H_2SO_4. ..... complies
Acid or alkaline react. substances. ..... complies
Aromatic polycyclic hydrocarbons. ..... complies
Solid paraffins. ..... complies
Conforms in all points to the corresponding pharmacopeia.

8904.1	1 l	plastic	25,70 €
Original pack 6 x 1 l			24,42/1 l
8904.2	10 l	plastic	144,60 €

Paraffin oil low viscosity

Paraffin oil low viscosity
Ph.Eur.
D 0,85 • bp 300 °C
flp 221 °C
[8042-47-5] • EC No. 232-455-8

Danger H304

Guarantee analysis:
Identity ..... complies
Relative density (20 °C) 0,810-0,875
Dynamic viscosity (20 °C). ..... 25,0-80,0 mPas
Refractive index n_D^{20}. 1,462-1,472
Reaction with H_2SO_4. ..... complies
Acid or alkaline react. substances. ..... complies
Aromatic polycyclic hydrocarbons. ..... complies
Solid paraffins. ..... complies
Conforms in all points to the corresponding pharmacopeia.

9190.1	1 l	plastic	25,70 €
Original pack 6 x 1 l			24,42/1 l
9190.2	10 l	plastic	147,85 €

Paraformaldehyde

Paraformaldehyde
extra pure
Fixative
Polyoxymethylene
$(CH_2O)_n$
D ~1,3 • mp ~130 °C • flp ~70 °C
Storage temp.: +4-15 °C
[30525-89-4] • EC No. 200-001-8
UN No. 2213 • ADR 4.1 III • WGK 2
Danger H228-H341-H302+H332-H315-H318-H317-H335-H350

Guarantee analysis:
Assay (acidim.) ..... ≥95,0 %
Ash content (as SO_4) ..... ≤0,1 %
Free carboxylic acid. ..... ≤0,1 %

0335.1	250 g	plastic	15,60 €
0335.2	500 g	plastic	19,25 €
Original pack 6 x 500 g			18,29/500 g
0335.3	1 kg	plastic	24,65 €
Original pack 6 x 1 kg			23,42/1 kg
0335.4	5 kg	plastic	93,45 €

For further information, please see page 1506

Paraloid™ B-72

Paraloid™ B-72
Clear, light-resistant thermoplastic acrylic resin for conserving samples. Also ideal for coating and sealing wood, stone, metals and other materials.
WGK 1

9639.1	1 kg	plastic	63,35 €
Original pack 6 x 1 kg			60,18/1 kg
9639.2	5 kg	plastic	180,10 €

For further information, please see page 1175

Paraplast®

Paraplast®
for histology, in pellets
Tissue embedding medium composed of highly purified paraffin containing complex elastomers with regulated molecular weights.
Melting point: 56 °C
D 0,8 • bp >371 °C
flp 199 °C

Type analysis:
Appearance. ..... pellets
Melting point. ..... 56 °C

X880.1	1 kg	paper bag	17,75 €
Original pack 6 x 1 kg			16,86/1 kg
X880.3	3 x 1 kg	paper bag	48,30 €
X880.2	8 x 1 kg	paper bag	117,20 €

For further information, please see page 1509

Paraplast PLUS®

Paraplast PLUS®
for histology, in pellets
Tissue embedding medium composed of highly purified paraffin containing complex elastomers with regulated molecular weights and an addition of DMSO for large and difficult-to-infiltrate tissue samples.
Melting point: 56 °C
D 0,8 • bp 316 °C
flp 199 °C

Type analysis:
Appearance. ..... pellets
Melting point. ..... 56 °C

X881.1	1 kg	paper bag	20,35 €
X881.3	3 x 1 kg	paper bag	57,95 €
X881.2	8 x 1 kg	paper bag	123,10 €

For further information, please see page 2192

Paraplast X-TRA®

Paraplast X-TRA®

for histology, in pellets

Tissue embedding medium composed of polymers with low molecular weights and highly purified paraffin for large and difficult-to-infiltrate tissue samples at low temperatures.
Melting point: 52 °C
flp 204 °C

Type analysis:
Appearance. ..... pellets
Melting point. ..... 52 °C

X882.1	1 kg	paper bag	23,15 €
X882.2	8 x 1 kg	paper bag	160,20 €

For further information, please see page 1509

Paratoluolsulphonic acid

▶ p-Toluenesulphonic acid monohydrate see p. 2412

Parietin

▶ Physcion see p. 2212

PAR monosodium salt

▶ 4-(2'-Pyridylazo)-resorcinol monosodium salt see p. 2246

PAS staining kit

PAS staining kit

for microscopy

Staining kit for Periodic Acid Schiff (PAS) staining, incl. instructions for use.
Storage temp.: +4 °C
WGK 1

Danger H302-H315-H319-H350

Formulation:
Periodic acid solution 1 % (Art. No. HP00)..... 500 ml
Schiff´s reagent (Art. No. X900)..... 500 ml
Hemalum solution acid acc. to Mayer (Art. No. T865)..... 500 ml

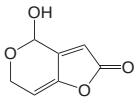
HP01.1	1 kit	glass	85,90 €

For further information, please see page 1516

Patton and Reeder's Reagent

▶ Calconcarboxylic acid see p. 1873

Patulin



Patulin

≥98 %
Claviformin
$C_7H_6O_4$
M 154,13 g/mol
mp 110-111 °C
Storage temp.: +4 °C
[149-29-1] • EC No. 205-735-2
UN No. 2811 • ADR 6.1 II • WGK 2

Danger H300+H310+H330-H351

Type analysis:
Appearance..... white powder
Assay (TLC). ..... ≥98 %

6970.2	5 mg	plastic	478,40 €

PBS

▶ Roti®-CELL PBS see p. 2270

PBS powder

▶ Roti®-PreMix PBS see p. 2295

PBS powder (pouch)

▶ Roti®fair PBS 7.4 see p. 2276
▶ Roti®fair 10x PBS 7.4 see p. 2277

10 x PBS ready-to-use solution

▶ Roti®-Stock 10x PBS see p. 2298

PBS (tablet)

▶ Roti®fair PBS 7.2 see p. 2276
▶ Roti®fair PBS 7.4 see p. 2276
▶ Roti®fair PBS potassium-free 7.4 see p. 2277

10 x PBST ready-to-use solution

▶ Roti®-Stock 10x PBST see p. 2298

PBST powder

▶ Roti®-PreMix PBST see p. 2295

PBST (tablet)

▶ Roti®fair PBST 7.4 see p. 2277

PCA

▶ Plate Count Agar see p. 2215
▶ Plate Count Agar, granulated see p. 2215

Pd/C 10 %

▶ Palladium (10 %) on activated carbon see p. 2189

$Pd(PPh_3)_4$

▶ Tetrakis(triphenylphosphine)palladium(0) see p. 2401

Peanut oil

Peanut oil

refined
D 0,91
[8002-03-7] • EC No. 232-296-4

Type analysis:
Refractive index n_D^{20}..... 1,468-1,472

9332.2	500 ml	glass	17,75 €
9332.1	1 l	glass	26,80 €
Original pack 6 x 1 l			25,46/1 l
9332.3	2,5 l	glass	45,70 €
Original pack 4 x 2,5 l			43,42/2,5 l

Pectin A

Pectin A

for biochemistry, natural
From apples.
Dry extract, Apple pectin extract
[9000-69-5] • EC No. 232-553-0

Type analysis:
Appearance. ..... red-brown flakes/needles
Odour..... fruity, light sour
Content (pectin). ..... ≥20 %
Solubility. ..... colloidal solution in water
Loss on drying (105 °C, 2 h)..... ≤10 %
Sulphur dioxide (SO_2). ..... ≤500 mg/kg

4510.1	1 kg	plastic	71,50 €
Original pack 6 x 1 kg			67,93/1 kg
4510.2	5 kg	cardboard	279,00 €

Pectin C

Pectin C

for biochemistry
From citrus fruits.
Degree of esterification ~70 %
[9000-69-5]

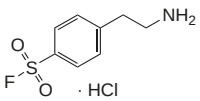
Type analysis:
Appearance. ..... powder, coloured like ivory
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %
Water content. ..... ≤12 %
Degree of esterification. ..... ≥69 %
pH value 2,5-3,5

8911.1	100 g	plastic	19,90 €
8911.2	1 kg	plastic	126,35 €
Original pack 6 x 1 kg			120,03/1 kg

Pectinose

▶ L(+)-Arabinose see p. 1813

Pefabloc® SC-Protease Inhibitor



Pefabloc® SC-Protease Inhibitor

≥95 %, for biochemistry
Irreversible inhibitor of serine proteases.
4-(2-Aminoethyl)-benzylsulphonyl fluoride hydrochloride
$C_8H_{10}NSO_2F \cdot HCl$
M 239,7 g/mol
mp 175-177 °C
Solubility: 10 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[30827-99-7]
UN No. 3261 • ADR 8 III • WGK 3
Danger H314

Type analysis:
Assay (HPLC).....≥95 %

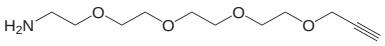
A154.1	100 mg	glass	70,85 €
A154.2	500 mg	glass	295,65 €
A154.3	1 g	glass	521,40 €

For further information, please see page 1327

PEG

▶ Polyethylene glycol see p. 2217

H_2N-PEG4-Alkyne



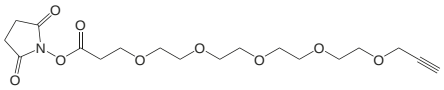
H_2N-PEG4-Alkyne

≥90 %
Linker
3,6,9,12-Tetraoxapentadec-14-yn-1-amine
$C_{11}H_{21}NO_4$
M 231,29 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[1013921-36-2]
WGK 3

Type analysis:
Appearance.....slightly orange oil (RT), grey solid (-20 °C)
Assay (NMR).....≥90 %
Solubility.....DMSO, DMF, CH_2Cl_2, $CHCl_3$, THF, H_2O

7840.1	5 mg	plastic	69,80 €
7840.2	10 mg	plastic	123,55 €

NHS-PEG5-Alkyne



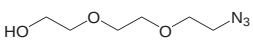
NHS-PEG5-Alkyne

≥95 %
Linker
2,5-Dioxopyrrolidin-1-yl-4,7,10,13,16-pentaoxanonadec-18-ynoate
$C_{18}H_{27}NO_9$
M 401,41 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
WGK 3

Type analysis:
Appearance.....slightly orange oil
Assay (NMR).....≥95 %
Solubility.....DMSO, DMF, CH_2Cl_2, $CHCl_3$, THF, H_2O

7838.1	5 mg	plastic	69,80 €
7838.2	10 mg	plastic	123,55 €

HO-PEG2-Azide



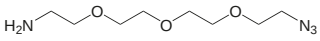
HO-PEG2-Azide

≥90 %
Linker
2-[2-(2-Azidoethoxy)ethoxy]ethanol
$C_6H_{13}N_3O_3$
M 175,19 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[86520-52-7]
WGK 3

Type analysis:
Appearance.....yellowish liquid
Assay (NMR).....≥90 %

7828.1	5 mg	plastic	43,55 €
7828.2	10 mg	plastic	69,80 €

H_2N-PEG3-Azide



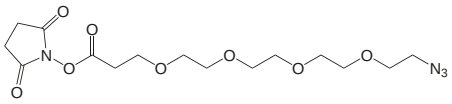
H_2N-PEG3-Azide

≥90 %
Linker
11-Azido-3,6,9-trioxaundecan-1-amine
$C_8H_{18}N_4O_3$ • M 218,25 g/mol
Storage temp.: +4 °C
Transport temp.: cooled
[134179-38-7]
UN No. 2735 • ADR 8 III • WGK 3
Danger H314

Type analysis:
Appearance.....colourless liquid
Assay (GC).....≥90 %

7830.1	5 mg	plastic	43,55 €
7830.2	10 mg	plastic	69,80 €

NHS-PEG4-Azide



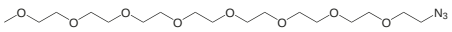
NHS-PEG4-Azide

≥90 %
Linker
15-Azido-4,7,10,13-tetraoxapentadecanoic acid succinimidyl ester
$C_{15}H_{24}N_4O_8$
M 388,37 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[944251-24-5]
WGK 3

Type analysis:
Appearance.....colourless viscous liquid
Assay (NMR).....≥90 %
Solubility.....DMSO, DMF, CH_2Cl_2

7823.1	5 mg	plastic	66,55 €
7823.2	10 mg	plastic	96,65 €
7823.3	50 mg	plastic	332,75 €
7823.4	100 mg	plastic	633,20 €

PEG8-Azide



PEG8-Azide

≥90 %
O-(2-Azidoethyl)-*O'*-methylheptaethylene glycole
$C_{17}H_{35}N_3O_8$
Storage temp.: -20 °C
Transport temp.: cooled
[869718-80-9]
WGK 3

Type analysis:
Appearance.....colourless viscous liquid
Assay (HPLC).....≥90 %

7826.1	5 mg	plastic	64,40 €
7826.2	10 mg	plastic	95,60 €

H_2N-PEG8-Azide

H_2N-PEG8-Azide

≥90 %

Linker

26-Azido-3,6,9,12,15,18,21,24-octaoxa-hexacosan-1-amine

$C_{18}H_{38}N_4O_8$ • M 438,52 g/mol

Storage temp.: +4 °C

Transport temp.: cooled

[857891-82-8] • WGK 3

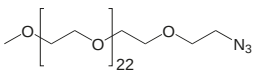
Type analysis:

Appearance. ..... yellowish liquid

Assay ..... ≥90 %

7829.1	5 mg	plastic	43,55 €
7829.2	10 mg	plastic	69,80 €

PEG24-Azide



PEG24-Azide

≥90 %

73-Azido-2,5,8,11,14,17,20,23,26,29,32,35,-38,41,44,47,50,53,56,59,62,65,68,71-tetracosaoxatriheptacontane

$C_{49}H_{99}N_3O_{24}$ • M 1114,32 g/mol

Storage temp.: -20 °C

Transport temp.: cooled

[89485-61-0] • WGK 3

Type analysis:

Appearance. ..... white solid

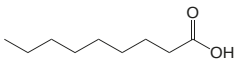
Assay (HPLC). ..... ≥90 %

7825.1	5 mg	plastic	64,40 €
7825.2	10 mg	plastic	95,60 €

Pelarginadon

▶ Naringenin see p. 2153

Pelargonic acid



Pelargonic acid

≥97 %

Nonanoic acid

$C_9H_{18}O_2$ • M 158,24 g/mol

D 0,90 • bp 254 °C

mp 12 °C • flp 133 °C

Solubility: 0,3 g/l (H_2O, 25 °C)

[112-05-0] • EC No. 203-931-2

UN No. 3265 • ADR 8 III • WGK 1

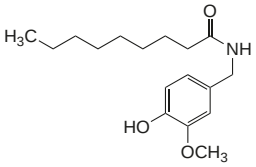
Danger H314

Type analysis:

Assay (GC). ..... ≥97,0 %

7015.1	50 ml	glass	35,40 €

Pelargonic acid vanillylamide



Pelargonic acid vanillylamide

≥97 %

Nonylvanylamide, Nonivamide, so called synth. Capsaicin

$C_{17}H_{27}NO_3$

M 293,41 g/mol

mp 52-56°C

[2444-46-4] • EC No. 219-484-1 • WGK 2

Warning H315-H319-H317-H335

Type analysis:

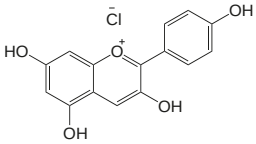
Assay (HPLC). ..... ≥97 %

Loss on drying. ..... ≤1,0 %

Heavy metals ..... ≤0,0005 %

4462.1	10 g	glass	34,30 €
4462.2	50 g	glass	132,15 €

Pelargonidin chloride



$C_{15}H_{11}O_5Cl$

M 306,70 g/mol

mp ~350 °C

Storage temp.: +4 °C

[134-04-3] • EC No. 205-127-7

Pelargonidin chloride

ROTICHROM® HPLC

Reference substance for HPLC.

Type analysis:

Purity (HPLC). ..... ≥99 %

4541.1	10 mg	glass	317,15 €

Pelargonidin chloride

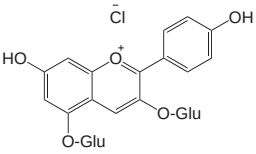
ROTICHROM® ~CHR

6853.1	25 mg	glass	95,70 €

Pelargonidin chloride 3-glucoside

▶ Callistephin (chloride) see p. 1873

Pelargonidin 3,5-diglucoside chloride



Pelargonidin 3,5-diglucoside chloride

ROTICHROM® HPLC

Reference substance for HPLC.

From *Pelargonium zonale*

Pelargonin chloride, Salvinin

$C_{27}H_{31}O_{15}Cl$

M 630,97 g/mol

Storage temp.: -20 °C

Transport temp.: room temp.

[17334-58-6]

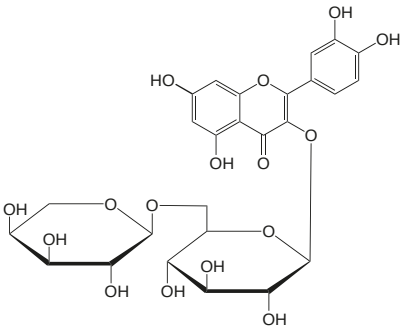
WGK 1

Type analysis:

Purity (HPLC). ..... ≥97 %

1646.1	5 mg	glass	284,90 €

Peltatoside



Peltatoside

ROTICHROM® HPLC

Reference substance for HPLC.

Quercetin-3-arabinoglucoside

$C_{26}H_{28}O_{16}$

M 596,50 g/mol

mp 202 °C

Storage temp.: +4 °C

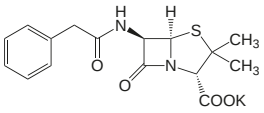
[23284-18-6] • EC No. 245-555-1

Type analysis:

Purity (HPLC). ..... ≥99 %

7406.1	10 mg	glass	321,45 €

Penicillin G potassium salt



Benzylpenicillin potassium salt
$C_{16}H_{17}KN_2O_4S$
M 372,48 g/mol • mp ~215 °C
Storage temp.: +4 °C
[113-98-4] • EC No. 204-038-0 • WGK 1

Danger H334-H317

Penicillin G potassium salt

CELLPURE® ≥1550 U/mg

β-Lactam antibiotic.
For cell culture and biochemistry.

Type analysis:

Endotoxins. ≤0,25 I.U./mg
Activity. ≥1550 U/mg
Assay. 96,0-101,0 %
pH value. 5,5-7,5
Specific rotation $[\alpha]_D^{20}$. +270° to +300°
Loss on drying. ≤1,0 %

HP49.1	1 g	plastic	20,35 €
HP49.2	10 g	plastic	38,60 €
HP49.3	25 g	plastic	76,25 €

For further information, please see page 1506

Penicillin G potassium salt

~1600 U/mg, for biochemistry

β-Lactam antibiotic

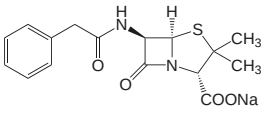
Type analysis:

Activity. ~1600 U/mg
Assay. 96,0-101,0 %
pH value. 5,0-7,5
Loss on drying. ≤1,0 %

CN29.1	10 g	plastic	20,35 €
CN29.2	25 g	plastic	31,10 €
CN29.3	100 g	plastic	83,35 €

For further information, please see page 1506

Penicillin G sodium salt



Benzylpenicillin sodium salt
$C_{16}H_{17}N_2NaO_4S$
M 356,37 g/mol
mp ~215 °C
Storage temp.: +4 °C
[69-57-8] • EC No. 200-710-2
WGK 1

Danger H334-H317

Penicillin G sodium salt

CELLPURE® ≥1550 U/mg

β-Lactam antibiotic.
For cell culture and biochemistry.

Type analysis:

Endotoxins. ≤0,25 I.U./mg
Activity. ≥1550 U/mg
Assay. 96,0-101,0 %
pH value. 5,5-7,5
Loss on drying. ≤1,0 %

HP48.1	1 g	plastic	16,70 €
HP48.2	10 g	plastic	34,30 €
HP48.3	25 g	plastic	68,30 €

For further information, please see page 1506

Penicillin G sodium salt

≥96 %, for biochemistry

β-Lactam antibiotic

Type analysis:

Assay. 96,0-102,0 %
pH value. 5,5-7,5
Specific rotation $[\alpha]_D^{20}$. +285° to +310°
Loss on drying. ≤1,0 %

CN28.1	10 g	plastic	18,20 €
CN28.2	25 g	plastic	30,65 €
CN28.3	100 g	plastic	87,00 €

For further information, please see page 1506

Pen/Strep-PreMix

Pen/Strep-PreMix

CELLPURE®

For elimination and prevention of bacterial contamination in cell culture.
Storage temp.: +4 °C
WGK 2

Danger H334-H302-H361d-H317

Guarantee analysis:

Penicillin G sodium salt. 312,5 mg/vial
Streptomycin. 0,5 g/vial
Sodium chloride. 0,45 g/vial
Endotoxins. ≤210 I.U./vial
pH value (stock solution in water). 5,5 ±0,2

HP10.1	powder mix for 100 ml	plastic	63,35 €

For further information, please see page 1506

Pentaerythritol

Pentaerythritol

≥98 %, for synthesis

2,2-Bis(hydroxymethyl)-1,3-propanediol
$C_5H_{12}O_4$
M 136,15 g/mol
D 1,39 • bp 276 °C (30 mbar)
mp 255-261 °C • flp 150 °C
Solubility: 72 g/l (H_2O, 25 °C)
[115-77-5] • EC No. 204-104-9 • WGK 1

Type analysis:

Assay. ≥98 %
Melting range. 255-261 °C

7522.2	100 g	plastic	18,20 €
7522.1	500 g	plastic	55,80 €
Original pack 6 x 500 g			53,01/500 g

trans-3,3',4',5,7-Pentahydroxyflavan

▶ DL-Catechin hydrate see p. 1883

2',3,4',5,7-Pentahydroxyflavone

▶ Morin hydrate see p. 2148

3',4',5,6,7-Pentamethoxyflavone

▶ Sinensetin see p. 2329

1-Pentanal

▶ n-Valeraldehyde see p. 2432

iso-Pentane

▶ 2-Methylbutane see p. 2136

n-Pentane

1,3-Dimethylpropane, Diethylmethane
C_5H_{12}
M 72,15 g/mol
D 0,63 • bp ~36 °C
mp -129,7 °C • flp -48 °C
[109-66-0] • EC No. 203-692-4
UN No. 1265 • ADR 3 II • WGK 2

Danger
H225-H304-H336-H411-EUH066

n-Pentane

ROTISOLV® HPLC

Guarantee analysis:

Assay (GC). ≥99 %
Water (KF). ≤0,005 %
Free acid (as CH_3COOH). ≤0,002 %
Non volatile matter. ≤0,0003 %
Transmission:
270 nm. ≥99 %
220 nm. ≥90 %
200 nm. ≥40 %
Filtered through 0,2 µm membrane and filled under protective gas.

CN99.1	1 l	glass	66,15 €
Original pack 6 x 1 l			62,84/1 l
CN99.2	2,5 l	glass	139,65 €
Original pack 4 x 2,5 l			132,67/2,5 l

For further information, please see page 1650

n-Pentane

ROTISOLV® ≥99 %, GC Ultra Grade

For gaschromatographic residue analysis.

Guarantee analysis:

Assay (GC). ≥99 %
Colour (APHA). ≤5
Water (KF). ≤0,005 %
Free acid (as CH_3COOH). ≤0,005 %
Evaporation residue. ≤0,0001 %
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤3 ng/l
GC/NPD pesticides (as parathion). ≤5 ng/l
PAH-test (less than 2 ppb, HPLC). complies
Filtered through 0,2 µm membrane and filled under protective gas.

KK45.1	2,5 l	glass	209,10 €
Original pack 4 x 2,5 l			198,65/2,5 l

n-Pentane

ROTISOLV® ≥99 %, Pestilyse® plus

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:

Assay (GC)	≥99,0 %
Colour (APHA)	≤5
Water (KF)	≤0,005 %
Free acid (as CH_3COOH)	≤0,002 %
Evaporation residue	≤0,0001 %
GC/FID suitability (as 2-octanol)	≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide)	≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane)	≤5 ng/l
GC/ECD pesticides (as lindane)	≤5 ng/l
GC/NPD pesticides (as parathion)	≤5 ng/l
Oil index (any hydrocarbon C_{10}-C_{40})	≤0,05 mg/l
GC/ECD volatile impurities (as ethylene dibromide)	≤5 ng/ml
Fluorescence (as quinine):	
254 nm	≤1 ppb
365 nm	≤1 ppb

7587.1	2,5 l	glass	122,45 €
Original pack 4 x 2,5 l			116,33/2,5 l

n-Pentane

ROTISOLV® ≥99 %, Pestilyse®

For residue and environmental analysis.

Guarantee analysis:

Assay (GC)	≥99 %
Water (KF)	≤0,01 %
Acidity	≤0,0005 meq/g
Evaporation residue	≤0,0005 %
GC/ECD (individual signal as lindane)	≤5 ng/l
GC/PND (individual signal as ethylparathion)	≤10 ng/l

T903.2	1 l	glass	53,25 €
Original pack 6 x 1 l			50,59/1 l
T903.1	2,5 l	glass	104,85 €
Original pack 4 x 2,5 l			99,61/2,5 l

n-Pentane

ROTISOLV® ≥99 %, UV/IR-Grade

For chromatography and spectroscopy.

Guarantee analysis:

Assay (GC)	≥99 %
Water (KF)	≤0,01 %
Acidity	≤0,0005 meq/g
Evaporation residue	≤0,0005 %
Transmission:	
240 nm	≥98 %
230 nm	≥95 %
220 nm	≥85 %
210 nm	≥60 %
200 nm	≥20 %

4443.1	2,5 l	glass	111,70 €
Original pack 4 x 2,5 l			106,12/2,5 l

n-Pentane

ROTIPURAN® ≥99 %, p.a.

Guarantee analysis:

Assay (GC)	≥99,0 %
Water (KF)	≤0,01 %
Sulphur (as S)	≤0,005 %
Evaporation residue	≤0,001 %
Aluminium (Al)	≤0,00005 %
Barium (Ba)	≤0,00001 %
Boron (B)	≤0,000002 %
Lead (Pb)	≤0,00001 %
Cadmium (Cd)	≤0,000005 %
Calcium (Ca)	≤0,00005 %
Iron (Fe)	≤0,00001 %
Chromium (Cr)	≤0,000002 %
Cobalt (Co)	≤0,000002 %
Copper (Cu)	≤0,000002 %
Magnesium (Mg)	≤0,00001 %
Manganese (Mn)	≤0,000002 %
Nickel (Ni)	≤0,000002 %
Zinc (Zn)	≤0,00001 %
Tin (Sn)	≤0,00001 %

4978.1	1 l	glass	51,10 €
Original pack 6 x 1 l			48,55/1 l
4978.2	2,5 l	glass	106,35 €
Original pack 4 x 2,5 l			101,03/2,5 l

n-Pentane

≥99 %, for synthesis

Type analysis:

Assay (GC)	≥99,0 %
Density (15 °C)	0,629-0,633
Aromatic compounds (GC)	≤0,001 %
Evaporation residue	≤0,001 %

8720.1	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
8720.3	2,5 l	glass	74,10 €
Original pack 4 x 2,5 l			70,40/2,5 l
8720.4	5 l	aluminium	131,70 €
Original pack 2 x 5 l			125,12/5 l
8720.2	10 l	tinplate	246,20 €
8720.5	25 l	tinplate	547,20 €

n-Pentane

≥95 %, extra pure

Type analysis:

Assay (GC)	≥95,0 %
Density (15 °C)	0,6250-0,6380
Isopentane	≤3,0 %
Cyclopentane	≤1,0 %
2,2-Dimethylbutane	≤1,0 %
n-Hexane	≤0,4 %
Benzene	≤0,002 %
Total sulphur	≤0,0001 %

3747.1	1 l	glass	24,20 €
Original pack 6 x 1 l			22,99/1 l
3747.3	2,5 l	glass	42,90 €
Original pack 4 x 2,5 l			40,76/2,5 l
3747.2	10 l	tinplate	99,90 €
3747.4	25 l	tinplate	196,65 €

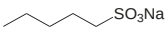
Pentanedial

▶ Glutaraldehyde 50 % see p. 2023

Pentane-2,4-dione

▶ Acetyl acetone see p. 1765

Pentane-1-sulphonic acid sodium salt



Pentane-1-sulphonic acid sodium salt

≥98 %, for ion pair chromatography

Ion pair reagent for HPLC.
Sodium-1-pentane sulphonate
$C_5H_{11}NaO_3S$
M 174,20 g/mol
[22767-49-3] • EC No. 245-208-4
WGK 3

Guarantee analysis:

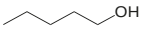
Assay (acidim.)	≥98,0 %
Water	≤2 %
Absorption:	
A 200 nm (0,25 M in water)	≤0,1 AU
A 210 nm (0,25 M in water)	≤0,05 AU
A 220 nm (0,25 M in water)	≤0,04 AU
A 230 nm (0,25 M in water)	≤0,03 AU
A 240 nm (0,25 M in water)	≤0,01 AU
A 250 nm (0,25 M in water)	≤0,01 AU
A 260 nm (0,25 M in water)	≤0,01 AU

KK56.1	10 g	glass	47,20 €
KK56.2	25 g	glass	91,30 €
KK56.3	100 g	glass	272,55 €

Pentanoic acid

▶ n-Valeric acid see p. 2432

1-Pentanol



n-Amyl alcohol, 1-Pentyl alcohol, n-Butyl carbinol
$C_5H_{12}O$
M 88,15 g/mol
D 0,81 • bp 137,8 °C
mp -78,5 °C • flp 43 °C
Solubility: 22 g/l (H_2O, 20 °C)
[71-41-0] • EC No. 200-752-1
UN No. 1105 • ADR 3 III • WGK 1

Warning H226-H332-H315-H335

1-Pentanol

~98 %, for synthesis

Type analysis:

Assay (GC)	~98 %
Density (20 °C)	0,810-0,830
Refractive index n_D^{20}	1,4090-1,4120

8949.2	500 ml	glass	26,35 €
8949.1	1 l	glass	43,55 €
Original pack 6 x 1 l			41,37/1 l

3-Pentanone

▶ Diethylketone see p. 1939

4-Pentenylglucosinolate potassium salt

▶ Glucobrassicanapin see p. 2018

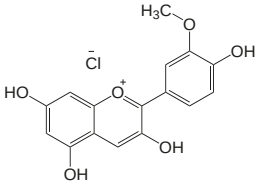
Pentetic acid

▶ Diethylene triamine pentaacetic acid
see p. 1938

1-Pentyl alcohol

▶ 1-Pentanol see p. 2196

Peonidin chloride



Peonidin chloride

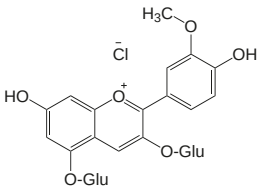
ROTICHROM® HPLC

Reference substance for HPLC.
$C_{16}H_{13}O_6Cl$
M 336,71 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[134-01-0] • EC No. 205-125-6

Type analysis:
Purity (HPLC)..... ≥98,5 %

4540.1	5 mg	glass	310,70 €

Peonidin 3,5-diglucoside chloride



Peonidin 3,5-diglucoside chloride

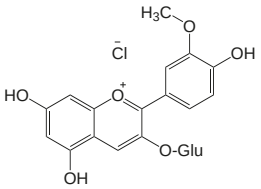
ROTICHROM® HPLC

Reference substance for HPLC.
From *Rosa Centifolia.*
Peonine
$C_{28}H_{33}O_{16}Cl$
M 661,01 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.
[132-37-6]
WGK 1

Type analysis:
Purity (HPLC)..... ≥96 %

1413.1	10 mg	glass	424,65 €

Peonidin 3-glucoside chloride



Peonidin 3-glucoside chloride

ROTICHROM® HPLC

Reference substance for HPLC.
From *Vitis vinifera*
$C_{22}H_{23}O_{11}Cl$
M 498,85 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[6906-39-4]
WGK 1

Type analysis:
Purity (HPLC). ..... ≥97 %

1619.1	5 mg	glass	299,95 €

Peonine

▶ Peonidin 3,5-diglucoside chloride
see p. 2197

PEP-3 Na

▶ Phosphoenolpyruvic acid, trisodium salt heptahydrate see p. 2209

Pepsin

M 35000 g/mol
Storage temp.: +4 °C
[9001-75-6] • EC No. 232-629-3
WGK 1

Danger H334-H335-H315-H319

Pepsin

≥2000 FIP-U/g, for biochemistry

From porcine gastric mucosa.
For detection of trichina in meat.

Guarantee analysis:
Appearance..... white to cream-coloured, ... cryst. or amorphous powder
Specific activity..... ≥2000 FIP-U/g
pH value (1 % in H_2O). 3,0-5,0
Loss on drying. ..... ≤5,0 %

KK38.1	50 g	plastic	59,05 €
KK38.2	100 g	plastic	94,50 €
KK38.3	250 g	plastic	193,00 €
KK38.4	1 kg	plastic	697,70 €
Original pack 6 x 1 kg			662,82/1 kg

For further information, please see page 1318

Pepsin

≥0,5 Ph.Eur.-U/mg, for biochemistry

Isolated from pigs stomach.

Type analysis:
Assay. ..... ≥0,5 Ph.Eur.-E/mg
Identity. ..... complies
Loss on drying. ..... <5,0 %

0230.1	25 g	glass	26,35 €
0230.2	50 g	glass	42,50 €

Pepstatin A

Pepstatin A

≥98 %, for biochemistry

Inhibitor of acidic/aspartic proteases
Iva-Val-Val-Sta-Ala-Sta
$C_{34}H_{63}N_5O_9$
M 685,91 g/mol
mp 233 °C (dec.)
Storage temp.: -20 °C
Transport temp.: room temp.
[26305-03-3] • EC No. 247-600-0
WGK 1

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Specific rotation $[\alpha]_D^{20}$ (c=0,5 in methanol). ..... -97° to -89°

2936.1	5 mg	plastic	31,10 €
2936.2	25 mg	plastic	91,95 €
2936.3	100 mg	plastic	289,20 €

For further information, please see page 1327

Peptide Synthesis, reagents for

▶ Reagents for Peptide Synthesis see p. 2254

Peptone ex casein

Peptone ex casein

tryptic digest, for microbiology

Solubility: 800 g/l (H_2O, 20 °C)
Storage temp.: +20 °C
[91079-40-2] • EC No. 293-428-4
WGK 1

Type analysis:
Total nitrogen. ..... ≥12,5 %
Amino nitrogen. ..... ≥3,0 %
Loss on drying. ..... ≤6 %
Ash. ..... ≤16 %
pH value 6,5-7,5

8986.1	500 g	plastic	80,10 €
Original pack 6 x 500 g			76,10/500 g
8986.2	1 kg	plastic	142,45 €
Original pack 6 x 1 kg			135,33/1 kg
8986.3	2,5 kg	plastic	314,45 €
8986.4	5 kg	plastic	547,20 €

For further information, please see page 1494

Peptone ex casein, pancreatic digest

▶ Tryptone/Peptone ex casein see p. 2424

Peptone ex gelatin

Peptone ex gelatin

pancreatic digest, for microbiology

Solubility: 550 g/l (H_2O, 20 °C)
Storage temp.: +20 °C
[91079-43-5] • EC No. 293-431-0
WGK 1

Type analysis:

Total nitrogen. ≥10 %
Amino nitrogen. ≥2,7 %
Loss on drying. ≤6 %
Ash. ≤15 %
pH value (2 % solution). 7,0 ±0,5

HP99.1	500 g	plastic	71,95 €
Original pack 6 x 500 g			68,35/500 g

For further information, please see page 1493

Peptone ex meat

Peptone ex meat

peptic digest, for microbiology

Solubility: 1500 g/l (H_2O, 20 °C)
Storage temp.: +20 °C
[91079-38-8] • EC No. 293-426-3
WGK 3

Type analysis:

Total nitrogen. ≥12,0 %
Amino nitrogen. 2,0-3,1 %
Loss on drying. ≤5 %
Ash. ≤20 %
pH value 6,5-7,5
Solubility (2 % solution) clear

2366.1	250 g	plastic	57,55 €
2366.3	500 g	plastic	106,35 €
Original pack 6 x 500 g			101,03/500 g
2366.2	1 kg	plastic	198,90 €
Original pack 6 x 1 kg			188,96/1 kg
2366.4	2,5 kg	plastic	392,40 €

For further information, please see page 1494

Peptone ex pea

Peptone ex pea

for microbiology

Storage temp.: +20 °C
WGK 1

Type analysis:

Total nitrogen. ≥12 %
Amino nitrogen. ≥3,8 %
Loss on drying. ≤6 %
Ash. ≤16 %
pH value (5 % solution). 6,7-7,7

2122.1	250 g	plastic	66,15 €
2122.2	500 g	plastic	121,40 €
Original pack 6 x 500 g			115,33/500 g

For further information, please see page 1495

Peptone ex soya

Solubility: 2200 g/l (H_2O, 20 °C)
Storage temp.: +20 °C
[91079-46-8] • EC No. 293-434-7
WGK 1

Peptone ex soya (animal-free/ GMO-free)

animal-free and GMO-free, papainic digest, for microbiology

Type analysis:

Total nitrogen. ≥7 %
Amino nitrogen. ≥2,2 %
Loss on drying. ≤6 %
Animal-free. complies
GMO-free. complies
pH value (5 % solution). 6,5-7,5

2832.1	250 g	plastic	57,55 €
2832.2	500 g	plastic	94,10 €
Original pack 6 x 500 g			89,40/500 g
2832.3	1 kg	plastic	170,95 €
Original pack 6 x 1 kg			162,40/1 kg

For further information, please see page 1495

Peptone ex soya

papainic digest, for microbiology

Type analysis:

Total nitrogen. ≥9,0 %
Amino nitrogen. ≥2,5 %
Loss on drying. ≤6 %
Ash. ≤21,0 %
pH value (5 % solution). 6,5-7,5

2365.1	250 g	plastic	39,70 €
2365.3	500 g	plastic	66,55 €
Original pack 6 x 500 g			63,22/500 g
2365.2	1 kg	plastic	128,50 €
Original pack 6 x 1 kg			122,08/1 kg
2365.4	2,5 kg	plastic	239,20 €

For further information, please see page 1494

Peptone Water, buffered

Storage temp.: +20 °C
WGK 1

Peptone Water, buffered

Ph.Eur., for microbiology

For dilution and homogenisation of samples during microbiological analysis of food. Sodium peptone buffer solution (Ph.Eur. 6.0), Buffered Sodium Chloride-Peptone Solution (Ph.Eur. 6.3, 7.0, 8.0 and 9.0) .

Application: Use 16,1 g for 1 l broth.

Guarantee analysis:

Potassium hydrogen phosphate*. 3,6 g/l
di-Sodium hydrogen phosphate dihydrate*. 7,2 g/l
Sodium chloride (NaCl). 4,3 g/l
Casein peptone (Pancreas hydrolysate). 1,0 g/l
pH value. 7,0 ±0,2
*equivalent to 0,067 M phosphate

AE67.1	500 g	plastic	66,15 €
Original pack 6 x 500 g			62,84/500 g
AE67.2	1 kg	plastic	112,90 €
Original pack 6 x 1 kg			107,26/1 kg

For further information, please see page 1458

Peptone Water, buffered

EN ISO 6887, EN ISO 6579, ISO 22964, EN ISO 19250, for microbiology

Diluent for homogenisation of food samples and for sample preparation for microbiological analysis.

Application: Use 20 g for 1 l broth.

Guarantee analysis:

Pancreatic digest of casein. 10 g/l
Sodium chloride (NaCl). 5 g/l
Disodium phosphate. 3,5 g/l
Potassium phosphate. 1,5 g/l
pH value. 7,0 ±0,2

X917.1	500 g	plastic	56,45 €
Original pack 6 x 500 g			53,63/500 g
X917.2	1 kg	plastic	101,60 €
Original pack 6 x 1 kg			96,52/1 kg
X917.3	2,5 kg	plastic	207,40 €

For further information, please see page 1458

Peptone water, buffered, granulated

granulated, EN ISO 6887, EN ISO 6579, ISO 22964, EN ISO 19250, for microbiology

Diluent for homogenisation of food samples and for sample preparation for microbiological analysis.

Application: Use 20 g for 1 l broth.

Guarantee analysis:

Pancreatic digest of casein. 10 g/l
Sodium chloride (NaCl). 5 g/l
Disodium phosphate. 3,5 g/l
Potassium phosphate. 1,5 g/l
pH value. 7,0 ±0,2
Granulation. complies

6680.1	500 g	plastic	84,40 €
Original pack 6 x 500 g			80,18/500 g
6680.2	1 kg	plastic	149,45 €
Original pack 6 x 1 kg			141,98/1 kg

For further information, please see page 1456

Perchlorate Standards

▶ Perchlorate IC Standard Solution see p. 2376

Perchloric acid Ultra-quality

Perchloric acid Ultra-quality

ROTIPURAN® Ultra 70 %

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis. The quality for highest demands on purity.

$HClO_4$
M 100,46 g/mol
D 1,688 • bp 198 °C
mp -18 °C
[7601-90-3] • EC No. 231-512-4
UN No. 1873 • ADR 5.1 (8) I • WGK 1

Danger H271-H314-H290

Guarantee analysis:

Assay (w/w). 65-71 %
Aluminium (Al). ≤100 ppt
Antimony (Sb). ≤100 ppt
Arsenic (As). ≤100 ppt
Barium (Ba). ≤100 ppt
Beryllium (Be). ≤100 ppt
Lead (Pb). ≤10 ppt
Cadmium (Cd). ≤10 ppt
Cesium (Cs). ≤10 ppt

Calcium (Ca). ≤100 ppt
Cerium (Ce). ≤10 ppt
Dysprosium (Dy). ≤10 ppt
Iron (Fe). ≤100 ppt
Erbium (Er). ≤10 ppt
Europium (Eu). ≤10 ppt
Gadolinium (Gd). ≤10 ppt
Gallium (Ga). ≤10 ppt
Holmium (Ho). ≤10 ppt
Indium (In). ≤10 ppt
Potassium (K). ≤100 ppt
Cobalt (Co). ≤100 ppt
Copper (Cu). ≤100 ppt
Lanthanum (La). ≤10 ppt
Lithium (Li). ≤100 ppt
Lutetium (Lu). ≤10 ppt
Magnesium (Mg). ≤100 ppt
Manganese (Mn). ≤100 ppt
Molybdenum (Mo). ≤100 ppt
Sodium (Na). ≤100 ppt
Neodymium (Nd). ≤10 ppt
Nickel (Ni). ≤100 ppt
Palladium (Pd). ≤10 ppt
Platinum (Pt). ≤100 ppt
Praseodymium (Pr). ≤10 ppt
Rhodium (Rh). ≤10 ppt
Rubidium (Rb). ≤10 ppt
Samarium (Sm). ≤10 ppt
Scandium (Sc). ≤100 ppt
Silver (Ag). ≤100 ppt
Strontium (Sr). ≤100 ppt
Tellur (Te). ≤10 ppt
Terbium (Tb). ≤10 ppt
Thallium (Tl). ≤100 ppt
Thorium (Th). ≤10 ppt
Thulium (Tm). ≤10 ppt
Titanium (Ti). ≤100 ppt
Uranium (U). ≤10 ppt
Vanadium (V). ≤100 ppt
Bismuth (Bi). ≤10 ppt
Ytterbium (Yb). ≤10 ppt
Yttrium (Y). ≤10 ppt
Zinc (Zn). ≤100 ppt
Tin (Sn). ≤100 ppt
Zirconium (Zr). ≤100 ppt

HN61.2	250 ml	plastic (FEP)	471,95 €
HN61.1	500 ml	plastic (FEP)	661,15 €
HN61.3	1 l	plastic (FEP)	1073,95 €
Original pack 6 x 1 l			1020,25/1 l
HN61.4	2 l	plastic (FEP)	1773,75 €

For further information, please see page 1729

Perchloric acid Supra-quality

Perchloric acid Supra-quality

ROTIPURAN® Supra 70 %

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

$HClO_4$
M 100,46 g/mol
D 1,688 • bp 198 °C
mp -18 °C
[7601-90-3] • EC No. 231-512-4
UN No. 1873 • ADR 5.1 (8) I • WGK 1

Danger H271-H314-H290

Guarantee analysis:

Assay (w/w). 65-71 %
Colour (APHA). ≤10
Aluminium (Al). ≤1 ppb
Antimony (Sb). ≤0,5 ppb
Arsenic (As). ≤0,5 ppb
Barium (Ba). ≤1 ppb
Beryllium (Be). ≤0,5 ppb
Lead (Pb). ≤1 ppb
Cadmium (Cd). ≤1 ppb
Cesium (Cs). ≤0,5 ppb
Calcium (Ca). ≤1 ppb
Cerium (Ce). ≤0,5 ppb
Dysprosium (Dy). ≤0,5 ppb
Iron (Fe). ≤1 ppb
Erbium (Er). ≤0,5 ppb
Europium (Eu). ≤0,5 ppb
Gadolinium (Gd). ≤0,5 ppb
Gallium (Ga). ≤0,5 ppb
Gold (Au). ≤0,5 ppb
Holmium (Ho). ≤0,5 ppb
Indium (In). ≤0,5 ppb
Potassium (K). ≤1 ppb
Cobalt (Co). ≤0,5 ppb
Copper (Cu). ≤0,5 ppb
Lanthanum (La). ≤0,5 ppb
Lithium (Li). ≤0,5 ppb
Lutetium (Lu). ≤0,5 ppb
Magnesium (Mg). ≤1 ppb
Manganese (Mn). ≤1 ppb
Molybdenum (Mo). ≤0,5 ppb
Sodium (Na). ≤1 ppb
Neodymium (Nd). ≤0,5 ppb
Nickel (Ni). ≤1 ppb
Palladium (Pd). ≤0,5 ppb
Platinum (Pt). ≤0,5 ppb
Praseodymium (Pr). ≤0,5 ppb
Rhodium (Rh). ≤0,5 ppb
Rubidium (Rb). ≤0,5 ppb
Samarium (Sm). ≤0,5 ppb
Scandium (Sc). ≤0,5 ppb
Silver (Ag). ≤1 ppb
Strontium (Sr). ≤0,5 ppb
Tellur (Te). ≤0,5 ppb
Terbium (Tb). ≤0,5 ppb
Thallium (Tl). ≤0,5 ppb
Thorium (Th). ≤1 ppb
Thulium (Tm). ≤0,5 ppb
Titanium (Ti). ≤1 ppb
Uranium (U). ≤0,5 ppb
Vanadium (V). ≤0,5 ppb
Bismuth (Bi). ≤0,5 ppb
Ytterbium (Yb). ≤0,5 ppb
Yttrium (Y). ≤0,5 ppb
Zinc (Zn). ≤1 ppb
Tin (Sn). ≤1 ppb
Zirconium (Zr). ≤0,5 ppb

HN51.1	500 ml	HDPE	171,50 €
HN51.3	1 l	HDPE	274,15 €
Original pack 6 x 1 l			260,44/1 l
HN51.4	2,5 l	HDPE	413,90 €
Original pack 4 x 2,5 l			393,21/2,5 l

For further information, please see page 1729

Perchloric acid 70 %

Perchloric acid 70 %

ROTIPURAN® 70 %, p.a.

$HClO_4$
M 100,46 g/mol
D 1,688 • bp 198 °C
mp -18 °C
[7601-90-3] • EC No. 231-512-4
UN No. 1873 • ADR 5.1 (8) I • WGK 1

Danger H271-H290-H314

Guarantee analysis:

Assay. 69-72 %
Free chlorine (Cl_2). ≤0,0005 %
Ash content (as SO_4). ≤0,005 %
Total nitrogen (as N). ≤0,001 %
Chloride (Cl). ≤0,0005 %
Sulphate (SO_4). ≤0,001 %
Barium (Ba). ≤0,0001 %
Beryllium (Be). ≤0,0001 %
Lead (Pb). ≤0,0001 %
Cadmium (Cd). ≤0,0001 %
Calcium (Ca). ≤0,0001 %
Cobalt (Co). ≤0,0001 %
Iron (Fe). ≤0,0001 %
Potassium (K). ≤0,0001 %
Copper (Cu). ≤0,0001 %
Manganese (Mn). ≤0,0001 %
Nickel (Ni). ≤0,0001 %
Silver (Ag). ≤0,0001 %
Strontium (Sr). ≤0,0001 %
Zinc (Zn). ≤0,0001 %

9216.1	500 ml	glass	69,80 €
9216.2	1 l	glass	114,95 €
Original pack 6 x 1 l			109,20/1 l

Perchloric acid 0,1 N

Perchloric acid

0,1 mol/l - 0,1 N volumetric standard solution

In anhydrous acetic acid.
$HClO_4$
M 100,46 g/mol
flp 40 °C
UN No. 2789 • ADR 8 (3) II • WGK 1

Danger H226-H290-H314

Type analysis:

Amount-of-substance conc. (20 °C). 0,1 mol/l ±0,2 %
Titer. 0,998-1,002

K023.1	1 l	glass	81,60 €
Original pack 6 x 1 l			77,52/1 l

For further information, please see page 1681

Perchloric acid 0,1 N

Perchloric acid

0,1 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.

In anhydrous acetic acid.
$HClO_4$
M 100,46 g/mol
flp 40 °C
UN No. 2789 • ADR 8 (3) II • WGK 1

Danger H226-H290-H314

Type analysis:

Amount-of-substance conc. (20 °C). 0,1 mol/l
Measurement uncertainty. ±0,2 %

9525.1	1 l	glass	83,75 €
Original pack 6 x 1 l			79,56/1 l

For further information, please see page 1683

Perchloroethylene

▶ Tetrachloroethylene see p. 2399

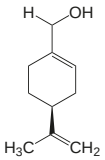
1H,1H,5H-Perfluoropentanol

▶ 2,2,3,3,4,4,5,5-Octafluoro-1-pentanol see p. 2170

Perhydrosqualene

▶ Squalane see p. 2357

(-)- Perillic alcohol



(-)- Perillic alcohol

~96 %
(-)-p-Mentha-1,8-diene-7-ol
$C_{10}H_{16}O$
M 152,24 g/mol
D 0,96 • bp 119-122 °C (15 hPa)
flp >110 °C
[536-59-4] • EC No. 208-639-9
WGK 2

Warning H315-H319-H335

Type analysis:
Assay..... ~96 %

7135.1	5 ml	glass	90,85 €

Periodic acid

H_5IO_6
M 227,94 g/mol
mp 122 °C
Solubility: 2430 g/l (H_2O, 20 °C)
[10450-60-9] • EC No. 233-937-0
UN No. 3085 • ADR 5.1 (8) I • WGK 1

Danger H271-H314

Periodic acid

≥99 %, p.a.
Pulping agent for organic substances.

Guarantee analysis:
Assay (iodom.)..... ≥99,0 %
Chloride, chlorate, bromide, bromate (as Cl)..... ≤0,02 %
Iodide (I)..... ≤0,001 %
Iodic acid (HIO_3)..... ≤1 %
Nitrate (NO_3)..... ≤0,01 %
Sulphate (SO_4)..... ≤0,01 %
Iron (Fe)..... ≤0,01 %

3257.1	100 g	glass	70,85 €
3257.2	500 g	glass	241,90 €
Original pack 6 x 500 g			229,81/500 g

Periodic acid

≥99 %, for synthesis

Type analysis:
Assay..... ≥99,0 %
Insoluble matter..... ≤0,01 %

2612.1	50 g	glass	34,30 €
2612.2	100 g	glass	52,60 €
2612.3	500 g	glass	203,20 €
Original pack 6 x 500 g			193,04/500 g

Periodic acid solution 1 %

Periodic acid solution 1 %

for microscopy
For hydrolysis of carbohydrates, e.g. in PAS reaction (Periodic Acid Schiff reaction).
$H_5IO_6 + H_2O$
[10450-60-9]

Warning H315-H319

Type analysis:
Assay (H_5IO_6)..... 1 % in water

HP00.1	500 ml	glass	40,75 €

For further information, please see page 1516

Peroxidase

Peroxidase

≥250 U/mg material
From horseradish, freeze-dried
HRP, Horseradish peroxidase
Storage temp.: -20 °C
Transport temp.: room temp.
[9003-99-0] • EC No. 232-668-6
WGK 1

Danger H317-H334

Type analysis:
Appearance..... brown powder
Activity..... ≥250 U/mg material
RZ (E_{403}/E_{275})..... >3,0

6055.1	0,05 g	plastic	125,70 €

For further information, please see page 1318

Peru-Balm

Peru-Balm

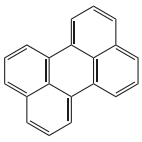
natural
Balsamum Peruvianum, Balsam of Peru
D 1,14
[8007-00-9] • EC No. 232-352-8
UN No. 3082 • ADR 9 III • WGK 2

Danger H315-H317-H411

Type analysis:
Appearance..... viscous, dark-brown to yellow-brown liquid
Assay (ester)..... 45,0-70,0 %
Density (20 °C)..... 1,140-1,170

6809.1	100 ml	glass	17,75 €

Perylene



Perylene

≥99 %
Dibenz[de,kl]anthracen
$C_{20}H_{12}$
M 252,32 g/mol
mp 275-279 °C
[198-55-0] • EC No. 205-900-9
WGK 2

Type analysis:
Assay (HPLC)..... ≥99,0 %
Melting point..... 275-279 °C

5272.1	1 g	glass	31,75 €
5272.2	5 g	plastic	117,75 €

Petroleum 132-175 °C

Petroleum 132-175 °C

special fraction 132-175 °C
D 0,77 • bp 132-175 °C
flp 23 °C
[64742-82-1] • EC No. 265-185-4
UN No. 1300 • ADR 3 III • WGK 2

Danger
H304-H226-H336-H411-EUH066

Type analysis:
Boiling range..... 132-175 °C
Colour (Hazen)..... ≤20
Density (15 °C)..... 0,757-0,785 g/cm³
Refractive index (20 °C)..... 1,401-1,440

5661.1	1 l	glass	23,15 €
Original pack 6 x 1 l			21,99/1 l
5661.2	10 l	tinplate	96,65 €

Petroleum 180-230 °C

Petroleum 180-230 °C

special fraction 180-230 °C
D 0,799 • bp 180-230 °C
flp 61 °C
[64742-81-0] • EC No. 232-366-4
UN No. 3082 • ADR 9 III • WGK 2

Danger H304-H372-H411-EUH066

Type analysis:
Appearance..... clearly liquid
Boiling range..... 180-230 °C
Colour number (Saybolt)..... +30
Density (15 °C)..... 0,795-0,815 g/cm³

9015.1	1 l	glass	22,50 €
Original pack 6 x 1 l			21,38/1 l
9015.2	10 l	tinplate	107,40 €

Petroleum 180-250 °C

Petroleum 180-250 °C

boilling range 180-250 °C
D 0,795 • flp 61 °C
[64742-81-0] • EC No. 232-366-4
UN No. 3082 • ADR 9 III • WGK 2
Danger H315-H336-H304-H411

Type analysis:
Boiling range..... 180-250 °C
Flash point. ..... ≥61 °C
Density..... ~0,795

5149.1	1 l	glass	17,75 €
Original pack 6 x 1 l			16,86/1 l
5149.3	10 l	tinplate	80,55 €

Petroleum benzine 30-50

Petroleum benzine 30-50

extra pure
Gasoline, Petroleum ether
D ~0,63 • bp 30-50 °C • flp -31 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 I • WGK 3
Danger
H224-H304-H315-H336-H411

Type analysis:
Boiling range..... 30-50 °C
Benzene (GC)..... ≤0,02 %
Density (15 °C). 0,625-0,636

3523.1	1 l	glass	27,45 €
Original pack 6 x 1 l			26,08/1 l
3523.3	2,5 l	glass	47,20 €
Original pack 4 x 2,5 l			44,84/2,5 l
3523.4	5 l	aluminium	89,15 €
Original pack 2 x 5 l			84,69/5 l
3523.2	10 l	tinplate	156,85 €

Petroleum benzine 30-75

Petroleum benzine 30-75

extra pure
Gasoline, Ligroin
D ~0665 • bp 30-75 °C • flp -21 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 II • WGK 3
Danger
H225-H304-H315-H336-H411

Type analysis:
Boiling range..... 30-75 °C
Aromatic compounds..... <0,02 %
Benzene. ..... <0,01 %
n-Hexane..... <5,0 %
Density (15 °C). 0,650-0,680
Refractive index n_D^{20}. 1,3670-1,3770

8961.1	1 l	glass	23,15 €
Original pack 6 x 1 l			21,99/1 l
8961.3	2,5 l	glass	39,70 €
Original pack 4 x 2,5 l			37,72/2,5 l
8961.4	5 l	aluminium	70,45 €
Original pack 2 x 5 l			66,93/5 l
8961.2	10 l	tinplate	113,45 €

Petroleum benzine 40-60

Petroleum benzine 40-60

extra pure
Gasoline, Petroleum ether
D ~0,65 • bp 40-60 °C
flp -45 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 II • WGK 1
Danger
H225-H304-H315-H336-H411

Type analysis:
Boiling range. ..... 40-60 °C
Aromatic compounds (GC)..... ≤0,01 %
Evaporation residue. ..... ≤0,002 %
Density (15 °C). 0,647-0,654

9320.4	500 ml	glass	21,40 €
9320.1	1 l	glass	26,80 €
Original pack 6 x 1 l			25,46/1 l
9320.5	2,5 l	glass	47,20 €
Original pack 4 x 2,5 l			44,84/2,5 l
9320.3	5 l	aluminium	89,15 €
Original pack 2 x 5 l			84,69/5 l
9320.2	10 l	tinplate	142,45 €
9320.9	25 l	tinplate	294,05 €

Petroleum benzine 40-65

Petroleum benzine 40-65

extra pure
Gasoline, Petroleum ether, white spirit
D ~0,65 • bp 40-65 °C
flp -43 °C
[64742-49-0] • EC No. 931-254-9
UN No. 3295 • ADR 3 II • WGK 2
Danger
H225-H304-H336-H411

Type analysis:
Boiling range. ..... 40-65 °C
Benzene. ..... ≤0,001 %
n-Hexane..... ≤2 %
Density (15 °C). 0,645-0,660

8573.1	1 l	glass	24,65 €
Original pack 6 x 1 l			23,42/1 l
8573.2	2,5 l	glass	42,90 €
Original pack 4 x 2,5 l			40,76/2,5 l
8573.3	5 l	aluminium	80,10 €
Original pack 2 x 5 l			76,10/5 l
8573.4	10 l	tinplate	123,55 €
8573.5	25 l	tinplate	224,70 €

Petroleum benzine 40-80

Petroleum benzine 40-80

extra pure
Petroleum ether, Petroleum benzine, Gasoline
D ~0,66 • bp 40-80 °C
flp -20 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 II • WGK 3
Danger
H225-H304-H361f-H373-H315-H336-H411

Type analysis:
Boiling range. ..... 40-80 °C
Aromatic compounds (GC). ..... ≤0,01 %
Density (15 °C)..... 0,650-0,670

CP48.1	1 l	glass	27,45 €
Original pack 6 x 1 l			26,08/1 l
CP48.4	2,5 l	glass	48,30 €
Original pack 4 x 2,5 l			45,89/2,5 l
CP48.2	5 l	aluminium	92,35 €
Original pack 2 x 5 l			87,73/5 l
CP48.3	10 l	tinplate	153,65 €

Petroleum benzine 50-70

Petroleum benzine 50-70

extra pure
Petroleum ether, Petroleum benzine, Gasoline
D ~0,665 • bp 50-70 °C
flp -20 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 II • WGK 3
Danger
H225-H304-H361f-H373-H315-H336-H411

Type analysis:
Boiling range. ..... 50-70 °C
Aromatic compounds (GC). ..... ≤0,01 %
Density (15 °C)..... 0,660-0,675

0969.1	1 l	glass	29,60 €
Original pack 6 x 1 l			28,12/1 l
0969.4	2,5 l	glass	54,75 €
Original pack 4 x 2,5 l			52,01/2,5 l
0969.5	5 l	aluminium	102,05 €
Original pack 2 x 5 l			96,95/5 l
0969.2	10 l	tin plate	192,45 €
0969.3	25 l	tin plate	360,15 €

Petroleum benzine 60-70

Petroleum benzine 60-70

extra pure

Gasoline

D ~0,675 • bp 60-70 °C

flp -25 °C

[64742-49-0] • EC No. 265-151-9

UN No. 3295 • ADR 3 II • WGK 3

Danger

H225-H304-H361f-H373-H315-H336-H411

Type analysis:

Boiling range. ..... 60-70 °C
Aromatic compounds (GC). ..... ≤0,01 %
Density (15 °C). 0,670-0,680

9735.1	1 l	glass	26,35 €
Original pack 6 x 1 l			25,03/1 l
9735.4	2,5 l	glass	45,05 €
Original pack 4 x 2,5 l			42,80/2,5 l
9735.5	5 l	aluminium	85,90 €
Original pack 2 x 5 l			81,61/5 l
9735.2	10 l	tinplate	152,55 €
9735.3	20 l	tinplate	235,45 €

Petroleum benzine 60-95

Petroleum benzine 60-95

extra pure

Gasoline, Petroleum ether

D ~0,69 • bp 60-95 °C

flp <0 °C

UN No. 3295 • ADR 3 II • WGK 3

Danger

H225-H304-H336-H411-H315

Type analysis:

Boiling range. ..... 60-95 °C
Benzene (GC). ..... ≤0,005 %
Aromatic compounds (GC). ..... ≤0,01 %
n-Hexane. ..... ≤5,0 %
Density (15 °C). 0,675-0,711

8575.1	1 l	glass	22,05 €
Original pack 6 x 1 l			20,95/1 l
8575.2	2,5 l	glass	36,45 €
Original pack 4 x 2,5 l			34,63/2,5 l
8575.3	5 l	aluminium	68,70 €
Original pack 2 x 5 l			65,27/5 l
8575.4	10 l	tinplate	110,65 €
8575.5	25 l	tinplate	197,70 €

Petroleum benzine 63-80

Petroleum benzine 63-80

extra pure

Gasoline, special boiling point gasoline

D ~0,675 • bp 63-80 °C

flp -30 °C

[64742-49-0] • EC No. 265-151-9

UN No. 3295 • ADR 3 II • WGK 3

Danger

H225-H304-H361f-H373-H315-H336-H411

Type analysis:

Boiling range. ..... 63-80 °C
Aromatic compounds (GC). ..... ≤0,01 %
Density (15 °C). 0,660-0,680

5649.1	1 l	glass	27,45 €
Original pack 6 x 1 l			26,08/1 l
5649.3	2,5 l	glass	48,30 €
Original pack 4 x 2,5 l			45,89/2,5 l
5649.4	5 l	aluminium	92,35 €
Original pack 2 x 5 l			87,73/5 l
5649.2	10 l	tinplate	153,65 €

Petroleum benzine 80-110

Petroleum benzine 80-110

extra pure

Gasoline, dry cleaning gasoline

D ~0,72 • bp 80-110 °C

flp -14 °C

[64742-49-0] • EC No. 265-151-9

UN No. 3295 • ADR 3 II • WGK 1

Danger

H225-H304-H315-H336-H411

Type analysis:

Boiling range. ..... 80-110 °C
Aromatic compounds. ..... ≤0,005 %
Benzene. ..... ≤0,001 %
n-Hexane. ..... ≤5 %
Density (15 °C). 0,710-0,730

3259.1	1 l	glass	23,55 €
Original pack 6 x 1 l			22,37/1 l
3259.3	2,5 l	glass	38,20 €
Original pack 4 x 2,5 l			36,29/2,5 l
3259.4	5 l	aluminium	72,60 €
Original pack 2 x 5 l			68,97/5 l
3259.2	10 l	tinplate	120,95 €

Petroleum benzine 100-140

Petroleum benzine 100-140

extra pure

Gasoline, special boiling point gasoline

D ~0,73 • bp 100-140 °C

flp -2 °C

[64742-49-0] • EC No. 265-151-9

UN No. 1268 • ADR 3 II • WGK 3

Danger

H225-H304-H315-H336-H361f-H411

Type analysis:

Appearance. ..... clear, colourless
Boiling range. ..... 100-140 °C
Aromatic compounds. ..... ≤0,01 %
Benzene. ..... ≤0,001 %
Density (15 °C). 0,720-0,740

9675.1	1 l	glass	19,25 €
Original pack 6 x 1 l			18,29/1 l
9675.4	2,5 l	glass	30,00 €
Original pack 4 x 2,5 l			28,50/2,5 l
9675.5	5 l	aluminium	55,40 €
Original pack 2 x 5 l			52,63/5 l
9675.2	10 l	tinplate	94,50 €
9675.3	25 l	tinplate	185,45 €

Petroleum benzine 135-180

Petroleum benzine 135-180

extra pure

Gasoline, Petroleum ether, white spirit

D ~0,775 • bp 135-180 °C • flp >23 °C

UN No. 3295 • ADR 3 III • WGK 3

Danger

H226-H304-H336-H372-H410-EUH066

Type analysis:

Boiling range. ..... 135-180 °C
Density (15 °C). 0,770-0,785
Refractive index (20 °C). 1,4260-1,4350

8576.1	1 l	glass	24,65 €
Original pack 6 x 1 l			23,42/1 l
8576.2	2,5 l	glass	42,90 €
Original pack 4 x 2,5 l			40,76/2,5 l
8576.3	5 l	aluminium	80,10 €
Original pack 2 x 5 l			76,10/5 l
8576.4	10 l	tinplate	123,55 €

Petroleum benzine 145-200

Petroleum benzine 145-200

extra pure

Gasoline, Petroleum ether, white spirit, kerosene

D ~0,785 • bp 145-200 °C • flp >30 °C

[64742-82-1] • EC No. 919-446-0

UN No. 3295 • ADR 3 III • WGK 3

Danger

H226-H304-H336-H372-H410-EUH066

Type analysis:

Boiling range. ..... 145-200 °C
Benzene (GC). ..... ≤0,01 %
Density (15 °C). 0,780-0,798

8577.1	1 l	glass	24,65 €
Original pack 6 x 1 l			23,42/1 l
8577.2	2,5 l	glass	42,90 €
Original pack 4 x 2,5 l			40,76/2,5 l
8577.3	5 l	aluminium	80,10 €
Original pack 2 x 5 l			76,10/5 l
8577.4	10 l	tinplate	123,55 €

Petroleum benzine 180-220

Petroleum benzine 180-220

extra pure

Gasoline, Petroleum ether, white spirit, kerosene

D ~0,79 • bp 180-220 °C

flp >61 °C • WGK 1

Danger H304-EUH066

Type analysis:

Boiling range. ..... 180-220 °C
Aromatic compounds. ..... ≤0,4 %
Density (15 °C). 0,770-0,815

8579.1	1 l	glass	24,65 €
Original pack 6 x 1 l			23,42/1 l
8579.2	2,5 l	glass	42,90 €
Original pack 4 x 2,5 l			40,76/2,5 l
8579.3	5 l	aluminium	80,10 €
Original pack 2 x 5 l			76,10/5 l
8579.4	10 l	tinplate	123,55 €

Petroleum benzine 190-245

Petroleum benzine 190-245

extra pure

Gasoline, Petroleum ether, white spirit
D ~0,80 • bp 190-245 °C
flp >70 °C
WGK 1

Danger H304-EUH066

Type analysis:

Boiling range..... 190-245 °C
Aromatic compounds..... ≤0,2 %
Density (15 °C). 0,780-0,820

8580.1	1 l	glass	24,65 €
Original pack 6 x 1 l			23,42/1 l
8580.2	2,5 l	glass	42,90 €
Original pack 4 x 2,5 l			40,76/2,5 l
8580.3	5 l	aluminium	80,10 €
Original pack 2 x 5 l			76,10/5 l
8580.4	10 l	tinplate	123,55 €

Petroleum benzine 235-265

Petroleum benzine 235-265

extra pure

Gasoline, Petroleum ether, white spirit
D ~0,82 • bp 235-265 °C
flp >100 °C
WGK 1

Danger H304-EUH066

Type analysis:

Boiling range..... 235-265 °C
Aromatic compounds..... ≤0,5 %
Density (15 °C). ..... ~0,82

8590.1	1 l	glass	24,65 €
Original pack 6 x 1 l			23,42/1 l
8590.2	2,5 l	glass	42,90 €
Original pack 4 x 2,5 l			40,76/2,5 l
8590.3	5 l	aluminium	80,10 €
Original pack 2 x 5 l			76,10/5 l
8590.4	10 l	tinplate	123,55 €

Petroleum Ether (Petroleum Benzine, Boiling Range 30-80 °C)

Art. No.	Description	Page
3523	Petroleum benzine 30-50	2201
8961	Petroleum benzine 30-75	2201
9320	Petroleum benzine 40-60	2201
8573	Petroleum benzine 40-65	2201
CP48	Petroleum benzine 40-80	2201
0969	Petroleum benzine 50-70	2201
9735	Petroleum benzine 60-70	2202
5649	Petroleum benzine 63-80	2202

Petroleum ether 40-60 °C

Petroleum benzine
D 0,65 • bp 40-60 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 II • WGK 2

Danger

H225-H304-H315-H336-H411

Petroleum ether 40-60 °C

ROTISOLV® HPLC

Guarantee analysis:

Boiling range. ..... 40-60 °C
Water (KF)..... ≤0,005 %
Acidity (as CH_3COOH). ..... ≤0,002 %
Evaporation residue. ..... ≤0,0005 %
Transmission:
270 nm. ..... ≥98 %
220 nm. ..... ≥75 %
200 nm. ..... ≥10 %
Filtered through a 0,2 µm membrane and filled under protective gas.

0731.1	2,5 l	glass	66,55 €
Original pack 4 x 2,5 l			63,22/2,5 l

Petroleum ether 40-60 °C

ROTISOLV® Pestilyse® plus

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:

Boiling range. ..... 40-60 °C
Colour (APHA)..... ≤10
Water (KF)..... ≤0,005 %
Free acid (as CH_3COOH). ..... ≤0,002 %
Evaporation residue. ..... ≤0,0003 %
GC/FID suitability (as 2-octanol)..... ≤10 ng/ml
GC/ECD suitability
(as heptachloro epoxide)..... ≤10 ng/l
GC/ECD dioxins, furans and PCBs
(as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane)..... ≤5 ng/l
GC/NPD pesticides (as parathion). ..... ≤10 ng/l
Oil index (any hydrocarbon C_{10}-C_{40}). ..... ≤0,05 mg/l
PAH-test (less than 2 ppb, HPLC). ..... complies
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb

7588.1	2,5 l	glass	71,95 €
Original pack 4 x 2,5 l			68,35/2,5 l

Petroleum ether 40-60 °C

ROTISOLV® Pestilyse®

For residue and environmental analysis.

Guarantee analysis:

Boiling range. ..... 40-60 °C
Water (KF)..... ≤0,02 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0001 %
GC/ECD (individual signal as lindane)..... ≤5 ng/l
GC/PND (individual signal as ethylparathion)..... ≤10 ng/l

T170.2	1 l	glass	34,95 €
Original pack 6 x 1 l			33,20/1 l
T170.1	2,5 l	glass	71,95 €
Original pack 4 x 2,5 l			68,35/2,5 l
T170.3	4 l	glass	99,45 €

Petroleum ether 40-60 °C

ROTIPURAN® p.a., ACS, ISO

Guarantee analysis

Boiling range. ..... 40-60 °C
Density (d 20 °C/4 °C). 0,640-0,655
Colour (APHA). ..... ≤10
Acidity. ..... ≤0,0003 meq/g
Water . ..... ≤0,015 %
Aromatic compounds (as C_6H_6). ..... ≤0,025 %
Sulphur compounds (as CS_2). ..... ≤0,005 %
Evaporation residue. ..... ≤0,001 %
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %

T173.1	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l
T173.2	2,5 l	glass	64,40 €
Original pack 4 x 2,5 l			61,18/2,5 l
T173.3	5 l	aluminium	107,40 €
Original pack 2 x 5 l			102,03/5 l
T173.5	25 l	tinplate	342,95 €

Petroleum ether 40-60 °C

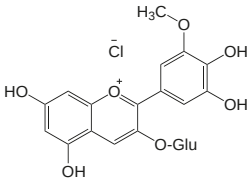
DAB, extra pure

Guarantee analysis:

Appearance. ..... clear, colourless liquid
Identity. ..... complies
Relative density (20/20 °C). 0,642-0,656
Boiling range (40-60 °C)..... ≥75 Vol. %
Benzene (UV). ..... ≤0,001 Vol. %
n-Hexane (GC)..... ≤2,0 Vol. %
Tetraethyl lead. ..... complies
Reaction with H_2SO_4. ..... complies
Non volatile matter. ..... ≤0,001 %
Evaporation residue. ..... ≤0,001 %
Reducing substances, incl. sulphur comp. ..... complies
Acid or alkaline react. substances. ..... complies
Foreign odour, non volatile matter. ..... complies

CP44.1	1 l	glass	28,95 €
Original pack 6 x 1 l			27,50/1 l
CP44.2	2,5 l	glass	54,75 €
Original pack 4 x 2,5 l			52,01/2,5 l
CP44.3	5 l	aluminium	98,80 €
Original pack 2 x 5 l			93,86/5 l
CP44.4	10 l	tinplate	161,15 €
CP44.5	25 l	tinplate	310,70 €

Petunidin 3-glucoside chloride



Petunidin 3-glucoside chloride

ROTICHROM® HPLC

Reference substance for HPLC.
From *Vitis vinifera*
$C_{22}H_{23}O_{12}Cl$
M 514,85 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[6988-81-4]
WGK 1

Type analysis:

Purity (HPLC)..... ≥97 %

1469.1	5 mg	glass	289,20 €

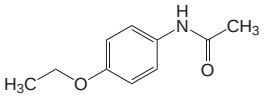
Pfu DNA polymerase, recombinant

▶ Roti®-Pol ProofRead see p. 2294

PGDA

▶ Propylene glycol diacetate see p. 2242

Phenacetin



Phenacetin

ROTI®CALIPURE Melting point standard 133-135 °C

N-(4-Ethoxyphenyl)acetamide
$C_{10}H_{13}NO_2$
M 179,22 g/mol
mp 133-135 °C
[62-44-2] • EC No. 200-533-0
WGK 3

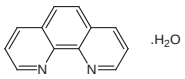
Danger H302-H350

Type analysis:

Meniscus formation. ..... 133-135 °C
Complete liquefaction. ..... 133-135 °C

9728.1	1 g	glass	31,10 €

1,10-Phenanthroline monohydrate



1,10-Phenanthroline monohydrate

≥99 %, p.a., ACS

Redox indicator
$C_{12}H_8N_2 \cdot H_2O$
M 198,23 g/mol
mp 93-94 °C
Solubility: 3,3 g/l (H_2O, 20 °C)
[5144-89-8] • EC No. 200-629-2
UN No. 2811 • ADR 6.1 III • WGK 3

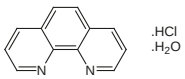
Danger H301-H400-H410

Guarantee analysis:

Assay (dry substance). ..... ≥99,0 %
Solubility in ethanol. ..... clear, colourless
Melting point. ..... ≥98 °C
Suitability as indicator. ..... complies
Suitability for determination of iron. ..... complies
1,10- Phenanthroline forms sparingly soluble complex compounds with a lot of heavy metal ions, and so it is suitable for their quantitative determination. The iron(II)-complex ("Ferroin") is usable as redox indicator.

9113.2	5 g	glass	28,95 €
9113.3	25 g	glass	103,10 €
9113.1	50 g	glass	192,45 €

1,10-Phenanthroline hydrochloride monohydrate



1,10-Phenanthroline hydrochloride monohydrate

≥99 %, p.a.

Redox indicator, reagent for Iron(II).
o-Phenanthroline hydrochloride monohydrate
$C_{12}H_8N_2 \cdot HCl \cdot H_2O$
M 234,69 g/mol
mp 215-220 °C (dec.)
[3829-86-5] • EC No. 223-325-1
UN No. 2811 • ADR 6.1 III • WGK 3

Danger H301-H400-H410

Guarantee analysis:

Assay (acidim.). ..... ≥99,0 %
Sulphated ash. ..... ≤0,2 %
Water. ..... ≤8,5 %
Suitability for determination of iron. ..... complies

KK21.1	5 g	glass	27,45 €
KK21.2	10 g	glass	46,80 €
KK21.3	50 g	glass	198,90 €

o-Phenanthroline hydrochloride monohydrate

▶ 1,10-Phenanthroline hydrochloride monohydrate see p. 2204

1,10-Phenanthrolin iron(II) salt solution

▶ Ferroin see p. 1993

Phenethyl-3,4-dihydroxycinnamate

▶ Caffeic acid phenethyl ester see p. 1867

Phenol

Carbolic acid, Hydroxybenzene
C_6H_6O
M 94,11 g/mol
D 1,06 • bp 181,8 °C
mp 40,8 °C • flp 81 °C
Solubility: 84 g/l (H_2O, 20 °C)
[108-95-2] • EC No. 203-632-7
UN No. 1671 • ADR 6.1 II • WGK 2

Danger
H301+H311+H331-H314-H341-H373-H411

Phenol

≥99,5 %, p.a., detached crystals

Guarantee analysis:

Appearance. ..... white crystals
Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,5 %
Chloride (Cl). ..... ≤0,0005 %
Sulphur (S). ..... ≤0,0002 %
Iron (Fe). ..... ≤0,0001 %
Non volatile matter. ..... ≤0,01 %
Solidification point. ..... ≤40,6 °C

0040.1	250 g	plastic	31,10 €
0040.2	1 kg	plastic	90,20 €
Original pack 6 x 1 kg			85,69/1 kg

Phenol

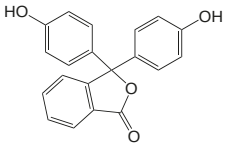
≥99 %, Ph.Eur., cryst.

Type analysis:

Assay. ..... 99,0-100,5 %
Identity. ..... complies
Water (KF). ..... ≤0,5 %
Appearance of solution. ..... complies
Acid react. substances. ..... complies
Non volatile matter. ..... ≤0,05 %
Solidification point. ..... ≥39,5 °C

3215.2	500 g	glass	48,30 €
Original pack 6 x 500 g			45,89/500 g
3215.1	1 kg	glass	89,15 €
Original pack 6 x 1 kg			84,69/1 kg

Phenolphthalein (C.I. 764)



Phenolphthalein (C.I. 764)

≥99 %, p.a.
Indicator pH 8,0-10,0
$C_{20}H_{14}O_4$
M 318,33 g/mol
D 1,30
mp 258-263 °C
Solubility: 92 mg/l (H_2O, 20 °C)
[77-09-8] • EC No. 201-004-7
WGK 3

Danger H341-H350-H361f

Type analysis:
Appearance. .....white to yellowish powder
pH-transition range. .. 8,0 (colourless)-10,0 (red-violet)
Assay (HPLC). .....≥99,0 %
Absorption max. (buffer, pH 9,8). .....551-554 nm
Loss on drying (105 °C). .....≤1,0 %

T126.2	50 g	plastic	17,75 €
T126.1	100 g	plastic	24,20 €
T126.3	500 g	plastic	64,40 €
Original pack 6 x 500 g			61,18/500 g

Phenolphthalein indicator solution 0,1 %

Phenolphthalein indicator solution 0,1 %

0,1 % in ethanol 90 %, denatured
D 0,82 • bp 78 °C
mp -114 °C • flp 12 °C
UN No. 1170 • ADR 3 II

Danger H225-H319

8145.1	250 ml	glass	20,35 €
8145.2	500 ml	glass	27,85 €

Phenolphthalein indicator solution 1 %

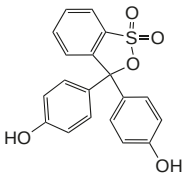
Phenolphthalein indicator solution 1 %

1 % in ethanol 90 %, denatured
D 0,82 • bp 78 °C
mp -114 °C • flp 12 °C
UN No. 1170 • ADR 3 II • WGK 3

Danger H225-H319-H341-H350

K034.1	250 ml	glass	21,40 €
K034.2	500 ml	glass	28,95 €
K034.3	1 l	glass	38,60 €
Original pack 6 x 1 l			36,67/1 l

Phenol red



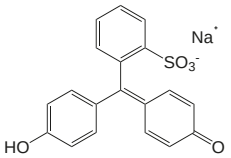
Phenol red

p.a., ACS
Indicator pH 6,5-8,2
Phenolsulphonphthalein
$C_{19}H_{14}O_5S$
M 354,38 g/mol
mp >300 °C
Solubility: 0,77 g/l (H_2O, 100 °C)
[143-74-8] • EC No. 205-609-7
WGK 2

Guarantee analysis:
pH-transition range. .....6,8 (yellow)-8,2 (red)
Loss on drying (110 °C). ..... ≤5,0 %
Appearance of solution (ACS). ..... complies

T127.1	5 g	glass	15,60 €
T127.2	25 g	glass	35,40 €
T127.3	100 g	glass	96,65 €

Phenol red sodium salt



Phenol red sodium salt

p.a., ACS
Indicator pH 6,8-8,2
Phenolsulphonphthalein sodium salt
$C_{19}H_{13}NaO_5S$
M 376,36 g/mol
mp 285 °C
Solubility: 100 g/l (H_2O, 20 °C)
[34487-61-1] • EC No. 252-057-8
WGK 1

Guarantee analysis:
Appearance. ..... dark red to brownish-red powder
Appearance of solution (ACS). ..... complies
Loss on drying. ..... ≤5 %
pH transition range. .....6,8 (yellow)-8,2 (red)

2566.1	5 g	glass	21,40 €
2566.2	25 g	glass	49,35 €

Phenol solutions

- Roti®-Aqua-Phenol see p. 2291
- Roti®-Aqua-P/C/I see p. 2291
- Roti®-Phenol see p. 2291
- Roti®-Phenol/Chloroform/Isoamyl alcohol see p. 2291

Phenolsulphonphthalein

- Phenol red see p. 2205

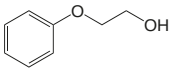
Phenolsulphonphthalein sodium salt

- Phenol red sodium salt see p. 2205

Phenoltetrabromophthalein disulfonic acid disodium salt

- Sulfobromophthalein disodium salt see p. 2386

2-Phenoxyethanol



Ethylene glycol monophenyl ether
$C_8H_{10}O_2$
M 138,17 g/mol
D 1,11 • bp 242 °C
mp ~13 °C • flp 121 °C
Solubility: 24 g/l (H_2O, 20 °C)
[122-99-6] • EC No. 204-589-7
WGK 1

Warning H302-H319

2-Phenoxyethanol

≥99 %, for synthesis

Type analysis:
Assay (GLC). .....≥99,0 %
Colour (APHA). .....≤10
Water. .....≤0,1 %

4348.1	250 ml	glass	23,55 €
4348.2	1 l	glass	47,85 €
Original pack 6 x 1 l			45,46/1 l
4348.3	10 l	tinplate	239,20 €

2-Phenoxyethanol

ROTI®STAR Primary Standard

Type analysis:
Assay (GC). .....≥95,0 %
Residual solvents (GC). .....≤1,0 %
Water (KF). .....≤1,0 %
Assay (qNMR). .....≥95,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE12.1	250 mg	glass	837,45 €

2-Phenoxyethanol

ROTICHROM® Working Standard

Type analysis:
Assay (GC). .....≥90,0 %
Identity. .....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC12.1	250 µl	glass	125,70 €

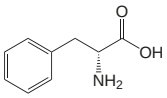
Phenylacetylenecarboxylic acid

▶ Phenylpropiolic acid see p. 2208

3-Phenylacrolein

▶ Cinnamaldehyde see p. 1899

D-Phenylalanine



D-Phenylalanine

≥98,5 %, for biochemistry

(R)-2-Amino-3-phenylpropionic acid,
H-D-Phe-OH

$C_9H_{11}NO_2$

M 165,2 g/mol

Storage temp.: +4 °C

[673-06-3] • EC No. 211-603-5

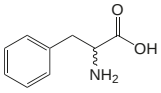
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... 98,5-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O). ..... +33,0° to +35,0°
Loss on drying. ..... ≤0,2 %

7886.1	5 g	plastic	22,05 €
7886.2	25 g	plastic	67,65 €
7886.3	100 g	plastic	166,10 €

DL-Phenylalanine



DL-Phenylalanine

≥98,5 %, for biochemistry

2-Amino-3-phenylpropionic acid

$C_9H_{11}NO_2$

M 165,19 g/mol

Storage temp.: +4 °C

[150-30-1] • EC No. 205-756-7

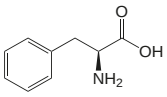
WGK 1

Type analysis:

Appearance. ..... white cryst. powder
Assay. ..... ≥98,5 %
Heavy metals (as Pb). ..... ≤0,002 %
Ash content. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

8603.1	25 g	plastic	22,05 €
8603.2	100 g	plastic	61,20 €
8603.3	250 g	plastic	127,95 €

L-Phenylalanine



(S)-2-Amino-3-phenylpropionic acid,
H-L-Phe-OH

$C_9H_{11}NO_2$

M 165,19 g/mol

mp 275-283 °C (dec.)

Solubility: ~27 g/l (H_2O, 20 °C)

[63-91-2] • EC No. 200-568-1

WGK 1

L-Phenylalanine

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... -35,5° to -33°
Foreign amino acids. ..... ≤0,5 %
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,03 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

1709.1	25 g	plastic	20,35 €
1709.2	100 g	plastic	45,70 €
1709.3	500 g	plastic	177,40 €
Original pack 6 x 500 g			168,53/500 g

L-Phenylalanine

≥98,5 %, Ph.Eur., for biochemistry

Guarantee analysis:

Appearance. ..... white cryst. powder
Assay. ..... 98,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Specific rotation $[\alpha]_D^{20}$. ..... -35,5° to -33°
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,03 %
Ammonium (NH_4). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

4491.3	25 g	plastic	14,55 €
4491.1	100 g	plastic	40,35 €
4491.4	250 g	plastic	80,55 €
4491.2	1 kg	plastic	284,90 €
Original pack 6 x 1 kg			270,66/1 kg

3-Phenylallyl alcohol

▶ Cinnamyl alcohol see p. 1900

Phenylamine

▶ Aniline see p. 1806

Phenylamine hydrochloride

▶ Aniline hydrochloride see p. 1806

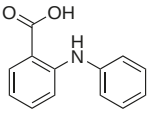
2-(Phenylamino)benzoic acid

▶ *N*-Phenylanthranilic acid see p. 2206

N-Phenylaniline

▶ Diphenylamine see p. 1952

N-Phenylanthranilic acid



N-Phenylanthranilic acid

≥97 %, p.a.

2-(Phenylamino)benzoic acid, Diphenylamine-2-carboxylic acid, DpC, o-Anilobenzoic acid, Fenamic acid

$C_{13}H_{11}NO_2$

M 213,24 g/mol

mp 182-185 °C

[91-40-7] • EC No. 202-066-8

WGK 1

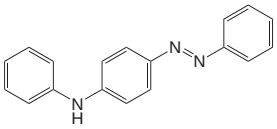
Warning H315-H319-H335

Type analysis:

Appearance. ..... yellow powder
Assay (titr.). ..... ≥97,0 %
Melting point. ..... 182-185 °C
Ash content. ..... ≤0,05 %

9858.1	25 g	plastic	23,15 €
9858.2	50 g	plastic	40,35 €
9858.3	100 g	plastic	69,35 €

4-(Phenylazo) diphenylamine



4-(Phenylazo) diphenylamine

≥97 %, p.a.

Indicator pH 1,2-2,5; for microscopy

4-Anilinoazobenzene,
N-Phenyl-4-phenylazoaniline

$C_{18}H_{15}N_3$

M 273,34 g/mol

mp 89-91 °C

[101-75-7] • EC No. 202-972-3

WGK 3

Guarantee analysis:

Appearance. ..... orange to orange-brown powder
Assay. ..... ≥97,0 %
Absorption max. (in EtOH). ..... ~411 nm
pH-transition range. ..... 1,2 (red)-2,5 (yellow)

4538.1	5 g	glass	33,25 €
4538.2	25 g	glass	89,80 €

N-Phenylbenzenamine
▶ Diphenylamine see p. 1952

1-Phenyl-1,3-butadione
▶ Benzoylacetone see p. 1833

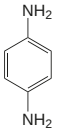
Phenyl carbinol
▶ Benzyl alcohol see p. 1833

Phenyl carbonate
▶ Diphenyl carbonate see p. 1953

Phenyl chloride
▶ Chlorobenzene see p. 1891

1-Phenyldodecane
▶ Dodecylbenzene see p. 1959

1,4-Phenylenediamine

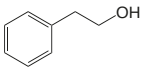


1,4-Phenylenediamine
≥99 %, for synthesis
1,4-Diaminobenzene
$C_6H_8N_2$
M 108,14 g/mol
D 1,14
mp 140 °C • flp 156 °C
Solubility: 47 g/l (H_2O, 25 °C)
[106-50-3] • EC No. 203-404-7
UN No. 1673 • ADR 6.1 III • WGK 3
Danger
H301+H311+H331-H400-H410-H319-H317

Type analysis:
Appearance. ..... pink to brown crystals
Assay (GC). ..... ≥99,0 %
Melting point. ..... ≥138 °C

4499.2	50 g	glass	24,65 €
4499.1	100 g	glass	36,45 €
4499.3	250 g	glass	55,80 €

2-Phenylethanol



2-Phenylethanol
≥99 %, for synthesis
Benzyl carbinol, β-Phenethyl alcohol
$C_8H_{10}O$
M 122,17 g/mol
D 1,02 • bp 219 °C
mp -27 °C • flp 102 °C
Solubility: 20 g/l (H_2O, 20 °C)
[60-12-8] • EC No. 200-456-2
WGK 1
Warning H302-H319

Type analysis:
Assay (GC). ..... ≥99 %

4422.1	5 ml	glass	10,65 €
4422.2	250 ml	glass	17,10 €
4422.3	1 l	glass	46,15 €
Original pack 6 x 1 l			43,84/1 l

Phenylethanolamine
▶ 2-Amino-1-phenylethanol see p. 1791

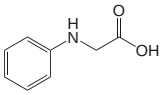
β-Phenethyl alcohol
▶ 2-Phenylethanol see p. 2207

Phenylethylene
▶ Styrene see p. 2383

Phenylethylglucosinolate potassium salt
▶ Gluconasturtiin see p. 2019

Phenylformic acid
▶ Benzoic acid see p. 1830

N-Phenylglycine



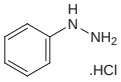
N-Phenylglycine
≥97 %, for biochemistry
Anilinoacetic acid
$C_8H_9NO_2$
M 151,17 g/mol
mp 121-123 °C
[103-01-5] • EC No. 203-070-2
WGK 1

Type analysis:
Assay (titr.). ..... ≥97 %

5939.1	10 g	plastic	60,10 €

2-Phenylhydracrylic acid
▶ DL-Tropic acid see p. 2423

Phenylhydrazine hydrochloride

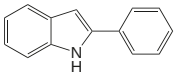


Phenylhydrazine hydrochloride
≥99 %, p.a.
Reagent for detection of sugar.
$C_6H_8N_2 \cdot HCl$
M 144,61 g/mol
mp >245 °C (dec.)
Solubility: ~50 g/l (H_2O, 20 °C)
[59-88-1] • EC No. 200-444-7
UN No. 2811 • ADR 6.1 III • WGK 3
Danger H301+H311+H331-H350-H372-H341-H400-H315-H319-H317

Guarantee analysis:
Assay (titr.). ..... ≥99,0 %
Sulphated ash. ..... ≤0,05 %

KK20.1	25 g	glass	19,90 €
KK20.2	100 g	glass	53,25 €
KK20.3	250 g	glass	117,75 €

2-Phenylindole

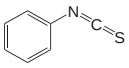


2-Phenylindole
≥94,5 %
α-Phenylindole
$C_{14}H_{11}N$
M 193,25 g/mol
mp 188-190 °C
[948-65-2] • EC No. 213-436-3
WGK 3
Danger H315-H318-H335

Type analysis:
Appearance. ..... pale yellow powder
Assay. ..... ≥94,5 %

6279.1	50 g	plastic	47,20 €

Phenyl isothiocyanate



Phenyl isothiocyanate

PEPTIPURE® ≥99 %, for biochemistry

C_7H_5NS
M 135,17 g/mol
D 1,13 • bp 221 °C
mp -21 °C • flp 87 °C
[103-72-0] • EC No. 203-138-1
UN No. 2927 • ADR 6.1 (8) II • WGK 3

Danger H301+H311+H331-H314

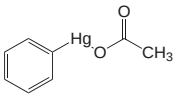
Type analysis:
Appearance. ..... colourless to pale yellow liquid
Assay (GC). ..... ≥99 %

7296.1	25 ml	glass	22,05 €
7296.2	100 ml	glass	50,45 €
7296.3	500 ml	glass	212,35 €

Phenyl ketone

▶ Benzophenone see p. 1831

Phenyl mercuric acetate



Phenyl mercuric acetate

≥98 %, extra pure

Acetoxyphenyl mercury
$C_8H_8HgO_2$
M 336,74 g/mol
mp 149-153 °C
Solubility: 2 g/l (H_2O, 20 °C)
[62-38-4] • EC No. 200-532-5
UN No. 1674 • ADR 6.1 II • WGK 3

Danger
H301-H314-H372-H400-H410

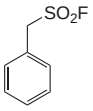
Type analysis:
Appearance. ..... white cryst. powder
Assay. ..... ≥98,0 %
Identity. ..... complies
Mercuric salts and heavy metals. ..... complies
Volatile organic impurities. ..... complies
Polymercurated benzene compounds. ..... ≤1,5 %
Ash content. ..... ≤0,2 %
Sensitive to light

6626.1	50 g	glass	81,20 €
6626.2	250 g	glass	342,95 €

Phenylmethanol

▶ Benzyl alcohol see p. 1833

Phenylmethyl sulphonyl fluoride (PMSF)



Phenylmethyl sulphonyl fluoride (PMSF)

≥99 %, for biochemistry

Irreversible inhibitor of serine- and cysteine proteases.
α-Toluene sulphonyl fluoride, PMSF
$C_7H_7FO_2S$
M 174,2 g/mol
mp 92-94 °C
[329-98-6] • EC No. 206-350-2
UN No. 2928 • ADR 6.1 (8) II • WGK 2

Danger H301-H314

Type analysis:
Appearance. ..... colourless crystals
Assay (GC). ..... ≥99 %
Identity (Raman). ..... complies
Melting point. ..... 91-95 °C
Solubility in ethanol. ..... complies
Solubility in methanol. ..... complies

6367.1	5 g	plastic	31,10 €
6367.2	25 g	plastic	103,10 €
6367.3	100 g	plastic	289,20 €
6367.4	348 mg, in 30 ml glass bottle		14,55 €

For further information, please see 1327

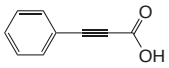
3-Phenyl-2-propen-1-ol

▶ Cinnamyl alcohol see p. 1900

3-Phenyl-2-propenal

▶ Cinnamaldehyde see p. 1899

Phenylpropiolic acid



Phenylpropiolic acid

≥98 %, for synthesis

Phenylacetylenecarboxylic acid
$C_9H_6O_2$
M 146,15 g/mol
mp 134-138 °C
[637-44-5] • EC No. 211-285-8
WGK 1

Warning H315-H319-H335

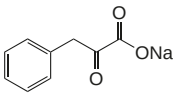
Type analysis:
Assay (titr.). ..... ≥98,0 %
Water (KF). ..... ≤1,0 %
Melting point. ..... 134-138 °C

5271.1	5 g	plastic	42,90 €
5271.2	25 g	plastic	155,90 €

3-Phenylpropionic acid ethyl ester

▶ Hydrocinnamic acid ethyl ester see p. 2052

Phenylpyruvic acid sodium salt



Phenylpyruvic acid sodium salt

≥98 %

Sodium phenylpyruvate
$C_9H_7NaO_3$
M 186,14 g/mol
[114-76-1] • EC No. 204-053-2

Type analysis:
Assay (nonaqueous titration). ..... ≥98,0 %
Water. ..... 7,0-10,0 %

9246.1	5 g	glass	128,50 €

H-D-Phe(4-N_3)-OH

▶ D-4-Azidophenylalanine see p. 1823

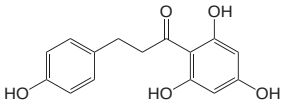
H-L-Phe(4-N_3)-OH

▶ L-4-Azidophenylalanine see p. 1823

pH-Indicators

▶ Indicators and Dyes see p. 2063

Phloretin



Phloretin

ROTICHROM® HPLC

Reference substance for HPLC.
Phloretol
$C_{15}H_{14}O_5$
M 274,26 g/mol
mp ~260 °C
[60-82-2] • EC No. 200-488-7

Type analysis:
Purity (HPLC). ..... ≥99 %

7051.4	50 mg	glass	310,70 €

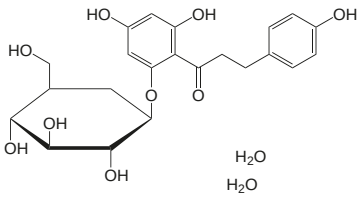
Phloretol

▶ Phloretin see p. 2208

Phloridzin

▶ Phlorizin dihydrate see p. 2209

Phlorizin dihydrate



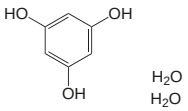
Phlorizin dihydrate

≥98 %, for biochemistry
Phloridzin
$C_{21}H_{24}O_{10} \cdot 2\ H_2O$
M 472,41 g/mol
mp ~110 °C
Storage temp.: +4 °C
[7061-54-3] • EC No. 200-487-1
Warning H315-H319-H335

Type analysis:
Assay (HPLC).....≥98 %
Loss on drying.....≤5,0 %
Heavy metals (as Pb).....≤0,001 %

4196.1	2,5 g	glass	47,85 €
4196.2	10 g	plastic	145,15 €
4196.3	100 g	plastic	858,95 €

Phloroglucinol dihydrate



Phloroglucinol dihydrate

≥98 %
1,3,5-Trihydroxybenzene
$C_6H_6O_3 \cdot 2\ H_2O$
M 162,14 g/mol • mp 221 °C
[6099-90-7] • EC No. 203-611-2 • WGK 2
Warning H315-H319-H335

Type analysis:
Appearance.....white to yellow powder
Assay.....≥98 %

7662.1	50 g	plastic	67,20 €

For further information, please see page 1498

Phos-α-D-Gal

▶ α-D-Galactose-1-phosphate dipotassium salt pentahydrate see p. 2010

Phosphate Standards

▶ Phosphate IC Standard Solution see p. 2376

Phosphatase, alkaline

▶ Alkaline phosphatase see p. 1781

Phosphate buffered formaldehyde

▶ Roti®-Histofix 4 % see p. 2284

Phosphate buffered saline

▶ Roti®-CELL PBS see p. 2270
▶ Roti®fair PBS 7.2 see p. 2276
▶ Roti®fair PBS 7.4 see p. 2276
▶ Roti®fair PBS 7.4 see p. 2276
▶ Roti®fair 10x PBS 7.4 see p. 2277
▶ Roti®fair PBS potassium-free 7.4 see p. 2277
▶ Roti®-PreMix PBS see p. 2295

Phosphate buffered saline with Tween

▶ Roti®fair PBST 7.4 see p. 2277
▶ Roti®-PreMix PBST see p. 2295

Phosphate matrix modifier

▶ Matrix modifier solution Ammonium dihydrogen phosphate see p. 2123

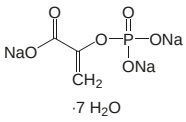
Phosphatidylcholine

▶ Lecithin see p. 2096

Phosphine ligands

Art. No.	Description	Page
2040	(R)-BINAP	1837
1845	(rac)-BINAP	1837
1950	(S)-BINAP	1837
1911	SPhos	2356
2058	Xantphos	2443
1445	XPhos	2443

Phosphoenolpyruvic acid, trisodium salt heptahydrate



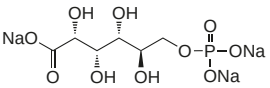
Phosphoenolpyruvic acid, trisodium salt heptahydrate

≥97 %, for biochemistry
PEP-3 Na
$C_3H_2Na_3O_6P \cdot 7\ H_2O$
M 360,09 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[5541-93-5] • EC No. 226-906-8
WGK 3

Type analysis:
Appearance.....white to off-white, cryst. powder
Assay (perchloric acid titration, dry substance).....≥97,0 %
Identity (IR).....complies
Appearance of solution (5 % in H_2O).....colourless

8397.1	100 mg	glass	30,65 €
8397.2	250 mg	glass	42,50 €
8397.3	500 mg	glass	63,45 €

6-Phosphogluconic acid trisodium salt dihydrate



6-Phosphogluconic acid trisodium salt dihydrate

≥98 %, for biochemistry
D-Gluconate-6-phosphate trisodium salt
$C_6H_{14}O_{12}PNa_3$
M 378,11 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[57775-17-4] • EC No. 258-543-6 • WGK 1
Warning H315-H319-H335

Type analysis:
Assay (titr.).....≥98 %
Solution (5 % in H_2O).....colourless, clear
Water (KF).....8-12 %

4167.1	250 mg	glass	107,00 €
4167.2	500 mg	glass	181,70 €

Phosphomolybdic acid

▶ Molybdatophosphoric acid hydrate see p. 2146

Phosphoramidite

Art. No.	Description	Page
K921	Adenosine-BCE-phosphoramidite	1773
K922	Cytidine-BCE-phosphoramidite	1920
K923	Guanosine-BCE-phosphoramidite	2031
K924	Thymidine-BCE-phosphoramidite	2406

meta-Phosphoric acid

meta-Phosphoric acid

p.a., pieces (hyaline)
Reagent for protein, vitamines, urea and glucose. Stabilised with sodium metaphosphate $(NaPO_3)_n$.
$(HPO_3)_n$
D ~2,0 • bp ~600 °C
mp 200-250 °C
[37267-86-0] • EC No. 253-433-4
UN No. 3453 • ADR 8 III • WGK 1
Danger H314

Guarantee analysis:
Assay (HPO_3).....40-50 %
Assay ($NaPO_3$).....50-60 %
Chloride (Cl).....≤0,001 %
Nitrate (NO_3).....≤0,001 %
reducing substances (as H_3PO_3).....≤0,02 %
Arsenic (As).....≤0,0001 %
Iron (Fe).....≤0,005 %

CN91.1	100 g	plastic	31,10 €
CN91.2	250 g	plastic	61,20 €
CN91.3	500 g	plastic	111,70 €
Original pack 6 x 500 g			106,12/500 g
CN91.4	1 kg	plastic	201,60 €
Original pack 6 x 1 kg			191,52/1 kg

ortho-Phosphoric acid 85 %

H_3PO_4
M 98,00 g/mol
D ~1,71
[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1
Danger H290-H314

ortho-Phosphoric acid 85 %
85 %, VLSI Grade

Guarantee analysis:

Assay	84-86 %
Particle number (≥0,5 µm)	≤250 p/ml
Colour (APHA)	≤10
Chloride (Cl)	≤0,0001 %
Fluoride (F)	≤0,0005 %
Nitrate (NO_3)	≤0,0001 %
Sulphate (SO_4)	≤0,0005 %
Insoluble matter	≤0,001 %
$KMnO_4$ reducing substances	complies
Aluminium (Al)	≤200 ppb
Antimony (Sb)	≤2000 ppb
Arsenic (As)	≤200 ppb
Lead (Pb)	≤100 ppb
Cadmium (Cd)	≤200 ppb
Calcium (Ca)	≤300 ppb
Chromium (Cr)	≤100 ppb
Iron (Fe)	≤1000 ppb
Potassium (K)	≤200 ppb
Cobalt (Co)	≤300 ppb
Copper (Cu)	≤100 ppb
Lithium (Li)	≤50 ppb
Magnesium (Mg)	≤100 ppb
Manganese (Mn)	≤50 ppb
Sodium (Na)	≤1000 ppb
Nickel (Ni)	≤200 ppb
Strontium (Sr)	≤200 ppb
Zinc (Zn)	≤1000 ppb

9788.1	2,5 l	plastic	146,10 €
Original pack 4 x 2,5 l			138,80/2,5 l

For further information, please see page 1718

ortho-Phosphoric acid 85 %
ROTIPURAN® ≥85 %, p.a., ISO

Guarantee analysis:

Assay (acidim.)	≥85 %
Colour (APHA)	≤10
Heavy metals (as Pb)	≤0,001 %
Volatile acids (as CH_3COOH)	≤0,001 %
$KMnO_4$ reducing substances (as O)	≤0,001 %
Chloride (Cl)	≤0,0003 %
Nitrate (NO_3)	≤0,0005 %
Sulphate (SO_4)	≤0,003 %
Arsenic (As)	≤0,0001 %
Antimony (Sb)	≤0,002 %
Lead (Pb)	≤0,0001 %
Cadmium (Cd)	≤0,0001 %
Calcium (Ca)	≤0,001 %
Chromium (Cr)	≤0,0005 %
Iron (Fe)	≤0,001 %
Potassium (K)	≤0,0005 %
Cobalt (Co)	≤0,0001 %
Copper (Cu)	≤0,0001 %
Magnesium (Mg)	≤0,001 %
Manganese (Mn)	≤0,00005 %
Sodium (Na)	≤0,025 %
Nickel (Ni)	≤0,0001 %
Zinc (Zn)	≤0,0002 %

6366.1	1 l	plastic	64,40 €
Original pack 6 x 1 l			61,18/1 l
6366.2	2,5 l	plastic	131,70 €
Original pack 4 x 2,5 l			125,12/2,5 l

ortho-Phosphoric acid 85 %
85 %, Ph.Eur.

Guarantee analysis:

Assay (acidim.)	85,0-88,0 %
Identity	complies
Appearance of solution	complies
Substances precipitated by NH_4OH	complies
Chloride (Cl)	≤0,005 %
Sulphate (SO_4)	≤0,01 %
Hypophosphorous acid, phosphorous acid	complies
Heavy metals (as Pb)	≤0,001 %
Arsenic (As)	≤0,0002 %
Iron (Fe)	≤0,005 %

2608.1	1 l	plastic	42,50 €
Original pack 6 x 1 l			40,38/1 l
2608.2	2,5 l	plastic	75,80 €
Original pack 4 x 2,5 l			72,01/2,5 l
2608.3	5 l	plastic	117,20 €
Original pack 2 x 5 l			111,34/5 l
2608.4	10 l	plastic	197,70 €

ortho-Phosphoric acid 85 %
85 %, extra pure

Type analysis:

Assay	84,0-86,0 %
Density (20 °C)	1,6780-1,700
Arsenic (As)	≤0,0001 %
Iron (Fe)	≤0,001 %
Cadmium (Cd)	≤0,0001 %
Copper (Cu)	≤0,0001 %

9079.1	1 l	plastic	40,35 €
Original pack 6 x 1 l			38,33/1 l
9079.2	2,5 l	plastic	71,95 €
Original pack 4 x 2,5 l			68,35/2,5 l
9079.3	10 l	plastic	150,00 €

ortho-Phosphoric acid 75 %

ortho-Phosphoric acid 75 %
75 %, extra pure
H_3PO_4
M 98,0 g/mol
D ~1,58
[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1
Danger H290-H314

Type analysis:

Assay	74,0-76,0 %
Chloride (Cl)	≤0,001 %
Sulphate (SO_4)	≤0,01 %
Heavy metals (as Pb)	≤0,0005 %
Arsenic (As)	≤0,00005 %
Cadmium (Cd)	≤0,00002 %
Iron (Fe)	≤0,001 %
Nickel (Ni)	≤0,0002 %
Mercury (Hg)	≤0,00001 %

2614.1	1 l	plastic	25,70 €
Original pack 6 x 1 l			24,42/1 l
2614.2	2,5 l	plastic	44,65 €
Original pack 4 x 2,5 l			42,42/2,5 l
2614.3	5 l	plastic	83,75 €
Original pack 2 x 5 l			79,56/5 l
2614.4	10 l	plastic	126,75 €

ortho-Phosphoric acid 50 %

ortho-Phosphoric acid 50 %
50 %, extra pure
H_3PO_4
M 98,00 g/mol
D ~1,33
[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1
Danger H314-H290

Type analysis:

Assay	49,0-51,0 %
Density (20 °C)	1,3250-1,3460
Chloride (Cl)	≤0,005 %
Iron (Fe)	≤0,001 %
Arsenic (As)	≤0,0001 %

4336.1	1 l	plastic	22,50 €
Original pack 6 x 1 l			21,38/1 l
4336.2	2,5 l	plastic	40,75 €
Original pack 4 x 2,5 l			38,71/2,5 l
4336.3	5 l	plastic	72,60 €
Original pack 2 x 5 l			68,97/5 l
4336.4	10 l	plastic	120,30 €

ortho-Phosphoric acid 40 %

ortho-Phosphoric acid 40 %
40 %, extra pure
H_3PO_4
M 98,00 g/mol
D ~1,25
[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1
Danger H314-H290

Type analysis:

Assay	39,0-41,0 %
Density (20 °C)	1,2468-1,2622
Chloride (Cl)	≤0,002 %
Iron (Fe)	≤0,001 %
Arsenic (As)	≤0,0001 %
Heavy metals (as Pb)	≤0,0005 %

4334.1	1 l	plastic	22,05 €
Original pack 6 x 1 l			20,95/1 l
4334.2	2,5 l	plastic	40,35 €
Original pack 4 x 2,5 l			38,33/2,5 l
4334.3	5 l	plastic	71,95 €
Original pack 2 x 5 l			68,35/5 l
4334.4	10 l	plastic	117,75 €

ortho-Phosphoric acid 25 %

ortho-Phosphoric acid 25 %

25 %, extra pure

H_3PO_4
M 98,00 g/mol • D ~1,15
[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1

Danger H314-H290

Type analysis:

Assay.....24,0-26,0 %
Density (20 °C).....1,1395-1,1529
Chloride (Cl).....≤0,005 %
Sulphate (SO_4).....≤0,05 %
Iron (Fe).....≤0,002 %
Arsenic (As).....≤0,0001 %

4332.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
4332.2	2,5 l	plastic	35,40 €
Original pack 4 x 2,5 l			33,63/2,5 l
4332.3	5 l	plastic	62,25 €
Original pack 2 x 5 l			59,14/5 l
4332.4	10 l	plastic	96,65 €

ortho-Phosphoric acid (0,3 N)

ortho-Phosphoric acid

0,1 mol/l - 0,3 N volumetric standard solution

[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1

Warning H290

Type analysis:

Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,3 %
Titer.....0,997-1,003

8089.1	1 l	plastic	54,75 €
Original pack 6 x 1 l			52,01/1 l

ortho-Phosphoric acid (0,5 N)

ortho-Phosphoric acid

1/6 mol/l - 0,5 N volumetric standard solution

[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1

Warning H290

Type analysis:

Amount-of-substance conc. (20 °C)....1/6 mol/l ±0,3 %
Titer.....0,997-1,003

8091.1	1 l	plastic	51,50 €
Original pack 6 x 1 l			48,93/1 l

ortho-Phosphoric acid (3 N)

ortho-Phosphoric acid

1 mol/l - 3 N volumetric standard solution

[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1

Warning H290

Type analysis:

Amount-of-substance conc. (20 °C).....1 mol/l ±0,3 %
Titer.....0,997-1,003

8141.1	1 l	plastic	51,50 €
Original pack 6 x 1 l			48,93/1 l

ortho-Phosphoric acid D3, 85 % solution in D_2O

ortho-Phosphoric acid D3, 85 % solution in D_2O

99 Atom%D

For nuclear magnetic resonance spectroscopy.
D_3PO_4
M 101,2 g/mol
D 1,74
[14335-33-2]
UN No. 1805 • ADR 8 III • WGK 1

Danger H290-H314-H318

Type analysis:

Deuterising degree.....≥99 %
Assay (titr.).....≥85 %

9915.1	10 ml	glass ampoule	50,45 €
9915.2	25 ml	glass	105,90 €

Phosphoric anhydride

▶ Phosphorus pentoxide see p. 2211

Phosphorous acid

Phosphorous acid

≥98 %, cryst.

H_3PO_3
M 82,0 g/mol
D 1,65 • bp >180 °C (dec.)
mp 73 °C
[13598-36-2] • EC No. 237-066-7
UN No. 2834 • ADR 8 III • WGK 1

Danger H302-H314

Type analysis:

Assay.....≥98,0 %
Chloride (Cl).....≤0,01 %
Sulphate (SO_4).....≤0,008 %
Iron (Fe).....≤0,005 %

2620.1	100 g	glass	17,75 €
2620.2	500 g	glass	28,50 €
Original pack 6 x 500 g			27,08/500 g
2620.3	1 kg	glass	41,40 €
Original pack 6 x 1 kg			39,33/1 kg

Phosphor(V) oxid

▶ Phosphorus pentoxide see p. 2211

Phosphorus Standards

▶ Phosphor AAS Standard Solution see p. 2360
▶ Phosphorus ICP Standard Solution see p. 2364
▶ Phosphorus ICP Standard Solution see p. 2368

Phosphorus pentoxide

Phosphorus pentoxide

≥99 %, powdered

Drying agent
Phosphorus(V) oxide, Phosphoric anhydride, Diphosphorous pentoxide
P_2O_5
M 141,94 g/mol
D 2,30 • bp 591 °C
mp 340-360 °C
[1314-56-3] • EC No. 215-236-1
UN No. 1807 • ADR 8 II • WGK 1

Danger H314-EUH014

Type analysis:

Appearance.....white powder
Assay.....≥99,0 %
Heavy metals (as Pb).....≤0,02 %
Arsenic (As).....≤0,015 %
Iron (Fe).....≤0,005 %

9076.1	500 g	plastic	24,65 €
Original pack 6 x 500 g			23,42/500 g
9076.2	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
9076.3	2,5 kg	plastic	78,40 €

For further information, please see page 1739

Phosphotungstic acid hydrate

Phosphotungstic acid hydrate

p.a., cryst.

Tungstophosphoric acid
$H_3PO_4 \cdot 12\ WO_3 \cdot x\ H_2O$
M 2880,17 + x H_2O g/mol
mp 95 °C
[12501-23-4] • EC No. 215-682-7
UN No. 3260 • ADR 8 II • WGK 1

Danger H314

Guarantee analysis:

Chloride (Cl).....≤0,03 %
Sulphate (SO_4).....≤0,02 %
Ammonium (NH_4).....≤0,005 %
Nitrate (NO_3).....≤0,005 %
Heavy metals (as Pb).....≤0,001 %
Iron (Fe).....≤0,002 %

2635.1	50 g	glass	46,15 €
2635.2	100 g	glass	75,15 €
2635.3	250 g	glass	160,75 €
2635.4	500 g	glass	299,95 €
Original pack 6 x 500 g			284,95/500 g

Phosphotungstic acid-Orange G solution

▶ Goldner's staining I see p. 2028

o-Phthaldialdehyde

o-Phthaldialdehyde

≥99 %, for synthesis
Benzene-1,2-dialdehyde, OPA
$C_8H_6O_2$
M 134,14 g/mol
D 1,13
mp 54-58 °C • flp 132 °C
Solubility: 53 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[643-79-8] • EC No. 211-402-2
UN No. 2923 • ADR 8 (6.1) II • WGK 3
Danger H301-H314-H317-H410

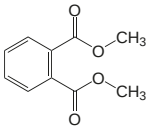
Type analysis:
Assay (GC). ..... ≥99,0 %
Melting range. ..... 54-58 °C

5980.1	25 g	plastic	117,20 €

Phthalein purple

▶ Metal phthaleine see p. 2129

Phthalic acid dimethyl ester



Phthalic acid dimethyl ester

≥99 %, for synthesis
Transparent liquid
Dimethyl phthalate, DMP
$C_{10}H_{10}O_4$
M 194,19 g/mol
D 1,19 • bp 283 °C
mp 6 °C • flp 150 °C
Solubility: <0,1 g/l (H_2O, 20 °C)
[131-11-3] • EC No. 205-011-6
WGK 1

Type analysis:
Assay. ..... ≥99,0 %
Density (20 °C). 1,189-1,198
Refractive index n_D^{20}. 1,514-1,516

4576.1	1 l	glass	42,90 €
Original pack 6 x 1 l			40,76/1 l
4576.2	2,5 l	glass	88,05 €
Original pack 4 x 2,5 l			83,65/2,5 l

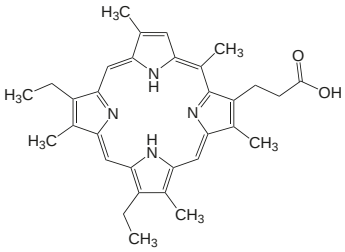
Phthalic acid monopotassium salt

▶ Potassium hydrogen phthalate see p. 2228

Phytomenadione

▶ Vitamin K_1 see p. 2436

Phylloporphyrin



Phylloporphyrin

≥90 %
$C_{32}H_{36}N_4O_2$ • M 508,85 g/mol
[13939-70-3] • EC No. 237-719-6

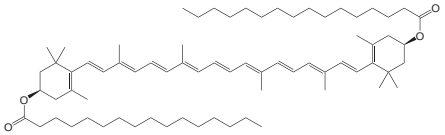
Type analysis:
Assay (TLC). ..... ≥90 %

9084.1	10 mg	glass	213,95 €

Phylloquinone

▶ Vitamin K_1 see p. 2436

Physalien

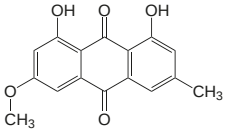


Physalien

ROTICHROM® TLC
Reference substance for thin layer chromatography
$C_{72}H_{116}O_4$ • M 1045,41 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[144-67-2] • EC No. 205-635-9

5673.1	5 mg	plastic	241,90 €

Physcion



Physcion

ROTICHROM® HPLC
Reference substance for HPLC.
Parietin, 1,8-Dihydroxy-3-methoxy-6-methyl-anthraquinone
$C_{16}H_{12}O_5$ • M 284,27 g/mol
mp 209-210 °C
Storage temp.: +4 °C
[521-61-9] • EC No. 208-315-7 • WGK 1
Warning H315-H319-H335

Type analysis:
Purity (HPLC). ..... ≥99 %

7412.2	20 mg	plastic	224,70 €

Phytohistol® plus

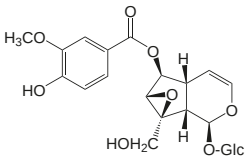
Phytohistol® plus

for microscopy
Botanical mounting medium based on sugar
Application: Drop on slide, add specimen. When free from air bubbles place cover slip.
D 1,11
WGK 1

Type analysis:
Appearance. ..... yellow to brownish, viscous liquid
Refractive index (20 °C). 1,42-1,44

6471.1	15 ml	dropp. bottle	21,40 €
6471.2	50 ml	plastic	57,55 €

Picrosid II



Picrosid II

ROTICHROM® HPLC
Reference substance for HPLC.
From *Picrorhiza kurroa.*
6-Vanilloylcatalpol
$C_{23}H_{28}O_{13}$
M 512,47 g/mol
Storage temp.: +4 °C
[39012-20-9] • EC No. 254-247-6
Warning H302

Type analysis:
Purity (HPLC). ..... >98 %

1197.1	20 mg	glass	252,65 €

Picrotoxin

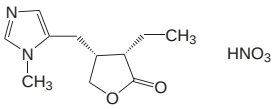
Picrotoxin

≥97,5 %
$C_{30}H_{34}O_{13}$
M 602,57 g/mol
mp 200-202 °C
[124-87-8] • EC No. 204-716-6
UN No. 3462 • ADR 6.1 II • WGK 2
Danger H300

Type analysis:
Assay (TLC). ..... ≥97,5 %

7093.1	1 g	glass	121,40 €

Pilocarpin nitrate



Pilocarpin nitrate

≥98,5 %, extra pure

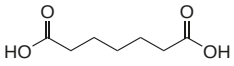
$C_{11}H_{17}N_3O_5$
M 271,27 g/mol
mp 169-173 °C
[148-72-1] • EC No. 205-723-7
UN No. 2811 • ADR 6.1 I • WGK 3

Danger H300+H330

Type analysis:
Assay (titr.). ..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$. ..... +80,0° to +84,0°

7523.1	1 g	glass	149,45 €

Pimelic acid



Pimelic acid

≥99 %

Heptanedioic acid
$C_7H_{12}O_4$ • M 160,17 g/mol
bp 212 °C (13 hPa)
mp 104-106 °C • Solubility: 50 g/l (H_2O, 20 °C)
[111-16-0] • EC No. 203-840-8 • WGK 1

Warning H319

Type analysis:
Assay (titr.). ..... ≥99,0 %
Solution (10 % in methanol). ..... colourless, clear
Water (KF). ..... ≤0,5 %
Melting point. ..... 104-106 °C

5270.1	25 g	plastic	31,10 €
5270.2	50 g	plastic	45,70 €

(-)-α-Pinene

2-Pinene
$C_{10}H_{16}$ • M 136,24 g/mol
D 0,86 • bp 155-156 °C
mp -62 °C • flp 32 °C
Storage temp.: +4 °C
[7785-26-4] • EC No. 232-077-3
UN No. 2368 • ADR 3 III • WGK 3

Danger
H226-H304-H315-H317-H410

(-)-α-Pinene

≥98 %, for synthesis

Type analysis:
Appearance. ..... clear, colourless liquid
Assay. ..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$. ..... -45° to -35°

5647.1	100 ml	glass	32,15 €

(-)-α-Pinene

ROTICHROM® GC

Reference substance for GC.

Type analysis:
Purity (GC). ..... ≥95,0 %

5170.2	100 mg	glass	85,90 €

(+)-α-Pinene

(+)-α-Pinene

ROTICHROM® GC

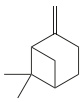
Reference substance for GC.
(+)-2-Pinene
$C_{10}H_{16}$
M 136,24 g/mol
D ~0,857 • bp 156-158 °C
mp -62 °C • flp 32 °C
Storage temp.: +4 °C
[7785-70-8] • EC No. 232-077-3
UN No. 2368 • ADR 3 III • WGK 3

Danger
H226-H304-H315-H317-H410

Type analysis:
Purity (GC). ..... ≥98 %

3857.2	100 mg	glass	88,05 €

β-Pinene



$C_{10}H_{16}$
M 136,24 g/mol
D ~0,87 • bp ~165 °C
mp -61 °C • flp 36 °C
[18172-67-3] • EC No. 204-872-5
UN No. 2319 • ADR 3 III • WGK 3

Danger
H226-H304-H315-H317-H410

β-Pinene

pure

Type analysis:
Appearance..... clear, colourless to light yellowish oil
Density (20 °C). ..... 0,860-0,880 g/cm³
Refractive index (20 °C). 1,4700-1,4800
Optical rotation (20 °C). ..... -25° to -15°

7106.1	250 ml	glass	23,55 €

β-Pinene

ROTICHROM® GC

Reference substance for GC.
Storage temp.: +4 °C

Type analysis:
Purity (GC). ..... ≥90 %

5172.1	1 g	plastic	80,55 €

2,5-Piperazinedione

▶ Glycine anhydride see p. 2027

Piperazine-N,N'-bis(2-ethane-sulphonic acid)

▶ PIPES see p. 2214
▶ PIPES monosodium salt see p. 2214
▶ PIPES 1,5 Na see p. 2214
▶ PIPES disodium salt see p. 2214

Piperazine-N',N'-bis(2-hydroxy-propane sulphonic acid)

▶ POPSO see p. 2221
▶ POPSO 1,5 Na see p. 2221

Piperidine

Hexahydropyridine
$C_5H_{11}N$
M 85,15 g/mol
D 0,86 • bp 106 °C
mp -10 °C • flp 16 °C
[110-89-4] • EC No. 203-813-0
UN No. 2401 • ADR 8 (3) I • WGK 1

Danger
H225-H302-H311+H331-H314

Piperidine

PEPTIPURE® ≥99,5 %, for peptide synthesis

Type analysis:
Assay. ..... ≥99,5 %
Water (KF). ..... ≤0,1 %
Evaporation residue. ..... ≤0,001 %
Lead (Pb). ..... ≤0,00001 %
Iron (Fe). ..... ≤0,00001 %
Magnesium (Mg). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00001 %

A122.1	200 ml	glass	33,25 €
A122.2	500 ml	glass	60,10 €
A122.3	1 l	glass	99,45 €
Original pack 6 x 1 l			94,48/1 l
A122.4	2,5 l	glass	171,50 €
Original pack 4 x 2,5 l			162,93/2,5 l

Piperidine

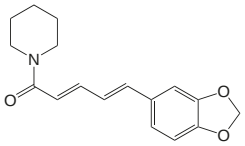
≥99 %, for synthesis

Type analysis:

Assay (GC). ..... ≥99 %
Water (KF). ..... ≤0,5 %
Pyridine (GC). ..... ≤0,5 %
Density (20 °C). ..... 0,859-0,867 g/cm³

0976.1	250 ml	glass	21,40 €
0976.2	1 l	glass	55,80 €
Original pack 6 x 1 l			53,01/1 l
0976.3	2,5 l	glass	110,65 €
Original pack 4 x 2,5 l			105,12/2,5 l

Piperine



Piperine

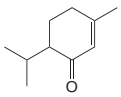
ROTICHROM® ~CHR

1-Piperoylpiperidine
$C_{17}H_{19}NO_3$
M 285,35 g/mol
mp 127-130 °C
Solubility: 0,04 g/l (H_2O, 18 °C)
[94-62-2] • EC No. 202-348-0
UN No. 3077 • ADR 9 III • WGK 2

Warning H302-H411

7099.1	5 g	glass	89,15 €

Piperitone



Piperitone

ROTICHROM® GC

Reference substance for GC.
$C_{10}H_{16}O$
M 152,24 g/mol
D ~0,93 • bp 233 °C
Storage temp.: +4 °C
[89-81-6] • EC No. 201-942-7
WGK 1

Type analysis:

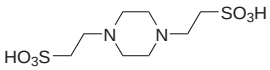
Purity (GC). ..... ≥96 %

5174.1	1 g	plastic	83,75 €

1-Piperoylpiperidin

▶ Piperine see p. 2214

PIPES



PIPES

PUFFERAN® ≥99 %

Piperazine-N,N'-bis-(2-ethanesulphonic acid)
$C_8H_{18}N_2O_6S_2$
M 302,37 g/mol
mp >300 °C
[5625-37-6] • EC No. 227-057-6
WGK 1

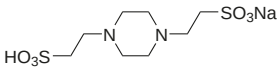
Guarantee analysis:

Appearance. ..... white powder
Assay (titr.). ..... ≥99 %
Water. ..... ≤1,0 %
Solubility (0,5 M in 1 M NaOH). ..... clear, soluble
UV-Absorption (0,1 M in 1 M NaOH):
280 nm. ..... ≤0,1
260 nm. ..... ≤0,1

9156.1	25 g	plastic	19,90 €
9156.2	100 g	plastic	56,90 €
9156.3	250 g	plastic	125,25 €
9156.4	500 g	plastic	212,35 €
Original pack 6 x 500 g			201,73/500 g

For further information, please see page 1308

PIPES monosodium salt



PIPES monosodium salt

PUFFERAN® ≥97 %

Piperazine-N,N'-bis(2-ethanesulphonic acid) monosodium salt monohydrate
$C_8H_{17}NaN_2O_6S_2$
M 324,35 g/mol
[10010-67-0] • EC No. 233-005-3

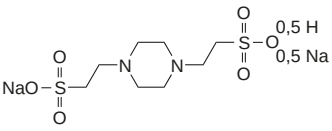
Guarantee analysis:

Assay. ..... ≥97,0 %
Water (KF). ..... ≤3,0 %
Solubility (1% in H_2O). ..... clear, soluble
pH value (1 % in H_2O). 4,0-5,0
UV-Absorbtion (1 % in H_2O):
280 nm. ..... ≤0,04
260 nm. ..... ≤0,05

9153.1	25 g	plastic	37,10 €

For further information, please see page 1308

PIPES 1,5 Na



PIPES 1,5 Na

PUFFERAN® ≥96 %

Piperazine-N,N'-bis(2-ethanesulphonic acid) 1,5 Na
$C_8H_{16,5}N_2O_6S_2Na_{1,5}$
M 335,3 g/mol
[100037-69-2]

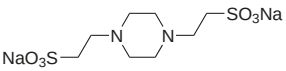
Type analysis:

Assay (titr.). ..... ≥96 %
Water (KF). ..... ≤4,0 %
pH value (1 % solution). 6,5-7,1
UV-absorption (10 % in H_2O):
280 nm. ..... ≤0,05
260 nm. ..... ≤0,05

5583.1	50 g	plastic	69,80 €
5583.2	250 g	plastic	289,20 €

For further information, please see page 1308

PIPES disodium salt



PIPES disodium salt

PUFFERAN® ≥99 %

Piperazine-N,N'-bis(2-ethanesulphonic acid) disodium salt
$C_8H_{16}Na_2N_2O_6S_2$
M 364,3 g/mol
[76836-02-7]
WGK 1

Type analysis:

Appearance. ..... white powder
Assay (titr.). ..... ≥99,0 %
Solubility (0,1 M in H_2O). ..... colourless
pK_a (at 25 °C). 6,5-6,9
Water (H_2O). ..... ≤2,0 %

7109.2	100 g	plastic	127,95 €

For further information, please see page 1308

Plant culture agar

▶ Agar-Agar, plant see p. 1774

Plant Growth Regulators

Art. No.	Description	Page
5552	6-Benzylaminopurine	1834
7464	Gibberellic acid	2015
4143	Indole-3-butyric acid	2066
4144	Indole-3-propionic acid	2067
7280	Indolyl 3-acetic acid	2067
4142	Kinetin	2085
8379	Putrescin	2244
4141	Putrescin dihydrochloride	2244
8367	Serotonin hydrochloride	2313
7161	Spermidine	2356
7162	Spermine	2356

Plant Indican

▶ 3-Indoxyl-β-D-glucopyranoside see p. 2067

Plasmides

Storage temp.: -20 °C
Transport temp.: room temp.
WGK 1

Plasmid DNA pUC19

High-purity plasmid-DNA of pUC19 (pUC19c, Acc. No. L09137) with a overall length of 2686 base pairs. Lyophilised.

X911.1	50 µg	plastic	51,10 €

For further information, please see page 1284

Plasmid DNA pBR322

High-purity plasmid-DNA of pBR322 (Acc. No. V01119) with a overall lenght of 4361 base pairs. Lyophilised.

X912.1	50 µg	plastic	60,10 €

For further information, please see page 1284

Plate Count Agar

Storage temp.: +20 °C

Plate Count Agar

APHA, ISO 4833:2003, for microbiology

For enumeration of the aerobic microbial flora in milk, foods and other material.

Application: Use 23,5 g for 1 l agar.

Guarantee analysis:

Casein peptone ..... 5 g/l
Yeast extract..... 2,5 g/l
Glucose. ..... 1 g/l
Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

X930.1	500 g	plastic	87,65 €
Original pack 6 x 500 g			83,27/500 g
X930.2	1 kg	plastic	164,40 €
Original pack 6 x 1 kg			156,18/1 kg
X930.3	2,5 kg	plastic	332,20 €

For further information, please see page 1458

Plate Count Agar with Powdered Milk

APHA, DIN 10192, LMBG, IDF, for microbiology

For enumeration of microorganisms in milk and dairy derivatives.

Application: Use 24,5 g for 1 l agar.

Guarantee analysis:

Tryptone (Peptone from Casein)..... 5 g/l
Yeast extract..... 2,5 g/l
Glucose. ..... 1 g/l
Skimmed Milk Powder. ..... 1 g/l
Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

HP08.1	500 g	plastic	98,80 €
Original pack 6 x 500 g			93,86/500 g

For further information, please see page 1458

Plate Count Agar, granulated

Plate Count Agar, granulated

granulated, for microbiology

For enumeration of the aerobic microbial flora in milk, foods and other material.

Application: Use 23,5 g for 1 l agar.

PCA

Storage temp.: +20 °C
WGK 1

Formulation:

Casein peptone . ..... 5 g/l
Yeast extract. ..... 2,5 g/l
Glucose. ..... 1 g/l
Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

1521.1	500 g	plastic	117,20 €
Original pack 6 x 500 g			111,34/500 g

For further information, please see page 1456

Platinum black

Platinum black

98,2-98,7 %

Platinummoor

Pt
D 21,45 • bp 3827 °C
mp 1772 °C
[7440-06-4] • EC No. 231-116-1
UN No. 3089 • ADR 4.1 III

Danger H228

Type analysis:

Appearance..... black, fine powder

8408.1	250 mg	glass	44,65 €
8408.2	1 g	glass	155,35 €

Platinum powder

Platinum powder

ROTI®METIC 99,999 % (5N)

Pt
M 195,08 g/mol
D 21,45 • bp 3827 °C
mp 1768 °C
[7440-06-4] • EC No. 231-116-1
UN No. 3089 • ADR 4.1 III

Danger H228

Type analysis:

Assay (metals basis). ..... 99,999 %
Particle size. ..... ~18 mesh
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5654.1	1 g	plastic	424,65 €

Platinum wire

Pt
D 21,45 • bp 3827 °C
mp 1772 °C
[7440-06-4] • EC No. 231-116-1

Platinum wire

≥99,95 %, ∅ 0,2 mm

Type analysis:

Assay. ..... ≥99,95 %
Diameter. ..... 0,2 mm

0737.1	25 cm	plastic	83,75 €
0737.2	50 cm	plastic	153,65 €
0737.3	1 m	plastic	289,20 €

Platinum wire

≥99,9 %, ∅ 0,3 mm

Type analysis:

Assay. ..... ≥99,9 %
Diameter. ..... 0,3 mm

8415.1	10 cm	plastic	75,15 €
8415.2	50 cm	plastic	252,65 €

Platinum wire

≥99,95 %, ∅ 0,5 mm

Typanalyse:

Assay. ..... ≥99,95 %
Diameter. ..... 0,5 mm

0803.1	5 cm	plastic	78,40 €
0803.2	10 cm	plastic	138,70 €
0803.3	25 cm	plastic	317,15 €

Platinum Standards

▶ Platinum AAS Standard Solution see p. 2360
▶ Platinum ICP Standard Solution see p. 2364

Platinummoor

▶ Platinum black see p. 2215

PMA

▶ Propylene glycol methyl ether acetate see p. 2242

PMSF

▶ Phenylmethyl sulphonyl fluoride (PMSF) see p. 2208

PNAG

▶ 4-Nitrophenyl-N-acetyl-β-D-glucosaminide see p. 2165

PNP-α-L-Fuc

▶ 4-Nitrophenyl-α-L-fucopyranoside see p. 2165

PNPG
▶ 4-Nitrophenyl-α-D-galactopyranoside see p. 2165

PNP-α-D-Gal
▶ 4-Nitrophenyl-α-D-galactopyranoside see p. 2165

PNP-β-D-Gal
▶ 4-Nitrophenyl-β-D-galactopyranoside see p. 2166

PNP-β-D-GalNAc
▶ 4-Nitrophenyl-N-acetyl-β-D-galactosaminide see p. 2165

PNP-β-D-Glc
▶ 4-Nitrophenyl-β-D-glucopyranoside see p. 2166

PNP-β-D-GlcNAc
▶ 4-Nitrophenyl-N-acetyl-β-D-glucosaminide see p. 2165

PNPX
▶ 4-Nitrophenyl-β-D-xyloside see p. 2166

PNP-β-D-Xyl
▶ 4-Nitrophenyl-β-D-xyloside see p. 2166

pNPP (tablet)
▶ Roti®fair pNPP 5mg see p. 2277
▶ Roti®fair pNPP 20mg see p. 2277

Podophyllin

Podophyllin
powdered
From *Podophyllum emodii*
Storage temp.: +4 °C
[9000-55-9] • EC No. 232-546-2
UN No. 2811 • ADR 6.1 II • WGK 3

Danger
H300+H310+H330-H314-H360D

Type analysis:
Appearance. ..... brown powder
Origin. ..... *Podophyllum emodii*
Identity:
Test A. ..... conforms to USP
Test B. ..... conforms to USP

7525.1	5 g	plastic	128,50 €

Polyacrylamide

Polyacrylamide
pure
Flocculating agent, usable in a wide pH range.
$(C_3H_5NO)_n$
M ~15 Mio. g/mol
[9003-05-8]
WGK 2

Type analysis:
Insoluble matter. ..... ≤0,5 %
Solids. ..... ≥87 %

3048.1	500 g	plastic	45,70 €
Original pack 6 x 500 g			43,42/500 g
3048.2	2,5 kg	plastic	160,20 €

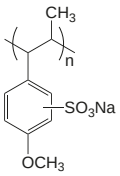
Polyamide

Polyamide
for column chromatography
Polyamide 6
[25038-54-4]

Guarantee analysis:
Appearance. ..... white powder
Particle-size distribution:
>0,315 mm. ..... ≤15 %
pH value 5,5-7,5
Water ..... <5 %
Ash content. ..... <0,3 %

9620.2	100 g	plastic	61,90 €
9620.1	250 g	plastic	131,50 €

Polyanetholesulphonic acid, sodium salt



Polyanetholesulphonic acid, sodium salt
for biochemistry
Sodium polyanetholesulfonate, SPS
$(C_{10}H_{11}NaO_4S)_n$
[55963-78-5]
WGK 3

Warning H315-H319-H335

Type analysis:
Appearance. ..... cream to light brown, amorphous powder
Appearance of solution (20 %, H_2O). ..... yellow to brown
Acetone (GC). ..... ≤0,2 %
Ethanol (GC). ..... ≤0,2 %
Calcium (Ca). ..... ≤0,1 %
Water (KF). ..... 8,0-15,0 %

8369.1	5 g	glass	31,10 €
8369.2	25 g	glass	115,60 €

Polyarabinic acid
▶ Arabic acid see p. 1813

Polydimethyl siloxane
▶ Silicone oil M-series see p. 2322

Polyethylene glycol 200

Polyethylene glycol 200
ROTIPURAN® Ph.Eur.
Type 200 (liquid), PEG 200, Polyglycol, Polyoxyethylene
M 190-210 g/mol
D 1,12 • bp >250 °C
mp -50 °C • flp 200 °C
[25322-68-3] • EC No. 500-038-2 • WGK 1

Guarantee analysis:
Appearance (20 °C). ..... liquid, clear
Identity. ..... complies
Average molar mass. ..... 190-210 g/mol
Colour count (APHA, 25 % in H_2O). ..... ≤30
Hydroxyl value. ..... 534-591 mg KOH/g
pH value (5 % in H_2O). 5,0-7,5
Water (KF). ..... ≤1,0 %
Viscosity (20 °C). ..... 60-67 mPa s
Heavy metals (as Pb). ..... ≤0,0005 %
Ethylene and diethylene glycol. ..... ≤0,2 %
Sulphated ash. ..... ≤0,1 %
Dioxane. ..... ≤0,0001 %
Ethylene oxide. ..... ≤0,0001 %
Formaldehyde. ..... ≤0,003 %
Acid reacting substances (0,1 M NaOH / 5 g). ..... ≤0,1 ml
Reducing substances ..... complies

2631.1	1 l	plastic	35,40 €
Original pack 6 x 1 l			33,63/1 l
2631.2	5 l	plastic	139,65 €
Original pack 2 x 5 l			132,67/5 l

Polyethylene glycol 300

Polyethylene glycol 300
ROTIPURAN® Ph.Eur.
Type 300 (liquid), PEG 300, Polyglycol, Polyoxyethylene
M 285-315 g/mol • D 1,12 • bp >250 °C
mp -15 / -10 °C • flp 220 °C
[25322-68-3] • EC No. 500-038-2
WGK 1

Guarantee analysis:
Appearance (20 °C). ..... liquid, clear
Identity. ..... complies
Average molar mass. ..... 285-315 g/mol
Colour count (APHA, 25 % in H_2O). ..... ≤15
Hydroxyl value. ..... 356-394 mg KOH/g
pH value (5 % in H_2O). 5,0-7,0
Water (KF). ..... ≤1,0 %
Viscosity (20 °C). ..... 88-96 mPa s
Heavy metals (as Pb). ..... ≤0,0005 %
Ethylene and diethylene glycol. ..... ≤0,2 %
Sulphated ash. ..... ≤0,1 %
Dioxane. ..... ≤0,0001 %
Ethylene oxide. ..... ≤0,0001 %
Formaldehyde. ..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g). ..... ≤0,1 ml
Reducing substances ..... complies

2632.1	1 l	plastic	32,15 €
Original pack 6 x 1 l			30,54/1 l
2632.2	5 l	plastic	113,85 €
Original pack 2 x 5 l			108,16/5 l

Polyethylene glycol 400

Polyethylene glycol 400

ROTIPURAN® Ph.Eur.

Type 400 (liquid), PEG 400, Polyglycol, Polyoxyethylene
M 380-420 g/mol
D 1,12
flp 240 °C
[25322-68-3] • EC No. 500-038-2
WGK 1

Guarantee analysis:

Appearance (20 °C)..... liquid, clear
Identity..... complies
Average molar mass..... 380-420 g/mol
Appearance of solution (25 % in H_2O)..... complies
Hydroxyl value..... 267-295 mg KOH/g
pH value (10 % in H_2O)..... 4,5-7,0
Water..... ≤1,0 %
Viscosity (20 °C)..... 105-130 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Ethylene and diethylene glycol..... ≤0,25 %
Sulphated ash..... ≤0,1 %
Dioxane..... ≤0,001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde..... ≤0,003 %
Acid/alkaline reac. substances (0,1 M NaOH / 5 g)..... complies
Reducing substances ..... complies

0144.1	1 l	plastic	27,85 €
Original pack 6 x 1 l			26,46/1 l
0144.2	5 l	plastic	95,60 €
Original pack 2 x 5 l			90,82/5 l
0144.3	25 kg	plastic	332,20 €

Polyethylene glycol 600

Polyethylene glycol 600

ROTIPURAN® Ph.Eur.

Type 600 (liquid), PEG 600, Polyglycol, Polyoxyethylene
M 570-630 g/mol
D 1,12
mp 17-22 °C • flp 260 °C
[25322-68-3] • EC No. 500-038-2
WGK 1

Guarantee analysis:

Appearance (30 °C)..... liquid, clear
Identity..... complies
Average molar mass..... 570-630 g/mol
Colour count (APHA, 25 % in H_2O)..... ≤15
Hydroxyl value..... 178-197 mg KOH/g
Solidification point..... 17-22 °C
pH value (5 % in H_2O)..... 5,0-7,5
Water (KF)..... ≤1,0 %
Viscosity (20 °C, 50 % in H_2O)..... 17-18 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Ethylene and diethylene glycol..... ≤0,2 %
Sulphated ash..... ≤0,1 %
Dioxane..... ≤0,0001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)..... ≤0,1 ml
Reducing substances ..... complies

2633.1	1 l	plastic	33,25 €
Original pack 6 x 1 l			31,59/1 l
2633.2	5 l	plastic	121,40 €
Original pack 2 x 5 l			115,33/5 l

Polyethylene glycol 1000

Polyethylene glycol 1000

ROTIPURAN® Ph.Eur.

Type 1000 (solid), PEG 1000, Polyglycol, Polyoxyethylene
M 950-1050 g/mol
bp >250 °C
mp 35-40 °C • flp 270 °C
[25322-68-3] • EC No. 500-038-2
WGK 1

Guarantee analysis:

Appearance (20 °C)..... wax like
Identity..... complies
Average molar mass..... 950-1050 g/mol
Colour count (APHA, 25 % in H_2O)..... ≤30
Hydroxyl value..... 107-118 mg KOH/g
Solidifying point..... 35-40 °C
pH value (5 %, water)..... 5,0-7,5
Water (KF)..... ≤1,0 %
Viscosity (20 °C, 50 % in H_2O)..... 24-28 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Ethylene and diethylene glycol..... ≤0,2 %
Sulphated ash..... ≤0,1 %
Dioxane..... ≤0,0001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)..... ≤0,1 ml
Reducing substances ..... complies

0150.3	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
0150.1	1 kg	plastic	32,15 €
Original pack 6 x 1 kg			30,54/1 kg
0150.2	5 kg	plastic	113,85 €

Polyethylene glycol 1500

Polyethylene glycol 1500

ROTIPURAN® Ph.Eur.

Type 1500 (solid), PEG 1500, Polyglycol, Polyoxyethylene
M 1400-1600 g/mol
D 1,21 • bp >250 °C
mp 44-48 °C • flp 270 °C
[25322-68-3] • EC No. 500-038-2
WGK 1

Guarantee analysis:

Appearance (20 °C)..... solid, scaly
Identity..... complies
Average molar mass..... 1400-1600 g/mol
Colour count (APHA, 25 % in H_2O)..... ≤30
Hydroxyl value..... 70-80 mg KOH/g
Solidifying point..... 44-48 °C
pH value (5 % in H_2O)..... 5,0-7,5
Water (KF)..... ≤1,0 %
Viscosity (20 °C, 50 % in H_2O)..... 36-42 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Ethylene and diethylene glycol..... ≤0,20 %
Sulphated ash..... ≤0,1 %
Dioxane..... ≤0,0001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)..... ≤0,1 ml
Reducing substances ..... complies

0152.3	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
0152.1	1 kg	plastic	32,15 €
Original pack 6 x 1 kg			30,54/1 kg
0152.2	5 kg	plastic	113,85 €

Polyethylene glycol 2000

Polyethylene glycol 2000

ROTIPURAN® Ph.Eur.

Type 2000 (solid), PEG 2000, Polyglycol, Polyoxyethylene
M 1800-2200 g/mol
D 1,21
mp 48-52 °C • flp 270 °C
[25322-68-3] • EC No. 500-038-2
WGK 1

Guarantee analysis:

Appearance (20 °C)..... solid, scaly
Identity..... complies
Average molar mass..... 1800-2200 g/mol
Colour count (APHA, 25 % in H_2O)..... ≤30
Hydroxyl value..... 51-62 mg KOH/g
Solidifying point..... 48-52 °C
pH value (5 % in H_2O)..... 5,0-7,5
Water (KF)..... ≤1,0 %
Viscosity (20 °C, 50 % in H_2O)..... 50-58 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Ethylene and diethylene glycol..... ≤0,25 %
Sulphated ash..... ≤0,1 %
Dioxane content (GC)..... ≤0,0001 %
Ethylene oxide (GC)..... ≤0,0001 %
Formaldehyde..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)..... ≤0,1 ml
Reducing substances ..... complies

0154.3	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
0154.1	1 kg	plastic	32,15 €
Original pack 6 x 1 kg			30,54/1 kg
0154.2	5 kg	plastic	113,85 €

Polyethylene glycol 4000

Polyethylene glycol 4000

ROTIPURAN® Ph.Eur.

Type 4000 (solid), PEG 4000, Polyglycol, Polyoxyethylene
M 3500-4500 g/mol
mp 53-58 °C • flp 270 °C
[25322-68-3] • EC No. 500-038-2
WGK 1

Guarantee analysis:

Appearance (20 °C)..... solid, scaly
Identity..... complies
Colour count (APHA, 25 % in H_2O)..... ≤30
Hydroxyl value..... 25-30 mg KOH/g
Average molar mass..... 3700-4400 g/mol
Solidifying point..... 53-58 °C
pH value (5 % in H_2O)..... 5,0-7,5
Water..... ≤1,0 %
Viscosity (20 °C, 50 % in H_2O)..... 114-142 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Ethylene and diethylene glycol..... ≤0,2 %
Sulphated ash..... ≤0,1 %
Dioxane..... ≤0,0001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)..... ≤0,1 ml
Reducing substances ..... complies

0156.3	500 g	plastic	23,15 €
Original pack 6 x 500 g			21,99/500 g
0156.1	1 kg	plastic	33,25 €
Original pack 6 x 1 kg			31,59/1 kg
0156.2	5 kg	plastic	122,05 €

Polyethylene glycol 6000

Polyethylene glycol 6000

ROTIPURAN® Ph.Eur.

For biochemical applications and molecular biology.

Type 6000 (powdery), PEG 6000, Polyglycol, Polyoxyethylene

M 5000-7000 g/mol

mp 55-60 °C • flp 270 °C

[25322-68-3] • EC No. 500-038-2 • WGK 1

Guarantee analysis:

Appearance	powdered
Identity	complies
Colour count (APHA, 25 % in H_2O)	≤30
Hydroxyl value	17-20 mg KOH/g
Average molar mass	5600-6600 g/mol
Solidifying point	55-60 °C
pH value (5 % in H_2O)	5,0-7,0
Water (KF)	≤1,0 %
Viscosity (20 °C, 50 % in H_2O)	210-262 mPa s
Heavy metals (as Pb)	≤0,0005 %
Sulphated ash	≤0,1 %
Dioxane	≤0,0001 %
Ethylene oxide	≤0,0001 %
Formaldehyde	≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)	≤0,1 ml
Reducing substances	complies

0158.4	500 g	plastic	23,55 €
Original pack 6 x 500 g			22,37/500 g
0158.1	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
0158.2	5 kg	plastic	132,15 €
0158.3	50 kg	plastic	1041,70 €

Polyethylene glycol 8000

Polyethylene glycol 8000

ROTIPURAN® Ph.Eur.

For biochemical applications and molecular biology.

Type 8000 (solid), PEG 8000, Polyglycol, Polyoxyethylene

M 7300-9000 g/mol

mp 55-61 °C • flp 270 °C

[25322-68-3] • EC No. 500-038-2 • WGK 1

Guarantee analysis:

Appearance	solid, scaled
Identity	complies
Average molar mass	7300-9000 g/mol
Colour count (APHA, 25 % in H_2O)	≤30
Hydroxyl value	12-16 mg KOH/g
Solidifying point	56-61 °C
pH value (5 % in H_2O)	5,0-7,5
Water (KF)	≤1,0 %
Viscosity (20 °C, 50 % in H_2O)	290-450 mPa s
Sulphated ash	≤0,1 %
Dioxane	≤0,0001 %
Ethylene oxide	≤0,0001 %
Formaldehyde	≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)	≤0,1 ml
Reducing substances	complies

0263.1	500 g	plastic	23,55 €
Original pack 6 x 500 g			22,37/500 g
0263.2	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
0263.3	5 kg	plastic	132,15 €

Polyethylene glycol 10000

Polyethylene glycol 10000

ROTIPURAN® Ph.Eur.

Type 10000 (solid), PEG 10000, Polyglycol, Polyoxyethylene

M 9000-11250 g/mol

D 1,12

mp 55-62 °C • flp 265 °C

[25322-68-3] • EC No. 500-038-2

WGK 1

Guarantee analysis:

Appearance (20 °C)	solid, scaled
Appearance of solution (25 % in H_2O)	clear
Identity	complies
Average molar mass	9000-11250 g/mol
Colour count (APHA, 25 % in H_2O)	≤30
Hydroxyl value	10-12 mg KOH/g
pH value (5 % in H_2O)	4,5-7,5
Melting point	55-62 °C
Water (KF)	≤1,0 %
Viscosity (20 °C, 50 % in H_2O)	550-750 mPa s
Heavy metals (as Pb)	≤0,0005 %
Sulphated ash	≤0,1 %
Dioxane	≤0,0001 %
Ethylene oxide	≤0,0001 %
Formaldehyde	≤0,003 %
Acid reacting substances (0,1 M NaOH / 5 g)	≤0,1 ml
Reducing substances	complies

2634.1	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
2634.2	1 kg	plastic	33,25 €
Original pack 6 x 1 kg			31,59/1 kg
2634.3	5 kg	plastic	121,40 €

Polyethylene glycol 20000

Polyethylene glycol 20000

ROTIPURAN® Ph.Eur.

Type 20000 (solid), PEG 20000, Polyglycol, Polyoxyethylene

M ~20000 g/mol

mp >57 °C • flp 260 °C

[25322-68-3] • EC No. 500-038-2

WGK 1

Guarantee analysis:

Appearance (20 °C)	solid, scales
Identity	complies
Average molar mass	≥16000 g/mol
Colour count (APHA, 25 % in H_2O)	≤30
Hydroxyl value	≤7 mg KOH/g
Solidifying point	≥57 °C
pH value (5 % in H_2O)	4,5-7,5
Water (KF)	≤1,0 %
Viscosity (20 °C, 50 % in H_2O)	2700-3500 mPa s
Heavy metals (as Pb)	≤0,0005 %
Sulphated ash	≤0,1 %
Dioxane	≤0,0001 %
Ethylene oxide	≤0,0001 %
Formaldehyde	≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)	≤0,1 ml
Reducing substances	complies

0165.3	500 g	plastic	23,55 €
Original pack 6 x 500 g			22,37/500 g
0165.1	1 kg	plastic	34,30 €
Original pack 6 x 1 kg			32,59/1 kg
0165.2	5 kg	plastic	124,60 €

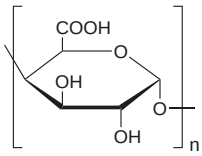
Polyethylene glycol alkylphenyl ether

▶ Triton® X 100 see p. 2423

Polyethylene oxide

▶ Polyethylene glycol see p. 2217

Polygalacturonic acid



Polygalacturonic acid

≥85 %

$(C_6H_8O_6)_n$

M ~25000 g/mol

mp 60 °C

[25990-10-7] • EC No. 205-676-2

Guarantee analysis:

Assay (titr.)	≥85,0 %
Loss on drying	≤10,0 %
pH value (1 % in H_2O)	2,5-3,5
Sulphated ash	≤2,0 %
Heavy metals (as Pb)	≤0,004 %

5269.1	25 g	plastic	45,05 €
5269.2	100 g	plastic	145,05 €

Polyglycol

▶ Polyethylene glycol see p. 2217

Polymerase (thermostable)

▶ Roti®-Pol Hot-TaqUltra see p. 2294
▶ Roti®-Pol Hot-TaqHY see p. 2294
▶ Roti®-Pol Hot-TaqS see p. 2294
▶ Roti®-Pol Hot-TaqS Mix (2x) see p. 2294
▶ Roti®-Pol Hot-TaqS Red-Mix (2x) see p. 2294
▶ Roti®-Pol ProofRead see p. 2294
▶ Roti®-Pol TaqUltra see p. 2295
▶ Roti®-Pol TaqHY see p. 2295
▶ Roti®-Pol TaqS see p. 2295
▶ Roti®-Pol TaqS Mix (2x) see p. 2295
▶ Roti®-Pol TaqS Red-Mix (2x) see p. 2295

Polymer microparticle suspension

▶ McFarland BSS 0,5 see p. 2124
▶ McFarland PMS 0,5 see p. 2124

Polymyxin B sulphate

Polymyxin B sulphate

≥80 %, for biochemistry

Bacteriostatic antibiotic, peptide antibiotic

Aerosporin

$C_{55}H_{96}N_{16}O_{13} \cdot 2\ H_2SO_4$

M 1385,63 g/mol

Storage temp.: +4 °C

[1405-20-5] • EC No. 215-774-7

WGK 1

Warning H302

Guarantee analysis:

Assay (HPLC).....≥80 %
pH value (2 % in H_2O).....5,0-7,0
Specific rotation $[\alpha]_D^{20}$(2 % in H_2O).....-90° to -78°
Sulphate (SO_4).....15,5-17,5 %
Sulphated ash.....≤0,75 %
Loss on drying.....≤5,0 %

0235.1	1 g	glass	48,95 €
0235.2	5 g	glass	198,90 €
0235.3	10 g	glass	359,60 €

For further information, please see page 1507

Polymyxin E_1-disulphate

▶ Colistinsulphate see p. 1905

Polyoxyethylene

▶ Polyethylene glycol see p. 2217

Polyoxyethylene-20-sorbitan monolaurate

▶ Tween® 20 see p. 2427

Polyoxyethylene-40-sorbitan monooleate

▶ Tween® 80 see p. 2427

Polyoxyethylene-40-sorbitan monopalmitate

▶ Tween® 40 see p. 2427

Polyoxyethylene-60-sorbitan monostearate

▶ Tween® 60 see p. 2427

Polyoxymethylene

▶ Paraformaldehyde see p. 2191

Polypeptone

Polypeptone

for microbiology

Storage temp.: +20 °C • WGK 1

Type analysis:

Total nitrogen.....≥10 %
Amino nitrogen.....≥3,7 %
Loss on drying.....≤6 %
Ash.....≤15 %
pH (2 % solution).....6,5-7,5

2903.1	250 g	plastic	52,15 €
2903.2	500 g	plastic	98,80 €
Original pack 6 x 500 g			93,86/500 g
2903.3	1 kg	plastic	179,00 €
Original pack 6 x 1 kg			170,05/1 kg

For further information, please see page 1495

Polyphenylethylene

▶ Polystyrene see p. 2219

Polysorbate

▶ Tween® 20 see p. 2427
▶ Tween® 40 see p. 2427
▶ Tween® 60 see p. 2427
▶ Tween® 80 see p. 2427

Polystyrene

Polystyrene

granulated

M ~320 000 g/mol • D ~1,05

[9003-53-6] • EC No. 500-008-9

Type analysis:

Appearance.....colourless granules
Density (DIN 53479).....1,05
Vicat softening point.....85 °C

9151.1	1 kg	plastic	27,45 €
Original pack 6 x 1 kg			26,08/1 kg

Polysucrose 400

Polysucrose 400

BioScience-Grade, for molecular biology and biochemistry

For density gradient centrifugation during cell separation and isolation of cell organelles.

Sucrose polymer, Sucrose-epichlorhydrin copolymer

$(C_{12}H_{22}O_{11})_n$ x $(C_3H_5ClO)_n$

M 450000 ±100000 g/mol

Storage temp.: +20 °C • [26873-85-8]

Type analysis:

Appearance.....white powder
Loss on drying.....≤5 %
Specific optical rotation $[\alpha]_D^{20}$.....+53° to +59°
Intrinsic viscosity (20 °C).....0,14-0,20
pH value (10 % in H_2O).....7,0-9,0
Sulphated ash.....≤0,3 %
Chloride (Cl).....≤500 ppm

4668.1	10 g	plastic	28,95 €
4668.2	25 g	plastic	65,50 €
4668.3	100 g	plastic	221,35 €

For further information, please see page 1279

Polysucrose solution

▶ Roti®-Sep 1077 human see p. 2297
▶ Roti®-Sep 1077 animal see p. 2297
▶ Roti®-Sep 1086 mouse see p. 2297
▶ Roti®-Sep 1077 human/tube see p. 2297

Polyvidon

▶ Polyvinylpyrrolidone K 12 see p. 2220
▶ Polyvinylpyrrolidone K 25 see p. 2220
▶ Polyvinylpyrrolidone K 30 see p. 2220
▶ Polyvinylpyrrolidone K 90 see p. 2220

Polyvinyl acetate

Polyvinyl acetate

extra pure

D 1,18

mp 96-102 °C

[9003-20-7]

WGK 1

Type analysis:

Softening point.....119 °C
Viscosity (10 % in ethyl acetate).....3,5-5,0 mPa s
Density.....1,18 ±0,01
Acid value.....<0,5 mg KOH/g
Molecular weight.....55000-70000

9154.1	1 kg	plastic	59,05 €
Original pack 6 x 1 kg			56,10/1 kg
9154.7	5 kg	plastic	231,15 €

Polyvinyl alcohol

▶ Mowiol®4-88 see p. 2148

Polyvinylbenzene

▶ Polystyrene see p. 2219

Polyvinyl chloride

Polyvinyl chloride

powdered

PVC

M 30000-40000 g/mol

D 1,4

Type analysis:

Appearance.....white to off-white powder
K-value.....42 ±1
Chlorine (Cl).....47,5 % ±0,6 %
Volatile parts.....<1,0 %
Viscosity (20 % in MEK).....28 ±5 mPa s

9163.1	250 g	plastic	26,80 €
9163.2	1 kg	plastic	67,20 €
Original pack 6 x 1 kg			63,84/1 kg

Polyvinylpyrrolidone K 12

Polyvinylpyrrolidone K 12
CELLPURE®
PVP, Polyvidone, Povidon
$(C_6H_9NO)_n$
M 2000-3000 g/mol
Solubility: >800 g/l (H_2O, 23 °C)
[9003-39-8]
WGK 1

Type analysis:
Endotoxins..... tested
Appearance..... white to off-white powder
K-value..... 10,2-13,8
Nitrogen content (N)..... 11,5-12,8 %
Identity (IR)..... complies
Clearness (5 % in H_2O)..... clear
Water (KF)..... ≤5,0 %
Sulphated ash..... ≤0,1 %
pH value (5 % in H_2O)..... 3,0-5,0
Vinylpyrrolidone (HPLC)..... ≤0,001 %
2-Pyrrolidone (HPLC)..... ≤3,0 %
Heavy metals..... ≤0,001 %
Aldehyde..... ≤0,05 %
Hydrazine..... ≤0,0001 %
Peroxides (as H_2O_2)..... ≤0,04 %

7598.1	100 g	plastic	25,30 €
7598.2	500 g	plastic	100,95 €
Original pack 6 x 500 g			95,90/500 g

Polyvinylpyrrolidone K 25

Polyvinylpyrrolidone K 25
extra pure
PVP, Polyvidone, Povidon
$(C_6H_9NO)_n$
M ~24000 g/mol
[9003-39-8]
WGK 1

Type analysis:
Appearance..... white to off-white powder
K-value..... 22,5-27,0
Nitrogen content (N)..... 11,5-12,8 %
Clearness (5 % in H_2O)..... clear
Water (KF)..... ≤5,0 %
Sulphated ash..... ≤0,1 %
pH value (5 % in H_2O)..... 3,0-5,0
Vinylpyrrolidone (HPLC)..... ≤0,001 %
Heavy metals..... ≤0,001 %
Aldehyde..... ≤0,05 %
Hydrazine..... ≤0,0001 %
Peroxides (as H_2O_2)..... ≤0,04 %

4606.1	100 g	plastic	21,00 €
4606.2	500 g	plastic	60,10 €
Original pack 6 x 500 g			57,10/500 g
4606.3	1 kg	plastic	107,40 €
Original pack 6 x 1 kg			102,03/1 kg
4606.4	2,5 kg	plastic	256,95 €
4606.7	5 kg	plastic	493,45 €

Polyvinylpyrrolidone K 30

Polyvinylpyrrolidone K 30
extra pure
Molecularbiology
PVP, Polyvidone, Povidon
$(C_6H_9NO)_n$
M ~40000 g/mol
[9003-39-8]
WGK 1

Type analysis:
Appearance..... white to off-white powder
K-value..... 27,0-32,4
Nitrogen content (N)..... 11,5-12,8 %
Clearness (5 % in H_2O)..... clear
Water (KF)..... ≤5,0 %
Sulphated ash..... ≤0,1 %
pH value (5 % in H_2O)..... 3,0-5,0
Vinylpyrrolidone (HPLC)..... ≤0,001 %
Heavy metals..... ≤0,001 %
Aldehyde..... ≤0,05 %
Hydrazine..... ≤0,0001 %
Peroxides (as H_2O_2)..... ≤0,04 %

4607.1	100 g	plastic	22,50 €
4607.2	500 g	plastic	75,15 €
Original pack 6 x 500 g			71,39/500 g
4607.3	1 kg	plastic	127,95 €
Original pack 6 x 1 kg			121,55/1 kg
4607.4	2,5 kg	plastic	289,20 €
4607.5	5 kg	plastic	536,45 €

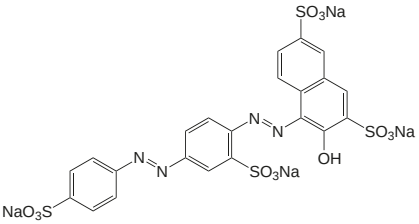
Polyvinylpyrrolidone K 90

Polyvinylpyrrolidone K 90
extra pure
Molecularbiology
PVP, Polyvidone, Povidon
$(C_6H_9NO)_n$
M ~360000 g/mol
[9003-39-8]
WGK 1

Type analysis:
Appearance..... white to off-white powder
K-value..... 81,0-97,2
Nitrogen content (N)..... 11,5-12,8 %
Clearness (5 % in H_2O)..... clear
Water (KF)..... ≤5,0 %
pH value (5 % in H_2O)..... 4,0-7,0
Vinylpyrrolidone (HPLC)..... ≤0,001 %
Heavy metals..... ≤0,001 %
Aldehydes..... ≤0,05 %
Hydrazine..... ≤0,0001 %
Peroxides (as H_2O_2)..... ≤0,04 %

CP15.1	100 g	plastic	23,15 €
CP15.2	500 g	plastic	76,25 €
Original pack 6 x 500 g			72,44/500 g
CP15.3	1 kg	plastic	138,70 €
Original pack 6 x 1 kg			131,77/1 kg
CP15.4	2,5 kg	plastic	321,45 €

Ponceau S (C.I. 27195)



Ponceau S (C.I. 27195)
for histology and electrophoresis
For reversible protein staining on membranes and for microscopy.
Scarlet red
$C_{22}H_{12}N_4Na_4O_{13}S_4$
M 760,56 g/mol
Solubility: 10 g/l (H_2O, 20 °C)
[6226-79-5] • EC No. 228-319-2 • WGK 1
Warning H315-H319-H335

Type analysis:
Absorption max. (in H_2O)..... 517-523 nm
Specific extinction E 1 %/1 cm..... >460
Loss on drying (110 °C)..... ≤10 %

5938.2	10 g	glass	26,80 €
5938.1	25 g	glass	53,65 €

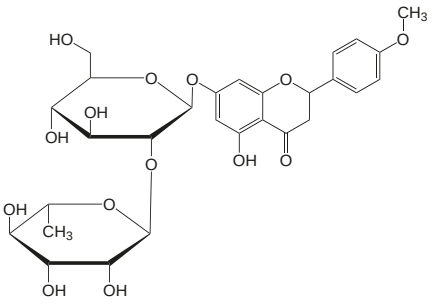
For further information, please see page 1525

Ponceau de Xylidine
▶ Xylidine Ponceau 2R (C.I. 16150) see p. 2445

Ponceau-Fuchsin solution
▶ Goldner's staining I see p. 2028

Ponceau 4G
▶ Crocein orange G (C.I. 15970) see p. 1913

Poncirin



Poncirin
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{28}H_{34}O_{14}$ • M 594,56 g/mol
Storage temp.: +4 °C
[14941-08-3] • EC No. 239-020-1

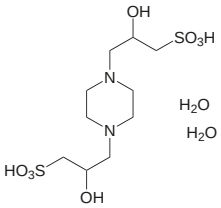
Type analysis:
Purity (HPLC)..... ≥97 %

7413.1	10 mg	plastic	246,20 €

POPOP

▶ 1,4-Bis[2-(5-phenyloxazolyl)]-benzene
see p. 1841

POPSO



POPSO

PUFFERAN® ≥99 %

Piperazine-N,N'-bis(2-hydroxypropane sulphonic acid)
$C_{10}H_{22}N_2O_8S_2 \cdot 2\ H_2O$
M 398,5 g/mol
mp 320 °C
[68189-43-5] • EC No. 269-199-1

Type analysis:

Assay (titr.). ..... ≥99 %
Water (KF). ..... ~9,0 %

6632.1	25 g	plastic	39,70 €
6632.2	100 g	plastic	124,60 €

For further information, please see page 1308

POPSO 1,5 Na

POPSO 1,5 Na

PUFFERAN® ≥99 %

Piperazine-N,N'-bis(2-hydroxypropane sulphonic acid) 1,5 Na
$C_{20}H_{41}N_4Na_3O_{16}S_4$
M 790,79 g/mol
[108321-08-0]

Type analysis:

Assay (titr. dry substance). ..... ≥99,0 %
Water (KF). ..... ≤1,0 %
pH value (1 % solution). 7,9-8,5
UV-absorption (0,1 M in H_2O):
280 nm. ..... ≤0,04
260 nm. ..... ≤0,06

6965.1	25 g	plastic	60,10 €
6965.2	100 g	plastic	184,40 €

For further information, please see page 1308

Potash

▶ Potassium carbonate see p. 2223

Potassium Standards

▶ Potassium AAS Standard Solution see p. 2360
▶ Potassium ICP Standard Solution see p. 2364
▶ Potassium ICP Standard Solution see p. 2369
▶ Potassium IC Standard Solution see p. 2377

Potassium hydrogen tartrate

Potassium hydrogen tartrate

≥99,5 %, extra pure

Cream of tartar, Potassium acid tartrate, Potassium bitartrate
$C_4H_5KO_6$
M 188,18 g/mol
D 1,95
mp ~250 °C (dec.)
Solubility: ~6 g/l (H_2O, 20 °C)
[868-14-4] • EC No. 212-769-1
WGK 1

Type analysis:

Assay (acidim., dry substance). ..... ≥99,5 %
Specific rotation $[\alpha]_D^{20}$ (dry substance). ..... +8,0° to +9,2°
Oxalic acid ($C_2H_2O_4$). ..... ≤0,05 %
Chloride (Cl). ..... ≤0,05 %
Sulphate (SO_4). ..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,001 %
Loss on drying (105 °C). ..... ≤0,5 %

8645.1	100 g	plastic	12,80 €
8645.2	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
8645.3	1 kg	plastic	48,30 €
Original pack 6 x 1 kg			45,89/1 kg

Potassium acetate

$K(CH_3COO)$
M 98,15 g/mol
D 1,57
mp 292 °C • flp >250 °C
Solubility: 2530 g/l (H_2O, 20 °C)
[127-08-2] • EC No. 204-822-2
WGK 1

Potassium acetate

≥99 %, p.a.

Buffer substance, molecular biology

Guarantee analysis:

Assay (perchloric acid titration). ..... ≥99,0 %
In H_2O insoluble matter. ..... ≤0,005 %
pH value (5 % in H_2O). 6,5-9,0
Nitrogen compounds (as N). ..... ≤0,001 %
Phosphate (PO_4). ..... ≤0,005 %
Chloride (Cl). ..... ≤0,002 %
Sulphate (SO_4). ..... ≤0,005 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,0005 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,005 %
Sodium (Na). ..... ≤0,25 %
Nickel (Ni). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

T874.1	500 g	plastic	35,40 €
Original pack 6 x 500 g			33,63/500 g
T874.2	1 kg	plastic	54,75 €
Original pack 6 x 1 kg			52,01/1 kg
T874.3	2,5 kg	plastic	105,25 €
T874.5	25 kg	plastic	719,20 €

For further information, please see page 1309

Potassium acetate

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6,0 E.U./g
Assay (dry substance). ..... ≥99 %
Appearance of solution. ..... complies
pH value (5 % in H_2O). 7,5-9,0
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,02 %
Iron (Fe). ..... ≤0,002 %
Sodium (Na). ..... ≤0,5 %
Reducing substances ..... complies
Loss on drying (105 °C). ..... ≤3,0 %

HN10.1	250 g	plastic	25,70 €
HN10.2	500 g	plastic	44,00 €
Original pack 6 x 500 g			41,80/500 g
HN10.3	1 kg	plastic	76,25 €
Original pack 6 x 1 kg			72,44/1 kg
HN10.4	2,5 kg	plastic	170,95 €

Potassium acetate

≥99 %, Ph.Eur., BP

Buffer substance, molecular biology

Guarantee analysis:

Assay (perchloric acid titration, dry substance). ..... 99,0-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
pH value (5 % in water). 7,5-9,0
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,0004 %
Iron (Fe). ..... ≤0,002 %
Sodium (Na). ..... ≤0,5 %
Reducing substances ..... complies
Loss on drying (105 °C). ..... ≤3,0 %

4986.1	1 kg	plastic	42,50 €
Original pack 6 x 1 kg			40,38/1 kg
4986.2	5 kg	plastic	120,30 €
4986.5	25 kg	plastic	471,95 €

Potassium acid tartrate

▶ Potassium hydrogen tartrate see p. 2221

Potassium alum

▶ Potassium aluminium sulphate dodecahydrate see p. 2222

Potassium aluminium sulphate dodecahydrate

Aluminium potassium sulphate, Potassium Alum
$KAl(SO_4)_2 \cdot 12\ H_2O$
M 474,39 g/mol • D 1,73 • mp ~92 °C
Solubility: 139 g/l (H_2O, 20 °C)
[7784-24-9] • EC No. 233-141-3 • WGK 1

Potassium aluminium sulphate dodecahydrate

≥98 %, p.a., ACS

Guarantee analysis:

Assay (compl.)	98,0-102,0 %
pH value (5 % in water)	≥3,0
In H_2O insoluble matter	≤0,005 %
Chloride (Cl)	≤0,0005 %
Phosphate (PO_4)	≤0,0005 %
Ammonium (NH_4)	≤0,005 %
Arsenic (As)	≤0,0002 %
Lead (Pb)	≤0,0005 %
Cadmium (Cd)	≤0,0005 %
Chromium (Cr)	≤0,0005 %
Iron (Fe)	≤0,0005 %
Cobalt (Co)	≤0,0005 %
Copper (Cu)	≤0,0005 %
Manganese (Mn)	≤0,0005 %
Sodium (Na)	≤0,02 %
Nickel (Ni)	≤0,0005 %
Heavy metals (as Pb)	≤0,001 %

P724.2	500 g	plastic	26,80 €
Original pack 6 x 500 g			25,46/500 g
P724.1	1 kg	plastic	47,20 €
Original pack 6 x 1 kg			44,84/1 kg
P724.3	2,5 kg	plastic	99,90 €

Potassium aluminium sulphate dodecahydrate

≥99 %, Ph.Eur.

Guarantee analysis:

Appearance	fine, white crystals
Assay	99,0-100,5 %
Identity	complies
Loss on drying	43-46 %
Appearance of solution	complies
pH value (10 % in H_2O)	3,0-3,5
Ammonium (NH_4)	≤0,2 %
Iron (Fe)	≤0,01 %
Heavy metals (as Pb)	≤0,002 %
Arsenic (As)	≤0,0003 %

CN78.1	500 g	plastic	19,90 €
Original pack 6 x 500 g			18,91/500 g
CN78.2	1 kg	plastic	28,95 €
Original pack 6 x 1 kg			27,50/1 kg
CN78.3	5 kg	plastic	103,75 €

Potassium aluminium sulphate dodecahydrate

≥98 %

Type analysis:

Assay	≥98,0 %
pH value (10 % in H_2O)	3,0-3,5
Iron (Fe)	≤0,02 %
Lead (Pb)	≤0,03 %
Insoluble matter	≤0,01 %

8896.1	1 kg	plastic	17,10 €
Original pack 6 x 1 kg			16,25/1 kg
8896.2	5 kg	plastic	42,90 €
8896.3	10 kg	plastic	75,15 €
8896.4	25 kg	plastic	170,95 €

Potassium bicarbonate

▶ Potassium hydrogen carbonate see p. 2227

Potassium bichromate

▶ Potassium dichromate see p. 2225

Potassium biphosphate

▶ Potassium dihydrogen phosphate see p. 2225

Potassium biphthalate

▶ Potassium hydrogen phthalate see p. 2228

Potassium bisulphate

▶ Potassium hydrogen sulphate see p. 2229

Potassium bitartrate

▶ Potassium hydrogen tartrate see p. 2221

Potassium bromate

Potassium bromate

≥99,8%, p.a., ACS, ISO

Standard substance for oxidimetric titrations, powerful bromination reagent.
$KBrO_3$
M 167,01 g/mol
mp 409-413 °C
Solubility: 69 g/l (H_2O, 20 °C)
[7758-01-2] • EC No. 231-829-8
UN No. 1484 • ADR 5.1 II • WGK 2

Danger H271-H301-H350

Guarantee analysis:

Assay (iodom.)	≥99,8 %
In H_2O insoluble matter	≤0,003 %
pH value (5 % in H_2O)	5,0-9,0
Loss on drying (150 °C)	≤0,1 %
Total nitrogen (N)	≤0,001 %
Bromide (Br)	≤0,02 %
Sulphate (SO_4)	≤0,005 %
Cadmium (Cd)	≤0,0005 %
Calcium (Ca)	≤0,005 %
Iron (Fe)	≤0,0005 %
Sodium (Na)	≤0,01 %
Nickel (Ni)	≤0,0005 %
Zinc (Zn)	≤0,0005 %
Heavy metals (as Pb)	≤0,0005 %

4396.1	100 g	plastic	47,85 €
4396.2	250 g	plastic	107,00 €
4396.3	500 g	plastic	193,00 €
Original pack 6 x 500 g			183,35/500 g

Potassium bromide

KBr
M 119,00 g/mol
D 2,75 • bp 1435 °C
mp 730 °C
Solubility: 650 g/l (H_2O, 20 °C)
[7758-02-3] • EC No. 231-830-3 • WGK 1

Warning H319

Potassium bromide

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis)	99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5064.1	10 g	plastic	107,40 €
5064.2	50 g	plastic	364,45 €

Potassium bromide

≥99 %, p.a., ACS

Guarantee analysis:

Assay (arg.)	≥99,0 %
In H_2O insoluble matter	≤0,005 %
pH value (5 % solution)	5,0-8,8
Bromate (BrO_3)	≤0,001 %
Chloride (Cl)	≤0,2 %
Iodate (IO_3)	≤0,001 %
Iodide (I)	≤0,001 %
Sulphate (SO_4)	≤0,005 %
Total nitrogen (as N)	≤0,005 %
Heavy metals (as Pb)	≤0,0005 %
Barium (Ba)	≤0,002 %
Calcium (Ca)	≤0,002 %
Iron (Fe)	≤0,0005 %
Magnesium (Mg)	≤0,001 %
Sodium (Na)	≤0,02 %

A137.1	100 g	plastic	21,40 €
A137.2	500 g	plastic	40,75 €
Original pack 6 x 500 g			38,71/500 g
A137.3	1 kg	plastic	71,95 €
Original pack 6 x 1 kg			68,35/1 kg

Potassium bromide

≥98 %, Ph.Eur.

Guarantee analysis:

Assay (arg., dry substance)	98,5-101,0 %
Identity	complies
Appearance of solution	complies
Acid or alkaline react. substances	complies
Loss on drying (105 °C)	≤1,0 %
Chloride (Cl)	≤0,6 %
Sulphate (SO_4)	≤0,01 %
Iodide (I)	complies
Bromate (BrO_3)	complies
Iron (Fe)	≤0,002 %
Mg and alkaline-earth metals (as Ca)	≤0,02 %

9252.1	250 g	plastic	36,45 €
9252.2	1 kg	plastic	95,60 €
Original pack 6 x 1 kg			90,82/1 kg

Potassium bromide

for IR spectrometry

Embedding reagent for the manufacture of KBr pellets.

Typ analysis:

Suitability for IR spectrometry. ..... complies

CP19.2	50 g	plastic	48,30 €
CP19.1	100 g	plastic	80,55 €

Potassium bromide bromate solution

▶ Bromide bromate solution (0,1 N) see p. 1851

Potassium bromide solution (0,1 N)

Potassium bromide solution

0,1 mol/l - 0,1 N volumetric standard solution

Type analysis:

Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,5 %
Titer. 0,995-1,005

8130.1	1 l	plastic	72,60 €
Original pack 6 x 1 l			68,97/1 l

Potassium carbonate

Potash
K_2CO_3
M 138,21 g/mol
D 2,43
mp 891 °C
Solubility: 1120 g/l (H_2O, 20 °C)
[584-08-7] • EC No. 209-529-3
WGK 1

Warning H315-H319-H335

Potassium carbonate

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5335.1	10 g	plastic	47,85 €
5335.2	50 g	plastic	152,15 €

Potassium carbonate

≥99 %, p.a., ACS

Drying agent, disintegrating agent

Guarantee analysis:

Assay (acidim., dry substance). ..... ≥99,0 %
In H_2O insoluble matter. ..... ≤0,005 %
Loss on drying (300 °C)..... ≤1,0 %
Nitrogen compounds (as N). ..... ≤0,001 %
Sulphur compounds (as SO_4)..... ≤0,003 %
Chloride (Cl). ..... ≤0,002 %
Phosphate (PO_4). ..... ≤0,001 %
Aluminium (Al)..... ≤0,001 %
Arsenic (As)..... ≤0,0001 %
Lead (Pb). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,002 %
Iron (Fe)..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,002 %
Sodium (Na). ..... ≤0,02 %
Nickel (Ni)..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %

P743.1	500 g	plastic	27,45 €
Original pack 6 x 500 g			26,08/500 g
P743.2	1 kg	plastic	42,50 €
Original pack 6 x 1 kg			40,38/1 kg
P743.3	2,5 kg	plastic	91,95 €

Potassium carbonate

≥99 %, Ph.Eur.

Guarantee analysis:

Appearance..... white to off-white powder
Assay (dry substance)..... 99,0-101,0 %
Identity..... complies
Appearance of solution..... complies
Chloride (Cl). ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,002 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe)..... ≤0,001 %
Loss on drying (120 °C)..... ≤5,0 %

X894.1	500 g	plastic	17,75 €
Original pack 6 x 500 g			16,86/500 g
X894.2	1 kg	plastic	26,35 €
Original pack 6 x 1 kg			25,03/1 kg
X894.3	2,5 kg	plastic	55,80 €

Potassium carbonate

≥98 %

Type analysis:

Assay (K_2CO_3). ..... ≥98,0 %
Sodium (Na)..... ≤0,25 %

7956.1	1 kg	plastic	18,20 €
Original pack 6 x 1 kg			17,29/1 kg
7956.2	5 kg	plastic	64,40 €
7956.5	25 kg	plastic	209,65 €

Potassium chlorate

$KClO_3$
M 122,55 g/mol
D 2,32 • bp 400 °C (dec.)
mp 368 °C
Solubility: ~73 g/l (H_2O, 20 °C)
[3811-04-9] • EC No. 223-289-7
UN No. 1485 • ADR 5.1 II • WGK 2

Danger H271-H302+H332-H411

Potassium chlorate

≥99 %, p.a., ACS

Oxidant

Guarantee analysis:

Assay. ..... ≥99,0 %
In H_2O insoluble matter. ..... ≤0,005 %
Bromate (BrO_3). ..... ≤0,015 %
Chloride (Cl)..... ≤0,001 %
Sulphate (SO_4)..... ≤0,002 %
Heavy metals (as Pb). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,002 %
Iron (Fe). ..... ≤0,0003 %
Magnesium (Mg). ..... ≤0,002 %
Sodium (Na)..... ≤0,01 %

HN27.1	100 g	plastic	16,05 €
HN27.2	250 g	plastic	24,20 €
HN27.3	500 g	plastic	36,45 €
Original pack 6 x 500 g			34,63/500 g

Potassium chlorate

≥99,7 % cryst.

Oxidation reagent

Type analysis:

Appearance. ..... white
Assay. ..... ≥99,7 %
Water content. ..... ≤0,05 %
Insoluble matter. ..... ≤0,45 %
The parameter 'Insoluble' consider insoluble contents of the anti-caking agent.

7959.1	1 kg	tin plate	33,25 €
Original pack 6 x 1 kg			31,59/1 kg
7959.2	5 kg	tin plate	120,30 €

Potassium chloride

KCl
M 74,56 g/mol
D 1,984 • bp 1413 °C
mp 770 °C
Solubility: 330 g/l (H_2O, 20 °C)
[7447-40-7] • EC No. 231-211-8
WGK 1

Potassium chloride

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5346.1	25 g	plastic	76,90 €
5346.2	100 g	plastic	223,10 €

Potassium chloride

≥99,5 %, p.a., ACS, ISO

Reagent for buffer solutions, for molecular biology.

Guarantee analysis:

Assay (arg.). ..... 99,5-100,5 %
In H_2O insoluble matter. ..... ≤0,005 %
pH value (5 % solution). 5,4-8,0
Bromide (Br). ..... complies
Iodide (I). ..... ≤0,002 %
Phosphate (PO_4) ..... ≤0,0005 %
Sulphate (SO_4). ..... ≤0,001 %
Chlorate and nitrate (as NO_3). ..... ≤0,003 %
Total nitrogen (as N). ..... ≤0,001 %
Loss on drying (150 °C). ..... ≤0,1 %
Heavy metals (as Pb) ..... ≤0,0005 %
Barium (Ba). ..... ≤0,001 %
Calcium (Ca) ..... ≤0,002 %
Cadmium (Cd). ..... ≤0,0005 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0002 %
Magnesium (Mg) ..... ≤0,001 %
Sodium (Na). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,002 %
Lead (Pb). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

6781.3	500 g	plastic	18,85 €
Original pack 6 x 500 g			17,91/500 g
6781.1	1 kg	plastic	26,35 €
Original pack 6 x 1 kg			25,03/1 kg
6781.2	5 kg	plastic	104,20 €
6781.5	25 kg	plastic	396,70 €

Potassium chloride

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤3,0 I.U./g
Assay (dry substance). ..... ≥99 %
Appearance of solution. ..... complies
Loss on drying. ..... ≤0,5 %
Bromide (Br). ..... ≤0,1 %
Iodide (I). ..... complies
Sulphate (SO_4). ..... ≤0,03 %
Heavy metals (as Pb) ..... ≤0,0005 %
Aluminium (Al). ..... ≤0,00002 %
Arsenic (As). ..... ≤0,0002 %
Iron (Fe). ..... ≤0,002 %

HN02.1	250 g	plastic	16,70 €
HN02.2	500 g	plastic	22,05 €
Original pack 6 x 500 g			20,95/500 g
HN02.3	1 kg	plastic	34,95 €
Original pack 6 x 1 kg			33,20/1 kg
HN02.4	2,5 kg	plastic	65,50 €
HN02.7	25 kg	plastic	439,70 €

Potassium chloride

≥99 %, Ph.Eur., USP, BP

Guarantee analysis:

Assay (dry substance). ..... 99,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... complies
Loss on drying (105 °C). ..... ≤1,0 %
Acid or alkaline react. substances. ..... complies
Volatile organic impurities. ..... complies
Bromide (Br). ..... ≤0,1 %
Iodide (I). ..... complies
Iodide (I). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,03 %
Barium (Ba). ..... complies
Iron (Fe) ..... ≤0,002 %
Sodium (Na). ..... complies
Heavy metals (as Pb). ..... ≤0,001 %
Calcium, Magnesium. ..... complies
Magnesium, alkaline-earth metals (as Ca). .... ≤0,02 %

P017.2	500 g	plastic	17,75 €
Original pack 6 x 500 g			16,86/500 g
P017.1	1 kg	plastic	25,30 €
Original pack 6 x 1 kg			24,04/1 kg
P017.3	5 kg	plastic	71,95 €
P017.5	25 kg	plastic	332,20 €

Potassium chloride powder (pouch)

▶ Roti®fair 1M KCl see p. 2275
▶ Roti®fair 3M KCl see p. 2275

Potassium chloride solution (0,2 N)

Potassium chloride solution

0,2 mol/l - 0,2 N volumetric standard solution

[7447-40-7] • EC No. 231-211-8 • WGK 1

Type analysis:

Amount-of-substance conc. (20 °C). .. 0,2 mol/l ±0,2 %

4117.1	1 l	plastic	26,80 €
Original pack 6 x 1 l			25,46/1 l

For further information, please see page 1682

Potassium chloride solution (3 N)

Potassium chloride solution

3 mol/l - 3 N volumetric standard solution

Storage solution for pH-electrodes
D 1,131
[7447-40-7] • EC No. 231-211-8 • WGK 1

Type analysis:

Amount-of-substance conc. (20 °C). ..... 3 mol/l ±0,2 %
Titer. 0,998-1,002

T138.1	250 ml	glass	19,25 €

For further information, please see page 1682

Potassium chloride solution (3 N) with AgCl

Potassium chloride solution

3 mol/l - 3 N volumetric standard solution, saturated with AgCl

Storage solution for pH-electrodes
D 1,12
WGK 1
H412

Type analysis:

Amount-of-substance conc. (20 °C). ..... 3 mol/l ±0,2 %
Titer. 0,9980-1,0020

9880.1	250 ml	plastic	23,15 €
9880.2	1 l	plastic	39,70 €
Original pack 6 x 1 l			37,72/1 l

Potassium chromate

Potassium chromate

≥99 %, p.a., ACS

Indicator for argentometry.
Chromic acid potassium salt
K_2CrO_4
M 194,21 g/mol
D 2,73 • bp 1000 °C • mp 985 °C
Solubility: 630 g/l (H_2O, 20 °C)
[7789-00-6] • EC No. 232-140-5
UN No. 3288 • ADR 6.1 III • WGK 3

Danger H340-H350i-H400-H410-H315-H319-H317-H335

Guarantee analysis:

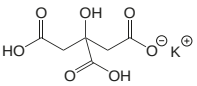
Assay (iodom.). ..... ≥99 %
pH value (5 % in H_2O). 9,0-9,8
In H_2O insoluble matter. ..... ≤0,005 %
Chloride (Cl) ..... ≤0,001 %
Sulphate (SO_4) ..... ≤0,005 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,002 %
Lead (Pb). ..... ≤0,005 %
Sodium (Na). ..... ≤0,02 %

HN33.1	100 g	plastic	37,55 €
HN33.2	250 g	plastic	70,85 €
HN33.3	500 g	plastic	124,60 €
Original pack 6 x 500 g			118,37/500 g
HN33.4	1 kg	plastic	214,50 €
Original pack 6 x 1 kg			203,78/1 kg

Potassium chromium(III) sulphate

▶ Chromium(III) potassium sulphate dodecahydrate see p. 1897

mono-Potassium citrate



mono-Potassium citrate

≥99 %, pure, anhydrous

Citric acid monopotassium salt,
Potassium dihydrogen citrate
$C_6H_7KO_7$ • M 230,21 g/mol
Solubility: 200 g/l (H_2O, 20 °C)
[866-83-1] • EC No. 212-753-4
WGK 1

Type analysis:

Assay (dry substance). ..... ≥99,0 %
pH value (1 % in H_2O). 3,5-4,0
Oxalate (as $C_2H_2O_4$). ..... ≤0,01 %
Arsenic (As). ..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %
Mercury (Hg). ..... ≤0,001 %
Loss on drying (180 °C, 4h) ..... ≤1,0 %

0481.1	250 g	plastic	27,85 €
0481.2	500 g	plastic	46,80 €
Original pack 6 x 500 g			44,46/500 g
0481.3	1 kg	plastic	83,75 €
Original pack 6 x 1 kg			79,56/1 kg
0481.4	2,5 kg	plastic	177,40 €

tri-Potassium citrate monohydrate

tri-Potassium citrate monohydrate

≥99 %, Ph.Eur., USP

Citric acid potassium salt

$C_6H_5K_3O_7 \cdot H_2O$

M 324,4 g/mol • D 1,98

Solubility: 1670 g/l (H_2O, 25 °C)

[6100-05-6] • EC No. 212-755-5 • WGK 1

Guarantee analysis:

Appearance	white crystals
Assay (dry substance)	99,0-100,5 %
Identity	complies
Appearance of solution	complies
pH value (5 % in H_2O)	7,5-9,0
Alkalinity/acidity	complies
Chloride (Cl)	≤0,005 %
Sulphate (SO_4)	≤0,015 %
Oxalate (as $C_2H_2O_4$)	≤0,01 %
Tartrate ($C_4H_4O_6$)	complies
Arsenic (As)	≤0,0001 %
Lead (Pb)	≤0,0001 %
Sodium (Na)	≤0,3 %
Mercury (Hg)	≤0,0001 %
Water (KF)	4,0-7,0 %
Loss on drying (180 °C, 4h)	3,0-6,0 %
Reaction with H_2SO_4	complies

X888.1	500 g	plastic	20,35 €
Original pack 6 x 500 g			19,33/500 g
X888.2	1 kg	plastic	30,00 €
Original pack 6 x 1 kg			28,50/1 kg
X888.3	2,5 kg	plastic	59,70 €

Potassium dichromate

Potassium bichromate, Potassium pyrochromate

$K_2Cr_2O_7$

M 294,18 g/mol

D 2,68 • bp 500 °C • mp 398 °C

Solubility: 130 g/l (H_2O, 20 °C)

[7778-50-9] • EC No. 231-906-6

UN No. 3086 • ADR 6.1 (5.1) II • WGK 3

Danger

H272-H301-H330-H334-H340-H350-H335-H360FD-H372-H314-H312-H317-H410

Potassium dichromate

≥99,5 %, p.a., ACS, ISO

Strong oxidizing agent for oxidative disintegration.Titrimetric standard substance in oxidimetry and iodometry.

Guarantee analysis:

Assay (iodom.)	≥99,5 %
In H_2O insoluble matter	≤0,005 %
Loss on drying (105 °C)	≤0,05 %
Chloride (Cl)	≤0,001 %
Sulphate (SO_4)	≤0,005 %
Lead (Pb)	≤0,005 %
Calcium (Ca)	≤0,002 %
Iron (Fe)	≤0,001 %
Copper (Cu)	≤0,001 %
Sodium (Na)	≤0,02 %

P744.3	100 g	plastic	27,45 €
P744.1	500 g	plastic	98,80 €
Original pack 6 x 500 g			93,86/500 g
P744.2	1 kg	plastic	167,60 €
Original pack 6 x 1 kg			159,22/1 kg

Potassium dichromate

≥99,5 % cryst.

Typ analysis:

Appearance	orange cryst. powder
Assay ($K_2Cr_2O_7$)	≥99,5 %
In water insoluble matter	≤0,02 %
Sulphate (SO_4)	≤0,02 %
Sodium (Na)	≤0,3 %

7953.3	100 g	plastic	17,75 €
7953.1	1 kg	plastic	94,10 €
Original pack 6 x 1 kg			89,40/1 kg
7953.2	5 kg	plastic	364,45 €

Potassium dichromate solution (0,1 N)

Potassium dichromate solution

1/60 mol/l - 0,1 N volumetric standard solution

[7778-50-9] • WGK 3

Danger

H340-H350-H360FD-H412-EUH208

Type analysis:

Amount-of-substance conc. (20 °C)	1/60 mol/l ±0,2 %
Titer	0,9980-1,0020

P722.1	1 l	glass	27,45 €
Original pack 6 x 1 l			26,08/1 l

For further information, please see page 1682

Potassium dichromate solution (0,12 N)

Potassium dichromate solution

0,02 mol/l - 0,12 N volumetric standard solution, for determination of COD

According to DIN 38409 part H41 and H43.

[7778-50-9] • WGK 3

Danger

H340-H350-H360FD-H412-EUH208

Type analysis:

Amount-of-substance conc. (20 °C)	0,02 mol/l ±0,2 %

P720.1	1 l	plastic	26,35 €
Original pack 6 x 1 l			25,03/1 l

For further information, please see page 1682

Potassium dichromate solution (0,25 N)

Potassium dichromate solution

1/24 mol/l - 0,25 N volumetric standard solution for determination of COD

bp ~100 °C • mp ~0 °C

UN No. 3082 • ADR 9 III • WGK 3

Danger H332-H340-H350-H360FD-H373-H412-EUH208

Type analysis:

Amount-of-substance conc. (20 °C)	1/24 mol/l ±0,2 %
Titer	0,998-1,002

P721.1	1 l	glass	31,10 €
Original pack 6 x 1 l			29,55/1 l

For further information, please see page 1682

Potassium dicyanoaurate

Potassium dicyanoaurate

extra pure

Gold potassium cyanide

$K[Au(CN)_2]$

M 288,10 g/mol

[13967-50-5] • EC No. 237-748-4

UN No. 1588 • ADR 6.1 I • WGK 3

Danger

H300+H310+H330-H400-H410-EUH032

Type analysis:

Au assay	68,20 % ±0,1 %
Iron (Fe)	≤0,0001 %
Sodium (Na)	≤0,04 %
Silver (Ag)	≤0,002 %

3959.1	1 g	glass	107,40 €

Potassium dihydrogen phosphate

Potassium phosphate, Potassium biphosphate

KH_2PO_4

M 136,09 g/mol

D 2,34

mp ~253 °C

Solubility: 222 g/l (H_2O, 20 °C)

[7778-77-0] • EC No. 231-913-4 • WGK 1

Potassium dihydrogen phosphate

≥99 %, p.a., ACS

Reagent for phosphate, buffer, molecular biology.

Guarantee analysis:

Assay (acidim.)	≥99,0 %
pH value (5 % in H_2O)	4,2-4,5
In H_2O insoluble matter	≤0,01 %
Loss on drying (105 °C)	≤0,2 %
Total nitrogen (as N)	≤0,001 %
Chloride (Cl)	≤0,0005 %
Sulphate (SO_4)	≤0,003 %
Heavy metals	≤0,001 %
Iron (Fe)	≤0,001 %
Arsenic (As)	≤0,0002 %
Lead (Pb)	≤0,0005 %
Copper (Cu)	≤0,0005 %
Calcium (Ca)	≤0,005 %
Cadmium (Cd)	≤0,0005 %
Cobalt (Co)	≤0,0005 %
Magnesium (Mg)	≤0,0005 %
Manganese (Mn)	≤0,0005 %
Sodium (Na)	≤0,005 %
Nickel (Ni)	≤0,0005 %
Zinc (Zn)	≤0,0005 %

3904.2	250 g	plastic	18,85 €
3904.1	1 kg	plastic	54,75 €
Original pack 6 x 1 kg			52,01/1 kg
3904.3	5 kg	plastic	219,20 €
3904.5	25 kg	plastic	955,70 €

Potassium dihydrogen phosphate

≥98 %, Ph.Eur., USP, BP

Guarantee analysis:

Assay (acidimetric, dry substance). ..... 98,0-100,5 %
Identity. ..... complies
pH value (5 % in H_2O). 4,2-4,5
Appearance of solution. ..... complies
In H_2O insoluble matter. ..... ≤0,2 %
Loss on drying (130 °C). ..... ≤1,0 %
Volatile organic impurities. ..... complies
Reducing substances . ..... complies
Chloride (Cl). ..... ≤0,02 %
Fluoride (F). ..... ≤0,001 %
Sulphate (SO_4). ..... ≤0,03 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,0025 %
Copper (Cu). ..... ≤0,025 %
Lead (Pb). ..... ≤0,0005 %

P018.1	500 g	plastic	21,00 €
Original pack 6 x 500 g			19,95/500 g
P018.2	1 kg	plastic	34,30 €
Original pack 6 x 1 kg			32,59/1 kg
P018.3	5 kg	plastic	142,45 €
P018.5	25 kg	plastic	489,15 €

Potassium disulphite

Potassium pyrosulphite, Potassium metabisulphite
$K_2S_2O_5$
M 222,33 g/mol
D 2,34
mp 150 °C (dec.)
Solubility: 450 g/l (H_2O, 20 °C)
[16731-55-8] • EC No. 240-795-3
WGK 1
Danger H318-H335-EUH031

Potassium disulphite

≥96 %, p.a.
Reducing agent, bleaching agent

Guarantee analysis:

Assay (iodom.). ..... ≥96 %
In H_2O insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,005 %
Phosphate (PO_4). ..... ≤0,0002 %
Thiosulphate. ..... ≤0,05 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Copper (Cu). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,001 %

P019.1	500 g	plastic	24,65 €
Original pack 6 x 500 g			23,42/500 g
P019.2	1 kg	plastic	36,45 €
Original pack 6 x 1 kg			34,63/1 kg
P019.3	5 kg	plastic	144,60 €

Potassium disulphite

≥96 %, powdered

Type analysis:

Assay. ..... ≥96 %
pH value (10 % solution). 3,8-4,8
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0001 %
Heavy metals (as Pb). ..... ≤0,001 %
Selenium (Se). ..... ≤0,0001 %
Zinc (Zn). ..... ≤0,0001 %

7995.1	1 kg	plastic	26,35 €
Original pack 6 x 1 kg			25,03/1 kg
7995.3	2,5 kg	plastic	47,20 €
7995.2	10 kg	plastic	150,00 €

Potassium ferricyanide

▶ Potassium hexacyanoferrate(III) see p. 2227

Potassium ferrocyanide

▶ Potassium hexacyanoferrate(II) trihydrate see p. 2227

Potassium ferrocyanide trihydrate

▶ Potassium hexacyanoferrate(II) trihydrate see p. 2227

Potassium fluoride

KF
M 58,10 g/mol
D 2,48 • bp 1500 °C
mp 860 °C
Solubility: 485 g/l (H_2O, 20 °C)
[7789-23-3] • EC No. 232-151-5
UN No. 1812 • ADR 6.1 III • WGK 1
Danger H301+H311+H331-H318

Potassium fluoride

ROTI®METIC 99,99 % (4N)

Type analysis:

Assay (metals basis). ..... 99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5656.1	5 g	plastic	54,30 €
5656.2	25 g	plastic	188,70 €

Potassium fluoride

≥99 %, p.a.
For fluorination of organic compounds.

Guaratee analysis:

Assay. ..... ≥99 %
Free acid (as HF). ..... ≤0,01 %
Free alkali (as K_2CO_3). ..... ≤0,01 %
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,02 %
Hexafluorosilicate (as K_2SiF_6). ..... ≤0,1 %
Cadmium (Cd). ..... ≤0,0005 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

CN83.1	100 g	plastic	17,75 €
CN83.2	250 g	plastic	29,60 €
CN83.3	500 g	plastic	54,30 €
Original pack 6 x 500 g			51,59/500 g
CN83.4	1 kg	plastic	92,35 €
Original pack 6 x 1 kg			87,73/1 kg

Potassium fluoride

≥99 %, cryst.

Typ analysis:

Assay. ..... ≥99,0 %
Hexafluorosilicate (as K_2SiF_6). ..... ≤0,2 %
Loss on drying. ..... ≤0,5 %
Free acid (as HF). ..... ≤0,5 %
Chloride (Cl). ..... ≤0,05 %
Iron (Fe). ..... ≤0,005 %
Heavy metals. ..... ≤0,005 %

2617.1	250 g	plastic	19,25 €
2617.2	500 g	plastic	31,10 €
Original pack 6 x 500 g			29,55/500 g
2617.3	1 kg	plastic	52,60 €
Original pack 6 x 1 kg			49,97/1 kg
2617.4	2,5 kg	plastic	107,40 €

Potassium formate

Potassium formate

≥98 %, for synthesis
Formic acid potassium salt
HCO_2K
M 84,12 g/mol
D 1,91
mp 165-168 °C
Solubility: 2500 g/l (H_2O, 20 °C)
[590-29-4] • EC No. 209-677-9
WGK 1

Type analysis:

Appearance. ..... colourless crystals
Assay (titr.). ..... ≥98,0 %
pH (5 % in H_2O). 6,0-8,5

0980.1	250 g	plastic	22,05 €
0980.2	1 kg	plastic	61,20 €
Original pack 6 x 1 kg			58,14/1 kg

Potassium gluconate

▶ Gluconic acid potassium salt see p. 2019

Potassium hexacyanoferrate(II) trihydrate

Potassium ferrocyanide, Yellow prussiate of potash
$K_4[Fe(CN)_6] \cdot 3\ H_2O$
M 422,41 g/mol
D 1,85
mp ~70 °C
Solubility: 289 g/l (H_2O, 20 °C)
[14459-95-1] • EC No. 237-722-2
WGK 2
H412

Potassium hexacyanoferrate(II) trihydrate

≥99 %, p.a., ACS, ISO

Reagent for the determination of Fe, Cu, Zn, protein. Preparation of Berlin blue.

Guarantee analysis:

Assay (perm.)	99,0-102,0 %
In H_2O insoluble matter	≤0,005 %
Chloride (Cl)	≤0,01 %
Sulphate (SO_4)	≤0,005 %
Lead (Pb)	≤0,002 %
Cadmium (Cd)	≤0,0005 %
Copper (Cu)	≤0,002 %
Sodium (Na)	≤0,02 %
Free alkali	≤0,002 %

P745.1	500 g	plastic	93,00 €
Original pack 6 x 500 g			88,35/500 g
P745.2	1 kg	plastic	167,60 €
Original pack 6 x 1 kg			159,22/1 kg
P745.3	2,5 kg	plastic	364,45 €

Potassium hexacyanoferrate(II) trihydrate

>99 % cryst.

Type analysis:

Appearance	pale yellow crystals
Assay	>99,0 %
Chloride (Cl)	<0,3 %
Sulphate (SO_4)	<0,1 %
In H_2O insoluble matter	<0,01 %

7974.1	250 g	plastic	17,75 €
7974.2	1 kg	plastic	42,90 €
Original pack 6 x 1 kg			40,76/1 kg
7974.3	5 kg	plastic	160,75 €

Potassium hexacyanoferrate(II) solution

▶ Carrez solution II see p. 1880

Potassium hexacyanoferrate(III)

Potassium ferricyanide, Red prussiate of potash
$K_3[Fe(CN)_6]$
M 329,25 g/mol
D 1,89
Solubility: 464 g/l (H_2O, 20 °C)
[13746-66-2] • EC No. 237-323-3
WGK 2
EUH032

Potassium hexacyanoferrate(III)

≥99 %, p.a., ACS

Oxidizing agent in organic synthesis. Reagent for the determination to Co, Zn and alkaloids.

Guarantee analysis:

Assay (iodom.)	≥99,0 %
In H_2O insoluble matter	≤0,005 %
Hexacyanoferrate (II) $[Fe(CN)_6]$	≤0,05 %
Chloride (Cl)	≤0,01 %
Sulphate (SO_4)	≤0,01 %

P746.3	100 g	plastic	22,50 €
P746.1	500 g	plastic	71,95 €
Original pack 6 x 500 g			68,35/500 g
P746.2	1 kg	plastic	130,65 €
Original pack 6 x 1 kg			124,12/1 kg

Potassium hexacyanoferrate(III)

≥99 %, techn.

Type analysis:

Appearance	ruby crystals
Assay	≥99,0 %
Potassium hexacyanoferrate(II) trihydrate	≤0,5 %
In H_2O insoluble matter	≤0,1 %
Chloride (as KCl)	≤0,3 %

7971.3	500 g	plastic	26,80 €
Original pack 6 x 500 g			25,46/500 g
7971.1	1 kg	plastic	44,00 €
Original pack 6 x 1 kg			41,80/1 kg
7971.2	5 kg	plastic	166,10 €

Potassium oxide hydrate

▶ Potassium hydroxide see p. 2229

Potassium hydrogen carbonate

Potassium bicarbonate
$KHCO_3$
M 100,12 g/mol
D 2,17
Solubility: 333 g/l (H_2O, 20 °C)
[298-14-6] • EC No. 206-059-0
WGK 1

Potassium hydrogen carbonate

≥99,5 %, p.a.

Neutralizing agent

Guarantee analysis:

Assay (acidim.)	99,5-101,0 %
In H_2O insoluble matter	≤0,005 %
Nitrogen compounds (as N)	≤0,0005 %
Sulphur compounds (as SO_4)	≤0,003 %
Chloride (Cl)	≤0,001 %
Phosphate (PO_4)	≤0,0005 %
Arsenic (As)	≤0,00004 %
Aluminium (Al)	≤0,001 %
Lead (Pb)	≤0,0005 %
Cadmium (Cd)	≤0,0005 %
Calcium (Ca)	≤0,001 %
Iron (Fe)	≤0,0005 %
Cobalt (Co)	≤0,0005 %
Copper (Cu)	≤0,0005 %
Magnesium (Mg)	≤0,001 %
Manganese (Mn)	≤0,0005 %
Sodium (Na)	≤0,03 %
Nickel (Ni)	≤0,0005 %
Zinc (Zn)	≤0,0005 %
Heavy metals (as Pb)	≤0,0005 %

P748.1	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
P748.2	1 kg	plastic	51,10 €
Original pack 6 x 1 kg			48,55/1 kg
P748.3	2,5 kg	plastic	114,95 €

Potassium hydrogen carbonate

≥99 %, Ph.Eur.

Guarantee analysis:

Appearance	white cryst. powder
Assay	99,0-101,0 %
Identity	complies
Appearance of solution	complies
pH value (5 % in H_2O)	≤8,6
Chloride (Cl)	≤0,001 %
Sulphate (SO_4)	≤0,015 %
Ammonium (NH_4)	≤0,002 %
Heavy metals (as Pb)	≤0,001 %
Calcium (Ca)	≤0,001 %
Iron (Fe)	≤0,002 %
Sodium (Na)	≤0,5 %

X887.1	500 g	plastic	17,75 €
Original pack 6 x 500 g			16,86/500 g
X887.2	1 kg	plastic	25,70 €
Original pack 6 x 1 kg			24,42/1 kg
X887.3	2,5 kg	plastic	51,10 €

Potassium hydrogen carbonate

≥99 %, extra pure

Type analysis:

Assay (dry substance)	≥99,0 %
Arsenic (As)	≤0,0005 %
Lead (Pb)	≤0,0005 %
Mercury (Hg)	≤0,0001 %
Loss on drying	≤0,25 %

9437.1	500 g	plastic	18,85 €
Original pack 6 x 500 g			17,91/500 g
9437.2	1 kg	plastic	31,10 €
Original pack 6 x 1 kg			29,55/1 kg
9437.3	2,5 kg	plastic	66,55 €

Potassium hydrogen citrate

▶ mono-Potassium citrate see p. 2224

di-Potassium hydrogen phosphate

Dipotassium hydrogen phosphate, Potassium phosphate, dibasic
K_2HPO_4
M 174,18 g/mol
D 2,44
Solubility: 1600 g/l (H_2O, 20 °C)
[7758-11-4] • EC No. 231-834-5 • WGK 1

di-Potassium hydrogen phosphate

ROTI®METIC 99,99 % (4N), anhydrous

Type analysis:

Assay (metals basis)	99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5066.1	25 g	plastic	166,55 €

di-Potassium hydrogen phosphate

≥99 %, p.a., anhydrous

Buffer substance, molecular biology

Guarantee analysis:

Assay (acidim.) ≥99,0 %
pH value (5 % in H_2O) 8,5-9,6
In H_2O insoluble matter ≤0,005 %
Loss on drying (105 °C) ≤1,0 %
Nitrogen compounds (as N) ≤0,002 %
Chloride (Cl) ≤0,005 %
Sulphate (SO_4) ≤0,01 %
Arsenic (As) ≤0,0001 %
Lead (Pb) ≤0,001 %
Cadmium (Cd) ≤0,001 %
Calcium (Ca) ≤0,005 %
Iron (Fe) ≤0,001 %
Cobalt (Co) ≤0,001 %
Copper (Cu) ≤0,001 %
Magnesium (Mg) ≤0,005 %
Manganese (Mn) ≤0,001 %
Nickel (Ni) ≤0,001 %
Zinc (Zn) ≤0,001 %

P749.1	500 g	plastic	28,95 €
Original pack 6 x 500 g			27,50/500 g
P749.2	1 kg	plastic	52,15 €
Original pack 6 x 1 kg			49,54/1 kg
P749.3	2,5 kg	plastic	105,25 €
P749.5	25 kg	plastic	848,20 €

For further information, please see page 1309

di-Potassium hydrogen phosphate

≥98 %, Ph.Eur., BP, anhydrous

Guarantee analysis:

Assay (acidim., dry substance) 98,0-100,5 %
Identity complies
Appearance of solution complies
In H_2O insoluble matter ≤0,01 %
pH value (5 % in H_2O) 8,5-9,6
Loss on drying (130 °C) ≤1,0 %
Chloride (Cl) ≤0,02 %
Fluoride (F) ≤0,001 %
Sulphate (SO_4) ≤0,05 %
Arsenic (As) ≤0,0002 %
Lead (Pb) ≤0,001 %
Iron (Fe) ≤0,001 %
Copper (Cu) ≤0,025 %
Nickel (Ni) ≤0,0025 %
Heavy metals (as Pb) ≤0,001 %
Potassium dihydrogen phosphate complies
$KMnO_4$ reducing substances (as O) complies

T875.1	500 g	plastic	27,85 €
Original pack 6 x 500 g			26,46/500 g
T875.2	1 kg	plastic	44,65 €
Original pack 6 x 1 kg			42,42/1 kg
T875.3	5 kg	plastic	187,60 €

di-Potassium hydrogen phosphate

≥98 %, anhydrous

Typ analysis:

Assay (acidim.) 98,0-100,5 %
pH value (5 % in H_2O) 8,5-9,6
Sulphate (SO_4) ≤0,05 %
Chloride (Cl) ≤0,02 %
Arsenic (As) ≤0,0002 %
Iron (Fe) ≤0,001 %
Heavy metals (as Pb) ≤0,001 %
Loss on drying (130 °C) ≤1,0 %

6875.2	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
6875.1	1 kg	plastic	37,55 €
Original pack 6 x 1 kg			35,67/1 kg
6875.3	5 kg	plastic	148,90 €
6875.7	25 kg	plastic	628,90 €

di-Potassium hydrogen phosphate trihydrate

di-Potassium hydrogen phosphate trihydrate

≥99 %, p.a.

Buffer substance

Dipotassium hydrogen phosphate trihydrate
$K_2HPO_4 \cdot 3\ H_2O$
M 228,23 g/mol
Solubility: easily soluble (H_2O, 20 °C)
[16788-57-1] • EC No. 231-834-5
WGK 1

Typ analysis:

Assay (K_2HPO_4 3 H_2O) ≥99 %
pH value (5 % in H_2O) 9,1-9,3
In H_2O insoluble matter ≤0,005 %
Chloride (Cl) ≤0,001 %
Sulphate (SO_4) ≤0,005 %
Total nitrogen (as N) ≤0,001 %
Heavy metals (as Pb) ≤0,001 %
Arsenic (As) ≤0,00005 %
Lead (Pb) ≤0,0005 %
Calcium (Ca) ≤0,005 %
Iron (Fe) ≤0,0005 %
Copper (Cu) ≤0,001 %
Magnesium (Mg) ≤0,005 %
Sodium (Na) ≤0,1 %
Nickel (Ni) ≤0,0005 %

6878.2	250 g	plastic	20,35 €
6878.1	1 kg	plastic	48,30 €
Original pack 6 x 1 kg			45,89/1 kg
6878.3	2,5 kg	plastic	97,75 €

Potassium hydrogen phthalate

Potassium hydrogen phthalate

≥99,5 %, p.a., ISO

Buffer substance and titrimetric standard substance for alkalimetry.

Potassium biphthalate, Phthalic acid potassium salt
$C_8H_5KO_4$
M 204,23 g/mol
D 1,64
mp 295-300 °C
Solubility: 80 g/l (H_2O, 20 °C)
[877-24-7] • EC No. 212-889-4
WGK 1

Guarantee analysis:

Assay (acidim.) ≥99,5 %
In H_2O insoluble matter ≤0,003 %
Loss on drying (110 °C) ≤0,05 %
Nitrogen compounds (as N) ≤0,001 %
Sulphur compounds (as S) ≤0,002 %
Chloride (Cl) ≤0,002 %
Lead (Pb) ≤0,0005 %
Cadmium (Cd) ≤0,0005 %
Calcium (Ca) ≤0,001 %
Chromium (Cr) ≤0,001 %
Iron (Fe) ≤0,0005 %
Cobalt (Co) ≤0,0005 %
Copper (Cu) ≤0,0005 %
Magnesium (Mg) ≤0,001 %
Manganese (Mn) ≤0,0005 %
Sodium (Na) ≤0,01 %
Nickel (Ni) ≤0,0005 %
Zinc (Zn) ≤0,0005 %
Heavy metals (as Pb) ≤0,0005 %

P750.1	500 g	plastic	51,50 €
Original pack 6 x 500 g			48,93/500 g
P750.2	1 kg	plastic	90,20 €
Original pack 6 x 1 kg			85,69/1 kg
P750.3	2,5 kg	plastic	193,00 €

Potassium hydrogen phthalate solution

Potassium hydrogen phthalate solution

200 mg COD/l (0,170 g $C_8H_5KO_4$/l)

For determination of COD; DIN 38409-41:1980, DEV H41; DIN 38409-44:1992, DEV H44

UN No. 3264 • ADR 8 III

Warning H290

2055.1	250 ml	plastic	47,85 €
2055.2	500 ml	plastic	59,70 €

Potassium hydrogen sulphate

Potassium bisulphate
$KHSO_4$
M 136,17 g/mol • D 2,32
Solubility: 490 g/l (H_2O, 20 °C)
[7646-93-7] • EC No. 231-594-1
UN No. 2509 • ADR 8 II • WGK 1
Danger H314-H335

Potassium hydrogen sulphate

≥98 %, p.a.
For disintegration of ores and silicates, detection of acetate. Cleaning of Pt crucibles.

Guarantee analysis:

Assay (acidim.)	≥98 %
In NH_4OH insoluble matter	≤0,01 %
Chloride (Cl)	≤0,001 %
Phosphate (PO_4)	≤0,001 %
Nitrate (NO_3)	≤0,001 %
Arsenic (As)	≤0,0001 %
Lead (Pb)	≤0,001 %
Iron (Fe)	≤0,001 %
Calcium (Ca)	≤0,005 %
Copper (Cu)	≤0,001 %
Magnesium (Mg)	≤0,005 %
Nickel (Ni)	≤0,001 %

P020.1	500 g	plastic	30,65 €
Original pack 6 x 500 g			29,12/500 g
P020.2	1 kg	plastic	53,65 €
Original pack 6 x 1 kg			50,97/1 kg
P020.3	2,5 kg	plastic	115,60 €

Potassium hydrogen sulphate

≥99 %, extra pure

Typ analysis:

Assay (acidim.)	≥99 %
In H_2O insoluble matter	≤0,05 %
Chloride (Cl)	≤0,002 %
Ammonium (NH_4)	≤0,002 %
Heavy metals (as Pb)	≤0,002 %
Aluminium (Al)	≤0,002 %
Calcium (Ca)	≤0,01 %
Iron (Fe)	≤0,002 %

X989.1	500 g	plastic	19,25 €
Original pack 6 x 500 g			18,29/500 g
X989.2	1 kg	plastic	32,15 €
Original pack 6 x 1 kg			30,54/1 kg
X989.3	2,5 kg	plastic	60,10 €
X989.7	25 kg	plastic	504,20 €

Potassium hydroxide

KOH
M 56,11 g/mol
D 2,04 • bp 1327 °C • mp 360 °C
Solubility: 1130 g/l (H_2O, 20 °C)
[1310-58-3] • EC No. 215-181-3
UN No. 1813 • ADR 8 II • WGK 1
Danger H314-H290-H302

Potassium hydroxide

ROTI®METIC 99,98 % (3N8)

Type analysis:

Assay (metals basis)	99,98 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5658.1	100 g	plastic	113,45 €

Potassium hydroxide

≥85 %, p.a., pellets
Reagent for the preparation of potassium hydroxide solution. Filled under protective gas.

Guarantee analysis:

Assay (as KOH)	≥85 %
Carbonate (as K_2CO_3)	≤0,5 %
Sodium (as NaOH)	≤1,0 %
Chloride (Cl)	≤0,005 %
Sulphate (SO_4)	≤0,001 %
Phosphate (PO_4)	≤0,0005 %
Nitrogen (N)	≤0,0005 %
Arsenic (As)	≤0,00005 %
Iron (Fe)	≤0,0005 %
Nickel (Ni)	≤0,001 %
Heavy metals (as Pb)	≤0,0005 %

6751.3	250 g	plastic	16,70 €
6751.1	1 kg	plastic	27,45 €
Original pack 6 x 1 kg			26,08/1 kg
6751.2	5 kg	plastic	94,10 €
6751.5	25 kg	plastic	289,20 €

Potassium hydroxide

≥85 %, Ph.Eur., pellets
Filled under protective gas.

Guarantee analysis:

Assay (acidim.)	85,0-100,5 %
Identity	complies
Appearance of solution	complies
Carbonate (as K_2CO_3)	≤1,0 %
Chloride (Cl)	≤0,005 %
Phosphate (PO_4)	≤0,002 %
Sulphate (SO_4)	≤0,005 %
Heavy metals (as Pb)	≤0,001 %
Aluminium (Al)	≤0,002 %
Calcium (Ca)	≤0,005 %
Iron (Fe)	≤0,001 %
Sodium (Na)	≤1,0 %
Lead (Pb)	≤0,001 %
Arsenic (As)	≤0,0001 %
Copper (Cu)	≤0,001 %
Magnesium (Mg)	≤0,005 %
Nickel (Ni)	≤0,001 %

P747.1	500 g	plastic	21,40 €
Original pack 6 x 500 g			20,33/500 g
P747.2	1 kg	plastic	34,30 €
Original pack 6 x 1 kg			32,59/1 kg
P747.3	5 kg	plastic	136,00 €

Potassium hydroxide

≥85 %, in flakes
Filled under protective gas.

Type analysis:

Assay (KOH)	≥85 %
Carbonate (as K_2CO_3)	≤1,0 %
Chloride (Cl)	≤0,01 %
Iron (Fe)	≤0,003 %

7986.1	1 kg	plastic	24,65 €
Original pack 6 x 1 kg			23,42/1 kg
7986.3	2,5 kg	plastic	44,00 €
7986.2	10 kg	plastic	117,75 €
7986.5	25 kg	plastic	224,70 €

Potassium hydroxide solution 50 %

Potassium hydroxide solution 50 %

50 %, extra pure
KOH
M 56,11 g/mol
bp >100 °C
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II • WGK 1
Danger H314-H290-H302

Type analysis:

Assay (KOH)	49,0-51,0 %
Carbonate (CO_3)	≤0,5 %
Chloride (Cl)	≤0,01 %
Sodium hydroxide (NaOH)	≤1 %
Iron (Fe)	≤0,001 %

7949.1	1 l	plastic	20,35 €
Original pack 6 x 1 l			19,33/1 l
7949.2	10 l	plastic	81,60 €

Potassium hydroxide solution 45 %

Potassium hydroxide solution 45 %

45 %, extra pure
KOH
M 56,11 g/mol
D 1,45 • bp >100 °C
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II • WGK 1
Danger H314-H290-H302

Type analysis:

Assay (KOH)	44-46 %
Carbonate (CO_3)	≤0,5 %
Chloride (Cl)	≤0,01 %
Sodium hydroxide (NaOH)	≤1 %
Iron (Fe)	≤0,001 %

0995.1	1 l	plastic	18,20 €
Original pack 6 x 1 l			17,29/1 l
0995.2	2,5 l	plastic	26,35 €
Original pack 4 x 2,5 l			25,03/2,5 l
0995.3	10 l	plastic	62,90 €

Potassium hydroxide solution 20 %

Potassium hydroxide solution 20 %

20 %, pure
KOH
M 56,11 g/mol
D ~1,19
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II • WGK 1
Danger H314-H290-H302

Type analysis:
Appearance. ..... clear, colourless
Assay (KOH)..... 19,0-21,0 %
Density (20 °C). 1,177-1,196

4330.1	1 l	plastic	17,10 €
Original pack 6 x 1 l			16,25/1 l
4330.2	2,5 l	plastic	24,65 €
Original pack 4 x 2,5 l			23,42/2,5 l
4330.3	5 l	plastic	41,85 €
Original pack 2 x 5 l			39,76/5 l
4330.4	10 l	plastic	59,05 €

Potassium hydroxide solution (0,1 N)

Potassium hydroxide solution

0,1 mol/l - 0,1 N volumetric standard solution
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 III
Warning H290-H315-H319

Type analysis:
Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,2 %

K018.1	1 l	plastic	22,50 €
Original pack 6 x 1 l			21,38/1 l
K018.2	5 l	plastic	61,20 €
Original pack 2 x 5 l			58,14/5 l
K018.3	5 l	ROTI®CUBE	64,40 €
Original pack 2 x 5 l			61,18/5 l

For further information, please see page 1682

Potassium hydroxide solution (0,1 N)

Potassium hydroxide solution

ROTI®VOLUM 0,1 mol/l - 0,1 N
Ampoule for preparation of 1000 ml volumetric solution.
KOH
M 56,11 g/mol
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II • WGK 1
Danger H314-H290

Type analysis:
Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,2 %

CN53.1	1 piece	plastic ampoule	19,90 €

For further information, please see page 1683

Potassium hydroxide solution (0,5 N)

Potassium hydroxide solution

0,5 mol/l - 0,5 N volumetric standard solution
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II
Danger H314-H290

Type analysis:
Amount-of-substance conc. (20 °C). .. 0,5 mol/l ±0,2 %
Titer. 0,998-1,002

N071.1	1 l	plastic	22,50 €
Original pack 6 x 1 l			21,38/1 l
N071.2	5 l	plastic	61,20 €
Original pack 2 x 5 l			58,14/5 l
N071.3	5 l	ROTI®CUBE	64,40 €
Original pack 2 x 5 l			61,18/5 l

For further information, please see page 1682

Potassium hydroxide solution (1 N)

Potassium hydroxide solution

1 mol/l - 1 N volumetric standard solution
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II • WGK 1
Danger H290-H314

Type analysis:
Amount-of-substance conc. (20 °C). .....1 mol/l ±0,2 %
Titer. 0,998-1,002

K017.1	1 l	plastic	22,50 €
Original pack 6 x 1 l			21,38/1 l
K017.2	5 l	plastic	61,20 €
Original pack 2 x 5 l			58,14/5 l
K017.3	5 l	ROTI®CUBE	64,40 €
Original pack 2 x 5 l			61,18/5 l

For further information, please see page 1682

Potassium hydroxide solution (1 N)

Potassium hydroxide solution

1 mol/l - 1 N volumetric standard solution, Reag. Ph.Eur.
KOH
M 56,11 g/mol
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II • WGK 1
Danger H290-H314

Type analysis:
Amount-of-substance conc. (20 °C). ..... 1 mol/l
Measurement uncertainty. ..... ±0,1 %

9522.1	1 l	plastic	45,05 €
Original pack 6 x 1 l			42,80/1 l

Potassium hydroxide solution in ethanol (0,05 N)

Potassium hydroxide solution in ethanol NEW

0,05 mol/l - 0,05 N volumetric standard solution
UN No. 2924 • ADR 3 (8) II • WGK 1
Danger H225-H290-H319

Type analysis:
Amount-of-substance conc. (20 °C). ..... 0,05 mol/l ±0,4 %
Titer. 0,996-1,004
Discolouration (yellow) is possible, but it has no effect on the usability.

0765.1	1 l	plastic	56,90 €
Original pack 6 x 1 l			54,06/1 l

Potassium hydroxide solution in ethanol (0,1 N)

Potassium hydroxide solution in ethanol

0,1 mol/l - 0,1 N volumetric standard solution
D 0,83 • bp >78 °C
flp 13 °C
UN No. 2924 • ADR 3 (8) II • WGK 1
Danger H225-H315-H319-H290

Type analysis:
Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,4 %
Titer. 0,996-1,004
Discolouration (yellow) is possible, but it has no effect on the usability.

P706.1	1 l	glass	40,75 €
Original pack 6 x 1 l			38,71/1 l

For further information, please see page 1682

Potassium hydroxide solution in ethanol (0,5 N)

Potassium hydroxide solution in ethanol

0,5 mol/l - 0,5 N volumetric standard solution
D 0,84 • bp 78 °C
flp 13 °C
UN No. 2924 • ADR 3 (8) II • WGK 1
Danger H225-H290-H314

Type analysis:
Amount-of-substance conc. (20 °C)... 0,5 mol/l ±0,4 %
Titer. 0,996-1,004
Discolouration (yellow) is possible, but it has no effect on the usability.

P707.1	1 l	glass	58,60 €
Original pack 6 x 1 l			55,67/1 l

For further information, please see page 1682

Potassium hydroxide solution in isopropanol (0,1 N)

Potassium hydroxide solution in isopropanol

0,1 mol/l - 0,1 N volumetric standard solution

For determination of neutralisation number acc. to DIN 51558 part 1.

D 0,79 • bp 82 °C

flp 13 °C

UN No. 2924 • ADR 3(8) II • WGK 1

Danger

H225-H315-H319-H336-H290

Type analysis:

Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,2 %

KK68.1	1 l	glass	52,60 €
Original pack 6 x 1 l			49,97/1 l

For further information, please see page 1682

Potassium hydroxide solution in methanol (0,1 N)

Potassium hydroxide solution in methanol

0,1 mol/l - 0,1 N volumetric standard solution

D 0,81 • bp 64 °C

flp 11 °C

UN No. 3286 • ADR 3 (6.1) (8) II • WGK 1

Danger H225-H301+H311+H331-H315-H319-H370-H290

Type analysis:

Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,2 %
Titer. 0,998-1,002

KK66.1	1 l	glass	32,80 €
Original pack 6 x 1 l			31,16/1 l

For further information, please see page 1682

Potassium hydroxide solution in methanol (0,5 N)

Potassium hydroxide solution in methanol

0,5 mol/l - 0,5 N volumetric standard solution

D 0,84 • bp 64 °C

flp <21 °C

UN No. 3286 • ADR 3 (6.1) (8) II • WGK 1

Danger

H225-H290-H301+H311+H331-H314-H370

Type analysis:

Amount-of-substance conc. (20 °C)....0,5 mol/l ±0,2 %
Titer. 0,998-1,002

KK67.1	1 l	glass	30,65 €
Original pack 6 x 1 l			29,12/1 l

For further information, please see page 1682

Potassium iodate

KIO_3

M 214,00 g/mol

D 3,93 • mp 560 °C

Solubility: ~92 g/l (H_2O, 25 °C)

[7758-05-6] • EC No. 231-831-9

UN No. 1479 • ADR 5.1 II • WGK 1

Danger H272-H318

Potassium iodate

≥99,4 %, p.a., ACS

Titrimetric standard substance in iodometry and in determination of morpholine.

Guarantee analysis:

Assay (iodom.). .... 99,4-100,4 %
pH value (5 % solution). 5,0-8,0
In H_2O insoluble matter. .... ≤0,005 %
Nitrogen compounds (as N). .... ≤0,005 %
Bromide and chloride (as Cl). .... ≤0,01 %
Sulphate (SO_4). .... ≤0,005 %
Iodide (I). .... ≤0,001 %
Iron (Fe). .... ≤0,001 %
Sodium (Na). .... ≤0,005 %
Heavy metals (as Pb). .... ≤0,0005 %

P751.1	100 g	plastic	38,60 €
P751.2	250 g	plastic	82,70 €

Potassium iodate

≥99 %, extra pure

Type analysis:

Appearance.... white crystals
Assay (dry substance). .... ≥99,0 %
pH value (5 % solution). 5,0-8,0
Chlorate (as Cl). .... ≤0,01 %
Iodide (I). .... ≤0,002 %
Loss on drying. .... ≤0,5 %
Arsenic (As). .... ≤0,0002 %
Lead (Pb). .... ≤0,0004 %
Cadmium (Cd). .... ≤0,001 %
Mercury (Hg). .... ≤0,00001 %

5301.1	100 g	plastic	26,35 €
5301.2	500 g	plastic	106,45 €
Original pack 6 x 500 g			101,13/500 g
5301.3	1 kg	plastic	196,65 €
Original pack 6 x 1 kg			186,82/1 kg
5301.4	2,5 kg	plastic	450,45 €

Potassium iodide

KI

M 166,01 g/mol

D 3,13 • bp 1330 °C

mp 723 °C

Solubility: 1430 g/l (H_2O, 20 °C)

[7681-11-0] • EC No. 231-659-4 • WGK 1

Potassium iodide

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis). .... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5067.1	25 g	plastic	125,25 €

Potassium iodide

≥99,5 %, p.a., ISO

Reagent used in iodometry and for the preparation of iodine-starch paper.

Guarantee analysis:

Assay (dry substance). ....≥99,5 %
pH value (5 % solution). 6,0-8,0
Loss on drying (105 °C). ....≤0,2 %
Chloride and bromide (as Cl). ....≤0,01 %
Iodate (IO_3). ....≤0,0003 %
Phosphate (PO_4). ....≤0,001 %
Sulphate (SO_4). ....≤0,005 %
Heavy metals (as Pb). ....≤0,0005 %
Barium (Ba). ....≤0,001 %
Calcium (Ca). ....≤0,002 %
Iron (Fe). ....≤0,0003 %
Magnesium (Mg). ....≤0,001 %

6750.4	50 g	glass	21,40 €
6750.1	250 g	glass	83,75 €
6750.3	500 g	glass	145,15 €
Original pack 6 x 500 g			137,89/500 g
6750.2	1 kg	glass	263,40 €
Original pack 6 x 1 kg			250,23/1 kg
6750.5	2,5 kg	glass	514,95 €

Potassium iodide

≥99 %, Ph.Eur., BP, USP

Guarantee analysis:

Appearance. .... white, cryst. powder
Assay. ....99,0-100,5 %
Appearance of solution. ....complies
Alkaline reacting substances....complies
Iodate (IO_3). ....complies
Sulphate (SO_4). ....≤0,015 %
Thiosulphate (S_2O_3). ....complies
Heavy metals (as Pb). ....≤0,001 %
Iron (Fe). ....≤0,002 %
Loss on drying (105 °C). ....≤1,0 %

8491.4	100 g	glass	27,85 €
8491.1	250 g	glass	66,15 €
8491.3	500 g	glass	113,85 €
Original pack 6 x 500 g			108,16/500 g
8491.2	1 kg	glass	212,75 €
Original pack 6 x 1 kg			202,11/1 kg
8491.5	2,5 kg	glass	418,20 €

Potassium iodide

≥99 %, extra pure

Type analysis:

Assay (dry substance). ....≥99,0 %
Sulphate (SO_4). ....≤0,05 %
Iron (Fe). ....≤0,005 %
Heavy metals. ....≤0,005 %
Loss on drying. ....≤1,0 %

0323.1	100 g	glass	22,05 €
0323.2	500 g	glass	70,85 €
Original pack 6 x 500 g			67,31/500 g
0323.3	1 kg	glass	132,15 €
Original pack 6 x 1 kg			125,54/1 kg
0323.4	2,5 kg	glass	278,45 €

Potassium iodide solution

Potassium iodide solution

10 %, p.a.
M 166,00 g/mol
D 1,08
WGK 1

Type analysis:
Assay (mass %)..... ~10 %

8121.1	1 l	plastic	48,30 €
Original pack 6 x 1 l			45,89/1 l

Potassium lactate

▶ Lactic acid potassium salt see p. 2089

Potassium metabisulphite

▶ Potassium disulphite see p. 2226

Potassium meta periodate

▶ Potassium periodate see p. 2233

Potassium myronate

▶ Sinigrin monohydrate see p. 2329

Potassium nitrate

KNO_3
M 101,11 g/mol
mp 334 °C
Solubility: 320 g/l (H_2O, 20 °C)
[7757-79-1] • EC No. 231-818-8
UN No. 1486 • ADR 5.1 III • WGK 1
Danger H272

Potassium nitrate

ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5659.1	10 g	plastic	54,75 €
5659.2	50 g	plastic	167,60 €

Potassium nitrate

≥99 %, p.a., ISO
Reagent for the oxidative disintegration of anorganic and organic samples.

Guarantee analysis:
Assay (titr. NaOH)..... ≥99,0 %
pH value (5 % in water)..... 5-8
In H_2O insoluble matter..... ≤0,005 %
Ammonium (NH_4)..... ≤0,001 %
Chloride (Cl)..... ≤0,001 %
Phosphate (PO_4)..... ≤0,0005 %
Nitrite (NO_2)..... ≤0,001 %
Sulphate (SO_4)..... ≤0,003 %
Iodate (IO_3)..... ≤0,0005 %
Heavy metals (as Pb)..... ≤0,0005 %
Magnesium (Mg)..... ≤0,002 %
Sodium (Na)..... ≤0,02 %
Calcium (Ca)..... ≤0,005 %
Iron (Fe)..... ≤0,0003 %

P021.1	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
P021.2	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
P021.3	2,5 kg	plastic	69,80 €

Potassium nitrate

≥99 %, Ph.Eur., BP

Guarantee analysis:
Assay (acidim., dry substance)..... ≥99,0 %
Identity..... complies
pH (5 % in H_2O)..... 4,5-8,5
Appearance of solution..... complies
In H_2O insoluble matter..... ≤0,025 %
Loss on drying (105 °C)..... ≤0,5 %
Residual solvents..... complies
Acid or alkaline react. substances..... complies
Reducible substances..... complies
Chloride (Cl)..... ≤0,002 %
Phosphate (PO_4)..... ≤0,003 %
Sulphate (SO_4)..... ≤0,01 %
Ammonium (NH_4)..... ≤0,005 %
Arsenic (As)..... ≤0,0002 %
Calcium (Ca)..... ≤0,005 %
Iron (Fe)..... ≤0,001 %
Copper (Cu)..... ≤0,003 %
Magnesium (Mg)..... ≤0,005 %
Sodium (Na)..... ≤0,1 %
Heavy metals (as Pb)..... ≤0,001 %

4397.1	500 g	plastic	19,90 €
Original pack 6 x 500 g			18,91/500 g
4397.2	1 kg	plastic	31,10 €
Original pack 6 x 1 kg			29,55/1 kg
4397.3	5 kg	plastic	119,25 €

Potassium nitrate

≥99 %

Type analysis:
Assay (KNO_3)..... ≥99,0 %
Loss on drying (1 h, 110 °C)..... ≤0,2 %
Chloride (Cl)..... ≤0,03 %
Insoluble matter..... ≤0,035 %
Anticaking agent..... ≤0,5 %

8001.1	500 g	plastic	15,60 €
Original pack 6 x 500 g			14,82/500 g
8001.3	1 kg	plastic	22,50 €
Original pack 6 x 1 kg			21,38/1 kg
8001.2	2,5 kg	plastic	41,85 €

Potassium nitrate solution (1 N)

Potassium nitrate solution

1 mol/l - 1 N volumetric standard solution
D 1,06
WGK 1

Type analysis:
Amount-of-substance conc. (20 °C)..... 1 mol/l ±0,2 %
Titer..... 0,9980-1,0020

9898.1	500 ml	plastic	32,15 €
9898.2	1 l	plastic	56,90 €
Original pack 6 x 1 l			54,06/1 l

Potassium oxalate

▶ di-Potassium oxalate monohydrate see p. 2232

di-Potassium oxalate monohydrate

Oxalic acid di-potassium salt monohydrate
$C_2K_2O_4 \cdot H_2O$
M 184,24 g/mol
D 2,13
Solubility: ~360 g/l (H_2O, 20 °C)
[6487-48-5] • EC No. 209-506-8
WGK 1
Warning H302+H312

di-Potassium oxalate monohydrate

≥98,5 %, p.a., ACS
For determination of Manganese.

Guarantee analysis:
Assay (perm.)..... 98,5-101,0 %
In H_2O insoluble matter..... ≤0,01 %
Neutrality..... complies
Chloride (Cl)..... ≤0,002 %
Sulphate (SO_4)..... ≤0,01 %
Ammonium (NH_4)..... ≤0,002 %
Dark coloured substance with H_2SO_4..... complies
Heavy metals (as Pb)..... ≤0,002 %
Iron (Fe)..... ≤0,001 %
Sodium (Na)..... ≤0,02 %

HN38.1	250 g	plastic	29,60 €
HN38.2	500 g	plastic	48,30 €
Original pack 6 x 500 g			45,89/500 g
HN38.3	1 kg	plastic	86,55 €
Original pack 6 x 1 kg			82,22/1 kg

di-Potassium oxalate monohydrate

≥98 %, extra pure

Typ analysis:
Appearance..... white cryst. powder
Assay ($C_2K_2O_4 \cdot H_2O$)..... ≥98,0 %
Sulphate (SO_4)..... ≤1,0 %
Chloride (Cl)..... ≤0,1 %
Heavy metals (as Pb)..... ≤0,001 %

4264.3	500 g	plastic	20,35 €
Original pack 6 x 500 g			19,33/500 g
4264.1	1 kg	plastic	32,80 €
Original pack 6 x 1 kg			31,16/1 kg
4264.4	5 kg	plastic	121,40 €
4264.2	10 kg	plastic	223,50 €

Potassium periodate

Potassium periodate

≥99,8 %, p.a., ACS
Potassium meta periodate
KIO_4
M 230,00 g/mol • D 3,62
mp 582 °C (dec.)
Solubility: 4,2 g/l (H_2O, 20 °C)
[7790-21-8] • EC No. 232-196-0
UN No. 1479 • ADR 5.1. II • WGK 1

Danger H272-H315-H319-H335

Guarantee analysis:
Assay (dry substance). ..... 99,8-100,3 %
Solubility. ..... complies
Other halogens (as Cl). ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,01 %
Manganese (Mn). ..... ≤0,0001 %
Loss on drying. ..... ≤0,1 %

2588.1	25 g	plastic	28,50 €
2588.2	100 g	plastic	66,55 €
2588.3	500 g	plastic	248,90 €
Original pack 6 x 500 g			236,46/500 g

Potassium permanganate

Permanganic acid potassium salt
$KMnO_4$
M 158,04 g/mol
D 2,70 • mp >240 °C
Solubility: 64 g/l (H_2O, 20 °C)
[7722-64-7] • EC No. 231-760-3
UN No. 1490 • ADR 5.1 II • WGK 3

Danger H272-H400-H410-H302

Potassium permanganate

≥99 %, p.a., ACS, max. 0,005 ppm Hg
For determination of mercury.

Guarantee analysis:
Assay. ..... ≥99,0 %
In H_2O insoluble matter. ..... ≤0,2 %
Total nitrogen (as N). ..... ≤0,005 %
Chloride, chlorate (as Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,02 %
Mercury (Hg) ..... ≤0,000005 %

KK08.1	500 g	plastic	44,00 €
Original pack 6 x 500 g			41,80/500 g
KK08.2	1 kg	plastic	66,55 €
Original pack 6 x 1 kg			63,22/1 kg

Potassium permanganate

≥99 %, p.a., ACS
Oxidizing agent, volumetric solution in manganometry.

Guarantee analysis:
Assay (iodom.) ..... ≥99,0 %
In H_2O insoluble matter. ..... ≤0,2 %
Chloride, chlorate (as Cl). ..... ≤0,005 %
Nitrogen compounds (as N) ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,02 %

P752.1	500 g	plastic	40,75 €
Original pack 6 x 500 g			38,71/500 g
P752.2	1 kg	plastic	61,20 €
Original pack 6 x 1 kg			58,14/1 kg
P752.3	2,5 kg	plastic	109,15 €

Potassium permanganate

≥99 %, Ph.Eur., BP, USP

Guarantee analysis:
Assay (iodom.). ..... 99,0-100,5 %
Appearance of solution. ..... complies
In H_2O insoluble matter. ..... ≤0,2 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,05 %
Loss on drying (105 °C). ..... ≤0,5 %

8004.1	250 g	plastic	23,55 €
8004.2	1 kg	plastic	58,60 €
Original pack 6 x 1 kg			55,67/1 kg
8004.3	5 kg	plastic	169,35 €

Potassium permanganate solution (0,1 N)

Potassium permanganate solution

0,02 mol/l - 0,1 N volumetric standard solution
D 1,002 • bp ~100 °C
mp ~0 °C
[7722-64-7] • EC No. 231-760-3
UN No. 3082 • ADR 9 III • WGK 3

H411

Type analysis:
Amount-of-substance conc. (20 °C). ..... 0,02 mol/l ±0,2 %
Titer. 0,998-1,002

K019.1	1 l	glass	24,20 €
Original pack 6 x 1 l			22,99/1 l

For further information, please see page 1682

Potassium permanganate solution (0,1 N)

Potassium permanganate solution

0,02 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.
$KMnO_4$
M 158,04 g/mol
UN No. 3082 • ADR 9 III • WGK 3

H411

Type analysis:
Amount-of-substance conc. (20 °C). ..... 0,02 mol/l
Measurement uncertainty. ..... ±0,1 %

9523.1	1 l	glass	44,00 €
Original pack 6 x 1 l			41,80/1 l

Potassium permanganate solution (0,5 N)

Potassium permanganate solution

0,1 mol/l - 0,5 N volumetric standard solution
UN No. 3082 • ADR 9 III • WGK 3

H411

Type analysis:
Amount-of-substance conc. (20 °C) ... 0,1 mol/l ±0,2 %
Titer. 0,998-1,002

KK69.1	1 l	glass	28,50 €
Original pack 6 x 1 l			27,08/1 l

For further information, please see page 1682

Potassium peroxodisulphate

▶ Potassium persulphate see p. 2233

Potassium persulphate

Potassium persulphate

≥99 %, extra pure
Potassium peroxodisulphate
$K_2S_2O_8$
M 270,32 g/mol
D 2,48
mp 100 °C (dec.)
Solubility: 52 g/l (H_2O, 20 °C)
[7727-21-1] • EC No. 231-781-8
UN No. 1492 • ADR 5.1 III • WGK 1

Danger
H334-H272-H302-H335-H315-H319-H317

Type analysis:
Assay. ..... ≥99,0 %
Iron (Fe). ..... ≤0,001 %

6795.2	500 g	plastic	24,65 €
Original pack 6 x 500 g			23,42/500 g
6795.1	1 kg	plastic	34,30 €
Original pack 6 x 1 kg			32,59/1 kg
6795.3	5 kg	plastic	96,65 €

sec. Potassium phosphate

▶ di-Potassium hydrogen phosphate see p. 2227

Potassium phosphate, dibasic

▶ di-Potassium hydrogen phosphate see p. 2227

Potassium phosphate monobasic

▶ Potassium dihydrogen phosphate see p. 2225

Potassium platinum(II) chloride

▶ Potassium tetrachloroplatinate(II) see p. 2235

Potassium polysulphide

Potassium polysulphide

≥42 %, extra pure

Potassium sulphide, Sulphurated potash

K_2S_x

D 1,65

mp 200-250 °C • flp >200 °C

Solubility: 500 g/l (H_2O, 20 °C)

[37199-66-9] • EC No. 253-390-1

UN No. 3262 • ADR 8 II • WGK 2

Danger H314-H400-EUH031

Type analysis:

Appearance. . buff-coloured or yellow-green fragments
Assay (K_2S). ..... 42-44 %
Total nitrogen (as N). ..... ~0,01 %
In water insoluble matter. ..... ~1,0 %
Size of fragments. ..... ~5-60 mm

8010.2	500 g	plastic	46,15 €
Original pack 6 x 500 g			43,84/500 g
8010.1	1 kg	plastic	81,60 €
Original pack 6 x 1 kg			77,52/1 kg
8010.3	2,5 kg	plastic	177,40 €

Potassium pyrochromat

▶ Potassium dichromate see p. 2225

Potassium pyrosulphite

▶ Potassium disulphite see p. 2226

Potassium rhodanide

▶ Potassium thiocyanate see p. 2235

Potassium silicate

Potassium silicate

NEW

extra pure

Liquid glass, Water glass

D 1,25

[1312-76-1] • EC No. 215-199-1

WGK 3

Type analysis:

K_2O. ..... 7,5-8,7 %
SiO_2. ..... 19,5-21,8 %
Density ..... 1,24-1,26 g/cm³

0748.1	1 l	plastic	53,65 €
Original pack 6 x 1 l			50,97/1 l
0748.2	2,5 l	plastic	106,45 €
Original pack 4 x 2,5 l			101,13/2,5 l
0748.3	5 l	plastic	192,45 €
Original pack 2 x 5 l			182,83/5 l
0748.4	10 l	plastic	353,70 €

Potassium sodium tartrate solution

▶ Fehling's solution II see p. 1992

Potassium sodium tartrate tetrahydrate

Seignette salt

$C_4H_4KNaO_6 \cdot 4\ H_2O$

M 282,22 g/mol

mp 70-80 °C

Solubility: 630 g/l (H_2O, 20 °C)

[6381-59-5] • EC No. 205-698-2

WGK 1

Potassium sodium tartrate tetrahydrate

≥99 %, p.a., ACS, ISO

Used as a constituent of Fehling's solution.

Guarantee analysis:

Assay (perchloric acid titration). ..... ≥99 %
pH value (5 % in water). 6,5-8,5
In H_2O insoluble matter. ..... ≤0,003 %
Chloride (Cl). ..... ≤0,0005 %
Sulphate (SO_4). ..... ≤0,005 %
Phosphate (PO_4). ..... ≤0,001 %
Ammonium (NH_4). ..... ≤0,002 %
Arsenic (As). ..... ≤0,00002 %
Lead (Pb). ..... ≤0,0002 %
Calcium (Ca). ..... ≤0,002 %
Iron (Fe). ..... ≤0,0002 %
Copper (Cu). ..... ≤0,0002 %
Magnesium (Mg). ..... ≤0,002 %
Nickel (Ni). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %

8087.2	500 g	plastic	40,75 €
Original pack 6 x 500 g			38,71/500 g
8087.1	1 kg	plastic	67,20 €
Original pack 6 x 1 kg			63,84/1 kg
8087.3	2,5 kg	plastic	147,85 €

Potassium sodium tartrate tetrahydrate

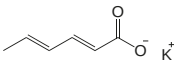
≥99 %, USP

Guarantee analysis:

Assay (dry substance). ..... 99,0-102,0 %
Identity. ..... complies
Water (KF). ..... 21,0-27,0 %
Loss on drying (150 °C). ..... 21,0-26,0 %
pH value (1 % in H_2O). 6,5-8,5
Ammonia (NH_3). ..... complies
Alkalinity. ..... complies
Oxalate (as oxalic acid). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %
Mercury (Hg). ..... ≤0,0001 %

7998.3	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
7998.1	1 kg	plastic	53,65 €
Original pack 6 x 1 kg			50,97/1 kg
7998.2	5 kg	plastic	184,40 €

Potassium sorbate



Sorbic acid potassium salt

$C_6H_7KO_2$

M 150,22 g/mol

mp 210 °C (dec.)

[24634-61-5] • EC No. 246-376-1

WGK 1

Warning H315-H319

Potassium sorbate

ROTI®STAR Primary Standard

Type analysis:

Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤2,0 %
Assay (qNMR). ..... ≥95,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE09.1	100 mg	glass	751,45 €

Potassium sorbate

ROTICHROM® Working Standard

Type analysis:

Assay (HPLC). ..... ≥85,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC09.1	100 mg	glass	125,70 €

Potassium sulphate

K_2SO_4

M 174,27 g/mol

D 2,662 • bp 1689 °C

mp 1069 °C

Solubility: 111 g/l (H_2O, 20 °C)

[7778-80-5] • EC No. 231-915-5

WGK 1

Potassium sulphate

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5071.1	10 g	plastic	92,35 €

Potassium sulphate

≥99 %, p.a., ACS, ISO

For raising the boiling point.

Guarantee analysis:

Assay.....≥99,0 %
pH value (5 % in water).....5,5-8,0
In H_2O insoluble matter.....≤0,01 %
Total nitrogen (as N).....≤0,0005 %
Chloride (Cl).....≤0,0005 %
Phosphate (PO_4).....≤0,001 %
Heavy metals (as Pb).....≤0,0005 %
Arsenic (As).....≤0,0002 %
Calcium (Ca).....≤0,005 %
Copper (Cu).....≤0,0005 %
Iron (Fe).....≤0,0005 %
Zinc (Zn).....≤0,0005 %
Cadmium (Cd).....≤0,0005 %
Magnesium (Mg).....≤0,002 %
Sodium (Na).....≤0,02 %
Lead (Pb).....≤0,0005 %

P022.1	500 g	plastic	39,70 €
Original pack 6 x 500 g			37,72/500 g
P022.2	1 kg	plastic	66,55 €
Original pack 6 x 1 kg			63,22/1 kg
P022.3	2,5 kg	plastic	150,00 €

Potassium sulphate

≥99 %, Ph.Eur.

Guarantee analysis:

Assay (dry substance).....99,0-100,5 %
Identity.....complies
Loss on drying.....≤0,5 %
Appearance of solution.....complies
Acidity/alkalinity.....complies
pH value (5 %, water).....6,0-7,5
Chloride (Cl).....≤0,004 %
Heavy metals (as Pb).....≤0,001 %
Arsenic (As).....≤0,0002 %
Lead (Pb).....≤0,0002 %
Calcium (Ca).....≤0,02 %
Iron (Fe).....≤0,001 %
Magnesium (Mg).....≤0,002 %
Sodium (Na).....≤0,1 %
Mercury (Hg).....≤0,0001 %
Selenium (Se).....≤0,0005 %

CN79.1	500 g	plastic	20,35 €
Original pack 6 x 500 g			19,33/500 g
CN79.2	1 kg	plastic	27,45 €
Original pack 6 x 1 kg			26,08/1 kg
CN79.3	5 kg	plastic	95,60 €

Potassium sulphate

≥98 % cryst.

Type analysis:

Assay.....≥98,0 %
Chloride (Cl).....~0,1 %
Calcium (Ca).....~0,02 %
Magnesium (Mg).....~0,02 %

X889.1	500 g	plastic	14,95 €
Original pack 6 x 500 g			14,20/500 g
X889.2	1 kg	plastic	19,25 €
Original pack 6 x 1 kg			18,29/1 kg
X889.3	2,5 kg	plastic	33,25 €
X889.5	25 kg	plastic	235,45 €

Potassium sulphide

▶ Potassium polysulphide see p. 2234

Potassium sulphocyanide

▶ Potassium thiocyanate see p. 2235

Potassium tetraborate tetrahydrate

Potassium tetraborate tetrahydrate

≥99,5 %, cryst.

$K_2B_4O_7 \cdot 4\ H_2O$
M 305,50 g/mol
mp 100 °C
Solubility: 158 g/l (H_2O, 20 °C)
[12045-78-2] • EC No. 215-575-5
WGK 1

Danger H360FD

Type analysis:

Assay.....≥99,5 %
Chloride (Cl).....≤0,002 %
Sulphate (SO_4).....≤0,005 %
Iron (Fe).....≤0,0007 %

2615.1	250 g	plastic	22,50 €
2615.2	500 g	plastic	33,25 €
Original pack 6 x 500 g			31,59/500 g
2615.3	1 kg	plastic	54,75 €
Original pack 6 x 1 kg			52,01/1 kg

Potassium tetrachloroaurate(III)

Potassium tetrachloroaurate(III)

ROTI®METIC 99,995 % (4N5)

$KAuCl_4$
M 377,88 g/mol
mp >300 °C
Solubility: 10 g/l (H_2O, 20 °C)
[13682-61-6] • EC No. 237-190-1
WGK 1

Warning H315-H319-H335

Typ analysis:

Assay (metals basis).....99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5114.1	1 g	plastic	241,90 €
5114.2	5 g	plastic	1020,20 €

Potassium tetrachloroplatinate(II)

Potassium tetrachloroplatinate(II)

ROTI®METIC 99,95 % (3N5)

Potassium platinum(II) chloride
K_2PtCl_4
M 415,09 g/mol
D 3,38
mp 250 °C
[10025-99-7] • EC No. 233-050-9
UN No. 3288 • ADR 6.1 II • WGK 3

Danger
H301-H315-H317-H318-H334

Type analysis:

Assay (metals basis).....99,95 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5660.1	1 g	plastic	241,90 €

Potassium tetraiodomercurate(II)

▶ Nessler's Reagent see p. 2155

Potassium tetraoxalate

▶ Buffer solution
pH 1,679 ±0,03 (25 °C) see p. 1856

Potassium thiocyanate

Potassium thiocyanate

≥98,5 %, p.a., ACS

Reagent for the detection of iron(III) ions.
Potassium rhodanide, Potassium sulphocyanide
KSCN
M 97,18 g/mol
D 1,89
mp 175 °C
Solubility: 2170 g/l (H_2O, 20 °C)
[333-20-0] • EC No. 206-370-1
WGK 1

Warning
H302+H312+H332-H412-EUH032

Guarantee analysis:

Assay (arg.).....≥98,5 %
pH value (5 % solution).....5,3-8,7
In H_2O insoluble matter.....≤0,005 %
Iodine consuming substances (I).....complies
Chloride (Cl).....≤0,005 %
Sulphate (SO_4).....≤0,005 %
Ammonium (NH_4).....≤0,003 %
Iron (Fe).....≤0,0002 %
Sodium (Na).....≤0,005 %
Heavy metals (as Pb).....≤0,0005 %

P753.1	500 g	plastic	79,45 €
Original pack 6 x 500 g			75,48/500 g
P753.2	1 kg	plastic	139,65 €
Original pack 6 x 1 kg			132,67/1 kg
P753.3	2,5 kg	plastic	320,90 €

Potassium thiocyanate solution (1 N)

Potassium thiocyanate solution

1 mol/l - 1 N volumetric standard solution

D 1,05
WGK 1
EUH031

Type analysis:

Amount-of-substance conc. (20 °C).....1 mol/l ±0,2 %
Titer. 0,9980-1,0020

9899.1	1 l	plastic	47,20 €
Original pack 6 x 1 l			44,84/1 l

Potato Extract Glucose Agar

Potato Extract Glucose Agar

Ph.Eur., for microbiology

For cultivation and identification of yeasts and moulds.
Application: Use 39 g for 1 l agar.
Slightly opalescent.
Potato Dextrose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), PDA
Storage temp.: +20 °C
WGK 1

Guarantee analysis:

Potato infusion. ..... 4 g/l
Glucose. ..... 20 g/l
Agar. ..... 15 g/l
pH value. ..... 5,6 ±0,2

X931.1	500 g	plastic	99,45 €
Original pack 6 x 500 g			94,48/500 g
X931.2	1 kg	plastic	177,40 €
Original pack 6 x 1 kg			168,53/1 kg
X931.3	2,5 kg	plastic	407,45 €

For further information, please see page 1459

Potato Extract Glucose Broth

Potato Extract Glucose Broth

for microbiology

For identification, cultivation and enumeration of yeasts and moulds.
Application: Use 26,5 g for 1 l broth.
Slightly opalescent.
Storage temp.: +20 °C
WGK 1

Formulation:

Potato infusion. ..... 6,5 g/l
Glucose. ..... 20 g/l
pH value. ..... 5,6 ±0,2

CP74.1	500 g	plastic	69,35 €
Original pack 6 x 500 g			65,88/500 g
CP74.2	1 kg	plastic	125,70 €
Original pack 6 x 1 kg			119,42/1 kg

For further informations, please see page 1459

Potato starch

▶ Dextrin see p. 1931

Povidon

▶ Polyvinylpyrrolidone K 12 see p. 2220
▶ Polyvinylpyrrolidone K 25 see p. 2220
▶ Polyvinylpyrrolidone K 30 see p. 2220
▶ Polyvinylpyrrolidone K 90 see p. 2220

Powdered milk

Powdered milk

blotting grade, powdered, low fat

BLOTTO reagent
[68514-61-4] • EC No. 271-045-3

Type analysis:

Water ..... ≤4,0 %
Fat. ..... ≤1,0 %
Ash. ..... ≤8,5 %
Lactose. ..... 45,0-54,0 %
Protein. ..... 33,0-40,0 %
pH value 6,4-6,7

T145.1	250 g	plastic	14,55 €
T145.2	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
T145.3	1 kg	plastic	36,45 €
Original pack 6 x 1 kg			34,63/1 kg
T145.5	2,5 kg	plastic	77,30 €
T145.4	5 kg	plastic	142,90 €

PPh_3

▶ Triphenylphosphine see p. 2420

PPO

▶ 2,5-Diphenyloxazole see p. 1953

Praseodymium Standards

▶ Praseodymium ICP Standard Solution see p. 2364
▶ Praseodymium ICP Standard Solution see p. 2369

Praseodymium(III) carbonate octahydrate

Praseodymium(III) carbonate octahydrate

ROTI®REMETIC 99 %

$Pr_2(CO_3)_3 \cdot 8\ H_2O$
M 605,96 g/mol
[14948-62-0] • EC No. 227-578-9
WGK 3

Type analysis:

Assay (TREO*). ..... 99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7090.2	25 g	plastic	133,85 €

Praseodymium(III,IV) oxide

Praseodymium(III,IV) oxide

ROTI®REMETIC 99,99 %

Pr_6O_{11}
M 1021,44 g/mol
bp 4200 °C
mp 2500 °C
Solubility: insoluble (H_2O, 20 °C)
[12037-29-5] • EC No. 234-857-9
WGK 1

Warning H315-H319-H335

Type analysis:

Assay (TREO*). .....99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7087.1	1 g	plastic	22,40 €
7087.2	5 g	plastic	90,20 €

Precipitation reagents (DNA)

▶ Roti®-PinkDNA see p. 2293
▶ Glycogen see p. 2027

Preston Agar

▶ Campylobacter Selective Agar (Base) see p. 1874

Preston Supplement

▶ Campylobacter Preston Supplement see p. 1874

Primary Antibody

Art. No.	Description	Page
4665	Anti DYKDDDDK pAB	1808
4664	Anti DYKDDDDK Serum	1808
3998	Anti GST pAB	1808
3994	Anti GST Serum	1809
3742	Anti His pAB	1809
3735	Anti His Serum	1809
4667	Anti Myc pAB	1809
4666	Anti Myc Serum	1809

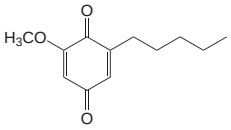
Primary Standards

Art. No.	Description	Page
NE36	Acetoxyvalerenic acid	1765
NE33	Acteoside	1771
NE37	Apigenin	1811
NE19	Apigenin-7-glucoside	1812
NE38	p-Arbutin	1814
NE00	L(+)-Ascorbic acid	1817
NE01	Benzaldehyde	1829
NE03	Benzoic acid	1830
NE11	Benzoic acid sodium salt	1831
NE02	Benzyl alcohol	1833
NE20	Bilobalid	1836
NE04	Butylated hydroxyanisole	1862
NE05	Butylated hydroxytoluene	1862
NE08	Caffeic acid	1867
NE39	Casticin	1882
NE06	Chlorogenic acid	1893
NE55	(+)-Dihydroquercetin	1941
NE52	3,4-Dihydroxybenzoic acid	1942
NE40	Echinacoside	1964
NE41	(-)-Epicatechin	1971
NE42	Eriocitrin	1973
NE43	Ginkgolide A	2015
NE44	Ginsenoside Rb1	2016
NE45	Ginsenoside Re	2017
NE62	Ginsenoside Rg1	2017
NE21	Harpagoside	2033
NE46	Hederacoside C	2034
NE47	Herniarin	2039
NE07	4-Hydroxybenzoic acid ethyl ester	2056
NE10	4-Hydroxybenzoic acid methyl ester	2056
NE13	4-Hydroxybenzoic acid propyl ester	2057
NE48	Hydroxyvalerenic acid	2060
NE22	Hypericin	2061
NE23	Hyperoside	2062
NE24	Isoquercitrin	2080
NE25	Isovitexin	2081
NE26	Kaempferol	2082
NE49	Luteolin	2106
NE50	Oleanolic acid	2183
NE51	Osthol	2187
NE12	2-Phenoxyethanol	2205
NE09	Potassium sorbate	2234
NE27	Quercetin dihydrate	2249
NE28	Quercetin-3-O-ß-Glucuronide	2249
NE29	Quercitrin	2250
NE30	Rosmarinic acid	2262
NE14	Rutin trihydrate	2301
NE53	Sennoside A	2312
NE54	Sennoside B	2312
NE31	Silybin	2328
NE15	Sorbic acid	2355
NE16	DL-α-Tocopherol	2410
NE18	RRR-α-Tocopherol	2411
NE17	DL-α-Tocopherol acetate	2411
NE32	Valerenic acid	2432
NE56	Vitexin	2436
NE34	Vitexin-2''-O-rhamnoside	2437
NE35	Xanthohumol	2442

Primer

- Roth Hexanucleotide Random-Primer Mix see p. 2262
- Roth poly d(T)$_{12-18}$ Primer see p. 2262
- Roth Random-Primer sets for RAPD-PCR see p. 2262

Primin



Primin

with analytical records

Synthetic

$C_{12}H_{16}O_3$

M 208,26 g/mol

mp 77-79 °C

Storage temp.: +4 °C

[15121-94-5]

WGK 1

Danger

H334-H302+H312+H332-H317

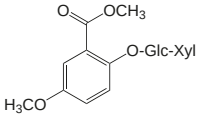
Type analysis:

Purity (HPLC). ..... >99 %

Analytical records: HPLC, TLC, ^{1}H- NMR, ^{13}C- NMR, UV, IR, MS, Melting point, Elemental analysis.

T898.1	20 mg	glass	504,20 €

Primulaverin



Primulaverin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Primula veris.*

$C_{20}H_{28}O_{13}$

M 476,43 g/mol

Storage temp.: +4 °C

[154-61-0]

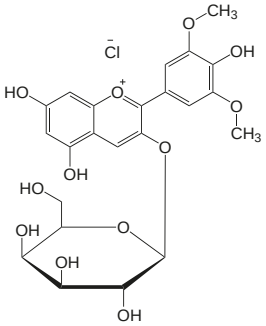
Warning H302

Type analysis:

Purity (HPLC). ..... >99 %

1201.1	10 mg	glass	295,65 €

Primulin chloride



Primulin chloride

ROTICHROM® HPLC

From *Vitis vinifera*

Malvidin 3-galactoside chloride

$C_{23}H_{25}O_{12}Cl$

M 528,87 g/mol

Storage temp.: -20 °C
Transport temp.: room temp.

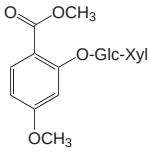
[30113-37-2]

Type analysis:

Purity (HPLC). .....≥95 %

K014.1	5 mg	plastic	600,95 €

Primverin



Primverin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Primula veris.*

$C_{20}H_{28}O_{13}$

M 476,43 g/mol

Storage temp.: +4 °C

[154-60-9]

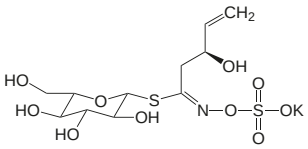
Warning H302

Type analysis:

Purity (HPLC). .....>99 %

1203.1	10 mg	glass	295,65 €

Progoitrin



Progoitrin

ROTICHROM® HPLC

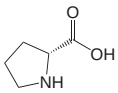
Reference substance for HPLC.
From *Brassica napus.*
2-Hydroxybut-3-enyl glucosinolate potassium salt
$C_{11}H_{18}KNO_{10}S_2$
M 427,48 g/mol
Storage temp.: +4 °C • [585-95-5] • WGK 1

Type analysis:

Purity (HPLC)..... ≥97,0 %

2436.1	10 mg	glass	256,95 €

D-Proline



D-Proline

≥98,5 %, for biochemistry

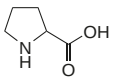
(R)-Pyrrolidine-2-carboxylic acid, H-D-Pro-OH
$C_5H_9NO_2$ • M 115,1 g/mol
Storage temp.: +4 °C
[344-25-2] • EC No. 206-452-7 • WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$ (c=4 in H_2O)..... +84,5° to +86,5°
Loss on drying. ..... ≤0,2 %

7888.1	1 g	glass	25,70 €
7888.2	5 g	plastic	75,15 €
7888.3	25 g	plastic	198,90 €

DL-Proline



DL-Proline

≥99 %, for biochemistry

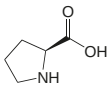
Pyrrolidine-2-carboxylic acid
$C_5H_9NO_2$ • M 115,13 g/mol
mp 208-210 °C (dec.)
[609-36-9] • EC No. 210-189-3 • WGK 1

Type analysis:

Assay (titr.). ..... ≥99,0 %
Solution (5 % in H_2O)..... colourless, clear
Water (KF). ..... ≤0,5 %
pH value (1 % in H_2O)..... 5,5-6,9
Heavy metals (as Pb)..... ≤0,002 %

5267.1	5 g	plastic	25,70 €
5267.2	10 g	plastic	46,15 €
5267.3	25 g	plastic	90,20 €

L-Proline



(S)-Pyrrolidine-2-carboxylic acid, H-L-Pro-OH
$C_5H_9NO_2$
M 115,13 g/mol
Solubility: 1500 g/l (H_2O, 20 °C)
[147-85-3] • EC No. 205-702-2
WGK 1

L-Proline

CELLPURE® ≥98,5 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥98,5 %
Loss on drying. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... -86,0° to -84,0°
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,03 %
Iron (Fe)..... ≤0,001 %

1713.1	25 g	plastic	21,40 €
1713.2	100 g	plastic	45,70 €
1713.3	500 g	plastic	170,95 €
Original pack 6 x 500 g			162,40/500 g

L-Proline

≥98,5 %, Ph.Eur., for biochemistry

Guarantee analysis:

Appearance..... white to off-white cryst. powder or colourless crystals
Assay (dry substance)..... 98,5-101,0 %
Identity..... complies
Appearance of solution..... complies
Specific rotation $[\alpha]_D^{20}$. ..... -86° to -84°
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,03 %
Iron (Fe)..... ≤0,001 %
Elemental impurities. ..... complies
Residual solvents. ..... complies
Foreign amino acids. ..... ≤0,5 %
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

T205.1	25 g	plastic	16,70 €
T205.2	100 g	plastic	32,80 €
T205.3	500 g	plastic	126,35 €
Original pack 6 x 500 g			120,03/500 g

Propanedioic acid

▶ Malonic acid see p. 2117

1,2-Propanediol

1,2-Propanediol

≥99,5 %, for synthesis

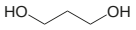
Propylene glycol, Methyl ethyl glycol
$C_3H_8O_2$
M 76,10 g/mol
D ~1,04 • bp 188 °C
mp -59 °C • flp 99 °C
[57-55-6] • EC No. 200-338-0
WGK 1

Type analysis:

Assay (GC). ..... ≥99,5 %
Density (d 20 °C/20 °C)..... 1,035-1,040
Water. ..... ≤0,2 %
Chloride (Cl)..... ≤0,007 %
Sulphate (SO_4)..... ≤0,006 %
Heavy metals (as Pb)..... ≤0,0005 %
Arsenic (As). ..... ≤0,0003 %

0340.1	1 l	plastic	24,20 €
Original pack 6 x 1 l			22,99/1 l
0340.2	2,5 l	plastic	46,15 €
Original pack 4 x 2,5 l			43,84/2,5 l
0340.3	5 l	plastic	84,85 €
Original pack 2 x 5 l			80,61/5 l

1,3-Propanediol



1,3-Propanediol

NEW

≥98 %, for synthesis

Trimethylene glycol, 1,3-Dihydroxy propane, PDO
$C_3H_8O_2$
M 76,09 g/mol
[504-63-2] • EC No. 207-997-3
WGK 1

Type analysis:

Assay (GC). ..... ≥98 %
Density (20 °C)..... 1,051-1,053 g/cm³
Water (KF). ..... ≤0,5 %

0958.1	100 ml	glass	18,20 €
0958.2	500 ml	glass	59,05 €
0958.3	1 l	glass	106,45 €
Original pack 6 x 1 l			101,13/1 l
0958.4	2,5 l	glass	213,95 €
Original pack 4 x 2,5 l			203,25/2,5 l

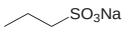
1,2-Propanediol cyclic carbonate

▶ Propylene carbonate see p. 2242

1,2-Propanediol diacetate

▶ Propylene glycol diacetate see p. 2242

Propane-1-sulphonic acid sodium salt



Propane-1-sulphonic acid sodium salt

≥98 %, for ion pair chromatography

Ion pair reagent for HPLC.
Sodium-1-propane sulphonate
$C_3H_7NaO_3S$
M 146,14 g/mol
[14533-63-2] • EC No. 238-564-7 • WGK 2

Guarantee analysis:

Assay (acidim.)..... ≥98,0 %
Water..... ≤2 %
A 200 nm (0,005 M in water)..... ≤0,05 AU
A 210 nm (0,005 M in water)..... ≤0,03 AU
A 220 nm (0,005 M in water)..... ≤0,02 AU
A 230 nm (0,005 M in water)..... ≤0,02 AU
A 250 nm (0,005 M in water)..... ≤0,01 AU
A 260 nm (0,005 M in water)..... ≤0,01 AU

KK57.1	10 g	glass	53,65 €
KK57.2	25 g	glass	107,40 €
KK57.3	100 g	glass	332,20 €

1,2,3-Propanetriol

▶ Glycerol see p. 2024

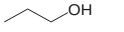
Propanoic acid

▶ Propionic acid see p. 2241

n-Propanol

▶ 1-Propanol see p. 2239

1-Propanol



n-Propanol, 1-Hydroxypropane, n-Propylalcohol
C_3H_8O
M 60,1 g/mol
D ~0,8 • bp 95,5-97,5 °C
mp -127 °C • flp 15 °C
[71-23-8] • EC No. 200-746-9
UN No. 1274 • ADR 3 II • WGK 1

Danger H225-H318-H336

1-Propanol

ROTISOLV® HPLC

Guarantee analysis:

Assay (GC)..... ≥99,5 %
Water (KF)..... ≤0,05 %
Acidity..... ≤0,002 meq/g
Non volatile matter..... ≤0,0003 %
Transmission:
300 nm..... ≥99 %
290 nm..... ≥98 %
250 nm..... ≥90 %
Filtered through 0,2 µm membrane and filled under protective gas.

T177.1	2,5 l	glass	121,40 €
Original pack 4 x 2,5 l			115,33/2,5 l

For further information, please see page 1650

1-Propanol

ROTIPURAN® ≥99,5 %, p.a.

Guarantee analysis:

Assay (GC)..... ≥99,5 %
Water (KF)..... ≤0,05 %
Density (d 20 °C/20 °C)..... 0,802-0,806
Acetone (GC)..... ≤0,01 %
Ethanol (GC)..... ≤0,05 %
Methanol (GC)..... ≤0,05 %
2-Propanol (GC)..... ≤0,05 %
Propionaldehyde (GC)..... ≤0,01 %
Evaporation residue..... ≤0,001 %
Lead (Pb)..... ≤0,00001 %
Cadmium (Cd)..... ≤0,000005 %
Calcium (Ca)..... ≤0,00005 %
Chromium (Cr)..... ≤0,000002 %
Iron (Fe)..... ≤0,00001 %
Cobalt (Co)..... ≤0,000002 %
Copper (Cu)..... ≤0,000002 %
Magnesium (Mg)..... ≤0,00001 %
Manganese (Mn)..... ≤0,000002 %
Nickel (Ni)..... ≤0,000002 %
Zinc (Zn)..... ≤0,00001 %

6776.1	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l
6776.2	2,5 l	glass	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

1-Propanol

≥99,5 %, for synthesis

Type analysis:

Assay (GC)..... ≥99,5 %
Colour (APHA)..... ≤10
Water (KF)..... ≤0,1 %
Density (20 °C)..... 0,803-0,805

9169.1	1 l	glass	26,35 €
Original pack 6 x 1 l			25,03/1 l
9169.2	2,5 l	glass	47,20 €
Original pack 4 x 2,5 l			44,84/2,5 l
9169.3	10 l	tinplate	120,95 €
9169.4	25 l	tinplate	214,50 €

2-Propanol

Isopropanol, Isopropyl alcohol,
Dimethyl carbinol, IPA, 2-Hydroxypropane
C_3H_8O
M 60,10 g/mol
D 0,78 • bp ~82 °C
mp -90 °C • flp 12 °C
[67-63-0] • EC No. 200-661-7
UN No. 1219 • ADR 3 II • WGK 1

Danger H225-H319-H336

2-Propanol

ROTISOLV® ≥99,95 %, Ultra LC-MS

Guarantee analysis:

Assay (GC)..... ≥99,95 %
Colour (APHA)..... ≤5
Water (KF)..... ≤0,05 %
Acidity (as CH_3COOH)..... ≤0,001 %
Alkalinity (as NH_3)..... ≤0,0001 %
Evaporation residue..... ≤0,0001 %
Transmission:
250 nm..... ≥99 %
230 nm..... ≥90 %
220 nm..... ≥80 %
Gradient test:
UV-absorption of the greatest eluated peak.
235 nm..... ≤0,001 AU
254 nm..... ≤0,001 AU
Fluorescence (as quinine):
254 nm..... ≤0,5 ppb
365 nm..... ≤0,5 ppb
Trace impurities:
Aluminium (Al)..... ≤20 ppb
Calcium (Ca)..... ≤50 ppb
Iron (Fe)..... ≤20 ppb
Potassium (K)..... ≤50 ppb
Magnesium (Mg)..... ≤20 ppb
Sodium (Na)..... ≤50 ppb
Filtered through 0,1 µm membrane and filled under protective gas.

0733.1	1 l	glass	55,80 €
Original pack 6 x 1 l			53,01/1 l
0733.2	2,5 l	glass	99,90 €
Original pack 4 x 2,5 l			94,91/2,5 l

2-Propanol

ROTISOLV® ≥99,95 %, LC-MS Grade

Guarantee analysis:

Assay (GC)..... ≥99,95 %
Colour (APHA)..... ≤5
Water (KF)..... ≤0,05 %
Free acid (as CH_3COOH)..... ≤0,001 %
Free alkali (as NH_3)..... ≤0,0005 %
Non volatile matter..... ≤0,0001 %
Transmission:
260 nm..... ≥98 %
220 nm..... ≥60 %
210 nm..... ≥30 %
Gradient test:
UV-absorption of the greatest eluated peak.
254 nm..... ≤0,001 AU
Fluorescence (as quinine):
254 nm..... ≤0,5 ppb
365 nm..... ≤0,5 ppb
Trace impurities:
Aluminium (Al)..... ≤0,05 ppm
Calcium (Ca)..... ≤0,05 ppm
Iron (Fe)..... ≤0,05 ppm
Potassium (K)..... ≤0,05 ppm
Magnesium (Mg)..... ≤0,05 ppm
Sodium (Na)..... ≤0,05 ppm
LC-MS suitability test..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

AE73.1	1 l	glass	39,70 €
Original pack 6 x 1 l			37,72/1 l
AE73.2	2,5 l	glass	77,95 €
Original pack 4 x 2,5 l			74,05/2,5 l

2-Propanol

ROTISOLV® HPLC

Guarantee analysis:

Assay (GC)..... ≥99,9 %
Water (KF)..... ≤0,05 %
Free acid..... ≤0,001 %
Non volatile matter..... ≤0,0001 %
Transmission:
255 nm..... ≥99 %
240 nm..... ≥90 %
210 nm..... ≥40 %
Filtered through 0,2 µm membrane and filled under protective gas.

7343.2	1 l	glass	33,25 €
Original pack 6 x 1 l			31,59/1 l
7343.1	2,5 l	glass	69,80 €
Original pack 4 x 2,5 l			66,31/2,5 l

For further information, please see page 1650

2-Propanol

ROTISOLV® ≥99,9 %, Pestilyse® plus

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:

Assay (GC)	≥99,9 %
Colour (APHA)	≤10
Water (KF)	≤0,03 %
Free acid (as CH_3COOH)	≤0,001 %
Free alkali (as NH_3)	≤0,0001 %
Evaporation residue	≤0,0003 %
GC/ECD suitability (as heptachloro epoxide)	≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane)	≤5 ng/l
GC/ECD pesticides (as lindane)	≤5 ng/l
GC/NPD pesticides (as parathion)	≤10 ng/l
PAH-test (less than 2 ppb, HPLC)	complies
Oil index (any hydrocarbon C_{10}-C_{40})	≤0,1 mg/l
Fluorescence (as quinine):	
254 nm	≤1 ppb
365 nm	≤1 ppb
Transmission:	
220 nm	≥80 %

7590.1	2,5 l	glass	54,30 €
Original pack 4 x 2,5 l			51,59/2,5 l

2-Propanol

ROTISOLV® ≥99,8 %, Pestilyse®

For residue and environmental analysis.

Guarantee analysis:

Assay (GC)	≥99,8 %
Water (KF)	≤0,1 %
Acidity	≤0,0005 meq/g
Evaporation residue	≤0,0005 %
GC/ECD (individual signal as lindane)	≤5 ng/l
GC/PND (individual signal as ethylparathion)	≤10 ng/l

T902.1	2,5 l	glass	53,25 €
Original pack 4 x 2,5 l			50,59/2,5 l

2-Propanol

ROTISOLV® ≥99,9 %, UV/IR-Grade

For chromatography and spectroscopy.

Guarantee analysis:

Assay (GC)	≥99,9 %
Water (KF)	≤0,05 %
Acidity	≤0,0005 meq/g
Evaporation residue	≤0,0005 %
Fluorescence (as quinine):	
254 nm	≤1,0 ppb
365 nm	≤1,0 ppb
Transmission:	
260 nm	≥98 %
242 nm	≥90 %
232 nm	≥80 %
217 nm	≥50 %
207 nm	≥10 %

T910.1	2,5 l	glass	72,60 €
Original pack 4 x 2,5 l			68,97/2,5 l

2-Propanol

≥99,9 %, VLSI Grade

Guarantee analysis:

Assay	≥99,9 %
Particle number (≥0,5 µm)	≤250 p/ml
Water	≤0,1 %
Alkalinity	0,1 µeq/g
Acidity	0,2 µeq/g
Colour (APHA)	≤10
Chloride (Cl)	≤0,0001 %
Nitrate (NO_3)	≤0,0001 %
Sulphate (SO_4)	≤0,0001 %
Sulphite (SO_3)	≤0,0001 %
Ash content	≤0,0005 %
Aluminium (Al)	≤20 ppb
Antimony (Sb)	≤10 ppb
Arsenic (As)	≤10 ppb
Barium (Ba)	≤20 ppb
Bismuth (Bi)	≤10 ppb
Lead (Pb)	≤10 ppb
Boron (B)	≤20 ppb
Cadmium (Cd)	≤10 ppb
Calcium (Ca)	≤50 ppb
Chromium (Cr)	≤10 ppb
Iron (Fe)	≤50 ppb
Gallium (Ga)	≤10 ppb
Gold (Au)	≤20 ppb
Potassium (K)	≤20 ppb
Cobalt (Co)	≤10 ppb
Copper (Cu)	≤10 ppb
Lithium (Li)	≤10 ppb
Magnesium (Mg)	≤50 ppb
Manganese (Mn)	≤10 ppb
Molybdenum (Mo)	≤10 ppb
Sodium (Na)	≤50 ppb
Nickel (Ni)	≤10 ppb
Silver (Ag)	≤10 ppb
Strontium (Sr)	≤20 ppb
Titanium (Ti)	≤10 ppb
Vanadium (V)	≤10 ppb
Zinc (Zn)	≤20 ppb
Tin (Sn)	≤10 ppb

9781.1	2,5 l	plastic	69,35 €
Original pack 4 x 2,5 l			65,88/2,5 l
9781.2	5 l	plastic	112,90 €
Original pack 2 x 5 l			107,26/5 l

For further information, please see page 1718

2-Propanol

ROTIPURAN® ≥99,8 %, p.a., ACS, ISO

Guarantee analysis:

Assay (GC)	≥99,8 %
Colour (Hazen)	≤10
Acidity	≤0,0001 meq/g
Solubility in H_2O	complies
Density (d 20 °C/4 °C)	0,784-0,787
Water	≤0,05 %
Acetone (GC)	≤0,01 %
Ethanol (GC)	≤0,01 %
Methanol (GC)	≤0,01 %
Evaporation residue	≤0,001 %
Carbonylic compounds (as CO)	≤0,002 %
Matter discoloured by H_2SO_4 (Hazen)	≤10
Aluminium (Al)	≤0,00005 %
Barium (Ba)	≤0,00001 %
Lead (Pb)	≤0,00001 %
Boron (B)	≤0,000002 %
Cadmium (Cd)	≤0,000005 %
Calcium (Ca)	≤0,00005 %
Chromium (Cr)	≤0,000002 %
Iron (Fe)	≤0,00001 %
Cobalt (Co)	≤0,000002 %
Copper (Cu)	≤0,000002 %
Magnesium (Mg)	≤0,00001 %
Manganese (Mn)	≤0,000002 %
Nickel (Ni)	≤0,000002 %
Zinc (Zn)	≤0,00001 %
Tin (Sn)	≤0,00001 %

6752.1	1 l	glass	25,30 €
Original pack 6 x 1 l			24,04/1 l
6752.3	1 l	plastic	24,20 €
Original pack 6 x 1 l			22,99/1 l
6752.2	2,5 l	glass	56,90 €
Original pack 4 x 2,5 l			54,06/2,5 l
6752.4	2,5 l	plastic	54,75 €
Original pack 4 x 2,5 l			52,01/2,5 l
6752.5	5 l	plastic	84,85 €
Original pack 2 x 5 l			80,61/5 l
6752.7	10 l	tinplate	138,70 €
6752.6	25 l	tinplate	246,75 €

2-Propanol

≥99,5 %, Ph.Eur., extra pure

Guarantee analysis:

Assay (GC)	≥99,5 %
Identity	complies
Appearance	complies
Acid or alkaline react. substances	complies
Density (d 20 °C/20 °C)	0,785-0,789
Refractive index n_D^{20}	1,376-1,379
Water (KF)	≤0,5 %
Benzene (UV)	≤0,0002 %
Benzene and related substances	complies
Peroxides	complies
Evaporation residue	≤0,002 %

CP41.1	1 l	glass	22,05 €
Original pack 6 x 1 l			20,95/1 l
CP41.2	2,5 l	glass	45,05 €
Original pack 4 x 2,5 l			42,80/2,5 l
CP41.3	2,5 l	plastic	42,90 €
Original pack 4 x 2,5 l			40,76/2,5 l
CP41.4	5 l	plastic	65,50 €
Original pack 2 x 5 l			62,23/5 l
CP41.5	10 l	tinplate	107,40 €
CP41.6	25 l	tinplate	182,25 €

2-Propanol

≥99,5 %, for synthesis

Type analysis:

Assay (GC)	≥99,5 %
Colour (Hazen)	≤10
Water (KF)	≤0,1 %
Density (20 °C)	0,784-0,787 g/cm³
Acid (as CH_3COOH)	≤0,002 %
Refractive index n_D^{20}	1,375-1,379

9866.1	1 l	glass	17,75 €
Original pack 6 x 1 l			16,86/1 l
9866.2	2,5 l	glass	42,50 €
Original pack 4 x 2,5 l			40,38/2,5 l
9866.5	2,5 l	plastic	40,35 €
Original pack 4 x 2,5 l			38,33/2,5 l
9866.6	5 l	plastic	57,95 €
Original pack 2 x 5 l			55,05/5 l
9866.3	10 l	tinplate	89,15 €
9866.4	25 l	tinplate	177,40 €

2-Propanol 70 %

2-Propanol 70 %

70 %, pure

Isopropanol, Isopropyl alcohol, Dimethyl carbinol, IPA, 2-Hydroxypropane

C_3H_8O

M 60,10 g/mol • D ~0,87 • bp ~82 °C

flp +12 °C • [67-63-0] • EC No. 200-661-7

UN No. 1219 • ADR 3 II • WGK 1

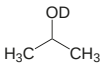
Danger H225-H319-H336

Type analysis:

Assay (V/V)	~70 %
Density (20 °C)	0,869-0,875 g/cm³
Refractive index (20 °C)	1,371-1,375

CN09.1	1 l	plastic	16,70 €
Original pack 6 x 1 l			15,87/1 l
CN09.2	2,5 l	plastic	26,35 €
Original pack 4 x 2,5 l			25,03/2,5 l
CN09.3	5 l	plastic	40,75 €
Original pack 2 x 5 l			38,71/5 l
CN09.4	10 l	plastic	59,05 €
CN09.5	25 l	plastic	128,50 €

2-Propanol D1



2-Propanol D1

98 Atom%D

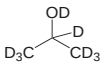
For nuclear magnetic resonance spectroscopy.
Isopropanol D1
$(CH_3)_2CHOD$
M 61,10 g/mol
D 0,80 • bp 82 °C • mp -89 °C • flp 23 °C
[3979-51-9] • EC No. 223-616-3
UN No. 1219 • ADR 3 II • WGK 1

Danger H225-H319-H336

Type analysis:
Deuterising degree. ..... ≥98 %
Water (KF, H_2O+D_2O). ..... ≤0,5 %

9917.1	25 ml	glass	118,15 €

2-Propanol D8



2-Propanol D8

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.
Isopropanol D8
C_3D_8O
M 68,16 g/mol
D 0,89 • bp 82 °C
mp -89 °C • flp 23 °C
[22739-76-0] • EC No. 245-189-2
UN No. 1219 • ADR 3 II • WGK 1

Danger H225-H319-H336

Type analysis:
Deuterising degree. ..... ≥99,5 %
Water (KF, H_2O+D_2O). ..... ≤0,05 %

9919.1	5 ml	glass	111,70 €

2-Propanone

▶ Acetone see p. 1760

Propenamide

▶ Acrylamide see p. 1770

2-Propenamide

▶ Acrylamide see p. 1770

trans-Propene-1,2,3-tricarboxylic acid

▶ trans-Aconitic acid see p. 1769

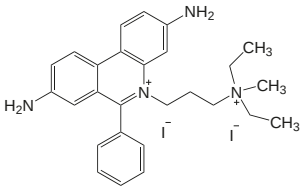
1,2,3-Propenetricarboxylic acid

▶ trans-Aconitic acid see p. 1769

p-Propenylanisole

▶ Anethole see p. 1806

Propidiumiodide



Propidiumiodide

≥95 %, p.a.

For fluorescence staining of DNA.
3,8-Diamino-5-(3-diethylaminopropyl)-6-phenyl-phenanthridinium iodide methiodide
$C_{27}H_{34}I_2N_4$
M 668,4 g/mol
Storage temp.: +4 °C
[25535-16-4] • EC No. 247-081-0
WGK 1

Warning H315-H319-H335-H341

Type analysis:
Assay (HPLC) ..... ≥95 %

CN74.1	25 mg	glass	69,80 €
CN74.2	50 mg	glass	122,05 €
CN74.3	100 mg	glass	217,70 €

For further information, please see page 1530

Propionate Standards

▶ Propionate IC Standard Solution see p. 2376

Propione

▶ Diethylketone see p. 1939

Propionic acid

Propionic acid

≥99,5 %, for synthesis

Methylacetic acid
$C_3H_6O_2$
M 74,08 g/mol
D 0,99 • bp 141-142 °C
mp -20 °C • flp 52 °C
Solubility: 370 g/l (H_2O, 20 °C)
[79-09-4] • EC No. 201-176-3
UN No. 3463 • ADR 8 (3) II • WGK 1

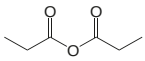
Danger H226-H314-H335

Type analysis:
Assay. ..... ≥99,5 %
Colour (APHA) ..... ≤10
Water ..... ≤0,15 %

6026.2	500 ml	glass	15,60 €
6026.1	1 l	glass	22,50 €
Original pack 6 x 1 l			21,38/1 l
6026.3	2,5 l	glass	41,85 €
Original pack 4 x 2,5 l			39,76/2,5 l

For further information, please see page 1578

Propionic anhydride



Propionic anhydride

≥98,5 %, for synthesis

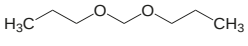
Propanoic anhydride
$C_6H_{10}O_3$
M 130,14 g/mol
D 1,02 • bp 167 °C
mp -45 °C
[123-62-6] • EC No. 204-638-2
UN No. 2496 • ADR 8 III • WGK 1

Danger H314

Type analysis:
Assay. ..... ≥98,5 %
Acetic anhydride ($(CH_3CO)_2O$). ..... <0,05 %

7432.1	100 ml	glass	14,55 €
7432.2	500 ml	glass	33,25 €
7432.3	1 l	glass	54,75 €
Original pack 6 x 1 l			52,01/1 l
7432.4	2,5 l	glass	117,20 €
Original pack 4 x 2,5 l			111,34/2,5 l

Propylal



NEW

Propylal

SOLVAGREEN® ≥99 %, for synthesis

Alternative for aromatics
Dipropoxymethane, 1-(Propoxymethoxy)propane
$C_7H_{16}O_2$
M 132,2 g/mol
D 0,83
[505-84-0] • EC No. 208-021-9
UN No. 3271 • ADR 3 III • WGK 1

Warning H226-H412

Type analysis:
Assay. ..... ≥99,0 %
Water. ..... ≤0,5 %

0795.1	100 ml	glass	17,10 €
0795.2	500 ml	glass	37,55 €
0795.3	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l
0795.4	2,5 l	plastic	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

For further information, please see page 1593

n-Propyl alcohol

▶ 1-Propanol see p. 2239

Propyl bromide

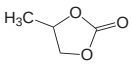
Propyl bromide

≥98 %
Bromopropane
C_3H_7Br
M 123,01 g/mol
D 1,35 • bp 71 °C
mp -108 °C • flp -10 °C
[106-94-5] • EC No. 203-445-0
UN No. 2344 • ADR 3 II • WGK 2
Danger
H225-H360FD-H373-H315-H319-H335-H336

Type analysis:
Appearance. ..... colourless liquid
Assay (GC). ..... ≥98 %
Refractive index n_D^{20}. 1,432-1,436

4631.1	100 ml	glass	38,60 €

Propylene carbonate



Propylene carbonate

≥99,7 %
1,2-Propanediol cyclic carbonate
$C_4H_6O_3$
M 102,09 g/mol
D 1,21 • bp 243 °C
mp -49 °C • flp 132 °C
Solubility: 240 g/l (H_2O, 20 °C)
[108-32-7] • EC No. 203-572-1
WGK 1
Warning H319

Type analysis:
Appearance. ..... colourless liquid
Assay (GC). ..... ≥99,7 %
Water. ..... ≤0,1 %
Colour (Hazen). ..... ≤10

5022.2	100 ml	glass	13,90 €
5022.1	250 ml	glass	22,50 €
5022.3	1 l	glass	35,40 €
Original pack 6 x 1 l			33,63/1 l
5022.4	2,5 l	glass	62,25 €
Original pack 4 x 2,5 l			59,14/2,5 l

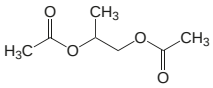
(±)-1,2-Propylene carbonate

▶ Propylene carbonate see p. 2242

Propylene glycol

▶ 1,2-Propanediol see p. 2238

Propylene glycol diacetate



Propylene glycol diacetate

≥99 %, pure
1,2-Propanediol diacetate, PGDA
$C_7H_{12}O_4$
M 160,17 g/mol
D 1,05 • bp 191 °C
mp -75 °C • flp 86 °C
[623-84-7] • EC No. 210-817-6 • WGK 1

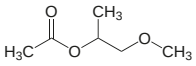
Type analysis:
Assay. ..... ≥99,0 %
Colour (Hazen). ..... ≤20
Density (d 20 °C/20 °C). 1,055-1,060

7657.1	1 l	plastic	42,90 €
Original pack 6 x 1 l			40,76/1 l
7657.2	2,5 l	plastic	83,35 €
Original pack 4 x 2,5 l			79,18/2,5 l

Propylene glycol methyl ether

▶ 1-Methoxy-2-propanol see p. 2135

Propylene glycol methyl ether acetate



Propylene glycol methyl ether acetate

≥99 %, pure
1-Methoxy-2-propyl acetate, PMA
$C_6H_{12}O_3$
M 132,16 g/mol
D 0,97 • bp 146 °C
mp -67 °C • flp 45 °C
[108-65-6] • EC No. 203-603-9
UN No. 3272 • ADR 3 III • WGK 1
Warning H226

Type analysis:
Assay (GC). ..... ≥99,0 %
Colour (Hazen). ..... ≤10
2-Methoxy-1-propyl acetate. ..... ≤0,3 %

7966.1	1 l	glass	42,90 €
Original pack 6 x 1 l			40,76/1 l
7966.2	2,5 l	glass	83,35 €
Original pack 4 x 2,5 l			79,18/2,5 l

Propyl 4-hydroxybenzoate

▶ 4-Hydroxybenzoic acid propyl ester see p. 2057

Propylparaben

▶ 4-Hydroxybenzoic acid propyl ester see p. 2057

Protaminsulphate

▶ Salmine sulphate see p. 2305

Protective Groups

Art. No.	Description	Page
4483	Acetic acid anhydride	1757
7456	Benzoyl chloride	1833
6985	Di-*tert*-butyl dicarbonate (Boc_2O)	1933
9671	4,4'-Dimethoxytrityl chloride (DMT-Cl)	1551
2201	9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl)	1995
2338	Trimethylchlorosilane (TMCS)	2419
1444	2-(Trimethylsilyl)ethoxymethyl chloride	2419

Proteicolor®

▶ Silver nitrate see p. 2326

Protein A affinity columns

▶ Roti®garose-Protein A MINI columns see p. 2283

Protein A agarose beads

▶ Roti®garose-Protein A Beads see p. 2283

Proteinase K

Proteinase K

lyophilised, ≥30 mAnson U/mg
Isolated from fungi (*Tritirachium album*).
Art. No. 7528.3: A stock solution with a concentration of 20 mg/ml can be prepared directly by adding 25 ml buffer or water.
Storage temp.: +4 °C
[39450-01-6] • EC No. 254-457-8
WGK 1
Danger H315-H319-H334-H317-H335

Guarantee analysis:
Activity (Hemoglobin, 37 °C). ..... ≥30 U/mg
DNases, RNases. ..... not detected
Endonucleases. ..... not detected

7528.1	100 mg	glass	93,45 €
7528.5	250 mg	glass	177,40 €
7528.2	500 mg	glass	317,15 €
7528.3	500 mg (in a 30 ml glass bottle)		353,70 €
7528.4	1 g	glass	532,15 €
7528.6	5 g	glass	2105,95 €

For further information, please see page 1280

Protein glycerol

Protein glycerol

for microscopy
For fixing and stretching of the cuts.
WGK 1

Type analysis:
Appearance. ..turbic, colourless to light yellow solution

P049.1	100 ml	glass	17,75 €

For further information, please see page 1509

Protein Marker

▶ Roti®-Mark, prestained see p. 2288

Protein quick test

▶ Clean Card® PRO Pack see p. 1901
▶ Clean Card® PRO Starter Kit see p. 1901

Proteose Peptone

Proteose Peptone

for microbiology

Rich component of microbiological nutrition media, particularly used for production of toxins and vaccines. From enzymatic digestion of animal tissue.

Storage temp.: +20 °C

[91079-38-8] • EC No. 293-426-3

WGK 3

Guarantee analysis:

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3,4 %
Loss on drying. .....≤6 %
Ash. .....≤10 %
pH value (2 % solution).....7,0 ±0,5

HP32.1	500 g	plastic	94,10 €
Original pack 6 x 500 g			89,40/500 g

For further information, please see page 1495

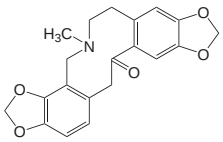
Protocatechualdehyde

▶ 3,4-Dihydroxybenzaldehyde see p. 1942

Protocatechuic acid

▶ 3,4-Dihydroxybenzoic acid see p. 1942

Protopine



Protopine

ROTICHROM® HPLC

Reference substance for HPLC.
From *Chelidonium majus.*

Fumarine, Biflorine, Macleyine

$C_{20}H_{19}NO_5$

M 353,37 g/mol

mp 198-203 °C

Storage temp.: +4 °C

[130-86-9]

UN No. 1544 • ADR 6.1 III • WGK 3

Warning H302

Type analysis:

Purity (HPLC).....≥98 %

6690.1	10 mg	glass	267,70 €

Prunetol

▶ Genistein see p. 2013

Prunin

▶ Naringenin-7-glucoside see p. 2154

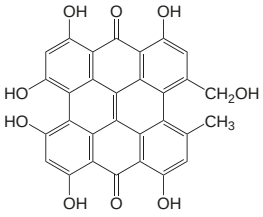
PSA

▶ Silica gel 60 modified phases see p. 2316

Pseudocef

▶ Cefsulodin sodium salt see p. 1884

Pseudohypericin



Pseudohypericin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Hypericum perforatum.*

$C_{30}H_{18}O_9$

M 520,43 g/mol

Storage temp.: -20 °C

[55954-61-5]

WGK 2

Type analysis:

Purity (HPLC). ..... ≥97 %

2846.1	5 mg	glass	536,45 €

Pseudomonas chromogenic Agar

Pseudomonas chromogenic Agar

for microbiology

For detection and isolation of *Pseudomonas*.

Application: Use 37 g for 1 l agar.
Do not overheat!

Storage temp.: +4 °C

Formulation:

Nutrients.....14 g/l
Peptone.....10 g/l
Chromogene Mixture.....1 g/l
Bromothymol blue. .....0,02 g/l
Agar.....12 g/l
pH value. ..... 7,2 ±0,2

3075.1	100 g	plastic	117,75 €

For further information, please see page 1459

Pseudomonas Selective Agar (Base)

Pseudomonas Selective Agar (Base)

DEV, EN ISO 16266:2008, for microbiology

For determination and enumeration of *Pseudomonas aeruginosa* from water samples by membrane filtration method.

Application: Use 50,6 g for 990 ml agar.
Add 10 ml glycerol.

CN Agar

Storage temp.: +20 °C

UN No. 3077 • ADR 9 III • WGK 3

Warning H400

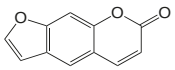
Guarantee analysis:

Gelatine peptone..... 16 g/l
Casein hydrolysed. ..... 10 g/l
Anhydrous potassium sulphate. ..... 10 g/l
Anhydrous magnesium chloride..... 1,4 g/l
Cetrimide. ..... 0,2 g/l
Nalidixic acid..... 0,015 g/l
Agar. ..... 13 g/l
pH value.....7,1 ±0,2

CP67.1	500 g	plastic	142,45 €
Original pack 6 x 500 g			135,33/500 g

For further information, please see page 1459

Psoralen



Psoralen

ROTICHROM® HPLC

Reference substance for HPLC.
7-*H*-Furo[3,2-g]benzopyran-7-one

$C_{11}H_6O_3$

M 186,16 g/mol

mp ~165 °C

Storage temp.: +4 °C

[66-97-7] • EC No. 200-639-7

WGK 1

Warning H302-H315-H319-H335

Type analysis:

Purity (HPLC).....≥98,5 %

7415.1	10 mg	glass	170,95 €

Pteroyl glutamic acid

▶ Folic acid see p. 2004

PTFE paste

PTFE paste

Paste for sealing and gliding.

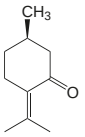
May be used at temperatures up to 300 °C

WGK 1

0124.1	100 g	plastic	133,85 €

For further information, please see page 1174

(+)-Pulegone



(+)-Pulegone
ROTICHROM® GC
Reference substance for GC.
$C_{10}H_{16}O$
M 152,24 g/mol
D ~0,936 • bp 224 °C
mp <25 °C • flp 82 °C
Storage temp.: +4 °C
[89-82-7] • EC No. 201-943-2
WGK 2
Warning H302

Type analysis:
Purity (GC).....≥98 %

5168.2	100 mg	glass	122,45 €

Pumice stone

Pumice stone
finely granulated <0,5 mm
Bulk density 350-900 g/l
[1332-09-8] • EC No. 215-108-5

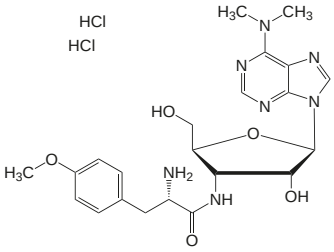
5832.2	1 kg	plastic	18,85 €
Original pack 6 x 1 kg			17,91/1 kg
5832.1	2,5 kg	plastic	30,00 €

Purification solution for surfaces
- DNA AWAY® see p. 1956
- RNase AWAY® see p. 2261
- Roti® Nucleic Acid-free see p. 2290
- Roti® Nucleic Acid-free eXtra see p. 2290

Purimycin
- Puromycin dihydrochloride see p. 2244

1H-Purine-6-amine
- Adenine see p. 1772

Puromycin dihydrochloride



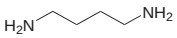
Puromycin dihydrochloride
≥99 %, for biochemistry
Inhibitor of proteine biosynthesis, aminonucleoside antibiotic.
Puromycin
$C_{22}H_{29}N_7O_5 \cdot 2$ HCl
M 544,44 g/mol
mp ~178 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[58-58-2] • EC No. 200-387-8
Warning H302

Type analysis:
Assay (HPLC).....≥99,0 %
Solubility (50 mg/ml, H_2O).....clear, colourless to light yellow solution
Melting point.....165-185 °C

0240.1	5 mg	glass	19,90 €
0240.2	10 mg	glass	31,75 €
0240.3	25 mg	glass	70,45 €
0240.4	50 mg	glass	127,95 €

For further information, please see page 1507

Putrescin

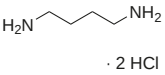


Putrescin
≥99 %, for biochemistry
1,4-Diaminobutane, Tetramethylenediamine
$C_4H_{12}N_2$
M 88,15 g/mol
D 0,874
mp 26 °C • flp 64 °C
[110-60-1] • EC No. 203-782-3
UN No. 2923 • ADR 8 (6.1) II • WGK 1
Danger
H290-H302+H312-H331-H314

Type analysis:
Appearance.....colourless liquid or white solid
Assay (GC).....≥99,0 %
Water (KF).....≤1,0 %

8379.1	25 g	glass	22,05 €
8379.2	100 g	glass	44,00 €
8379.3	500 g	glass	135,35 €
Original pack 6 x 500 g			128,58/500 g

Putrescin dihydrochloride



Putrescin dihydrochloride
≥97 %, for biochemistry
1,4-Diaminobutane dihydrochloride, Tetramethylenediamine dihydrochloride
$C_4H_{12}N_2 \cdot 2$ HCl
M 161,08 g/mol
[333-93-7] • EC No. 206-375-9
WGK 1
Warning H315-H319-H335

Type analysis:
Assay (titr.).....≥97 %
Solution (10 % in water).....colourless, clear
Water (KF).....≤2 %
Loss on drying (3 h, 105 °C, vacuum).....≤3 %
pH value (10 % in H_2O).....4,0-7,0
Heavy metals (as Pb).....≤0,002 %

4141.1	10 g	glass	25,70 €
4141.2	25 g	glass	50,45 €
4141.3	50 g	glass	89,15 €

PVA
- Mowiol®4-88 see p. 2148

PVC
- Polyvinyl chloride see p. 2219

PVP
- Polyvinylpyrrolidone K 12 see p. 2220
- Polyvinylpyrrolidone K 25 see p. 2220
- Polyvinylpyrrolidone K 30 see p. 2220
- Polyvinylpyrrolidone K 90 see p. 2220

PyBOP®
- Benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBOP®) see p. 1832

PyBrOP®
- Bromo-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBrOP®) see p. 1855

PyClock®
- 6-Chloro-benzotriazole-1-yl-oxy-tris-pyrrolidinophosphonium hexafluoro-phosphate (PyClock®) see p. 1892

PyOxim
- (Ethylcyano(hydroxyimino)-acetato-O_2)tri-1-pyrrolidinylphosphonium hexafluoro-phosphate (PyOxim) see p. 1980

Pyracidosorb-ROTH®

Pyracidosorb-ROTH®

For neutralizing acids.
WGK 1

Warning H319

0411.1	5 kg	plastic	44,65 €

For further information, please see page 719

Pyridine

C_5H_5N
M 79,10 g/mol
D 0,98 • bp ~115 °C
mp -42 °C • flp 17 °C
[110-86-1] • EC No. 203-809-9
UN No. 1282 • ADR 3 II • WGK 2

Danger
H225-H302+H312+H332-H315-H319

Pyridine

ROTIPURAN® ≥99,5 %, p.a., ACS

Guarantee analysis:

Assay (GC)	≥99,5 %
Water	≤0,1 %
Piperidine (GC)	≤0,01 %
2-Methylpyridine (GC)	≤0,1 %
Evaporation residue	≤0,001 %
$KMnO_4$ reducing substances (as O)	≤0,0005 %
Chloride (Cl)	≤0,001 %
Sulphate (SO_4)	≤0,001 %
Aluminium (Al)	≤0,00005 %
Ammonia (NH_3)	≤0,002 %
Barium (Ba)	≤0,00001 %
Lead (Pb)	≤0,00001 %
Boron (B)	≤0,000002 %
Cadmium (Cd)	≤0,000005 %
Calcium (Ca)	≤0,00005 %
Chromium (Cr)	≤0,000002 %
Iron (Fe)	≤0,00001 %
Cobalt (Co)	≤0,000002 %
Copper (Cu)	≤0,000002 %
Magnesium (Mg)	≤0,00001 %
Manganese (Mn)	≤0,000002 %
Nickel (Ni)	≤0,000002 %
Zinc (Zn)	≤0,00001 %
Tin (Sn)	≤0,00001 %

9729.3	500 ml	glass	65,50 €
9729.1	1 l	glass	121,40 €
Original pack 6 x 1 l			115,33/1 l
9729.2	2,5 l	glass	257,90 €
Original pack 4 x 2,5 l			245,01/2,5 l

For further information, please see page 1309

Pyridine

≥99 %, for synthesis

Type analysis:

Assay (GC)	≥99,0 %
Water	≤0,1 %
Evaporation residue	≤0,01 %

CP07.1	500 ml	glass	34,95 €
CP07.2	1 l	glass	66,55 €
Original pack 6 x 1 l			63,22/1 l
CP07.3	2,5 l	glass	139,25 €
Original pack 4 x 2,5 l			132,29/2,5 l

Pyridine D5

C_5D_5N
M 84,13 g/mol
D 1,05 • bp 114 °C
mp -41 °C • flp 20 °C
[7291-22-7] • EC No. 230-720-2
UN No. 1282 • ADR 3 II • WGK 2

Danger
H225-H302+H312+H332-H315-H319

Pyridine D5

99,8 Atom%D
For nuclear magnetic resonance spectroscopy.

Type analysis:

Deuterising degree	≥99,8 %
Water (KF, H_2O+D_2O)	≤0,03 %

7922.1	10 ml	glass	132,15 €
7922.2	10 x 0,75 ml	glass ampoule	133,20 €

Pyridine D5

99,5 Atom%D
For nuclear magnetic resonance spectroscopy.

Type analysis:

Deuterising degree	≥99,5 %
Water (KF, H_2O+D_2O)	≤0,05 %

CP94.1	10 ml	glass	127,95 €
CP94.2	10 ml	septum bottle	130,00 €
CP94.3	10 x 0,75 ml	glass ampoule	125,70 €

3-Pyridine carboxylic acid

▶ Nicotinic acid see p. 2158

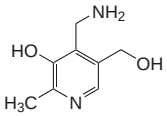
Pyridine-4-carboxylic acid

▶ Isonicotinic acid see p. 2078

1-(3-Pyridinyl)-ethanone

▶ 3-Acetylpyridine see p. 1768

Pyridoxamine dihydrochloride



· 2 HCl

Pyridoxamine dihydrochloride

≥99 %
4-(Aminomethyl)-5-hydroxy-6-methyl-3-pyridinemethanol dihydrochloride
$C_8H_{14}Cl_2N_2O_2$
M 241,12 g/mol
mp 223-229 °C (dec.)
[524-36-7] • EC No. 208-357-6
WGK 1

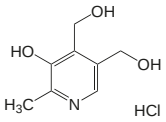
Warning H315-H319-H335

Type analysis:

Assay (HPLC)	≥99,0 %
Solution (10 % in H_2O)	colourless
Water (KF)	≤8,0 %
Melting point	223-229 °C

5254.1	1 g	glass	52,15 €
5254.2	5 g	plastic	213,95 €

Pyridoxine hydrochloride



Pyridoxine hydrochloride

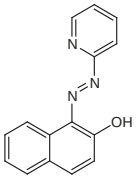
≥99 %, for biochemistry
Vitamin B_6-hydrochloride, Adermine hydrochloride
$C_8H_{12}ClNO_3$
M 205,6 g/mol
[58-56-0] • EC No. 200-386-2
WGK 1

Type analysis:

Appearance	white to off-white, cryst. powder
Assay (titr. dry substance)	99,0-101,0 %
pH value (5 % in H_2O)	2,4-3,0
Loss on drying	≤0,5 %
Sulphated ash	≤0,1 %

T914.1	50 g	plastic	30,00 €
T914.2	100 g	plastic	51,50 €

1-(2-Pyridylazo)-2-naphthol



1-(2-Pyridylazo)-2-naphthol

≥98 %, p.a., ACS
For titration of metal ions.
PAN
$C_{15}H_{11}N_3O$
M 249,27 g/mol
mp 128-143 °C
Solubility: insoluble (H_2O, 20 °C)
[85-85-8] • EC No. 201-637-9
WGK 3

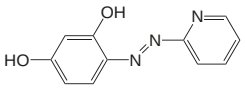
Warning H315-H319-H335

Guarantee analysis:

Assay	≥98,0 %
Melting point	128-143 °C
Loss on drying (110 °C)	≤5,0 %
Suitability as indicator for complexometry	complies

KK12.1	1 g	glass	19,25 €
KK12.2	5 g	glass	66,55 €

4-(2'-Pyridylazo)-resorcinol



4-(2'-Pyridylazo)-resorcinol

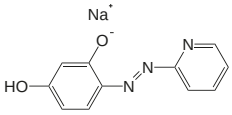
p.a., ACS
Metal indicator
PAR
$C_{11}H_9N_3O_2$
M 215,21 g/mol
mp 188 °C
[1141-59-9] • EC No. 214-528-6
WGK 1

Guarantee analysis:

Appearance. ..... orange powder
Appearance of solution (ACS). ..... complies
Loss on drying. ..... ≤5 %
Suitability as indicator for complexometry..... complies

2564.1	5 g	glass	81,60 €
2564.2	25 g	glass	289,75 €

4-(2'-Pyridylazo)-resorcinol monosodium salt



4-(2'-Pyridylazo)-resorcinol monosodium salt

p.a., ACS
Metal indicator
PAR monosodium salt
$C_{11}H_8N_3NaO_2$
M 237,21 g/mol
Solubility: 38 g/l (H_2O, 20 °C)
[16593-81-0] • EC No. 236-339-8
WGK 1

Guarantee analysis:

Appearance. ..... dark orange to brown cryst. powder
Appearance of solution (ACS). ..... complies
Loss on drying. ..... ≤10 %
Suitability as indicator for complexometry..... complies

2565.1	5 g	glass	89,15 €
2565.2	25 g	glass	332,75 €

Pyrocatechol

Pyrocatechol

>99 %, for biochemistry
1,2-Dihydroxybenzene
$C_6H_6O_2$ • M 110,11 g/mol
D 1,37 • bp 246 °C
mp 105 °C • flp 127 °C
Solubility: 430 g/l (H_2O, 20 °C)
[120-80-9] • EC No. 204-427-5
UN No. 2811 • ADR 6.1 III • WGK 2

Danger
H301+H311-H315-H318-H341

Type analysis:

Assay (GC, area %)..... ≥99 %
Melting range. ..... 103-105 °C

4249.1	25 g	glass	20,35 €

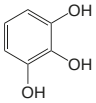
Pyrocatechol-3,5-disulfonic acid disodium salt

▶ Tiron see p. 2409

Pyrogallic acid

▶ Pyrogallol see p. 2246

Pyrogallol



Pyrogallic acid, 1,2,3-Trihydroxybenzene
$C_6H_6O_3$
M 126,11 g/mol
mp ~134 °C
Solubility: 400 g/l (H_2O, 25 °C)
[87-66-1] • EC No. 201-762-9 • WGK 2

Warning
H341-H302+H312+H332-H412

Pyrogallol

ROTIPURAN® ≥99 %, p.a., ACS

Guarantee analysis:

Assay. ..... ≥99 %
Melting point. ..... 131-135 °C
Insoluble matter. ..... ≤0,01 %
Ash content (as SO_4)..... ≤0,005 %
Chloride (Cl). ..... ≤0,001 %
Sulphate (SO_4). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Iron (Fe)..... ≤0,001 %
Copper (Cu). ..... ≤0,0005 %
Nickel (Ni)..... ≤0,0005 %

4364.1	50 g	glass	39,70 €
4364.2	100 g	glass	64,40 €
4364.3	250 g	glass	133,20 €
4364.4	1 kg	glass	471,95 €
Original pack 6 x 1 kg			448,35/1 kg

Pyrogallol

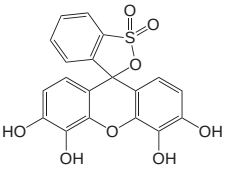
≥98 %, for synthesis

Type analysis:

Assay (HPLC). ..... ≥98 %
Ash content. ..... ≤0,05 %
Melting point. ..... 131-135 °C

3963.2	50 g	glass	26,80 €
3963.1	100 g	glass	48,30 €
3963.3	250 g	glass	95,60 €
3963.4	1 kg	glass	342,95 €
Original pack 6 x 1 kg			325,80/1 kg

Pyrogallol red



Pyrogallol red

p.a.
Indicator for metal titration
Pyrogallol sulphonic phthalein, Sulfogallein
$C_{19}H_{12}O_8S$
M 400,36 g/mol
mp >300 °C
[32638-88-3] • EC No. 251-134-3
WGK 3

Type analysis:

Sulphated ash. ..... <0,5 %
Solubility (10 mg/ml in 1 M NH_4OH). ..... dark, purple solution
Absorption max. (in EtOH). ..... 475-515 nm
Suitability as indicator. ..... complies

0287.1	1 g	glass	25,70 €
0287.2	5 g	glass	50,00 €

Pyrogallol sulphonic phthalein

▶ Pyrogallol red see p. 2246

Pyrogenous silicic acid

▶ Aerosil® see p. 1774

Pyrrodiazole

▶ 1,2,4-Triazole see p. 2414

Pyrrolidine-2-carboxylic acid

▶ D-Proline see p. 2238
▶ DL-Proline see p. 2238
▶ L-Proline see p. 2238

2-Pyrrolidone

2-Pyrrolidone

≥99,5 %, for synthesis
γ-Butyrolactame, γ-Lactame
C_4H_7NO
M 85,11 g/mol
D 1,11 • bp 250 °C
mp 25,5 °C • flp 138 °C
[616-45-5] • EC No. 210-483-1
WGK 1

Warning H319

Type analysis:
Assay (GC). ..... ≥99,5 %
1,4-Butanediol. ..... ≤0,1 %
Butyrolactone..... ≤0,1 %
Water (KF). ..... ≤0,1 %

8779.1	500 ml	plastic	34,30 €
8779.2	1 l	plastic	55,80 €
Original pack 6 x 1 l			53,01/1 l
8779.3	2,5 l	plastic	111,30 €
Original pack 4 x 2,5 l			105,74/2,5 l
8779.4	5 l	plastic	212,35 €
Original pack 2 x 5 l			201,73/5 l

Pyrrolizidine Alkaloids

Art. No.	Description	Page
7975	7-O-Acetylintermedine	1767
7980	7-O-Acetylintermedine N-oxide	1767
7992	Echimidine	1964
8011	Echimidine N-oxide	1964
1657	(Z)-Erucifoline	1974
1664	(Z)-Erucifoline N-oxide	1974
1676	Europine hydrochloride	1988
1687	Europine-N-oxide	1988
1929	Heliotrine	2034
1944	Heliotrine N-oxide	2035
1960	Indicine hydrochloride	2065
1961	Indicine N-oxide	2065
1962	Intermedine	2069
8018	Intermedine N-oxide	2069
1963	Jacobine	2081
1970	Jacobine N-oxide	2082
2090	Lasiocarpine	2092
2202	Lasiocarpine N-oxide	2092
2208	Lycopsamine	2107
8022	Lycopsamine N-oxide	2107
3418	Monocrotaline	2147
2249	Monocrotaline N-oxide	2147
1213	Retrorsine	2257
6733	Retrorsine-N-oxide	2257
2261	Senecionine	2310
6734	Senecionine N-oxide	2311
1214	Seneciphylline	2311
6735	Seneciphylline N-oxide	2311
2209	Senecivernine	2311
2215	Senecivernine N-oxide	2311
4934	Senkirkine	2311

1H-Pyrrolo[2,3-b]pyridine

▶ 7-Azaindole see p. 1820

Pyruvaldehyde

▶ Methylglyoxal see p. 2138

Pyruvate solution

▶ Roti®-CELL Pyruvate solution see p. 2270

Pyruvic acid

Pyruvic acid

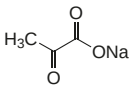
≥98 %
α-Ketopropionic acid, 2-Oxopropanoic acid
$C_3H_4O_3$
M 88,06 g/mol
D 1,27
mp 12 °C • flp 82 °C
Storage temp.: +4 °C
[127-17-3] • EC No. 204-824-3
UN No. 3265 • ADR 8 III • WGK 1

Danger H314

Type analysis:
Assay (titr.). ..... ≥98 %

8788.1	25 ml	glass	30,00 €

Pyruvic acid sodium salt



Pyruvic acid sodium salt

≥99 %, for biochemistry
Sodium pyruvate
$C_3H_3NaO_3$
M 110,04 g/mol
[113-24-6] • EC No. 204-024-4
WGK 1

Type analysis:
Appearance..... white to off-white powder
Assay. ..... ≥99 %
Heavy metals..... ≤0,01 %
Loss on drying. ..... ≤0,5 %

8793.1	25 g	plastic	18,20 €
8793.2	250 g	plastic	84,40 €

Quantum Dots, hydrophilic

CdTe
mp 2150-2200 °C
Storage temp.: +4 °C
[1306-25-8] • EC No. 215-149-9
UN No. 3077 • ADR 9 III • WGK 3

Warning
H302+H312+H332-H400-H410

Cadmium telluride

ROTI®nanoMETIC λ max. 510 ±5 nm

Type analysis:
Fluorescence λ max..... 505-515 nm

8256.1	5 mg	glass	66,15 €
8256.2	10 mg	glass	105,25 €

Cadmium telluride

ROTI®nanoMETIC λ max. 570 ±5 nm

Type analysis:
Fluorescence λ max..... 565-575 nm

8257.1	5 mg	glass	66,15 €
8257.2	10 mg	glass	105,25 €

Cadmium telluride

ROTI®nanoMETIC λ max. 610 ±5 nm

Type analysis:
Fluorescence λ max..... 605-615 nm

8258.1	5 mg	glass	66,15 €
8258.2	10 mg	glass	105,25 €

Cadmium telluride

ROTI®nanoMETIC λ max. 710 ±5 nm

Type analysis:
Fluorescence λ max..... 705-715 nm

8260.1	5 mg	glass	66,15 €
8260.2	10 mg	glass	105,25 €

Cadmium telluride

ROTI®nanoMETIC λ max. 780 ±5 nm

Type analysis:
Fluorescence λ max..... 775-785 nm

8261.1	5 mg	glass	66,15 €
8261.2	10 mg	glass	105,25 €

Quantum Dots, hydrophobic

Storage temp.: +4 °C
WGK 1
Warning
H302+H332-H315-H319-H335-EUH032

Zn-Cu-In-S/ZnS

Cd-free

ROTI®nanoMETIC Cd-free, λ max. 530 ±15 nm

Type analysis:
Fluorescence λ max.. ..... 515-545 nm

8609.1	5 mg	glass	52,60 €
8609.2	10 mg	glass	78,40 €

Zn-Cu-In-S/ZnS

Cd-free

ROTI®nanoMETIC Cd-free, λ max. 560 ±15 nm

Type analysis:
Fluorescence λ max.. ..... 545-575 nm

8610.1	5 mg	glass	52,60 €
8610.2	10 mg	glass	78,40 €

Zn-Cu-In-S/ZnS

Cd-free

ROTI®nanoMETIC Cd-free, λ max. 590 ±15 nm

Type analysis:
Fluorescence λ max.. ..... 575-605 nm

8618.1	5 mg	glass	52,60 €
8618.2	10 mg	glass	78,40 €

Zn-Cu-In-S/ZnS

Cd-free

ROTI®nanoMETIC Cd-free, λ max. 610 ±15 nm

Type analysis:
Fluorescence λ max.. ..... 595-625 nm

8614.1	5 mg	glass	52,60 €
8614.2	10 mg	glass	78,40 €

Zn-Cu-In-S/ZnS

Cd-free

ROTI®nanoMETIC Cd-free, λ max. 650 ±15 nm

Type analysis:
Fluorescence λ max.. ..... 635-665 nm

8616.1	5 mg	glass	52,60 €
8616.2	10 mg	glass	78,40 €

Zn-Cu-In-S/ZnS

Cd-free

ROTI®nanoMETIC Cd-free, λ max. 700 ±15 nm

Type analysis:
Fluorescence λ max.. ..... 685-715 nm

8615.1	5 mg	glass	52,60 €
8615.2	10 mg	glass	78,40 €

Quarz

Sea sand
SiO_2
M 60,08 g/mol
D 2,65 • bp 2230 °C
mp 1710 °C
[14808-60-7] • EC No. 238-878-4

Quarz

>99 % powdered, <125 µm
Resistant to chemicals (except very strong alkalis).

Danger H372

Type analysis:
Assay. ..... >99 %
Al_2O_3. ..... 0,3 %
Fe_2O_3. ..... 0,05 %
CaO + MgO. ..... 0,1 %
$Na_2O + K_2O$. ..... 0,2 %
Loss on ignition. ..... 0,25 %
Particle size:
>125 µm. ..... 0,1 %
>100 µm. ..... 0,5 %
>63 µm. ..... 1-3 %
>40 µm. ..... 12 %

4651.2	500 g	plastic	17,75 €
Original pack 6 x 500 g			16,86/500 g
4651.1	1 kg	plastic	24,20 €
Original pack 6 x 1 kg			22,99/1 kg
4651.3	5 kg	plastic	54,75 €

Quarz

fine, cryst., 0,4-0,8 mm
Filtration aids

7897.1	2,5 kg	plastic	19,90 €
7897.2	20 kg	plastic	61,20 €

Quarz

cryst., 0,6-1,3 mm
Filtration aids

7898.1	2,5 kg	plastic	21,40 €
7898.2	20 kg	plastic	63,35 €

Quarz

▶ Sea sand see p. 2309

Quarz wool

Quarz wool

chemically pure
Ideal for elementary analysis or as a final stopper in chromatography columns; filter aid.
Fibre size 5 to 30 µm.

9208.1	10 g	plastic	22,05 €
9208.2	100 g	plastic	144,60 €
9208.3	250 g	plastic	309,10 €

QuEChERS Mixtures

WGK 1

QuEChERS Extraction Mix I

CHROMABOND® Citrate mix
For pesticide residue analysis in food.

Formulation:
Magnesium sulphate anhydrous. ..... 4 g
Sodium chloride. ..... 1 g
di-Sodium hydrogen citrate 1,5-hydrate. ..... 0,5 g
tri-Sodium citrate dihydrate. ..... 1 g

4867.1	50 x 15 ml	plastic	152,50 €

For further information, please see page 1675

QuEChERS Extraction Mix II

CHROMABOND® Acetate mix
For pesticide residue analysis in food.

Formulation:
Magnesium sulphate anhydrous. ..... 6 g
Sodium acetate. ..... 1,5 g

4868.1	50 x 15 ml	plastic	152,50 €

For further information, please see page 1675

QuEChERS Clean-up Mix III

CHROMABOND® Diamino mix
For pesticide residue analysis in food.

Formulation:
Magnesium sulphate anhydrous. ..... 0,9 g
CHROMABOND® Diamino. ..... 0,15 g

4870.1	50 x 15 ml	plastic	104,50 €

For further information, please see page 1675

QuEChERS Clean-up Mix IV

CHROMABOND® Diamino/Carbon mix
For pesticide residue analysis in food.

Formulation:
Magnesium sulphate anhydrous. ..... 0,9 g
CHROMABOND® Diamino. ..... 0,15 g
CHROMABOND® Carbon. ..... 0,015 g

4871.1	50 x 15 ml	plastic	104,50 €

For further information, please see page 1675

QuEChERS Clean-up Mix V

CHROMABOND® Diamino/Carbon mix
For pesticide residue analysis in food.

Formulation:
Magnesium sulphate anhydrous. ..... 0,9 g
CHROMABOND® Diamino. ..... 0,15 g
CHROMABOND® Carbon. ..... 0,045 g

4875.1	50 x 15 ml	plastic	104,50 €

For further information, please see page 1675

QuEChERS Clean-up Mix VI

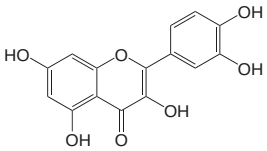
CHROMABOND® Diamino/C_{18} ec mix
For pesticide residue analysis in food.

Formulation:
Magnesium sulphate anhydrous. ..... 0,9 g
CHROMABOND® Diamino. ..... 0,15 g
CHROMABOND® C_{18} ec. ..... 0,15 g

4877.1	50 x 15 ml	plastic	104,50 €

For further information, please see page 1675

Quercetin

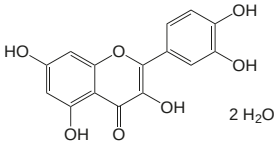


Quercetin
with analytical records
Synthetical from Rutin.
Sophoretin, Meletin
$C_{15}H_{10}O_7$
M 302,24 g/mol
Storage temp.: +4 °C
[117-39-5] • EC No. 204-187-1
UN No. 2811 • ADR 6.1 III • WGK 1
Danger H301

Type analysis:
Purity (HPLC)..... >99 %
Analytical records: HPLC, TLC, ^{1}H-NMR, ^{13}C-NMR, UV, IR, MS, melting point.

1210.1	50 mg	glass	493,45 €

Quercetin dihydrate



Sophoretin, Meletin
$C_{15}H_{10}O_7 \cdot 2\ H_2O$
M 338,27 g/mol
bp 314 °C (dec.)
mp 305-310 °C
[6151-25-3] • EC No. 204-187-1
UN No. 2811 • ADR 6.1 III • WGK 2
Danger H301-H341

Quercetin dihydrate (C.I. 75670)
≥98 %
Storage temp.: +4 °C

Type analysis:
Appearance..... yellow-brown powder
Assay..... ≥98 %

7138.1	25 g	plastic	52,15 €
7138.2	100 g	plastic	164,40 €

Quercetin dihydrate (C.I. 75670)
≥95 %
Storage temp.: +4 °C

Type analysis:
Assay (HPLC)..... ≥95,0 %
Water (KF)..... ≤12 %

2629.1	25 g	plastic	40,35 €
2629.2	50 g	plastic	73,00 €
2629.3	100 g	plastic	134,30 €

Quercetin dihydrate
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤1,0 %
Water (KF)..... ≤15,0 %
Assay (qNMR)..... ≥85,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE27.1	50 mg	glass	751,45 €

Quercetin dihydrate
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC)..... ≥80,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC27.1	100 mg	glass	246,20 €

Quercetin dihydrate
ROTICHROM® HPLC
Reference substance for HPLC.
Synthetic, from rutin.
Storage temp.: +4 °C

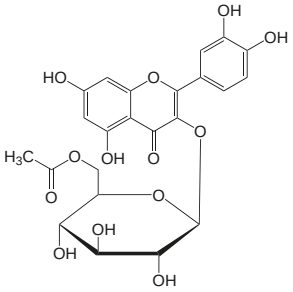
Type analysis:
Purity (HPLC)..... >99 %

7417.1	10 mg	glass	107,40 €
7417.7	25 mg	glass	192,45 €

Quercetin-3-arabinoglucoside
▶ Peltatoside see p. 2194

Quercetin-3-galactoside
▶ Hyperoside see p. 2062

Quercetin-3-O-glucose-6''-acetate



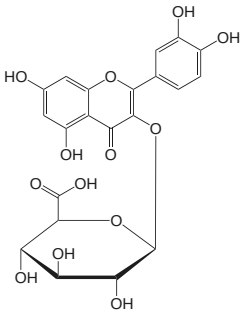
Quercetin-3-O-glucose-6''-acetate
ROTICHROM® ~CHR
$C_{23}H_{22}O_{13}$
M 506,42 g/mol
[54542-51-7]
WGK 1

9419.1	10 mg	glass	310,70 €

Quercetin-3-glucoside
▶ Isoquercitrin see p. 2080

Quercetin-4'-glucoside
▶ Spiraeoside see p. 2356

Quercetin-3-O-ß-Glucuronide



$C_{21}H_{18}O_{13}$
M 478,37 g/mol
[22688-79-5]
WGK 1

Quercetin-3-O-ß-Glucuronide
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC)..... ≥90,0 %
Residual solvents (GC)..... ≤2,0 %
Water (KF)..... ≤8,0 %
Assay (qNMR)..... ≥85,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE28.1	25 mg	glass	1106,20 €

Quercetin-3-O-ß-Glucuronide
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC)..... ≥80,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

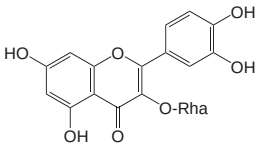
NC28.1	50 mg	Glas	299,95 €

Quercetin-4'-methyl ether
▶ Tamarixetin see p. 2393

Quercetin-3-rhamnoside
▶ Quercitrin see p. 2250

Quercetin-3-rutinoside
▶ Rutin trihydrate see p. 2301

Quercitrin



Quercetin-3-rhamnoside
$C_{21}H_{20}O_{11}$
M 448,39 g/mol
[522-12-3] • EC No. 208-322-5
WGK 1

Quercitrin
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC).....≥95,0 %
Residual solvents (GC).....≤7,0 %
Water (KF).....≤10,0 %
Assay (qNMR).....≥80,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE29.1	25 mg	glass	880,45 €

Quercitrin
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC).....≥70,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC29.2	50 mg	glass	364,45 €
NC29.1	100 mg	glass	364,45 €

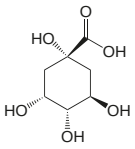
Quercitrin
ROTICHROM® HPLC
Reference substance for HPLC.
From *Aesculus hippocastanum*
Storage temp.: +4 °C

Type analysis:
Purity (HPLC).....≥99 %

9417.1	10 mg	glass	206,95 €

Quicklime
▶ Calcium oxide see p. 1872

(-)-Quinic acid

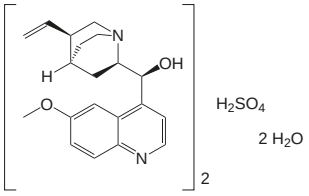


(-)-Quinic acid
≥98 %
For resolutions of racemates for synthesis.
$C_7H_{12}O_6$
M 192,17 g/mol
mp ~160 °C
[77-95-2] • EC No. 201-072-8
WGK 1

Type analysis:
Assay (acidim.).....≥98 %
Melting range.....160-165 °C
Specific rotation $[\alpha]_D^{20}$ (c=10 in H_2O).....-44° to -42°

8835.1	25 g	plastic	93,00 €
8835.2	100 g	plastic	297,70 €

Quinidine sulphate dihydrate

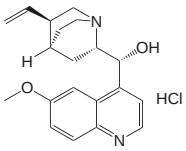


Quinidine sulphate dihydrate
≥99 %
$(C_{20}H_{24}N_2O_2)_2 \cdot H_2SO_4 \cdot 2\ H_2O$
M 782,96 g/mol
bp 212-214 °C
[6591-63-5] • EC No. 200-046-3
WGK 1
Warning H302-H317

Type analysis:
Assay.....≥99,0 %
pH value.....6,0-6,8
Specific rotation $[\alpha]_D^{20}$.....+275° to +290°
Loss on drying.....≤5,0 %

3348.1	10 g	glass	33,25 €

Quinine hydrochloride dihydrate

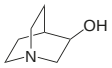


Quinine hydrochloride dihydrate
ROTICHROM® CHR
$C_{20}H_{25}ClN_2O_2 \cdot 2\ H_2O$
M 396,92 g/mol
mp 115 °C (dec.) • flp 122 °C
Solubility: 62,5 g/l (H_2O, 20 °C)
[6119-47-7] • EC No. 231-437-7
WGK 1
Danger H334-H302-H317

6225.1	25 g	plastic	44,00 €

8-Quinolinol
▶ 8-Hydroxyquinoline see p. 2059

(R)-3-Quinuclidinol



(R)-3-Quinuclidinol
≥99 %
Chiral building block
$C_7H_{13}NO$
M 127,19 g/mol
[25333-42-0] • EC No. 246-857-6
UN No. 3263 • ADR 8 II • WGK 3
Danger H314

Type analysis:
Appearance.....white to off-white solid
Assay (GC).....≥99 %
Enantiomeric excess (GC).....≤1 % (S)-3-Quinuclidinol

7483.1	1 g	glass	17,75 €
7483.2	5 g	glass	61,20 €
7483.3	10 g	glass	113,85 €

R2A-Agar

R2A-Agar

Ph.Eur., for microbiology

For enumeration of heterotrophic bacteria from water samples.

Application: Use 18,1 g for 1 l agar.

Agar medium S (Ph.Eur. 6.0), Reasoner's 2A Agar

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

Yeast extract	0,5 g/l
Peptone	0,5 g/l
Casein hydrolysed	0,5 g/l
Glucose	0,5 g/l
Starch	0,5 g/l
di-Potassium hydrogen phosphate	0,3 g/l
Magnesium sulphate ($MgSO_4$)	0,024 g/l
Sodium pyruvate	0,3 g/l
Agar	15 g/l
pH value	7,2 ±0,2

CL01.1	500 g	plastic	141,40 €
Original pack 6 x 500 g			134,33/500 g

For further information, please see page 1460

R2A-Agar, granulated

R2A-Agar, granulated

granulated, Ph.Eur., for microbiology

For enumeration of heterotrophic bacteria from water samples.

Application: Use 18,1 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

Yeast extract	0,5 g/l
Peptone	0,5 g/l
Casein hydrolysed	0,5 g/l
Glucose	0,5 g/l
Starch	0,5 g/l
di-Potassium hydrogen phosphate	0,3 g/l
Magnesium sulphate ($MgSO_4$)	0,024 g/l
Sodium pyruvate	0,3 g/l
Agar	15 g/l
pH value	7,2 ±0,2

1523.1	500 g	plastic	177,40 €
Original pack 6 x 500 g			168,53/500 g

For further information, please see page 1457

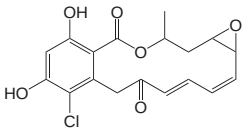
Rabbit Plasma Fibrinogen Supplement

▶ RPF Supplement see p. 2300

Racemic acid

▶ DL-Tartaric acid see p. 2394

Radicicol



Radicicol

≥98 %, for biochemistry

Strong HSP90 inhibitor, macrolactone antibiotic. Binds specifically to the heat shock protein HSP90.

$C_{18}H_{17}ClO_6$

M 364,79 g/mol

mp ~207 °C

Storage temp.: -20 °C

Transport temp.: room temp.

[12772-57-5]

UN No. 2811 • ADR 6.1 III • WGK 1

Danger H301-H315-H319-H335

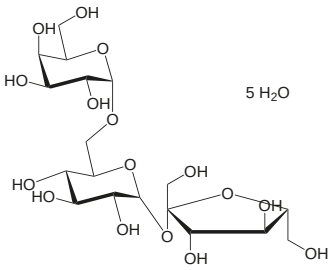
Type analysis:

Assay (HPLC) ≥98 %

HN72.1	1 mg	glass	98,80 €
HN72.2	5 mg	glass	396,70 €
HN72.3	10 mg	glass	628,90 €

For further information, please see page 1328

D(+)-Raffinose pentahydrate



D(+)-Raffinose pentahydrate

≥98 %, for biochemistry

Melitose, Melitriose

$C_{18}H_{32}O_{16} \cdot 5\ H_2O$

M 594,5 g/mol

mp 78-82 °C

[17629-30-0] • EC No. 208-146-9

WGK 1

Type analysis:

Appearance	white to off-white, cryst. powder
Assay (HPLC)	≥98,0 %
Water (KF)	13-17 %
Specific rotation $[\alpha]_D^{20}$ (1 % in H_2O)	+103° to +108°
Heavy metals (as Pb)	≤0,001 %
Sulphated ash	≤0,1 %

5241.1	10 g	plastic	22,50 €
5241.4	25 g	plastic	42,50 €
5241.2	50 g	plastic	73,00 €
5241.3	100 g	plastic	117,75 €

Rapeseed oil

Oleum Rapae, Colza oil

D 0,917

flp >100 °C

[8002-13-9] • EC No. 232-299-0

Rapeseed oil

crude oil

Type analysis:

Density (20 °C)	0,915-0,919
Refractive index (20 °C)	1,467-1,475
Optical rotation (20 °C)	-5° to +5°
Solubility (in ethanol)	insoluble

6964.1	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l
6964.2	2,5 l	glass	67,20 €
Original pack 4 x 2,5 l			63,84/2,5 l
6964.3	5 l	plastic	115,60 €
Original pack 2 x 5 l			109,82/5 l

Rapeseed oil

refined, extra pure

NEW

Type analysis:

Peroxide value	≤10,0
Iodine value	100-130
Free fatty acid	≤0,1 %
Water	≤0,1 %
GC-fatty acid constituents:	
C 14:0 Myristic acid	≤0,2 %
C 16:0 Palmitic acid	2,5-7,0 %
C 18:0 Stearic acid	0,8-3,0 %
C 18:1 Oleic acid	51,0-70,0 %
C 18:2 Linoleic acid	15,0-30,0 %
C 18:3 Linolenic acid	5,0-14,0 %
C 20:1 Gadoleic acid	0,1-4,3 %
C 22:1 Erucic acid	≤2,0 %
Trans-isomer fatty acids	≤2,0 %

0754.1	500 ml	plastic	13,90 €
0754.2	1 l	plastic	20,35 €
Original pack 6 x 1 l			19,33/1 l
0754.3	2,5 l	plastic	38,60 €
Original pack 4 x 2,5 l			36,67/2,5 l
0754.4	10 l	plastic	91,30 €
0754.5	25 l	plastic	192,45 €

Rappaport Vassiliadis Broth

Rappaport Vassiliadis Broth

Ph.Eur., for microbiology

For selective enrichment of *Salmonellae* in foods, water- and other samples.

Application: Use 27,1 g for 1 l broth.

R10 Broth, Rappaport Vassiliadis *Salmonella* Enrichment Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), RVS Broth

Storage temp.: +20 °C • WGK 1

Guarantee analysis:

Anhydrous magnesium chloride	13,58 g/l
Sodium chloride (NaCl)	8,0 g/l
Soy peptone	4,5 g/l
Potassium dihydrogen phosphate	0,6 g/l
di-Potassium hydrogen phosphate	0,4 g/l
Malachite green	0,036 g/l
pH value	5,2 ±0,2

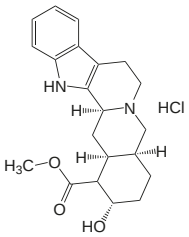
CL03.1	500 g	plastic	97,30 €
Original pack 6 x 500 g			92,44/500 g

For further information, please see page 1460

Raubasine

▶ Ajmalicine see p. 1777

Rauwolscine hydrochloride



Rauwolscine hydrochloride

ROTICHROM® ~CHR
α-Yohimbine hydrochloride
$C_{21}H_{26}N_2O_3 \cdot HCl$
M 390,91 g/mol
mp 270-280 °C
[6211-32-1] • EC No. 228-279-6
UN No. 1544 • ADR 6.1 III • WGK 1
Danger H301

7144.1	100 mg	glass	18,20 €
7144.2	1 g	glass	104,20 €

RBC Agar

▶ Bengal Red Agar (with chloroamphenicol) see p. 1828

RBS® 25

RBS® 25

concentrated liquid, pH 13
For manual, automatic and ultrasonic bath cleaning.
D 1,094
UN No. 3266 • ADR 8 II • WGK 1
Danger H290-H314-EUH031

Type analysis:
Dry residue. ..... 11,2-12,8 %

AL89.1	5 l	plastic	61,20 €

For further information, please see page 1135

RBS® 35

RBS® 35

concentrated liquid, pH 12,9
For manual or automatic cleaning.
D 1,09
UN No. 1824 • ADR 8 III
Danger H290-H314-EUH031

Type analysis:
pH value. 12,90-13,40
pH (2 % solution). 11,30-12,00
Density (20 °C). 1,068-1,074
Dry residue. ..... 8,8-10,8 %

9238.1	1 l	plastic	16,80 €
9238.2	5 l	plastic	68,70 €
9238.4	20 kg	plastic	195,65 €

For further information, please see page 1135

RBS® 50

RBS® 50

concentrated liquid, pH 13,6
Universal cleaner
D 1,244
UN No. 3266 • ADR 8 II • WGK 1
Danger H290-H314

Type analysis:
Dry residue. ..... 23,5-27,5 %

9232.1	1 l	plastic	21,45 €
9232.2	5 l	plastic	96,55 €
9232.4	20 kg	plastic	272,00 €

For further information, please see page 1135

RBS® A 375

RBS® A 375

pH ~1
Liquid, acidic pre-rinse and neutralisation agent for automatic dishwashers.
D 1,14
WGK 1
Danger H315-H318

Type analysis:
Dry residue. ..... 27,0-30,0 %

TK44.1	5 l	plastic	45,05 €

For further information, please see page 1135

RBS® B 210 T

RBS® B 210 T

pH 9,7
Mildly alkaline detergent for dishwashers.
D 1,178
WGK 2
Danger H318

Type analysis:
Dry residue. ..... 22,5-25,0 %

KC19.1	5 l	plastic	62,90 €

For further information, please see page 1135

RBS® IND 470

RBS® IND 470

Alkaline liquid cleaning concentrate, pH 14,0
D 1,06
UN No. 1814 • ADR 8 II • WGK 2
Danger H290-H314

Type analysis:
Dry residue. ..... 15,8-16,8 %

TA00.1	5 l	plastic	52,15 €
TA00.2	20 kg	plastic	156,95 €

For further information, please see page 1135

RBS® NA 2

RBS® NA 2

concentrated liquid pH 1
For prewash and neutralisation in lab washing systems.
D 1,378
UN No. 1805 • ADR 8 III • WGK 1
Danger H290-H314

Type analysis:
Dry residue. ..... 53,0-58,0 %

AL93.1	5 l	plastic	57,85 €

For further information, please see page 1135

RBS® Neutral T

RBS® Neutral T

concentrated liquid, pH 6,3
For manual or automatic cleaning of sensitive objects.
D 1,072
WGK 1
Warning H319

Type analysis:
Dry residue. ..... 12,5-13,5 %

0180.1	1 l	plastic	17,00 €
0180.2	5 l	plastic	64,40 €

For further information, please see page 1135

RBS® pF T

RBS® pF T

concentrated liquid, pH 13,1
Phosphates-free detergent for manual and automatic cleaning.
D 1,072
UN No. 1824 • ADR 8 III
Danger H290-H314

Type analysis:
Dry residue. ..... 12,8-13,8 %

9243.1	1 l	plastic	16,35 €
9243.2	5 l	plastic	68,70 €
9243.4	20 kg	plastic	220,40 €

For further information, please see page 1135

RBS® R 60

RBS® R 60

concentrated liquid, pH 1,3
For secondary cleaning and neutralisation in lab washing systems.
D 1,016
UN No. 2924 • ADR 3 III • WGK 1
Warning
H226-H290-H315-H319-H412

Type analysis:
Dry residue. ..... 30,0-33,0 %

AL94.1	5 l	plastic	57,85 €

For further information, please see page 1135

RBS® R 60 pF

RBS® R 60 pF

concentrated liquid, pH ~1

For secondary cleaning and neutralisation in lab washing systems, phosphate free.

D 1,013

UN No. 1987 • ADR 3 III • WGK 1

Warning H226-H315-H319-H412

Type analysis:

Dry residue. ..... 31,0-34,0 %

AL96.1	5 l	plastic	68,60 €

For further information, please see page 1135

RBS® Solid

RBS® Solid

pH (3 g/l) ~11

Powder-based, alkaline high-performance detergent for laboratory dishwashers.

D 1,03

UN No. 1759 • ADR 8 II

Danger

H290-H332-H314-H335-H411-EUH031

Type analysis:

Dry residue. ..... 95,0-99,0 %

5715.1	5 kg	plastic	55,15 €

For further information, please see page 1135

RBS® A 285 SOLID pF

RBS® A 285 SOLID pF

pH (3 g/l) ~11

Powder-based, alkaline high-performance detergent for laboratory dishwashers.

WGK 1

Danger H315-H318-H335

HNY8.1	4,5 kg	plastic	50,35 €

For further information, please see page 1135

RBS® T 105

RBS® T 105

Alkaline liquid cleaning concentrate, pH 13,3

D 1,12

WGK 1

Warning H319

Type analysis:

Dry residue. ..... 16,5-18,5 %

PY99.1	5 l	plastic	37,85 €

For further information, please see page 1135

RBS® T 115

RBS® T 115

Alkaline, liquid cleaning concentrate

UN No. 1824 • ADR 8 III

Danger H290-H314

Type analysis:

Dry residue. ..... 12,8-13,8 %

LY18.1	5 l	plastic	40,10 €

For further information, please see page 1135

RBS® T 230

RBS® T 230

Neutral, liquid cleaning concentrate

WGK 1

Warning H319

Type analysis:

Dry residue. ..... 12,5-13,5 %

LY17.1	5 l	plastic	38,20 €

For further information, please see page 1135

RBS® T 305

RBS® T 305

concentrated liquid, pH 1,0

For cleaning in immersion baths and ultrasonic baths.

D 1,4

UN No. 1805 • ADR 8 III • WGK 2

Danger H290-H314

Type analysis:

Dry residue. ..... 64,0-68,0 %

KT39.1	5 l	plastic	49,40 €

For further information, please see page 1135

RCM

▶ Reinforced Clostridial Medium see p. 2255

Ready-made gels

▶ Roti®-PAGE gels ready-to-use see p. 2291

Ready-made media

▶ Compact Dry see p. 1906
▶ Roti®-Aquatest Plates see p. 2265
▶ Roti®-ContiPlates see p. 2271
▶ Roti®-DipSlides see p. 2272

Ready-made Media

Art. No.	Description	Page
4827	Compact Dry CF	1906
4826	Compact Dry EC	1906
4828	Compact Dry ETB	1906
4817	Compact Dry SL	1906
4816	Compact Dry TC	1906
1070	Compact Dry X-BC	1906
1087	Compact Dry X-SA	1906
4818	Compact Dry YM	1906
9646	Roti®-Aquatest Plate Cetr	2265
9649	Roti®-Aquatest Plate m-CP	2265
9640	Roti®-Aquatest Plate PCA	2265
9644	Roti®-Aquatest Plate R2A	2265
9643	Roti®-Aquatest Plate Sab4	2265
9650	Roti®-Aquatest Plate Staph	2265
9648	Roti®-Aquatest Plate Strep	2265
9642	Roti®-Aquatest Plate YE	2265
2313	Roti®-ContiPlate MacCon	2271
9630	Roti®-ContiPlate PCA	2272
9632	Roti®-ContiPlate RBC	2272
9633	Roti®-ContiPlate Sab4plus	2272
2312	Roti®-ContiPlate TSA	2272
9634	Roti®-ContiPlate TSA-Letheen	2272
2314	Roti®-ContiPlate VRB	2272
9631	Roti®-ContiPlate VRBD	2272
3934	Roti®-DipSlide CASO-TTC/RBCenr	2272
2957	Roti®-DipSlide CLED/MacCon	2273
8023	Roti®-DipSlide D/Eneutral	2273
8045	Roti®-DipSlide MacCon/Cetr	2273
2837	Roti®-DipSlide Nutrient-TTC	2273
2927	Roti®-DipSlide PCA	2273
2493	Roti®-DipSlide PCA/Legionella	2273
2926	Roti®-DipSlide PCA/RBCplus	2273
8715	Roti®-DipSlide PCA/TSA-Letheen	2273
2925	Roti®-DipSlide PCA/VRB	2273
2924	Roti®-DipSlide PCA/VRBD	2274
2956	Roti®-DipSlide Sab4plus	2274
2954	Roti®-DipSlide VRBD	2274

Ready-made primers

▶ Roth Hexanucleotide Random-Primer Mix see p. 2262
▶ Roth poly d(T)$_{12-18}$ Primer see p. 2262
▶ Roth Random-Primer sets for RAPD-PCR see p. 2262

Ready-made Reagents (pouches)

Art. No.	Description	Page
1011	Roti®fair BSC	2274
1026	Roti®fair BSC	2274
1031	Roti®fair 0.5M EDTA	2274
1030	Roti®fair 20% Glucose	2275
1032	Roti®fair Glycine 3.0	2275
1034	Roti®fair 1M KCl	2275
1035	Roti®fair 3M KCl	2275
1195	Roti®fair Na-Acetate 5.2	2275
1071	Roti®fair 3M NaCl	2275
1079	Roti®fair 5M NaCl	2276
1090	Roti®fair 0.02M Na-Phosphate 7.0	2276
1094	Roti®fair 0.02M Na-Phosphate 7.0	2276
1095	Roti®fair 1M Na-Phosphate 6.5	2276
1097	Roti®fair 1M Na-Phosphate 7.2	2276
1101	Roti®fair PBS 7.4	2276
1102	Roti®fair PBS 7.4	2276
1103	Roti®fair PBS 7.4	2276
1104	Roti®fair PBS 7.4	2276
1105	Roti®fair 10x PBS 7.4	2277
1157	Roti®fair 10% SDS	2278
1249	Roti®fair SDS-PAGE	2278
1250	Roti®fair SDS-PAGE	2278
1232	Roti®fair 20x SSC	2278
1234	Roti®fair 50x TAE	2278
1240	Roti®fair 50x TAE	2278
1241	Roti®fair 1x TBE	2278
1242	Roti®fair 5x TBE	2278
1243	Roti®fair 10x TBE	2278
1245	Roti®fair TBS 8.0	2279
1247	Roti®fair 10x TBS 8.0	2279
1268	Roti®fair 10x TE	2279
1269	Roti®fair TG-Western	2279
1276	Roti®fair TG-Western	2279
1251	Roti®fair 1M Tris 7.4	2279
1260	Roti®fair 1M Tris 8.0	2279
1261	Roti®fair 1M Tris 8.3	2279

Ready-made Reagents (tablets)

Art. No.	Description	Page
HP67	Agarose-Tablets	1776
1005	Roti®fair BBS	2274
1027	Roti®fair CBB	2274
1033	Roti®fair HBS	2275
1053	Roti®fair 0.9% NaCl	2275
1067	Roti®fair 0.9% NaCl	2275
1106	Roti®fair PBS 7.2	2276
1107	Roti®fair PBS 7.4	2276
1108	Roti®fair PBS 7.4	2277
1111	Roti®fair PBS 7.4	2277
1112	Roti®fair PBS 7.4	2277
1113	Roti®fair PBS potassium-free 7.4	2277
1114	Roti®fair PBS potassium-free 7.4	2277
1115	Roti®fair PBST 7.4	2277
1116	Roti®fair PBST 7.4	2277
1117	Roti®fair pNPP 5mg	2277
1128	Roti®fair pNPP 20mg	2277
1156	Roti®fair SDS 0.5g	2278
1233	Roti®fair SSPE	2278
1244	Roti®fair TBS 7.6	2279
1248	Roti®fair TBST 7.6	2279

Ready-made Solutions

Art. No.	Description	Page
9400	Albumin solution 20 %	1779
9401	Albumin solution 30 %	1779
9414	Albumin solution 30 %, with azide, US-Origin	1779
3130	Ammonium iron(III) citrate solution	1800
0509	Antibody Diluent clear	1810
0070	Antibody Diluent green	1810
1096	Compact Dry Dilution Rack MRD	1906
4823	Compact Dry Dilution Rack	1906
6484	Decalcifier soft	1923
6483	Decalcifier standard	1923
CP11	Geneticin disulphate (G418)-solution	2013
2039	Geneticin disulphate (G418)-solution	2013
HN09	Gentamycin sulphate solution	2014
2475	Gentamycin sulphate solution	2014
9465	Guanidine hydrochloride solution	2030
9969	HCl-ethanol solution 0,75 %	2033
6477	HCl-ethanol solution 3 %	2033
CP12	Hygromycin B solution	2060
1287	Hygromycin B solution	2061
2950	Kovacs' Reagent	2087
9979	Legionella Acid Buffer	2096
P049	Protein glycerol	2242
X985	Roti®-Aqua-P/C/I	2291
A980	Roti®-Aqua-Phenol	2291
A151	Roti®-Block	2266
L509	Roti®-Blot 1	2266
X984	Roti®-C/I	2266
A538	Roticlear®	2271
2313	Roti®-ContiPlate MacCon	2271
2312	Roti®-ContiPlate TSA	2272
2314	Roti®-ContiPlate VRB	2272
CL85	Roti®-Fix spray fixative	2280
9330	Roti®-Free Slide Enhancer	2280
3337	Roti®-Free Stripping Buffer 2.2 plus	2280
3319	Roti®-Free Stripping Buffer 2.0	2280
0083	Roti®-Free Stripping Buffer	2280
P087	Roti®-Histofix 4 %	2284
3105	Roti®-Histofix 4 %, prefilled containers	2284
2213	Roti®-Histofix 4,5 %	2284
8244	Roti®-Histofix 4,5 %, prefilled containers	2284
A146	Roti®-Histofix 10 %	2284
8907	Roti®-Histofix ECO Plus	2284
6640	Roti®-Histol	2285
A981	Roti®-Hybri-Quick	2285
T144	Roti®-ImmunoBlock	2285
AN91	Roti®-Liquid Barrier Marker, colourless	2285
AN92	Roti®-Liquid Barrier Marker, red	2285
3734	Roti®-Lumin ultra	2287
3692	Roti®-Lumin plus	2287
P078	Roti®-Lumin	2287
K880	Roti®-Nanoquant	2290
HP69	Roti® Nucleic Acid-free	2290
1312	Roti® Nucleic Acid-free eXtra	2290
0038	Roti®-Phenol	2291
A156	Roti®-Phenol/Chloroform/Isoamyl alcohol	2291
8996	Rotiphorese®-PAGE Matrix Buffer plus	2292
HP54	Roti®-PinkDNA	2293
K015	Roti®-Quant	2296
0120	Roti®-Quant universal	2296
0642	Roti®-Sep 1077 human	2297
1058	Roti®-Stock 10x PBS	2298
1059	Roti®-Stock 10x PBST	2298
1057	Roti®-Stock 20 % SDS	2298
1054	Roti®-Stock 20x SSC	2298
1060	Roti®-Stock 10x TBS	2299
1061	Roti®-Stock 10x TBST	2299
1052	Roti®-Stock 100x TE	2299
0016	Rotiszint® eco plus	2299
7735	Rotitest®-Annexin V	2299
0069	Rotitest® Vital	2300
P043	Roti®-Transform	2300
9319	Roti®ZOL RNA	2300
9211	Signal Enhancer Western/ELISA Set	2314
9213	Signal Enhancer Western/ELISA-1	2314
9214	Signal Enhancer Western/ELISA-2	2314
T143	Water	2440
1504	Weise buffer concentrate 100x, pH 6,4	2441
1569	Weise buffer concentrate 100x, pH 6,8	2441
1674	Weise buffer concentrate 100x, pH 7,2	2441

Ready made solutions, others

- Cell Culture Ready-made Solutions see p. 1885
- Cell Culture Media see p. 1885
- Embedding- / Inclusion Media see p. 1969
- Formaldehyde Solutions, Phosphate Buffered see p. 2005
- Gel Staining Solutions and Kits see p. 2013
- Gel Media and Additives see p. 2012
- Gel Loading Buffer see p. 2012
- Gel Running Buffer see p. 2013
- Nucleotides / Nucleosides see p. 2169
- Staining Solutions for Histology / Microscopy see p. 2357

Reagents for water analysis

- Karl Fischer Roti®hydroquant C2 see p. 2083
- Karl Fischer Roti®hydroquant S see p. 2084
- Karl Fischer Roti®hydroquant T see p. 2084
- Karl Fischer methanol see p. 2084
- Karl Fischer Roti®hydroquant C5 K see p. 2083
- Karl Fischer Roti®hydroquant coulo A see p. 2084
- Karl Fischer Roti®hydroquant coulo AG see p. 2084
- Karl Fischer Roti®hydroquant coulo CG see p. 2084
- Karl Fischer Roti®hydroquant coulo Oil see p. 2084

Reagents for Peptide Synthesis

Art. No.	Description	Page
4483	Acetic acid anhydride	1757
4380	Acetonitrile	1763
2131	O-(7-Azabenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HATU)	1820
2148	O-(7-Azabenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TATU)	1820
2168	Benzotriazole-1-yl-oxy-tris-(dimethylamino)-phosphonium hexafluorophosphate (BOP)	1832
2178	Benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBOP®)	1832
2132	O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HBTU)	1832
2140	O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TBTU)	1833
6907	Boc-L-Alanine	1843

6914 Boc-L-Arginine hydrochloride monohydrate 1843
6915 Boc-L-Asparagine 1843
8846 Boc-L-Aspartic acid-(OBenzyl) 1843
6917 Boc-L-Glutamic acid 1844
6916 Boc-L-Glutamine 1844
6918 Boc-Glycine 1844
6920 Boc-L-Histidine 1844
6921 Boc-L-Hydroxyproline 1845
6923 Boc-L-Isoleucine hemihydrate 1845
6924 Boc-L-Leucine monohydrate 1845
6942 Boc-L-tert-Leucine 1845
6926 Boc-L-Lysine 1845
6928 Boc-L-Methionine 1845
6931 Boc-L-Phenylalanine 1846
6932 Boc-L-Proline 1846
6933 Boc-L-Serine 1846
6935 Boc-L-Threonine 1846
6945 Boc-L-Tryptophan 1846
6949 Boc-L-Tyrosine 1846
6950 Boc-L-Valine 1847
2200 Bromo-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBrOP®) 1855
6992 1,1'-Carbonyldiimidazole (CDI) 1878
6636 Cbz-Cyclohexyl-L-glycine 1883
2112 O-(1H-6-Chlorobenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HCTU) 1892
6893 4-((6-Chloro-1H-benzo{d}[1,2,3]triazol-1-yloxy)(dimethylamino)methylene)-morpholin-4-ium hexafluorophosphate (HDMC) 1892
2123 6-Chloro-benzotriazole-1-yl-oxy-tris-pyrrolidinophosphonium hexafluorophosphate (PyClock®) 1892
6890 O-(6-Chlorobenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TCTU) 1892
7405 2-Chlorotrityl chloride resin 1895
2100 1-[(1-(Cyano-2-ethoxy-2-oxoethylideneaminooxy) dimethylaminomorpholino)] uronium hexafluorophosphate (COMU®) 1915
6985 Di-*tert*-butyl dicarbonate (Boc_2O) 1933
P089 Dichloromethane 1936
4193 N,N'-Dicyclohexylcarbodiimide (DCC) 1936
6981 *N,N'*-Diisopropylcarbodiimide (DIC) 1944
2474 N,N-Diisopropylethylamine (DIPEA) 1944
3617 N,N-Dimethylacetamide (DMA) 1946
6888 1-[(Dimethylamino)(morpholino)methylene]-1H-[1,2,3]triazolo[4,5-b]pyridine-1-ium 3-oxide hexafluorophosphate (HDMA) 1946
6988 4-(Dimethylamino)pyridine (DMAP) 1947
A529 N,N-Dimethylformamide (DMF) 1948
2110 N,N'-Disuccinimidyl carbonate (DSC) 1955
2125 O-[(Ethoxycarbonyl)cyanomethylenamino]-N,N,N',N'-tetramethyluronium tetrafluoroborate (TOTU) 1978
6891 Ethyl cyanoglyxylate-2-oxyme potassium salt (K-Oxyma) 1980
2120 (Ethylcyano(hydroxyimino)-acetato-O_2)-tri-1-pyrrolidinylphosphonium hexafluorophosphate (PyOxim) 1980
2156 1-Ethyl-3-(3-dimethylaminopropyl)carbodiimide hydrochloride (EDC-HCl) 1980
2118 Ethyl(hydroxyimino)cyanoacetate (Oxyma Pure) 1985
2201 9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl) 1995
6646 Fmoc-L-Alanine monohydrate 1997
7400 Fmoc-8-Amino-3,6-dioxaoctanoic acid 1997
6896 Fmoc-L-Arginine 1997
8833 Fmoc-L-Arginine-(Pbf) 1997
6897 Fmoc-L-Asparagine 1998
9652 Fmoc-L-Asparagine-(Trityl) 1998
6641 Fmoc-L-Aspartic acid-(OAllyl) 1998
9654 Fmoc-L-Aspartic acid-(OtBu) 1998
7369 Fmoc-L-β-Azidoalanine 1998
7363 Fmoc-L-γ-Azidohomoalanine 1998
7357 Fmoc-L-Azidolysine 1999
7362 Fmoc-L-Azidoornithine 1999
7485 Fmoc-L-4-Azidophenylalanine 1999
7367 Fmoc-L-4-Azidoproline (2S,4R) 1999
8842 Fmoc-L-Cysteine-(Acetamidomethyl) 1999
8841 Fmoc-L-Cysteine-(Trityl) 1999
9655 Fmoc-L-Glutamic acid-(OtBu) monohydrate 2000
6898 Fmoc-L-Glutamine 2000
9653 Fmoc-L-Glutamine-(Trityl) 2000
6899 Fmoc-Glycine 2000
8843 Fmoc-L-Histidine-(Trityl) 2000
6647 Fmoc-L-Isoleucine 2001
6654 Fmoc-L-Leucine 2001
6900 Fmoc-L-Lysine 2001
8840 Fmoc-L-Lysine-(Boc) 2001
6656 Fmoc-L-Methionine 2001
6658 Fmoc-L-Phenylalanine 2002
6659 Fmoc-L-Proline 2002
7491 Fmoc-L-Propargylglycine 2002
6901 Fmoc-L-Serine monohydrate 2002
9666 Fmoc-L-Serine-(tBu) 2002
9659 Fmoc-L-Threonine-(tBu) 2003
6903 Fmoc-L-Tryptophan 2003
9668 Fmoc-L-Tryptophan-(Boc) 2003
6906 Fmoc-L-Tyrosine 2003
9669 Fmoc-L-Tyrosine-(tBu) 2003
6660 Fmoc-L-Valine 2003
6665 N-Formyl-L-Leucine 2007
2473 1,1,1,3,3,3-Hexafluoro-2-propanol 2040
6662 L-Hydroxyproline methylester hydrochloride 2059
9670 N-Hydroxysuccinimide 2060
6664 L-tert-Leucine methylester hydrochloride 2098
P052 N-Methyl-2-pyrrolidone (NMP) 2142
A122 Piperidine 2213
7515 Rink amide resin 2261
7408 Sieber amide resin 2314
2130 O-(N-Succinimidyl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TSTU) 2384
P088 Trifluoroacetic acid (TFA) 2417
7506 Wang resin 2438
3478 Water 2439
1914 Z-L-Arginine 2449
1894 Z-L-Aspartic acid 2449
1885 Z-L-Glutamic acid 2449
1859 Z-L-Leucine 2453
1907 Z-L-Lysine 2453
1865 Z-L-Phenylalanine 2453

Reasoner's 2A Agar

▶ R2A-Agar see p. 2251
▶ R2A-Agar, granulated see p. 2251

Red prussiate of potash

▶ Potassium hexacyanoferrate(III) see p. 2227

Reinecke salt monohydrate

Reinecke salt monohydrate

≥93%, p.a., ACS

Ammonium tetrathiocyanato-diamminechromate(III) monohydrate

$NH_4[Cr(SCN)_4(NH_3)_2] \cdot H_2O$

M 354,45 g/mol

mp 268-272 °C (dec.)

[13573-17-6] • EC No. 237-003-3

WGK 3

Warning H302+H312+H332-H315-H319-H335-H412-EUH032

Guarantee analysis:

Appearance. ..... red-brown to purple powder
Assay. ..... ≥93,0 %
In diluted HCl insoluble matter. ..... ≤0,05 %
Sensitivity ..... complies

6629.1	25 g	glass	60,10 €
6629.2	100 g	glass	176,85 €

Reinforced Clostridial Medium

Reinforced Clostridial Medium

Ph.Eur., for microbiology

For enrichment and enumeration of *Clostridiae* and other anaerobes from foods and other specimens.

Application: Use 38 g for 1 l broth.

Medium P (Ph.Eur. 6.0), Reinforced Medium for *Clostridia* (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), **RCM**

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

Beef extract. ..... 10 g/l
Peptone. ..... 10 g/l
Yeast extract. ..... 3 g/l
Soluble starch. ..... 1 g/l
Glucose monohydrate. ..... 5 g/l
Cystein hydrochloride. ..... 0,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Sodium acetate. ..... 3 g/l
Agar. ..... 0,5 g/l
pH value. ..... 6,8 ±0,2

AE66.1	500 g	plastic	107,00 €
Original pack 6 x 500 g			101,65/500 g

For further information, please see page 1460

Renardin

▶ Senkirkine see p. 2311

Rennase

▶ Rennin see p. 2256

Rennin

Rennin

for biochemistry

Chymosin, rennase, lab
M ~31000 g/mol
Storage temp.: +4 °C
[9001-98-3] • EC No. 232-645-0
WGK 1

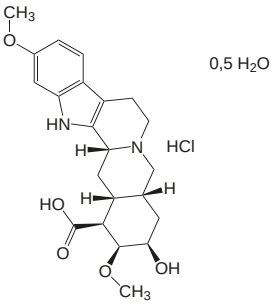
Danger H334-H335-H315-H319

Type analysis:

Appearance. ..... light brown, saline powder
Odour. ..... typical odour of rennin
Chymosin..... ≥95 %
Pepsin..... ≤5 %
Rennet strength. ..... ≥800 IMCU/g
Preserved with benzoic acid.
From the fourth calf stomach.

8178.1	50 g	plastic	60,10 €

Reserpic acid hydrochloride hemihydrate



Reserpic acid hydrochloride hemihydrate

ROTICHROM® ~CHR

$C_{22}H_{28}N_2O_5 \cdot HCl \cdot 0,5\ H_2O$
M 445,91 g/mol
mp 259-265 °C
UN No. 1544 • ADR 6.1 III • WGK 1

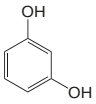
Danger H301

4295.1	100 mg	glass	46,15 €

Resorcin blue

▶ Lacmoid see p. 2087

Resorcinol



Resorcinol

≥99 %, for biochemistry

Reagent on alkaloids, aldehydes and invert sugar.
1,3-Dihydroxybenzene, 1,3-Benzenediol
$C_6H_6O_2$
M 110,11 g/mol
bp 281 °C
mp 109-111 °C • flp 127 °C
Solubility: 1400 g/l (H_2O, 20 °C)
[108-46-3] • EC No. 203-585-2
UN No. 2876 • ADR 6.1 III • WGK 2

Warning H400-H302-H315-H319

Type analysis:

Assay. ..... ≥99,0 %
In H_2O insoluble matter. ..... ≤0,01 %
Melting range. ..... 109-111 °C
Loss on drying. ..... ≤1,0 %

5727.1	100 g	plastic	21,40 €
5727.2	500 g	plastic	55,80 €
Original pack 6 x 500 g			53,01/500 g
5727.3	1 kg	plastic	96,25 €
Original pack 6 x 1 kg			91,44/1 kg
5727.4	2,5 kg	plastic	207,40 €

Resorcinol

▶ Resorcinol see p. 2256

Resorcinol-Fuchsine-solution acc. to Weigert

Resorcinol-Fuchsine-solution acc. to Weigert

for microscopy

For visualising elastic fibres.
WEIGERT'S Resorcinol-Fuchsine-solution
UN No. 1993 • ADR 3 II • WGK 1

Danger H225-H302+H312+H332-H319-H317-H370-H336

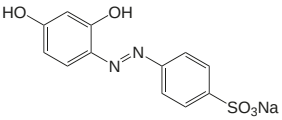
Type analysis:

Suitability for microscopy (tissue section)..... complies

X877.1	500 ml	glass	33,90 €
X877.2	1 l	glass	57,95 €
Original pack 6 x 1 l			55,05/1 l
X877.3	2,5 l	plastic	116,65 €
Original pack 4 x 2,5 l			110,82/2,5 l

For further information, please see page 1513

Resorcinol yellow (C.I. 14270)



Resorcinol yellow (C.I. 14270)

extra pure

Indicator pH 11,0-12,7
Tropaeolin O sodium salt
$C_{12}H_9NaN_2O_5S$
M 316,27 g/mol
mp >300 °C
[547-57-9]
WGK 3

Type analysis:

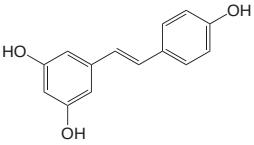
Appearance. .....dark orange to rust colored powder
Appearance of solution (10 mg/ml in 1 N NH_3)..... clear, red brown
pH-transition range. ..... 11,0 (yellow)-12,7 (red)

7741.1	5 g	glass	14,55 €
7741.2	25 g	glass	25,30 €
7741.3	100 g	glass	62,25 €

Resorcinophthalein sodium

▶ Fluorescein disodium salt see p. 1996

Resveratrol



Resveratrol

≥98 %

trans-3,4',5-Trihydroxystilbene
$C_{14}H_{12}O_3$
M 228,25 g/mol
Storage temp.: +4 °C
[501-36-0]

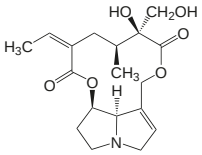
Warning H319

Type analysis:

Appearance. ..... white powder
Assay (HPLC, dry substance). ..... ≥98,0 %
Loss on drying..... ≤7,0 %

N811.1	500 mg	glass	47,85 €
N811.2	1 g	glass	78,40 €
N811.3	5 g	glass	166,65 €

Retrorsine

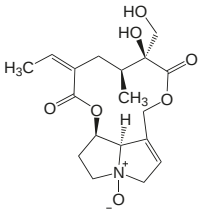


Retrorsine
ROTICHROM® HPLC
Reference substance for HPLC.
From *Senecio retrorsus.*
β-Longilobine, 12,18-Dihydroxysenecionan-11,16-dion
$C_{18}H_{25}NO_6$
M 351,40 g/mol
Storage temp.: +4 °C
[480-54-6]
UN No. 1544 • ADR 6.1 II • WGK 1
Danger H300+H330-H311

Type analysis:
Purity (HPLC).....>98 %

1213.1	20 mg	glass	278,45 €

Retrorsine-N-oxide

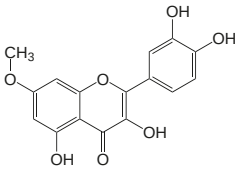


Retrorsine-N-oxide
ROTICHROM® HPLC
Reference substance for HPLC.
From *Senecio retrorsus.*
12,18-Dihydroxysenecionan-11,16-dione-4-oxide, Isatidine
$C_{18}H_{25}NO_7$
M 367,40 g/mol
mp 140-144 °C
Storage temp.: +4 °C
[15503-86-3]
UN No. 1544 • ADR 6.1 II • WGK 1
Danger H300-H373

Type analysis:
Purity (HPLC).....≥97 %

6733.1	10 mg	glass	284,90 €

Rhamnetin



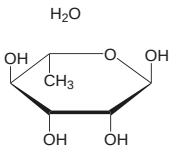
Rhamnetin
ROTICHROM® HPLC
Reference substance for HPLC.
7-Methylquercetin, β-Rhamnocitrin
$C_{16}H_{12}O_7$
M 316,27 g/mol
Storage temp.: +4 °C
[90-19-7] • EC No. 201-974-1

Type analysis:
Purity (HPLC).....≥99 %

7418.1	10 mg	glass	233,85 €

β-Rhamnocitrin
▶ Rhamnetin see p. 2257

L(+)-Rhamnose monohydrate



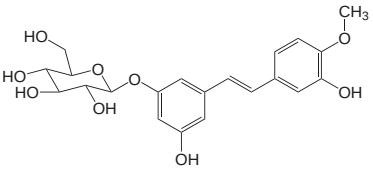
L(+)-Rhamnose monohydrate
≥98 %, for biochemistry
Isodulcit, L-Mannomethylose
$C_6H_{12}O_5 \cdot H_2O$
M 182,17 g/mol
mp 88-94 °C
[3615-41-6] • EC No. 222-793-4
WGK 1

Type analysis:
Assay (HPLC).....≥98,0 %
Water (KF).....9,0-11,0 %
Melting point.....88-94 °C
Specific rotation $[\alpha]_D^{20}$ (c=5 in H_2O).....+7,7° to +8,9°

4655.1	5 g	glass	31,75 €
4655.2	25 g	plastic	85,90 €

Rhamnoxanthine
▶ Frangulin (A+B) see p. 2007

Rhaponticin



Rhapontin
$C_{21}H_{24}O_9$
M 420,40 g/mol
mp 233-237 °C
Storage temp.: +4 °C
[155-58-8] • EC No. 205-845-0
WGK 1

Rhaponticin
ROTICHROM® TLC
Reference substance for thin layer chromatography

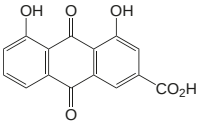
5804.1	100 mg	glass	59,05 €

Rhaponticin
ROTICHROM® ~CHR

7152.1	1 g	glass	46,15 €

Rhapontin
▶ Rhaponticin see p. 2257

Rhein



Cassic acid, Monorhein
$C_{15}H_8O_6$
M 284,23 g/mol
mp 321-324 °C
Storage temp.: +4 °C
[478-43-3] • EC No. 207-521-4
WGK 1
Warning H315-H319-H335

Rhein
ROTICHROM® HPLC
Reference substance for HPLC.

Type analysis:
Purity (HPLC).....≥99 %

7419.2	20 mg	glass	224,70 €

Rhein
ROTICHROM® CHR

8868.1	50 mg	glass	57,95 €

Rhenium Standards

▶ Rhenium ICP Standard Solution see p. 2364
▶ Rhenium ICP Standard Solution see p. 2369

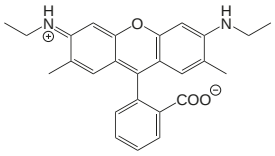
Rhinanthin

▶ Aucubin see p. 1819

Rhodamine 19

▶ Rhodamine 575 see p. 2258

Rhodamine 575



Rhodamine 575

≥98 %

Laser and scintillation dye
Rhodamine 19
$C_{26}H_{26}N_2O_3$
M 414,51 g/mol
mp 313-317 °C
Solubility: insoluble (H_2O, 20 °C)
[25152-49-2] • EC No. 246-666-8 • WGK 3

Type analysis:

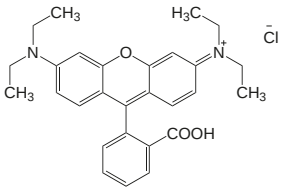
Appearance. ..... coralred cryst. powder
Assay (HPLC). ..... ≥98 %
Maximum absorption. ..... 518 ±2 nm (MeOH)

7310.1	100 mg	glass	25,30 €
7310.2	500 mg	glass	43,55 €

Rhodamine 590

▶ Rhodamine 6G (C.I. 45160) see p. 2258

Rhodamine B (C.I. 45170)



Rhodamine B (C.I. 45170)

for microscopy

Oil-soluble red A, Safraniline, Rosaceine
$C_{28}H_{31}ClN_2O_3$
M 479,02 g/mol
D 1,31 • mp 199-201 °C
Solubility: 15 g/l (H_2O, 20 °C)
[81-88-9] • EC No. 201-383-9 • WGK 1

Danger H318-H412

Type analysis:

Dye content. ..... ~80 %
Maximum absorption. ..... 540-560 nm
Loss on drying (60 °C). ..... ≤5,0 %

T130.1	25 g	glass	34,30 €
T130.7	50 g	glass	55,80 €

Rhodamine B-spray solution

Rhodamine B-spray solution

for TLC

Ready-to-use spray solution for detection of lipids. 0,1 g Rhodamine B dissolved in 100 ml ethanol.
UN No. 1170 • ADR 3 II • WGK 2

Danger H225-H319

Type analysis:

TLC-application. ..... complies

CP37.1	100 ml	glass	38,50 €

Rhodamine-12-dUTP

Rhodamine-12-dUTP

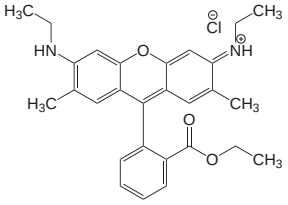
≥95 %, 1 mM solution

For non-radioactive, enzymatic labelling of DNA.
Rhodamine-6-carboxyaminocaproyl-[5-(3-aminoallyl)-2'-desoxyuridine-5'-triphosphate]
$C_{39}H_{41}N_6O_{19}P_3$
M 990,7 g/mol
Storage temp.: -20 °C
Transport temp.: cooled

1049.1	25 nmol (25 µl)	plastic	188,70 €
1049.2	50 nmol (50 µl)	plastic	322,00 €

For further information, please see page 1304

Rhodamine 6G (C.I. 45160)



NEW

Rhodamine 6G (C.I. 45160)

pure

Rhodamine 590, Basic red 1
[989-38-8] • EC No. 213-584-9
WGK 1

Warning H302

Type analysis:

Appearance of solution (1 % in H_2O). ..... opaque, dark red
Loss on drying (1 h, 110 °C). ..... ≤10 %

0749.1	5 g	glass	17,10 €
0749.2	25 g	glass	32,15 €
0749.3	100 g	glass	85,90 €

Rhodium Standards

▶ Rhodium ICP Standard Solution see p. 2364

Rhodium(III) ammonium chloride

▶ Ammonium hexachlororhodate(III) see p. 1797

Rhodium(III) chloride hydrate

Rhodium(III) chloride hydrate

ROTI®METIC 99,95 % (3N5)

Rhodium trichloride hydrate
$RhCl_3 \cdot x\ H_2O$
M 209,26 + x H_2O g/mol
[20765-98-4] • EC No. 233-165-4
WGK 1

Danger H302-H318

Type analysis:

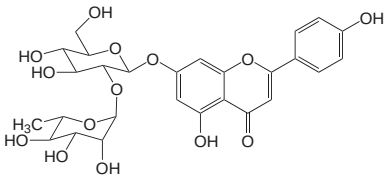
Assay (metals basis). ..... 99,95 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5668.1	1 g	plastic	521,40 €

Rhodium trichloride hydrate

▶ Rhodium(III) chloride hydrate see p. 2258

Rhoifolin



Rhoifolin

ROTICHROM® HPLC

Reference substance for HPLC.
Apigenin-7-rhamnoglucoside
$C_{27}H_{30}O_{14}$
M 578,54 g/mol
mp 190-200 °C
Storage temp.: +4 °C
[17306-46-6] • EC No. 241-335-4

Type analysis:

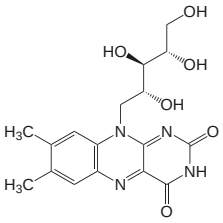
Purity (HPLC). ..... ≥99 %

7420.2	20 mg	glass	289,20 €

Ribitol

▶ Adonitol see p. 1773

Riboflavine



Riboflavine

≥97 %, Ph.Eur., for biochemistry

Lactoflavine, Vitamin B_2

$C_{17}H_{20}N_4O_6$

M 376,37 g/mol

mp ~280 °C

[83-88-5] • EC No. 201-507-1

WGK 1

Guarantee analysis:

Appearance. ..... yellow to orange-yellow cryst. powder
Assay (UV-absorption, dry substance). .. 97,0-103,0 %
Specific rotation $[\alpha]_D^{20}$ (0,5 % in 0,05 N NaOH). ..... -135° to -115°
Absorption. ..... complies
Sulphated ash. ..... ≤0,1 %
Loss on drying (105 °C). ..... ≤1,5 %
Related substances. ..... complies

9607.1	25 g	plastic	31,10 €
9607.2	50 g	plastic	51,50 €
9607.3	100 g	plastic	89,15 €
9607.4	250 g	plastic	160,20 €

Riboflavine-5'-adenosine-diphosphate disodium salt

▶ Flavine-adenine-dinucleotide disodium salt (FAD) see p. 1994

RiboFlow® Campylobacter

RiboFlow® Campylobacter

SY-LAB ready-to-use, for microbiology

For the confirmation of thermophilic *Campylobacter* colonies.

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

Danger H314-H360FD

Components:

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9885.1	24 tests	284,90 €

For further information, please see page 1481

RiboFlow® Candida albicans

RiboFlow® Candida albicans

SY-LAB ready-to-use, for microbiology

For detection of *Candida albicans.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

Components:

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9893.1	24 tests	263,40 €

For further information, please see page 1481

RiboFlow® Cosmetics

RiboFlow® Cosmetics

SY-LAB ready-to-use, for microbiology

Combi test for 4 target organisms each - for detection and differentiation of *E. coli, Ps. aeruginosa, S. aureus, C. albicans.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

Danger H314-H360FD

Components:

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes 2 ml. ..... 8 pieces
RiboFlow® test cassettes. ..... 6 sets of 4 tests

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9894.1	6 x 4 tests	203,20 €

For further information, please see page 1481

RiboFlow® Cronobacter

RiboFlow® Cronobacter

SY-LAB ready-to-use, for microbiology

For detection of *Cronobacter* spp.

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

Danger H314-H360FD

Components:

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9882.1	24 tests	220,40 €

For further information, please see page 1481

RiboFlow® E. coli

RiboFlow® E. coli

SY-LAB ready-to-use, for microbiology

For detection of *E. coli.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

Danger H314-H360FD

Components:

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9891.1	24 tests	263,40 €

For further information, please see page 1481

RiboFlow® Enterobacteriaceae

RiboFlow® Enterobacteriaceae

SY-LAB ready-to-use, for microbiology

For detection of enterobacteria.

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

Danger H314-H360FD

Components:

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9890.1	24 tests	263,40 €

For further information, please see page 1481

RiboFlow® Listeria Twin

RiboFlow® Listeria Twin

SY-LAB ready-to-use, for microbiology

For detection and differentiation of *Listeria* spp. and *Listeria monocytogenes.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

Danger H314-H360FD

Components:

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9884.1	24 tests	375,20 €

For further information, please see page 1481

RiboFlow® P/En

RiboFlow® P/En

SY-LAB ready-to-use, for microbiology

For detection and differentiation of *Pseudomonas* spp. and *Enterobacteriaceae.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

Danger H314-H360FD

Components:

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9895.1	24 tests	263,40 €

For further information, please see page 1481

RiboFlow® Pseudomonas aeruginosa

RiboFlow® Pseudomonas aeruginosa

SY-LAB ready-to-use, for microbiology

For detection of *Pseudomonas aeruginosa.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

Components:

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9892.1	24 tests	263,40 €

For further information, please see page 1481

RiboFlow® Salmonella

RiboFlow® Salmonella

SY-LAB ready-to-use, for microbiology

For detection of *Salmonella* spp.

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

Danger H314-H360FD

Components:

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 x 2 ml
RiboExtract. ..... 6 ml
Reaction tubes. ..... 50 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9881.1	24 tests	274,15 €

For further information, please see page 1481

RiboFlow® Staphylococcus aureus

RiboFlow® Staphylococcus aureus

SY-LAB ready-to-use, for microbiology

For detection of *Staphylococcus aureus.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

Danger H314-H360FD

Components:

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9889.1	24 tests	263,40 €

For further information, please see page 1481

RiboFlow® Vibrio parahaemolyticus

RiboFlow® Vibrio parahaemolyticus

SY-LAB ready-to-use, for microbiology

For the confirmation of *Vibrio parahaemolyticus.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

Danger H314-H360FD

Components:

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9888.1	24 tests	299,95 €

For further information, please see page 1481

D(-)-Ribofuranose

▶ D(-)-Ribose see p. 2261

D-Ribofuranose 5-phosphate disodium salt

▶ D-Ribose-5-phosphate disodium salt see p. 2261

9-β-D-Ribofuranosyladenine

▶ Adenosine see p. 1772

Ribonuclease

Ribonuclease

>70 U/mg (Kunitz), free from salt and protease

Purified by chromatography, for biochemistry.

RNase

Storage temp.: -20 °C
Transport temp.: room temp.

[9001-99-4] • EC No. 232-646-6

WGK 1

Type analysis:

Appearance. ..... white, freeze-dried powder
Activity (Kunitz). ..... >70 U/mg

7164.1	100 mg	glass	31,10 €
7164.2	1 g	glass	213,95 €

For further information, please see page 1281

Ribonuclease A

Ribonuclease A

90 U/mg (Kunitz), BioScience-Grade, free from salt

Acc. to Hirs, extracted from bovine pancreas.

RNase A

M ~13 700 g/mol

Storage temp.: -20 °C
Transport temp.: room temp.

[9001-99-4] • EC No. 232-646-6

WGK 1

Type analysis:

Appearance. ..... white, freeze-dried powder
Assay (IEC, Amberlit CG50). ..... >95 %
Solubility (2 mg/ml, H_2O). ..... clear, soluble
Activity (Kunitz). ..... ~90 U/mg
DNAse. ..... none detected
Protease. ..... none detected

7156.1	100 mg	glass	75,80 €
7156.2	500 mg	glass	335,95 €
7156.3	1 g	glass	553,65 €

For further information, please see page 1281

Ribonucleic acid sodium salt

Ribonucleic acid sodium salt

≥93 %, for biochemistry

Sodium nucleinate

Storage temp.: +4 °C

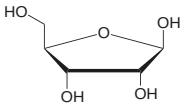
[9010-05-3]

Type analysis:

Appearance. ..... yellowish powder
Assay (dry substance). ..... ≥93,0 %

4362.1	25 g	plastic	40,35 €

D(-)-Ribose



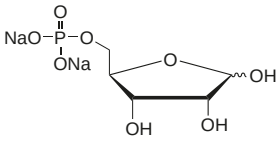
D(-)-Ribose

≥98 %, for biochemistry
D(-)-Ribofuranose
$C_5H_{10}O_5$
M 150,13 g/mol
D 0,80
mp 90-95 °C
Storage temp.: +4 °C
[50-69-1] • EC No. 200-059-4

Type analysis:
Appearance. ... colourless to light yellow, cryst.powder
Assay (HPLC, dry substance)..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$. ..... -18° to -22°
Loss on drying. ..... ≤3,0 %
Heavy metals. ..... ≤0,001 %
Sulphated ash. ..... ≤0,2 %

7168.1	10 g	plastic	20,35 €
7168.3	25 g	plastic	40,35 €
7168.2	100 g	plastic	103,75 €

D-Ribose-5-phosphate disodium salt



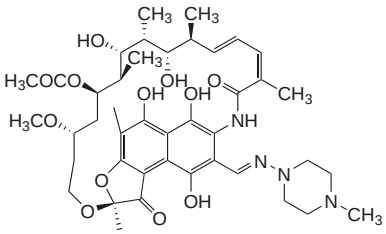
D-Ribose-5-phosphate disodium salt

≥85 %, for biochemistry
D-Ribofuranose 5-phosphate disodium salt, R-5-P-Na2
$C_5H_9Na_2O_8P$
M 274,08 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[18265-46-8] • EC No. 242-140-7

Type analysis:
Assay (titr.). ..... ≥85,0 %
Solution (5 % in H_2O)..... colourless to light yellow
Water (KF). ..... ≤15,0 %
pH value (1 % in H_2O)..... 6,5-7,5
Heavy metals (as Pb)..... ≤0,002 %

5253.1	250 mg	glass	51,10 €
5253.2	1 g	glass	155,90 €

Rifampicin



Rifampicin

≥90 %, for biochemistry
Bacteriostatic antibiotic
Art. No. 4163.3: A stock solution with a concentration of 100 mg/ml can be prepared directly by adding 5 ml chloroform or DMSO.
3-(4-Methylpiperazinyliminomethyl)rifamycin SV
$C_{43}H_{58}N_4O_{12}$
M 822,94 g/mol
Storage temp.: +4 °C
[13292-46-1] • EC No. 236-312-0
WGK 1

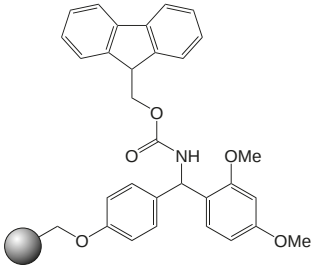
Warning H302-H315-H319-H335

Type analysis:
Assay (HPLC)..... ≥90 %
Solution (5% in chloroform). ..... orange to dark brown
Loss on drying (60 °C, vacuum). ..... ≤2 %
Sulphated ash. ..... ≤0,1 %

4163.1	500 mg	glass	32,15 €
4163.3	500 mg (in a 10 ml glass bottle)		39,70 €
4163.2	1 g	glass	55,80 €

For further information, please see page 1507

Rink amide resin



Rink amide resin

PEPTIPURE® 100-200 mesh, 1 % DVB
For peptide synthesis
4-(2',4'-Dimethoxyphenyl-Fmoc-aminomethyl)phenoxy resin
WGK 1

Type analysis:
Appearance..... white to slightly yellow beads
Loading. ..... 0,3-0,8 mmol/g
Identity (IR). ..... complies
Swelling..... 4,0-7,0 ml/g (DMF, 24 h)
Swelling..... 4,5-8,5 ml/g (CH_2Cl_2, 24 h)
Kaiser test. ..... negative
Loss on drying. ..... ≤2 %

7515.1	1 g	glass	35,40 €
7515.2	5 g	plastic	147,85 €

RNA-isolation kit

▶ Roti®-Quick kit see p. 2296

RNA isolation reagent

▶ Roti®ZOL RNA see p. 2300

RNase

▶ Ribonuclease A see p. 2260
▶ Ribonuclease see p. 2260

RNase AWAY®

RNase AWAY®

ready-to-use solution for removal of RNAse-contaminations

Danger H314

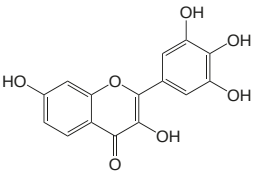
A998.1	250 ml	plastic	50,45 €
A998.4	475 ml	spray bottle	77,30 €
A998.2	1 l	plastic	104,20 €
Original pack 6 x 1 l			98,99/1 l
A998.3	4 l	plastic	193,40 €

For further information, please see page 1298

Robigenin

▶ Kaempferol see p. 2082

Robinetin



Robinetin

ROTICHROM® HPLC
Reference substance for HPLC.
Norkanugin, 5'-Oxyfisetin
$C_{15}H_{10}O_7$
M 302,23 g/mol
mp ~300 °C
Storage temp.: +4 °C
[490-31-3] • EC No. 207-709-6

Type analysis:
Purity (HPLC)..... ≥99 %

7421.1	10 mg	glass	228,90 €

Rogosa Agar

Rogosa Agar
for microbiology

For selective cultivation of lactobacilli.
Application: Use 75 g for 1 l agar.
Lactobacillus Selective Agar acc. to Rogosa
Storage temp.: +20 °C • WGK 1

Formulation:

Sodium acetate	15 g/l
Tryptone	10 g/l
Dextrose	10 g/l
Potassium phosphate	6 g/l
Yeast extract	5 g/l
Sucrose	5 g/l
Arabinose	5 g/l
Ammonium citrate	2 g/l
Polysorbate 80	1 g/l
Magnesium sulphate ($MgSO_4$)	0,57 g/l
Manganese sulphate	0,12 g/l
Iron sulphate	0,03 g/l
Agar	15 g/l
pH value	5,4 ±0,2

8329.1	500 g	plastic	143,55 €
Original pack 6 x 500 g			136,37/500 g

For further information, please see page 1461

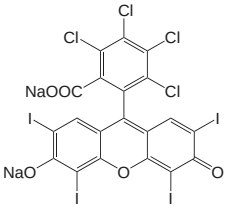
Rongalit®

▶ Sodium formaldehyde sulphoxylate dihydrate see p. 2338

Rosaceine

▶ Rhodamine B (C.I. 45170) see p. 2258

Rose Bengale B (C.I. 45440)



Rose Bengale B (C.I. 45440)
for microscopy

4,5,6,7-Tetrachloro-2',4',5',7'-tetraiodofluorescein disodium salt
$C_{20}H_2Cl_4I_4Na_2O_5$
M 1017,65 g/mol
Solubility: 1 g/l (H_2O, 20 °C)
[632-69-9] • EC No. 211-183-3 • WGK 2

Type analysis:

Maximum absorption	540-555 nm
Loss on drying (110 °C)	≤10 %

3162.1	50 g	plastic	95,70 €

For further information, please see page 1530

Rose-Gal

▶ 6-Chloro-3-indoxyl-β-D-galactopyranoside see p. 1893

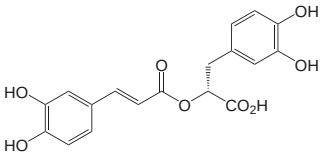
Rose-Glucuro CHAsalt

▶ 6-Chloro-3-indoxyl-β-D-glucuronic acid cyclohexylammonium salt see p. 1893

Rose-Phos p-toluidine salt

▶ 6-Chloro-3-indoxyl phosphate p-toluidine salt see p. 1893

Rosmarinic acid



$C_{18}H_{16}O_8$
M 360,34 g/mol
D 0,91
mp ~170 °C
[20283-92-5]

Rosmarinic acid
ROTI®STAR Primary Standard

Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:

Assay (HPLC)	≥85,0 %
Residual solvents (GC)	≤2,0 %
Water (KF)	≤5,0 %
Assay (qNMR)	≥80,0 %

Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE30.1	50 mg	glass	1009,45 €

Rosmarinic acid
ROTICHROM® Working Standard

Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:

Assay (HPLC)	≥85,0 %
Identity	complies

Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC30.1	100 mg	glass	306,40 €

Rosmarinic acid
ROTICHROM® HPLC

Reference substance for HPLC.
Storage temp.: +4 °C

Type analysis:

Purity (HPLC)	≥99 %

N816.1	10 mg	glass	166,65 €

Rosmarinic acid
ROTICHROM® ~CHR

Storage temp.: +4 °C

A558.1	100 mg	glass	252,65 €

Roth Hexanucleotide Random-Primer Mix

Roth Hexanucleotide Random-Primer Mix
HPLC-purified, lyophilised

For random priming during probe generation or during total genome-amplification.
N_6 mix (N for A, G, C, T). 10 OD_{260} units.
Storage temp.: -20 °C
Transport temp.: room temp.

HP28.1	1 kit		70,45 €

For further information, please see page 1307

Roth poly d(T)$_{12-18}$ Primer

Roth poly d(T)$_{12-18}$ Primer
HPLC-purified, lyophilised

For sequence unspecific priming during reverse transcription.
Mix of d(T) 12 to 18mers. 5 OD_{260} units.
Storage temp.: -20 °C
Transport temp.: room temp.

HP27.1	1 kit		53,25 €

For further information, please see page 1307

Roth Random-Primer sets for RAPD-PCR

Roth Random-Primer sets for RAPD-PCR
20 x 10mer/set. 2.0 OD_{260} units per primer, aliquoted in 2 vials each.
Desalted and lyophilised.
Storage temp.: -20 °C
Transport temp.: room temp.

HP22.1	1 Set	Set A	206,95 €
HP23.1	1 Set	Set B	206,95 €
HP24.1	1 Set	Set C	206,95 €
HP25.1	1 Set	Set D	206,95 €

For further information, please see page 1307

Roti®-Antibiotic Discs Erythromycin (E)

Roti®-Antibiotic Discs Erythromycin (E) NEW
15 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.
Antimicrobial Susceptibility Disc
Storage temp.: -20 °C
Transport temp.: cooled
WGK 1

Guarantee analysis:

Concentration	15 µg
Inhibiting zone diameter of the test strains	complies

1463.2	50 discs	plastic	9,60 €
1463.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Amphotericin B (AP)

Roti®-Antibiotic Discs Amphotericin B (AP) NEW

100 units, for microbiology

For antimicrobial susceptibility testing of fungal cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Activity. ..... 100 U
Inhibiting zone diameter of the test strains. .... complies

1454.2	50 discs	plastic	12,80 €
1454.1	5 x 50 discs	plastic	40,75 €

For further information, please see page 1478

Roti®-Antibiotic Discs Carbenicillin (CB)

Roti®-Antibiotic Discs Carbenicillin (CB) NEW

100 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Concentration. ..... 100 µg
Inhibiting zone diameter of the test strains..... complies

1459.2	50 discs	plastic	9,60 €
1459.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Penicillin (P)

Roti®-Antibiotic Discs Penicillin (P) NEW

10 units, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Activity. ..... 10 U
Inhibiting zone diameter of the test strains. .... complies

1494.2	50 discs	plastic	9,60 €
1494.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Ampicillin (AMP)

Roti®-Antibiotic Discs Ampicillin (AMP) NEW

10 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Concentration. ..... 10 µg
Inhibiting zone diameter of the test strains. .... complies

1456.2	50 discs	plastic	9,60 €
1456.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Cefoxitin (CX)

Roti®-Antibiotic Discs Cefoxitin (CX) NEW

30 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Concentration. ..... 30 µg
Inhibiting zone diameter of the test strains..... complies

1460.2	50 discs	plastic	9,60 €
1460.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Polymyxin B (PB)

Roti®-Antibiotic Discs Polymyxin B (PB) NEW

300 units, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Activity. ..... 300 U
Inhibiting zone diameter of the test strains. .... complies

1495.2	50 discs	plastic	9,60 €
1495.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Bacitracin (B)

Roti®-Antibiotic Discs Bacitracin (B) NEW

10 units, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Activity. ..... 10 U
Inhibiting zone diameter of the test strains. .... complies

1458.2	50 discs	plastic	9,60 €
1458.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Chloroamphenicol (C)

Roti®-Antibiotic Discs Chloroamphenicol (C) NEW

30 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Concentration. ..... 30 µg
Inhibiting zone diameter of the test strains..... complies

1461.2	50 discs	plastic	9,60 €
1461.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Colistin (CL)

Roti®-Antibiotic Discs Colistin (CL) NEW

10 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Concentration. ..... 10 µg
Inhibiting zone diameter of the test strains. .... complies

1462.2	50 discs	plastic	10,65 €
1462.1	5 x 50 discs	plastic	32,15 €

For further information, please see page 1478

Roti®-Antibiotic Discs Gentamycin (GEN)

Roti®-Antibiotic Discs Gentamycin (GEN) NEW

10 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Concentration. ..... 10 µg
Inhibiting zone diameter of the test strains. .... complies

1464.2	50 discs	plastic	9,60 €
1464.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Kanamycin (K)

Roti®-Antibiotic Discs Kanamycin (K) NEW

5 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Concentration. ..... 5 µg
Inhibiting zone diameter of the test strains. .... complies

1465.2	50 discs	plastic	10,65 €
1465.1	5 x 50 discs	plastic	32,15 €

For further information, please see page 1478

Roti®-Antibiotic Discs Nalidixic acid (NA)

Roti®-Antibiotic Discs Nalidixic acid (NA) NEW

30 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Concentration. ..... 30 µg
Inhibiting zone diameter of the test strains. .... complies

1466.2	50 discs	plastic	9,60 €
1466.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Neomycin (N)

Roti®-Antibiotic Discs Neomycin (N) NEW

10 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Concentration. ..... 10 µg
Inhibiting zone diameter of the test strains. .... complies

1467.2	50 discs	plastic	9,60 €
1467.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Novobiocin (NV)

Roti®-Antibiotic Discs Novobiocin (NV) NEW

30 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Concentration. ..... 30 µg
Inhibiting zone diameter of the test strains. .... complies

1468.2	50 discs	plastic	9,60 €
1468.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Nystatin (NS)

Roti®-Antibiotic Discs Nystatin (NS) NEW

100 units, for microbiology

For antimicrobial susceptibility testing of fungal cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Activity. ..... 100 U
Inhibiting zone diameter of the test strains. .... complies

1476.2	50 discs	plastic	9,60 €
1476.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Rifampicin (RIF)

Roti®-Antibiotic Discs Rifampicin (RIF) NEW

5 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

1496.2	50 discs	plastic	9,60 €
1496.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Streptomycin (S)

Roti®-Antibiotic Discs Streptomycin (S) NEW

10 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Concentration. ..... 10 µg
Inhibiting zone diameter of the test strains. .... complies

1497.2	50 discs	plastic	9,60 €
1497.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Tetracycline (TE)

Roti®-Antibiotic Discs Tetracycline (TE) NEW

30 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Guarantee analysis:

Concentration. ..... 30 µg
Inhibiting zone diameter of the test strains. .... complies

1498.2	50 discs	plastic	9,60 €
1498.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Ticarcillin (TI)

Roti®-Antibiotic Discs Ticarcillin (TI) NEW

75 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled • WGK 1

Guarantee analysis:

Concentration. ..... 75 µg
Inhibiting zone diameter of the test strains. .... complies

1499.2	50 discs	plastic	9,60 €
1499.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Antibiotic Discs Vancomycin (VA)

Roti®-Antibiotic Discs Vancomycin (VA) NEW

30 µg, for microbiology

For antimicrobial susceptibility testing of bacterial cultures.

Antimicrobial Susceptibility Disc

Storage temp.: -20 °C
Transport temp.: cooled • WGK 1

Guarantee analysis:

Concentration. ..... 30 µg
Inhibiting zone diameter of the test strains. .... complies

1501.2	50 discs	plastic	9,60 €
1501.1	5 x 50 discs	plastic	27,85 €

For further information, please see page 1478

Roti®-Aqua-P/C/I

▶ Roti®-Phenol/Chloroform/Isoamyl alcohol see p. 2291

Roti®-Aqua-Phenol

▶ Roti®-Phenol see p. 2291

Roti®-Aquatest Plates

Storage temp.: +4-15 °C
Transport temp.: cooled

Roti®-Aquatest Plate Cetr

Ph.Eur., ready-to-use, sterile, for microbiology

For isolation of *Pseudomonas aeruginosa*.

UN No. 3077 • ADR 9 III • WGK 3

Warning H400

Formulation:

Gelatin peptone (Pancreas hydrolysate). ..... 20 g/l
Magnesium chloride. ..... 1,4 g/l
Potassium sulphate. ..... 10 g/l
Cetrimide. ..... 0,3 g/l
Glycerol. ..... 10 ml/l
Agar. ..... 13,6 g/l
pH value. ..... 7,2 ±0,2
Colour. ..... opaque white
Growth of test strains. ..... complies
Diameter. ..... 55 mm

9646.1	30 pieces	box	49,35 €

For further information, please see page 1428

Roti®-Aquatest Plate m-CP

TWVO 2001, ready-to-use, sterile, for microbiology

For enumeration of *Clostridium perfringens*.

WGK 1

Formulation:

Saccharose. ..... 5 g/l
L-Cysteine hydrochloride. ..... 1 g/l
Magnesium sulphate heptahydrate. ..... 0,1 g/l
Iron(III)-chloride hexahydrate solution 4,5 %. ..... 2 ml
Bromocresol purple. ..... 0,04 g/l
Chromogene Mixture. ..... 0,16 g/l
D-Cycloserine. ..... 0,4 g/l
Polymyxin B sulphate. ..... 0,025 g/l
Tryptose. ..... 30 g/l
Yeast extract. ..... 20 g/l
Agar. ..... 15 g/l
pH value. ..... 7,6 ±0,2
Colour. ..... purple
Growth of test strains. ..... complies
Diameter. ..... 55 mm

9649.1	30 pieces	box	103,75 €

For further information, please see page 1429

Roti®-Aquatest Plate PCA

APHA, ISO 4833, ready-to-use, sterile, for microbiology

For enumeration of the aerobic microbial flora.

WGK 1

Formulation:

Casein peptone . ..... 5 g/l
Yeast extract. ..... 2,5 g/l
Glucose. ..... 1 g/l
Agar. ..... 14 g/l
pH value. ..... 7,0 ±0,2
Colour. ..... amber, slightly opalescent
Growth of test strains. ..... complies
Diameter. ..... 55 mm

9640.1	30 pieces	box	49,35 €

For further information, please see page 1427

Roti®-Aquatest Plate R2A

Ph.Eur., ready-to-use, sterile, for microbiology

For enumeration of heterotrophic bacteria.

WGK 1

Formulation:

Yeast extract. ..... 0,5 g/l
Peptone. ..... 0,5 g/l
Casein hydrolysed. ..... 0,5 g/l
Glucose. ..... 0,5 g/l
Starch. ..... 0,5 g/l
di-Potassium hydrogen phosphate. ..... 0,3 g/l
Magnesium sulphate ($MgSO_4$). ..... 0,024 g/l
Sodium pyruvate. ..... 0,3 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,2
Colour. ..... amber
Growth of test strains. ..... complies
Diameter. ..... 55 mm

9644.1	30 pieces	box	60,10 €

For further information, please see page 1428

Roti®-Aquatest Plate Sab4

Ph.Eur., ready-to-use, sterile, for microbiology

For cultivation of yeasts and fungi.

WGK 1

Formulation:

Glucose. ..... 40 g/l
Meat and casein peptone. ..... 10 g/l
Agar. ..... 15 g/l
pH value. ..... 5,6 ±0,2
Colour. ..... amber, slightly opalescent
Growth of test strains. ..... complies
Diameter. ..... 55 mm

9643.1	30 pieces	box	49,35 €

For further information, please see page 1429

Roti®-Aquatest Plate Staph

Ph.Eur., ready-to-use, sterile, for microbiology

For isolation of pathogenic staphylococci.

WGK 2

Formulation:

Pancreatic digest of casein. ..... 5 g/l
Peptone (peptic digest of animal tissue). ..... 5 g/l
Beef extract. ..... 1 g/l
Sodium chloride (NaCl). ..... 75 g/l
D-Mannitol. ..... 10 g/l
Phenol red. ..... 0,025 g/l
Agar. ..... 15 g/l
pH value. ..... 7,4 ±0,2
Colour. ..... red
Growth of test strains. ..... complies
Diameter. ..... 55 mm

9650.1	30 pieces	box	49,35 €

For further information, please see page 1429

Roti®-Aquatest Plate Strep

DEV, ISO 7899-2, ready-to-use, sterile, for microbiology

For enumeration of intestinal streptococci.

WGK 2

Warning H312-H412-EUH032

Formulation:

di-Potassium hydrogen phosphate. ..... 4 g/l
Sodium azide. ..... 0,4 g/l
Tetrazolium chloride (TTC). ..... 0,1 g/l
Tryptose. ..... 20 g/l
Yeast extract. ..... 5 g/l
Glucose. ..... 2 g/l
Agar. ..... 12 g/l
pH value. ..... 7,2 ±0,1
Colour. ..... amber, slightly opalescent
Growth of test strains. ..... complies
Diameter. ..... 55 mm

9648.1	30 pieces	box	56,90 €

For further information, please see page 1429

Roti®-Aquatest Plate YE

DEV, ISO 6222, ready-to-use, sterile, for microbiology

For enumeration of microorganisms in general, e.g. bacteria, moulds or yeast.

WGK 1

Formulation:

Tryptone. ..... 6 g/l
Yeast extract. ..... 3 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,2
Colour. ..... amber, slightly opalescent
Growth of test strains. ..... complies
Diameter. ..... 55 mm

9642.1	30 pieces	box	49,35 €

For further information, please see page 1428

Roti®-Black N

Roti®-Black N

silver staining kit for DNA-polyacrylamide gels

UN No. 3316 • ADR 9 II • WGK 3

Danger

H272-H301+H311+H331-H314-H317-H341-H350-H370-H410

N769.1	for 10 gels of max. 10 ml gel volume	97,75 €
N769.2	for 10 gels of max. 40 ml gel volume	170,95 €

For further information, please see page 1219

Roti®-Black NSeq

Roti®-Black NSeq

silver staining kit for sequencing gels

UN No. 3316 • ADR 9 II • WGK 3

Danger H272-H301+H311+H331-H314-H317-H341-H350-H370-H410

P081.1	for 10 gels of max. 48 ml gel volume	139,25 €

For further information, please see page 1219

Roti®-Black P

Roti®-Black P

silver staining kit for proteins

UN No. 3316 • ADR 9 II • WGK 3

Danger H272-H301+H311+H331-H314-H317-H341-H350-H370-H410

L533.1	for 10 gels of 10 ml vol. each	78,40 €
L533.2	for 10 gels of 40 ml vol. each	94,50 €

For further information, please see page 1218

Roti®-Block

Roti®-Block

ready-to-use, 10x conc.

Protein free blocking solution.
Contains Tween® 20.
D 1,086
Storage temp.: +20 °C
WGK 1

A151.1	250 ml	glass	51,10 €
A151.4	500 ml	glass	85,90 €
A151.2	1 l	glass	155,90 €
Original pack 6 x 1 l			148,11/1 l
A151.3	2,5 l	glass	289,75 €
Original pack 4 x 2,5 l			275,26/2,5 l

For further information, please see page 1367

Roti®-Blot 1

Roti®-Blot 1

Discontinuous transfer buffer for semi dry blotting.

Storage temp.: +20 °C
WGK 1

Warning H315-H319

L509.1	1 Set	glass	103,10 €

For further information, please see page 1261

Roti®-Blot A

Roti®-Blot A

anode buffer to Roti®-Blot 1, 10x conc.

Storage temp.: +20 °C
WGK 1

Warning H315-H319

L510.1	1 l	glass	62,25 €
Original pack 6 x 1 l			59,14/1 l

For further information, please see page 1261

Roti®-Blot K

Roti®-Blot K

cathode buffer to Roti®-Blot 1, 10x conc.

Storage temp.: +20 °C
WGK 1

L511.1	1 l	glass	64,40 €
Original pack 6 x 1 l			61,18/1 l

For further information, please see page 1261

Roti®-Blue

Roti®-Blue

5x concentrated

Colloidal Coomassie® staining solution for protein gels.
1 l concentrate is sufficient for 50 mini gels.
Storage temp.: +20 °C
WGK 1

Type analysis:

Appearance.....dark blue, colloidal solution
pH value. 1-4

A152.2	250 ml	plastic	32,15 €
A152.1	1 l	plastic	93,00 €
Original pack 6 x 1 l			88,35/1 l

For further information, please see page 1217

Roti®-Blue quick

Roti®-Blue quick

ready-to-use 1x conc. solution

Solution for rapid, sensitive staining of protein gels.
1 l solution is sufficient for approx. 40 mini gels.
Storage temp.: +4 °C
WGK 1

4829.1	250 ml	glass	67,20 €
4829.2	1 l	glass	228,45 €
Original pack 6 x 1 l			217,03/1 l

For further information, please see page 1216

Roti®-C/I

Roti®-C/I

for extraction of nucleic acids

Chloroform/Isoamyl alcohol at a ratio of 24:1.
Storage temp.: +20 °C
UN No. 1888 • ADR 6.1 III • WGK 3

Danger

H331-H372-H351-H361d-H302-H315-H319

X984.3	100 ml	glass	11,30 €
X984.1	250 ml	glass	17,10 €
X984.2	500 ml	glass	26,80 €

For further information, please see page 1263

Roti®-CELL Bicarbonate solution

Roti®-CELL Bicarbonate solution

CELLPURE® sterile, 7,5 %

For cell culture
Sodium bicarbonate solution in water

Type analysis:

Sodium bicarbonate. .....7,5 %
pH value. 7,5-8,1
Osmolality. ..... 266-354 mOsm/kg
Endotoxins. ..... <1,0 EU/ml
Toxicity ..... none detected
Sterility. .....complies

9165.1	100 ml	plastic	13,45 €

For further information, please see page 1375

Roti®-CELL DMEM : F12

Roti®-CELL DMEM : F12

CELLPURE® ready-to-use, sterile, with glutamine, with pyruvate, with HEPES

Medium for analysis of hormones and growth factors in cell culture.

Dulbecco's Modified Eagle Medium + Ham's F12 medium (1:1)

Storage temp.: +4 °C

Type analysis:

Glucose. ..... 3,15 g/l
HEPES. ..... 15 mM
pH value. 7,0-7,4
Osmolality. ..... 286-356 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9031.1	500 ml	plastic	16,05 €

For further information, please see page 1373

Roti®-CELL DMEM High Glucose

Dulbecco's Modified Eagle Medium

Storage temp.: +4 °C

Roti®-CELL DMEM High Glucose

CELLPURE® ready-to-use, sterile, with glutamine, with pyruvate

Medium for a wide range of mammalian cell culture applications.

Type analysis:

Glucose. ..... 4,5 g/l
L-Glutamine. ..... complies
pH value. 7,0-7,4
Osmolality. ..... 324-352 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9005.1	500 ml	plastic	13,45 €

For further information, please see page 1372

Roti®-CELL DMEM High Glucose

CELLPURE® ready-to-use, sterile, with glutamine, w/o pyruvate

Medium for a wide range of mammalian cell culture applications.

Type analysis:

Glucose. ..... 4,5 g/l
L-Glutamine. ..... complies
pH value. 7,0-7,4
Osmolality. ..... 318-360 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9006.1	500 ml	plastic	13,45 €

For further information, please see page 1372

Roti®-CELL DMEM High Glucose

CELLPURE® ready-to-use, sterile, with stable glutamine, with pyruvate

Medium for a wide range of mammalian cell culture applications.

Type analysis:

Glucose. ..... 4,5 g/l
L-Glutamine, stable. ..... complies
pH value. 7,0-7,4
Osmolality. ..... 324-352 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9007.1	500 ml	plastic	14,55 €

For further information, please see page 1372

Roti®-CELL DMEM High Glucose

CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate

Medium for a wide range of mammalian cell culture applications.

Type analysis:

Glucose. ..... 4,5 g/l
pH value. 7,0-7,4
Osmolality. ..... 324-352 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9010.1	500 ml	plastic	13,45 €

For further information, please see page 1372

Roti®-CELL DMEM High Glucose

CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate, with HEPES

Medium for a wide range of mammalian cell culture applications.

Type analysis:

Glucose. ..... 4,5 g/l
HEPES. ..... 25 mM
pH value. 7,0-7,4
Osmolality. ..... 321-351 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9011.1	500 ml	plastic	17,75 €

For further information, please see page 1372

Roti®-CELL DMEM High Glucose

CELLPURE® ready-to-use, sterile, w/o glutamine, w/o pyruvate

Medium for a wide range of mammalian cell culture applications.

Type analysis:

Glucose. ..... 4,5 g/l
pH value. 7,0-7,4
Osmolality. ..... 318-360 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9019.1	500 ml	plastic	13,45 €

For further information, please see page 1372

Roti®-CELL DMEM High Glucose

CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate, w/o phenol red

Medium for a wide range of mammalian cell culture applications.

Type analysis:

Glucose. ..... 4,5 g/l
pH value. 7,0-7,4
Osmolality. ..... 324-352 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9023.1	500 ml	plastic	19,90 €

For further information, please see page 1372

Roti®-CELL DMEM Low Glucose

Dulbecco's Modified Eagle Medium

Storage temp.: +4 °C

Roti®-CELL DMEM Low Glucose

CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate

Medium for culturing of adherent mammalian cell lines.

Type analysis:

Glucose. ..... 1,0 g/l
pH value. 7,0-7,4
Osmolality. ..... 306-346 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9027.1	500 ml	plastic	13,45 €

For further information, please see page 1373

Roti®-CELL DMEM Low Glucose

CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate, with HEPES

Medium for culturing of adherent mammalian cell lines.

Type analysis:

Glucose. ..... 1,0 g/l
HEPES. ..... 25 mM
pH value. 7,0-7,4
Osmolality. ..... 300-326 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9030.1	500 ml	plastic	16,70 €

For further information, please see page 1373

Roti®-CELL DPBS

Phosphate buffered saline acc. to Dulbecco, DPBS

Roti®-CELL DPBS

CELLPURE® ready-to-use, sterile, w/o Ca/Mg

Balanced salt solution for cell culture

Type analysis:

pH value. 7,3-7,7
Osmolality. ..... 271-287 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9124.1	500 ml	plastic	13,90 €
9124.2	1 l	plastic	21,00 €
Original pack 6 x 1 l			19,95/1 l

For further information, please see page 1377

Roti®-CELL 10x DPBS

CELLPURE® sterile, w/o Ca/Mg

Balanced salt solution for cell culture

10x ready-made solution

Type analysis:

pH value. 7,3-7,7
Osmolality. ..... 271-287 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9130.1	500 ml	plastic	18,20 €
9130.2	1 l	plastic	22,50 €
Original pack 6 x 1 l			21,38/1 l

For further information, please see page 1377

Roti®-CELL DPBS

CELLPURE® ready-to-use, sterile, with Ca/Mg

Balanced salt solution for cell culture

Type analysis:

pH value. 6,9-7,2
Osmolality. ..... 275-292 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity . ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9131.1	500 ml	plastic	13,90 €
9131.2	1 l	plastic	21,00 €
Original pack 6 x 1 l			19,95/1 l

For further information, please see page 1377

Roti®-CELL DPBS/EDTA

Roti®-CELL DPBS/EDTA

CELLPURE® sterile, 0,02 % EDTA (Versene®), w/o Ca/Mg

Balanced salt solution with EDTA for cell culture.

EDTA solution in DPBS

Type analysis:

EDTA (Versene®). ..... 0,02 %
pH value. 7,0-7,5
Osmolality. ..... 275-291 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity . ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9135.1	100 ml	plastic	16,70 €

For further information, please see page 1387

Roti®-CELL Eagle's MEM-Alpha

Minimum Essential Medium acc. to Eagle, Alpha modification

Storage temp.: +4 °C

Roti®-CELL Eagle's MEM-Alpha

CELLPURE® ready-to-use, sterile, w/o glutamine, w/o nucleosides

Medium for culturing of bone marrow and amniotic cells.

Type analysis:

Alpha modification. ..... complies
pH value. 6,9-7,3
Osmolality. ..... 281-317 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9058.1	500 ml	plastic	15,60 €

For further information, please see page 1373

Roti®-CELL Eagle's MEM-Alpha

CELLPURE® ready-to-use, sterile, with stable glutamine, with nucleosides

Medium for culturing of bone marrow and amniotic cells.

Type analysis:

L-Glutamine, stable. ..... complies
Alpha modification. ..... complies
Ribonucleosides. ..... complies
Deoxyribonucleosides. ..... complies
pH value. 6,7-7,3
Osmolality. ..... 285-315 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9082.1	500 ml	plastic	28,95 €

For further information, please see page 1373

Roti®-CELL Eagle's MEM / Earle's

Minimum Essential Medium acc. to Eagle with Earle's salts

Storage temp.: +4 °C

Roti®-CELL Eagle's MEM / Earle's

CELLPURE® ready-to-use, sterile, with glutamine

Medium for a wide range of mammalian cell culture applications.

Type analysis:

L-Glutamine. ..... complies
Salts acc. to Earle. ..... complies
pH value. 6,9-7,3
Osmolality. ..... 280-308 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9044.1	500 ml	plastic	14,55 €

For further information, please see page 1373

Roti®-CELL Eagle's MEM / Earle's

CELLPURE® ready-to-use, sterile, w/o glutamine

Medium for a wide range of mammalian cell culture applications.

Type analysis:

Salts acc. to Earle. ..... complies
pH value. 6,7-7,3
Osmolality. ..... 285-301 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9047.1	500 ml	plastic	13,45 €

For further information, please see page 1373

Roti®-CELL Eagle's MEM / Earle's

CELLPURE® ready-to-use, sterile, w/o glutamine, with HEPES

Medium for a wide range of mammalian cell culture applications.

Type analysis:

HEPES. ..... 25 mM
Salts acc. to Earle. ..... complies
pH value. 6,8-7,3
Osmolality. ..... 284-305 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9048.1	500 ml	plastic	15,60 €

For further information, please see page 1373

Roti®-CELL Eagle's MEM / Earle's

CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate, with NEAA

Medium for a wide range of mammalian cell culture applications.

Type analysis:

Salts acc. to Earle. ..... complies
Non essential amino acids. ..... complies
pH value. 7,0-7,3
Osmolality. ..... 287-303 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9049.1	500 ml	plastic	15,60 €

For further information, please see page 1373

Roti®-CELL Eagle's MEM / Hanks'

Roti®-CELL Eagle's MEM / Hanks'

CELLPURE® ready-to-use, sterile, w/o glutamine

Medium for a wide range of mammalian cell culture applications.

Minimum Essential Medium acc. to Eagle with Hanks' salts

Storage temp.: +4 °C

Type analysis:

Salts acc. to Hanks. ..... complies
pH value. 6,9-7,4
Osmolality. ..... 286-307 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9056.1	500 ml	plastic	16,70 €

For further information, please see page 1373

Gelatine solution

- Roti®-CELL 0.1% Gelatine solution see p. 2268
- Roti®-CELL 2% Gelatine solution see p. 2269

Roti®-CELL 0.1% Gelatine solution

Roti®-CELL 0.1% Gelatine solution

NEW

sterile, 0,1 % conc., in PBS w/o Ca/Mg

From porcine skin, for cell culture, protein biochemistry and molecular biology.

Gelatine solution

Storage temp.: +4 °C
Transport temp.: cooled
WGK 1

Type analysis:

pH value. 7,2-7,8
Osmolality. ..... tested
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

0621.1	500 ml	plastic	31,75 €

For further information, please see page 1380

Roti®-CELL 2% Gelatine solution

Roti®-CELL 2% Gelatine solution

NEW

sterile, 2 % conc., in PBS w/o Ca/Mg

From porcine skin, for cell culture, protein biochemistry and molecular biology.

Gelatine solution

Storage temp.: +4 °C
Transport temp.: cooled

WGK 1

Type analysis:

pH value. ..... tested
Osmolality. ..... tested
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

0646.1	100 ml	plastic	21,00 €

For further information, please see page 1381

Roti®-CELL Glutamine solution

Roti®-CELL Glutamine solution

CELLPURE® sterile, 200 mM

Temperature-stable. For cell culture.

Alanyl-L-glutamine solution in 145 mM NaCl

Type analysis:

Glutamin, stable. ..... 200 mM
pH value. 5,58-6,78
Osmolality. ..... 423-499 mOsm/kg
Endotoxins. ..... <1,0 EU/ml
Sterility. ..... complies

9183.1	100 ml	plastic	17,75 €

For further information, please see page 1375

Roti®-CELL Ham's F12

Roti®-CELL Ham's F12

CELLPURE® ready-to-use, sterile, with glutamine, with pyruvate

Medium for culturing of a variety of mammalian- and hybridoma cells, especially CHO cells.

Ham's F12 cell culture medium

Storage temp.: +4 °C

Type analysis:

L-Glutamine. ..... complies
pH value. 7,0-7,4
Osmolality. ..... 286-305 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9108.1	500 ml	plastic	14,95 €

For further information, please see page 1374

Roti®-CELL Hanks' BSS

Hanks' salt solution, HBSS

Roti®-CELL Hanks' BSS

CELLPURE® ready-to-use, sterile, w/o Ca/Mg, w/o phenol red

Balanced salt solution for cell culture

Type analysis:

Glucose. ..... 1,0 g/l
pH value. 7,1-7,5
Osmolality. ..... 270-286 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity . ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9117.1	500 ml	plastic	11,75 €

For further information, please see page 1377

Roti®-CELL Hanks' BSS

CELLPURE® ready-to-use, sterile, w/o Ca/Mg, with phenol red

Balanced salt solution for cell culture

Type analysis:

Glucose. ..... 1,0 g/l
pH value. 7,1-7,5
Osmolality. ..... 270-286 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity . ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9118.1	500 ml	plastic	12,40 €

For further information, please see page 1377

Roti®-CELL Hanks' BSS

CELLPURE® ready-to-use, sterile, with Ca/Mg, w/o phenol red

Balanced salt solution for cell culture

Type analysis:

Glucose. ..... 1,0 g/l
pH value. 7,0-7,4
Osmolality. ..... 274-290 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity . ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9119.1	500 ml	plastic	11,75 €

For further information, please see page 1377

Roti®-CELL Hanks' BSS

CELLPURE® ready-to-use, sterile, with Ca/Mg, with phenol red

Balanced salt solution for cell culture

Type analysis:

Glucose. ..... 1,0 g/l
pH value. 7,1-7,4
Osmolality. ..... 277-299 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity . ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9122.1	500 ml	plastic	16,70 €

For further information, please see page 1377

Roti®-CELL HEPES solution

Roti®-CELL HEPES solution

CELLPURE® sterile, 1 M

For cell culture

HEPES solution in 145 mM NaCl

Type analysis:

HEPES. ..... 1 M
pH value. 6,98-7,3
Osmolality. ..... 265-341 mOsm/kg
Toxicity ..... none detected
Sterility. ..... complies

9157.1	100 ml	plastic	23,55 €

For further information, please see page 1375

Roti®-CELL Iscove's MDM

Iscove's Modified Dulbecco's Medium

Storage temp.: +4 °C

Roti®-CELL Iscove's MDM

CELLPURE® ready-to-use, sterile, with glutamine, with pyruvate, with HEPES

Medium for a wide range of mammalian cell culture applications.

Type analysis:

Glucose. ..... 4,5 g/l
L-Glutamine. ..... complies
HEPES. ..... 25 mM
pH value. 6,95-7,15
Osmolality. ..... 275-305 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9033.1	500 ml	plastic	17,75 €

For further information, please see page 1373

Roti®-CELL Iscove's MDM

CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate, with HEPES

Medium for a wide range of mammalian cell culture applications.

Type analysis:

Glucose. ..... 4,5 g/l
HEPES. ..... 25 mM
pH value. 6,95-7,15
Osmolality. ..... 275-305 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9035.1	500 ml	plastic	17,75 €

For further information, please see page 1373

Roti®-CELL Leibovitz's L15

Roti®-CELL Leibovitz's L15

CELLPURE® ready-to-use, sterile, w/o glutamine, with galactose

Medium for culture of mammalian cells without CO_2 atmosphere.

Leibovitz's cell culture medium

Storage temp.: +4 °C

Type analysis:

Galactose. ..... 0,9 g/l
pH value. 7,3-7,75
Osmolality. ..... 309-332 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9109.1	500 ml	plastic	24,20 €

For further information, please see page 1374

Roti®-CELL McCoy's 5A

Roti®-CELL McCoy's 5A

CELLPURE® ready-to-use, sterile, with glutamine

Medium for culturing of a variety of mammalian cell lines and primary cells.

McCoys 5A cell culture medium

Storage temp.: +4 °C

Type analysis:

L-Glutamine. ..... complies
pH value. 6,9-7,2
Osmolality. ..... 290-307 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9111.1	500 ml	plastic	22,50 €

For further information, please see page 1374

Roti®-CELL Medium 199 / Earle's

Roti®-CELL Medium 199 / Earle's

CELLPURE® ready-to-use, sterile, with glutamine, with HEPES

Medium for cell culture in virology and vaccine production.

Medium 199 with Earle's salts

Storage temp.: +4 °C

Type analysis:

L-Glutamine. ..... complies
HEPES. ..... 25 mM
Salts acc. to Earle. ..... complies
pH value. 6,9-7,3
Osmolality. ..... 294-333 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9112.1	500 ml	plastic	19,25 €

For further information, please see page 1375

Roti®-CELL MEM-AA solution

Roti®-CELL MEM-AA solution

NEW

CELLPURE® sterile, 50x conc., w/o glutamine

For cell culture.

Essential amino acids, solution in water

Storage temp.: +4 °C
Transport temp.: cooled
WGK 1

Type analysis:

pH value. 1,2-1,6
Cell growth promotion test. ..... complies
Sterility. ..... complies

0647.1	100 ml	plastic	23,15 €

For further information, please see page 1376

Roti®-CELL MEM-NEAA solution

Roti®-CELL MEM-NEAA solution

CELLPURE® sterile, 100x conc., 10 mM each

For cell culture.

Non essential amino acids, solution in water

Storage temp.: +4 °C

Type analysis:

L-Alanine. ..... 0,89 g/l
L-Asparagine. ..... 1,321 g/l
L-Aspartic acid. ..... 1,33 g/l
L-Glutamic acid. ..... 1,47 g/l
Glycine. ..... 0,75 g/l
L-Proline. ..... 1,15 g/l
L-Serine. ..... 1,05 g/l
pH value. 2,15-3,35
Osmolality. ..... 72-105 mOsm/kg
Endotoxins. ..... <1,0 EU/ml
Sterility. ..... complies

9185.1	100 ml	plastic	17,75 €

For further information, please see page 1376

Roti®-CELL Myco-Free

Roti®-CELL Myco-Free

CELLPURE® 50x conc., ready-to-use, sterile

For elimination of mycoplasm contamination in cell culture.

One bottle of 100 ml is sufficient for approx. 300 applications.

Mycoplasm eradication solution

Storage temp.: -20 °C
Transport temp.: cooled
WGK 3

Guarantee analysis:

Appearance of solution. ..... clear, colourless
pH value. 4,0-4,5
Osmolality. 280-340
Endotoxins. ..... <10 EU/ml
Sterility. ..... complies
Toxicity . ..... none detected

9830.1	100 ml	plastic	228,45 €

For further information, please see page 1383

Roti®-CELL PBS

Phosphate buffered saline, PBS without Ca/Mg

Roti®-CELL PBS

CELLPURE® ready-to-use, sterile

Balanced salt solution for cell culture.

Type analysis:

pH value. 7,3-7,5
Osmolality. ..... 287-309 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity . ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9143.1	500 ml	plastic	12,80 €
9143.2	1 l	plastic	15,60 €
Original pack 6 x 1 l			14,82/1 l

For further information, please see page 1379

Roti®-CELL 10x PBS

CELLPURE® sterile

Balanced salt solution for cell culture

10x ready-made solution

Type analysis:

pH value. 7,3-7,5
Osmolality. ..... 287-309 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9150.1	1 l	plastic	19,25 €
Original pack 6 x 1 l			18,29/1 l

For further information, please see page 1379

Roti®-CELL PBS/EDTA

Roti®-CELL PBS/EDTA

CELLPURE® sterile, 0,046 % EDTA

Balanced salt solution with EDTA for cell culture.

EDTA solution in PBS

Type analysis:

EDTA. ..... 0,046 %
pH value. 7,4-7,6
Osmolality. ..... 290-320 mOsm/kg
Endotoxins. ..... ≤0,25 EU/ml
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9152.1	500 ml	plastic	12,40 €

For further information, please see page 1387

Roti®-CELL Pyruvate solution

Roti®-CELL Pyruvate solution

CELLPURE® sterile, 100 mM

For cell culture.

Sodium pyruvate solution in water.

Storage temp.: +4 °C

Type analysis:

Sodium pyruvate. ..... 100 mM
Osmolality. ..... 178-198 mOsm/kg
Endotoxins. ..... <1,0 EU/ml
Sterility. ..... complies

9182.1	100 ml	plastic	10,65 €

For further information, please see page 1376

Roti®-CELL RPMI-1640

RPMI cell culture medium

Storage temp.: +4 °C

Roti®-CELL RPMI-1640

CELLPURE® ready-to-use, sterile, with glutamine

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes.

Type analysis:

L-Glutamine. ..... complies
pH value. 6,9-7,3
Osmolality. ..... 271-295 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9085.1	500 ml	plastic	13,45 €

For further information, please see page 1374

Roti®-CELL RPMI-1640

CELLPURE® ready-to-use, sterile, with glutamine, with HEPES

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes.

Type analysis:

L-Glutamine. ..... complies
HEPES. ..... 25 mM
pH value. 7,1-7,4
Osmolality. ..... 271-315 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9086.1	500 ml	plastic	14,95 €

For further information, please see page 1374

Roti®-CELL RPMI-1640

CELLPURE® ready-to-use, sterile, with stable glutamine

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes.

Type analysis:

L-Glutamine, stable. ..... complies
pH value. 6,9-7,3
Osmolality. ..... 271-295 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9091.1	500 ml	plastic	14,55 €

For further information, please see page 1374

Roti®-CELL RPMI-1640

CELLPURE® ready-to-use, sterile, with stable glutamine, with HEPES

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes

Type analysis:

L-Glutamine, stable. ..... complies
HEPES. ..... 25 mM
pH value. 7,1-7,5
Osmolality. ..... 271-315 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9093.1	500 ml	plastic	16,70 €

For further information, please see page 1374

Roti®-CELL RPMI-1640

CELLPURE® ready-to-use, sterile, with glutamine, w/o glucose

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes

Type analysis:

L-Glutamine. ..... complies
pH value. 6,9-7,3
Osmolality. ..... 260-282 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9094.1	500 ml	plastic	54,75 €

For further information, please see page 1374

Roti®-CELL RPMI-1640

CELLPURE® ready-to-use, sterile, w/o glutamine

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes.

Type analysis:

pH value. 6,9-7,4
Osmolality. ..... 270-293 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9099.1	500 ml	plastic	13,45 €

For further information, please see page 1374

Roti®-CELL RPMI-1640

CELLPURE® ready-to-use, sterile, w/o glutamine, w/o phenol red

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes

Type analysis:

pH value. 6,9-7,4
Osmolality. ..... 270-293 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9104.1	500 ml	plastic	16,70 €

For further information, please see page 1374

Roti®-CELL TC100

Roti®-CELL TC100

CELLPURE® ready-to-use, sterile, with glutamine

Medium for culture of Sf9 cells.
TC100 cell culture medium; BML-TC/100
Storage temp.: +4 °C

Type analysis:

L-Glutamine. ..... complies
pH value. 6,1-6,7
Osmolality. ..... 332-368 mOsm/kg
Sterility. ..... complies

9114.1	500 ml	plastic	27,45 €

For further information, please see page 1375

Roti®-CELL Water

Roti®-CELL Water

CELLPURE® sterile

For cell culture.

Type analysis:

Sterility. ..... complies
Endotoxins. ..... <0,25 EU/ml
Osmolality. ..... ≤7 mOsm/kg

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

9186.1	500 ml	plastic	10,25 €
9186.2	1 l	plastic	15,60 €
Original pack 6 x 1 l			14,82/1 l

Roti®-CELL William's E

Roti®-CELL William's E

CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate

Medium for long-term culturing of adult, primary liver epithelial cells.
William's E cell culture medium
Storage temp.: +4 °C

Type analysis:

Pyruvate. ..... complies
pH value. 7,0-7,4
Osmolality. ..... 290-318 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

9116.1	500 ml	plastic	22,50 €

For further information, please see page 1375

Roticlear®

Roticlear®

for histology

Clearing agent of aliphatic hydrocarbons, practically free from aromatic compounds.
For dewaxing of histological sections.
Alternative product for xylene.
D 0,755 • bp 135-170 °C
mp -60 °C • flp >23 °C
[64742-48-9] • EC No. 265-150-3
UN No. 3295 • ADR 3 III • WGK 2

Danger

H226-H304-H336-H412-EUH066

Type analysis:

Density (15 °C). 0,7460-0,7638
Colour (Hazen). ..... <10
Flash point. ..... >23 °C
Boiling range. ..... 130-170 °C
Aromatic compounds. ..... ≤0,005 %

A538.1	1 l	glass	16,70 €
Original pack 6 x 1 l			15,87/1 l
A538.5	2,5 l	glass	31,10 €
Original pack 4 x 2,5 l			29,55/2,5 l
A538.2	10 l	tinplate	92,35 €
A538.3	25 l	tinplate	184,40 €
A538.4	200 l	barrel	794,45 €

For further information, please see page 1496

Roti®-ContiPlate CASO

▶ Roti®-ContiPlate TSA see p. 2272

Roti®-ContiPlates

Storage temp.: +4-15 °C
Transport temp.: cooled

Roti®-ContiPlate MacCon

NEW

ready-to-use, sterile, for microbiology

For the study of enterobacteria on surfaces.
WGK 1

Formulation:

Gelatine peptone. ..... 17 g/l
Meat and casein peptone. ..... 3 g/l
Lactose. ..... 10 g/l
Bile salt (Cholate). ..... 1,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Neutral red. ..... 0,03 g/l
Crystal Violet. ..... 0,001 g/l
Agar. ..... 15 g/l
pH value. ..... 7,1±0,2
Colour. ..... pink
Growth of test strains. ..... complies
Diameter. ..... 60 mm

2313.1	30 pieces	box	62,25 €

For further information, please see page 1419

Roti®-ContiPlate PCA

ready-to-use, sterile, for microbiology

For total germ count on surfaces.

WGK 1

Formulation:

Casein peptone	5 g/l
Yeast extract	2,5 g/l
Glucose	1 g/l
Agar	15 g/l
pH value	7,0 ±0,2
Colour	amber, slightly opalescent
Growth of test strains	complies
Diameter	60 mm

9630.1	30 pieces	box	62,25 €

For further information, please see page 1425

Roti®-ContiPlate RBC

ready-to-use, sterile, for microbiology

For counting yeasts and moulds on surfaces.

WGK 3

Danger H318

Formulation:

Glucose	10 g/l
Peptone	5 g/l
Potassium phosphate	1 g/l
Magnesium sulphate ($MgSO_4$)	0,5 g/l
Chloroamphenicol	0,1 g/l
Bengal red	0,05 g/l
Agar	15 g/l
pH value	7,2 ±0,2
Colour	intense pink
Growth of test strains	complies
Diameter	60 mm

9632.1	30 pieces	box	62,25 €

For further information, please see page 1419

Roti®-ContiPlate Sab4plus

ready-to-use, sterile, for microbiology

For selective detection of yeasts and pathogenic fungi on surfaces.

WGK 3

Formulation:

Glucose	40 g/l
Meat and casein peptone	10 g/l
Chloroamphenicol	0,5 g/l
Agar	15 g/l
pH value	5,6 ±0,2
Colour	amber, slightly opalescent
Growth of test strains	complies
Diameter	60 mm

9633.1	30 pieces	box	62,25 €

For further information, please see page 1425

Roti®-ContiPlate TSA

NEW

ready-to-use, sterile, for microbiology

For total germ count on surfaces.

Roti®-ContiPlate CASO

WGK 1

Formulation:

Casein peptone	15 g/l
Soy peptone	5 g/l
Sodium chloride (NaCl)	5 g/l
Agar	15 g/l
pH value	7,3±0,2
Colour	straw-colored
Growth of test strains	complies
Diameter	60 mm

2312.1	30 pieces	box	62,25 €

For further information, please see page 1425

Roti®-ContiPlate TSA-Letheen

ready-to-use, sterile, for microbiology

For detection of microorganisms on disinfected surfaces.

WGK 2

Warning H319

Formulation:

Pancreatic digest of casein	15 g/l
Soy peptone (papain hydrolysate)	5 g/l
Sodium chloride (NaCl)	5 g/l
Triton® X-100	1,0 g/l
Lecithin	0,7 g/l
Polysorbate 80	5 g/l
Agar	15 g/l
pH value	7,0 ±0,2
Colour	amber, slightly opalescent
Growth of test strains	complies
Diameter	60 mm

9634.1	30 pieces	box	62,25 €

For further information, please see page 1419

Roti®-ContiPlate VRB

NEW

ready-to-use, sterile, for microbiology

For the study of coliforms on surfaces.

WGK 3

Formulation:

Yeast extract	3 g/l
Meat peptone	7 g/l
Sodium chloride (NaCl)	5 g/l
Bile salt (Cholate)	1,5 g/l
Lactose	10 g/l
Neutral red	0,03 g/l
Crystal Violet	0,002 g/l
Agar	15 g/l
pH value	7,4±0,2
Colour	violett-pink
Growth of test strains	complies
Diameter	60 mm

2314.1	30 pieces	box	62,25 €

For further information, please see page 1419

Roti®-ContiPlate VRBD

ready-to-use, sterile, for microbiology

For detection of enterobacteria on surfaces.

WGK 1

Formulation:

Glucose monohydrate	10 g/l
Gelatine peptone	7 g/l
Sodium chloride (NaCl)	5 g/l
Yeast extract	3 g/l
Bile salts	1,5 g/l
Neutral red	0,03 g/l
Crystal Violet	0,002 g/l
Agar	13 g/l
pH value	7,4 ±0,2
Colour	purple-red
Growth of test strains	complies
Diameter	60 mm

9631.1	30 pieces	box	62,25 €

For further information, please see page 1425

Roti®-DAB Kit

Roti®-DAB Kit

for immunochemistry

Substrate kit for detection of HRP activity on blot membranes and slides.

One kit is sufficient for staining of approx. 44 minigel blot membranes or 500 slides.

DAB substrate kit, HRP substrate kit

Storage temp.: +4 °C
Transport temp.: cooled

WGK 1

Danger

H302-H341-H351-H360D-H373

Type analysis:

Application test (Blotting)	complies
RNAse	≤1 ppb
DNAse	≤1 ppm

9202.1	1 kit	cardboard	188,70 €

For further information, please see page 1329

Roti®-DipSlides

Storage temp.: +4-15 °C
Transport temp.: cooled

Roti®-DipSlide CASO-TTC/ RBCenr

ready-to-use, sterile, for microbiology

For total germ count and for detection of yeasts and moulds in solution or on surface. Suitable for analysis of water-mixable cooling lubricants, air conditions, water-soluble paint, and cosmetics.

Formulation:

Agar side 1 (CASO-TTC):	
Caseine peptone	15 g/l
Soja peptone	5 g/l
Sodium chloride (NaCl)	5 g/l
TTC	0,02 g/l
Agar	15 g/l
pH value	7,3
Colour	amber, slightly opalescent
Growth of test strains	complies
Agar side 2 (RBCenr):	
Meat peptone	5 g/l
Casein peptone	5 g/l
Glucose	40 g/l
Bengal red	0,05 g/l
Trimethoprim	0,03 g/l
Gentamycin	0,03 g/l
Agar	15 g/l
pH-value	7,2
Colour	intense pink
Growth of test strains	complies

3934.1	20 pieces	box	64,40 €

For further information, please see page 1418

Roti®-DipSlide CLED/MacCon

ready-to-use, sterile, for microbiology

For detection of bacteria of the urinary tract and of enterobacteria/Coliforms in liquids or on surfaces.

Formulation:

Agar side 1 (CLED):	
Casein peptone	4 g/l
Gelatine peptone	4 g/l
Beef extract	3 g/l
Lactose	10 g/l
L-Cystine	0,128 g/l
Bromothymol blue	0,02 g/l

Agar. 15 g/l
pH value. 7,3
Colour. green
Growth of test strains. complies
Agar side 2 (MacCon):
Gelatin peptone (Pancreas hydrolysate). 17 g/l
Meat and casein peptone. 3 g/l
Lactose monohydrate. 10 g/l
Bile salt (Cholate). 1,5 g/l
Sodium chloride (NaCl). 5 g/l
Neutral red. 0,03 g/l
Crystal Violet. 0,001 g/l
Agar. 13,5 g/l
pH-value. 7,1
Colour. violet-red
Growth of test strains. complies

2957.1	20 slides	box	64,40 €

For further information, please see page 1422

Roti®-DipSlide D/Eneutral

ready-to-use, sterile, for microbiology

For total germ count on surface after disinfection. For hygiene monitoring. Contains 5 neutralizers.

WGK 1

Formulation:

Agar both sides (D/Eneutral):
Dextrose. 10 g/l
Lecithin. 7 g/l
Sodium thiosulphate. 6 g/l
Casein peptone. 5 g/l
Polysorbate 80. 5 g/l
Yeast extract. 2,5 g/l
Sodium bisulfite. 2,5 g/l
Sodium thioglycolate. 1 g/l
Bromocresol purple. 0,02 g/l
Agar. 15 g/l
pH value. 7,6 ±0,2
Colour. purple
Growth of test strains. complies

8023.1	20 slides	box	64,40 €

For further information, please see page 1418

Roti®-DipSlide MacCon/Cetr

ready-to-use, sterile, for microbiology

For detection of enterobacteria like salmonellae or shigellae and pseudomonads in liquids or on surfaces.

WGK 1

Formulation:

Agar side 1 (MacCon):
Gelatine peptone. 17,0 g/l
Meat and casein peptone. 3,0 g/l
Lactose monohydrate. 10,0 g/l
Sodium chloride (NaCl). 5,0 g/l
Bile salt (Cholate). 1,5 g/l
Neutral red. 0,03 g/l
Crystal Violet. 0,001 g/l
Agar. 13,5 g/l
pH value. 7,1 ± 0,2
Colour. violet-red
Growth of test strains. complies
Agar side 2 (Cetr):
Pancreas hydrolysate made from gelatin. 20,0 g/l
Magnesium chloride. 1,4 g/l
Potassium sulphate. 10,0 g/l
Cetrimide. 0,3 g/l
Agar. 13,6 g/l
pH-value. 7,2 ±0,2
Colour. opaque white
Growth of test strains. complies

8045.1	20 slides	box	64,40 €

For further information, please see page 1421

Roti®-DipSlide Nutrient-TTC

ready-to-use, sterile, for microbiology

For total germ count in liquids or on surfaces.

Formulation:

Agar side 1 (Nutrient):
Meat peptone. 5 g/l
Meat extract. 3 g/l
Agar. 12 g/l
pH value. 7,0
Colour. amber, slightly opalescent
Growth of test strains. complies
Agar side 2 (Nutrient-TTC):
Meat peptone. 5 g/l
Meat extract. 3 g/l
TTC. 0,05 g/l
Agar. 12 g/l
pH-value. 7,0
Colour. amber, slightly opalescent
Growth of test strains. complies

2837.1	20 pieces	box	64,40 €

For further information, please see page 1420

Roti®-DipSlide PCA

ready-to-use, sterile, for microbiology

For total germ count in liquids or on surfaces.

Formulation:

Agar both sides (PCA):
Casein peptone . 5 g/l
Yeast extract. 2,5 g/l
Glucose. 1 g/l
Agar. 15 g/l
pH value. 7,0
Colour. amber, slightly opalescent
Growth of test strains. complies

2927.1	20 slides	box	64,40 €

For further information, please see page 1421

Roti®-DipSlide PCA/Legionella

ready-to-use, sterile, for microbiology

For total germ count and for detection of legionells in solution or on surface.

Formulation:

Agar side 1 (PCA):
Casein peptone . 5 g/l
Yeast extract. 2,5 g/l
Glucose. 1 g/l
Agar. 15 g/l
pH value. 7,0
Colour. amber, slightly opalescent
Growth of test strains. complies
Agar side 2 (Legionella):
Yeast extract. 10 g/l
Charcoal activated. 2 g/l
GVPC selective additive. complies
Growth additive. complies
Agar. 13 g/l
pH-value. 6,9
Colour. black
Growth of test strains. complies

2493.1	20 pieces	box	64,40 €

For further information, please see page 1413

Roti®-DipSlide PCA/RBCplus

ready-to-use, sterile, for microbiology

For total germ count and for detection of yeasts and moulds in liquids or on surfaces.

Formulation:

Agar side 1 (PCA):
Casein peptone . 5 g/l
Yeast extract. 2,5 g/l
Glucose. 1 g/l
Agar. 15 g/l
pH value. 7,0
Colour. amber, slightly opalescent
Growth of test strains. complies
Agar side 2 (RBCplus):
Peptone. 5 g/l
Glucose. 10 g/l
Potassium phosphate. 1 g/l
Magnesium sulphate ($MgSO_4$). 0,5 g/l
Chloroamphenicol. 0,1 g/l
Bengal red. 0,05 g/l
Agar. 15 g/l
pH-value. 7,2
Colour. intense pink
Growth of test strains. complies

2926.1	20 slides	box	64,40 €

For further information, please see page 1416

Roti®-DipSlide PCA/TSA-Letheen

ready-to-use, sterile, for microbiology

For total germ count in liquids or on surfaces. Suitable for analysis of cosmetics and of preservative containing products or after disinfection. Contains two neutralizers.

WGK 2

Warning H319

Formulation:

Agar side 1 (PCA):
Casein peptone . 5,0 g/l
Glucose. 1,0 g/l
Yeast extract. 2,5 g/l
Agar. 15,0 g/l
pH value. 7,0 ± 0,2
Colour. amber, slightly opalescent
Growth of test strains. complies
Agar side 2 (TSA-Letheen):
Pancreatic digest of casein. 15,0 g/l
Soy peptone (papain hydrolysate). 5,0 g/l
Sodium chloride (NaCl). 5,0 g/l
Triton® X-100. 1,0 g/l
Lecithin. 1,0 g/l
Polysorbate 80. 5 g/l
Agar. 15,0
pH-value. 7,2 ±0,2
Colour. amber, slightly opalescent
Growth of test strains. complies

8715.1	20 slides	box	64,40 €

For further information, please see page 1417

Roti®-DipSlide PCA/VRB

ready-to-use, sterile, for microbiology

For total germ count and for detection of Coliforms in liquids or on surfaces.

Formulation:

Agar side 1 (PCA):
Casein peptone . 5 g/l
Yeast extract. 2,5 g/l
Glucose. 1 g/l
Agar. 15 g/l
pH value. 7,0
Colour. amber, slightly opalescent
Growth of test strains. complies
Agar side 2 (VRB):
Yeast extract. 3 g/l
Pancreas hydrolysate made from gelatin. 7 g/l
Sodium chloride (NaCl). 5 g/l
Bile salts. 1,5 g/l
Lactose. 10 g/l
Neutral red. 0,03 g/l
Crystal Violet. 0,002 g/l
Agar. 15 g/l
pH-value. 7,4
Colour. purple-red
Growth of test strains. complies

2925.1	20 slides	box	64,40 €

For further information, please see page 1422

Roti®-DipSlide PCA/VRBD

ready-to-use, sterile, for microbiology

For total germ count and for detection of enterobacteria in liquids or on surfaces.

Formulation:

Agar side 1 (PCA):
Casein peptone ..... 5 g/l
Yeast extract..... 2,5 g/l
Glucose. ..... 1 g/l
Agar..... 15 g/l
pH value. 7,0
Colour..... amber, slightly opalescent
Growth of test strains..... complies
Agar side 2 (VRBD):
Yeast extract..... 3 g/l
Pancreas hydrolysate made from gelatin..... 7 g/l
Sodium chloride (NaCl). ..... 5 g/l
Bile salts. ..... 1,5 g/l
Glucose monohydrate. ..... 10 g/l
Neutral red..... 0,03 g/l
Crystal Violet..... 0,002 g/l
Agar..... 15 g/l
pH-value. 7,4
Colour..... purple-red
Growth of test strains..... complies

2924.1	20 slides	box	64,40 €

For further information, please see page 1423

Roti®-DipSlide Sab4plus

ready-to-use, sterile, for microbiology

For detection of yeasts and moulds in liquids or on surfaces.

Formulation:

Agar both sides (Sab4plus):
Meat and casein peptone. ..... 10 g/l
Glucose. ..... 40 g/l
Chloroamphenicol. ..... 0,5 g/l
Agar..... 15 g/l
pH value. 5,6
Colour..... amber, slightly opalescent
Growth of test strains..... complies

2956.1	20 slides	box	64,40 €

For further information, please see page 1421

Roti®-DipSlide VRBD

ready-to-use, sterile, for microbiology

For detection of enterobacteria in liquids or on surfaces.

Formulation:

Agar both sides (VRBD):
Yeast extract..... 3 g/l
Pancreas hydrolysate made from gelatin..... 7 g/l
Sodium chloride (NaCl). ..... 5 g/l
Bile salts. ..... 1,5 g/l
Glucose monohydrate. ..... 10 g/l
Neutral red..... 0,03 g/l
Crystal Violet..... 0,002 g/l
Agar..... 15 g/l
pH value. 7,4
Colour..... purple-red
Growth of test strains..... complies

2954.1	20 slides	box	64,40 €

For further information, please see page 1423

ROTIDRY®Sept Dried Solvents in a Septum Bottle

Art. No.	Description	Page
5175	Acetonitrile	1763
5176	Dichloromethane	1935
5177	Diethyl ether	1939
5179	Dimethyl sulphoxide (DMSO)	1950
5180	n-Hexane	2042
5181	Methanol	2132
5182	Tetrahydrofuran	2400
5191	Toluene	2412

ROTIDRY® Dry Solvents

Art. No.	Description	Page
4424	Acetic acid ethyl ester	1759
AE00	Acetonitrile	1763
AE03	Dichloromethane	1935
AE04	Diethyl ether	1939
AE02	Dimethyl sulphoxide (DMSO)	1950
4429	1,4-Dioxane	1952
AE05	n-Hexane	2042
AE01	Methanol	2132
AE07	Tetrahydrofuran	2401
AE06	Toluene	2412
4423	Trichloromethane/Chloroform	2415

Roti®fair BBS

Roti®fair BBS

for 500 ml/tablet, for biochemistry and molecular biology

Coating of ELISA plates and blocking supplement.

1x BBS solution is prepared by solubilization of 1 tablet in 500 ml highly pure water.

Borate Buffered Saline (tablets)

WGK 1

Danger H360FD

Composition:

Prepared 1x BBS solution contains: 0,15 M NaCl, 10 mM borate buffer, pH-value 8,2 ±0,05, when prepared in deionized or distilled water.

1005.1	100 tablets	plastic	265,00 €

For further information, please see page 1368

Roti®fair BSC

BSC buffer powder (pouch), Buffered Sodium Citrate

WGK 1

Roti®fair BSC

for 100 ml pouch, for cell biology

Buffer solution for isolation of blood cells.

0,109 M BSC solution is prepared by dissolution of 1 pouch in 100 ml highly pure water.

Formulation:

Prepared BSC solution contains: 0,109 M (3,2 %) buffered Na-citrate, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

1011.1	10 pouches	box	91,30 €

For further information, please see page 1388

Roti®fair BSC

for 1000 ml pouch, for cell biology

Buffer solution for isolation of blood cells.

0,109 M BSC solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Formulation:

Prepared BSC solution contains: 0,109 M (3,2 %) buffered Na-citrate, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

1026.1	5 pouches	box	140,30 €

For further information, please see page 1388

Roti®fair CBB

Roti®fair CBB

for 100 ml/tablet, for biochemistry and molecular biology

Coating of microtiter plates and tubes for immunoassays.

1x CBB solution is prepared by dissolution of 1 tablet in 100 ml highly pure water.

Carbonate bicarbonate buffer (tablets)

WGK 1

Warning H319

Formulation:

Prepared 1x CBB solution contains: 50 mM sodium carbonate bicarbonate buffer, pH-value 9,6 ±0,05, when prepared in deionized or distilled water.

1027.1	8 tablets	blister	38,60 €
1027.2	24 tablets	blister	71,50 €
1027.3	100 tablets	plastic	113,85 €

For further information, please see page 1372

Roti®fair 0.5M EDTA

Roti®fair 0.5M EDTA

for 500 ml/pouch, for applications in Life Science in general

For preparation of bioanalytical solutions, anticoagulant.

0,5 M EDTA solution is prepared by dissolution of 1 pouch in 500 ml highly pure water.

EDTA powder (pouch), Ethylenediamine tetraacetic acid

WGK 2

Warning H332-H373

Formulation:

Prepared solution contains: 0,5 M EDTA, pH value 8,0 ±0,05, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

1031.1	5 pouches	box	261,15 €

For further information, please see page 1388

Roti®fair 20% Glucose

Roti®fair 20% Glucose

for 1000 ml/pouch, for microbiology and biochemistry

For preparation of nutrient media and solutions for enzymatics.

20 % glucose solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Glucose powder (pouch), D(+)-Glucose, Dextrose, Blood sugar

WGK 1

Formulation:

Prepared solution contains: 20 % glucose, when prepared in deionized or distilled water.

1030.1	5 pouches	box	168,70 €

For further information, please see page 1305

Roti®fair Glycine 3.0

Roti®fair Glycine 3.0

for 1000 ml/pouch, for biochemistry

For preparation of buffer solutions with acidic pH and elution buffer in affinity chromatography.

0,1 M glycine solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Glycine powder (pouch)

WGK 1

Formulation:

Prepared solution contains: 0,1 M glycine-HCl, pH value 3,0 ±0,05, when prepared in deionized or distilled water.

1032.1	10 pouches	box	99,90 €

For further information, please see page 1305

Roti®fair HBS

Roti®fair HBS

for 500 ml/tablet, for biochemistry and cell biology

General buffer base and for calcium phosphate mediated transfection.

1x HBS solution is prepared by dissolution of 1 tablet in 500 ml highly pure water.

HEPES Buffered Saline (tablets)

WGK 1

Composition:

Prepared 1x HBS solution contains: 10 mM HEPES, 0,15 M NaCl, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1033.1	12 tablets	blister	64,40 €
1033.2	100 tablets	plastic	274,05 €

For further information, please see page 1391

Roti®fair 1M KCl

Roti®fair 1M KCl

for 1000 ml/pouch, for biochemistry and molecular biology

For preparation of salt solutions and buffer concoctions.

1 M KCl solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Potassium chloride powder (pouch)

WGK 1

Formulation:

Prepared solution contains: 1 M KCl, when prepared in deionized or distilled water.

1034.1	10 pouches	box	175,15 €

For further information, please see page 1305

Roti®fair 3M KCl

Roti®fair 3M KCl

for 1000 ml/pouch, for biochemistry and molecular biology

For preparation of salt solutions and buffer concoctions.

3 M KCl solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Potassium chloride powder (pouch)

WGK 1

Formulation:

Prepared solution contains: 3 M KCl, when prepared in deionized or distilled water.

1035.1	5 pouch	box	150,40 €

For further information, please see page 1305

Roti®fair Na-Acetate 5.2

Roti®fair Na-Acetate 5.2

for 1000 ml/pouch, for molecular biology

For isolation of nucleic acids.

3 M sodium acetate solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Sodium acetate powder (pouch)

Formulation:

Prepared solution contains: 3 M sodium acetate, pH value 5,2 ±0,05, when prepared in deionized or distilled water.

1195.1	5 pouches	box	293,40 €

For further information, please see page 1305

Roti®fair 0.9% NaCl

Sodium chloride (tablet)

WGK 1

Roti®fair 0.9% NaCl

for 100 ml/tablet, for biochemistry and molecular biology

For preparation of salt solutions and buffer concoctions.

0,9 % NaCl solution is prepared by dissolution of 1 tablet in 100 ml highly pure water respectively.

Formulation:

Prepared solution contains: 0,9 % NaCl, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

1053.1	100 tablets	plastic	56,45 €

For further information, please see page 1380

Roti®fair 0.9% NaCl

for 1000 ml/tablet, for biochemistry and molecular biology

For preparation of salt solutions and buffer concoctions.

0,9 % NaCl solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water respectively.

Formulation:

Prepared solution contains: 0,9 % NaCl, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

1067.1	10 tablets	blister	50,45 €
1067.2	100 tablets	plastic	121,40 €

For further information, please see page 1380

Roti®fair 3M NaCl

Roti®fair 3M NaCl

for 1000 ml/pouch, for biochemistry and molecular biology

For preparation of salt solutions and buffer concoctions.

3 M NaCl solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Sodium chloride powder (pouch)

WGK 1

Formulation:

Prepared solution contains: 3 M NaCl, when prepared in deionized or distilled water.

1071.1	5 pouch	box	80,55 €

For further information, please see page 1305

Roti®fair 5M NaCl

Roti®fair 5M NaCl

for 1000 ml/pouch, for biochemistry and molecular biology

For preparation of salt solutions and buffer concoctions.

5 M NaCl solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Sodium chloride powder (pouch)

WGK 1

Formulation:

Prepared solution contains: 5 M NaCl, when prepared in deionized or distilled water.

1079.1	5 pouch	box	94,50 €

For further information, please see page 1305

Roti®fair 0.02M Na-Phosphate 7.0

WGK 1

Roti®fair 0.02M Na-Phosphate 7.0

for 1000 ml/pouch, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

0,02 M sodium phosphate solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Sodium phosphate powder (pouch)

Formulation:

Prepared solution contains: 20 mM sodium phosphate, pH-value 7,0 ±0,05, when prepared in deionized or distilled water.

1090.1	10 pouches	box	91,30 €

For further information, please see page 1305

Roti®fair 0.02M Na-Phosphate 7.0

for 5000 ml/pouch, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

0,02 M sodium phosphate solution is prepared by dissolution of 1 pouch in 5000 ml highly pure water.

Formulation:

Prepared solution contains: 20 mM sodium phosphate, pH-value 7,0 ±0,05, when prepared in deionized or distilled water.

1094.1	10 pouches	box	264,35 €

For further information, please see page 1305

Roti®fair 1M Na-Phosphate 6.5

Roti®fair 1M Na-Phosphate 6.5

for 1000 ml/pouch, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1 M sodium phosphate solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Sodium phosphate powder (pouch)

WGK 1

Formulation:

Prepared solution contains: 1 M sodium phosphate, pH-value 6,5 ±0,05, when prepared in deionized or distilled water.

1095.1	10 pouches	box	249,95 €

For further information, please see page 1305

Roti®fair 1M Na-Phosphate 7.2

Roti®fair 1M Na-Phosphate 7.2

for 1000 ml/pouch, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1 M sodium phosphate solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Sodium phosphate powder (pouch)

WGK 1

Formulation:

Prepared solution contains: 1 M sodium phosphate, pH-value 7,2 ±0,05, when prepared in deionized or distilled water.

1097.1	10 pouches	box	250,40 €

For further information, please see page 1305

Roti®fair PBS 7.2

Roti®fair PBS 7.2

for 1000 ml/tablet, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water.

PBS (tablet), Phosphate buffered saline

WGK 1

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,2 ±0,05, when prepared in deionized or distilled water.

1106.1	10 tablets	blister	76,90 €
1106.2	100 tablets	plastic	368,20 €

For further information, please see page 1305

Roti®fair PBS 7.4

PBS powder (pouch), Phosphate buffered saline

WGK 1

Roti®fair PBS 7.4

for 10 l/pouch, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 pouch in 10 litre highly pure water.

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1101.1	1 pouch	box	40,75 €

For further information, please see page 1305

Roti®fair PBS 7.4

for 25 l/pouch, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 pouch in 25 litre highly pure water.

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1102.1	1 pouch	box	81,60 €

For further information, please see page 1305

Roti®fair PBS 7.4

for 50 l/pouch, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 pouch in 50 litre highly pure water.

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1103.1	1 pouch	box	125,70 €

For further information, please see page 1305

Roti®fair PBS 7.4

for 100 l/pouch, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 pouch in 100 litre highly pure water.

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1104.1	1 pouch	box	205,90 €

For further information, please see page 1305

Roti®fair PBS 7.4

PBS (tablet), Phosphate buffered saline

WGK 1

Roti®fair PBS 7.4

for 100 ml/tablet, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 100 ml highly pure water.

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1107.1	100 tablets	plastic	58,60 €

For further information, please see page 1305

Roti®fair PBS 7.4

for 200 ml/tablet, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 200 ml highly pure water.

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1108.1	100 tablets	plastic	97,75 €

For further information, please see page 1305

Roti®fair PBS 7.4

for 500 ml/tablet, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 500 ml highly pure water.

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1111.1	12 tablets	blister	51,50 €
1111.2	100 tablets	plastic	206,95 €

For further information, please see page 1305

Roti®fair PBS 7.4

for 1000 ml/tablet, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water.

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1112.1	10 tablets	blister	75,80 €
1112.2	100 tablets	plastic	364,45 €

For further information, please see page 1305

Roti®fair 10x PBS 7.4

Roti®fair 10x PBS 7.4

for 1000 ml/pouch, for biochemistry and molecular biology

Concentrated general solution for assays in molecular biology and biochemistry.

10x PBS solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

PBS powder (pouch), Phosphate buffered saline

Formulation:

Prepared 10x PBS solution contains: 1,4 M NaCl, 27 mM KCl, 0,1 M phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1105.1	5 pouches	box	99,90 €

For further information, please see page 1305

Roti®fair PBS potassium-free 7.4

PBS (tablet), Phosphate buffered saline

WGK 1

Roti®fair PBS potassium-free 7.4

for 1000 ml/tablet, for biochemistry and molecular biology

Potassium-free, general solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water.

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1113.1	10 tablets	blister	75,80 €
1113.2	100 tablets	plastic	368,20 €

For further information, please see page 1306

Roti®fair PBS potassium-free 7.4

for 1000 ml/tablet, high-phosphate, for biochemistry and molecular biology

Potassium-free, high-phosphate general solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water.

Formulation:

Prepared 1x PBS solution contains: 0,15 M NaCl, 20 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1114.1	100 tablets	plastic	418,20 €

For further information, please see page 1306

Roti®fair PBST 7.4

PBST (tablet), Phosphate buffered saline with Tween

WGK 1

Roti®fair PBST 7.4

for 500 ml/tablet, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBST solution is prepared by dissolution of 1 tablet in 500 ml highly pure water.

Formulation:

Prepared 1x PBST solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, 0,05 % Tween® 20, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1115.1	12 tablets	blister	65,50 €
1115.2	100 tablets	plastic	266,10 €

For further information, please see page 1306

Roti®fair PBST 7.4

for 1000 ml/tablet, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBST solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water.

Formulation:

Prepared 1x PBST solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, 0,05 % Tween® 20, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1116.1	10 tablets	blister	85,50 €
1116.2	100 tablets	plastic	411,20 €

For further information, please see page 1306

Roti®fair pNPP 5mg

Roti®fair pNPP 5mg

5 mg/tablet, for biochemistry

For preparation of pNPP substrate solution for alkaline phosphatase.

0,1 % pNPP solution (1 mg/ml) is prepared by dissolution of 1 tablet in 5 ml substrate buffer.

pNPP (tablet), p-Nitrophenyl phosphate

Storage temp.: -20 °C
Transport temp.: room temp.

WGK 1

Formulation:

Prepared solution contains 1 mg/ml pNPP, when 1 tablet is dissolved in 5 ml substrate buffer or deionized, or distilled, water.

1117.1	24 tablets	blister	95,60 €
1117.2	100 tablets	plastic	138,70 €

For further information, please see page 1306

Roti®fair pNPP 20mg

Roti®fair pNPP 20mg

20 mg/tablet, for biochemistry

For preparation of pNPP substrate solution for alkaline phosphatase.

0,1 % pNPP solution (1 mg/ml) is prepared by dissolution of 1 tablet in 20 ml substrate buffer.

pNPP (tablet), p-Nitrophenyl phosphate

Storage temp.: -20 °C
Transport temp.: room temp.

WGK 1

Formulation:

Prepared solution contains 1 mg/ml pNPP, when 1 tablet is dissolved in 20 ml substrate buffer or deionized, or distilled, water.

1128.1	24 tablets	blister	100,55 €
1128.2	100 tablets	plastic	362,85 €

For further information, please see page 1306

Roti®fair SDS 0.5g

Roti®fair SDS 0.5g

0,5 g/tablet, for biochemistry, molecular biology and electrophoresis

Anionic detergent for preparation of bioanalytical solutions.

10 % SDS solution is prepared by dissolution of 1 tablet in 5 ml highly pure water.
Concentrations of 0,05-20 % may be prepared.

SDS (tablet), Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

UN No. 1325 • ADR 4.1 III • WGK 2

Danger

H228-H302+H332-H315-H318-H335-H412

Formulation:

Prepared solution contains when prepared in deionized or distilled water: SDS in favoured concentration, dependent on the amount of water used.

1156.1	50 tablets	plastic	48,30 €

For further information, please see page 1313

Roti®fair 10% SDS

Roti®fair 10% SDS

for 1000 ml/pouch, for biochemistry, molecular biology and electrophoresis

Anionic detergent for preparation of bioanalytical solutions.

10 % SDS solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

SDS powder (pouch), Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

UN No. 1325 • ADR 4.1 III • WGK 2

Danger

H228-H302+H332-H315-H318-H335-H412

Formulation:

Prepared solution contains: 10 % SDS, pH value 3,0 ±0,05, when prepared in deionized or distilled water.

1157.1	5 pouches	box	618,15 €

For further information, please see page 1313

Roti®fair SDS-PAGE

SDS-PAGE powder (pouch), Tris-glycine-SDS buffer

WGK 2

Warning H315-H319-H335

Roti®fair SDS-PAGE

for 1000 ml/pouch, for electrophoresis

Buffer for protein electrophoresis.

1x SDS-PAGE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Formulation:

Prepared 1x SDS-PAGE solution contains: 25 mM Tris, 0,192 M glycine, 0,1 % SDS, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

1249.1	10 pouches	box	91,95 €

For further information, please see page 1306

Roti®fair SDS-PAGE

for 5000 ml/pouch, for electrophoresis

Buffer for protein electrophoresis.

1x SDS-PAGE solution is prepared by dissolution of 1 pouch in 5000 ml highly pure water.

Formulation:

Prepared 1x SDS-PAGE solution contains: 25 mM Tris, 0,192 M glycine, 0,1 % SDS, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

1250.1	10 pouches	box	195,15 €

For further information, please see page 1306

Roti®fair 20x SSC

Roti®fair 20x SSC

for 1000 ml/pouch, for molecular biology

Concentrated buffer solution for Southern- and Northern transfer.

20x SSC solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

SSC buffer powder (pouch), Sodium sodium citrate

WGK 1

Formulation:

Prepared 20x SSC solution contains: 3,0 M NaCl, 0,3 M Na-Citrat, pH-value 7,0 ±0,05, when prepared in deionized or distilled water.

1232.1	5 pouches	box	158,60 €

For further information, please see page 1286

Roti®fair SSPE

Roti®fair SSPE

for 200 ml/tablet, for molecular biology

Buffer solution for DNA- and RNA hybridisation.

1x SSPE solution is prepared by dissolution of 1 tablet in 200 ml highly pure water.

Sodium sodium phosphate EDTA, SSPE buffer (tablets)

WGK 1

Formulation:

Prepared 1x SSPE solution contains: 0,15 M NaCl, 1 mM EDTA, 10 mM Na-phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1233.1	100 tablets	plastic	103,75 €

For further information, please see page 1287

Roti®fair 50x TAE

TAE powder (pouch)

WGK 2

Warning H315-H319-H335

Roti®fair 50x TAE

for 500 ml/pouch, for electrophoresis

Buffer concentrate for DNA electrophoresis.

50x TAE solution is prepared by dissolution of 1 pouch in 500 ml highly pure water.

Formulation:

Prepared 50x TAE solution contains: 2 M Tris acetate, 50 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

1234.1	5 pouches	box	418,20 €

For further information, please see page 1306

Roti®fair 50x TAE

for 1000 ml/pouch, for electrophoresis

Buffer concentrate for DNA electrophoresis.

50x TAE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Formulation:

Prepared 50x TAE solution contains: 2 M Tris acetate, 50 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

1240.1	5 pouches	box	747,15 €

For further information, please see page 1306

Roti®fair 1x TBE

Roti®fair 1x TBE

for 1000 ml/pouch, for electrophoresis

Buffer for DNA electrophoresis.

1x TBE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

TBE powder (pouch)

WGK 2

Danger H315-H319-H335-H360FD

Formulation:

Prepared 1x TBE solution contains: 89 mM Tris-Borat, 2 mM EDTA, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

1241.1	10 pouches	box	80,10 €

For further information, please see page 1306

Roti®fair 5x TBE

Roti®fair 5x TBE

for 1000 ml/pouch, for electrophoresis

Buffer concentrate for DNA electrophoresis.

5x TBE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

TBE powder (pouch)

WGK 2

Danger H315-H319-H335-H360FD

Formulation:

Prepared 5x TBE solution contains: 0,445 M Tris borate, 10 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

1242.1	10 pouches	box	174,70 €

For further information, please see page 1306

Roti®fair 10x TBE

Roti®fair 10x TBE

for 1000 ml/pouch, for electrophoresis

Buffer concentrate for DNA electrophoresis.

10x TBE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

TBE powder (pouch)

WGK 2

Danger H315-H319-H335-H360FD

Formulation:

Prepared 10x TBE solution contains: 0,89 M Tris borate, 20 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

1243.1	10 pouches	box	289,75 €

For further information, please see page 2278

Roti®fair TBS 7.6

Roti®fair TBS 7.6

for 500 ml/tablet, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 500 ml highly pure water.

TBS (tablet), Tris buffered saline

WGK 1

Warning H315-H319-H335

Formulation:

Prepared 1x TBS solution contains: 0,15 M NaCl, 50 mM Tris-HCl, pH-value 7,6 ±0,05, when prepared in deionized or distilled water.

1244.1	10 tablets	blister	56,90 €
1244.2	100 tablets	plastic	273,60 €

For further information, please see page 1306

Roti®fair TBS 8.0

Roti®fair TBS 8.0

for 1000 ml/pouch, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x TBS solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

TBS powder (pouch), Tris buffered saline

WGK 1

Warning H315-H319-H335

Formulation:

Prepared 1x TBS solution contains: 0,138 M NaCl, 2,7 mM KCl, 50 mM Tris-HCl, pH-value 8,0 ±0,05, when prepared in deionized or distilled water.

1245.1	10 pouches	box	100,55 €

For further information, please see page 1306

Roti®fair 10x TBS 8.0

Roti®fair 10x TBS 8.0

for 1000 ml/pouch, for biochemistry and molecular biology

Concentrated general solution for assays in molecular biology and biochemistry.

10x TBS solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

TBS powder (pouch), Tris buffered saline

WGK 1

Warning H315-H319-H335

Formulation:

Prepared 10x TBS solution contains: 1,38 M NaCl, 27 mM KCl, 0,5 M Tris-HCl, pH-value 8,0 ±0,05, when prepared in deionized or distilled water.

1247.1	10 pouches	box	671,90 €

For further information, please see page 1306

Roti®fair TBST 7.6

Roti®fair TBST 7.6

for 500 ml/tablet, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x TBST solution is prepared by dissolution of 1 tablet in 500 ml highly pure water.

TBST (tablet), Tris buffered saline with Tween

WGK 1

Warning H315-H319-H335

Formulation:

Prepared 1x TBST solution contains: 0,15 M NaCl, 50 mM Tris-HCl, 0,05 % Tween® 20, pH-value 7,6 ±0,05, when prepared in deionized or distilled water.

1248.1	10 tablets	blister	70,85 €
1248.2	100 tablets	plastic	346,70 €

For further information, please see page 1306

Roti®fair 10x TE

Roti®fair 10x TE

for 1000 ml/pouch, for molecular biology

Concentrated buffer solution for solubilisation and dilution of nucleic acids.

1x TE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

TE buffer powder (pouch), Tris EDTA

WGK 2

Warning H315-H319-H335-H373

Formulation:

Prepared 10x TE solution contains: 0,1 M Tris-HCl, 10 mM EDTA, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1268.1	10 pouches	box	221,35 €

For further information, please see page 1306

Roti®fair TG-Western

TG buffer powder (pouch), Tris-glycine buffer

WGK 1

Warning H315-H319-H335

Roti®fair TG-Western

for 1000 ml/pouch, for electrophoresis

Buffer for protein electrophoresis and transfer.

1x TG-Western solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Formulation:

Prepared 1x TG-Western solution contains: 25 mM Tris, 0,192 M glycine, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

1269.1	10 pouches	box	82,70 €

For further information, please see page 1306

Roti®fair TG-Western

for 5000 ml/pouch, for electrophoresis

Buffer for protein electrophoresis and transfer.

1x TG-Western solution is prepared by dissolution of 1 pouch in 5000 ml highly pure water.

Formulation:

Prepared 1x TG-Western solution contains: 25 mM Tris, 0,192 M glycine, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

1276.1	10 pouches	box	177,40 €

For further information, please see page 1306

Roti®fair 1M Tris 7.4

Roti®fair 1M Tris 7.4

for 1000 ml/pouch, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1 M Tris solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Tris powder (pouch)

WGK 1

Warning H315-H319-H335

Formulation:

Prepared solution contains: 1 M Tris, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

1251.1	10 pouches	box	390,80 €

For further information, please see page 1306

Roti®fair 1M Tris 8.0

Roti®fair 1M Tris 8.0

for 1000 ml/pouch, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1 M Tris solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Tris powder (pouch)

WGK 1

Warning H315-H319-H335

Formulation:

Prepared solution contains: 1 M Tris, pH-value 8,0 ±0,05, when prepared in deionized or distilled water.

1260.1	10 pouches	box	390,80 €

For further information, please see page 1306

Roti®fair 1M Tris 8.3

Roti®fair 1M Tris 8.3

for 1000 ml/pouch, for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1 M Tris solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Tris powder (pouch)

WGK 1

Warning H315-H319-H335

Formulation:

Prepared solution contains: 1 M Tris, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

1261.1	10 pouches	box	390,80 €

For further information, please see page 1306

Roti®-Fect

Roti®-Fect

CELLPURE® for transfection

Reagent for liposoma-mediated transfection of eukaryotic cells.

Approx. 400 assays per ml in 24wells. Dependent on the cell line used.

Storage temp.: +4 °C

WGK 1

P001.1	0,2 ml	plastic	73,00 €
P001.2	0,5 ml	plastic	163,30 €
P001.3	1 ml	plastic	255,75 €
P001.4	5 x 1 ml	plastic	1106,20 €

For further information, please see page 1390

Roti®-Fect Plus

Roti®-Fect Plus

CELLPURE® for transfection

Reagent for transfection of all eukaryotic cells in culture, particularly suited for hard-to-transfect cell lines.

Approx. 500 assays per ml in 24wells. Dependent on the cell line used.

Storage temp.: +4 °C

WGK 1

CL21.1	0,2 ml	plastic	95,60 €
CL21.2	1 ml	plastic	353,70 €

For further information, please see page 1390

Roti®-Fect RNAi Kit

Roti®-Fect RNAi Kit

CELLPURE® for transfection

Reagent for transfection of mammalian cells with siRNA and miRNA, for efficient gene silencing.

Approx. 250 assays per ml in 24wells. Dependend on the cell line used.

Storage temp.: -20 °C
Transport temp.: room temp.

3129.1	1 mini set	plastic	107,00 €
3129.2	1 set	plastic	375,20 €

For further information, please see page 1389

Roti®-Fix spray fixative

Roti®-Fix spray fixative

for cytology

For fixation of samples from cytological material.

UN No. 1993 • ADR 3 II • WGK 1

Danger H225

Type analysis:

Alcoholic solution of ethanol and 2-propanol

CL85.1	100 ml	spray bottle	16,70 €

For further information, please see page 1507

Rotifluid®

Rotifluid®

Fine mechanic oil. Liquid lubricant for fine mechanical instruments. Excellent price quality.

D 0,88

WGK 1

1264.1	200 ml	spray bottle	8,85 €
1266.1	1 l	plastic	20,75 €
Original pack 6 x 1 l			19,71/1 l

For further information, please see page 1174

Roti®-Free Slide Enhancer

Roti®-Free Slide Enhancer

10x conc., BioScience-Grade

Concentrated buffer for enhancement of detection signals in immunohistochemistry and *in situ* hybridization.

One bottle with 500 ml is sufficient for approx. 500 slides.

Storage temp.: +20 °C

WGK 2

Type analysis:

pH value (1x sol.). 6,9-7,1
RNAse..... ≤2 ppb
DNAse..... ≤0,2 ppm

9330.1	500 ml	plastic	206,95 €

Roti®-Free Stripping Buffer 2.2 plus

Roti®-Free Stripping Buffer 2.2 plus

ready-to-use

Premixed buffer for efficient stripping of Western-Blot membranes after Chemoluminescence detection, even with hard-to-remove antibodies.

Storage temp.: +20 °C

WGK 1

3337.1	250 ml	glass	48,95 €
3337.2	1 l	glass	121,40 €
Original pack 6 x 1 l			115,33/1 l

For further information, please see page 1372

Roti®-Free Stripping Buffer 2.0

Roti®-Free Stripping Buffer 2.0

ready-to-use

Premixed buffer for gentle stripping of Western-Blot membranes after Chemoluminescence detection.

Storage temp.: +20 °C

WGK 1

Warning H319

3319.1	250 ml	glass	42,50 €
3319.2	1 l	glass	110,20 €
Original pack 6 x 1 l			104,69/1 l

For further information, please see page 1372

Roti®-Free Stripping Buffer

Roti®-Free Stripping Buffer

ready-to-use

Premixed buffer for stripping of Western-Blot membranes.

Storage temp.: +20 °C • WGK 2

Warning H317-H319-H412

0083.2	250 ml	glass	19,90 €
0083.1	1 l	glass	60,10 €
Original pack 6 x 1 l			57,10/1 l
0083.3	2,5 l	glass	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

For further information, please see page 1372

Roti®garose-Biotin Beads

Roti®garose-Biotin Beads

NEW

for biochemistry

For isolation of avidin/streptavidin-coupled molecules by affinity chromatography.

Agarose beads for affinity chromatography, Biotin-agarose beads, Column matrix for protein isolation

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 3

Warning H226-H319

Type analysis:

Particle size..... 50-150 µm
Beads (cross-linked agarose). ..... 4 %
Ligand. ..... Biotin
Binding capacity (gel) (Avidin). ..... ≥30 mg/ml
Sodium azide. ..... 0,02 %

0844.1	5 ml	plastic	424,65 €
0844.2	10 ml	plastic	752,50 €

For further information, please see page 1353

Roti®garose-Glu/GST Beads

Roti®garose-Glu/GST Beads

NEW

for biochemistry

For isolation of GST-tagged proteins by affinity chromatography.

Suitable for batch mode, LPLC, FPLC and MPLC and big matrix volumes.

Agarose beads for affinity chromatography, glutathione-agarose beads, Column matrix for protein isolation, GST agarose beads

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 3

Warning H226-H319

Type analysis:

Particle size..... 50-150 µm
Beads (un-cross-linked agarose). ..... 4 %
Ligand. ..... Glutathion
Binding capacity (gel) (GST_{rek}). ..... ≥8 mg/ml
Ethanol..... 20 %

0841.1	10 ml	plastic	290,25 €
0841.2	100 ml	plastic	1881,25 €

For further information, please see page 1352

Roti®garose-Glu/GST Cartridges

Roti®garose-Glu/GST Cartridges

NEW

for biochemistry

For isolation of GST-tagged proteins by high pressure affinity chromatography.

For MPLC, FPLC, ÄKTA™ and peristaltic pump.

Affinity chromatography columns with glutathione-agarose, Column for protein isolation, GST agarose beads

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 3

Warning H226-H319

Type analysis:

Column volume..... 5 ml
Particle size. ..... 50-150 µm
Beads (un-cross-linked agarose)..... 4 %
Ligand..... Glutathione
Binding capacity/cartridge (GST_{rek}). ..... ≥50 mg
Stabilised with 15 % ethanol

0843.1	1 x 5 ml	plastic	258,00 €
0843.2	5 x 5 ml	plastic	1064,25 €

For further information, please see page 1352

Roti®garose-His/Co Beads

Roti®garose-His/Co Beads

for biochemistry

For isolation of His-tagged proteins by affinity chromatography.

Agarose beads for affinity chromatography, IMAC matrix/cobalt charged, Column matrix for protein isolation

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 1

Danger

H226-H319-H350-EUH208

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 6 %
Ligand..... IDA
Metal ion. ..... cobalt
Binding capacity (DHAK-6xHis)..... 135 mg/ml
Activating agent. ..... Epichlorohydrin
Stabilizer..... 20 % ethanol

1235.1	25 ml	plastic	284,90 €
1235.2	100 ml	plastic	772,95 €

For further information, please see page 1350

Roti®garose-His/Co Columns

Roti®garose-His/Co Columns

for biochemistry

For isolation of His-tagged proteins by affinity chromatography.

Affinity chromatography columns/cobalt charged, IMAC columns

Storage temp.: +4 °C

UN No. 1170 • ADR 3 II • WGK 1

Danger H225

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose)..... 6 %
Ligand. ..... IDA
Metal ion..... cobalt
Binding capacity (DHAK-6xHis). ..... 135 mg/ml
Activating agent..... Epichlorohydrin
Stabilizer. ..... 20 % ethanol

1267.1	8 x 1 ml	plastic	246,20 €
1267.2	5 x 5 ml	plastic	639,65 €

For further information, please see page 1349

Roti®garose-His/Co HPBeads

Roti®garose-His/Co HPBeads

NEW

for biochemistry

For isolation of His-tagged proteins by fast or large scale affinity chromatography.

Suitable for LPLC, FPLC and MPLC and big matrix volumes.

Agarose beads "high pressure" for affinity chromatography, IMAC matrix/cobalt charged, Column matrix for protein isolation

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 3

Danger H226-H319-H350

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose)..... 6 %
Ligand. ..... IDA
Metal ion..... cobalt
Binding capacity (gel) (DHAK-6xHis). ..... ~20 µmol/ml
Size exclusion limit (Da). ..... ~$4x10^6$
Ethanol. ..... 20 %

0838.1	25 ml	plastic	295,65 €
0838.2	100 ml	plastic	795,50 €

For further information, please see page 1350

Roti®garose-His/Ni Beads

Roti®garose-His/Ni Beads

for biochemistry

For isolation of His-tagged proteins by affinity chromatography.

Agarose beads for affinity chromatography, IMAC matrix/nickel charged, Column matrix for protein isolation

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 1

Danger H226-H319-EUH208

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose)..... 6 %
Ligand. ..... IDA
Metal ion..... nickel
Binding capacity (DHAK-6xHis). ..... 117 mg/ml
Activating agent..... Epichlorohydrin
Stabilizer. ..... 20 % ethanol

1308.1	25 ml	plastic	284,90 €
1308.2	100 ml	plastic	772,95 €

For further information, please see page 1348

Roti®garose-His/Ni HPCartridges

Roti®garose-His/Ni HPCartridges

for biochemistry

For isolation of His-tagged proteins by high pressure affinity chromatography.

for MPLC, FPLC, ÄKTATM and peristaltic pump

Affinity chromatography colums/nickel charged, IMAC columns

Storage temp.: +4 °C

UN No. 1170 • ADR 3 II • WGK 1

Danger H225

Type analysis:

Particle size..... 20-50 µm
Beads (cross-linked agarose). ..... 6 %
Ligand. ..... IDA
Metal ion. ..... nickel
Binding capacity (DHAK-6xHis). ..... 110 mg/ml
Stabilizer. ..... 20 % ethanol

1318.1	1 x 5 ml	plastic	190,85 €
1318.2	5 x 5 ml	plastic	805,20 €

For further information, please see page 1342

Roti®garose-His/Ni Columns

Roti®garose-His/Ni Columns

for biochemistry

For isolation of His-tagged proteins by affinity chromatography.

Affinity chromatography colums/nickel charged, IMAC columns

Storage temp.: +4 °C

UN No. 1170 • ADR 3 II • WGK 1

Danger H225

Type analysis:

Particle size..... 50-150 µm
Beads (cross-linked agarose). ..... 6 %
Ligand. ..... IDA
Metal ion. ..... nickel
Binding capacity (DHAK-6xHis). ..... 117 mg/ml
Activating agent. ..... Epichlorohydrin
Stabilizer. ..... 20 % ethanol

1314.1	8 x 1 ml	plastic	246,20 €
1314.2	5 x 5 ml	plastic	639,65 €

For further information, please see page 1342

Roti®garose-His/Ni HPBeads

Roti®garose-His/Ni HPBeads

NEW

for biochemistry

For isolation of His-tagged proteins by fast or large scale affinity chromatography.

Suitable for LPLC, FPLC and MPLC and big matrix volumes.

Agarose beads "high pressure" for affinity chromatography, IMAC matrix/nickel charged, Column matrix for protein isolation

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 3

Warning H226-H319

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 6 %
Ligand. ..... IDA
Metal ion. ..... nickel
Binding capacity (gel) (DHAK-6xHis). ..... ~20 µmol/ml
Size exclusion limit (Da). ..... ~4x10^6
Ethanol. ..... 20 %

0835.1	25 ml	plastic	295,65 €
0835.2	100 ml	plastic	795,50 €

For further information, please see page 1348

Roti®garose-His/Ni HPBeads plus

Roti®garose-His/Ni HPBeads plus

NEW

for biochemistry

For isolation of His-tagged proteins by fast or large scale affinity chromatography under presence of EDTA or DTT.

Suitable for LPLC, FPLC and MPLC and big matrix volumes.

Agarose beads "high pressure" for affinity chromatography, IMAC matrix/nickel charged, Column matrix for protein isolation

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 3

Warning H226-H319

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 6 %
Ligand. ..... Polychelator
Metal ion. ..... nickel
Binding capacity (gel) (GFPuv-6xHis). ..... ≥80 mg/ml
Ethanol. ..... 20 %

0806.1	25 ml	plastic	580,50 €
0806.2	100 ml	plastic	1988,75 €

For further information, please see page 1347

Roti®garose-His/Ni NTA-Beads

Roti®garose-His/Ni NTA-Beads

NEW

for biochemistry

For isolation of His-tagged proteins by affinity chromatography under reducing conditions.

Agarose beads for affinity chromatography, IMAC matrix/nickel charged, Column matrix for protein isolation

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 3

Warning H226-H319

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 6 %
Ligand. ..... NTA
Metal ion. ..... nickel
Binding capacity (gel) (GFPuv-6xHis). ..... ≥50 mg/ml
Ethanol. ..... 15 %

0807.1	25 ml	plastic	370,90 €
0807.2	100 ml	plastic	1204,00 €

For further information, please see page 1344

Roti®garose-His/Ni NTA-Cartridges

Roti®garose-His/Ni NTA-Cartridges

NEW

for biochemistry

For isolation of His-tagged proteins by high pressure affinity chromatography under reducing conditions.

For MPLC, FPLC, ÄKTA™ and peristaltic pump.

Affinity chromatography colums/nickel charged, IMAC columns

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 3

Warning H226-H319

Type analysis:

Column volume. ..... 5 ml
Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 6 %
Ligand. ..... NTA
Metal ion. ..... nickel
Binding capacity/cartridge (GFPuv-6xHis). ..... 250 mg
Stabilised with 15 % ethanol

0804.1	1 x 5 ml	plastic	193,50 €
0804.2	5 x 5 ml	plastic	774,00 €

For further information, please see page 1344

Roti®garose-His/Ni NTA-HPBeads

Roti®garose-His/Ni NTA-HPBeads

NEW

for biochemistry

For isolation of His-tagged proteins by fast or large scale affinity chromatography under reducing conditions.

Suitable for LPLC, FPLC and MPLC and big matrix volumes.

Agarose beads "high pressure" for affinity chromatography, IMAC matrix/nickel charged, Column matrix for protein isolation

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 3

Warning H226-H319

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 6 %
Ligand. ..... NTA
Metal ion. ..... nickel
Binding capacity (gel) (GFPuv-6xHis). ..... ≥60 mg/ml
Ethanol. ..... 20 %

0805.1	25 ml	plastic	473,00 €
0805.2	100 ml	plastic	1505,00 €

For further information, please see page 1344

Roti®garose-His uncharged HPBeads

Roti®garose-His uncharged HPBeads

NEW

for biochemistry

For isolation of His-tagged proteins by fast or large scale affinity chromatography.

Suitable for LPLC, FPLC and MPLC and big matrix volumes.

Agarose beads "high pressure" for affinity chromatography, IMAC matrix/uncharged, Column matrix for protein isolation

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 3

Warning H226-H319

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 6 %
Ligand. ..... IDA
Metal ion. ..... uncharged
Binding capacity (gel) (DHAK-6xHis). ..... ~20 µmol/ml
Size exclusion limit (Da). ..... ~4x10^6
Ethanol. ..... 20 %

0839.1	25 ml	plastic	295,65 €
0839.2	100 ml	plastic	795,50 €

For further information, please see page 1351

Roti®garose-Protein A Beads

Roti®garose-Protein A Beads

for biochemistry

For purification of immunoglobulins by affinity chromatography.

Agarose beads for affinity chromatography, IMAC matrix/Protein A conjugated, Column matrix for protein isolation

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 1

Warning H226-H319

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 4 %
Ligand. ..... recombinant protein A
Chemical bonding. ..... covalent
Ligand density (Protein A). ..... ca. 3 mg/ml
Binding capacity (humane IgG). ..... ca. 25 mg/ml
Stabilizer. ..... 20 % ethanol

1278.1	5 ml	plastic	590,20 €
1278.2	25 ml	plastic	1998,45 €

For further information, please see page 1354

Roti®garose-Protein A/G HPBeads

Roti®garose-Protein A/G HPBeads

NEW

for biochemistry

For purification of immunoglobulins by affinity chromatography.

Suitable for LPLC, FPLC and MPLC and big matrix volumes.

Agarose beads "high pressure" for affinity chromatography, Column matrix for protein isolation, Protein A/G conjugated agarose beads

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 3

Warning H226-H319

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 4 %
Ligand. ..... recombinant protein A/G
Chemical bonding. ..... covalent
Binding capacity (humane IgG). ..... ~25 mg/ml
Ethanol. ..... 20 %

0809.1	0,5 ml	plastic	118,25 €
0809.2	1 ml	plastic	193,50 €
0809.3	2 ml	plastic	344,00 €

For further information, please see page 1355

Roti®garose-Protein A MAXI columns

Roti®garose-Protein A MAXI columns

for biochemistry

For purification of immunoglobulins by affinity chromatography.

Affinity chromatography columns/protein A conjugated

Storage temp.: +4 °C

UN No. 1170 • ADR 3 II • WGK 1

Danger H225

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 4 %
Ligand. ..... recombinant protein A
Chemical bonding. ..... covalent
Ligand density (Protein A). ..... ca. 3 mg/ml
Binding capacity (humane IgG). ..... ca. 25 mg/ml
Stabilizer. ..... 20 % ethanol

4070.1	1 x 5 ml	plastic	708,45 €

For further information, please see page 1356

Roti®garose-Protein A MIDI columns

Roti®garose-Protein A MIDI columns

for biochemistry

For purification of immunoglobulins by affinity chromatography.

Affinity chromatography columns/protein A conjugated

Storage temp.: +4 °C

UN No. 1170 • ADR 3 II • WGK 1

Danger H225

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 4 %
Ligand. ..... recombinant protein A
Chemical bonding. ..... covalent
Ligand density (Protein A). ..... ca. 3 mg/ml
Binding capacity (humane IgG). ..... ca. 25 mg/ml
Stabilizer. ..... 20 % ethanol

4066.1	1 x 1 ml	plastic	284,90 €

For further information, please see page 1356

Roti®garose-Protein A MINI columns

Roti®garose-Protein A MINI columns

for biochemistry

For purification of immunoglobulins by affinity chromatography.

Affinity chromatography columns/protein A conjugated

Storage temp.: +4 °C

UN No. 1170 • ADR 3 II • WGK 1

Danger H225

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 4 %
Ligand. ..... recombinant protein A
Chemical bonding. ..... covalent
Ligand density (Protein A). ..... ca. 3 mg/ml
Binding capacity (humane IgG). ..... ca. 25 mg/ml
Stabilizer. ..... 20 % ethanol

4065.1	5 x 100 µl	plastic	317,15 €

For further information, please see page 1354

Roti®garose-Protein G HPBeads

Roti®garose-Protein G HPBeads

NEW

for biochemistry

For purification of immunoglobulins by affinity chromatography.

Suitable for LPLC, FPLC and MPLC and big matrix volumes.

Agarose beads "high pressure" for affinity chromatography, Column matrix for protein isolation, Protein G conjugated agarose beads

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 3

Warning H226-H319

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 4 %
Ligand. ..... recombinant protein G
Chemical bonding. ..... covalent
Binding capacity (humane IgG). ..... ~20 mg/ml
Ethanol. ..... 20 %

0808.1	5 ml	plastic	612,75 €
0808.2	25 ml	plastic	1709,25 €

For further information, please see page 1355

Roti®garose-Streptavidin Beads

Roti®garose-Streptavidin Beads

NEW

for biochemistry

For isolation of biotin-coupled molecules by affinity chromatography.

Agarose beads for affinity chromatography, Streptavidin-agarose beads, Column matrix for protein isolation

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 3

Warning H226-H319

Type analysis:

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 6 %
Ligand. ..... Streptavidin
Binding capacity (gel) (free biotin). ..... ≥120 nmol/ml
Ethanol. ..... 20 %

0846.1	5 ml	plastic	413,90 €
0846.2	10 ml	plastic	704,15 €

For further information, please see page 1353

Roti®-GelStain

Roti®-GelStain

Fluorescent staining, ready-to-use, for electrophoresis

For non-toxic fluorescent staining of nucleic acids in agarose gels.

1 ml is sufficient for staining of approx. 600 minigels (with 30 ml agarose each).

Storage temp.: +4 °C

3865.1	1 ml	plastic	95,60 €
3865.2	5 x 1 ml	plastic	429,50 €

For further information, please see page 1220

Roti®-GelStain Red

Roti®-GelStain Red

for electrophoresis

Red fluorescent staining reagent for non-toxic staining of nucleic acids in agarose gels and polyacrylamide gels.

Alternative for ethidium bromide, Ethidium bromide substitute

Storage temp.: +4 °C

WGK 2

Type analysis:

Appearance. ... red, transparent liquid, no precipitation
Staining of DNA in agarose gels. ..... complies
Staining of DNA in PA gels. ..... complies

0984.1	1 ml	plastic	100,95 €
0984.2	5 x 1 ml	plastic	450,45 €

For further information, please see page 1220

Roti®-Histofix 4 %

Roti®-Histofix 4 %

acid free (pH 7), phosphate-buffered formaldehyde solution 4 %

Fixative for histology, stabilised with methanol.

bp 100 °C

Storage temp.: +15-25 °C

WGK 2

Danger H350-H341-H302-H317

Type analysis:

Appearance. ..... clear, colourless solution
Assay (formaldehyde)..... 4,0 %
pH value ..... 7,0 ±0,5
Stabilised with methanol

P087.4	500 ml	plastic	10,25 €
P087.6	1 l	plastic	12,80 €
Original pack 6 x 1 l			12,16/1 l
P087.5	2,5 l	plastic	17,10 €
Original pack 4 x 2,5 l			16,25/2,5 l
P087.3	5 l	plastic	27,45 €
Original pack 2 x 5 l			26,08/5 l
P087.1	10 l	plastic	50,45 €
P087.2	30 l	plastic	131,70 €

For further information, please see page 1396

Roti®-Histofix 4 %, prefilled containers

Roti®-Histofix 4 %, prefilled containers

acid free (pH 7), phosphate-buffered formaldehyde solution 4 %

Fixative for histology, prefilled in screw cap containers. Stabilised with methanol.

Storage temp.: +15-25 °C

WGK 2

Danger H350-H341-H302-H317

Type analysis:

Appearance. ..... clear, colourless liquid
Assay (formaldehyde)..... ~4 %
pH value. ..... 7,0 ±0,5
Stabilised with methanol

3105.1	100 x 10 ml (in 20 ml-container)	cardboard	84,85 €
3105.2	54 x 50 ml (in 100 ml-container)	cardboard	57,55 €

For further information, please see page 1503

Roti®-Histofix 4,5 %

Roti®-Histofix 4,5 %

acid free (pH 7), phosphate-buffered formaldehyde solution 4,5 %

Fixative for histology, stabilised with methanol.

D 1,019

Storage temp.: +15-25 °C

WGK 2

Danger H302-H317-H341-H350

Type analysis:

Appearance..... clear, colourless solution
Assay (formaldehyde). ..... 4,5 %
pH value . ..... 7,0 ±0,5
Stabilised with methanol.

2213.4	500 ml	plastic	10,65 €
2213.6	1 l	plastic	12,80 €
Original pack 6 x 1 l			12,16/1 l
2213.5	2,5 l	plastic	19,25 €
Original pack 4 x 2,5 l			18,29/2,5 l
2213.3	5 l	plastic	28,95 €
Original pack 2 x 5 l			27,50/5 l
2213.1	10 l	plastic	52,15 €
2213.2	30 l	plastic	128,50 €

For further information, please see page 1504

Roti®-Histofix 4,5 %, prefilled containers

Roti®-Histofix 4,5 %, prefilled containers

acid free (pH 7), phosphate-buffered formaldehyde solution 4,5 %

Fixative for histology, prefilled in screw cap containers. Stabilised with methanol.

Storage temp.: +15-25 °C

WGK 2

Danger H302-H317-H341-H350

Type analysis:

Appearance..... clear, colourless liquid
Assay (formaldehyde). ..... 4,0-5,0 %
pH value. ..... 7,2 ±0,2
Stabilised with methanol

8244.1	100 x 10 ml (in 20 ml container)	cardboard	82,70 €
8244.2	54 x 50 ml (in 100 ml container)	cardboard	57,95 €
8244.3	32 x 100 ml (in 180 ml container)	cardboard	54,30 €

For further information, please see page 1503

Roti®-Histofix 10 %

Roti®-Histofix 10 %

acid free (pH 7), phosphate-buffered formaldehyde solution 10 %

Fixative for histology, stabilised with methanol.

D 1,042

Storage temp.: +15-25 °C

WGK 2

Danger H302+H312-H315-H317-H319-H335-H341-H350-H371

Type analysis:

Appearance. ..... clear, colourless solution
Assay (formaldehyde). ..... 10 %
pH value. ..... 7,0 ±0,5
Stabilised with methanol

A146.4	500 ml	plastic	12,40 €
A146.6	1 l	plastic	14,95 €
Original pack 6 x 1 l			14,20/1 l
A146.5	2,5 l	plastic	26,35 €
Original pack 4 x 2,5 l			25,03/2,5 l
A146.3	5 l	plastic	44,00 €
Original pack 2 x 5 l			41,80/5 l
A146.1	10 l	plastic	69,80 €
A146.2	30 l	plastic	171,90 €

For further information, please see page 1504

Roti®-Histofix ECO Plus

Roti®-Histofix ECO Plus

Fixing agent without formalin

For fixing of histological and immunochemical specimens. Formalin substitute.

D 1,015 • bp >100 °C

mp <0 °C

Storage temp.: +20 °C • WGK 1

Formalin-free, non-toxic reddish solution. For fixing of histological specimens. Pleasantly aromatic odour. Forrmalin substitute.

8907.1	500 ml	plastic	15,60 €
8907.2	2,5 l	plastic	47,85 €
Original pack 4 x 2,5 l			45,46/2,5 l
8907.3	5 l	plastic	89,15 €
Original pack 2 x 5 l			84,69/5 l

For further information, please see page 1400

Roti®-Histokitt

Roti®-Histokitt

mounting medium, for histology

Compatible with Roti®-Histol (Art. No. 6640).

D 0,945

UN No. 1866 • ADR 3 III • WGK 2

Danger

H225-H304-H361d-H373-H315-H336

Type analysis:

Appearance. ..... clear, viscous liquid
Identity. ..... complies
Refractive index n_D^{20} 1,4930-1,4960

6638.1	100 ml	glass	13,45 €
6638.2	500 ml	glass	37,10 €

For further information, please see page 1532

Roti®-Histokitt II

Roti®-Histokitt II

mounting medium, for histology
Compatible with xylene (e.g. Art. No. 9713).
D 0,95
UN No. 1307 • ADR 3 III • WGK 2
Danger H226-H302+H332-H304-H315-H319-H335-H373-EUH208

Type analysis:
Appearance. ..... clear, viscous liquid
Density (d 20 °C/4 °C). 0,95
Viscosity (20 °C). ..... 250-450 mPa s

T160.1	100 ml	glass	13,90 €
T160.2	500 ml	glass	37,55 €

For further information, please see page 1532

Roti®-Histol

Roti®-Histol

for histology
Clearing agent on base of limonene.
For dewaxing of histological sections.
Alternative product for xylene.
D 0,84 • bp 177 °C
flp 50 °C
UN No. 2319 • ADR 3 III • WGK 3
Danger
H226-H304-H315-H317-H410

Type analysis:
Density (20 °C). 0,836-0,848
Refractive index n_D^{20}. 1,468-1,478
Flash point. ..... 50 °C

6640.1	1 l	glass	30,00 €
Original pack 6 x 1 l			28,50/1 l
6640.4	2,5 l	glass	57,95 €
Original pack 4 x 2,5 l			55,05/2,5 l
6640.5	5 l	aluminium	97,30 €
Original pack 2 x 5 l			92,44/5 l
6640.2	10 l	tinplate	173,00 €
6640.3	22 kg	tinplate	411,65 €

For further information, please see page 1495

Roti®-Hybri-Quick

Roti®-Hybri-Quick

BioScience-Grade, ready-to-use, for molecular biology
Ready-made buffer for DNA- and RNA hybridisation.
D 1,034
WGK 2

A981.1	1 l	glass	52,15 €
Original pack 6 x 1 l			49,54/1 l
A981.2	2,5 l	glass	94,10 €
Original pack 4 x 2,5 l			89,40/2,5 l

For further information, please see page 1286

Roti®-ImmunoBlock

Roti®-ImmunoBlock

ready-to-use, 10x conc.
Protein free blocking reagent for immunocytological assays. Without detergent.
Storage temp.: +20 °C
WGK 1

T144.1	250 ml	glass	46,80 €

For further information, please see page 1402

Roti®-Insectofect

Roti®-Insectofect

CELLPURE® for transfection
For transfection of insect cells in culture.
Approx. 1000 assays per ml in 24wells.
Storage temp.: +4 °C
WGK 1

AE29.1	0,5 ml	plastic	139,25 €
AE29.2	1 ml	plastic	212,35 €

For further information, please see page 1391

ROTI® Kits

Art. No.	Description	Page
7773	EdU Click-488	1966
7775	EdU Click-555	1966
7776	EdU Click-594	1966
7777	EdU Click-647	1966
7779	EdU Click FC-488	1966
7780	EdU Click FC-555	1967
7781	EdU Click FC-594	1967
7783	EdU Click FC-647	1967
7786	EdU Click HTS 2-488	1967
7787	EdU Click HTS 4-488	1967
7788	EdU Click HTS 20-488	1967
7789	EdU Click HTS 2-555	1967
7791	EdU Click HTS 4-555	1967
7792	EdU Click HTS 20-555	1968
HP02	Gram staining kit	2029
9194	H&E fast staining kit	2034
3459	Masson-Goldner's trichrome staining kit	2123
7764	Oligo Click S Reload	2184
7765	Oligo Click M Reload	2184
6487	Panoptical fast staining kit	2190
9195	PAP fast staining kit	2191
HP01	PAS staining kit	2192
N769	Roti®-Black N	2266
P081	Roti®-Black NSeq	2266
L533	Roti®-Black P	2266
L509	Roti®-Blot 1	2266
9202	Roti®-DAB Kit	2272
3129	Roti®-Fect RNAi Kit	2280
3734	Roti®-Lumin ultra	2287
3692	Roti®-Lumin plus	2287
P078	Roti®-Lumin	2287
A431	Rotiphorese® DNA sequencing system	2292
8620	Roti®-Prep Blood Genomic DNA MINI	2295
8510	Roti®-Prep Gel Extraction	2295
8472	Roti®-Prep Genomic DNA MINI	2296
8503	Roti®-Prep PCR Purification	2296
HP29	Roti®-Prep Plasmid MINI	2296
8546	Roti®-Prep Plasmid MINI-XL	2296
8485	Roti®-Prep RNA MINI	2296
8547	Roti®-Prep Viral RNA/DNA MINI	2296
0120	Roti®-Quant universal	2296
9206	Roti®-Strept/HRP-Kit	2299
7735	Rotitest®-Annexin V	2299
P043	Roti®-Transform	2300

Roti®-Liquid Barrier Marker, colourless

Roti®-Liquid Barrier Marker, colourless

For immunology, histology and molecular biology. Glass bottle with brush.
For use with aqueous liquids and solvents as ethanol or acetone.
Also available: Roti®-Liquid Barrier Marker, red (Art. No. AN92) for use without solvents.
UN No. 1268 • ADR 3 II • WGK 3
Danger
H225-H304-H315-H336-H411

AN91.1	10 ml	glass	33,90 €
AN91.2	5 x 10 ml	glass	132,15 €

For further information, please see page 1537

Roti®-Liquid Barrier Marker, red

Roti®-Liquid Barrier Marker, red

For immunology, histology and molecular biology. Glass bottle with brush.
For use with aqueous liquids only.
The red dye is not solvent resistant.
Also available: Roti®-Liquid Barrier Marker, colourless (Art. No. AN91) for use with solvents.
UN No. 1268 • ADR 3 II • WGK 3
Danger
H225-H304-H315-H336-H411

AN92.1	10 ml	glass	33,90 €
AN92.2	5 x 10 ml	glass	132,15 €

For further information, please see page 1537

Roti®-Load 1

Roti®-Load 1

reducing, 4x conc.
Protein gel loading buffer, modified formulation acc. to Laemmli.
D 1,172
Storage temp.: +15-25 °C
UN No. 2810 • ADR 6.1 III • WGK 3
Danger H302+H332-H311-H315-H317-H318-H373-H411

Type analysis:
Appearance. ..... dark blue, clear solution
pH value (1x sol.). 6,6-7,2

K929.1	10 ml	glass	18,20 €
K929.2	4 x 10 ml	glass	53,25 €
K929.3	10 x 10 ml	glass	122,05 €

For further information, please see page 1203

Roti®-Load 2

Roti®-Load 2

non reducing, 4x conc.

Protein gel loading buffer, modified formulation acc. to Laemmli. For protein complexes, secondary structures, and for native gels.

D 1,158

Storage temp.: +20 °C

WGK 2

Type analysis:

Appearance. .....dark blue, clear solution
pH value (1x sol.). 6,7-7,2

K930.1	10 ml	glass	15,60 €

For further information, please see page 1203

Roti®-Load 3 (LDS)

Roti®-Load 3 (LDS)

non reducing, 4x conc.

Protein gel loading buffer for ready-made gels and cooled gels.

Storage temp.: +20 °C

WGK 1

Warning H315-H319

Type analysis:

Appearance. ..... green-blue, clear solution
pH value (1x sol.). ..... 7,7 ±0,1

3359.1	10 ml	glass	21,00 €

For further information, please see page 1203

Roti®-Load DNA

Storage temp.: -20 °C
Transport temp.: room temp.
WGK 1

Roti®-Load DNA (with ficoll)

6x conc. gel loading buffer, DNase-free

For DNA gel electrophoresis of small DNA amounts, produces especially sharp bands.

X905.1	5 x 1,8 ml	plastic	43,55 €

For further information, please see page 1204

Roti®-Load DNA (with saccharose)

6x conc. gel loading buffer, DNase-free

For DNA gel electrophoresis of big sample volumes. For big fragments.

T847.1	5 x 1,0 ml	plastic	64,40 €

For further information, please see page 1204

Roti®-Load DNA (with glycerol)

6x conc. gel loading buffer, DNase-free

For DNA gel electrophoresis of routine gels.

X904.1	5 x 1,8 ml	plastic	39,70 €

For further information, please see page 1204

Roti®-Load DNA 1x (with glycerol)

1x conc. gel loading buffer, ready-to-use, DNase-free

For DNA gel electrophoresis of routine gels, excellent for resolubilisation of DNA pellets.

0100.1	5 x 1,0 ml	plastic	35,40 €

For further information, please see page 1204

Roti®-Load DNA short-run (with glycerol)

6x conc. gel loading buffer, DNase-free

For high-throughput DNA-electrophoresis and short separation distance. For fast gels.

0095.1	5 x 1,8 ml	plastic	42,90 €

For further information, please see page 1204

Roti®-Load DNA short-run 1x (with glycerol)

1x conc. gel loading buffer, ready-to-use, DNase-free

For high-throughput DNA-electrophoresis and short separation distance. Especially suitable for resolubilisation of pelleted DNA. For fast gels.

0099.1	5 x 1,0 ml	plastic	35,40 €

For further information, please see page 1204

Roti®-Load DNA small (with glycerol)

6x conc. gel loading buffer, DNase-free

For DNA gel electrophoresis of small or very big fragments.

HP03.1	5 x 1,8 ml	plastic	45,70 €

For further information, please see page 1204

Roti®-Load DNA orange 1 (with glycerol)

6x conc. gel loading buffer, DNase-free

For DNA gel electrophoresis, optimised for very short separation distances and small fragments. Suitable for high concentrated or High Resolution agarose.

HP04.1	5 x 1,8 ml	plastic	51,10 €

For further information, please see page 1204

Roti®-Load DNA-orange 2 (with glycerol)

6x conc. gel loading buffer, DNase-free

For DNA gel electrophoresis, suitable for mixtures of small and big fragments.

HP05.1	5 x 1,8 ml	plastic	51,10 €

For further information, please see page 1204

Roti®-Load DNA-tricolor (with glycerol)

6x conc. gel loading buffer, DNase-free

For DNA gel electrophoresis, suitable for a broad range of fragments.

HP06.1	5 x 1,8 ml	plastic	51,10 €

For further information, please see page 1204

Roti®-Load DNAstain

Storage temp.: -20 °C
Transport temp.: room temp.
WGK 3

Roti®-Load DNAstain 1

6x conc. gel loading buffer, ready-to-use, DNAse-free

DNA-gel loading buffer with fluorescent DNA-dye EvaGreen®. For fragments >500 bp.

1 ml is sufficient for running and staining of approx. 500 lanes.

5783.1	1,0 ml	plastic	37,55 €
5783.2	5 x 1,0 ml	plastic	114,95 €

For further information, please see page 1204

Roti®-Load DNAstain 2

6x conc. gel loading buffer, ready-to-use, DNAse-free

DNA-gel loading buffer with fluorescent DNA-dye EvaGreen®. For fragments of 100-2000 bp.

1 ml is sufficient for running and staining of approx. 500 lanes.

5784.1	1,0 ml	plastic	37,55 €
5784.2	5 x 1,0 ml	plastic	114,95 €

For further information, please see page 1204

Roti®-Load DNAstain 3

6x conc. gel loading buffer, ready-to-use, DNAse-free

DNA-gel loading buffer with fluorescent DNA-dye EvaGreen®. For fragments <500 bp.

1 ml is sufficient for running and staining of approx. 500 lanes.

6472.1	1 ml	plastic	37,55 €
6472.2	5 x 1,0 ml	plastic	114,95 €

For further information, please see page 1204

Roti®-Load RNA

Roti®-Load RNA

1,3x conc. gel loading buffer, RNase-free

For RNA gel electrophoresis.

Storage temp.: -20 °C
Transport temp.: room temp.
WGK 2

Danger H302-H315-H317-H319-H341-H350-H360FD-H373

T848.1	2 x 0,5 ml	plastic	62,25 €

For further information, please see page 1204

Roti®-Lumin ultra

Roti®-Lumin ultra

ready-to-use, spray

Superior chemoluminescence substrate for HRP-mediated Western-Blot detection systems.

HRP substrate

Storage temp.: +4 °C
Transport temp.: cooled

Type analysis:

Solution 1..... colourless to light yellow, clear
Solution 2..... colourless
Light emission after 0, 5, 30 minutes (RLU). ..complies

3734.1	1 mini kit (spray)	239,20 €
3734.2	1 kit (spray)	955,70 €

For further information, please see page 1331

Roti®-Lumin plus

Roti®-Lumin plus

ready-to-use, spray

Highly efficient chemoluminescence substrate for HRP-mediated Western-Blot detection systems.

HRP substrate

Storage temp.: +4 °C
Transport temp.: cooled

Type analysis:

Solution 1..... colourless to light yellow, clear
Solution 2..... colourless
Light emission after 5 and 30 minutes (RLU). complies

3692.1	1 mini kit (spray)	134,95 €
3692.2	1 kit (spray)	278,45 €
3692.3	1 kit (bottles)	450,45 €

For further information, please see page 1331

Roti®-Lumin

Roti®-Lumin

ready-to-use

Chemoluminescence substrate for peroxidase mediated detection systems.

HRP substrate

Storage temp.: +4 °C

P078.2	1 mini kit	plastic	78,40 €
P078.1	1 kit	plastic	278,45 €

For further information, please see page 1332

Roti®lyte Carrier Ampholyte

Storage temp.: +4 °C
WGK 1

Roti®lyte pH 3-5

40 % solution in water, sterile filtered (0,2 µm)

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

Type analysis:

Appearance..... clear solution
Content (w/v)..... 40 %
pH-value (2,5 % in H_2O, 20 °C)..... 3,7-4,3
Conductivity (2,0 % in H_2O, 20 °C). ..0,10-0,30 mS/cm
pH Range. ..... 3,0 ±0,5 to 5,1 ±0,5
pH gradient performed..... min. 70 %

5834.1	10 ml	glass	211,25 €
5834.2	25 ml	glass	470,35 €

For further information, please see page 1200

Roti®lyte pH 3-6

40 % solution in water, sterile filtered (0,2 µm)

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

Type analysis:

Appearance..... clear solution
Content (w/v)..... 40 %
pH-value (2,5 % in H_2O, 20 °C). 4,6-5,4
Conductivity (2,0 % in H_2O, 20 °C)... 0,05-0,50 mS/cm
pH Range. ..... 3,3 ±0,3 to 6,2 ±0,5
pH gradient performed. ..... min. 70 %

5835.1	10 ml	glass	201,60 €
5835.2	25 ml	glass	448,20 €

For further information, please see page 1200

Roti®lyte pH 3-7

40 % solution in water, sterile filtered (0,2 µm)

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

Type analysis:

Appearance..... clear solution
Content (w/v)..... 40 %
pH-value (2,5 % in H_2O, 20 °C). 4,5-5,5
Conductivity (2,0 % in H_2O, 20 °C)... 0,20-0,70 mS/cm
pH Range. ..... 3,3 ±0,3 to 7,0 ±0,5
pH gradient performed. ..... min. 70 %

5839.1	10 ml	glass	201,60 €
5839.2	25 ml	glass	448,20 €

For further information, please see page 1200

Roti®lyte pH 3-10

40 % solution in water, sterile filtered (0,2 µm)

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

Type analysis:

Appearance..... clear solution
Content (w/v)..... 40 %
pH-value (2,5 % in H_2O, 20 °C). 6,6-7,4
Conductivity (2,5 % in H_2O, 20 °C)... 0,20-0,90 mS/cm
pH Range. ..... 3,3 ±0,3 to 10,0 ±0,6
pH gradient performed. ..... min. 60 %

5841.1	10 ml	glass	190,20 €
5841.2	25 ml	glass	392,40 €

For further information, please see page 1200

Roti®lyte pH 4-6

40 % solution in water, sterile filtered (0,2 µm)

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

Type analysis:

Appearance..... clear solution
Content (w/v)..... 40 %
pH-value (2,5 % in H_2O, 20 °C). 4,8-5,6
Conductivity (2,0 % in H_2O, 20 °C)....0,10-0,20 mS/cm
pH Range..... 4,0 ±0,5 to 6,1 ±0,5
pH gradient performed..... min. 60 %

5845.1	10 ml	glass	211,25 €
5845.2	25 ml	glass	470,35 €

For further information, please see page 1200

Roti®lyte pH 4-7

40 % solution in water, sterile filtered (0,2 µm)

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

Type analysis:

Appearance. ..... clear solution
Content (w/v)..... 40 %
pH-value (2,5 % in H_2O, 20 °C)..... 5,8-6,2
Conductivity (2,5 % in H_2O, 20 °C)..... 0,1-0,2 mS/cm
pH Range..... 4,0 ±0,2 to 7,0 ±0,2
pH gradient performed..... min. 70 %

5850.1	10 ml	glass	200,95 €
5850.2	25 ml	glass	448,20 €

For further information, please see page 1200

Roti®lyte pH 5-6

40 % solution in water, sterile filtered (0,2 µm)

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

Type analysis:

Appearance. ..... clear solution
Content (w/v)..... 40 %
pH-value (2.0 % in H_2O, 20 °C)..... 5,3-5,7
Conductivity (2,0 % in H_2O, 20 °C)....0,05-0,50 mS/cm
pH Range..... 5,3 ±0,3 to 6,2 ±0,5
pH gradient performed..... min. 70 %

5851.1	10 ml	glass	211,25 €
5851.2	25 ml	glass	470,35 €

For further information, please see page 1200

Roti®lyte pH 5-7

40 % solution in water, sterile filtered (0,2 µm)

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

Type analysis:

Appearance. ..... clear solution
Content (w/v)..... 40 %
pH-value (2,5 % in H_2O, 20 °C)..... 5,8-6,6
Conductivity (2,5 % in H_2O, 20 °C)..... 0,1-0,2 mS/cm
pH Range..... 5,0 ±0,5 to 7,1 ±0,5
pH gradient performed..... min. 60 %

5856.1	10 ml	glass	211,25 €
5856.2	25 ml	glass	470,35 €

For further information, please see page 1200

Roti®lyte pH 5-8

40 % solution in water, sterile filtered (0,2 µm)

Carrier ampholytes for isoelectric focussing (IEF). Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

Type analysis:

Appearance. ..... clear solution
Content (w/v). ..... 40 %
pH-value (2,5 % in H_2O, 20 °C)..... 6,2-7,0
Conductivity (2,5 % in H_2O, 20 °C). ..... 0,1-0,5 mS/cm
pH Range. ..... 5,0 ±0,5 to 8,0 ±0,6
pH gradient performed..... min. 70 %

5857.1	10 ml	glass	200,95 €
5857.2	25 ml	glass	448,20 €

For further information, please see page 1200

Roti®lyte pH 6-7

40 % solution in water, sterile filtered (0,2 µm)

Carrier ampholytes for isoelectric focussing (IEF). Added in 3 % to acrylamide- or agarose gel solution.

Type analysis:

Appearance. ..... clear solution
Content (w/v). ..... 40 %
pH-value (2,5 % in H_2O, 20 °C)..... 6,2-7,0
Conductivity (2,5 % in H_2O, 20 °C). ..... 0,1-0,2 mS/cm
pH Range. ..... 6,0 ±0,2 to 7,0 ±0,2
pH gradient performed..... min. 70 %

5858.1	10 ml	glass	211,25 €
5858.2	25 ml	glass	470,35 €

For further information, please see page 1200

Roti®lyte pH 6-8

40 % solution in water, sterile filtered (0,2 µm)

Carrier ampholytes for isoelectric focussing (IEF). Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

Type analysis:

Appearance. ..... clear solution
Content (w/v). ..... 40 %
pH-value (2,5 % in H_2O, 20 °C)..... 7,2-8,0
Conductivity (2,5 % in H_2O, 20 °C). ..... 0,15-0,55 mS/cm
pH Range. ..... 6,2 ±0,4 to 8,0 ±0,5
pH gradient performed..... min. 60 %

5860.1	10 ml	glass	211,25 €
5860.2	25 ml	glass	470,35 €

For further information, please see page 1200

Roti®lyte pH 7-9

40 % solution in water, sterile filtered (0,2 µm)

Carrier ampholytes for isoelectric focussing (IEF). Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

Type analysis:

Appearance. ..... clear solution
Content (w/v). ..... 40 %
pH-value (2,5 % in H_2O, 20 °C)..... 7,6-8,1
Conductivity (2,0 % in H_2O, 20 °C). ..... 0,20-0,90 mS/cm
pH Range. ..... 7,0 ±0,3 to 9,0 ±0,3
pH gradient performed..... min. 70 %

5861.1	10 ml	glass	211,25 €
5861.2	25 ml	Glas	470,35 €

For further information, please see page 1200

Roti®lyte pH 8-10

40 % solution in water, sterile filtered (0,2 µm)

Carrier ampholytes for isoelectric focussing (IEF). Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

Type analysis:

Appearance. ..... clear solution
Content (w/v). ..... 40 %
pH-value (2,5 % in H_2O, 20 °C). 7,8-9,2
Conductivity (2,5 % in H_2O, 20 °C). ..... 0,10-0,40 mS/cm
pH Range. ..... 7,5 ±0,5 to 9,5 ±0,6
pH gradient performed. ..... min. 60 %

5864.1	10 ml	glass	211,25 €
5864.2	25 ml	glass	470,35 €

For further information, please see page 1200

Roti®-Mark, not prestained

Storage temp.: -20 °C
Transport temp.: room temp.
WGK 1

Roti®-Mark 10-150

Protein marker, not prestained
Size range: 10-150 kD
Number of protein bands: 8
Number of lanes/ml: approx. 200 (mini gels)

Warning H319

T850.2	100 µl	plastic	53,65 €
T850.1	500 µl	plastic	121,40 €

For further information, please see page 1207

Roti®-Mark 10-150 PLUS

Protein marker with additional prestained protein
Size range: 10-150 kD
Number of protein bands: 9
Number of lanes/ml: approx. 200 (mini gels)

Warning H319

X879.2	100 µl	plastic	60,10 €
X879.1	500 µl	plastic	149,45 €

For further information, please see page 1207

Roti®-Mark PETIT

Protein marker, not prestained
Size range: 3,5-40 kD
Number of protein bands: 7
Number of lanes/ml: approx. 200 (mini gels)

9299.1	100 µl	plastic	64,40 €
9299.2	500 µl	plastic	188,15 €

For further information, please see page 1207

Roti®-Mark STANDARD

Protein marker, not prestained
Size range: 14-212 kD
Number of protein bands: 7
Number of lanes/ml: approx. 200 (mini gels)

Warning H319

T851.3	200 µl	plastic	35,40 €
T851.1	1 ml	plastic	100,55 €
T851.2	4 x 1 ml	plastic	353,70 €

For further information, please see page 1207

Roti®-Mark ALL BLUE

Roti®-Mark ALL BLUE

NEW

Protein marker, prestained
Size range: 10-240 kD
Number of protein bands: 12
Number of lanes/ml: approx. 200 (mini gels)

Storage temp.: -20 °C
Transport temp.: room temp.
WGK 2

2242.1	250 µl	plastic	91,30 €
2242.2	2 x 250 µl	plastic	166,10 €

For further information, please see page 1206

Roti®-Mark, prestained

Storage temp.: -20 °C
Transport temp.: room temp.
WGK 1

Roti®-Mark BICOLOR

Protein marker, prestained
Size range: 17-245 kD
Number of protein bands: 9
Number of lanes/ml: approx. 200 (mini gels)

Warning H319

2806.1	100 µl	plastic	62,25 €
2806.2	250 µl	plastic	110,65 €

For further information, please see page 1207

Roti®-Mark BI-PINK

Protein marker, prestained
Size range: 10-175 kD
Number of protein bands: 11
Number of lanes/ml: approx. 200 (mini gels)

8269.1	500 µl	plastic	170,95 €

For further information, please see page 1207

Roti®-Mark TRICOLOR

Protein marker, prestained
Size range: 10-245 kD
Number of protein bands: 12
Number of lanes/ml: approx. 200 (mini gels)

8271.1	500 µl	plastic	170,95 €

For further information, please see page 1207

Roti®-Mark TRICOLOR XTRA

Roti®-Mark TRICOLOR XTRA

NEW

Protein marker, prestained
Size range: 10-310 kD
Number of protein bands: 12
Number of lanes/ml: approx. 200 (mini gels)
Storage temp.: -20 °C
Transport temp.: room temp.
WGK 2

2244.1	250 µl	plastic	103,10 €
2244.2	2 x 250 µl	plastic	191,25 €

For further information, please see page 1206

Roti®-Mark WESTERN PLUS

Roti®-Mark WESTERN PLUS

NEW

Protein marker, prestained
Size range: 15-200 kD
Number of protein bands: 14
· 10 IgG binding
· 4 prestained (tricolour)
Number of lanes/ml: approx. 200 (mini gels)
Storage temp.: -20 °C
Transport temp.: room temp.
WGK 2

2245.1	250 µl	plastic	195,55 €
2245.2	2 x 250 µl	plastic	370,90 €

For further information, please see page 1357

Roti®-Methylene blue staining concentrate

Roti®-Methylene blue staining concentrate

For reversible staining of DNA in agarose gels, 200x concentrate.
12 ml Roti®-methylene blue staining concentrate is sufficient for more than 50 mini gels.
Storage temp.: +4 °C
UN No. 1170 • ADR 3 III • WGK 2
Warning H226-H319

0648.1	3 ml	plastic	38,20 €
0648.2	12 ml	plastic	113,85 €

For further information, please see page 1219

ROTI®METIC, High-Purity Metals and Metal Compounds

Art. No.	Description	Page
5577	Aluminium granulate	1783
5368	Aluminium chloride hexahydrate	1784
5395	Aluminium fluoride	1784
5567	Aluminium nitrate nonahydrate	1784
5575	Aluminium oxide	1785
5050	Ammonium chloride	1796
5580	Ammonium dihydrogen phosphate	1796
5585	Ammonium hexachloroosmate (IV)	1797
5586	Ammonium hexachlororhodate(III)	1797
5587	Ammonium hexafluorosilicate	1798
5589	Ammonium hexafluorotitanate(IV)	1798
5363	Ammonium hydrogen fluoride	1799
5596	di-Ammonium hydrogen phosphate	1799
5591	Ammonium molybdate(VI)	1801
5590	Ammonium monovanadate	1801
5606	Ammonium sulphate	1803
5396	Ammonium tetraborate tetrahydrate	1804
5608	Ammonium tetrathiomolybdate	1804
5397	Ammonium tetrathiotungstate	1804
4516	Antimony shot	1810
5321	Barium carbonate	1825
5051	Barium chloride	1826
5115	Barium chloride dihydrate	1826
5055	Barium fluoride	1826
5609	Barium hydroxide hydrate	1826
5138	Barium nitrate	1827
5612	Beryllium acetate basic	1835
5614	Boric acid	1847
5247	Cadmium acetate	1731
5618	Caesium carbonate	1866
5061	Caesium chloride	1866
4505	Caesium nitrate	1867
5616	Calcium carbonate	1869
5056	Calcium chloride hydrate	1869
5617	Calcium hydroxide	1871
5058	Calcium nitrate hydrate	1872
5312	Cerium(III) nitrate hexahydrate	1886
5372	Cerium(III) acetate hydrate	1886
5603	Cerium(III) sulphate	1887
5601	Cerium(III) sulphate octahydrate	1887
5619	Chromium(III) nitrate nonahydrate	1896
4498	Chromium(III) oxide	1897
5620	Cobalt powder	1902
5291	Cobalt(II) nitrate hexahydrate	1903
5326	Cobalt(II) sulphate hydrate	1903
5621	Copper pellets	1907
5386	Copper powder	1908
5379	Copper(I) chloride	1909
5300	Copper(I) iodide	1909
5394	Europium(III) oxide	1988
4507	Gallium	2011
5548	Gallium(III) nitrate hydrate	2011
5377	Gallium(III) oxide	2011
5622	Gold shot	2028
5338	Holmium(III) oxide	2045
5626	Hydrogen hexachloroplatinate(IV) hydrate	2053
5628	Hydrogen tetrachloroaurate(III) hydrate	2055
5629	Indium shot	2065
5322	Indium(III) bromide	2066
5384	Indium(III) nitrate pentahydrate	2066
5630	Indium(III) oxide	2066
5364	Iodine(V) oxide	2070
5631	Iron granules	2073
5632	Iron(III) nitrate nonahydrate	2075
5634	Iron(III) oxide	2075
5366	Lanthanum(III) nitrate hexahydrate	2091
5062	Lithium bromide	2101
5635	Lithium carbonate	2102
5079	Lithium chloride	2102
5082	Lithium fluoride	2103
5281	Lithium nitrate	2103
5296	Lutetium(III) oxide	2107
5347	Magnesium chloride hexahydrate	2111
5420	Magnesium nitrate hexahydrate	2112
5639	Magnesium oxide	2113
4509	Manganese flakes	2119
5641	Manganese(II) acetate tetrahydrate	2119
5304	Manganese(II) chloride tetrahydrate	2120
5392	Manganese(II) nitrate hydrate	2120
5383	Manganese(IV) oxide	2120
4548	Molybdenum(VI) oxide	2146
5643	Nickel powder	2156
5373	Nickel(II) chloride hexahydrate	2156
5387	Nickel(II) nitrate hexahydrate	2157
5388	Nickel(II) oxide	2157
5648	Palladium powder	2189
5653	Palladium(II) chloride	2189
5393	Palladium(II) oxide	2189
5654	Platinum powder	2215
5064	Potassium bromide	2222
5346	Potassium chloride	2223
5656	Potassium fluoride	2226
5066	di-Potassium hydrogen phosphate	2227
5658	Potassium hydroxide	2229
5067	Potassium iodide	2231
5659	Potassium nitrate	2232
5071	Potassium sulphate	2234
5114	Potassium tetrachloroaurate(III)	2235
5660	Potassium tetrachloroplatinate(II)	2235
5668	Rhodium(III) chloride hydrate	2258
5679	Rubidium chloride	2301
5293	Rubidium nitrate	2301
5686	Ruthenium(III) chloride	2301
5735	Scandium(III) oxide	2307
4547	Selenium pellets	2310
5324	Selenium(IV) oxide	2310
5738	Silicon dioxide	2322
5739	Silver bromide	2326
5302	Silver chloride	2326
4500	Silver nitrate	2326
5065	Silver nitrite	2328
5380	Sodium acetate	2330
5086	Sodium bromide	2332
5740	Sodium carbonate	2333
5741	Sodium chloride	2334
4503	Sodium fluoride	2337
5742	Sodium nitrate	2345
5076	Sodium sulphate	2348
5376	Strontium carbonate	2382
5078	Strontium nitrate	2382
5745	Tellurium(IV) oxide	2396
5746	Tetraammineplatinum(II) nitrate	2398
5097	Tin shot	2408
5747	Titanium(IV) oxide	2409
5399	Tungsten(VI) oxide	2426
5370	Vanadium(V) oxide	2433
5749	Ytterbium(III) chloride hexahydrate	2448
5303	Ytterbium(III) oxide	2448
5751	Yttrium(III) oxide	2448
5345	Zinc shot	2449
5421	Zinc oxide	2451
4502	Zirconyl chloride octahydrate	2453
5415	Zirconyl nitrate hydrate	2453

Roti®-Mix PCR

Storage temp.: -20 °C
Transport temp.: cooled

Roti®-Mix PCR 1

2 mM (per dNTP) dATP, dTTP, dGTP, dCTP
Roti®-Mix PCR 1, nucleotide-mixture containing dATP, dTTP, dGTP, dCTP.
Concentration: 2 mM per dNTP.

L541.1	1 ml	plastic	24,65 €
L541.2	5 x 1 ml	plastic	96,65 €

For further information, please see page 1302

Roti®-Mix PCR 2

2 mM (per dNTP) dATP, dUTP, dGTP, dCTP

Roti®-Mix PCR 2, nucleotide-mixture containing dATP, dUTP, dGTP, dCTP.
Concentration: 2 mM per dNTP.

L542.1	1 ml	plastic	24,65 €
L542.2	5 x 1 ml	plastic	96,65 €

For further information, please see page 1302

Roti®-Mix PCR 3

10 mM (per dNTP) dATP, dTTP, dGTP, dCTP

Roti®-Mix PCR 3, nucleotide-mixture containing dATP, dTTP, dGTP, dCTP.
Concentration: 10 mM per dNTP.

L785.1	0,2 ml	plastic	24,65 €
L785.2	5 x 0,2 ml	plastic	96,65 €
L785.3	5 x 1 ml	plastic	396,70 €

For further information, please see page 1302

Roti®-Mix PCR 3 (pH 7)

10 mM (pro dNTP) dATP, dTTP, dGTP, dCTP

Roti®-Mix PCR 3 (pH 7), nucleotide-mixture containing dATP, dTTP, dGTP, dCTP.
Concentration: 10 mM per dNTP, **pH 7,0 ±0,1**

0179.1	0,2 ml	plastic	24,65 €
0179.2	5 x 0,2 ml	plastic	96,65 €

For further information, please see page 1302

Roti®-Mix PCR 4

10 mM (per dNTP) dATP, dUTP, dGTP, dCTP

Roti®-Mix PCR 4, nucleotide-mixture containing dATP, dUTP,dGTP, dCTP.
Concentration: 10 mM per dNTP.

L786.1	0,2 ml	plastic	24,65 €
L786.2	5 x 0,2 ml	plastic	96,65 €

For further information, please see page 1302

Roti®-Mount

Roti®-Mount

Mountant for microscopy, free from xylene and toluene.

Compatible with Roticlear® (Art. No. A538) and n-Butyl acetate (Art. No. P036).

D 0,88 • bp 110-130 °C
mp <-17 °C • flp 17,8 °C
UN No. 1993 • ADR 3 II • WGK 3

Danger
H225-H304-H372-H411-EUH066

Type analysis:

Appearance. ..... colourless to light yellowish, viscous liquid
Viscosity (20 °C). ..... 1000-1200 mPas
Refractive index (20 °C)..... 1,43-1,46
Density (20 °C). 0,850-900

HP68.1	100 ml	glass	21,00 €
HP68.2	500 ml	glass	64,40 €

For further information, please see page 1532

Roti®-Mount Aqua

Roti®-Mount Aqua

for microscopy

Aqueous mounting medium
D 1,05-1,18
WGK 1

Type analysis:

Appearance..... colourless, viscous liquid
Viscosity (20 °C)..... 170-220 mPas
Refractive index (20 °C). 1,3750-1,3950
Density (20 °C). ..... 1,05-1,18 g/cm^3

2848.1	15 ml	dropp. bottle	22,05 €
2848.2	50 ml	glass	40,75 €

For further information, please see page 1533

Roti®-Mount FluorCare

Storage temp.: +4 °C
WGK 1

Roti®-Mount FluorCare

for fluorescence microscopy

Aqueous mounting medium with antifading effect.

Type analysis:

Appearance.....clear, viscous liquid
Viscosity (20 °C)..... 170-220 mPas
Refractive index (20 °C). 1,44-1,465
Density (20 °C). 1,05-1,18

HP19.1	15 ml	dropp. bottle	57,55 €

For further information, please see page 1533

Roti®-Mount FluorCare DAPI

for fluorescence microscopy

Aqueous mounting medium with antifading effect. Contains DAPI for counterstaining.

Type analysis:

Appearance.....clear, viscous liquid
Viscosity (20 °C)..... 170-220 mPas
Refractive index (20 °C). 1,44-1,465
Density (20 °C). 1,05-1,18

HP20.1	15 ml	dropp. bottle	70,45 €

For further information, please see page 1534

Roti®-Mount FluorCare PI

for fluorescence microscopy

Aqueous mounting medium with antifading effect. Contains propidiumiodide (PI) for counterstaining.

Type analysis:

Appearance.....viscous, slightly reddish liquid
Viscosity (20 °C)..... 170-220 mPas
Refractive index (20 °C). 1,44-1,465
Density (20 °C). 1,05-1,18

HP21.1	15 ml	dropp. bottle	70,45 €

For further information, please see page 1534

Roti®-Nanoquant

Roti®-Nanoquant

5x conc.

For protein quantitation acc. to Bradford, for extremely small protein amounts.
D 1,371
Storage temp.: +4 °C
UN No. 2920 • ADR 8 (3) II • WGK 1

Danger H226-H314-H290

K880.2	50 ml	plastic	15,60 €
K880.3	200 ml	plastic	46,80 €
K880.1	500 ml	plastic	93,45 €

For further information, please see page 1362

Roti® Nucleic Acid-free

Roti® Nucleic Acid-free

ready-to-use solution for removal of nucleic acid contaminations from surfaces

Warning H315-H319

HP69.1	500 ml	spray bottle	71,95 €
HP69.2	1 l	plastic	96,25 €
Original pack 6 x 1 l			91,44/1 l
HP69.3	2,5 l	plastic	213,95 €
Original pack 4 x 2,5 l			203,25/2,5 l

For further information, please see page 1294

Roti® Nucleic Acid-free eXtra

Roti® Nucleic Acid-free eXtra

ready-to-use

Gentle solution for removal of nucleic acid contaminations from surfaces.
D 1,0

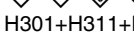
Type analysis:

Appearance. ..... clear, colourless
Efficiency (strand breakage test).....complies
Efficiency (PCR).....complies

1312.1	500 ml	plastic	68,70 €
1312.4	500 ml	spray bottle	71,95 €
1312.2	1 l	plastic	103,10 €
Original pack 6 x 1 l			97,95/1 l
1312.3	2,5 l	plastic	235,45 €
Original pack 4 x 2,5 l			223,68/2,5 l

For further information, please see page 1295

Roti®-Phenol

D 1,06
Storage temp.: +4 °C
UN No. 2821 • ADR 6.1 III • WGK 2
 **Danger**
H301+H311+H331-H314-H341-H373-H411

Roti®-Aqua-Phenol

for RNA extraction
Redistilled, in water saturated phenol, pH 4,5-5.
Draw solution from lower phase.
Do not shake before use!

A980.2	100 ml	glass	22,05 €
A980.1	250 ml	glass	43,55 €
A980.3	500 ml	glass	65,50 €

For further information, please see page 1263

Roti®-Phenol

for extraction of nucleic acids
Redistilled, in TE buffer equilibrated phenol, pH 7,5-8,0.
Draw solution from lower phase.
Do not shake before use!

0038.1	100 ml	glass	26,80 €
0038.2	250 ml	glass	52,60 €
0038.3	500 ml	glass	80,10 €

For further information, please see page 1263

Roti®-Phenol/Chloroform/ Isoamyl alcohol

Storage temp.: +4 °C
UN No. 2821 • ADR 6.1 II • WGK 3
Danger H301+H331-H312-H314-H341-H351-H361d-H372-H411

Roti®-Aqua-P/C/I

for RNA extraction
Redistilled, in water saturated phenol, chloroform and isoamyl alcohol at a ratio of 25:24:1, pH 4,5-5.

X985.3	100 ml	glass	28,95 €
X985.1	250 ml	glass	51,10 €
X985.2	500 ml	glass	77,30 €

For further information, please see page 1263

Roti®-Phenol/Chloroform/ Isoamyl alcohol

for extraction of nucleic acids
Redistilled, in TE-buffer equilibrated phenol, chloroform and isoamyl alcohol at a ratio of 25:24:1, pH 7,5-8,0.
Draw solution from lower phase.
Do not shake before use!

A156.3	100 ml	glass	37,55 €
A156.1	250 ml	glass	75,15 €
A156.2	500 ml	glass	125,25 €

For further information, please see page 1263

Rotiphorese® Blue R

Rotiphorese® Blue R

Brillant Blue R concentrate
For Coomassie® staining of protein gels.
600 ml concentrate are sufficient for approx. 12 mini gels.
D 0,826 • flp 11 °C
UN No. 3286 • ADR 3 (6.1) (8) II • WGK 1
Danger
H225-H370-H315-H319-H311+H331+H301

3074.1	600 ml	glass	32,15 €

For further information, please see page 1217

Rotiphorese® Gel solution 30 %

D 1,024
Storage temp.: +8 °C
WGK 3
Danger H302-H315-H317-H319-H340-H350-H361f-H372

Rotiphorese® Gel 30 (37,5:1)

ready-to-use, gas stabilised, aqueous 30 % acrylamide and bisacrylamide stock solution at a ratio of 37,5:1
For preparation of protein gels in electrophoresis.

3029.3	250 ml	glass	25,30 €
3029.2	500 ml	glass	39,25 €
3029.1	1 l	glass	66,55 €
Original pack 6 x 1 l			63,22/1 l

For further information, please see page 1188

Rotiphorese® NF-Acrylamide/ Bis-solution 30 % (29:1)

ready-to-use, gas stabilised, aqueous 30 % acrylamide and bisacrylamide stock solution at a ratio of 29:1, fluorescence free
Made from 4x cristallised acrylamide.
Tested for automatic sequencers.

A124.1	250 ml	glass	48,30 €
A124.2	1 l	glass	147,20 €
Original pack 6 x 1 l			139,84/1 l

For further information, please see page 1189

Rotiphorese® Gel solution 40 %

D 1,03
Storage temp.: +8 °C
WGK 3
Danger H302+H332-H315-H317-H319-H340-H350-H361f-H372

Rotiphorese® Gel 40 (19:1)

ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 19:1
Ideal for the preparation of sequencing gels and other DNA gels used for separating small DNA fragments.

3030.2	250 ml	glass	31,75 €
3030.1	1 l	glass	77,30 €
Original pack 6 x 1 l			73,44/1 l

For further information, please see page 1188

Rotiphorese® Gel 40 (29:1)

ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 29:1
For preparation of protein- or DNA gels. Particularly ideal for the analysis of protein/DNA interactions, or peptides.

A515.2	250 ml	glass	34,30 €
A515.1	1 l	glass	82,70 €
Original pack 6 x 1 l			78,57/1 l

For further information, please see page 1188

Rotiphorese® Gel 40 (37,5:1)

ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 37,5:1
For preparation of protein gels.

T802.2	250 ml	glass	30,65 €
T802.1	1 l	glass	74,10 €
Original pack 6 x 1 l			70,40/1 l

For further information, please see page 1188

Rotiphorese® NF-Acrylamide/ Bis-solution 40 % (19:1)

ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 19:1, fluorescence free

Made from 4x cristallised acrylamide.
Tested for automatic sequencers.

A516.1	250 ml	glass	50,00 €

For further information, please see page 1189

Rotiphorese® NF-Acrylamide/ Bis-solution 40 % (29:1)

ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 29:1, fluorescence free

Made from 4x cristallised acrylamide.
Tested for automatic sequencers.

A121.1	250 ml	glass	40,35 €

For further information, please see page 1189

Rotiphorese® Gel A

Rotiphorese® Gel A

30 % acrylamide solution
D 1,023
Storage temp.: +8 °C
WGK 3
Danger H302-H315-H319-H317-H340-H350-H361f-H372

3037.2	250 ml	glass	21,40 €
3037.1	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l

For further information, please see page 1189

Rotiphorese® Gel A

Rotiphorese® Gel A-40

40 % acrylamide solution
D 1,031
Storage temp.: +8 °C
WGK 3
Danger H302+H332-H315-H319-H317-H340-H350-H361f-H372

7748.1	250 ml	glass	28,95 €
7748.2	1 l	glass	68,70 €
Original pack 6 x 1 l			65,27/1 l

For further information, please see page 1188

Rotiphorese® Gel B

Rotiphorese® Gel B

2 % bisacrylamide solution
D 1,001
Storage temp.: +8 °C

3039.2	250 ml	glass	20,35 €
3039.1	1 l	glass	47,85 €
Original pack 6 x 1 l			45,46/1 l

For further information, please see page 1189

Rotiphorese® NF 10 x TBE Buffer

Rotiphorese® NF 10 x TBE Buffer

Ready-to-use 10x TBE-buffer for preparing sequencing gels, also tested and optimised as running buffer in electrophoresis for automatic sequencers, fluorescence-free.
D 1,061
Storage temp.: +20 °C
WGK 1
Warning H315-H319

A118.1	2,5 l	glass	100,95 €
Original pack 4 x 2,5 l			95,90/2,5 l

For further information, please see page 1201

Rotiphorese® NF-Urea

Rotiphorese® NF-Urea

tested for automatic sequencers, fluorescence free
CH_4N_2O
M 60,06 g/mol
mp 132-134 °C
Storage temp.: +4 °C
[57-13-6]
WGK 1

A120.1	1 kg	plastic	66,15 €
Original pack 6 x 1 kg			62,84/1 kg

For further information, please see page 1191

Rotiphorese®-PAGE Matrix Buffer plus

Rotiphorese®-PAGE Matrix Buffer plus

4x concentrated SDS-PAGE matrix buffer, for electrophoresis

Ready-made buffer solution for pouring of optimized SDS-PAGE gels.
One bottle of 250 ml is sufficient for pouring of approx. 100 mini gels.
SDS-Page buffer, Gel matrix buffer
Storage temp.: +4 °C
Transport temp.: cooled
WGK 1

Type analysis:
pH value.....6,9-7,1
Stability test.....complies

8996.1	250 ml	plastic	115,60 €

For further information, please see page 1189

Rotiphorese® 10x SDS-PAGE

Rotiphorese® 10x SDS-PAGE

10x concentrated SDS-PAGE running buffer, for electrophoresis.
Tris-glycine-SDS buffer
D 1,06
WGK 1

Composition:
0,25 M TRIS; 1,92 M Glycine
1 % (g/v) SDS; distilled, deionized water

3060.3	2,5 l	glass	69,35 €
Original pack 4 x 2,5 l			65,88/2,5 l
3060.2	5 l	plastic	98,80 €
Original pack 2 x 5 l			93,86/5 l
3060.1	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l

For further information, please see page 1201

Rotiphorese® DNA sequencing system

Rotiphorese® DNA sequencing system

Set of ready-to-use solutions for preparation of DNA sequencing gels.
Storage temp.: +4-15 °C
UN No. 3426 • ADR 6.1 III • WGK 3
Danger H340-H350-H372-H361f-H302-H315-H319-H317

A431.1	1 kit	glass	109,55 €

For further information, please see page 1190

Rotiphorese® Sequencing gel concentrate

Rotiphorese® Sequencing gel concentrate

Ready-to-use solution (19:1) for the preparation of gels containing 0-20 % monomer, for electrophoresis.

Also part of the DNA sequencing system (Art. No. A431.1).

D 1,140 • bp 100 °C

Storage temp.: +4-15 °C

WGK 3

Danger H302-H315-H319-H317-H340-H350-H361f-H372

Formulation:

Acrylamide..... 237,5 g
Methylenebisacrylamide..... 12,5 g
Urea..... 500 g
per 1 l

3043.2	100 ml	glass	13,90 €
3043.1	1 l	glass	60,10 €
Original pack 6 x 1 l			57,10/1 l

For further information, please see page 1190

Rotiphorese® Sequencing gel diluent

Rotiphorese® Sequencing gel diluent

50 % (g/v; 8,3 M) solution of urea in water for diluting Rotiphorese® Sequencing gel concentrate.

Also part of the DNA sequencing system (Art. No. A431.1).

D 1,120

Storage temp.: +4-15 °C

WGK 1

3047.1	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l

For further information, please see page 1190

Rotiphorese® Sequencing gel buffer concentrate

Rotiphorese® Sequencing gel buffer concentrate

50 % (g/v; 8,3 M) solution of urea in 10x TBE (1 M Tris-borate, 20 mM EDTA buffer, pH 8,3), for electrophoresis.

Also part of the DNA sequencing system (Art. No. A431.1).

D 1,185

Storage temp.: +4-15 °C

WGK 1

Warning H315-H319

3050.1	250 ml	glass	25,30 €

For further information, please see page 1190

Rotiphorese® 10x TAE Buffer

Storage temp.: +20 °C

WGK 1

Rotiphorese® 10x TAE Buffer

Buffer concentrate for DNA electrophoresis.

Composition:

0,4 M TRIS-acetate
0,01 M EDTA
distilled, deionized water

T845.1	1 l	glass	30,65 €
Original pack 6 x 1 l			29,12/1 l
T845.2	5 l	plastic	71,50 €
Original pack 2 x 5 l			67,93/5 l

For further information, please see page 1201

Rotiphorese® 10x TAE Buffer *light*

with reduced EDTA concentration

Buffer concentrate for DNA electrophoresis, ideal for DNA elution gels or in-gel-applications.

0122.1	1 l	glass	26,80 €
Original pack 6 x 1 l			25,46/1 l

For further information, please see page 1201

Rotiphorese® 50x TAE Buffer

Rotiphorese® 50x TAE Buffer

Buffer concentrate for DNA electrophoresis.

Storage temp.: +20 °C

WGK 1

Warning H315-H319-H335

CL86.1	1 l	glass	60,10 €
Original pack 6 x 1 l			57,10/1 l
CL86.3	2,5 l	glass	115,60 €
Original pack 4 x 2,5 l			109,82/2,5 l
CL86.2	5 l	plastic	176,85 €
Original pack 2 x 5 l			168,01/5 l

For further information, please see page 1201

Rotiphorese® 10x TBE Buffer

Rotiphorese® 10x TBE Buffer

10-times concentrated buffer

Ideal for preparation of sequencing gels and as running buffer in electrophoresis.

D 1,067

Storage temp.: +20 °C

WGK 1

Danger H315-H319-H360FD

Composition:

1,0 M TRIS-borate (pH 8,3), 20 mM EDTA
distilled, deionized water

3061.1	1 l	glass	28,50 €
Original pack 6 x 1 l			27,08/1 l
3061.3	2,5 l	glass	57,95 €
Original pack 4 x 2,5 l			55,05/2,5 l
3061.2	5 l	plastic	89,80 €
Original pack 2 x 5 l			85,31/5 l

For further information, please see page 1201

Roti®-PinkDNA

Roti®-PinkDNA

for molecular biology

Synthetic co-precipitant with dye for efficient precipitation of nucleic acids.

Storage temp.: +4 °C

WGK 1

Guarantee analysis:

Linear Polyacrylamide..... 5 mg/ml
DNA/RNA.....free
Dye. .....complies

HP54.1	0,5 ml	plastic	42,50 €
HP54.2	1,5 ml	plastic	120,30 €
HP54.3	3 ml	plastic	213,95 €

For further information, please see page 1282

Roti®-Plast

Roti®-Plast

100 % paraffin, for histology
Melting range: 54-56 °C

D 0,8 • bp 371 °C • flp >199 °C
[8002-74-2] • EC No. 232-315-6

Type analysis:

Appearance. .....white pastilles
Solidification point. .....54-56 °C

6642.1	1 kg	plastic	18,20 €
Original pack 6 x 1 kg			17,29/1 kg
6642.5	2,5 kg	plastic	33,25 €
6642.2	10 kg	plastic	112,80 €
6642.6	20 kg	plastic	192,45 €

For further information, please see page 1508

Roti®-Plast with DMSO

Roti®-Plast with DMSO

paraffin, for histology
Melting range: 56-58 °C

D 0,9 • flp >100 °C

Type analysis:

Appearance. .....white droplets
Solidification point. .....56-58 °C

6643.1	1 kg	cardboard	22,50 €
Original pack 6 x 1 kg			21,38/1 kg
6643.2	2 kg	plastic	38,60 €
6643.3	20 x 1 kg	cardboard	332,20 €

For further information, please see page 1508

Roti-Plasticlean®

Roti-Plasticlean®

plastic cleaner with antistatic effect, pH 9

D 0,98 • bp 82 °C

UN No. 1987 • ADR 3 III

Warning H226-H319

1953.1	500 ml	plastic	21,00 €

For further information, please see page 1153

Roti®-Pol Hot-TaqUltra

Roti®-Pol Hot-TaqUltra

5 U/µl, DNA-free

For hot start PCR amplifications, particularly of bacterial DNA.

Taq DNA polymerase, recombinant, hot start polymerase, antibody-blocked

Storage temp.: -20 °C
Transport temp.: cooled
WGK 1

Type analysis:

Purity (enzyme).....≥98 %
Enzyme activity.....5 U/µl
Endonuclease activity.....none detected
Exonuclease activity.....none detected
Suitability for PCR (400 bp).....complies
Suitability for PCR (3 kb).....complies
Bacterial DNA (enzyme).....none detected
Selective specificity in PCR.....complies
Hot start functionality.....complies
Stability (in storage buffer).....complies
For research use only. Not approved for use in clinical or *in vitro* diagnostics.

9350.1	200 U	plastic	155,90 €
9350.2	1000 U	plastic	740,70 €

For further information, please see page 1297

Roti®-Pol Hot-TaqHY

Roti®-Pol Hot-TaqHY

5 U/µl

For rapid high yield hot start PCR amplifications.

Taq DNA polymerase, recombinant, modified high yield hot start polymerase, antibody-blocked

Storage temp.: -20 °C
Transport temp.: cooled
WGK 1

Type analysis:

Purity (enzyme).....≥98 %
Enzyme activity.....5 U/µl
Endonuclease activity.....none detected
Exonuclease activity.....none detected
Suitability for PCR (400 bp).....complies
Suitability for PCR (3 kb).....complies
Suitability for PCR (5 kb).....complies
Selective specificity in PCR.....complies
Hot start functionality.....complies
Stability (in storage buffer).....complies
For research use only. Not approved for use in clinical or *in vitro* diagnostics.

9346.1	200 U	plastic	69,80 €
9346.2	1000 U	plastic	321,45 €

For further information, please see page 1297

Roti®-Pol Hot-TaqS

Roti®-Pol Hot-TaqS

5 U/µl

For hot start PCR amplifications.

Taq DNA polymerase, recombinant, hot start polymerase, antibody-blocked

Storage temp.: -20 °C
Transport temp.: cooled
WGK 1

Type analysis:

Purity (enzyme).....≥98 %
Enzyme activity.....5 U/µl
Endonuclease activity.....none detected
Exonuclease activity.....none detected
Suitability for PCR (400 bp).....complies
Suitability for PCR (3 kb).....complies
Suitability for PCR (5 kb).....complies
Selective specificity in PCR.....complies
Hot start functionality.....complies
Stability (in storage buffer).....complies
For research use only. Not approved for use in clinical or *in vitro* diagnostics.

9245.1	200 U	plastic	62,25 €
9245.2	1000 U	plastic	295,65 €

For further information, please see page 1297

Roti®-Pol Hot-TaqS Mix (2x)

Roti®-Pol Hot-TaqS Mix (2x)

ready-to-use, 2x conc.

Taq master mix for hot start PCR amplifications.

Optimized for reactions of 25 µl volume.

Master mix Taq DNA polymerase, recombinant, hot start master mix, antibody-blocked

Storage temp.: -20 °C
Transport temp.: cooled
WGK 1

Type analysis:

Appearance.....colourless
Endonuclease activity.....none detected
Exonuclease activity.....none detected
Suitability for PCR (400 bp).....complies
Suitability for PCR (3 kb).....complies
Suitability for PCR (5 kb).....complies
Selective specificity in PCR.....complies
For research use only. Not approved for use in clinical or *in vitro* diagnostics.

9248.1	2,5 ml	plastic	67,20 €
9248.2	12,5 ml	plastic	310,70 €

For further information, please see page 1297

Roti®-Pol Hot-TaqS Red-Mix (2x)

Roti®-Pol Hot-TaqS Red-Mix (2x)

ready-to-use, 2x conc.

Taq master mix for hot start PCR amplifications followed by direct gel-loading.

Optimized for reactions of 25 µl volume.

Master mix Taq DNA polymerase, recombinant, hot start master mix, antibody-blocked, ready-to-load

Storage temp.: -20 °C
Transport temp.: cooled
WGK 1

Type analysis:

Appearance.....red
Endonuclease activity.....none detected
Exonuclease activity.....none detected
Suitability for PCR (400 bp).....complies
Suitability for PCR (3 kb).....complies
Suitability for PCR (5 kb).....complies
Selective specificity in PCR.....complies
For research use only. Not approved for use in clinical or *in vitro* diagnostics.

9256.1	2,5 ml	plastic	69,80 €
9256.2	12,5 ml	plastic	321,45 €

For further information, please see page 1297

Roti®-Pol ProofRead

Roti®-Pol ProofRead

5 U/µl

For high fidelity PCR amplifications.

Pfu DNA polymerase, recombinant, high fidelity, proof reading polymerase

Storage temp.: -20 °C
Transport temp.: cooled
WGK 1

Type analysis:

Purity (enzyme).....≥98 %
Enzyme activity.....5 U/µl
Endonuclease activity.....none detected
Exonuclease activity.....none detected
Suitability for PCR (400 bp).....complies
Suitability for PCR (3 kb).....complies
Selective specificity in PCR.....complies
Stability (in storage buffer).....complies
For research use only. Not approved for use in clinical or *in vitro* diagnostics.

9344.1	200 U	plastic	80,55 €
9344.2	1000 U	plastic	375,20 €

For further information, please see page 1297

Roti®-Pol TaqHY

Roti®-Pol TaqHY

5 U/µl

For rapid high yield PCR amplifications.

Taq DNA polymerase, recombinant, modified high yield polymerase

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Type analysis:

Purity (enzyme)..... ≥98 %
Enzyme activity..... 5 U/µl
Endonuclease activity..... none detected
Exonuclease activity..... none detected
Suitability for PCR (400 bp)..... complies
Suitability for PCR (3 kb)..... complies
Selective specificity in PCR. ..... complies
Stability (in storage buffer)..... complies

For research use only. Not approved for use in clinical or *in vitro* diagnostics.

9345.1	500 U	plastic	69,80 €
9345.2	2500 U	plastic	321,45 €

For further information, please see page 1297

Roti®-Pol TaqS

Roti®-Pol TaqS

5 U/µl

For all standard PCR amplifications.

Taq DNA polymerase, recombinant

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Type analysis:

Purity (enzyme)..... ≥98 %
Enzyme activity..... 5 U/µl
Endonuclease activity..... none detected
Exonuclease activity..... none detected
Suitability for PCR (400 bp)..... complies
Suitability for PCR (3 kb)..... complies
Selective specificity in PCR. ..... complies
Stability (in storage buffer)..... complies

For research use only. Not approved for use in clinical or *in vitro* diagnostics.

9223.1	500 U	plastic	62,25 €
9223.2	2500 U	plastic	295,65 €

For further information, please see page 1297

Roti®-Pol TaqS Mix (2x)

Roti®-Pol TaqS Mix (2x)

ready-to-use, 2x conc.

Taq master mix for all standard PCR amplifications.

Optimized for reactions of 25 µl volume.

Master mix Taq DNA polymerase, recombinant

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Type analysis:

Appearance..... colourless
Endonuclease activity..... none detected
Exonuclease activity..... none detected
Suitability for PCR (400 bp)..... complies
Suitability for PCR (3 kb)..... complies
Selective specificity in PCR. ..... complies

For research use only. Not approved for use in clinical or *in vitro* diagnostics.

9239.1	2,5 ml	plastic	44,00 €
9239.2	12,5 ml	plastic	177,40 €

For further information, please see page 1297

Roti®-Pol TaqS Red-Mix (2x)

Roti®-Pol TaqS Red-Mix (2x)

ready-to-use, 2x conc.

Taq master mix for standard PCR amplifications followed by direct gel-loading.

Optimized for reactions of 25 µl volume.

Master mix Taq DNA polymerase, recombinant, ready-to-load

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Type analysis:

Appearance..... red
Endonuclease activity..... none detected
Exonuclease activity..... none detected
Suitability for PCR (400 bp). ..... complies
Suitability for PCR (3 kb). ..... complies
Selective specificity in PCR. ..... complies

For research use only. Not approved for use in clinical or *in vitro* diagnostics.

9241.1	2,5 ml	plastic	48,30 €
9241.2	12,5 ml	plastic	192,45 €

For further information, please see page 1297

Roti®-Pol TaqUltra

Roti®-Pol TaqUltra

5 U/µl, DNA-free

For PCR amplifications, particularly of bacterial DNA.

Taq DNA polymerase, recombinant

Storage temp.: -20 °C
Transport temp.: cooled

WGK 1

Type analysis:

Purity (enzyme). ..... ≥98 %
Enzyme activity. ..... 5 U/µl
Endonuclease activity..... none detected
Exonuclease activity..... none detected
Suitability for PCR (400 bp). ..... complies
Suitability for PCR (3 kb). ..... complies
Bacterial DNA (enzyme)..... none detected
Selective specificity in PCR. ..... complies
Stability (in storage buffer)..... complies

For research use only. Not approved for use in clinical or *in vitro* diagnostics.

9347.1	200 U	plastic	146,10 €
9347.2	1000 U	plastic	719,20 €

For further information, please see page 1297

Roti®-PreMix PBS

Roti®-PreMix PBS

for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 9.55 g/l in highly pure water.

PBS powder, Phosphate buffered saline

WGK 1

Formulation:

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,2, when prepared in deionized or distilled water.

0890.1	250 g	plastic	77,30 €
0890.2	1,25 kg	plastic	213,40 €

For further information, please see page 1362

Roti®-PreMix PBST

Roti®-PreMix PBST

for biochemistry and molecular biology

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 10.05 g/l in highly pure water.

WGK 1

Formulation:

Prepared 1x PBST solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, 0,05 % Tween® 20, pH-value 7,4 ±0,2, when prepared in deionized or distilled water.

0987.1	250 g	plastic	77,30 €
0987.2	1,25 kg	plastic	213,40 €

For further information, please see page 1370

Roti®-Prep Blood Genomic DNA MINI

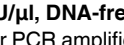
Roti®-Prep Blood Genomic DNA MINI

for molecular biology

For isolation of DNA from whole blood

Storage temp.: +20 °C

UN No. 3316 • ADR 9 II • WGK 2

 **Danger** H225-H317-H319-H315-H334-H335-H336-H400

8620.1	10 prep.	35,40 €
8620.2	50 prep.	135,35 €
8620.3	250 prep.	536,45 €

For further information, please see page 1266

Roti®-Prep Gel Extraction

Roti®-Prep Gel Extraction

for molecular biology

For DNA extraction from agarose gels.

Storage temp.: +20 °C

UN No. 3316 • ADR 9 III • WGK 2

Warning H290-H302+H312+H332-H315-H319-H412-EUH032

8510.1	10 prep.	21,00 €
8510.2	50 prep.	78,40 €
8510.3	250 prep.	304,15 €

For further information, please see page 1269

Roti®-Prep Genomic DNA MINI

Roti®-Prep Genomic DNA MINI

for molecular biology

For isolation of genomic DNA from tissues, rodent tails, FFPE tissues, buccal swabs, cell cultures.

Storage temp.: +20 °C

UN No. 3316 • ADR 9 II • WGK 2

Danger H225-H315-H317-H318-H334-H335-H336-H411

8472.1	10 prep.	40,35 €
8472.2	50 prep.	150,00 €
8472.3	250 prep.	590,20 €

For further information, please see page 1265

Roti®-Prep PCR Purification

Roti®-Prep PCR Purification

for molecular biology

For concentration and purification of PCR products.

Storage temp.: +20 °C

UN No. 3316 • ADR 9 II • WGK 1

Danger H225-H319-H336

8503.1	10 prep.	21,00 €
8503.2	50 prep.	78,40 €
8503.3	250 prep.	304,15 €

For further information, please see page 1268

Roti®-Prep Plasmid MINI

Roti®-Prep Plasmid MINI

for molecular biology

For fast and easy isolation of plasmid and cosmid DNA from recombinant bacteria.

Storage temp.: +20 °C

UN No. 1760 • ADR 8 II • WGK 1

Danger H290-H302-H314

HP29.4	10 prep.	33,25 €
HP29.1	50 prep.	71,95 €
HP29.2	250 prep.	278,45 €

For further information, please see page 1265

Roti®-Prep Plasmid MINI-XL

Roti®-Prep Plasmid MINI-XL

for molecular biology

For easy isolation of plasmids from up to 15 ml bacterial culture.

Storage temp.: +20 °C

UN No. 3316 • ADR 9 II • WGK 1

Danger

H225-H290-H302-H315-H318-H336

8546.1	10 prep.	26,35 €
8546.2	50 prep.	94,50 €
8546.3	250 prep.	353,70 €

For further information, please see page 1264

Roti®-Prep RNA MINI

Roti®-Prep RNA MINI

for molecular biology

For RNA isolation from eukaryotic cells, tissues, bacteria, biopsies.

Storage temp.: +20 °C

WGK 1

Warning H302+H312-H412-EUH032

8485.1	10 prep.	57,95 €
8485.2	50 prep.	223,50 €
8485.3	250 prep.	858,95 €

For further information, please see page 1266

Roti®-Prep Viral RNA/DNA MINI

Roti®-Prep Viral RNA/DNA MINI

for molecular biology

For isolation of viral DNA and RNA

Storage temp.: +20 °C

UN No. 3316 • ADR 9 II • WGK 2

Danger H225-H315-H317-H319-H334-H335-H336-H411-EUH032

8547.1	50 prep.	223,50 €

For further information, please see page 1268

Roti®-Quant

Roti®-Quant

5x conc.

For protein quantitation acc. to Bradford.

D 1,37

Storage temp.: +4 °C

UN No. 2920 • ADR 8 (3) II • WGK 1

Danger H226-H290-H314

K015.2	50 ml	plastic	14,95 €
K015.3	200 ml	plastic	48,95 €
K015.1	500 ml	plastic	96,65 €

For further information, please see page 1360

Roti®-Quant universal

Roti®-Quant universal

For protein quantitation (PCA enhanced Biuret reaction). High tolerance against detergents, salts and alcohols.

D 1,37

Storage temp.: +20 °C

UN No. 3082 • ADR 9 III • WGK 2

Danger H315-H318-H411

0120.2	1 kit (200 assays)		89,80 €
0120.1	1 kit (500 assays)		188,15 €

For further information, please see page 1363

Roti®-Quick kit

Roti®-Quick kit

for molecular biology

For RNA-isolation from cells and tissues.

The Roti®-Quick Kit is sufficient for 20 isolations from 0,2 g tissue each.

Storage temp.: +4 °C

UN No. 1992 • ADR 3 (6.1) II • WGK 3

Danger

H225-H314-H301+H311-H330-H341-H351-H373-H336-H412-EUH032

A979.1	1 kit	cardboard	91,30 €

For further information, please see page 1267

ROTI®REMETIC Rare Earth Metal Inorganic Compounds

Art. No.	Description	Page
7084	Cerium(III) acetate hydrate	1886
7049	Cerium(III) nitrate hexahydrate	1887
7067	Cerium(III) oxalate hydrate	1887
7042	Cerium(IV) oxide	1887
7145	Dysprosium(III) oxide	1963
7160	Erbium(III) oxide	1972
7187	Europium(III) oxide	1988
7189	Gadolinium(III) oxide	2009
7136	Gadolinium(III) oxide	2009
7031	Lanthanum(III) acetate hydrate	2091
7026	Lanthanum(III) carbonate hydrate	2091
7028	Lanthanum(III) fluoride	2091
7019	Lanthanum(III) nitrate hexahydrate	2091
7180	Lanthanum(III) nitrate hexahydrate	2092
7191	Lanthanum(III) oxalate	2092
7410	Lanthanum(III) oxide	2092
7203	Lanthanum(III) phosphate hydrate	2092
7265	Lutetium(III) nitrate hydrate	2107
7177	Lutetium(III) oxide	2107
7107	Neodymium(III) acetate hydrate	2155
7097	Neodymium(III) nitrate hexahydrate	2155
7092	Neodymium(III) oxide	2155
7090	Praseodymium(III) carbonate octahydrate	2236
7087	Praseodymium(III,IV) oxide	2236
7120	Samarium(III) carbonate hydrate	2307
7108	Samarium(III) oxide	2307
7011	Scandium(III) oxide	2308
7282	Thulium(III) nitrate pentahydrate	2406
7353	Ytterbium(III) oxide	2448
7284	Yttrium(III) carbonate hydrate	2448
7352	Yttrium(III) oxide	2448

Roti®-Seal

Roti®-Seal

for microscopy

Aqueous cover slip sealant.

Melt on a water bath (50-55 °C) prior to use.

D 1,05 • mp 45 °C • WGK 1

Type analysis:

Appearance. ..... yellowish, clear, solid medium
Refractive index (20 °C)..... 1,366-1,367
Density..... 1,045-1,055
Melting point. ..... 40-45 °C

6473.1	20 ml	glass	13,90 €

For further information, please see page 1537

Roti®-Sep 1077 human

Roti®-Sep 1077 human

CELLPURE® sterile, for density gradient centrifugation

Polysucrose based medium for separation of lymphocytes from whole blood.

Polysucrose solution, lymphocyte separation medium

M ~400000 g/mol • D 1,077

Storage temp.: +4 °C • WGK 1

Danger H317-H334

Type analysis:

Appearance of solution..... clear, colourless
Density. ..... 1,077 ± 0,001 g/ml
pH value. ..... 7,15±0,35
Osmolality. ..... 315 ±25 mOsm/kg
Sterility. ..... complies
Endotoxins. ..... <0,5 E.U./ml
Suitability for cell cultur. ..... complies

0642.1	100 ml	plastic	44,00 €
0642.2	500 ml	plastic	117,75 €

For further information, please see page 1280

Roti®-Sep 1077 animal

Roti®-Sep 1077 animal NEW

CELLPURE® sterile, for density gradient centrifugation

Polysucrose based medium for separation of lymphocytes from mammalian whole blood.

For PBMC isolation from mammalian blood.

Polysucrose solution, lymphocyte separation medium

M ~400000 g/mol

D 1,077

Storage temp.: +4 °C

WGK 1

Type analysis:

Appearance of solution..... clear, colourless
Density. ..... 1,077±0,001 g/ml
pH value. ..... 7,1±0,5
Osmolality. ..... 265±10 mOsm/kg
Sterility. ..... complies

0622.1	100 ml	plastic	44,65 €
0622.2	500 ml	plastic	121,50 €

For further information, please see page 1385

Roti®-Sep 1077 human/tube

Roti®-Sep 1077 human/tube NEW

CELLPURE® sterile, for density gradient centrifugation

Polysucrose based medium for separation of lymphocytes from human whole blood. Prefilled in centrifugation tubes, 50 ml each.

For PBMC isolation from human blood.

Polysucrose solution, lymphocyte separation medium

M ~400000 g/mol

D 1,077

Storage temp.: +4 °C

WGK 1

Type analysis:

Appearance of solution..... clear, colourless
Density. ..... 1,077±0,001 g/ml
pH value. ..... 7,15±0,35
Osmolality. ..... 315±25 mOsm/kg
Endotoxins. ..... tested
Sterility. ..... complies

0634.1	25 x 50 ml	cardboard	397,75 €

For further information, please see page 1385

Roti®-Sep 1086 mouse

Roti®-Sep 1086 mouse NEW

CELLPURE® sterile, for density gradient centrifugation

Polysucrose based medium for separation of lymphocytes from mouse whole blood.

For PBMC isolation from mouse blood.

Polysucrose solution, lymphocyte separation medium

M ~400000 g/mol

D 1,086

Storage temp.: +4 °C

WGK 1

Type analysis:

Appearance of solution. ..... clear, colourless
Density. ..... 1,086±0,001 g/ml
pH value. ..... 7,0±0,5
Osmolality. ..... 285±15 mOsm/kg
Sterility. ..... complies

0624.1	100 ml	plastic	46,80 €
0624.2	500 ml	plastic	137,60 €

For further information, please see page 2297

Rotisol®

Rotisol®

≥99 %

Universal alcoholic solvent

D ~0,79 • bp 56-80 °C

flp 12 °C

UN No. 1170 • ADR 3 II • WGK 1

Danger H225-H319-EUH066

Type analysis:

Appearance. ..... clear, colourless liquid
Assay (EtOH). ..... ≥99 %
Methyl ethyl ketone (MEK). ..... ~1 %
Acetone..... ~5 %
Methanol. ..... ≤0,1 %
Aldehyde content (as acetaldehyde). ..... ≤0,003 %
Sum of other impurities. ..... ≤0,03 %
Acid content (as CH_3COOH)..... ≤0,001 %
Evaporation residue. ..... ≤0,003 %

7917.3	1 l	glass	19,90 €
Original pack 6 x 1 l			18,91/1 l
7917.1	2,5 l	glass	34,95 €
Original pack 4 x 2,5 l			33,20/2,5 l
7917.2	25 l	tinplate	193,40 €

For further information, please see page 1153

ROTISOLV® GC Ultra Grade

Art. No.	Description	Page
KK42	Acetic acid ethyl ester	1759
KK40	Acetone	1761
KK41	Cyclohexane	1916
KK47	Dichloromethane	1935
KK48	n-Hexane	2041
KK44	Methanol	2131
KK45	n-Pentane	2195
KK46	Toluene	2411

ROTISOLV® Headspace Grade

Art. No.	Description	Page
HN45	N,N-Dimethylacetamide (DMA)	1945
HN46	N,N-Dimethylformamide (DMF)	1948
HN48	1,3-Dimethyl-2-imidazolidinone (DMI)	1949
HN47	Dimethyl sulphoxide (DMSO)	1950

ROTISOLV® HPLC Grade

Art. No.	Description	Page
7336	Acetic acid ethyl ester	1758
7328	Acetone	1760
T195	Acetonitrile	1762
8825	Acetonitrile	1762
HN44	Acetonitrile	1763
7330	Acetonitrile	1763
CN20	Acetonitrile	1763
6827	Acetonitrile	1763
T178	1-Butanol	1859
T175	tert-Butyl methyl ether	1863
7333	Cyclohexane	1916
7334	Dichloromethane	1935
0702	N,N-Dimethylformamide (DMF)	1948
0728	Dimethyl sulphoxide (DMSO)	1950
X949	1,4-Dioxane	1952
P076	Ethanol	1975
6828	n-Heptane	2037
7337	n-Heptane	2037
7339	n-Hexane	2041
T176	Isohexane	2077
7340	Isooctane	2078
X948	Methanol	2131
7342	Methanol	2131
KK39	Methanol	2131
P717	Methanol	2131
CN99	n-Pentane	2195
0731	Petroleum ether 40-60 °C	2203
T177	1-Propanol	2239
7343	2-Propanol	2239
7344	Tetrahydrofuran	2400
7346	Toluene	2411
7331	Trichloromethane/Chloroform	2415
A511	Water	2439

ROTISOLV® LC-MS Eluent Mixtures

Art. No.	Description	Page
CP00	Acetonitrile with 0,1 % formic acid	1764
CP01	Acetonitrile with 0,1 % acetic acid	1764
CP02	Acetonitrile with 0,1 % trifluoroacetic acid	1764
CP06	Methanol with 0,1 % trifluoroacetic acid	2134
CP03	Water with 0,1 % formic acid	2440
CP05	Water with 0,1 % trifluoroacetic acid	2440

ROTISOLV® LC-MS Grade

Art. No.	Description	Page
AE69	Acetic acid ethyl ester	1758
AE70	Acetonitrile	1762
AE71	Methanol	2131
AE73	2-Propanol	2239
AE72	Water	2439

ROTISOLV® Pestilyse®

Art. No.	Description	Page
T164	Acetic acid ethyl ester	1759
T161	Acetone	1761
T168	Acetonitrile	1763
T163	Cyclohexane	1916
T162	Dichloromethane	1935
T900	Diethyl ether	1939
X878	n-Heptane	2037
T861	n-Hexane	2042
T165	n-Hexane	2042
T904	Isohexane	2077
T167	Isooctane	2079
T169	Methanol	2132
T903	n-Pentane	2196
T170	Petroleum ether 40-60 °C	2203
T902	2-Propanol	2240
T166	Toluene	2411
T901	Trichloromethane/Chloroform	2415
T905	Water	2439

ROTISOLV® Pestilyse® plus

Art. No.	Description	Page
7565	Acetic acid ethyl ester	1759
7535	Acetone	1761
7542	Cyclohexane	1916
7562	Dichloromethane	1935
7566	n-Heptane	2037
7573	n-Hexane	2041
7567	n-Hexane	2042
7576	Isohexane	2077
7580	Isooctane	2079
7583	Methanol	2132
7587	n-Pentane	2196
7588	Petroleum ether 40-60 °C	2203
7590	2-Propanol	2240
7591	Toluene	2411
7554	Trichloromethane/Chloroform	2415

ROTISOLV® Ultra LC-MS

Art. No.	Description	Page
HN40	Acetonitrile	1762
HN41	Methanol	2131
0733	2-Propanol	2239
0739	Tetrahydrofuran	2400
HN43	Water	2439

ROTISOLV® UV/IR Grade

Art. No.	Description	Page
4442	Acetic acid ethyl ester	1759
T906	Acetone	1761
T907	Acetonitrile	1763
CP81	Cyclohexane	1916
4433	Dichloromethane	1935
CP79	N,N-Dimethylformamide (DMF)	1948
CP78	n-Heptane	2038
T908	n-Hexane	2042
CP80	Isooctane	2079
T909	Methanol	2132
4443	n-Pentane	2196
T910	2-Propanol	2240
CP83	Tetrachloroethylene	2399
CP82	Tetrahydrofuran	2400
4445	Toluene	2412
4432	Trichloromethane/Chloroform	2415

Roti®-Stock 10x PBS

Roti®-Stock 10x PBS

BioScience-Grade, ready-to-use, filtered and steam sterilised

For protein biochemistry, cytology, and molecular biology.

PBS 10x ready-to-use solution

WGK 1

Composition:

1.37 M NaCl, 27 mM KCl, 100 mM Na_2HPO_4, 20 mM KH_2PO_4 in deionised water, pH-value 7.4, 0.2 µm filtered and steam sterilised

1058.1	1 l	glass	119,90 €
Original pack 6 x 1 l			113,91/1 l

For further information, please see page 1370

Roti®-Stock 10x PBST

Roti®-Stock 10x PBST

BioScience-Grade, ready-to-use, filtered and steam sterilised

For protein biochemistry, cytology, and molecular biology.

PBST 10x ready-to-use solution

bp 100 °C

WGK 1

Composition:

1,37 M NaCl, 27 mM KCl, 100 mM Na_2HPO_4, 20 mM KH_2PO_4, 0,5 % Tween® 20 in deionised water, pH value 7,4, 0,2 µm filtered and steam sterilised

1059.1	1 l	glass	125,25 €
Original pack 6 x 1 l			118,99/1 l

Roti®-Stock 20 % SDS

Roti®-Stock 20 % SDS

BioScience-Grade, ready-to-use, 0,2 µm filtered

For molecular biology and electrophoresis.

SDS 20 % ready-to-use solution

WGK 2

Danger H318-H315-H335

Composition:

20 % SDS in deionised water, 0,2 µm filtered

1057.1	1 l	glass	143,55 €
Original pack 6 x 1 l			136,37/1 l

For further information, please see page 1293

Roti®-Stock 20x SSC

Roti®-Stock 20x SSC

BioScience-Grade, ready-to-use, steam sterilised

For molecular biology.

SSC 20x ready-to-use solution

WGK 1

Composition:

3 M NaCl, 300 mM sodium citrate in deionised water, pH-value 7.0, steam sterilised

1054.1	1 l	glass	68,70 €
Original pack 6 x 1 l			65,27/1 l

For further information, please see page 1287

Roti®-Stock 10x TBS

Roti®-Stock 10x TBS

BioScience-Grade, ready-to-use, filtered and steam sterilised

For protein biochemistry, cytology, and molecular biology.

TBS 10x ready-to-use solution

WGK 1

Composition:

1.5 M NaCl, 30 mM KCl, 250 mM Tris in deionised water, pH value 7.4, 0.2 µm filtered and steam sterilised

1060.1	1 l	glass	126,35 €
Original pack 6 x 1 l			120,03/1 l

Roti®-Stock 10x TBST

Roti®-Stock 10x TBST

BioScience-Grade, ready-to-use, filtered and steam sterilised

For protein biochemistry, cytology, and molecular biology.

TBST 10x ready-to-use solution

WGK 1

Composition:

1.5 M NaCl, 30 mM KCl, 250 mM Tris, 0.5 % Tween® 20 in deionised water, pH value 7.4, 0.2 µm filtered and steam sterilised

1061.1	1 l	glass	126,35 €
Original pack 6 x 1 l			120,03/1 l

Roti®-Stock 100x TE

Roti®-Stock 100x TE

BioScience-Grade, ready-to-use, steam sterilised

For molecular biology.

TE 100x ready-to-use solution

WGK 1

Warning H315-H319

Composition:

1 M Tris (pH 8,0), 100 mM EDTA (pH 8,0) in deionised water, steam sterilised

1052.1	1 l	glass	84,85 €
Original pack 6 x 1 l			80,61/1 l

For further information, please see page 1292

Roti®-Store cryo vials

Storage temp.: +4 °C

WGK 1

Roti®-Store cryo vials

Sterile. Suitable for freezing all types of microorganisms, including recombinant bacteria.

P730.3	5 vials, with 25 glass globules each	13,45 €
P730.1	50 vials, with 25 glass globules each	111,30 €
P730.2	250 vials, with 25 glass globules each	521,40 €

For further information, please see page 1509

Roti®-Store yeast cryo vials

Sterile. Ideal for freezing yeast and monocellular moulds.

X983.1	50 cryo vials, with 25 glass globules each	137,10 €

For further information, please see page 1509

Roti®-Strept/HRP-Kit

Roti®-Strept/HRP-Kit

for immunochemistry

HRP-kit for highly sensitive detection of biotinylated molecules on slides.

One kit is sufficient for incubation of approx. 200 slides.

HRP detection kit with biotin and streptavidine

Storage temp.: +4 °C
Transport temp.: cooled

WGK 1

EUH208

Type analysis:

Application test (Blotting)..... complies

9206.1	1 kit	cardboard	332,20 €

For further information, please see page 1375

Rotiszint® eco plus

Rotiszint® eco plus

LSC-universal cocktail

For hydrophilic and lipophilic samples.

D 0,96 • bp 290 °C

mp -47 °C • flp 148 °C

UN No. 3082 • ADR 9 III • WGK 2

Danger H318-H315-H412-H302

0016.4	100 ml	glass	18,85 €
0016.3	5 l	plastic	268,25 €
Original pack 2 x 5 l			254,84/5 l

For further information, please see page 1359

Rotitest®-Annexin V

Rotitest®-Annexin V

Rotitest® Bio Analysis

For detection and enumeration of apoptotic cells and simultaneous differentiation from necrosis.

1 set is sufficient for analysis of 50 samples of 10^5 cells each

Annexin-FITC conjugate, Apoptosis detection Kit

Storage temp.: +4 °C

WGK 3

Type analysis:

Appearance (test solution). ..... colourless to yellowish
Appearance PI solution. ..... orange to red
Dye content. ..... complies
Appearance Binding Buffer. ..... colourless
pH value Binding Buffer..... 7,3-7,5

7735.1	50 assays	214,50 €

For further information, please see page 1397

Rotitest® Coliform

Rotitest® Coliform

Rotitest® Bio Analysis

Detection system for exclusion, or affirmation, of contamination by coliforms.

Suitable for testing of any surface.

Storage temp.: +20 °C

WGK 1

Type analysis:

Appearance (nutrient medium).....red-brown
Sterility test. .....complies
Growth of bacterial test strains. .....complies

4806.1	25 swabs	131,70 €

For further information, please see page 1412

Rotitest® Listeria

Rotitest® Listeria

Rotitest® Bio Analysis

Detection system for exclusion, or affirmation, of contamination by listeriae.

Suitable for testing of any surface.

Storage temp.: +20 °C

WGK 1

Type analysis:

Appearance (nutrient medium)..... brown
Sterility test. .....complies
Growth of bacterial test strains. .....complies

4805.1	25 swabs	131,70 €

For further information, please see page 1412

Rotitest® Oxidase strips

Rotitest® Oxidase strips

Rotitest® Bio Analysis

Rapid test system for detection of cytochrome oxidase in microorganisms.

Storage temp.: +4 °C

Type analysis:

Paper colour..... white
Labelling reaction area.....green
Colour shift to blue. .....complies
Colour shift test germs. .....complies

8469.1	100 pieces	tube	37,10 €

For further information, please see page 1480

Rotitest® Phosphatase paper

Rotitest® Phosphatase paper

Rotitest® Bio Analysis

For detection of phosphatase in Milk.

Storage temp.: +4 °C

Type analysis:

Paper colour..... white
Colour shift to yellow. .....complies
Sensitivity.....complies

8470.1	10 pieces	21,00 €

For further information, please see page 1411

Rotitest® Protein

Rotitest® Protein

Rotitest® Bio Analysis

Protein detection system for rapid control of surfaces after the cleaning process.

Suitable for testing of any surface.

Protein quick test

Storage temp.: +20 °C

UN No. 1170 • ADR 3, III • WGK 1

Warning H226

Type analysis:

Appearance (test solution).....yellow-orange
Turbidity.....transparent
Test (milk protein).....complies

4803.1	20 swabs	94,10 €

Rotitest® Vital

Rotitest® Vital

Rotitest® Bio Analysis

Colorimetric test solution for evaluation of cell proliferation and -viability.

1 ml is sufficient for enumeration of 100 cell samples.

Non-cytotoxic cell proliferation test solution.

Storage temp.: +4 °C

WGK 2

Type analysis:

Appearance (test solution).....red
Turbidity.....transparent
Absorption.....complies

0069.3	1 ml	plastic	63,35 €
0069.1	5 ml	plastic	177,40 €
0069.2	4 x 5 ml	plastic	532,15 €

For further information, please see page 1392

Rotitherm® H 250

Rotitherm® H 250

Silicone oil for heating baths.

D 1,03

mp -55 °C

WGK 1

1670.1	1 l	plastic	132,15 €
1670.2	10 l	plastic	1116,95 €

For further information, please see page 1181

Rotitherm® M 220

Rotitherm® M 220

Silicone oil for heating baths. Brown.

D 0,97

WGK 1

0991.1	1 l	plastic	49,35 €

For further information, please see page 1181

Rotitherm® M 150

Rotitherm® M 150

Silicone oil for heating baths.

D 1,00

WGK 1

0990.1	1 l	plastic	33,25 €
0990.2	5 l	plastic	145,15 €

For further information, please see page 1181

Rotitherm® K + H

Rotitherm® K + H

Heat transfer fluid for cooling and heating baths. Due to the low pour point, Rotitherm® K+H can also be used as a coolant. Can be mixed with water in any ratio. No susceptibility to water hardness. Mixtures with 10-30 % proportion of water can be used up to -55 °C. Does not form build-up even when heated and can easily be removed using water.

Modified polyglycol ether

D 1,15 • bp 200 °C

flp >290 °C

WGK 1

Type analysis:

Density (23 °C).....1,13-1,17 g/cm³
Viscosity (23 °C).....220-280 mm²/s
Pour point.....<-39 °C
Flash point.....>290 °C
Autoignition temperature.....~390 °C
Water.....<0,5 %

7143.1	1 l	plastic	38,60 €
Original pack 6 x 1 l			36,67/1 l
7143.2	5 l	plastic	142,90 €
Original pack 2 x 5 l			135,76/5 l

For further information, please see page 1181

Roti®-Transform

Roti®-Transform

Sterile. For preparation of competent *E. coli*.

Storage temp.: -20 °C
Transport temp.: room temp.

WGK 1

P043.1	1 kit		63,35 €

For further information, please see page 1510

ROTI®VOLUM volumetric solutions in ampoules

▶ Chapter Anorganic and Analytical Reagents see p. 1683

ROTI®VOLUM Volumetric Solutions in Ampoules

Art. No.	Description	Page
CN51	EDTA disodium salt solution (0,1 N)	1965
CN61	Hydrochloric acid (0,1 N)	2051
CN62	Hydrochloric acid (0,5 N)	2051
CN63	Hydrochloric acid (1 N)	2052
CN59	Oxalic acid solution (0,1 N)	2188
CN53	Potassium hydroxide solution (0,1 N)	2230
CN66	Silver nitrate solution (0,1 N)	2327
CN67	Sodium chloride solution (0,1 N)	2335
CN56	Sodium hydroxide solution (0,1 N)	2342
CN57	Sodium hydroxide solution (0,5 N)	2343
CN58	Sodium hydroxide solution (1 N)	2343
CN55	Sodium thiosulphate solution (0,1 N)	2351
CN64	Sulphuric acid (0,1 N)	2390
CN65	Sulphuric acid (1 N)	2391

Roti®ZOL RNA

Roti®ZOL RNA

for molecular biology

Ready-made solution with green dye for isolation of total RNA

1 ml Roti®ZOL RNA is used for RNA isolation from 100 mg tissue or 10^7 cells, respectively.

RNA isolation reagent

Storage temp.: +4 °C

UN No. 1760 • ADR 8 II • WGK 2

Danger H290-H302+H312+H332-H314-H341-H373-EUH032

Type analysis:

Colour.....green
pH value (25 °C).....4,1-4,7

9319.1	100 ml	plastic	231,70 €
9319.2	200 ml	plastic	407,45 €

RPF Supplement

RPF Supplement

lyophilised

Media supplement for identification and enumeration of *Staphylococcus aureus*.

One box of 10 vials RPF Supplement is sufficient for 10x 100 ml Baird Parker Agar.

Rabbit Plasma Fibrinogen Supplement

Storage temp.: +4 °C

WGK 1

Warning H302+H312+H332

Formulation:

Rabbit plasma.....2,5 ml
Bovine fibrinogen.....380 mg
Trypsin inhibitor.....2,5 mg
Potassium tellurite.....2,5 mg
per vial

6064.1	10 vials	glass	418,20 €

For further information, please see page 1461

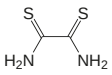
RPMI cell culture medium

▶ Roti®-CELL RPMI-1640 see p. 2270

R-5-P-Na_2

▶ D-Ribose-5-phosphate disodium salt see p. 2261

Rubeanic acid spray solution



Rubeanic acid spray solution

for TLC

Ready-to-use spray solution for detection of heavy metal ions. 0,2 g Rubeanic acid dissolved in 100 ml ethanol.

UN No. 1170 • ADR 3 II • WGK 1

Danger H225

Type analysis:

TLC-application. ..... complies

CP32.1	100 ml	glass	38,50 €

Rubidium Standards

▶ Rubidium ICP Standard Solution see p. 2364
▶ Rubidium ICP Standard Solution see p. 2369

Rubidium chloride

RbCl
M 120,92 g/mol
D 2,76 • bp 1390 °C
mp 715 °C
Solubility: 910 g/l (H_2O, 20 °C)
[7791-11-9] • EC No. 232-240-9 • WGK 1

Rubidium chloride

ROTI®METIC 99,98 % (3N8)

Type analysis:

Assay (metals basis)..... 99,98 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5679.1	5 g	plastic	213,95 €
5679.2	10 g	plastic	364,45 €

Rubidium chloride

≥99,5 %, p.a.

Guarantee analysis:

Appearance. ..... white powder
Assay..... ≥99,5 %
Aluminium (Al). ..... ≤0,001 %
Lead (Pb)..... ≤0,001 %
Calcium (Ca)..... ≤0,001 %
Cesium (Cs)..... ≤0,05 %
Iron (Fe)..... ≤0,005 %
Potassium (K). ..... ≤0,05 %
Sodium (Na). ..... ≤0,002 %
Magnesium (Mg)..... ≤0,001 %
Lithium (Li)..... ≤0,001 %
Silicon (Si). ..... ≤0,001 %

4471.2	5 g	plastic	37,55 €
4471.1	10 g	plastic	65,05 €
4471.3	25 g	plastic	137,10 €
4471.4	50 g	plastic	252,65 €

Rubidium nitrate

Rubidium nitrate

ROTI®METIC 99,99 % (4N)

$RbNO_3$
M 147,47 g/mol
D 3,11
mp 310 °C (dec.)
Solubility: 650 g/l (H_2O, 20 °C)
[13126-12-0] • EC No. 236-060-1
UN No. 1477 • ADR 5.1 II • WGK 1

Danger H272-H315-H319-H335

Type analysis:

Assay (metals basis). ..... 99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5293.1	5 g	plastic	155,90 €
5293.2	25 g	plastic	676,20 €

Ruthenium Standards

▶ Ruthenium ICP Standard Solution see p. 2364
▶ Ruthenium ICP Standard Solution see p. 2369

Ruthenium(III) chloride

Ruthenium trichloride
$RuCl_3$
M 207,43 g/mol
D 3,11
mp >500 °C
[10049-08-8] • EC No. 233-167-5
UN No. 3260 • ADR 8 II • WGK 2

Danger H314-H302-H412

Ruthenium(III) chloride

ROTI®METIC 99,9 % (3N), anhydrous

Type analysis:

Assay (metals basis). ..... 99,9 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5686.1	1 g	plastic	92,35 €
5686.2	5 g	plastic	407,45 €

Ruthenium(III) chloride

pure, anhydrous

Type analysis:

Assay (Ru)..... ≥48 %

4659.1	1 g	glass	55,80 €

Ruthenium(III) chloride hydrate

Ruthenium(III) chloride hydrate

pure

Contains 10-15 % water.
$RuCl_3 \cdot x\ H_2O$
M 207,43 + x H_2O g/mol
[14898-67-0] • EC No. 233-167-5
UN No. 3260 • ADR 8 II • WGK 2

Danger H314-H302

Type analysis:

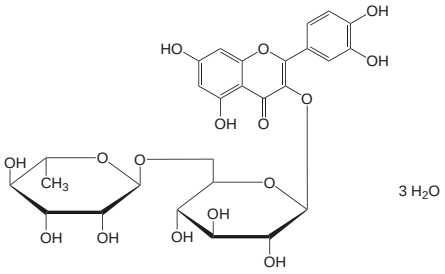
Assay (Ru). ..... 40,0-43,0 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,01 %
Sodium (Na)..... ≤0,01 %
Palladium (Pd). ..... ≤0,01 %

7910.1	1 g	glass	73,65 €

Ruthenium trichloride

▶ Ruthenium(III) chloride see p. 2301

Rutin trihydrate



Rutoside, Quercetin-3-rutinoside, Sophorin
$C_{27}H_{30}O_{16} \cdot 3\ H_2O$
M 664,58 g/mol
mp ~210 °C
[250249-75-3] • EC No. 205-814-1 • WGK 3

Rutin trihydrate

≥95 %, Ph.Eur.

Guarantee analysis:

Appearance. ..... yellow to yellow green cryst. powder
Assay (titr. dry substance)..... 95,0-101,0 %
Identity. ..... complies
Water (KF). ..... 7,5-9,5 %
In CH_3OH insoluble matter. ..... ≤3,0 %
Light-absorbing contaminants (450-800 nm). ..... ≤0,1
Sulphated ash. ..... ≤0,1 %
Impurities (A, B, C). ..... ≤2,0 %
Sum of all impurities. ..... ≤4,0 %

5154.1	25 g	plastic	28,50 €
5154.2	100 g	plastic	87,65 €

Rutin trihydrate

ROTI®STAR Primary Standard

Type analysis:

Assay (HPLC). ..... ≥90,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤10,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV. The certificate includes all results of analytical tests and validations.

NE14.1	50 mg	glass	532,15 €

Rutin trihydrate
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC14.1	100 mg	glass	125,70 €

Rutin trihydrate
ROTICHROM® HPLC
Reference substance for HPLC.
Storage temp.: +4 °C

Type analysis:
Purity (HPLC)..... ≥99 %

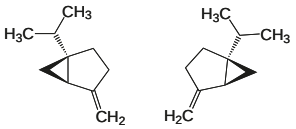
7422.2	50 mg	glass	188,15 €

Rutinosyl-7-iso-sakuranetin
▶ Didymin see p. 1937

Rutoside
▶ Rutin trihydrate see p. 2301

RVS Broth
▶ Rappaport Vassiliadis Broth see p. 2251

Sabinene



Sabinene
ROTICHROM® GC
Reference substance for GC.
$C_{10}H_{16}$
M 136,23 g/mol
bp 163-165 °C
Storage temp.: +4 °C
[3387-41-5] • EC No. 222-212-4
UN No. 3295 • ADR 3 III • WGK 3
Warning H226

Type analysis:
Purity (GC)..... ≥98,5 %

7188.2	100 mg	glass	145,15 €

Sabouraud 2 % Glucose Agar

Sabouraud 2 % Glucose Agar
for microbiology
Selective agar for taxonomic analysis of pathogenic fungi.
Application: Use 47 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

Formulation:
Meat and casein peptone..... 10 g/l
Glucose..... 20 g/l
Agar..... 17 g/l
pH value..... 5,6 ±0,2

AE22.1	500 g	plastic	80,10 €
Original pack 6 x 500 g			76,10/500 g

For further information, please see page 1461

Sabouraud 2 % Glucose Broth

Sabouraud 2 % Glucose Broth
Ph.Eur., for microbiology
Selective media for taxonomic analysis of pathogenic fungi.
Application: Use 30 g for 1 l broth.
Sabouraud Dextrose Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
Storage temp.: +20 °C

Guarantee analysis:
Meat and casein peptone..... 10 g/l
Glucose..... 20 g/l
pH value..... 5,6 ±0,2

AE23.1	500 g	plastic	67,65 €
Original pack 6 x 500 g			64,27/500 g

For further information, please see page 1461

Sabouraud 2 % Glucose Broth, granulated

Sabouraud 2 % Glucose Broth, granulated
granulated, Ph.Eur., for microbiology
Selective media for taxonomic analysis of pathogenic fungi.
Application: Use 30 g for 1 l broth.
Sabouraud Dextrose Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
Storage temp.: +20 °C
WGK 1

Guarantee analysis:
Meat and casein peptone..... 10 g/l
Glucose..... 20 g/l
pH value..... 5,7 ±0,2

1508.1	500 g	plastic	85,90 €
Original pack 6 x 500 g			81,61/500 g

For further information, please see page 1457

Sabouraud 4 % Glucose Agar

Sabouraud 4 % Glucose Agar
Ph.Eur., for microbiology
For isolation, differentiation and cultivation of yeasts and fungi.
Application: Use 65 g for 1 l agar.
Agar medium C (Ph.Eur. 6.0), Sabouraud Dextrose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
Storage temp.: +20 °C
WGK 1

Guarantee analysis:
Meat and casein peptone..... 10 g/l
Glucose monohydrate..... 40 g/l
Agar..... 15 g/l
pH value..... 5,6 ±0,2

X932.1	500 g	plastic	68,30 €
Original pack 6 x 500 g			64,89/500 g
X932.2	1 kg	plastic	123,10 €
Original pack 6 x 1 kg			116,95/1 kg

For further information, please see page 1461

Sabouraud 4 % Glucose Agar (with chloroamphenicol)

Sabouraud 4 % Glucose Agar (with chloroamphenicol)
Ph.Eur., for microbiology
Selective agar for cultivation and isolation of yeasts and pathogenic fungi.
Application: Use 65 g for 1 l agar.
Agar medium C with chloroamphenicol (Ph.Eur. 6.0)
Storage temp.: +20 °C
WGK 1

Guarantee analysis:
Meat and casein peptone..... 10 g/l
Glucose monohydrate..... 40 g/l
Chloroamphenicol..... 0,05 g/l
Agar..... 15 g/l
pH value..... 5,6 ±0,2

AE48.1	500 g	plastic	87,00 €
Original pack 6 x 500 g			82,65/500 g

For further information, please see page 1461

Sabouraud 4 % Glucose Agar (with chloroamphenicol)

Sabouraud 4 % Glucose Agar (with chloroamphenicol)
for microbiology
For selective isolation of yeasts and pathogenic fungi.
Application: Use 65,5 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

Formulation:
Meat and casein peptone..... 10 g/l
Glucose..... 40 g/l
Chloroamphenicol..... 0,5 g/l
Agar..... 15 g/l
pH value..... 5,6 ±0,2

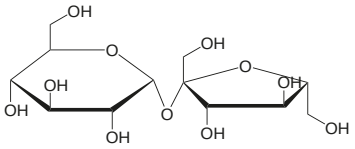
X933.1	500 g	plastic	77,30 €
Original pack 6 x 500 g			73,44/500 g

For further information, please see page 1461

Saccharin sodium salt

▶ o-Benzoic sulphimide sodium salt see p. 1831

D(+)-Saccharose



D-Sucrose
$C_{12}H_{22}O_{11}$
M 342,30 g/mol
mp 185-187 °C
Solubility: ~1970 g/l (H_2O, 15 °C)
[57-50-1] • EC No. 200-334-9 • WGK 1

D(+)-Saccharose

≥99,5 %, p.a.
For microbiology and molecular biology.

Guarantee analysis:

Assay	≥99,5 %
Invert sugar	≤0,04 %
Loss on drying	≤0,1 %
Sulfite (as SO_2)	≤0,001 %
Chloride (Cl)	≤0,005 %
Arsenic (As)	≤0,00001 %
Lead (Pb)	≤0,00005 %
Cadmium (Cd)	≤0,00001 %
Chromium (Cr)	≤0,0005 %
Calcium (Ca)	≤0,001 %
Iron (Fe)	≤0,0005 %
Potassium (K)	≤0,005 %
Cobalt (Co)	≤0,0005 %
Copper (Cu)	≤0,0005 %
Magnesium (Mg)	≤0,0005 %
Manganese (Mn)	≤0,0005 %
Sodium (Na)	≤0,005 %
Nickel (Ni)	≤0,0005 %
Mercury (Hg)	≤0,000005 %
Zinc (Zn)	≤0,0005 %

4621.1	1 kg	plastic	20,35 €
Original pack 6 x 1 kg			19,33/1 kg
4621.2	5 kg	plastic	86,55 €
4621.3	10 kg	plastic	109,55 €
4621.5	25 kg	plastic	198,90 €

D(+)-Saccharose

CELLPURE®
For cell culture and biochemistry.

Guarantee analysis:

Endotoxins	≤1,5 E.U./g
Appearance	white to off-white powder
Loss on drying (3 h, 105 °C)	≤0,1 %
Specific rotation $[\alpha]_D^{20}$ (c=26 in H_2O)	+66,3° to +67,0°
Conductivity	≤35 µS/cm
Sulphite (SO_3)	≤0,001 %
Ethanol	≤0,1 %
Methanol	≤0,05 %

8890.1	50 g	plastic	17,75 €
8890.2	100 g	plastic	26,80 €
8890.3	250 g	plastic	50,00 €
8890.4	500 g	plastic	93,45 €
Original pack 6 x 500 g			88,78/500 g

D(+)-Saccharose

≥99,5 %, Ph.Eur.
For density gradient centrifugation; for biochemical applications.

Guarantee analysis:

Appearance of solution	complies
Assay	≥99,5 %
Identity	complies
Conductivity	≤35 µS/cm
Colour	≤45
Reducing sugar	complies
Specific rotation $[\alpha]_D^{20}$	+66,3° to +67,0°
Loss on drying (105 °C)	≤0,1 %
Sulfite (as SO_2)	complies

4661.1	1 kg	plastic	19,90 €
Original pack 6 x 1 kg			18,91/1 kg
4661.2	5 kg	plastic	82,25 €
4661.4	10 kg	plastic	100,95 €
4661.3	50 kg	cardboard	317,15 €

For further information, please see page 1616

D(+)-Saccharose

≥99,7 %, powdered

Type analysis:

Appearance	fine white powder
Assay	≥99,7 %
Water (KF)	0,06 %
Reducing substances (invert sugar)	≤0,04 %
Melting point	185-187 °C
Grain size 80 % under 100 µm	

9286.1	1 kg	plastic	18,85 €
Original pack 6 x 1 kg			17,91/1 kg
9286.2	5 kg	plastic	67,20 €

D(+)-Saccharose

≥99,5 %, RNase/DNase free
Reagent for density gradient centrifugation.

Guarantee analysis:

Assay	≥99,5 %

9097.1	1 kg	plastic	37,55 €
Original pack 6 x 1 kg			35,67/1 kg
9097.2	5 kg	plastic	160,20 €

For further information, please see page 1280

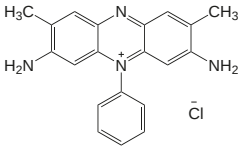
Saffron yellow

▶ Martius yellow (C.I. 10315) see p. 2123

Safraniline

▶ Rhodamine B (C.I. 45170) see p. 2258

Safranin O (C.I. 50240)



Safranin O (C.I. 50240)

for microscopy
Safranin T
$C_{20}H_{19}ClN_4$
M 350,85 g/mol
Solubility: 50 g/l (H_2O, 20 °C)
[477-73-6] • EC No. 207-518-8
WGK 2

Warning H315-H319

Type analysis:

Absorption max. (ethanol 50 %)	530-534 nm
Loss on drying (110 °C)	≤15 %

T129.1	10 g	glass	42,50 €

For further information, please see page 1525

Safranin solution

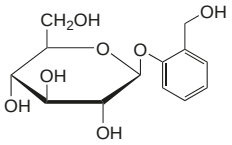
Safranin solution

for Gram staining
[477-73-6] • EC No. 207-518-8
WGK 2

CN01.1	500 ml	glass	33,25 €

For further information, please see page 1519

D(-)-Salicin



D(-)-Salicin

≥90 %, for biochemistry
Saligenin-β-D-glucopyranoside, Salicoside
$C_{13}H_{18}O_7$
M 286,27 g/mol
mp 198-200 °C
Solubility: 250 g/l (H_2O, 60 °C)
[138-52-3] • EC No. 205-331-6
WGK 1

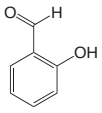
Warning H317

Type analysis:

Appearance	white powder
Assay (HPLC)	≥90 %
Specific rotation $[\alpha]_D^{20}$ (in H_2O)	-62,5° ±2°
Loss on drying	≤0,5 %

7192.1	5 g	plastic	30,00 €
7192.2	50 g	plastic	182,25 €

Salicylaldehyde



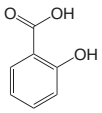
Salicylaldehyde

≥99 %, for synthesis
2-Hydroxybenzaldehyde
$C_7H_6O_2$
M 122,12 g/mol
D ~1,16 • bp 197 °C
mp -7 °C • flp 79 °C
Solubility: 14 g/l (H_2O, 20 °C)
[90-02-8] • EC No. 201-961-0 • WGK 2
Warning H302-H315-H319

Type analysis:
Assay (GC). ..... ≥99 %
Density (d 20 °C/4 °C). 1,165-1,167

4662.1	100 ml	glass	22,50 €

Salicylic acid



2-Hydroxybenzoic acid
$C_7H_6O_3$
M 138,12 g/mol
D 1,44 • bp 336 °C
mp 158-161 °C • flp 157 °C
Solubility: ~2 g/l (H_2O, 20 °C)
[69-72-7] • EC No. 200-712-3 • WGK 1
Danger H318-H302

Salicylic acid

≥99 %, p.a., ACS

Guarantee analysis:
Assay. ..... ≥99,0 %
Melting point. ..... 158-161 °C
Chloride (Cl). ..... ≤0,001 %
Sulphate (SO_4). ..... ≤0,003 %
Heavy metals (as Pb). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0002 %
Matter discoloured by H_2SO_4. ..... complies
Ash content. ..... ≤0,01 %

2723.1	250 g	plastic	27,45 €
2723.2	500 g	plastic	39,25 €
Original pack 6 x 500 g			37,29/500 g
2723.3	1 kg	plastic	62,90 €
Original pack 6 x 1 kg			59,76/1 kg

Salicylic acid

≥99 %, Ph.Eur.

Guarantee analysis:
Appearance. ..... white to off-white, cryst. powder
Assay. ..... 99,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... clear, colourless
Chloride (Cl). ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,02 %
Sulphated ash. ..... ≤0,1 %
Heavy metals. ..... ≤0,002 %
Related substances:
Water (KF). ..... ≤0,5 %
4-Hydroxybenzoic acid. ..... ≤0,1 %
4-Hydroxyisophthalic acid. ..... ≤0,05 %
Phenol. ..... ≤0,02 %
Any other impurities. ..... ≤0,05 %
Sum of all impurities. ..... ≤0,2 %

8626.1	250 g	plastic	21,00 €
8626.2	1 kg	plastic	60,10 €
Original pack 6 x 1 kg			57,10/1 kg
8626.3	2,5 kg	plastic	96,65 €

Salicylic acid

≥99 %, for biochemistry

Type analysis:
Assay (dry substance). ..... 99,0-100,5 %
Water (KF). ..... ≤0,5 %
Colour number (Hazen). ..... ≤30
Chloride (Cl). ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,002 %
Sulphated ash. ..... ≤0,1 %

9268.2	500 g	plastic	34,30 €
Original pack 6 x 500 g			32,59/500 g
9268.1	1 kg	plastic	57,95 €
Original pack 6 x 1 kg			55,05/1 kg
9268.3	2,5 kg	plastic	85,90 €

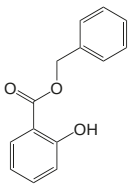
Salicylic acid

ROTI®CALIPURE Melting point standard 158-160 °C

Type analysis:
Meniscus formation. ..... 158-160 °C
Complete liquefaction. ..... 158-160 °C

9731.1	1 g	glass	31,10 €

Salicylic acid benzyl ester



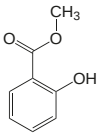
Salicylic acid benzyl ester

≥99 %
Benzyl salicylate
$C_{14}H_{12}O_3$
M 228,24 g/mol
D ~1,18
flp 180 °C
[118-58-1] • EC No. 204-262-9
WGK 2
Warning H315-H319-H335

Type analysis:
Assay (GC). ..... ≥99,0 %
Refractive index n_D^{20}. 1,580-1,582

4184.1	100 ml	glass	39,25 €

Salicylic acid methyl ester



Salicylic acid methyl ester

≥99 %
Methyl salicylate, 2-Hydroxybenzoic acid methyl ester
$C_8H_8O_3$
M 152,15 g/mol
D 1,18 • bp 223 °C
mp -8 °C • flp 101 °C
Solubility: 0,74 g/l (H_2O, 30 °C)
[119-36-8] • EC No. 204-317-7
WGK 1
Warning H302-H315-H319-H335

Type analysis:
Appearance. ... clear, almost colourless to yellowish oil
Assay. ..... ≥99 %
Density (20 °C). ..... 1,180-1,186 g/cm³
Refractive index (20 °C). 1,5350-1,5380
Optical rotation (20 °C). ..... -1° to +1°

4529.1	250 ml	glass	26,80 €

Salicylic acid sodium salt

▶ Sodium salicylate see p. 2348

5-Salicylsulphonic acid

▶ 5-Sulphosalicylic acid dihydrate see p. 2387

Salicyluric acid

▶ o-Hydroxyhippuric acid see p. 2058

Saligenin-β-D-glucopyranoside

▶ D(-)-Salicin see p. 2303

Salmiac

▶ Ammonium chloride see p. 1796

Salmiac salt

▶ Ammonium chloride see p. 1796

Salmiac solution

▶ Ammonia solution Ultra-quality see p. 1792
▶ Ammonia solution Supra-quality see p. 1793
▶ Ammonia solution 32 % see p. 1793
▶ Ammonia solution 30 % see p. 1793
▶ Ammonia solution 25 % see p. 1793
▶ Ammonia solution 15 % see p. 1794

Salmine sulphate

Salmine sulphate

for biochemistry

From salmon sperm.
Protamine sulphate
M ~9000 g/mol
[53597-25-4]

Type analysis:

Appearance. ..... white to light yellowish powder
Loss on drying. ..... ≤5,0 %
Nitrogen (N). ..... 22-26 %
Sulphate (SO_4). ..... 16-21 %

7194.1	5 g	plastic	122,45 €

Salmonella chromogenic Agar

Salmonella chromogenic Agar

for microbiology

For isolation of *Salmonella* from foods, waters and other samples.
Application: Use 37,1 g for 1 l agar.
Storage temp.: +4 °C
WGK 1

Formulation:

Sodium citrate. ..... 8,5 g/l
Casein peptone. ..... 5 g/l
Beef extract. ..... 5 g/l
Chromogene Mixture. ..... 5,81 g/l
Agar. ..... 12,8 g/l
pH value. ..... 7,2 ±0,2

CL46.2	100 g	plastic	145,05 €
CL46.1	575 g	plastic	482,70 €

For further information, please see page 1462

Salmonella-Shigella Agar

Salmonella-Shigella Agar

for microbiology

For isolation of pathogenic enterobacteria, especially *Salmonella* and *Shigella*.
Application: Use 60 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

Formulation:

Beef extract. ..... 5 g/l
Peptone mixture. ..... 5 g/l
Lactose. ..... 10 g/l
Ferric citrate. ..... 1 g/l
Bile salts. ..... 8,5 g/l
Sodium citrate. ..... 8,5 g/l
Sodium thiosulphate. ..... 8,5 g/l
Brilliant green. ..... 0,0003 g/l
Neutral red. ..... 0,025 g/l
Agar. ..... 13,5 g/l
pH value. ..... 7,0 ±0,2

X934.1	500 g	plastic	61,85 €
Original pack 6 x 500 g			58,76/500 g

For further information, please see page 1462

Salmon Sperm DNA sodium salt

Salmon Sperm DNA sodium salt

ex salmon testes

Deoxyribonucleic acid sodium salt, DNA from salmon sperm
Storage temp.: +4 °C
[9007-49-2]

Guarantee analysis:

Appearance. ..... off-white to light brown powder
Solution (10 % in H_2O at 40 °C). ..... colourless to slightly yellow
Loss on drying. ..... ≤12,0 %
Sodium (dry substance). ..... ≥5,8 %
Phosphorus (dry substance). ..... ≥8,1 %
Nitrogen (dry substance). ..... ≥14,3 %
Maximum absorption. ..... 258-262 nm
UV-Absorption (0,001 % in phosphate buffer pH 7). ..... ≥0,155 AU

5434.1	5 g	plastic	28,50 €
5434.2	10 g	plastic	44,65 €

For further information, please see page 1288

Salts for Analysis

Art. No.	Description	Page
X862	Aluminium ammonium sulphate dodecahydrate	1784
CN85	Aluminium nitrate nonahydrate	1784
5340	Aluminium sulphate hexadecahydrate	1785
7869	Ammonium acetate	1795
HN14	Ammonium bromide	1795
CP98	Ammonium carbonate	1795
4386	Ammonium cerium(IV) sulphate dihydrate	1796
K298	Ammonium chloride	1796
P727	Ammonium dihydrogen phosphate	1797
6549	Ammonium fluoride	1797
3666	Ammonium heptamolybdate tetrahydrate	1797
T871	Ammonium hydrogen carbonate	1798
P735	di-Ammonium hydrogen citrate	1798
P736	di-Ammonium hydrogen phosphate	1799
5485	Ammonium hydrogen sulphate	1799
9818	Ammonium iodide	1799
P728	Ammonium iron(II) sulphate hexahydrate	1800
P734	Ammonium iron(III) sulphate dodecahydrate	1801
0742	Ammonium metatungstate hydrate	1801
4232	Ammonium monovanadate	1801
K299	Ammonium nitrate	1802
P737	di-Ammonium oxalate monohydrate	1802
9592	Ammonium peroxydisulphate	1802
3746	Ammonium sulphate	1803
4477	Ammonium thiocyanate	1804
9819	Antimony(III) chloride	1811
9826	Antimony(III) oxide	1811
2553	Barium acetate	1825
P008	Barium carbonate	1826
4453	Barium chloride dihydrate	1826
P009	Barium hydroxide octahydrate	1827
4387	Barium nitrate	1827
4447	Bismuth(III) nitrate	1840
2554	Bismuth(III) nitrate pentahydrate	1840
6555	Bismuth(III) oxide	1840
KK06	Cadmium acetate dihydrate	2000
4482	Cadmium sulphate hydrate	1866
6873	Caesium carbonate	1866
8627	Caesium chloride	1866
9355	Caesium sulphate	1867
P011	Calcium acetate monohydrate	1868
P012	Calcium carbonate	1869
5239	Calcium chloride dihydrate	1870
T886	Calcium chloride hexahydrate	1870
P740	Calcium nitrate tetrahydrate	1872
P741	Calcium sulphate dihydrate	1873
HN28	Cerium(IV) ammonium nitrate	1886
HN18	Cerium(III) nitrate hexahydrate	1887
9837	Cerium(IV) oxide	1887
P014	Cerium(IV) sulphate tetrahydrate	1887
9832	Chromium(III) chloride hexahydrate	1896
8773	Chromium(III) nitrate nonahydrate	1897
4389	Chromium(III) potassium sulphate dodecahydrate	1897
HN29	Cobalt(II) acetate tetrahydrate	1902
T889	Cobalt(II) chloride hexahydrate	1903
HN16	Cobalt(II) nitrate hexahydrate	1903
9834	Cobalt(II,III) oxide	1903
4390	Cobalt(II) sulphate heptahydrate	1904
HN30	Copper(II) acetate monohydrate	1908
4391	Copper(I) chloride	1909
CN82	Copper(II) chloride dihydrate	1909
P754	Copper(II) nitrate trihydrate	1910
4467	Copper(II) oxide	1910
P023	Copper(II) sulphate	1910
P024	Copper(II) sulphate pentahydrate	1911
3053	Ethylenediamine tetraacetic acid dipotassium salt dihydrate	1981
8043	Ethylenediamine tetraacetic acid disodium salt dihydrate	1982
CP87	Ethylenediamine tetraacetic acid tetrasodium salt tetrahydrate	1983
HN96	Hydrazinium sulphate	2046
0307	Indium(III) chloride	2066
0314	Indium(III) sulphate	2066
P742	Iron(III) chloride hexahydrate	2074
P015	Iron(II) sulphate heptahydrate	2075
8358	Lanthanum(III) nitrate hexahydrate	2092
8373	Lanthanum(III) oxide	2092
2559	Lead(II) acetate, basic	2095
P739	Lead(II) acetate trihydrate	2095
2558	Lead(II) carbonate	2095
HN32	Lead(II) nitrate	2095
4479	Lead(IV) oxide	2096
3995	Lithium carbonate	2102
3739	Lithium chloride	2102
6698	Lithium chloride	2102
6715	Lithium fluoride	2103
9840	Lithium metaborate	2103
4393	Lithium sulphate monohydrate	2104
P026	Magnesium acetate tetrahydrate	2110
2189	Magnesium chloride hexahydrate	2111
HN31	Magnesium nitrate hexahydrate	2112
0682	Magnesium sulphate	2113
P027	Magnesium sulphate heptahydrate	2113
9927	Manganese(II) carbonate	2119
4320	Manganese(II) chloride monohydrate	2120
T881	Manganese(II) chloride tetrahydrate	2120
HN26	Manganese(II) nitrate tetrahydrate	2120
4487	Manganese(II) sulphate monohydrate	2121
KK05	Mercury(II) acetate	2127
6581	Mercury(II) bromide	2127
KK04	Mercury(II) chloride	2127
6601	Mercury(I) chloride	2127
6590	Mercury(II) iodide	2128
6605	Mercury(I) nitrate dihydrate	2128
6595	Mercury(II) nitrate monohydrate	2128
4470	Mercury(II) oxide	2128
T112	Mercury(II) sulphate	2128
6600	Mercury(II) thiocyanate	2129

0142	Molybdenum(VI) oxide	2146
4489	Nickel(II) chloride hexahydrate	2156
4395	Nickel(II) nitrate hexahydrate	2157
9996	Nickel(II) oxide	2157
9925	Nickel(II) oxide	2157
T111	Nickel(II) sulphate hexahydrate	2157
8371	Osmium tetraoxide	2186
T874	Potassium acetate	2221
P724	Potassium aluminium sulphate dodecahydrate	2222
4396	Potassium bromate	2222
A137	Potassium bromide	2222
P743	Potassium carbonate	2223
HN27	Potassium chlorate	2223
6781	Potassium chloride	2224
HN33	Potassium chromate	2224
P744	Potassium dichromate	2225
3904	Potassium dihydrogen phosphate	2225
P019	Potassium disulphite	2226
CN83	Potassium fluoride	2226
P745	Potassium hexacyanoferrate(II) trihydrate	2227
P746	Potassium hexacyanoferrate(III)	2227
P748	Potassium hydrogen carbonate	2227
P749	di-Potassium hydrogen phosphate	2228
6878	di-Potassium hydrogen phosphate trihydrate	2228
P750	Potassium hydrogen phthalate	2228
P020	Potassium hydrogen sulphate	2229
P751	Potassium iodate	2231
6750	Potassium iodide	2231
P021	Potassium nitrate	2232
HN38	di-Potassium oxalate monohydrate	2232
2588	Potassium periodate	2233
KK08	Potassium permanganate	2233
P752	Potassium permanganate	2233
8087	Potassium sodium tartrate tetrahydrate	2234
P022	Potassium sulphate	2235
P753	Potassium thiocyanate	2235
6629	Reinecke salt monohydrate	2255
4471	Rubidium chloride	2301
KK25	Silver diethyldithiocarbamate	2326
6874	Silver nitrate	2326
7908	Silver nitrate	2327
5309	Silver oxide	2328
6791	Silver sulphate	2328
6773	Sodium acetate	2330
6779	Sodium acetate trihydrate	2331
T882	Sodium ammonium hydrogen phosphate tetrahydrate	2331
K305	Sodium azide	2331
4401	Sodium bismuthate	2332
HN15	Sodium bromide	2332
A135	Sodium carbonate	2333
2597	Sodium carbonate monohydrate	2333
K303	Sodium carbonate decahydrate	2333
3957	Sodium chloride	2334
3580	tri-Sodium citrate dihydrate	2335
2601	Sodium diethyldithiocarbamate trihydrate	2336
K300	Sodium dihydrogen phosphate monohydrate	2336
T879	Sodium dihydrogen phosphate dihydrate	2337
T883	tetra-Sodium diphosphate decahydrate	2337
P756	Sodium fluoride	2338
4404	Sodium formate	2338
4409	Sodium hexanitrocobaltate(III)	2338
6885	Sodium hydrogen carbonate	2338
P030	di-Sodium hydrogen phosphate	2339
4984	di-Sodium hydrogen phosphate dihydrate	2339
X987	di-Sodium hydrogen phosphate heptahydrate	2340
T106	di-Sodium hydrogen phosphate dodecahydrate	2340
HN17	Sodium iodate	2344
A134	Sodium iodide	2344
P755	Sodium metabisulphite	2344
0274	Sodium molybdate dihydrate	2345
A136	Sodium nitrate	2345
4411	Sodium nitrite	2346
HN34	Sodium nitroprusside dihydrate	2346
HN39	di-Sodium oxalate	2346
2603	Sodium periodate	2347
4412	Sodium peroxide	2347
T107	tri-Sodium phosphate dodecahydrate	2347
CP39	Sodium salicylate	2348
8560	Sodium sulphate	2348
0966	Sodium sulphate	2349
T108	Sodium sulphate decahydrate	2349
P033	Sodium sulphite	2349
T110	di-Sodium tartrate dihydrate	2350
T880	di-Sodium tetraborate decahydrate	2350
4385	Sodium tetraphenyl borate	2350
2724	Sodium thiocyanate	2351
HN25	Sodium thiosulphate	2351
P034	Sodium thiosulphate pentahydrate	2351
2604	Sodium tungstate dihydrate	2352
4473	Strontium chloride hexahydrate	2382
4413	Strontium nitrate	2382
X945	Sulphuric acid 98 %	2388
X946	Sulphuric acid 90-91 %	2389
0321	Tellurium(IV) oxide	2396
0689	Tetrachloroauric(III) acid trihydrate	2399
3867	Tetrachloroauric(III) acid trihydrate	2399
KK07	Tin(II) chloride dihydrate	2408
4977	Tin(II) chloride dihydrate	2408
9929	Tin(IV) oxide	2409
4382	Tin(II) sulphate	2409
0747	Tungstic acid	2426
P035	Zinc acetate dihydrate	2450
9839	Zinc iodide	2451
6634	Zinc nitrate hexahydrate	2451
T114	Zinc oxide	2451
K301	Zinc sulphate heptahydrate	2452
T887	Zinc chloride	2450

Salts in Pharmacopoeia Quality

Art. No.	Description	Page
CP88	Aluminium chloride hexahydrate	1784
P726	Ammonium chloride	1796
7094	Ammonium hydrogen carbonate	1798
4266	di-Ammonium oxalate monohydrate	1802
6551	Bismuth subcarbonate	1841
6552	Bismuth subsalicylate	1841
0260	Calcium acetate hydrate	1868
P013	Calcium carbonate	1869
T885	Calcium chloride dihydrate	1870
CP89	Calcium chloride hexahydrate	1870
HN70	Calcium hydrogen phosphate dihydrate	1871
8450	Calcium hydroxyphosphate	1871
0256	Calcium sulphate dihydrate	1873
CP86	Copper(II) sulphate	1910
P025	Copper(II) sulphate pentahydrate	1911
6506	Ethylenediamine tetraacetic acid calcium disodium salt dihydrate	1981
X986	Ethylenediamine tetraacetic acid disodium salt dihydrate	1982
3722	Iron(II) sulphate heptahydrate	2075
9443	tri-Lithium citrate tetrahydrate	2102
0275	Magnesium acetate tetrahydrate	2110
3530	Magnesium carbonate	2111
A537	Magnesium chloride hexahydrate	2111
9453	Magnesium hydroxide	2112
8280	Magnesium oxide	2113
T888	Magnesium sulphate heptahydrate	2113
X890	Manganese(II) sulphate monohydrate	2121
4986	Potassium acetate	2221
CN78	Potassium aluminium sulphate dodecahydrate	2222
9252	Potassium bromide	2222
X894	Potassium carbonate	2223
P017	Potassium chloride	2224
X888	tri-Potassium citrate monohydrate	2225
P018	Potassium dihydrogen phosphate	2226
X887	Potassium hydrogen carbonate	2227
T875	di-Potassium hydrogen phosphate	2228
8491	Potassium iodide	2231
4397	Potassium nitrate	2232
8004	Potassium permanganate	2233
7998	Potassium sodium tartrate tetrahydrate	2234
CN79	Potassium sulphate	2235
9370	Silver nitrate	2327
3856	Sodium acetate trihydrate	2331
P028	Sodium carbonate	2333
8566	Sodium carbonate decahydrate	2333
P029	Sodium chloride	2334
4088	tri-Sodium citrate dihydrate	2336
T878	Sodium dihydrogen phosphate monohydrate	2336
2370	Sodium dihydrogen phosphate dihydrate	2337
8551	Sodium hydrogen carbonate	2339
T876	di-Sodium hydrogen phosphate	2339
T877	di-Sodium hydrogen phosphate dihydrate	2340
N350	di-Sodium hydrogen phosphate dodecahydrate	2340
8783	Sodium iodide	2344
P032	Sodium sulphate	2349
X892	Sodium sulphate decahydrate	2349
CN07	di-Sodium tetraborate decahydrate	2350
T109	Sodium thiosulphate pentahydrate	2351
X893	Zinc acetate dihydrate	2450
T884	Zinc sulphate heptahydrate	2452
5297	Zinc oxide	2452

Salvinin

▶ Pelargonidin 3,5-diglucoside chloride see p. 2194

Samarium Standards

▶ Samarium ICP Standard Solution see p. 2364
▶ Samarium ICP Standard Solution see p. 2369

Samarium(III) carbonate hydrate

Samarium(III) carbonate hydrate

ROTI®REMETIC 99,98 %

$Sm_2(CO_3)_3 \cdot x\ H_2O$
M 480,75 + x H_2O g/mol
[38245-37-3] • EC No. 227-581-5
WGK 3

Type analysis:
Assay (TREO*). ..... 99,98 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7120.1	10 g	plastic	85,90 €
7120.2	50 g	plastic	289,20 €

Samarium(III) oxide

Samarium(III) oxide

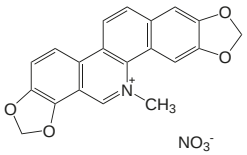
ROTI®REMETIC 99,95 %

Samarium trioxide, Samaria
Sm_2O_3
M 348,72 g/mol
bp 3780 °C
mp 2269 °C
Solubility: insoluble (H_2O, 20 °C)
[12060-58-1] • EC No. 235-043-6
WGK 1

Type analysis:
Assay (TREO*). ..... 99,95 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7108.1	5 g	plastic	45,70 €
7108.2	25 g	plastic	98,40 €

Sanguinarine nitrate



Sanguinarine nitrate

≥95 %

$C_{20}H_{14}N_2O_7$
M 394,33 g/mol
[4752-86-7] • EC No. 225-276-1
UN No. 1544 • ADR 6.1 III • WGK 3

Danger H301

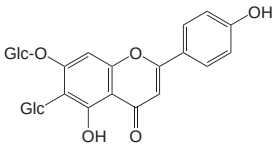
Type analysis:
Appearance. ..... orange powder
Assay (HPLC). ..... ≥95 %

7200.2	10 mg	glass	284,90 €

Saponaretin

▶ Isovitexin see p. 2081

Saponarin



Saponarin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Saponaria officinalis*
Isovitexin-7-O-glucoside
$C_{27}H_{30}O_{16}$
M 610,54 g/mol
Storage temp.: +4 °C
[20310-89-8]

Type analysis:
Purity (HPLC). ..... ≥98 %

6413.1	5 mg	plastic	206,95 €

Saponin

[8047-15-2] • EC No. 232-462-6
WGK 2

Warning H319-H335

Saponin

DAB

From quillaja bark. Special quality for hemolysis.

Guarantee analysis:
Appearance..... whitish to pale yellow powder
Identity..... complies
Extinction (5 %, water)..... ≤0,4
pH value (5 %, water). 4,0-7,0
Density (5 %, water). 1,01-1,02
Turbidity (5 %, water). ..... ≤30 TE/F
Lather value (5 %, water)..... 6-17
Surface tension (20 °C, 1 ‰ sol.). .....35-55 dyn/cm

9622.2	25 g	plastic	26,80 €
9622.1	100 g	plastic	64,40 €
9622.3	250 g	plastic	127,95 €

Saponin

free of tannic acid

From quillaja bark. Sapagonin content 8,5 %.
Main aglycone: quilliac acid.

Type analysis:
Appearance..... whitish to pale yellow powder
Extinction..... ≤0,4
pH value (5 %, water). 4,0-7,0
Density (5 %, water). 1,01-1,02

6857.1	100 g	plastic	50,45 €
6857.2	250 g	plastic	102,05 €
6857.3	500 g	plastic	177,40 €
Original pack 6 x 500 g			168,53/500 g
6857.8	1 kg	plastic	289,20 €
Original pack 6 x 1 kg			274,74/1 kg

Saponin

pure

Type analysis:
Appearance. ..... whitish to light yellow powder

4185.1	100 g	plastic	40,35 €
4185.2	250 g	plastic	80,55 €
4185.3	500 g	plastic	149,45 €
Original pack 6 x 500 g			141,98/500 g

Sarcine

▶ Hypoxanthine see p. 2062

Sarcolactic acid

▶ Lactic acid see p. 2088
▶ DL-Lactic acid see p. 2088
▶ L-Lactic acid see p. 2088

SB-8

▶ N-Octyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 2172

SB-10

▶ N-Decyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 1924

SB-12

▶ N-Dodecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 1959

SB-14

▶ N-Tetradecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 2400

SB-16

▶ N-Hexadecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 2040

Scandium Standards

▶ Scandium AAS Standard Solution see p. 2360
▶ Scandium ICP Standard Solution see p. 2364

Scandium(III) oxide

Scandium oxide
Sc_2O_3
M 137,91 g/mol
D 3,86
mp 2485 °C
[12060-08-1] • EC No. 235-042-0 • WGK 1

Scandium(III) oxide

ROTI®METIC 99,995 % (4N5)

Type analysis:
Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5735.1	1 g	plastic	160,20 €

Scandium(III) oxide

ROTI®REMETIC 99,999 %

Type analysis:

Assay (TREO*). ..... 99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7011.1	1 g	plastic	127,95 €
7011.2	5 g	plastic	364,45 €

Scandium oxide

▶ Scandium(III) oxide see p. 2307

Scarlet red

▶ Sudan IV (C.I. 26105) see p. 2385

Schaedler Agar

Schaedler Agar

for microbiology

For recovery and cultivation of anaerobic microorganisms.
Application: Use 41,9 g for 1 l agar.
Storage temp.: +20 °C
WGK 2

Formulation:

Casein peptone. ..... 5,66 g/l
Soy peptone. ..... 1 g/l
Sodium chloride. ..... 1,66 g/l
Dipotassium hydrogen phosphate. ..... 0,83 g/l
Peptone mixture. ..... 5 g/l
Yeast extract. ..... 5 g/l
Glucose. ..... 5,83 g/l
Tris (hydroxymethyl aminomethane). ..... 3 g/l
L-Cystine. ..... 0,4 g/l
Hemin. ..... 0,01 g/l
Agar. ..... 13,5 g/l
pH value. ..... 7,6 ±0,2

5771.1	500 g	plastic	127,95 €
Original pack 6 x 500 g			121,55/500 g

For further information, please see page 1462

Schaedler Broth

Schaedler Broth

for microbiology

For enrichment and cultivation of anaerobic microorganisms.
Application: Use 28,4 g for 1 l broth.
Storage temp.: +20 °C
WGK 2

Warning H315-H319

Formulation:

Casein peptone. ..... 5,66 g/l
Soy peptone. ..... 1 g/l
Sodium chloride. ..... 1,66 g/l
Dipotassium hydrogen phosphate. ..... 0,83 g/l
Peptone mixture. ..... 5 g/l
Yeast extract. ..... 5 g/l
Glucose. ..... 5,83 g/l
Tris (hydroxymethyl aminomethane). ..... 3 g/l
L-Cystine. ..... 0,4 g/l
Hemin. ..... 0,01 g/l
pH value. ..... 7,6 ±0,2

5772.1	500 g	plastic	111,70 €
Original pack 6 x 500 g			106,12/500 g

For further information, please see page 1462

Schiff's reagent

Fuchsine sulphurous acid
WGK 1

Danger H350

Schiff's reagent

on aldehyde

For the detection of aldehydes in the range of ppm.

N057.1	250 ml	glass	30,00 €

Schiff's reagent

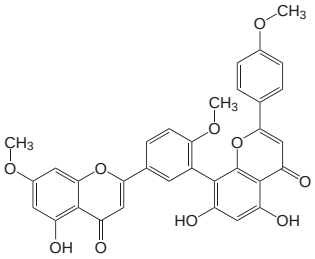
for microscopy

Staining reagent for detection of carbohydrates in tissue (PAS reaction).

X900.1	500 ml	glass	23,15 €
X900.2	1 l	glass	31,10 €
Original pack 6 x 1 l			29,55/1 l

For further information, please see page 1516

Sciadopitysin



Sciadopitysin

ROTICHROM® HPLC

Reference substance for HPLC.
$C_{33}H_{24}O_{10}$
M 580,54 g/mol
Storage temp.: +4 °C
[521-34-6] • EC No. 208-311-5

Type analysis:

Purity (HPLC). ..... ≥99 %

9410.2	10 mg	glass	278,45 €

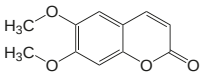
Scintillation cocktail

▶ Rotiszint® eco plus see p. 2299

Scintillation Products

Art. No.	Description	Page
3210	1,4-Bis[2-(5-phenyloxazolyl)]-benzene	1841
7029	Dimethyl sulphoxide	1950
3689	2,5-Diphenyloxazole	1953
0016	Rotiszint® eco plus	2299
3107	Toluene	2412
6683	Triton X 100	2423

Scoparone



Scoparone

≥97,5 %

Esculetin dimethyl ether, 6,7-Dimethoxycoumarin
$C_{11}H_{10}O_4$
M 206,18 g/mol
mp ~145 °C
[120-08-1] • EC No. 204-369-0
UN No. 2811 • ADR 6.1 III • WGK 1

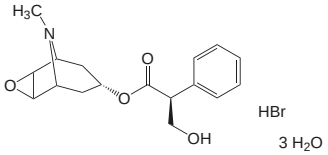
Danger H301-H319

Type analysis:

Assay. ..... ≥97,5 %

7494.1	500 mg	glass	217,70 €

Scopolamine hydrobromide trihydrate



Scopolamine hydrobromide trihydrate

≥98 %

$C_{17}H_{22}BrNO_4 \cdot 3\ H_2O$
M 438,31 g/mol
[6533-68-2]
UN No. 1544 • ADR 6.1 I • WGK 3

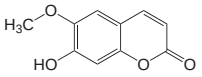
Danger H300+H310+H330

Type analysis:

Assay (HPLC). ..... ≥98 %

7153.1	1 g	glass	117,20 €

Scopoletin



Scopoletin

≥98%

β-Methylesculetin, Gelseminic acid, Chrysatropic acid, 7-Hydroxy-6-methoxycoumarin
$C_{10}H_8O_4$
M 192,16 g/mol
mp 202-204 °C
[92-61-5] • EC No. 202-171-9
WGK 2

Warning H315-H319-H335

Type analysis:

Appearance. ..... pale yellow powder
Assay (HPLC). ..... ≥98 %
Water (KF). ..... ≤1,0 %

7210.3	50 mg	glass	87,00 €
7210.1	100 mg	glass	138,70 €
7210.2	1 g	glass	1073,95 €

SDS

Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS
$C_{12}H_{25}NaO_4S$
M 288,38 g/mol
mp 204-207 °C • flp >100 °C
Solubility: ~150 g/l (H_2O, 20 °C)
[151-21-3] • EC No. 205-788-1
UN No. 1325 • ADR 4.1 III • WGK 2
Danger
H228-H302+H332-H315-H318-H335-H412

SDS

≥99 %, Blotting-Grade
For Western- and Southern blotting

Type analysis:
Appearance. ..... white cryst. powder
Assay (titr.). ..... ≥99,5 %
Water (KF). ..... ≤1,0 %
Solubility (10 % in H_2O). ..... clear, colourless
Chloride (Cl). ..... ≤0,025 %
Heavy metals (as Pb) ..... ≤0,0005 %
Absorption:
260 nm ..... ≤0,06
280 nm ..... ≤0,04

0183.1	100 g	plastic	50,45 €
0183.2	250 g	plastic	105,90 €
0183.3	500 g	plastic	170,95 €
Original pack 6 x 500 g			162,40/500 g

SDS ultra pure

≥99 %, for electrophoresis, biochemistry and molecular biology
Anionic detergent.

Guarantee analysis:
Assay (titr.). ..... ≥99 %
Water (KF). ..... ≤1,0 %
Chloride (Cl). ..... ≤0,025 %
Heavy metals (as Pb) ..... ≤0,0005 %
Absorption:
260 nm ..... ≤0,06
280 nm ..... ≤0,04

2326.1	100 g	plastic	40,75 €
2326.4	250 g	plastic	86,55 €
2326.2	500 g	plastic	155,90 €
Original pack 6 x 500 g			148,11/500 g
2326.3	500 g (in 2,5 l glass bottle for prep. of a 20 % sol.)	glass	163,30 €
2326.5	1 kg	plastic	267,70 €
Original pack 6 x 1 kg			254,32/1 kg

SDS / Sodium lauryl sulphate

≥99 %, for biochemistry
Anionic detergent; active substance for studies with surfactants.

Guarantee analysis:
Appearance. ..... white powder
Assay (GC). ..... ≥99 %
pH value (1 % in H_2O). 7,5-10,5
Absorption (10 %, water, 1 cm):
260 nm. ..... ≤1,5
280 nm. ..... ≤1,0
Solubility (10 % in H_2O). ..... clear, ≤50 Hazen

4360.1	250 g	plastic	25,30 €
4360.2	1 kg	plastic	68,70 €
Original pack 6 x 1 kg			65,27/1 kg

SDS / Sodium lauryl sulphate

≥95 %
Active substance for studies with surfactants.

Guarantee analysis:
Appearance. ..... white to yellowish powder
Assay. ..... ≥95 %
Water (KF). ..... ≤5,0 %
Unsulphated Matter. ..... ≤4,0 %
Heavy metals (as Pb). ..... ≤0,002 %

5136.1	1 kg	plastic	52,60 €
Original pack 6 x 1 kg			49,97/1 kg
5136.2	5 kg	cardboard	166,65 €

20 % SDS Ready-to-use solution

▶ Roti®-Stock 20 % SDS see p. 2298

SDS-Page buffer

▶ Rotiphorese® 10x SDS-PAGE see p. 2292
▶ Rotiphorese®-PAGE Matrix Buffer plus see p. 2292

SDS-PAGE powder (pouch)

▶ Roti®fair SDS-PAGE see p. 2278

SDS Pellets

Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS
$C_{12}H_{25}NaO_4S$
M 288,38 g/mol
bp 2212 °C
mp 204-207 °C • flp >100 °C
Solubility: ~150 g/l (H_2O, 20 °C)
[151-21-3] • EC No. 205-788-1 • WGK 2
Danger H302-H315-H318-H412

SDS Pellets

≥99,5 %, Rotiphorese®-Grade, for electrophoresis
Anionic detergent

Guarantee analysis:
Appearance. ..... white rods
Assay (titration). ..... ≥99,5 %
pH value (10 % in water). 6,5-9
Water (KF). ..... ≤1,0 %
UV-absorption (20 % in H_2O):
410 nm. ..... ≤0,1
Solubility (10 % in H_2O). ..... clear, colourless
Colour count (APHA, 10 % in H_2O). ..... ≤10
Turbidity (10 %, water). ..... ≤2,5 NTU
Chloride (Cl). ..... ≤0,01 %
Lead (Pb). ..... ≤0,0002 %

8029.1	100 g	plastic	27,45 €
8029.2	250 g	plastic	54,75 €
8029.3	500 g	plastic	94,50 €
Original pack 6 x 500 g			89,78/500 g
8029.4	1 kg	plastic	177,40 €
Original pack 6 x 1 kg			168,53/1 kg

For further information, please see page 1314

SDS Pellets

≥99 %, for biochemistry
Anionic detergent.

Guarantee analysis:
Appearance. ..... white to off-white pellets
Assay (GC). ..... ≥99 %
pH value (1 % in H_2O). 7,5-10,5
UV-absorption (10 % in H_2O):
260 nm. ..... ≤1,5
280 nm. ..... ≤1,0
Solubility (10 % in H_2O). ..... clear, ≤50 Hazen

CN30.1	250 g	plastic	27,45 €
CN30.2	500 g	plastic	43,55 €
Original pack 6 x 500 g			41,37/500 g
CN30.3	1 kg	plastic	69,80 €
Original pack 6 x 1 kg			66,31/1 kg
CN30.4	2,5 kg	plastic	125,70 €
CN30.7	5 kg	plastic	201,60 €

SDS powder (pouch)

▶ Roti®fair 10% SDS see p. 2278

SDS (tablet)

▶ Roti®fair SDS 0.5g see p. 2278

Sea sand

SiO_2
bp 2230 °C
mp 1710 °C
[14808-60-7] • EC No. 238-878-4

Sea sand

p.a., purified by acid and calcinated
Filtration aids

Guarantee analysis:
Acid soluble iron (Fe). ..... ≤0,01 %
Loss on ignition (900 °C). ..... ≤0,05 %
Substances soluble in HCl . ..... ≤0,2 %
Chloride (Cl). ..... ≤0,005 %
Particle size (0,1-0,315 mm). ..... ≥90 %

4309.2	500 g	plastic	53,65 €
Original pack 6 x 500 g			50,97/500 g
4309.1	1 kg	plastic	94,50 €
Original pack 6 x 1 kg			89,78/1 kg
4309.3	2,5 kg	plastic	162,90 €
4309.4	5 kg	plastic	314,45 €
4309.5	10 kg	plastic	579,45 €

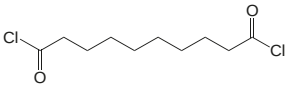
Sea sand

extra pure, purified by acid
Filtration aids

Type analysis:
Acid soluble iron (Fe). ..... ≤0,01 %
Loss on ignition (800 °C). ..... ≤0,5 %
Substances soluble in HCl . ..... ≤0,5 %
Chloride (Cl). ..... ≤0,01 %

8441.3	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
8441.1	1 kg	plastic	47,20 €
Original pack 6 x 1 kg			44,84/1 kg
8441.4	2,5 kg	plastic	96,65 €
8441.2	5 kg	plastic	182,65 €
8441.5	10 kg	plastic	342,95 €
8441.6	25 kg	plastic	772,95 €

Sebacic acid dichloride



Sebacic acid dichloride

≥98 %
Sebacoyl chloride
$C_{10}H_{16}Cl_2O_2$
M 239,14 g/mol
D ~1,12 • bp 161 °C (19 hPa)
mp -5 °C • flp 113 °C
[111-19-3] • EC No. 203-843-4
UN No. 3265 • ADR 8 II • WGK 2
Danger H302-H314-H335

Type analysis:
Assay. ..... ≥98,0 %

4472.2	10 ml	glass	25,70 €
4472.1	50 ml	glass	77,30 €
4472.3	250 ml	glass	241,90 €

Sebacoyl chloride

▶ Sebacic acid dichloride see p. 2310

Secondary Antibody

Art. No.	Description	Page
4754	Anti Human-AP	1809
4755	Anti Human-FITC	1809
4753	Anti Human-HRP	1809
4760	Anti Mouse-AP	1809
4761	Anti Mouse-FITC	1809
4759	Anti Mouse-HRP	1809
4751	Anti Rabbit-AP	1810
4752	Anti Rabbit-FITC	1810
4750	Anti Rabbit-HRP	1810
4763	Anti Rat-AP	1810
4764	Anti Rat-FITC	1810
4762	Anti Rat-HRP	1810

Seignette salt

▶ Potassium sodium tartrate tetrahydrate see p. 2234

Sekuroka® Decon-Bags

Sekuroka® Decon-Bags

Absorber bags for removing ethidium bromide from liquids.
[7440-44-0]

T856.2	10 Bags	31,10 €
T856.1	50 Bags	131,70 €
T856.3	250 Bags	557,95 €

For further information, please see page 1222

Selenium pellets

Selenium pellets

ROTI®METIC 99,999 % (5N)
Se
M 78,96 g/mol
D ~4,35 • bp 685 °C
mp 217 °C
[7782-49-2] • EC No. 231-957-4
UN No. 3288 • ADR 6.1 III • WGK 2
Danger H301+H331-H373-H413

Type analysis:
Assay (metals basis). ..... 99,999 %
Particle size. ..... ~3-6 mm
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

4547.1	10 g	plastic	48,30 €
4547.2	50 g	plastic	181,70 €

Selenium Standards

▶ Selenium AAS Standard Solution see p. 2360
▶ Selenium ICP Standard Solution see p. 2369
▶ Selenium ICP Standard Solution see p. 2365

Selenium dioxide

▶ Selenium(IV) oxide see p. 2310

Selenium(IV) oxide

Selenium(IV) oxide

ROTI®METIC 99,999 % (5N)
Selenium dioxide
SeO_2
M 110,96 g/mol
D 3,95
mp 315 °C (subl.)
Solubility: 2640 g/l (H_2O, 20 °C)
[7446-08-4] • EC No. 231-194-7
UN No. 3283 • ADR 6.1 III • WGK 2
Danger H301+H331-H373-H410

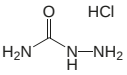
Type analysis:
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5324.1	10 g	glass	138,70 €

SEM-chloride

▶ 2-(Trimethylsilyl)ethoxymethyl chloride see p. 2419

Semicarbazide hydrochloride



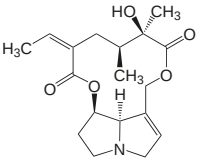
Semicarbazide hydrochloride

≥98 %, p.a.
Reagent for aldehydes and ketones.
N-Aminourea hydrochloride
$CH_5N_3O \cdot HCl$
M 111,53 g/mol
mp 175-177 °C (dec.)
[563-41-7] • EC No. 209-247-0
UN No. 2811 • ADR 6.1 III • WGK 1
Danger H301-H315-H319

Guarantee analysis:
Assay. ..... ≥98,0 %
Solution (10 % in water). ..... colourless
Loss on drying (105 °C). ..... ≤6,0 %

4681.1	100 g	plastic	33,25 €
4681.2	500 g	plastic	117,75 €
Original pack 6 x 500 g			111,86/500 g

Senecionine



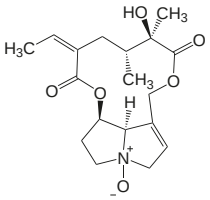
Senecionine

ROTICHROM® GC
Reference substance for GC.
Aureine, 12-Hydroxysenecionan-11,16-dione
$C_{18}H_{25}NO_5$
M 335,17 g/mol
mp 232-233 °C
Storage temp.: +4 °C
[130-01-8]
UN No. 1544 • ADR 6.1 III
Danger H301+H311+H331-H373

Type analysis:
Purity (GC). ..... ≥96 %

2261.1	10 mg	glass	117,75 €

Senecionine N-oxide

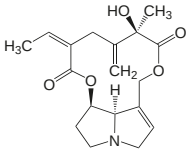


Senecionine N-oxide
ROTICHROM® HPLC
Reference substance for HPLC.
From *Senecio vulgaris.*
12-Hydroxysenecionan-11,16-dione-4-oxide
$C_{18}H_{25}NO_6$
M 351,39 g/mol
Storage temp.: +4 °C
[13268-67-2]
UN No. 1544 • ADR 6.1 III • WGK 1
Danger H301-H373

Type analysis:
Purity (HPLC).....≥95 %

6734.1	10 mg	glass	446,15 €

Seneciphylline

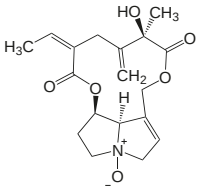


Seneciphylline
with analytical records
From *Senecio vulgaris.*
Jacodine, α-Longilobine, 13,19-Didehydro-12-hydroxysenecionan-11,16-dione
$C_{18}H_{23}NO_5$
M 333,38 g/mol
Storage temp.: +4 °C
[480-81-9]
UN No. 1544 • ADR 6.1 III • WGK 3
Danger H301+H311+H331-H373

Type analysis:
Purity (HPLC).....>99 %
Analytical records: HPLC, TLC, ^{1}H-NMR, ^{13}C-NMR, UV, IR, MS, melting point.

1214.1	20 mg	glass	510,65 €

Seneciphylline N-oxide

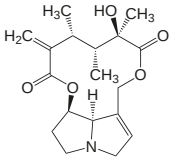


Seneciphylline N-oxide
ROTICHROM® HPLC
Reference substance for HPLC.
From *Senecio vulgaris.*
$C_{18}H_{23}NO_6$
M 349,37 g/mol
Storage temp.: +4 °C
[38710-26-8]
UN No. 1544 • ADR 6.1 III • WGK 1
Danger H301-H373

Type analysis:
Purity (HPLC). ..... ≥97 %

6735.1	10 mg	glass	499,90 €

Senecivernine

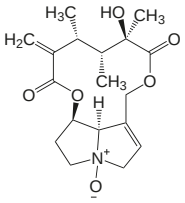


Senecivernine
ROTICHROM® HPLC
Reference substance for HPLC.
From *Senecio inaequidens*
$C_{18}H_{25}NO_5$
M 335,39 g/mol
mp 103-108 °C
Storage temp.: +4 °C
[72755-25-0]
WGK 1
Warning H302

Type analysis:
Purity (HPLC). ..... ≥95,0 %

2209.1	5 mg	glass	299,95 €

Senecivernine N-oxide

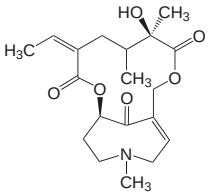


Senecivernine N-oxide
ROTICHROM® HPLC
Reference substance for HPLC.
From *Senecio naequidens*
$C_{18}H_{25}NO_6$
M 351,39 g/mol
Storage temp.: +4 °C
WGK 1
Warning H302

Type analysis:
Purity (HPLC).....≥95,0 %

2215.1	5 mg	glass	321,45 €

Senkirkine

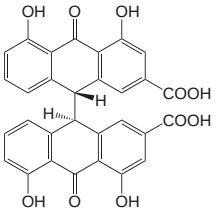


Senkirkine
ROTICHROM® HPLC
Reference substance for HPLC.
Renardin
$C_{19}H_{27}NO_6$
M 365,4 g/mol
mp 197,5-198 °C
Storage temp.: +4 °C
[6882-01-5]
UN No. 1544 • ADR 6.1 II
Danger H301+H311+H331-H373

Type analysis:
Purity (HPLC).....≥95 %

4934.1	10 mg	glass	353,70 €

Sennidine A

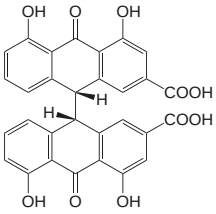


Sennidine A
ROTICHROM® ~CHR

$C_{30}H_{18}O_{10}$ • M 538,46 g/mol
Storage temp.: +4 °C
[641-12-3] • EC No. 211-371-5 • WGK 1
Warning H302

7012.1	10 mg	glass	213,95 €

Sennidine B

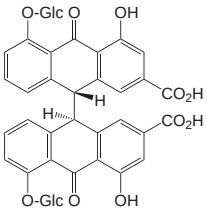


Sennidine B
ROTICHROM® ~CHR

$C_{30}H_{18}O_{10}$ • M 538,46 g/mol
Storage temp.: +4 °C
[517-44-2] • EC No. 208-239-4 • WGK 1
Warning H302

7016.1	10 mg	glass	278,45 €

Sennoside A



$C_{42}H_{38}O_{20}$
M 862,72 g/mol
[81-27-6] • EC No. 201-339-9 • WGK 3

Sennoside A
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC).....≥80,0 %
Residual solvents (GC).....≤2,0 %
Water (KF).....≤5,0 %
Assay (qNMR).....≥75,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE53.1	50 mg	glass	1052,45 €

Sennoside A
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC).....≥75,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC53.1	50 mg	glass	364,45 €

Sennoside A
ROTICHROM® HPLC

Reference substance for HPLC.
From *Cassia angustifolia.*
Storage temp.: +4 °C

Type analysis:
Purity (HPLC).....>98 %

7423.1	10 mg	glass	132,15 €

Sennoside A
≥90 %

Storage temp.: +4 °C

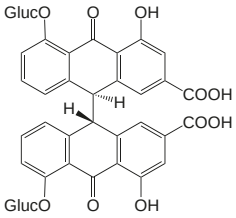
Type analysis:
Appearance.....yellow to yellow brownish powder
Assay (HPLC).....≥90 %

9349.1	100 mg	glass	439,70 €

Sennoside A'

▶ Sennoside A1 see p. 2312

Sennoside A1



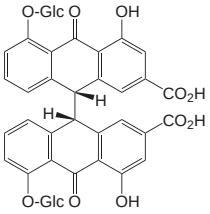
Sennoside A1
ROTICHROM® HPLC

Reference substance for HPLC.
From *Cassia angustifolia.*
Sennoside G, Sennoside A'
$C_{42}H_{38}O_{20}$
M 862,72 g/mol
Storage temp.: +4 °C
[66575-30-2]
WGK 3

Type analysis:
Purity (HPLC).....≥95 %

6693.1	10 mg	glass	299,95 €

Sennoside B



$C_{42}H_{38}O_{20}$
M 862,72 g/mol
mp 200 °C
[128-57-4] • EC No. 204-895-0
WGK 1

Sennoside B
≥90 %

Storage temp.: +4 °C

Type analysis:
Appearance.....yellowish powder
Assay.....≥90 %

9352.1	100 mg	glass	396,70 €

Sennoside B
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC).....≥85,0 %
Residual solvents (GC).....≤2,0 %
Water (KF).....≤7,0 %
Assay (qNMR).....≥80,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE54.1	50 mg	glass	1052,45 €

Sennoside B
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC).....≥80,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC54.1	50 mg	glass	407,45 €

Sennoside B
ROTICHROM® HPLC

Reference substance for HPLC.
From *Cassia angustifolia*
Storage temp.: +4 °C

Type analysis:
Purity (HPLC).....≥98 %

7424.1	10 mg	glass	206,95 €

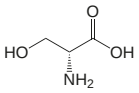
Sennoside G

▶ Sennoside A1 see p. 2312

Sequencing gel solutions

▶ Rotiphorese® DNA sequencing system see p. 2292

D-Serine



D-Serine

≥99 %, for biochemistry

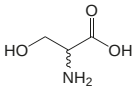
$C_3H_7NO_3$
M 105,09 g/mol
mp 215-225 °C (dec.)
Solubility: 360 g/l (H_2O, 20 °C)
[312-84-5] • EC No. 206-229-4
WGK 1

Type analysis:

Appearance. ..... white, cryst. powder
Assay. ..... ≥99,0 %

7531.2	1 g	glass	13,45 €
7531.1	5 g	plastic	21,00 €
7531.3	25 g	plastic	83,75 €

DL-Serine



DL-Serine

≥99 %, for biochemistry

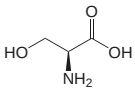
$C_3H_7NO_3$
M 105,09 g/mol
Storage temp.: +4 °C
[302-84-1] • EC No. 206-130-6
WGK 1

Type analysis:

Appearance. ..... white cryst. powder
Assay. ..... ≥99,0 %
Heavy metals (as Pb). ..... ≤0,001 %
Ash content. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

8606.1	100 g	plastic	46,80 €
8606.2	500 g	plastic	200,50 €
Original pack 6 x 500 g			190,48/500 g

L-Serine



3-Hydroxy-L-alanine
$C_3H_7NO_3$
M 105,09 g/mol
Solubility: ~270 g/l (H_2O, 20 °C)
[56-45-1] • EC No. 200-274-3
WGK 1

L-Serine

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... +14,0° to +15,5°
Ammonium (NH_4). ..... ≤0,05 %
Chloride (Cl). ..... ≤0,05 %
Sulphate (SO_4). ..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

1714.1	25 g	plastic	26,35 €
1714.2	100 g	plastic	63,35 €
1714.3	500 g	plastic	256,95 €
Original pack 6 x 500 g			244,10/500 g

L-Serine

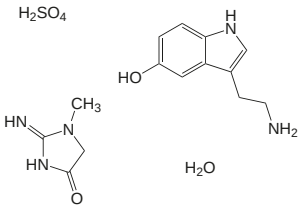
≥98,5 %, Ph.Eur.

Guarantee analysis:

Appearance. ..... white, cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Specific rotation $[\alpha]_D^{20}$. ..... +14,0° to +16,0°
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,03 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

4682.1	100 g	plastic	45,70 €
4682.3	250 g	plastic	89,15 €
4682.4	500 g	plastic	166,10 €
Original pack 6 x 500 g			157,80/500 g
4682.2	1 kg	plastic	289,20 €
Original pack 6 x 1 kg			274,74/1 kg

Serotonin creatinine sulphate monohydrate



Serotonin creatinine sulphate monohydrate

≥99 %, for biochemistry

$C_{14}H_{21}N_5O_6S \cdot H_2O$
M 405,44 g/mol
mp 218-222°C (dec.)
Storage temp.: +4 °C
[971-74-4] • EC No. 213-539-3
WGK 1

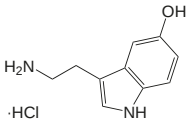
Warning H361-H302+H312+H332

Type analysis:

Assay (titr.). ..... ≥99,0 %
Melting point (dec.). ..... 218-222 °C
Water (KF). ..... 3,4-5,4 %

8385.1	1 g	glass	123,55 €

Serotonin hydrochloride



Serotonin hydrochloride

≥98 %, for biochemistry

5-Hydroxytryptamine hydrochloride,
3-(2-Aminoethyl)-5-hydroxyindole hydrochloride
$C_{10}H_{12}N_2O \cdot HCl$
M 212,68 g/mol
mp 171 °C
Storage temp.: +4 °C
[153-98-0] • EC No. 244-464-4
UN No. 2811 • ADR 6.1 III • WGK 3

Danger H301

Type analysis:

Appearance. ..... white to off-white, cryst. powder
Assay (arg.). ..... ≥98,0 %
Appearance of solution (1 % in MeOH). ..... colourless
Loss on drying (3 h, 115 °C, vacuum). ..... ≤5,0 %

8367.1	100 mg	glass	21,00 €
8367.2	1 g	glass	38,60 €
8367.3	5 g	glass	153,65 €

Sheets of gold

Sheets of gold
22 carat, block of 25 sheets 80 x 80 mm
[7440-57-5] • EC No. 231-165-9

7605.1	1 piece (25 sheets)	113,85 €

Sheets of silver

Sheets of silver
thickness 4 µm, block of 25 sheets 95 x 95 mm
[7440-22-4] • EC No. 231-131-3

9367.1	1 piece (25 sheets)	38,60 €

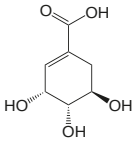
Shellac

Shellac
orange lamella
mp 65-80 °C
[9000-59-3] • EC No. 232-549-9

Type analysis:
Appearance. ..... orange-coloured lamella
Acid value (mg KOH/g). 60-75
Melting point. ..... 65-80 °C
Loss on drying. ..... ≤2 %
Wax. ..... ≤5,5 %

9298.2	100 g	plastic	17,75 €
9298.3	500 g	plastic	52,15 €
Original pack 6 x 500 g			49,54/500 g
9298.1	1 kg	plastic	87,65 €
Original pack 6 x 1 kg			83,27/1 kg

Shikimic acid



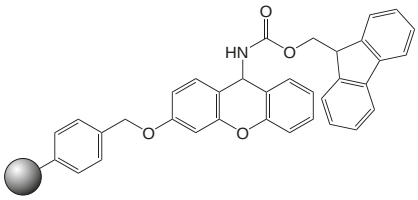
Shikimic acid
≥98 %, for biochemistry
$C_7H_{10}O_5$
M 174,15 g/mol
mp 190 °C
Solubility: 180 g/l (H_2O, 20 °C)
[138-59-0] • EC No. 205-334-2

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Loss on drying. ..... ≤5 %

7305.2	250 mg	glass	24,20 €
7305.1	1 g	glass	82,25 €

Sialic acid
▶ N-Acetylneuraminic acid see p. 1767

Sieber amide resin



Sieber amide resin
PEPTIPURE® 100-200 mesh
For peptide synthesis
9-Fmoc-amino-xanthen-3-yloxy-Merrifield resin
Storage temp.: +4 °C
WGK 3

Type analysis:
Appearance. ..... white to slightly brown powder
Loading. ..... 0,5-0,8 mmol/g
Swelling. ..... 5-6 ml/g (DMF, 24 h)

7408.1	1 g	glass	93,00 €
7408.2	5 g	plastic	375,20 €

Signal Enhancer Western/ ELISA

Enhancer solution
Storage temp.: +4 °C
Transport temp.: cooled

Signal Enhancer Western/ ELISA Set
for immunochemistry
For enhancement of immunochemical detection signals on blot membranes and in ELISA.
One set with 250 ml each is sufficient for optimization of approx. 25 minigel blots.

Type analysis:
Application test (ELISA). ..... complies

9211.2	1 Mini-Set	plastic	139,25 €
9211.1	1 Set	plastic	413,90 €

For further information, please see page 1376

Signal Enhancer Western/ ELISA-1
for immunochemistry
For optimisation of primary antibody binding in immunochemical assays.
One bottle with 250 ml is sufficient for approx. 25 assays.

Type analysis:
Application test (ELISA). ..... complies

9213.1	250 ml	plastic	239,20 €

For further information, please see page 1376

Signal Enhancer Western/ ELISA-2
for immunochemistry
For optimisation of binding of secondary and labelled antibodies in immunochemical assays.
One bottle with 250 ml is sufficient for approx. 25 assays.

Type analysis:
Application test (ELISA). ..... complies

9214.1	250 ml	plastic	239,20 €

For further information, please see page 1376

Silica acid, amorphous
▶ Silica gel 22 Grade 12 see p. 2314
▶ Silica gel 35 see p. 2315
▶ Silica gel 60 see p. 2315
▶ Silica gel 150 see p. 2318
▶ Silica gel 250 see p. 2319
▶ Silica gel 500 see p. 2319
▶ Silica gel 1000 see p. 2320
▶ Silica gel 1500 see p. 2320
▶ Silica gel 2500 see p. 2320
▶ Silica gel 4500 see p. 2320

Silica gel 22 Grade 12

Silica gel 22 Grade 12
0,07-0,21 mm (200-70 mesh)
For column chromatography.
Silicic acid amorphous, Siliciumdioxide
SiO_2
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

Type analysis:
Appearance. ..... white powder
Pore volume (N_2). ..... ≤0,55 ml/g
Specific surface. ..... ≥600 m^2/g
Loss on drying. ..... ≤5,0 %
pH value (5 % in H_2O). ..... ≥3,0
Volatile parts (950 °C). ..... ≤10,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,03 %
Na_2O content (dry substance). ..... ≤0,3 %
SO_4 content. ..... ≤0,4 %
Particle-size distribution:
>30 mesh. ..... ≤6,0 %
> 70 mesh. ..... ≥50,0 %
>140 mesh. ..... ≥85,0 %
<200 mesh. ..... ≤6,0 %
>200 mesh. ..... ≥94,0 %
Adsorptive capacity:
80 % rel. humidity, 25 °C. ..... ≥31,0 %
Bulk density. ..... 640-800 g/l

9698.1	250 g	plastic	51,50 €
9698.2	500 g	plastic	77,30 €
Original pack 6 x 500 g			73,44/500 g
9698.3	1 kg	plastic	137,10 €
Original pack 6 x 1 kg			130,25/1 kg
9698.4	2,5 kg	plastic	266,10 €

Silica gel 35

Silicic acid amorphous, Siliciumdioxide
SiO_2
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

Silica gel 35

0,01-0,014 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Pore volume (N_2). ..... 0,5-0,7 ml/g
Specific surface (BET). ..... ≥550 m^2/g
pH value (5 % in H_2O). 4,5-6,5
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size:
d10. ..... ≥5,5 µm
d50. ..... 10,0-14,0 µm
d90. ..... ≤23,0 µm

0380.1	250 g	plastic	44,00 €
0380.2	500 g	plastic	73,65 €
Original pack 6 x 500 g			69,97/500 g
0380.3	1 kg	plastic	132,80 €
Original pack 6 x 1 kg			126,16/1 kg
0380.4	2,5 kg	plastic	278,45 €

Silica gel 35

0,04-0,063 mm (400-230 mesh)

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 25-40 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume (N_2). ..... 0,5-0,7 ml/g
Specific surface. ..... ≥550 m^2/g
pH. 4,5-6,5
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,1 %
Particle-size distribution:
d10. ..... 23,4-41,1 µm
d50. ..... 48,2-65,3 µm
d90. ..... 75,5-96,0 µm

5400.1	250 g	plastic	41,85 €
5400.2	500 g	plastic	72,60 €
Original pack 6 x 500 g			68,97/500 g
5400.3	1 kg	plastic	117,75 €
Original pack 6 x 1 kg			111,86/1 kg
5400.4	2,5 kg	plastic	233,85 €

Silica gel 60

Silicic acid amorphous, Siliciumdioxide
SiO_2
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

Silica gel 60

1,0-3,0 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6,0 %
Pore volume (N_2). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 m^2/g
pH value. 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
<1,0 mm. ..... ≤5,0 %
>3,15 mm. ..... ≤5,0 %
>3,55 mm. ..... ≤0,5 %

9833.1	250 g	plastic	37,55 €
9833.2	500 g	plastic	69,80 €
Original pack 6 x 500 g			66,31/500 g
9833.3	1 kg	plastic	120,30 €
Original pack 6 x 1 kg			114,29/1 kg
9833.4	2,5 kg	plastic	217,70 €

Silica gel 60

0,006-0,035 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6,0 %
Pore volume (N_2). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 m^2/g
pH value. 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
>6,4 µm. ..... ≥98,0 %
>10,1 µm. ..... ≥90,0 %
>40,3 µm. ..... ≤10,0 %

9779.1	250 g	plastic	33,25 €
9779.2	500 g	plastic	54,75 €
Original pack 6 x 500 g			52,01/500 g
9779.3	1 kg	plastic	97,75 €
Original pack 6 x 1 kg			92,86/1 kg
9779.4	2,5 kg	plastic	171,50 €

Silica gel 60 Grade 710 NW

0,010-0,014 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (200 °C). ..... ≤8,5 %
Pore volume (N_2). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 m^2/g
pH value. 6,5-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... ≥5,5 µm
d50. ..... 10,0-14,0 µm
d90. ..... ≤23,0 µm

9859.1	25 g	plastic	46,15 €
9859.2	50 g	plastic	81,20 €
9859.3	100 g	plastic	148,90 €

Silica gel 60

0,016-0,024 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Loss on drying (160 °C). ..... 3,0-9,0 %
Pore volume (H_2O). ..... 0,8-1,0 ml/g
Specific surface (BET). ..... 500-600 m^2/g
pH value (5 % in H_2O). 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,1 %
Particle-size distribution:
d20. ..... ≥13,0 µm
d50. ..... 23,0-28,0 µm
d90. ..... ≤46,0 µm

9817.1	250 g	plastic	70,45 €
9817.2	500 g	plastic	127,95 €
Original pack 6 x 500 g			121,55/500 g
9817.3	1 kg	plastic	232,75 €
Original pack 6 x 1 kg			221,11/1 kg
9817.4	2,5 kg	plastic	524,10 €

Silica gel 60

0,02-0,045 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume (N_2). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 m^2/g
pH value. 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
>16,0 µm. ..... ≥98 %
>20,2 µm. ..... ≥90 %
>64,0 µm. ..... ≤4 %

0712.1	250 g	plastic	28,50 €
0712.2	500 g	plastic	42,90 €
Original pack 6 x 500 g			40,76/500 g
0712.4	1 kg	plastic	73,65 €
Original pack 6 x 1 kg			69,97/1 kg
0712.3	2,5 kg	plastic	165,05 €

For further information, please see page 1655

Silica gel 60

0,03-0,2 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume (N_2). ..... 0,8-1,0 ml/g
Specific surface. ..... 550-600 m^2/g
pH value 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... >30 µm
d90. ..... <250 µm

P090.1	500 g	plastic	34,30 €
Original pack 6 x 500 g			32,59/500 g
P090.2	1 kg	plastic	60,10 €
Original pack 6 x 1 kg			57,10/1 kg
P090.3	2,5 kg	plastic	143,55 €
P090.4	5 kg	plastic	217,70 €
P090.5	25 kg	plastic	633,20 €

Silica gel 60

0,035-0,07 mm (400-220 mesh)

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume (N_2). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 m^2/g
pH. 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
>20,2 µm. ..... ≥99,0 %
>32,0 µm. ..... ≥87,0 %
>80,7 µm. ..... ≤3,0 %

5401.1	250 g	plastic	28,95 €
5401.2	500 g	plastic	46,15 €
Original pack 6 x 500 g			43,84/500 g
5401.3	1 kg	plastic	75,80 €
Original pack 6 x 1 kg			72,01/1 kg
5401.4	2,5 kg	plastic	171,50 €

Silica gel 60

0,04-0,063 mm (400-230 mesh)

For column chromatography.
Suitable for flash chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6,0 %
Pore volume (N_2). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 m^2/g
pH value 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... 23,4-41,1 µm
d50. ..... 48,2-65,3 µm
d90. ..... 75,5-96,0 µm

P091.1	250 g	plastic	30,65 €
P091.2	1 kg	plastic	85,50 €
Original pack 6 x 1 kg			81,23/1 kg
P091.3	2,5 kg	plastic	195,15 €
P091.4	5 kg	plastic	287,60 €
P091.5	25 kg	plastic	959,45 €

Silica gel 60

0,07-0,2 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6,0 %
Pore volume (N_2). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 m^2/g
pH value (5 % in H_2O). 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
>0,063 mm. ..... ≥98,0 %
>0,200 mm. ..... ≤1,0 %

9820.1	250 g	plastic	27,85 €
9820.2	500 g	plastic	46,15 €
Original pack 6 x 500 g			43,84/500 g
9820.3	1 kg	plastic	69,80 €
Original pack 6 x 1 kg			66,31/1 kg
9820.4	2,5 kg	plastic	114,95 €

Silica gel 60

0,09-0,13 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6 %
pH value (5 % in H_2O). 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size (µm):
>63. ..... ≥99,0 %
>90. ..... ≥90,0 %
>150. ..... ≤3,0 %

0399.1	250 g	plastic	38,60 €
0399.2	500 g	plastic	66,55 €
Original pack 6 x 500 g			63,22/500 g
0399.3	1 kg	plastic	121,40 €
Original pack 6 x 1 kg			115,33/1 kg
0399.4	2,5 kg	plastic	244,60 €

Silica gel 60

0,2-0,5 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume. ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 m^2/g
pH value. 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance) ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
<200µm. ..... ≤10 %
>500 µm. ..... ≤1,0 %

CN18.1	500 g	plastic	40,75 €
Original pack 6 x 500 g			38,71/500 g
CN18.2	1 kg	plastic	68,70 €
Original pack 6 x 1 kg			65,27/1 kg
CN18.3	2,5 kg	plastic	155,35 €

Silica gel 60

0,8-1,2 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6,0 %
Pore volume (N_2). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 m^2/g
pH value (5 % in H_2O). 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance) ..... ≤0,15 %
SO_4 content. ..... ≤0,1 %
Particle-size distribution:
<0,63 mm. ..... ≤0,5 %
<0,8 mm. ..... ≤20,0 %
>1,25 mm. ..... ≤5,0 %

9828.1	250 g	plastic	30,00 €
9828.2	500 g	plastic	53,25 €
Original pack 6 x 500 g			50,59/500 g
9828.3	1 kg	plastic	81,20 €
Original pack 6 x 1 kg			77,14/1 kg
9828.4	2,5 kg	plastic	137,10 €

Silica gel 60 modified phases

SiO_2
[7631-86-9] • EC No. 231-545-4

Silica gel 60 amino

0,010-0,014 mm

For liquid chromatography.
Normal or reversed-phase separations.
Silica gel NH_2

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Pore volume (N_2). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 m^2/g
Carbon content. ..... ~4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... ≥5,5 µm
d50. ..... 10,0-14,0 µm
d90. ..... ≤23,0 µm

0600.1	10 g	plastic	44,65 €
0600.2	50 g	plastic	155,35 €
0600.3	100 g	plastic	278,45 €

Silica gel amino

0,035-0,07 mm (400-220 mesh)

For liquid chromatography.
Normal or reversed-phase separations.
Silica gel NH_2

Type analysis:

Appearance	white powder
Pore diameter	53-80 Å
Pore volume (N_2)	0,8-1,0 ml/g
Specific surface	500-600 m^2/g
Carbon content	3,5-5,6 %
Fe_2O_3 content (dry substance)	≤0,014 %
Na_2O content (dry substance)	≤0,15 %
SO_4 content	≤0,10 %
Particle-size distribution:	
d50	47,0-60,0 µm
<31 µm	≤17,0 %
<200 mesh	≥98,0 %

5475.1	50 g	glass	155,35 €
5475.2	100 g	glass	278,45 €
5475.3	250 g	glass	611,70 €

Silica gel C_{18}

0,01-0,014 mm

For liquid chromatography.
Reversed-phase separations.
Octadecyl-modified silica gel - endcapped

Type analysis:

Appearance	white powder
Pore diameter	53-80 Å
Carbon content	5-7 %
Pore volume (N_2)	0,8-1,0 ml/g
Specific surface	500-600 m^2/g
Fe_2O_3 content (dry substance)	≤0,014 %
Na_2O content (dry substance)	≤0,15 %
SO_4 content	≤0,10 %
Particle-size distribution:	
d10	≥5,5 µm
d50	10,0-14,0 µm
d90	≤23,0 µm

5509.1	50 g	glass	142,90 €
5509.2	100 g	glass	267,70 €
5509.3	250 g	glass	568,70 €

Silica gel C_{18}

0,035-0,07 mm (400-220 mesh)

For liquid chromatography.
Reversed-phase separations.
Octadecyl-modified silica gel - endcapped

Type analysis:

Appearance	white powder
Pore diameter	53-80 Å
Carbon content	~17 %
Pore volume (N_2)	0,8-1,0 ml/g
Specific surface	500-600 m^2/g
Fe_2O_3 content (dry substance)	≤0,014 %
Na_2O content (dry substance)	≤0,15 %
SO_4 content	≤0,10 %
Particle-size distribution:	
d50	47,0-60,0 µm
<31 µm	≤17,0 %
<200 mesh	≥98,0 %

5504.1	50 g	glass	110,65 €
5504.2	100 g	glass	209,65 €
5504.3	250 g	glass	439,70 €

Silica gel 60 C_{18} ec

0,02-0,05 mm

For SPE and QuEChERS method.
Octacedyl modified silica - endcapped

Type analysis:

Pore diameter	55-75 Å
Particle size	20-50 µm
Capacity (mg caffein/g sorbent)	≥90
Loss on ignition	17-23 %

6070.1	10 g	glass	58,90 €
6070.2	25 g	glass	119,50 €

For further information, please see page 1675

Silica gel cyano

0,01-0,014 mm

For liquid chromatography.
Normal or reversed-phase separations.
Silica gel CN - endcapped

Type analysis:

Appearance	white powder
Pore diameter	53-80 Å
Pore volume (N_2)	0,8-1,0 ml/g
Specific surface	500-600 m^2/g
Carbon content	~5 %
Fe_2O_3 content (dry substance)	≤0,014 %
Na_2O content (dry substance)	≤0,15 %
SO_4 content	≤0,10 %
Particle-size distribution:	
d10	≥5,5 µm
d50	10,0-14,0 µm
d90	≤23,0 µm

5531.1	50 g	glass	177,30 €
5531.2	100 g	glass	310,70 €
5531.3	250 g	glass	676,20 €

Silica gel cyano

0,035-0,07 mm (400-220 mesh)

For liquid chromatography.
Normal or reversed-phase separations.
Silica gel CN - endcapped

Type analysis:

Appearance	white powder
Pore diameter	53-80 Å
Carbon content	~5 %
Pore volume (N_2)	0,8-1,0 ml/g
Specific surface	500-600 m^2/g
SO_4 content	≤0,10 %
Na_2O content (dry substance)	≤0,15 %
Fe_2O_3 content (dry substance)	≤0,014 %
Particle-size distribution:	
d50	47,0-60,0 µm
<31 µm	≤17,0 %
<200 mesh	≥98,0 %

5499.1	50 g	glass	160,75 €
5499.2	100 g	glass	289,20 €
5499.3	250 g	glass	643,95 €

Silica gel 60 diamino

0,045 mm

For the QuEChERS method.
Aminopropylmodified silica gel for pesticide residue analysis in food.
Aminopropyl-modified silica gel, PSA

Type analysis:

Mean pore diameter	55-75 Å
Mean particle size	20-50 µm
Capacity (mg caffein/g sorbent)	≥15
Loss on ignition	≤15 %

4878.1	10 g	glass	81,90 €
4878.2	25 g	glass	175,50 €

For further information, please see page 1675

Silica gel diol

0,010-0,014 mm

For liquid chromatography.
Normal or reversed-phase separations.

Type analysis:

Appearance	white powder
Pore diameter	53-80 Å
Pore volume (N_2)	0,8-1,0 ml/g
Specific surface	500-600 m^2/g
Carbon content	~6,5 %
Fe_2O_3 content (dry substance)	≤0,014 %
Na_2O content (dry substance)	≤0,15 %
SO_4 content	≤0,10 %
Particle-size distribution:	
d10	≥5,5 µm
d50	10,0-14,0 µm
d90	≤23,0 µm

0567.1	10 g	plastic	44,00 €
0567.2	50 g	plastic	155,35 €
0567.3	100 g	plastic	276,85 €

Silica gel diol

0,035-0,07 mm (400-220 mesh)

For liquid chromatography.
Normal or reversed-phase separations.

Type analysis:

Appearance	white powder
Pore diameter	53-80 Å
Pore volume (N_2)	0,8-1,0 ml/g
Specific surface	500-600 m^2/g
Carbon content	~6,5 %
Fe_2O_3 content (dry substance)	≤0,014 %
Na_2O content (dry substance)	≤0,15 %
SO_4 content	≤0,10 %
Particle-size distribution:	
d50	47,0-60,0 µm
<31 µm	≤17,0 %
<200 mesh	≥98,0 %

5458.1	50 g	glass	156,85 €
5458.2	100 g	glass	289,20 €
5458.3	250 g	glass	622,45 €

Silica gel 60 G/F_{254}

Silica gel 60 G/F_{254}

for TLC (with gypsum)

For preparation of TLC plates.
SiO_2
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

Type analysis:

Particle size	2-55 µm
Calcium sulphate ($CaSO_4$)	11-15 %
pH value (5 % suspension)	5,5-7,5
Pore volume	0,65-0,85 ml/g
Specific surface	350-450 m^2/g

CN45.3	250 g	plastic	32,90 €
CN45.1	500 g	plastic	61,90 €
Original pack 6 x 500 g			58,81/500 g
CN45.2	1 kg	plastic	113,50 €
Original pack 6 x 1 kg			107,83/1 kg

For further information, please see page 1659

Silica gel 60 P/F_{254}

Silica gel 60 P/F_{254}

for preparative TLC

For preparation of TLC plates.

SiO_2

M 60,09 g/mol

[7631-86-9] • EC No. 231-545-4

Type analysis:

Particle size. ..... 0-40 µm
Loss on drying. ..... <9 %
pH value (5 % suspension). 5,5-7,5
Pore volume. ..... 0,65-0,85 ml/g
Specific surface. ..... 450-650 m^2/g

CN47.3	250 g	plastic	32,50 €
CN47.1	500 g	plastic	55,90 €
Original pack 6 x 500 g			53,11/500 g
CN47.2	1 kg	plastic	93,90 €
Original pack 6 x 1 kg			89,21/1 kg

For further information, please see page 1659

Silica gel 60 G

Silica gel 60 G

for TLC (with gypsum)

For preparation of TLC plates.

SiO_2

M 60,09 g/mol

[7631-86-9] • EC No. 231-545-4

Type analysis:

Loss on drying. ..... <9 %
Calcium sulphate ($CaSO_4$). ..... 11-15 %
pH value. 5,5-7,5
Pore volume. ..... 0,65-0,85 ml/g
Specific surface. ..... 350-450 m^2/g

CN44.3	250 g	plastic	30,90 €
CN44.1	500 g	plastic	54,90 €
Original pack 6 x 500 g			52,16/500 g
CN44.2	1 kg	plastic	91,90 €
Original pack 6 x 1 kg			87,31/1 kg

For further information, please see page 1659

Silica gel 150

Silicic acid amorphous, Siliciumdioxide

SiO_2

M 60,09 g/mol

[7631-86-9] • EC No. 231-545-4

Silica gel 150

0,01-0,014 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 118-182 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume (N_2). ..... ≥1,05 ml/g
Specific surface (BET). ..... 285-365 m^2/g
pH value (5 % in H_2O). 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size:
d10. ..... ≥5,5 µm
d50. ..... 10,0-14,0 µm
d90. ..... ≤23,0 µm

0405.1	100 g	plastic	27,85 €
0405.2	250 g	plastic	50,00 €
0405.3	500 g	plastic	89,15 €
Original pack 6 x 500 g			84,69/500 g
0405.4	1 kg	plastic	155,35 €
Original pack 6 x 1 kg			147,58/1 kg
0405.5	2,5 kg	plastic	310,70 €

Silica gel 150

0,016-0,024 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Pore volume (H_2O). ..... ≥1,05 ml/g
Specific surface (BET). ..... 285-355 m^2/g
pH value (5 % in H_2O). 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size:
d20. ..... ≥13,0 µm
d50. ..... 25,0-30,0 µm
d90. ..... ≤52,0 µm

0430.1	100 g	plastic	33,25 €
0430.2	250 g	plastic	61,20 €
0430.3	500 g	plastic	107,40 €
Original pack 6 x 500 g			102,03/500 g
0430.4	1 kg	plastic	199,85 €
Original pack 6 x 1 kg			189,86/1 kg

Silica gel 150

0,03-0,2 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 118-182 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume (H_2O). ..... 1,05-1,30 ml/g
Specific surface (BET). ..... 285-355 m^2/g
pH value (5 % in H_2O). 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size:
d10. ..... ≥30,0 µm
d90. ..... ≤250,0 µm

0448.1	250 g	plastic	26,80 €
0448.2	500 g	plastic	38,60 €
Original pack 6 x 500 g			36,67/500 g
0448.3	1 kg	plastic	66,55 €
Original pack 6 x 1 kg			63,22/1 kg
0448.4	2,5 kg	plastic	132,80 €

Silica gel 150

0,035-0,07 mm (400-220 mesh)

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... ~150 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume (H_2O). ..... ≥1,05 ml/g
Specific surface. ..... 285-355 m^2/g
pH. 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle-size distribution:
>32,0 µm. ..... ≥90,0 %
>80,7 µm. ..... ≤5,0 %

5402.1	250 g	plastic	28,50 €
5402.2	500 g	plastic	42,90 €
Original pack 6 x 500 g			40,76/500 g
5402.3	1 kg	plastic	67,65 €
Original pack 6 x 1 kg			64,27/1 kg
5402.4	2,5 kg	plastic	146,10 €

Silica gel 150

0,07-0,2 mm (220-70 mesh)

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... ~150 Å
Loss on drying (160 °C). ..... ≤6 %
Specific surface. ..... 285-355 m^2/g
pH. 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... >80 µm
d50. ..... 130-170 µm
d90. ..... <250 µm

5403.1	250 g	plastic	28,50 €
5403.2	500 g	plastic	42,90 €
Original pack 6 x 500 g			40,76/500 g
5403.3	1 kg	plastic	67,65 €
Original pack 6 x 1 kg			64,27/1 kg
5403.4	2,5 kg	plastic	146,10 €

Silica gel 150

0,1-0,3 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 118-182 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume (H_2O). ..... ≥1,05 ml/g
pH value (5 % in H_2O). 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size (µm):
<100. ..... ≤3,0 %
>315. ..... ≤1,5 %
>500. ..... 0 %

0473.1	250 g	plastic	33,25 €
0473.2	500 g	plastic	61,20 €
Original pack 6 x 500 g			58,14/500 g
0473.3	1 kg	plastic	107,40 €
Original pack 6 x 1 kg			102,03/1 kg
0473.4	2,5 kg	plastic	199,85 €

Silica gel 150

0,315-0,5 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 118-182 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume (H_2O). ..... ≥1,05 ml/g
Specific surface (BET). ..... 285-355 m^2/g
pH value (5 % in H_2O). 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size (µm):
<100. ..... ≤1,0 %
<250. ..... ≤2,0 %
<315. ..... ≤40,0 %
>500. ..... ≤1,0 %

0485.1	250 g	plastic	33,25 €
0485.2	500 g	plastic	61,20 €
Original pack 6 x 500 g			58,14/500 g
0485.3	1 kg	plastic	107,40 €
Original pack 6 x 1 kg			102,03/1 kg
0485.4	2,5 kg	plastic	199,85 €

Silica gel 150

0,6-1,4 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Water (KF). ..... ≤4,0 %
Pore volume. ..... ≥1,05 ml/g
Specific surface. ..... 285-355 m^2/g
pH value. 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
<0,63 mm. ..... ≤5,0 %
>1,40 mm. ..... ≤5,0 %

9856.1	250 g	plastic	30,00 €
9856.2	500 g	plastic	53,25 €
Original pack 6 x 500 g			50,59/500 g
9856.3	1 kg	plastic	87,00 €
Original pack 6 x 1 kg			82,65/1 kg
9856.4	2,5 kg	plastic	160,75 €

Silica gel 250

Silicic acid amorphous, Siliciumdioxide
SiO_2
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

Silica gel 250

0,04-0,063 mm (400-230 mesh)

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... ~250 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume (N_2). ..... 1,60-1,95 ml/g
Specific surface. ..... 280-355 m^2/g
pH. 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
d12. ..... 23,4-41,1 µm
d50. ..... 48,2-65,3 µm
d90. ..... 75,5-96,0 µm

5405.1	250 g	plastic	51,10 €
5405.2	500 g	plastic	95,60 €
Original pack 6 x 500 g			90,82/500 g
5405.3	1 kg	plastic	178,35 €
Original pack 6 x 1 kg			169,43/1 kg
5405.4	2,5 kg	plastic	418,20 €

Silica gel 250

0,07-0,2 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Pore volume (H_2O). ..... 1,60-1,95 ml/g
Specific surface (BET). ..... 280-355 m^2/g
pH value (5 % in H_2O). 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size:
d10. ..... ≥80,0 µm
d90. ..... ≤300,0 µm

0493.1	100 g	plastic	27,85 €
0493.2	250 g	plastic	50,00 €
0493.3	500 g	plastic	89,15 €
Original pack 6 x 500 g			84,69/500 g
0493.4	1 kg	plastic	166,55 €
Original pack 6 x 1 kg			158,22/1 kg

Silica gel 250

0,09-0,13 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... 180-280 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume (H_2O). ..... 1,60-1,95 ml/g
Specific surface (BET). ..... 285-355 m^2/g
pH value (5 % in H_2O). 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size:
d10. ..... ≥75,0 µm
d50. ..... 102,0-120,0 µm
d90. ..... ≤174,0 µm

0501.1	100 g	plastic	33,25 €
0501.2	250 g	plastic	66,55 €
0501.3	500 g	plastic	115,60 €
Original pack 6 x 500 g			109,82/500 g
0501.4	1 kg	plastic	209,65 €
Original pack 6 x 1 kg			199,17/1 kg

Silica gel 500

Silicic acid amorphous, Siliciumdioxide
SiO_2
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

Silica gel 500

0,035-0,07 mm (400-220 mesh)

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... ~500 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume (N_2). ..... ≥1,0 ml/g
Specific surface. ..... 70-90 m^2/g
Volatile parts (950 °C). ..... ≤10,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... ≥36 µm
d50. ..... 65-85 µm
d90. ..... ≤120 µm

5407.5	100 g	plastic	103,10 €
5407.1	250 g	plastic	209,65 €
5407.2	500 g	plastic	385,95 €
Original pack 6 x 500 g			366,65/500 g
5407.3	1 kg	plastic	686,95 €
Original pack 6 x 1 kg			652,60/1 kg
5407.4	2,5 kg	plastic	1611,45 €

Silica gel 500

0,09-0,13 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Pore volume (H_2O). ..... ≥1,0 ml/g
Specific surface (BET). ..... 70-90 m^2/g
Volatile parts (950 °C). ..... ≤10,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size (µm):
>65. ..... ≥96,0 %
>90. ..... ≥70,0 %
>125. ..... 20-45 %
>150. ..... ≤24,5 %

0512.1	50 g	plastic	55,80 €
0512.2	100 g	plastic	89,15 €
0512.3	250 g	plastic	188,15 €
0512.4	500 g	plastic	342,95 €
Original pack 6 x 500 g			325,80/500 g

Silica gel 500

0,1-0,3 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Pore volume (H_2O). ..... ≥1,0 ml/g
Specific surface (BET). ..... 70-90 m^2/g
Volatile parts (950 °C). ..... ≤10,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size (µm):
<100. ..... ≤5,0 %
>315. ..... ≤2,0 %
>500. ..... 0 %

0524.1	50 g	plastic	54,75 €
0524.2	100 g	plastic	89,15 €
0524.3	250 g	plastic	188,15 €
0524.4	500 g	plastic	342,95 €
Original pack 6 x 500 g			325,80/500 g

Silica gel 1000

Silicic acid amorphous, Siliciumdioxide
SiO_2
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

Silica gel 1000

0,016-0,024 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Specific surface (BET). ..... 30-55 m^2/g
Volatile parts (950 °C). ..... ≤10,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size (µm):
>12,7. ..... ≥85,0 %
>32,0. ..... ≤7,0 %

0533.1	10 g	plastic	28,95 €
0533.2	50 g	plastic	73,65 €
0533.3	100 g	plastic	128,50 €
0533.4	250 g	plastic	255,35 €

Silica gel 1000

0,035-0,07 mm (400-220 mesh)

For column chromatography.

Type analysis:

Appearance. ..... white powder
Pore diameter. ..... ~1000 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume (N_2). ..... ≥1,0 ml/g
Specific surface. ..... 30-55 m^2/g
Volatile parts (950 °C). ..... ≤10 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content. ..... ≥10,0 %
Particle-size distribution:
d10. ..... ≥36 µm
d50. ..... 62-85 µm

5409.5	100 g	plastic	92,35 €
5409.1	250 g	plastic	196,65 €
5409.2	500 g	plastic	364,45 €
Original pack 6 x 500 g			346,23/500 g
5409.3	1 kg	plastic	665,45 €
Original pack 6 x 1 kg			632,18/1 kg
5409.4	2,5 kg	plastic	1536,20 €

Silica gel 1000

0,09-0,13 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Pore volume (H_2O). ..... ≥1,0 ml/g
Specific surface (BET). ..... 30-55 m^2/g
Volatile parts (950 °C). ..... ≤10,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size (µm):
>65. ..... ≥96 %
>90. ..... ≥70 %
>125. ..... 20-45 %
>150. ..... ≤24,5 %

0153.1	10 g	plastic	22,05 €
0153.2	50 g	plastic	55,80 €
0153.3	100 g	plastic	89,15 €
0153.4	250 g	plastic	199,85 €

Silica gel 1500

Silicic acid amorphous, Siliciumdioxide
SiO_2
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

Silica gel 1500

0,016-0,024 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Specific surface (BET). ..... 20-30 m^2/g
Volatile parts (950 °C). ..... ≤10,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size (µm):
>12,7. ..... ≥85,0 %
>32,0. ..... ≤7,0 %

0559.1	10 g	plastic	27,45 €
0559.2	50 g	plastic	66,55 €
0559.3	100 g	plastic	121,40 €
0559.4	250 g	plastic	241,90 €

Silica gel 1500

0,09-0,13 mm

For column chromatography.

Type analysis:

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Pore volume (H_2O). ..... ≥1,0 ml/g
Specific surface (BET). ..... 20-30 m^2/g
Volatile parts (950 °C). ..... ≤10,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size (µm):
>65. ..... ≥96 %
>90. ..... ≥70 %
>125. ..... 20-45 %
>150. ..... ≤24,5 %

0171.1	10 g	plastic	27,85 €
0171.2	50 g	plastic	77,95 €
0171.3	100 g	plastic	132,15 €
0171.4	250 g	plastic	332,20 €

Silica gel 2500

Silica gel 2500

0,09-0,13 mm

For column chromatography.
Silicic acid amorphous, Siliciumdioxide
SiO_2
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

Type analysis:

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Pore volume (H_2O). ..... ≥1,0 ml/g
Specific surface (BET). ..... 12-18 m^2/g
Volatile parts (950 °C). ..... ≤10,0 %
SiO_2 content (dry substance). ..... ≥99,3 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %
Particle size (µm):
>65. ..... ≥96 %
>90. ..... ≥70 %
>125. ..... 20-45 %
>150. ..... ≤24,5 %

0177.1	10 g	plastic	27,85 €
0177.2	50 g	plastic	77,95 €
0177.3	100 g	plastic	132,15 €

Silica gel 4500

Silica gel 4500

0,1-0,3 mm

For column chromatography.
Silicic acid amorphous, Siliciumdioxide
SiO_2 • M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

Type analysis:

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Pore volume (H_2O). ..... 0,9-1,2 ml/g
Specific surface (BET). ..... 8-12 m^2/g
Volatile parts (950 °C). ..... ≤13,0 %
SiO_2 content (dry substance). ..... ≥99,4 %
Fe_2O_3 content (dry substance). ..... ≤0,014 %
Na_2O content (dry substance). ..... ≤0,15 %
SO_4 content (dry substance). ..... ≤0,10 %

Particle size (µm):
<100. ..... ≤5,0 %
>315. ..... ≤2,0 %
>500. ..... 0 %

0186.1	10 g	plastic	32,15 €
0186.2	50 g	plastic	99,90 €
0186.3	100 g	plastic	177,40 €

Silica gel with humidity indicator

- Silica gel blue see p. 2321
- Silica gel orange see p. 2321

Silica gel without humidity indicator

- Silica gel industry grade see p. 2321
- Silica gel white see p. 2321

Silica gel blue

Silica gel blue

2-4 mm, with colour inidicator, pearls

Drying agent

Drying pearls blue; colour change from blue to pink.

[7631-86-9] • EC No. 231-545-4

Type analysis:

Particle size. ..... 2-4 mm
Adsorption capacity:
20 % rel. humidity. ..... approx. 8 %
50 % rel. humidity. ..... approx. 20 %
Filled under protective gas.
Change in colour from blue to fuchsia.
Regeneration at ~80-100 °C, approximately 2-4 hours.

2440.1	500 g	plastic	18,20 €
Original pack 6 x 500 g			17,29/500 g
2440.2	1 kg	plastic	28,50 €
Original pack 6 x 1 kg			27,08/1 kg
2440.3	2,5 kg	plastic	56,90 €
2440.4	10 kg	plastic	188,15 €

For further information, please see page 1742

Silica gel industry grade

Silica gel industry grade

pearls, without indicator

Universal drying agent, drying of buildings.

[1327-36-2]

Type analysis:

Appearance. ..... pearls, colourless to brown
Particle size. ..... 1-2,3 mm
BET-surface. ..... approx. 750 m^2/g
Adsorption capacity:
10 % rel. humidity. ..... approx. 6 weight %
80 % rel. humidity. ..... approx. 45 weight %
Regeneration at 130-150 °C.

CN70.1	1 kg	plastic	40,75 €
Original pack 6 x 1 kg			38,71/1 kg
CN70.2	5 kg	plastic	147,85 €
CN70.3	10 kg	plastic	267,70 €
CN70.4	25 kg	plastic	611,70 €

For further information, please see page 1743

Silica gel orange

Silica gel orange

2-5 mm, with colour indicator, pearls

Drying agent

Drying pearls orange; colour change from orange to colourless.

Type analysis:

Particle size. ..... 2-5 mm
BET-surface. ..... approx. 750 m^2/g
Adsorptive capacity:
10 % rel. humidity. ..... approx. 6,5 weight %
80 % rel. humidity. ..... approx. 42 weight %
Filled under protective gas. Colour change from orange to colourless at approx. 6 weight-% load.
Regeneration at 130 °C, approx. 4 hours.

P077.4	500 g	plastic	26,35 €
Original pack 6 x 500 g			25,03/500 g
P077.1	1 kg	plastic	39,70 €
Original pack 6 x 1 kg			37,72/1 kg
P077.2	2,5 kg	plastic	77,30 €
P077.3	10 kg	plastic	234,25 €

For further information, please see page 1742

Silica gel orange desiccant sachet

- Desiccant sachet Silica gel orange see p. 1927

Silica gel water resistant

Silica gel water resistant

2-5 mm, bead form

Drying agent water resistant,

Drying pearls water resistant, Drying pearls WS

[1327-36-2] • EC No. 215-475-1

WGK 1

Type analysis:

Particle size. ..... 2-5 mm
BET-surface. ..... ca. 650 m^2/g
Absorption capacity:
10 % rel. humidity. ..... approx. 4 %
80 % rel. humidity. ..... approx. 42 %
Regeneration at 130-150 °C.

8109.1	500 g	plastic	28,95 €
Original pack 6 x 500 g			27,50/500 g
8109.2	1 kg	plastic	42,90 €
Original pack 6 x 1 kg			40,76/1 kg
8109.3	2,5 kg	plastic	80,10 €
8109.4	10 kg	plastic	231,15 €

Silica gel white

SiO_2

[7631-86-9] • EC No. 231-545-4

Silica gel white

0,5-1 mm, granules

Drying agent

Type analysis:

Bulk density. ..... 650-770 g/l
Absorption capacity:
10 % rel. humidity. ..... ≥5 weight %
80 % rel. humidity. ..... ≥28 weight %
Regeneration at ~130 °C, approximately 4 hours.

9376.1	1 kg	plastic	34,30 €
Original pack 6 x 1 kg			32,59/1 kg
9376.2	5 kg	plastic	119,90 €

For further information, please see page

Silica gel white

1-3 mm, granules

Drying agent

Type analysis:

Absorption capacity:
10 % rel. humidity. ..... approx. 6 weight %
80 % rel. humidity. ..... approx. 32 weight %
Regeneration at ~130 °C, approximately 4 hours.

T858.1	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg
T858.2	5 kg	plastic	126,35 €

Silica gel with colour indicator

- Silica gel blue see p. 2321
- Silica gel orange see p. 2321

Silica sol

Silica sol

15 % in water

D ~1,09

Type analysis:

pH value (25 °C). 9,0-10,0
Density (20 °C). ..... 1,09-1,1 g/cm^3
Protect from frost.

8025.1	1 l	plastic	27,45 €
Original pack 6 x 1 l			26,08/1 l

Siliceous earth

- Infusorial earth see p. 2067

Silicic acid

Silicic acid

for chromatography

Acc. to Ramsey and Patterson.

Silicone dioxide

SiO_2

M 60,09 g/mol

[1343-98-2] • EC No. 215-683-2

Type analysis:

Loss on ignition. ..... ≤13 %

0201.1	250 g	plastic	21,40 €
0201.2	1 kg	plastic	57,95 €
Original pack 6 x 1 kg			55,05/1 kg

Silicon Standards

- Silicon AAS Standard Solution see p. 2360
- Silicon AAS Standard Solution see p. 2360
- Silicon ICP Standard Solution see p. 2369
- Silicon ICP Standard Solution see p. 2365

Silicon dioxide

Silicon dioxide
ROTI®METIC 99,998 % (4N8)

SiO_2
M 60,09 g/mol
D 2,2 • bp 2950 °C
mp 1713 °C
[60676-86-0] • EC No. 262-373-8
Warning H319-H335-H373

Type analysis:
Assay (metals basis)..... 99,998 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5738.1	5 g	plastic	44,00 €
5738.2	25 g	plastic	110,65 €

Silicon dioxide

- Silica gel 35 see p. 2315
- Silica gel 60 see p. 2315
- Silica gel 150 see p. 2318
- Silica gel 250 see p. 2319
- Silica gel 500 see p. 2319
- Silica gel 1000 see p. 2320
- Silica gel 1500 see p. 2320
- Silica gel 2500 see p. 2320
- Silica gel 4500 see p. 2320
- Silicic acid see p. 2321

Silicone anti-foaming emulsion

Silicone anti-foaming emulsion
Useful as anti-foaming agent in aqueous solutions of surfactants. The antifoam emulsion consists 30 % of polydimethylsiloxane in water and modified inorganic components. It applies to entire range of pH in non-ionic, cationic and anionic solutions. Admixture upwards of 30 ppm. The antifoam emulsion must be homogenized by shaking briefly prior to use. The antifoam emulsion must be homogenized by shaking briefly prior to use.

Shake well before using!
D 1,00
WGK 1

Type analysis:
Appearance. ..... white liquid
Defoaming effect (30 sec.)..... ≤80 mm
Solids after 30 min./120 °C. ..... 42,0-49,0 %

0734.1	250 ml	plastic	27,85 €
0734.2	1 l	plastic	69,80 €
Original pack 6 x 1 l			66,31/1 l
0734.3	2,5 l	plastic	138,15 €
Original pack 4 x 2,5 l			131,24/2,5 l

Silicon oils

Thermal stability
In the presence of air, silicone oils M are stable up to 150 °C for a long time. If you impede the air supply they are even stable up to higher temperatures. If you stop the air supply totally, i.e. the oil is used in a closed system or in an inert atmosphere, e.g. in an atmosphere of nitrogen or carbon dioxide, the oils can be used up to peak temperatures of about 300 °C, but the viscosity will decrease continously.

Solubility
All silicone oils M can be solved easily in aliphatic and aromatic hydrocarbons, higher alcohols, ether, ester and chlorinated hydrocarbons, e.g.

petroleum benzin	ethyl acetate
benzene	butyl acetate
toluene	carbon tetrachloride
ether	chloroform
butyl alcohol	trichloroethylene
amyl alcohol	tetrachloroethane

Silicon oils are not soluble in water, methanol and ethylene glycol. The solubility in organic solvents increases with decreasing viscosity. Therefore, in addition, silicone oils M 50 and M 100 are soluble in isopropanol and n-butanol and partially miscible with n-propanol. Silicone oils M with a viscosity below 20 mm · s^{-1} can be solved in n-propanol and also in acetone and dioxane. Silicone oils M with a viscosity of 10 mm · s^{-1} are even soluble in ethanol.

Lubricant and gliding properties
The lubrication properties of silicone oils M depend on the bearing material to a high degree. They give the best results with plastics, e.g. polyamides, polystyrene, phenol resins and with rubber. They are also suited as lubricants for some special combinations of metallic materials, e.g. steel combined with bronze, brass, chromium, zinc or cadmium, also chromium combined with bronze.

However there is no lubricity when you combine steel with steel in the range of the critical friction. In each case you have to decide whether the use of pure silicone oils M is to be taken into account. It is necessary to distinguish between the lubricity and the gliding properties of the oils. Silicone oils M are excellent gliding agents in many cases, e.g. in the treatment of special plastics and man-made fibres. This property is not due to the building up of a load-bearing lubrication film, but to the separation effect of the silicone oils M.

Surface tension
The surface tension of the silicone oils M is in the range of about 19-21 mM · s^{-1} , so it is extremely low. It increases only a little with viscosity of the oils.

Refractive index
The refractive index of silicone oils M increases from 1,3941 for M 3 to 1,4000 for M 20, and it is almost constant at 1,4042 for M 1000 and higher.

Density
At 25 °C the densities of silicone oils M range between 0,90 and 0,97. So they are not very different from the density of water. With increasing viscosity the densities of the oils increase too. They depend on temperature nearly linear: The values mentioned above were measured between -40 °C and 175 °C.

Chemical inertness
Generally silicone oils M are inert. They are stable in contact with water, organic solvents, pure oxygen and many other chemicals. In contact with most metals they will not be changed, and on the other hand they will not corrode metals, wood, paper and plastics. Strong oxidising agents like concentrated nitric acid or elemental chlorine decompose silicone oils M especially at higher temperatures.

Main properties of silicone oils:
- Heat and cold resistance
- Low setting point
- Low temperature and pressure dependency of viscosity
- Low steam pressure
- Good dielectric strength, little depending on temperature and frequency
- High interfacial tension to water and organic polymers
- High surface activity
- High compressibility
- Chemical and physiological inertness

Due to these properties silicone oils M are ideal as:
- Heat transfer agents
- Hydraulic fluids
- Fluid dielectrics
- Surface agents
- Separating agents
- Gliding agents
- Defoamer
- Auxiliary agents in varnishes
- Damping fluids

Silicone oil M-series

Polydimethyl siloxane
WGK 1

Silicone oil M 3
low viscous, 3 cSt

Type analysis:
Viscosity (25 °C). ..... 2,7-3,3 mm^2/s
Density (25 °C)..... ~0,90
Pour point..... ~-100 °C
Flash point. ..... >62 °C

4106.1	1 kg	plastic	59,05 €
Original pack 6 x 1 kg			56,10/1 kg
4106.2	5 kg	plastic	246,20 €
4106.3	25 kg	plastic	1069,65 €

Silicone oil M 5
low viscous, 5 cSt

Type analysis:
Viscosity (25 °C). ..... 4,5-5,5 mm^2/s
Density (25 °C)..... 0,92
Pour point..... ~-100 °C
Flash point. ..... >120 °C

7844.1	1 l	plastic	36,45 €
Original pack 6 x 1 l			34,63/1 l
7844.2	5 l	plastic	139,25 €
Original pack 2 x 5 l			132,29/5 l
7844.3	10 l	plastic	267,70 €
7844.4	25 l	plastic	536,45 €

Silicone oil M 10

low viscous, 10 cSt

Type analysis:

Viscosity (25 °C).....9,0-11,0 mm²/s
Density (25 °C).....0,93
Pour point.....~-90 °C
Flash point.....>165 °C

4113.1	1 kg	plastic	42,90 €
Original pack 6 x 1 kg			40,76/1 kg
4113.2	5 kg	plastic	170,95 €
4113.4	10 kg	tinplate	317,15 €
4113.3	25 kg	plastic	665,45 €

Silicone oil M 20

low viscous, 20 cSt

Type analysis:

Viscosity (25 °C).....18-22 mm²/s
Density (25 °C).....0,95-0,96
Pour point.....~-70 °C
Flash point.....~240 °C

4010.1	1 kg	plastic	46,15 €
Original pack 6 x 1 kg			43,84/1 kg
4010.3	5 kg	plastic	192,45 €
4010.4	10 kg	plastic	364,45 €
4010.2	25 kg	plastic	837,45 €

Silicone oil M 50

medium viscous, 50 cSt

Type analysis:

Viscosity (25 °C).....45-55 mm²/s
Density (25 °C).....~0,96
Pour point.....-55 °C
Flash point.....>250 °C

4020.1	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
4020.4	5 kg	plastic	132,15 €
4020.2	10 kg	plastic	246,20 €
4020.3	25 kg	plastic	568,70 €

Silicone oil M 100

medium viscous, 100 cSt

Type analysis:

Viscosity (25 °C).....95-105 mm²/s
Density (25 °C).....0,97
Pour point.....~-55 °C
Flash point.....>275 °C

4025.5	250 ml	plastic	19,25 €
4025.1	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
4025.2	5 kg	plastic	126,35 €
4025.3	10 kg	plastic	220,40 €
4025.4	25 kg	plastic	482,70 €

Silicone oil M 200

medium viscous, 200 cSt

Type analysis:

Viscosity (25 °C).....190-210 mm²/s
Pour point.....~-50 °C
Flash point.....~310 °C

4030.1	1 kg	plastic	46,15 €
Original pack 6 x 1 kg			43,84/1 kg
4030.2	5 kg	plastic	192,45 €
4030.3	10 kg	plastic	342,95 €
4030.4	25 kg	plastic	783,70 €

Silicone oil M 350

medium viscous, 350 cSt

Type analysis:

Viscosity (25 °C).....333-368 mm²/s
Pour point.....~-50 °C
Flash point.....>300 °C

4035.6	250 ml	plastic	19,90 €
4035.1	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
4035.5	2,5 kg	plastic	75,15 €
4035.2	5 kg	plastic	138,70 €
4035.4	10 kg	plastic	246,20 €
4035.3	25 kg	plastic	568,70 €

Silicone oil M 500

medium viscous, 500 cSt

Type analysis:

Viscosity (25 °C).....475-525 mm²/s
Density (25 °C).....~0,97
Pour point.....-47 °C
Flash point.....>300 °C

4040.5	250 ml	plastic	20,35 €
4040.1	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
4040.2	5 kg	plastic	138,70 €
4040.4	10 kg	plastic	246,20 €
4040.3	25 kg	plastic	568,70 €

Silicone oil M 1000

medium viscous, 1000 cSt

Type analysis:

Viscosity (25 °C).....950-1050 mm²/s
Density (25 °C).....~0,97
Pour point.....~-50 °C
Flash point.....>300 °C

4045.5	250 ml	plastic	21,00 €
4045.1	1 kg	plastic	37,55 €
Original pack 6 x 1 kg			35,67/1 kg
4045.4	5 kg	plastic	148,25 €
4045.3	10 kg	plastic	267,70 €
4045.2	25 kg	plastic	611,70 €

Silicone oil M 5000

high viscous, 5000 cSt

Type analysis:

Viscosity (25 °C).....4750-5250 mm²/s
Density (25 °C).....0,97-0,98
Pour point.....~-50 °C
Flash point.....~320 °C

4050.1	1 kg	plastic	61,20 €
Original pack 6 x 1 kg			58,14/1 kg
4050.2	5 kg	plastic	235,45 €
4050.3	10 kg	plastic	364,45 €
4050.4	25 kg	plastic	783,70 €

Silicone oil M 10 000

high viscous, 10 000 cSt

Type analysis:

Viscosity (25 °C).....9500-11000 mm²/s
Density (25 °C).....0,97-0,98
Pour point.....~-50 °C
Flash point.....~320 °C

4055.5	250 ml	plastic	23,55 €
4055.1	1 kg	plastic	48,30 €
Original pack 6 x 1 kg			45,89/1 kg
4055.2	5 kg	plastic	181,70 €
4055.4	10 kg	plastic	289,20 €
4055.3	25 kg	plastic	697,70 €

Silicone oil M 20 000

high viscous, 20 000 cSt

Type analysis:

Viscosity (25 °C).....19000-21000 mm²/s
Density (25 °C).....0,97-0,98
Pour point.....~-50 °C
Flash point.....~320 °C

4060.1	1 kg	plastic	41,85 €
Original pack 6 x 1 kg			39,76/1 kg
4060.3	5 kg	plastic	162,90 €
4060.4	10 kg	plastic	284,90 €
4060.2	25 kg	plastic	671,90 €

Silicone oil M 60 000

high viscous, 60 000 cSt

Type analysis:

Viscosity (25 °C).....57000-63000 mm²/s
Density (25 °C).....0,97-0,98
Pour point.....~-50 °C
Flash point.....~320 °C

4080.1	1 kg	plastic	48,30 €
Original pack 6 x 1 kg			45,89/1 kg
4080.2	5 kg	plastic	181,70 €
4080.3	10 kg	plastic	295,65 €
4080.4	25 kg	plastic	697,70 €

Silicone oil M 100 000

high viscous, 100 000 cSt

Type analysis:

Viscosity (25 °C). ..... 95000-105000 mm^2/s
Density (25 °C). 0,97-0,98
Pour point. ..... ~-50 °C
Flash point. ..... ~320 °C

4085.1	1 kg	plastic	63,35 €
Original pack 6 x 1 kg			60,18/1 kg
4085.3	5 kg	plastic	213,95 €
4085.2	10 kg	plastic	364,45 €
4085.4	25 kg	plastic	794,45 €

Silicone oil M 250 000

high viscous, 250 000 cSt

Type analysis:

Viscosity (25 °C). ..... 225000-275000 mm^2/s
Density (25 °C). 0,97-0,98
Pour point. ..... ~-40 °C
Flash point. ..... ~320 °C

4112.1	1 kg	plastic	122,45 €
Original pack 6 x 1 kg			116,33/1 kg
4112.2	5 kg	plastic	525,70 €
4112.3	10 kg	plastic	998,70 €

Silicone oil M 500 000

super-high viscous, 500 000 cSt

Type analysis:

Viscosity (25 °C). ..... ~500000 mm^2/s
Density (25 °C). 0,97-0,98
Pour point. ..... ~-40 °C
Flash point. ..... ~320 °C

4109.1	1 kg	plastic	111,70 €
Original pack 6 x 1 kg			106,12/1 kg
4109.3	5 kg	plastic	482,70 €
4109.4	10 kg	plastic	880,45 €
4109.2	25 kg	plastic	2096,25 €

Silicone oil M 1 000 000

super-high viscous, 1 000 000 cSt

Type analysis:

Viscosity (25 °C). ..... 900000-1100000 mm^2/s
Density (25 °C). ..... 0,97-0,98 g/cm^3
Pour point. ..... ~-40 °C
Flash point. ..... ~320 °C

9375.1	1 kg	plastic	99,90 €
Original pack 6 x 1 kg			94,91/1 kg
9375.2	5 kg	plastic	439,70 €
9375.3	10 kg	plastic	837,45 €
9375.4	25 kg	plastic	1924,25 €

Silicone oil M-series, pharma

Polydimethyl siloxane
WGK 1

Silicone oil MPH 100

medium viscous, pharma

Guarantee analysis:

Appearance. ..... complies
Viscosity (25 °C). ..... 95-105 mm^2/s
Acid content (HCl). ..... ≤0,0001 %
Volatile parts (1 g, 2 h, 150 °C). ..... ≤0,3 %
Odour. ..... complies
IR-spectrum. ..... complies
UV-spectrum. ..... complies
Heavy metals (as Pb). ..... ≤0,0005 %

6822.1	25 kg	plastic	751,45 €

Silicone oil MPH 350

medium viscous, pharma

Guarantee analysis:

Appearance. ..... complies
Viscosity (25 °C). ..... 333-368 mm^2/s
Acid content (HCl). ..... ≤0,0001 %
Volatile parts (1 g, 2 h, 150 °C). ..... ≤0,3 %
Odour. ..... complies
IR-spectrum. ..... complies
UV-spectrum. ..... complies
Heavy metals (as Pb). ..... ≤0,0005 %

6825.1	25 kg	plastic	751,45 €

Silicone oil MPH 1000

medium viscous, pharma

Guarantee analysis:

Appearance. ..... complies
Viscosity (25 °C). ..... 950-1050 mm^2/s
Acid content (HCl). ..... ≤1 ppm
Volatile parts (1 g, 2 h, 150 °C). ..... ≤0,3 %
Odour. ..... complies
IR-spectrum. ..... complies
UV-spectrum. ..... complies
Heavy metals. ..... ≤0,0005 %

2190.3	25 kg	plastic	751,45 €

Silicone oil, stabilised

Polydimethyl siloxane
WGK 1

Silicone oil M 3

stabilised, low viscous

4217.1	25 kg	plastic	1709,25 €

Silicone oil M 5

stabilised, low viscous

A413.1	25 kg	plastic	1069,65 €

Silicone oil M 20

stabilised, low viscous

2188.1	25 kg	plastic	1041,70 €

Silicone oil M 50

stabilised, medium viscous

4212.2	5 kg	plastic	235,45 €
4212.1	25 kg	plastic	998,70 €

Silicone oil M 100

stabilised, medium viscous

A528.1	25 kg	plastic	794,45 €

Silicone oil, organofunctional

Silicone oil OF-OH 50

organo functional
WGK 1

Type analysis:

Viscosity (25 °C). ..... 40-70 mm^2/s
OH-Assay. ..... 2,7-3,3 %
Water. ..... ≤0,1 %

4076.1	25 kg	plastic	2676,75 €

Silicone oil, phenylsubstituted

Polymethyl phenyl siloxane
WGK 1

Silicone oil PN 200

medium viscous, 200 cSt

Type analysis:

Viscosity (25 °C). ..... 180-220 mm^2/s
Density (25 °C). ..... ~1,03
Pour point. ..... ~-65 °C
Flash point. ..... ~300 °C
Combustion point. ..... ~360 °C

4130.1	1 kg	plastic	134,30 €
Original pack 6 x 1 kg			127,59/1 kg
4130.2	5 kg	plastic	568,70 €
4130.3	25 kg	plastic	2633,75 €

Silicone oil PN 1000

medium viscous, 1000 cSt

Type analysis:

Viscosity (25 °C). ..... 925-1075 mm^2/s
Density (25 °C). ..... ~1,07
Flash point. ..... ~285 °C
Combustion point. ..... ~425 °C

6826.1	1 kg	plastic	134,30 €
Original pack 6 x 1 kg			127,59/1 kg
6826.2	5 kg	plastic	568,70 €
6826.3	25 kg	plastic	2633,75 €

Silicone oil DC

Silicone oil DC 702

~45 cSt
WGK 1
H412

0885.1	50 ml	glass	44,65 €

Silicone paste

Heat resistance
Silicone pastes are stable within temperature range of -50 to +200 °C without any considerable change in their consistency.

Chemical resistance
Silicone pastes are resistant to steam, sulphur dioxide, diluted acids and alkaline solutions.They are chemically indifferent to metals and different kinds of metals.

Application range:
- Laboratory techniques as an antiseize agent and lubricant for stopcocks, taper ground joints and regulating valves. Also suitable for sealing various glass apparatus.
- Apparatus engineering
- Electrotechnology

Silicone paste

bp >315 °C
flp >300 °C

Silicone paste

low viscous

Type analysis:
Appearance. ..... whitish/translucent
Decrease in weight (30 h/200 °C). ..... <3 %
Penetration (acc. to Klein)..... 300 ±30
Consistency (30 h/200 °C). ..... stable

5872.3	500 g	plastic	41,85 €
Original pack 6 x 500 g			39,76/500 g
5872.1	1 kg	plastic	70,85 €
Original pack 6 x 1 kg			67,31/1 kg
5872.2	5 kg	plastic	310,70 €
5872.4	10 kg	plastic	590,20 €

Silicone paste

medium viscous

Type analysis:
Appearance. ..... whitish/translucent
Decrease in weight (30 h/200 °C). ..... <3 %
Penetration (acc. to Klein)..... 270 ±30
Consistency (30 h/200 °C). ..... stable

5874.3	500 g	plastic	41,85 €
Original pack 6 x 500 g			39,76/500 g
5874.1	1 kg	plastic	70,85 €
Original pack 6 x 1 kg			67,31/1 kg
5874.2	5 kg	plastic	310,70 €

Silicone paste

high viscous

Type analysis:
Appearance..... whitish/translucent
Decrease in weight (30 h/200 °C)..... <3 %
Penetration (acc. to Klein). ..... 200 ±30
Consistency (30 h/200 °C). ..... stable

5876.7	100 g	plastic	17,10 €
5876.3	500 g	plastic	41,85 €
Original pack 6 x 500 g			39,76/500 g
5876.1	1 kg	plastic	70,85 €
Original pack 6 x 1 kg			67,31/1 kg
5876.2	5 kg	plastic	310,70 €

Silicone stripping agent M

Silicone stripping agent M

Aerosol 400 ml
UN No. 1950 • ADR 2.1 • WGK 2
Danger
H222-H229-H315-H336-H411

0895.1	400 ml	spray bottle	9,25 €

For further information, please see page 1175

Silicone stripping agent SPM

Silicone stripping agent SPM

WGK 1

1824.3	25 kg	plastic	1773,75 €

Silicon oil TT 2

Silicon oil TT 2

NEW

dried, low viscous, 2 cSt
Polydimethyl siloxane
D 0,87
WGK 1

Type analysis:
Water..... ≤0,005 %
Viscosity (25 °C)..... 1,8-2,2 mm^2/s

1965.1	25 kg	plastic	2139,25 €

Silicon oil TT 3

Silicon oil TT 3

NEW

dried, low viscous, 3 cSt
Polydimethyl siloxane
D 0,90
WGK 1

Type analysis:
Water..... ≤0,005 %
Viscosity (25 °C)..... 2,7-3,3 mm^2/s
Flash point..... ≥62 °C

1952.1	25 kg	plastic	2068,85 €

Silicon oil TT 5

Silicon oil TT 5

NEW

dried, low viscous, 5 cSt
Polydimethyl siloxane
D 0,92
WGK 1

Type analysis:
Water. ..... ≤0,005 %
Viscosity (25 °C). ..... 4,5-5,5 mm^2/s
Flash point. ..... ≥120 °C

1971.1	25 kg	plastic	1773,75 €

Silvan

▶ 2-Methylfuran see p. 2138

Silver

Ag
bp 2163 °C
mp 960 °C
[7440-22-4] • EC No. 231-131-3

Silver sheet

Sheet 100 x 100 x 0,1 mm
Weight per sheet ~10,5 g

Type analysis:
Assay. ..... ≥99,9 %

8816.1	1 sheet	cardboard	75,15 €

Silver wire

≥99,9 %, wire ∅ 0,1 mm
Weight per meter ~0,082 g

Type analysis:
Assay. ..... ≥99,9 %
Length (m)..... 310 m (~25 g)
Diameter. ..... 0,1 mm

8819.1	310 m	plastic	155,90 €

Silver wire

≥99,9 %, wire ∅ 0,5 mm
Weight per meter ~2,062 g

Type analysis:
Assay. ..... ≥99,9 %
Diameter. ..... 0,5 mm

8821.1	25 g	plastic	144,60 €
8821.2	100 g	plastic	482,70 €

Silver wool

≥99,9 %, for elementary analysis

Type analysis:
Assay (arg.)..... ≥99,9 %
Diameter. ..... ~45-55 µm

9373.1	10 g	plastic	70,45 €

Silver pellets

Silver pellets

NEW

99,99 %

Ag
M 107,87 g/mol
D 10,5 • bp 2212 °C
mp 960 °C
[7440-22-4] • EC No. 231-131-3

Type analysis:

Purity. ..... 99,99 %
Bismuth (Bi). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0001 %
Copper (Cu). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Palladium (Pd). ..... ≤0,0005 %
Selenium (Se). ..... ≤0,0005 %
Tellur (Te). ..... ≤0,0005 %

0884.1	10 g	glass	37,55 €
0884.2	25 g	glass	69,80 €
0884.3	50 g	glass	155,80 €
0884.4	100 g	glass	289,20 €

Silver

▶ Sheets of silver see p. 2314

Silver Standards

▶ Silver AAS Standard Solution see p. 2360
▶ Silver ICP Standard Solution see p. 2365
▶ Silver ICP Standard Solution see p. 2369

Silver bromide

Silver bromide

ROTI®METIC 99,999 % (5N)

AgBr
M 187,78 g/mol
D 6,47 • bp 700 °C • mp 432 °C
Solubility: ~0,14 mg/l (H_2O, 50 °C)
[7785-23-1] • EC No. 232-076-8

Type analysis:

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5739.1	5 g	plastic	62,25 €
5739.2	25 g	plastic	228,45 €

Silver chloride

AgCl
M 143,32 g/mol
D 5,56 • bp 1550 °C
mp 455 °C
Solubility: ~1,9 mg/l (H_2O, 25 °C)
[7783-90-6] • EC No. 232-033-3
UN No. 3077 • ADR 9 III • WGK 2

Warning H410

Silver chloride

ROTI®METIC 99,9999 % (6N)

Type analysis:

Assay (metals basis). ..... 99,9999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5302.1	1 g	plastic	47,20 €
5302.2	5 g	plastic	84,40 €
5302.3	25 g	plastic	332,20 €

Silver chloride

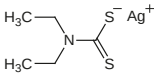
≥99 %

Type analysis:

Assay. ..... ≥99 %
Assay (metals basis). ..... 74,51-75,26 %
Water. ..... ≤0,2 %
In NH_4OH insoluble matter. ..... ≤0,1 %

6877.1	10 g	plastic	62,25 €
6877.2	25 g	plastic	111,70 €
6877.3	100 g	plastic	299,95 €

Silver diethyldithiocarbamate



Silver diethyldithiocarbamate

≥97 %, p.a.

Reagent for arsenic.
Diethyldithiocarbamic acid silver salt
$C_5H_{10}AgNS_2$
M 256,14 g/mol
mp 178-183 °C
[1470-61-7] • EC No. 216-003-7 • WGK 3

Guarantee analysis:

Assay (titr.). ..... ≥97,0 %
Solubility (0,5 % in pyridine). ..... clearly soluble
Suitability for determination of arsenic. ..... complies

KK25.1	5 g	glass	45,70 €
KK25.2	10 g	glass	81,60 €

Silver iodide

Silver iodide

≥99 %, extra pure

AgI
M 234,79 g/mol
mp 552 °C
[7783-96-2] • EC No. 232-038-0
UN No. 3077 • ADR 9 III • WGK 2

Warning H400-H410

Type analysis:

Appearance. ..... fine bright yellow powder
Assay. ..... ≥99,5 %
Chloride (Cl). ..... ≤0,0002 %
Sulphate (SO_4). ..... ≤0,005 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,0002 %
Copper (Cu). ..... ≤0,005 %

6630.1	25 g	glass	85,90 €
6630.2	100 g	glass	278,45 €

Silver nitrate

$AgNO_3$
M 169,88 g/mol
D 4,35 • bp 290-440 °C (dec.)
mp 212 °C
Solubility: 2160 g/l (H_2O, 20 °C)
[7761-88-8] • EC No. 231-853-9
UN No. 1493 • ADR 5.1 II • WGK 3

Danger H272-H314-H410

Silver nitrate

ROTI®METIC 99,9999 % (6N)

Type analysis:

Assay (metals basis). ..... 99,9999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

4500.1	10 g	plastic	75,15 €
4500.2	50 g	plastic	342,95 €

Silver nitrate

≥99,9 %, p.a., ultra quality

Type analysis:

Appearance. ..... colorless to white cryst. powder
Assay. ..... ≥99,9 %
Water content. ..... ≤0,1 %
pH value (10 % in H_2O). 3,6-5,0
Nitrite (NO_2). ..... ≤0,0002 %
Chloride (Cl). ..... ≤0,001 %
Antimony (Sb). ..... ≤0,00001 %
Bismuth (Bi). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,00001 %
Calcium (Ca). ..... ≤0,0005 %
Chromium (Cr). ..... ≤0,00002 %
Copper (Cu). ..... ≤0,00001 %
Gold (Au). ..... ≤0,000001 %
Iridium (Ir). ..... ≤0,0000005 %
Iron (Fe). ..... ≤0,00004 %
Lead (Pb). ..... ≤0,00002 %
Manganese (Mn). ..... ≤0,00001 %
Nickel (Ni). ..... ≤0,00002 %
Palladium (Pd). ..... ≤0,000001 %
Platinum (Pt). ..... ≤0,0000005 %
Potassium (K). ..... ≤0,0005 %
Rhodium (Rh). ..... ≤0,0000005 %
Ruthenium (Ru). ..... ≤0,0000003 %
Selenium (Se). ..... ≤0,00001 %
Sodium (Na). ..... ≤0,008 %
Sulphur (S). ..... ≤0,0008 %
Tellur (Te). ..... ≤0,00004 %
Tin (Sn). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00001 %
Particle size. ..... >250 µm

6874.1	10 g	plastic	38,60 €
6874.2	50 g	plastic	147,85 €
6874.3	250 g	plastic	536,45 €

Silver nitrate

≥99,9 %, p.a.

For detection of halogenides. For volumetric solutions in argentometry. For protein staining. For molecular biology.

Guarantee analysis:

Assay. ..... ≥99,9 %
Water . ..... ≤0,1 %
Sulphate (SO_4). ..... ≤0,002 %
Lead (Pb). ..... ≤0,0001 %
Cadmium (Cd). ..... ≤0,0001 %
Calcium (Ca). ..... ≤0,0005 %

Iron (Fe). ..... ≤0,0001 %
Potassium (K). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0001 %
Sodium (Na). ..... ≤0,0005 %

7908.1	50 g	plastic	117,20 €
7908.2	250 g	plastic	489,15 €
7908.3	1 kg	plastic	1714,65 €
Original pack 6 x 1 kg			1628,92/1 kg

Silver nitrate

≥99 %, Ph.Eur., extra pure

Guarantee analysis:

Assay (titr.). ..... 99,0-100,5 %
Identity. ..... complies
pH value (10 % in H_2O). 4,0-6,0
Appearance of solution. ..... complies
Acid or alkaline react. substances. ..... complies
Foreign salts. ..... ≤0,3 %
Al, Pb, Cu, Bi. ..... complies
Water content. ..... ≤0,1 %

9370.4	10 g	plastic	28,50 €
9370.1	50 g	plastic	99,90 €
9370.9	100 g	plastic	188,70 €
9370.2	250 g	plastic	407,45 €
9370.3	1 kg	plastic	1525,45 €
Original pack 6 x 1 kg			1449,18/1 kg

For further information, please see page 1498

Silver nitrate

NEW

≥98 %, tech.

Type analysis:

Assay. ..... ≥98,0 %
Water content. ..... ≤0,5 %
pH value (10 % in H_2O). 3,5-5,5

2246.1	10 g	plastic	23,55 €
2246.2	50 g	plastic	83,75 €
2246.3	100 g	plastic	149,45 €
2246.4	500 g	plastic	590,20 €
Original pack 6 x 500 g			560,69/500 g
2246.5	1 kg	plastic	1063,20 €
Original pack 6 x 1 kg			1010,04/1 kg

Silver nitrate

≥99,9 %, for staining of proteins, Proteicolor®

Guarantee analysis:

Assay. ..... ≥99,9 %
Tested for protein gel staining.

6207.1	50 g	plastic	137,10 €

For further information, please see page 1218

Silver nitrate solution (5 %)

Silver nitrate solution

5 %

[7761-88-8] • EC No. 231-853-9
UN No. 1760 • ADR 8 II • WGK 3

Danger H314-H410

N053.1	250 ml	plastic	40,75 €

Silver nitrate solution (0,01 N)

Silver nitrate solution

0,01 mol/l - 0,01 N volumetric standard solution

[7761-88-8] • EC No. 231-853-9
UN No. 3082 • ADR 9 III • WGK 3

Danger H411

Type analysis:

Amount-of-substance conc. (20 °C). ..... 0,01 mol/l ±0,2 %
Titer. 0,9980-1,0020

6838.1	250 ml	plastic	16,05 €
6838.2	500 ml	plastic	21,40 €
6838.3	1 l	plastic	31,10 €
Original pack 6 x 1 l			29,55/1 l
6838.4	2,5 l	plastic	62,25 €
Original pack 4 x 2,5 l			59,14/2,5 l

Silver nitrate solution (0,05 N)

Silver nitrate solution

0,05 mol/l - 0,05 N volumetric standard solution

[7761-88-8] • EC No. 231-853-9
UN No. 3082 • ADR 9 III • WGK 2

Warning H400-H410

Type analysis:

Amount-of-substance conc. (20 °C). ..... 0,05 mol/l ±0,4 %
Titer. 0,9960-1,0040

6835.1	250 ml	plastic	34,30 €
6835.2	500 ml	plastic	40,75 €
6835.3	1 l	plastic	59,05 €
Original pack 6 x 1 l			56,10/1 l
6835.4	2,5 l	plastic	105,25 €
Original pack 4 x 2,5 l			99,99/2,5 l

Silver nitrate solution (0,1 N)

Silver nitrate solution

0,1 mol/l - 0,1 N volumetric standard solution

$AgNO_3$
M 169,88 g/mol • D 1,005
[7761-88-8] • EC No. 231-853-9
UN No. 3082 • ADR 9 III • WGK 3

Warning H315-H319-H410

Type analysis:

Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,2 %
Titer. 0,998-1,002

K713.2	250 ml	plastic	35,40 €
K713.4	500 ml	plastic	46,15 €
K713.1	1 l	plastic	77,30 €
Original pack 6 x 1 l			73,44/1 l
K713.3	2,5 l	plastic	118,15 €
Original pack 4 x 2,5 l			112,24/2,5 l

For further information, please see page 1682

Silver nitrate solution (0,1 N)

Silver nitrate solution

0,1 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.

$AgNO_3$
M 169,88 g/mol
[7761-88-8] • EC No. 231-853-9
UN No. 3082 • ADR 9 III • WGK 3

Warning H315-H319-H410

Type analysis:

Amount-of-substance conc.. ..... 0,1 mol/l
Measurement uncertainty. ..... ±0,2 %

9526.1	1 l	plastic	102,05 €
Original pack 6 x 1 l			96,95/1 l

Silver nitrate solution (0,1 N)

Silver nitrate solution

ROTI®VOLUM 0,1 mol/l - 0,1 N

Ampoule for preparation of 1000 ml volumetric solution.
$AgNO_3$
M 169,88 g/mol
[7761-88-8] • EC No. 231-853-9
UN No. 1760 • ADR 8 II • WGK 3

Danger H290-H314-H410

Type analysis:

Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,2 %

CN66.1	1 piece	plastic ampoule	64,00 €

For further information, please see page 1683

Silver nitrate solution (0,5 N)

Silver nitrate solution

0,5 mol/l - 0,5 N volumetric standard solution

[7761-88-8] • EC No. 231-853-9
UN No. 1760 • ADR 8 II • WGK 3

Danger H314-H400-H410

Type analysis:

Amount-of-substance conc. (20 °C)... 0,5 mol/l ±0,4 %
Titer. 0,9960-1,0040

6839.1	250 ml	plastic	59,70 €
6839.2	500 ml	plastic	95,60 €
6839.3	1 l	plastic	181,70 €
Original pack 6 x 1 l			172,62/1 l

Silver nitrate solution (1 N)

Silver nitrate solution

1 mol/l - 1 N volumetric standard solution

$AgNO_3$
M 169,88 g/mol
[7761-88-8] • EC No. 231-853-9
UN No. 1760 • ADR 8 II • WGK 3

Danger H314-H400-H410

Type analysis:
Amount-of-substance conc. (20 °C).....1 mol/l ±0,2 %
Titer. 0,998-1,002

6841.1	250 ml	plastic	107,40 €
6841.2	500 ml	plastic	160,20 €
6841.3	1 l	plastic	306,40 €
Original pack 6 x 1 l			291,08/1 l

Silver nitrite

Silver nitrite

ROTI®METIC 99,99 % (4N)

$AgNO_2$
M 153,87 g/mol
D 4,453
mp 140 °C (dec.)
[7783-99-5] • EC No. 232-041-7
UN No. 2627 • ADR 5.1 II • WGK 3

Danger
H272-H302-H315-H319-H400-H410

Type analysis:
Assay (metals basis).....99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5065.1	10 g	plastic	149,45 €
5065.2	50 g	plastic	493,45 €

Silver oxide

Silver oxide

≥99 %, p.a.

Ag_2O
M 231,74 g/mol
D 7,2
mp 230 °C (dec.)
[20667-12-3] • EC No. 243-957-1
UN No. 3085 • ADR 5.1 (8) II • WGK 2

Danger H271-H318-H410

Type analysis:
Assay (calculated on Ag).....99,0-101,0 %
Silver (Ag).....92,2-94,0 %
Copper (Cu).....≤0,005 %
Iron (Fe).....≤0,001 %
Aluminium (Al).....≤0,001 %
Potassium (K).....≤0,005 %
Sodium (Na).....≤0,01 %
Nickel (Ni).....≤0,001 %
Lead (Pb).....≤0,005 %

5309.1	10 g	glass	53,65 €
5309.2	50 g	glass	184,40 €

Silver staining

- Roti®-Black N see p. 2266
- Roti®-Black NSeq see p. 2266
- Roti®-Black P see p. 2266

Silver sulphate

Silver sulphate

≥99 %, p.a.
For COD analysis.

Ag_2SO_4
M 311,80 g/mol
D 5,45 • bp 1085 °C (dec.)
mp 655 °C • flp 27 °C
Solubility: 8 g/l (H_2O, 25 °C)
[10294-26-5] • EC No. 233-653-7
UN No. 3077 • ADR 9 III • WGK 3

Danger H318-H410

Guarantee analysis:
Assay. ..... ≥99,0 %
Water..... ≤0,2 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd)..... ≤0,0005 %
Iron (Fe)..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Nickel (Ni)..... ≤0,0005 %
Zinc (Zn)..... ≤0,0005 %

6791.1	25 g	plastic	120,30 €
6791.2	100 g	plastic	427,85 €

Silver sulphate solution (10 g/l)

Silver sulphate solution

10 g/l in sulphuric acid, for determination of COD

According to DIN 38409 part H41-1.
UN No. 3264 • ADR 8 II • WGK 3

Danger H290-H314-H410

X870.1	1 l	glass	67,20 €
Original pack 6 x 1 l			63,84/1 l
X870.2	2,5 l	glass	149,45 €
Original pack 4 x 2,5 l			141,98/2,5 l

For further information, please see page 1682

Silver sulphide

Silver sulphide

≥98 %

Ag_2S
M 247,80 g/mol
D 7,23
mp 845 °C
Solubility: insoluble (H_2O, 20 °C)
[21548-73-2] • EC No. 244-438-2
WGK 2

Type analysis:
Assay (calculated on Ag)..... ≥98 %

5311.1	10 g	glass	171,90 €
5311.2	50 g	glass	665,45 €

Silvosol®

Silvosol®

removes silver nitrate and iodine stains

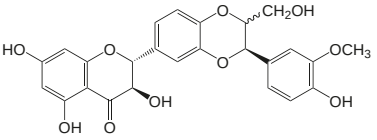
bp 100 °C
UN No. 3264 • ADR 8 III • WGK 2

Warning H290-H351-H361d-H412

0047.1	250 ml	plastic	18,25 €
0047.2	1 l	plastic	38,65 €

For further information, please see page 1154

Silybin



$C_{25}H_{22}O_{10}$
M 482,43 g/mol
mp 167 °C
[22888-70-6] • EC No. 245-302-5
WGK 3

Silybin

ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC). .....≥95,0 %
Residual solvents (GC). .....≤5,0 %
Water (KF). .....≤5,0 %
Assay (qNMR). .....≥85,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE31.1	50 mg	glass	532,15 €

Silybin

ROTICHROM® Working Standard

Type analysis:
Assay (HPLC). .....≥85,0 %
Identity. .....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC31.1	100 mg	glass	188,15 €

Silybin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Sylibum marianum*.
Diastereomere mixture of Silybin A and B.
Storage temp.: +4 °C

Type analysis:
Purity (HPLC). .....>98 %

1215.1	50 mg	glass	424,65 €

Silybin

ROTICHROM® TLC

Reference substance for thin layer chromatography

Storage temp.: +4 °C

5578.1	100 mg	glass	63,35 €

Silyl 991

▶ N,O-Bis(trimethylsilyl)-trifluoroacetamide with 1 % trimethylchlorosilane see p. 1842

Simmons Citrate Agar

Simmons Citrate Agar

ISO 10273, for microbiology

For differentiation of microorganisms on the basis of citrate utilization.

Application: Use 24,3 g for 1 l agar.

Koser Citrate Agar (modified)

Storage temp.: +20 °C

WGK 1

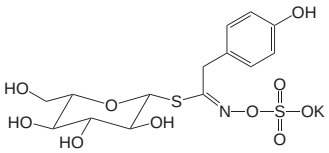
Guarantee analysis:

Sodium chloride..... 5 g/l
Sodium citrate..... 2 g/l
Ammonium dihydrogen phosphate..... 1 g/l
di-Potassium hydrogen phosphate..... 1 g/l
Magnesium sulphate..... 0,2 g/l
Bromothymol blue..... 0,08 g/l
Agar..... 15 g/l
pH value..... 6,9 ±0,2

5774.1	500 g	plastic	138,70 €
Original pack 6 x 500 g			131,77/500 g

For further information, please see page 1462

Sinalbin potassium salt



Sinalbin potassium salt

ROTICHROM® HPLC

Reference substance for HPLC.
From *Sinapis alba*.

$C_{14}H_{18}NO_{10}S_2K$

M 463,52 g/mol

Storage temp.: +4 °C

[16411-05-5]

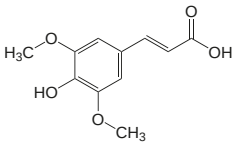
WGK 3

Type analysis:

Purity (HPLC)..... ≥97 %

6694.1	20 mg	glass	263,40 €

Sinapic acid



Sinapic acid

≥98 %

3,5-Dimethoxy-4-hydrocinnamic acid

$C_{11}H_{12}O_5$

M 224,22 g/mol

mp 203-205 °C (dec.)

[530-59-6] • EC No. 208-487-3 • WGK 1

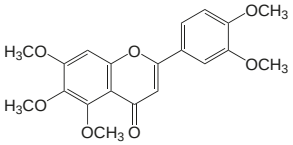
Warning H315-H319-H335

Type analysis:

Appearance..... whitish to pale yellow powder
Assay. ..... ≥98,0 %
Loss on drying..... ≤0,5 %

5317.1	1 g	glass	75,15 €
5317.2	10 g	glass	536,45 €

Sinensetin



Sinensetin

ROTICHROM® HPLC

Reference substance for HPLC.

3',4',5,6,7-Pentamethoxyflavone

$C_{20}H_{20}O_7$ • M 372 g/mol

Storage temp.: +4 °C

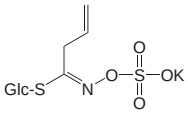
[2306-27-6]

Type analysis:

Purity (HPLC). ..... ≥99 %

3497.2	10 mg	glass	353,70 €

Sinigrin monohydrate



Potassium myronate

$C_{10}H_{16}NO_9S_2K \cdot H_2O$

M 415,49 g/mol

mp ~128 °C

Storage temp.: +4 °C

[3952-98-5] • EC No. 223-545-8

Sinigrin monohydrate

ROTICHROM® HPLC

Reference substance for HPLC.
From *Sinapis nigra*

Type analysis:

Purity (HPLC). ..... ≥99 %

4542.2	50 mg	glass	332,20 €

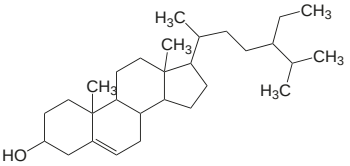
Sinigrin monohydrate

ROTICHROM® CHR

From *Sinapis nigra*

5319.1	250 mg	glass	96,65 €

β-Sitosterol



β-Sitosterol

≥80 % (HPLC)

$C_{29}H_{50}O$

M 414,72 g/mol

mp 140 °C

Storage temp.: +4 °C

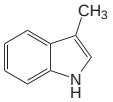
[83-46-5] • EC No. 201-480-6

Type analysis:

Appearance. ..... white to beige powder
Assay (HPLC). ..... ≥80 %
Melting point. ..... 135-140 °C

A540.1	100 mg	glass	188,15 €

Skatole



Skatole

>99 %

3-Methyl-indole

C_9H_9N

M 131,18 g/mol

bp 265-266 °C

mp 95 °C • flp 132 °C

[83-34-1] • EC No. 201-471-7

WGK 2

Warning H315-H319-H335

Type analysis:

Assay. ..... >99 %

4696.1	10 g	glass	84,85 €

Skimmed milk powder

▶ Powdered milk see p. 2236

Slaked lime

▶ Calcium hydroxide see p. 1871

Slanetz-Bartley Media

Storage temp.: +20 °C
WGK 1
Warning H302-H412

Slanetz-Bartley Agar

for microbiology

For detection and enumeration of faecal *streptococci* by membrane filtration method or by direct plating.

Application: Use 41,5 g for 1 l agar.

Formulation:

Tryptose	20 g/l
Yeast extract	5 g/l
Glucose	2 g/l
Dipotassium phosphate	4 g/l
Sodium azide	0,4 g/l
Tetrazolium chloride (TTC)	0,1 g/l
Agar	10 g/l
pH value	7,2 ±0,1

X935.1	500 g	plastic	155,35 €
Original pack 6 x 500 g			147,58/500 g

For further information, please see page 1463

Slanetz-Bartley Medium (with tetrazolium chloride)

DEV, ISO 7899-2:2000, for microbiology

For detection and enumeration of intestinal enterococci from water samples.

Application: Use 41,5 g for 1 l agar.
Sterilise by sterile filtration, do not autoclave.

Guarantee analysis:

Tryptose	20 g/l
Yeast extract	5 g/l
Glucose	2 g/l
di-Potassium hydrogen phosphate	4 g/l
Sodium azide	0,4 g/l
Tetrazolium chloride (TTC)	0,1 g/l
Agar	10 g/l
pH value	7,2 ±0,1

CP68.1	500 g	plastic	169,35 €
Original pack 6 x 500 g			160,88/500 g

For further information, please see page 1463

SLS

- SDS see p. 2309
- Roti®fair SDS 0.5g see p. 2278
- Roti®fair 10% SDS see p. 2278

SMAC-Agar

- Sorbitol MacConkey Agar see p. 2355

SOB Broth

SOB Broth

for molecular biology

Application: Use 26,64 g for 1 l broth.
Storage temp.: +20 °C • WGK 1

Formulation:

Tryptone	20 g/l
Yeast extract	5 g/l
Magnesium chloride	0,96 g/l
Sodium chloride (NaCl)	0,5 g/l
Potassium chloride (KCl)	0,186 g/l
pH value	7,0 ±0,2

AE27.1	500 g	plastic	67,65 €
Original pack 6 x 500 g			64,27/500 g

For further information, please see page 1486

Soda

- Sodium carbonate see p. 2333

Soda lime

Soda lime

granulated, 2-4 mm, with indicator

Calcaria natronata
[1305-62-0] • EC No. 215-137-3
WGK 1
Danger H290-H314-H335

Type analysis:

Granulation	~2-4 mm
Bulk density	~900 g/l

1 Litre absorbs more than 120 l CO_2.
CO_2-absorption in rebreathing anesthesia systems with indicator, colour changes to blue. Mixture of calcium hydroxide with small amounts of NaOH and KOH.

8652.1	1 l	plastic	42,90 €
Original pack 6 x 1 l			40,76/1 l
8652.3	5 l	plastic	132,15 €
Original pack 2 x 5 l			125,54/5 l

Soda monohydrate

- Sodium carbonate monohydrate see p. 2333

Sodium

Sodium

≥99 %, rods, in paraffin oil

Na
D 0,97 • bp 881 °C
mp 98 °C
[7440-23-5] • EC No. 231-132-9
UN No. 1428 • ADR 4.3 I • WGK 1
Danger H260-H314-EUH014

Type analysis:

Assay (Na)	≥99,0 %

4469.1	250 g	plastic	159,00 €

Sodium Standards

- Sodium AAS Standard Solution see p. 2360
- Sodium ICP Standard Solution see p. 2365
- Sodium ICP Standard Solution see p. 2369
- Sodium IC Standard Solution see p. 2377

Sodium acetate

$NaCH_3COO$
M 82,03 g/mol
D 1,52 • bp >400 °C
mp 324 °C • flp >250 °C
Solubility: 365 g/l (H_2O, 20 °C)
[127-09-3] • EC No. 204-823-8 • WGK 1

Sodium acetate

ROTI®METIC 99,99 % (4N), anhydrous

Type analysis:

Assay (metals basis)	99,99 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5380.1	25 g	plastic	83,75 €

Sodium acetate

≥99 %, p.a., ACS, anhydrous

Dehydrating agent, for molecular biology

Guarantee analysis:

Assay (titr.)	≥99 %
pH value (5 % in H_2O)	7,5-9,2
In H_2O insoluble matter	≤0,005 %
Chloride (Cl)	≤0,002 %
Sulphate (SO_4)	≤0,003 %
Phosphate (PO_4)	≤0,001 %
Ammonium (NH_4)	≤0,001 %
Aluminium (Al)	≤0,001 %
Arsenic (As)	≤0,0001 %
Lead (Pb)	≤0,0005 %
Cadmium (Cd)	≤0,0005 %
Calcium (Ca)	≤0,002 %
Iron (Fe)	≤0,0005 %
Potassium (K)	≤0,02 %
Cobalt (Co)	≤0,0005 %
Copper (Cu)	≤0,0005 %
Magnesium (Mg)	≤0,001 %
Nickel (Ni)	≤0,0005 %
Heavy metals	≤0,001 %
Zinc (Zn)	≤0,0005 %
Loss on drying (120 °C)	≤1,0 %

6773.1	250 g	plastic	25,70 €
6773.2	1 kg	plastic	66,55 €
Original pack 6 x 1 kg			63,22/1 kg
6773.3	2,5 kg	plastic	139,25 €
6773.5	25 kg	plastic	962,15 €

Sodium acetate

≥98,5 %, extra pure, anhydrous

Type analysis:

Assay (dry substance)	≥98,5 %
pH value (1 % in H_2O)	8,0-9,5
Arsenic (As)	≤0,0003 %
Lead (Pb)	≤0,0005 %
Mercury (Hg)	≤0,0001 %
Loss on drying (120 °C/4 h)	≤2,0 %
Oxidizable impurities	≤0,1 %

X891.1	500 g	plastic	16,70 €
Original pack 6 x 500 g			15,87/500 g
X891.2	1 kg	plastic	25,70 €
Original pack 6 x 1 kg			24,42/1 kg
X891.3	2,5 kg	plastic	52,60 €
X891.5	25 kg	plastic	337,45 €

Sodium acetate solution (0,1 N)

Sodium acetate solution

0,1 mol/l - 0,1 N volumetric standard solution in acetic acid

D 1,05 • bp 103 °C
flp 43 °C
UN No. 2789 • ADR 8 II • WGK 1
Danger H226-H290-H314

Type analysis:

Amount-of-substance conc. (20 °C)	0,1 mol/l ±0,2 %

0151.1	1 l	plastic	40,35 €
Original pack 6 x 1 l			38,33/1 l

Sodium acetate trihydrate

$NaCH_3COO \cdot 3\ H_2O$
M 136,08 g/mol
D 1,42
mp 58 °C
Solubility: 408 g/l (H_2O, 20 °C)
[6131-90-4] • EC No. 204-823-8 • WGK 1

Sodium acetate trihydrate

≥99,5 %, p.a., ACS, ISO

For molecular biology, component of acetate buffer; neutralization of mineral acids.
Neutral to potassium permanganate.

Guarantee analysis:

Assay (titr.)	≥99,5 %
pH value (5 % in H_2O)	7,5-9,0
Appearance of solution (10 %, water)	complies
In H_2O insoluble matter	≤0,005 %
Chloride (Cl)	≤0,0005 %
Sulphate (SO_4)	≤0,002 %
Phosphate (PO_4)	≤0,0002 %
Total nitrogen (as N)	≤0,001 %
Aluminium (Al)	≤0,0005 %
Arsenic (As)	≤0,00005 %
Lead (Pb)	≤0,0005 %
Cadmium (Cd)	≤0,0005 %
Calcium (Ca)	≤0,001 %
Iron (Fe)	≤0,0003 %
Potassium (K)	≤0,005 %
Cobalt (Co)	≤0,0005 %
Copper (Cu)	≤0,0003 %
Magnesium (Mg)	≤0,0005 %
Nickel (Ni)	≤0,005 %
Heavy metals (as Pb)	≤0,0005 %
Zinc (Zn)	≤0,0005 %
Ca, Mg and Me_2O_3-precipitate	≤0,01 %
$KMnO_4$ reducing matter (as HCOOH)	≤0,005 %

6779.2	500 g	plastic	18,85 €
Original pack 6 x 500 g			17,91/500 g
6779.1	1 kg	plastic	34,30 €
Original pack 6 x 1 kg			32,59/1 kg
6779.3	5 kg	plastic	107,40 €
6779.5	25 kg	plastic	429,50 €

Sodium acetate trihydrate

CELLPURE® ≥99,5 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins	≤3,0 I.U./g
Assay (dry substance)	≥99,5 %
Appearance of solution	complies
pH value (5 % solution)	7,5-9,0
In H_2O insoluble matter	≤0,005 %
Chloride (Cl)	≤0,005 %
Sulphate (SO_4)	≤0,005 %
Heavy metals (as Pb)	≤0,0005 %
Aluminium (Al)	≤0,00002 %
Arsenic (As)	≤0,0002 %
Lead (Pb)	≤0,0002 %
Iron (Fe)	≤0,0005 %
Mercury (Hg)	≤0,0001 %

HN05.1	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
HN05.2	1 kg	plastic	36,45 €
Original pack 6 x 1 kg			34,63/1 kg
HN05.3	2,5 kg	plastic	69,80 €

Sodium acetate trihydrate

≥99 %, Ph.Eur., USP

Guarantee analysis:

Appearance	colourless crystals
Assay (dry substance)	99,0-101,0 %
Identity	complies
Insoluble in water	≤0,05 %
Appearance of solution (10 %, H_2O)	complies
pH value (5 % in H_2O)	7,5-9,0
Alkalinity	complies
Chloride (Cl)	≤0,02 %
Sulphate (SO_4)	≤0,005 %
Arsenic (As)	≤0,0002 %
Calcium and Magnesium (as Ca)	≤0,005 %
Iron (Fe)	≤0,001 %
Potassium (K)	complies
Reducing substances	complies
Loss on drying (130 °C)	39,0-40,5 %

3856.1	1 kg	plastic	17,75 €
Original pack 6 x 1 kg			16,86/1 kg
3856.2	5 kg	plastic	61,20 €
3856.5	25 kg	plastic	231,15 €

Sodium acetate powder (pouch)

▶ Roti®fair Na-Acetate 5.2 see p. 2275

Sodium alginate

▶ Alginic acid sodium salt see p. 1780

Sodium ammonium hydrogen phosphate tetrahydrate

Sodium ammonium hydrogen phosphate tetrahydrate

≥99 %, p.a.

Reagent for Mg; phosphorus salt bead
Ammonium sodium phosphate,
sec-Sodium ammonium phosphate
$NaNH_4HPO_4 \cdot 4\ H_2O$
M 209,07 g/mol
D 0,85
mp 79 °C
Solubility: 167 g/l (H_2O, 20 °C)
[7783-13-3] • EC No. 235-860-8 • WGK 1

Guarantee analysis:

Assay (acidim.)	≥99,0 %
In NH_4OH insoluble matter	≤0,01 %
Chloride (Cl)	≤0,002 %
Sulphate (SO_4)	≤0,01 %
Nitrate (NO_3)	≤0,002 %
Arsenic (As)	≤0,0001 %
Lead (Pb)	≤0,001 %
Iron (Fe)	≤0,001 %
Copper (Cu)	≤0,001 %
Nickel (Ni)	≤0,001 %

T882.1	500 g	plastic	66,55 €
Original pack 6 x 500 g			63,22/500 g
T882.2	1 kg	plastic	98,40 €
Original pack 6 x 1 kg			93,48/1 kg
T882.3	2,5 kg	plastic	220,40 €

sec. Sodium ammonium phosphate

▶ Sodium ammonium hydrogen phosphate tetrahydrate see p. 2331

Sodium L(+)-ascorbate

▶ L(+)-Ascorbic acid sodium salt see p. 1817

Sodium azide

NaN_3
M 65,01 g/mol
mp 275 °C (dec.)
Solubility: 420 g/l (H_2O, 17 °C)
[26628-22-8] • EC No. 247-852-1
UN No. 1687 • ADR 6.1 II • WGK 2

Danger

H300+H310-H373-H410-EUH032

Sodium azide

≥99 %, p.a.

Guarantee analysis:

Appearance	colourless to white fine cryst. powder
Assay (cerim.)	≥99,0 %
In H_2O insoluble matter	≤0,05 %
Chloride (Cl)	≤0,005 %
Total sulphur (as SO_4)	≤0,005 %
Free alkali (as NaOH)	≤0,2 %
Aluminium (Al)	≤0,0005 %
Arsenic (As)	≤0,00001 %
Barium (Ba)	≤0,0005 %
Lead (Pb)	≤0,0005 %
Bismuth (Bi)	≤0,0005 %
Cadmium (Cd)	≤0,0005 %
Calcium (Ca)	≤0,005 %
Chromium (Cr)	≤0,0005 %
Cobalt (Co)	≤0,0005 %
Iron (Fe)	≤0,0005 %
Potassium (K)	≤0,005 %
Copper (Cu)	≤0,0005 %
Lithium (Li)	≤0,0005 %
Magnesium (Mg)	≤0,001 %
Manganese (Mn)	≤0,0005 %
Molybdenum (Mo)	≤0,0005 %
Nickel (Ni)	≤0,0005 %
Strontium (Sr)	≤0,0005 %
Zinc (Zn)	≤0,0005 %
Loss on drying	≤0,2 %
pH value (1 % in H_2O)	~10

K305.1	100 g	plastic	44,00 €
K305.2	250 g	plastic	79,45 €
K305.3	500 g	plastic	142,90 €
Original pack 6 x 500 g			135,76/500 g
K305.4	1 kg	plastic	221,35 €
Original pack 6 x 1 kg			210,28/1 kg

Sodium azide

≥98 %, for synthesis

Type analysis:

Assay (cerim.)	≥98 %
Water insoluble residue	≤0,1 %
Iron (Fe)	≤0,001 %
pH value (1 % in H_2O)	~10,0

4221.1	100 g	plastic	23,55 €
4221.2	500 g	plastic	77,30 €
Original pack 6 x 500 g			73,44/500 g
4221.3	1 kg	plastic	142,45 €
Original pack 6 x 1 kg			135,33/1 kg
4221.4	2,5 kg	plastic	332,20 €

Sodium benzoate

▶ Benzoic acid sodium salt see p. 1831

Sodium bicarbonate

▶ Sodium hydrogen carbonate see p. 2338

Sodium bicarbonate solution

▶ Roti®-CELL Bicarbonate solution see p. 2266

Sodium biphosphate

▶ Sodium dihydrogen phosphate see p.
▶ Sodium dihydrogen phosphate monohydrate see p. 2336
▶ Sodium dihydrogen phosphate dihydrate see p. 2337

Sodium bismuthate

Sodium bismuthate

≥85 %, p.a.
Oxidation reagent, determination of manganese in iron and steel.
Sodium bismuth oxide
$NaBiO_3$
M 279,97 g/mol
Solubility: insoluble in water
[12232-99-4] • EC No. 235-455-6
WGK 1

Warning H302

Guarantee analysis:

Assay (iodom.)	≥85,0 %
Soluble Peroxides (as O)	≤0,008 %
Chloride (Cl)	≤0,002 %
Nitrate (NO_3)	≤0,004 %
Manganese (Mn)	≤0,0005 %

4401.1	50 g	plastic	47,85 €
4401.2	100 g	plastic	88,70 €
4401.3	250 g	plastic	192,45 €

Sodium bismuth oxide

▶ Sodium bismuthate see p. 2332

Sodium bisulphate

▶ Sodium hydrogen sulphate see p. 2340

Sodium bisulphite solution

Sodium bisulphite solution

≥37 %, in water
Sodium hydrogen sulphite
$NaHSO_3$
M 104,06 g/mol
D 1,36 • bp 146 °C
[7631-90-5] • EC No. 231-548-0
WGK 1

Warning H302-EUH031

Type analysis:

Assay (iodom.)	37,0-42,2 %
Density (20 °C)	1,310-1,380

2372.1	1 l	plastic	17,10 €
Original pack 6 x 1 l			16,25/1 l
2372.2	5 l	plastic	42,90 €
Original pack 2 x 5 l			40,76/5 l

Sodium borodeuteride

Sodium borodeuteride

98 Atom%D
For nuclear magnetic resonance spectroscopy.
$NaBD_4$
M 41,88 g/mol
mp >300 °C
[15681-89-7] • EC No. 239-764-7
UN No. 1426 • ADR 4.3 I • WGK 2

Danger H260-H301+H311-H314

Guarantee analysis:

Deuterising degree	≥98 %

HN89.1	1 g	glass	63,35 €

Sodium borohydride

Sodium borohydride

≥97 %
Reducing agent
Sodium tetrahydroborate
$NaBH_4$
M 37,83 g/mol
D 1,074
mp >220 °C (dec.) • flp 250 °C
Solubility: 550 g/l (H_2O, 25 °C)
[16940-66-2] • EC No. 241-004-4
UN No. 1426 • ADR 4.3 I • WGK 2

Danger
H260-H301-H314-H332-H360FD-EUH014

Type analysis:

Appearance	white, hygroscopic powder
Assay	≥97 %

4051.1	25 g	tin	34,30 €
4051.2	100 g	tin	73,00 €

Sodium bromide

NaBr
M 102,9 g/mol
D ~3,2 • bp 1390 °C
mp 755 °C
Solubility: 905 g/l (H_2O, 20 °C)
[7647-15-6] • EC No. 231-599-9
WGK 1

Sodium bromide

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis)	99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

5086.1	25 g	plastic	149,45 €

Sodium bromide

≥99 %, p.a., ACS

Guarantee analysis:

Assay (arg.)	≥99,0 %
In H_2O insoluble matter	≤0,005 %
pH value (5 % solution)	5,0-8,8
Bromate (BrO_3)	≤0,001 %
Chloride (Cl)	≤0,2 %
Sulphate (SO_4)	≤0,002 %
Heavy metals (as Pb)	≤0,0005 %
Barium (Ba)	≤0,002 %
Calcium (Ca)	≤0,002 %
Iron (Fe)	≤0,0005 %
Potassium (K)	≤0,1 %
Magnesium (Mg)	≤0,001 %

HN15.1	250 g	plastic	16,05 €
HN15.2	1 kg	plastic	40,35 €
Original pack 6 x 1 kg			38,33/1 kg
HN15.3	2,5 kg	plastic	83,35 €
HN15.7	25 kg	plastic	665,45 €

Sodium 2-bromoethane-sulfonate

▶ 2-Bromoethanesulfonic acid sodium salt see p. 1853

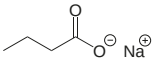
Sodium-1-butane sulphonate

▶ Butane-1-sulphonic acid sodium salt see p. 1859

Sodium butanoate

▶ Sodium butyrate see p. 2332

Sodium butyrate



NEW

Sodium butyrate

≥98 %, for synthesis
Sodium butanoate, Butanoic acid sodium salt, Butyric acid sodium salt
$C_4H_7O_2Na$
M 110,09 g/mol
[156-54-7] • EC No. 205-857-6
WGK 1

Warning H315-H319-H335

Type analysis:

Assay	≥98,0 %
Loss on drying	≤1,0 %

1441.1	25 g	plastic	13,90 €
1441.2	100 g	plastic	24,65 €
1441.3	250 g	plastic	48,30 €
1441.4	500 g	plastic	80,55 €
Original pack 6 x 500 g			76,52/500 g

Sodium cacodylate

▶ Cacodylic acid sodium salt trihydrate see p. 1865

Sodium dimethylarsonate

▶ Cacodylic acid sodium salt trihydrate
see p. 1865

Sodium carbonate

Anhydrous soda, Soda
Na_2CO_3
M 105,99 g/mol
D 2,53
mp 854 °C
Solubility: 220 g/l (H_2O, 20 °C)
[497-19-8] • EC No. 207-838-8
WGK 1

Warning H319

Sodium carbonate

ROTI®METIC 99,999 % (5N), anhydrous

Type analysis:

Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5740.1	5 g	plastic	45,70 €
5740.2	25 g	plastic	155,90 €

Sodium carbonate

≥99,5 %, p.a., ACS, anhydrous

Dissolving agent/soda extraction; molecular biology; glass industry.

Guarantee analysis:

Assay (acidim., dry substance)..... ≥99,5 %
In H_2O insoluble matter..... ≤0,005 %
Loss on drying (285 °C)..... ≤1,0 %
Total sulphur (as SO_4)..... ≤0,003 %
Total nitrogen (as N)..... ≤0,001 %
Chloride (Cl)..... ≤0,001 %
Phosphate (PO_4)..... ≤0,001 %
Silicate (SiO_2)..... ≤0,005 %
Heavy metals..... ≤0,0005 %
Aluminium (Al)..... ≤0,001 %
Calcium (Ca)..... ≤0,005 %
Potassium (K)..... ≤0,005 %
Arsenic (As)..... ≤0,0001 %
Copper (Cu)..... ≤0,0005 %
Iron (Fe)..... ≤0,0005 %
Lead (Pb)..... ≤0,0005 %
Magnesium (Mg)..... ≤0,002 %

A135.1	500 g	plastic	20,35 €
Original pack 6 x 500 g			19,33/500 g
A135.2	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
A135.3	5 kg	plastic	138,70 €

For further information, please see page 1309

Sodium carbonate

≥99,5 %, Ph.Eur., USP, BP, anhydrous

Guarantee analysis:

Assay (dry substance)..... 99,5-100,5 %
Appearance of solution..... complies
Identity..... complies
In H_2O insoluble matter..... ≤0,025 %
Loss on drying..... ≤0,5 %
Total nitrogen (N)..... ≤0,005 %
Sulphate (SO_4)..... ≤0,025 %
Alkali hydroxide and alkali hydrogen carbonate..... complies
Volatile organic impurities..... complies
Chloride (Cl)..... ≤0,01 %
Phosphate (PO_4)..... ≤0,005 %
Arsenic (As)..... ≤0,0003 %
Lead (Pb)..... ≤0,001 %
Calcium (Ca)..... ≤0,01 %
Iron (Fe)..... ≤0,001 %
Potassium (K)..... ≤0,05 %
Magnesium (Mg)..... ≤0,01 %
Heavy metals (as Pb)..... ≤0,001 %

P028.1	500 g	plastic	16,05 €
Original pack 6 x 500 g			15,25/500 g
P028.2	1 kg	plastic	28,50 €
Original pack 6 x 1 kg			27,08/1 kg
P028.3	5 kg	plastic	94,50 €
P028.5	25 kg	plastic	332,20 €

Sodium carbonate

≥99 %, anhydrous

Type analysis:

Assay..... ≥99,0 %
Loss on drying..... ≤0,5 %
Sodium chloride (NaCl)..... ≤0,15 %
Ferric oxide (Fe_2O_3)..... ≤0,002 %

8563.1	1 kg	plastic	16,70 €
Original pack 6 x 1 kg			15,87/1 kg
8563.2	10 kg	plastic	62,25 €
8563.5	25 kg	plastic	117,20 €

Sodium carbonate monohydrate

Soda monohydrate
$Na_2CO_3 \cdot H_2O$
M 124,00 g/mol
D 2,25
mp 100 °C
Solubility: 210 g/l (H_2O, 20 °C)
[5968-11-6] • EC No. 207-838-8
WGK 1

Warning H319

Sodium carbonate monohydrate

≥99,5 %, p.a., ACS

Guarantee analysis:

Assay (acidim.)..... ≥99,5 %
In H_2O insoluble matter..... ≤0,01 %
Loss on drying (150 °C)..... 13,0-15,0 %
Total nitrogen (N)..... ≤0,001 %
Total sulphur (as SO_4)..... ≤0,004 %
Chloride (Cl)..... ≤0,001 %
Phosphate (PO_4)..... ≤0,0005 %
Silicate (SiO_2)..... ≤0,005 %
Substances precipitated by ammonia..... ≤0,01 %
Heavy metals (as Pb)..... ≤0,0005 %
Arsenic (As)..... ≤0,0001 %
Calcium (Ca)..... ≤0,03 %
Iron (Fe)..... ≤0,0005 %
Potassium (K)..... ≤0,005 %
Magnesium (Mg)..... ≤0,005 %

2597.1	100 g	plastic	17,10 €
2597.2	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g

Sodium carbonate monohydrate

≥99 %, pure

Type analysis:

Assay (dry substance)..... ≥99,0 %
Heavy metals (as Pb)..... ≤0,01 %
Loss on drying (105 °C, 4 h)..... 12,0-15,0 %

0474.1	500 g	plastic	22,05 €
Original pack 6 x 500 g			20,95/500 g
0474.2	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
0474.3	2,5 kg	plastic	72,60 €
0474.4	5 kg	plastic	122,45 €

Sodium carbonate decahydrate

Soda
$Na_2CO_3 \cdot 10\ H_2O$
M 286,14 g/mol
D 1,44 • mp 33 °C
Solubility: 210 g/l (H_2O, 20 °C)
[6132-02-1] • EC No. 207-838-8 • WGK 1

Warning H319

Sodium carbonate decahydrate

≥99 %, p.a., ISO

Guarantee analysis:

Assay (acidim.)..... ≥99 %
Chloride (Cl)..... ≤0,001 %
Phosphate (PO_4)..... ≤0,001 %
Total sulphur (as SO_4)..... ≤0,003 %
Total nitrogen (as N)..... ≤0,0005 %
Aluminium (Al)..... ≤0,0005 %
Lead (Pb)..... ≤0,0005 %
Calcium (Ca)..... ≤0,003 %
Iron (Fe)..... ≤0,0003 %
Potassium (K)..... ≤0,005 %
Copper (Cu)..... ≤0,0005 %
Magnesium (Mg)..... ≤0,0003 %
Heavy metals (as Pb)..... ≤0,0005 %

K303.2	500 g	plastic	23,55 €
Original pack 6 x 500 g			22,37/500 g
K303.1	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg
K303.3	2,5 kg	plastic	80,55 €

Sodium carbonate decahydrate

≥99,5 %, Ph.Eur.

Guarantee analysis:

Appearance..... colourless crystals
Assay (dry substance)..... ≥99,5 %
Assay (Na_2CO_3)..... 36,7-40,0 %
Identity..... complies
Appearance of solution..... complies
Alkali hydroxide and alkali bicarbonate..... complies
Loss on drying..... 55-65 %
Arsenic (As)..... ≤0,0002 %
Lead (Pb)..... ≤0,0002 %
Iron (Fe)..... ≤0,002 %
Mercury (Hg)..... ≤0,0001 %
Chloride (Cl)..... ≤0,003 %
Sulphate (SO_4)..... ≤0,01 %

8566.3	1 kg	plastic	22,50 €
Original pack 6 x 1 kg			21,38/1 kg
8566.1	2,5 kg	plastic	42,90 €
8566.2	10 kg	plastic	147,85 €

Sodium carbonate solution (0,1 N)

Sodium carbonate solution

0,05 mol/l - 0,1 N volumetric standard solution

Type analysis:

Amount-of-substance conc. (20 °C)..0,05 mol/l ±0,2 %
Titer. 0,998-1,002

0187.1	1 l	plastic	104,20 €
Original pack 6 x 1 l			98,99/1 l

For further information, please see page 1682

Sodium carbonate solution (1 N)

Sodium carbonate solution

0,5 mol/l - 1 N volumetric standard solution

Type analysis:

Amount-of-substance conc. (20 °C)....0,5 mol/l ±0,2 %
Titer. 0,998-1,002

0211.1	1 l	plastic	104,20 €
Original pack 6 x 1 l			98,99/1 l

For further information, please see page 1682

Sodium carboxymethyl-cellulose

▶ Carboxymethylcellulose sodium salt see p. 1878

Sodium-Casein

Sodium-Casein

≥89 % lactoprotein

Casein-sodium
[9005-46-3]

Type analysis:

Appearance. ..... off-white powder
Protein. ..... ≥89 %
Water ..... ≤6 %
pH value. 6,5-7,0
Ash. ..... 3,0-4,5 %
Fat. ..... ≤1,85 %

8569.2	500 g	plastic	28,50 €
Original pack 6 x 500 g			27,08/500 g
8569.1	1 kg	plastic	42,90 €
Original pack 6 x 1 kg			40,76/1 kg
8569.3	2,5 kg	plastic	95,15 €

Sodium chlorate

Sodium chlorate

≥98 %, pure

$NaClO_3$
M 106,46 g/mol
D 2,49 • bp 300 °C (dec.)
mp 255 °C
Solubility: 916 g/l (H_2O, 20 °C)
[7775-09-9] • EC No. 231-887-4
UN No. 1495 • ADR 5.1 II • WGK 2

Danger H271-H302-H411

Type analysis:

Appearance. ..... white, crystalline
Assay. ..... ≥98 %
Sodium chloride (NaCl). ..... ≤0,1 %
In H_2O insoluble. ..... ≤0,005 %
Water ..... ≤0,05 %
Calcium (Ca). ..... ≤0,10 %
Potassium (K). ..... ≤0,10 %
Chromium (Cr). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

8572.3	500 g	plastic	26,80 €
Original pack 6 x 500 g			25,46/500 g
8572.1	1 kg	plastic	31,75 €
Original pack 6 x 1 kg			30,16/1 kg
8572.2	5 kg	plastic	92,35 €

Sodium chloride

Common salt
NaCl
M 58,44 g/mol
D 2,17 • bp 1461 °C • mp 801 °C
Solubility: 358 g/l (H_2O, 20 °C)
[7647-14-5] • EC No. 231-598-3 • WGK 1

Sodium chloride

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5741.1	5 g	plastic	38,60 €
5741.2	25 g	plastic	76,25 €
5741.3	100 g	plastic	267,70 €

Sodium chloride

≥99,5 %, p.a., ACS, ISO

For freezing mixtures; salting-out soap.
For molecular biology.

Guarantee analysis:

Assay (arg.). ..... ≥99,5 %
Appearance of solution. ..... complies
pH value (5 % in water). 5,0-8,0
In H_2O insoluble matter. ..... ≤0,005 %
Chlorate and nitrate (as NO_3). ..... ≤0,003 %
Hexacyanoferrate (II) [$Fe(CN)_6$] ..... ≤0,0001 %
Total nitrogen (as N). ..... ≤0,0005 %
Phosphate (PO_4). ..... ≤0,0005 %
Sulphate (SO_4). ..... ≤0,001 %
Bromide (Br). ..... ≤0,005 %
Iodide (I). ..... ≤0,001 %
Iodide (I). ..... complies
Aluminium (Al). ..... ≤0,0002 %
Arsenic (As). ..... ≤0,00004 %
Barium (Ba). ..... ≤0,001 %
Barium (Ba). ..... complies
Calcium (Ca). ..... ≤0,002 %
Iron (Fe). ..... ≤0,0001 %
Potassium (K). ..... ≤0,005 %
Copper (Cu). ..... ≤0,0002 %
Magnesium (Mg). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,001 %
Heavy metals (Pb). ..... ≤0,0005 %
Magnesium, alkaline-earth metals (as Ca). .. ≤0,001 %
Loss on drying. ..... ≤0,5 %

3957.3	500 g	plastic	16,05 €
Original pack 6 x 500 g			15,25/500 g
3957.1	1 kg	plastic	18,20 €
Original pack 6 x 1 kg			17,29/1 kg
3957.2	5 kg	plastic	66,55 €
3957.4	10 kg	plastic	102,05 €
3957.5	25 kg	plastic	198,90 €

Sodium chloride

CELLPURE® ≥99,8 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤5 I.U./g
Assay (dry substance). ..... ≥99,8 %
Appearance of solution. ..... complies
Loss on drying. ..... ≤0,1 %
Bromide (Br). ..... ≤0,005 %
Iodide (I). ..... complies
Sulphate (SO_4). ..... ≤0,02 %
Phosphate (PO_4). ..... ≤0,002 %
Calcium, magnesium, alkaline-earth metals (as Ca). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,0005 %
Aluminium (Al). ..... ≤0,00002 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,0002 %

HN00.1	500 g	plastic	19,90 €
Original pack 6 x 500 g			18,91/500 g
HN00.2	1 kg	plastic	26,35 €
Original pack 6 x 1 kg			25,03/1 kg
HN00.3	5 kg	plastic	88,05 €

Sodium chloride

≥99 %, Ph.Eur., USP

Guarantee analysis:

Assay (dry substance). ..... 99,0-100,5 %
Chloride (Cl). ..... complies
Sodium (Na). ..... complies
Appearance of solution. ..... complies
Loss on drying (105 °C). ..... ≤0,5 %
Acid or alkaline react. substances. ..... complies
Bromide (Br). ..... ≤0,01 %
Iodide (I). ..... complies
Hexacyanoferrate (II) [$Fe(CN)_6$] . ..... complies
Phosphate (PO_4). ..... ≤0,0025 %
Nitrite (NO_2). ..... complies
Sulphate (SO_4). ..... ≤0,02 %
Calcium, magnesium, alkaline-earth metals (as Ca). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,0005 %
Aluminium (Al). ..... ≤0,00002 %
Barium (Ba). ..... complies
Iron (Fe). ..... ≤0,0002 %
Arsenic (As). ..... ≤0,0001 %
Potassium (K). ..... ≤0,05 %

P029.1	500 g	plastic	11,75 €
Original pack 6 x 500 g			11,16/500 g
P029.2	1 kg	plastic	13,90 €
Original pack 6 x 1 kg			13,21/1 kg
P029.3	5 kg	plastic	42,90 €
P029.4	10 kg	plastic	71,95 €
P029.5	25 kg	plastic	134,40 €

Sodium chloride

≥99 %

Type analysis:

Assay (dry substance). ..... ≥99,0 %
Phosphate (PO_4). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,05 %
Aluminium (Al). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (Pb). ..... ≤0,001 %
Loss on drying. ..... ≤1,0 %

0601.1	1 kg	plastic	11,30 €
Original pack 6 x 1 kg			10,74/1 kg
0601.2	5 kg	plastic	32,15 €
0601.3	10 kg	plastic	55,80 €
0601.4	25 kg	plastic	110,65 €

Sodium chloride

≥99,8 %, extra fine, with anticaking

Type analysis:

Assay (dry substance). ..... ≥99,8 %
Calcium (Ca). ..... ≤0,05 %
Magnesium (Mg). ..... ≤0,005 %
Stripping agent. ..... ≤0,005 %
Loss on drying (110 °C). ..... ≤0,15 %
Particle-size distribution:
<63 µm. ..... ≤10 %
>355 µm. ..... ≤5 %

0962.1	1 kg	plastic	11,30 €
Original pack 6 x 1 kg			10,74/1 kg
0962.2	5 kg	plastic	32,15 €
0962.3	25 kg	plastic	110,65 €

Sodium chloride

>99,8 %, with anticaking

Type analysis:

Assay. ..... >99,8 %
Calcium (Ca). ..... <0,01 %
Magnesium (Mg). ..... <0,002 %
Stripping agent. ..... <0,0015 %
Bulk density. ..... 1100-1300 kg/m^3

9265.1	1 kg	plastic	10,65 €
Original pack 6 x 1 kg			10,12/1 kg
9265.2	5 kg	plastic	30,65 €
9265.3	10 kg	plastic	54,75 €
9265.5	25 kg	plastic	107,40 €
9265.4	50 kg	card board	170,95 €

Sodium chloride powder (pouch)

▶ Roti®fair 3M NaCl see p. 2275
▶ Roti®fair 5M NaCl see p. 2276

Sodium chloride solution 0,9 %

Sodium chloride solution 0,9 %

CELLPURE®

Type analysis:

pH value. 4,5-7,0
Endotoxins. ..... ≤0,5 I.U./ml

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

8607.1	500 ml	plastic	16,70 €
8607.2	1 l	plastic	27,85 €
Original pack 6 x 1 l			26,46/1 l

Sodium chloride solution (0,1 N)

Sodium chloride solution

ROTI®VOLUM 0,1 mol/l - 0,1 N

Ampoule for preparation of 1000 ml volumetric solution.
NaCl
M 58,44 g/mol
[7647-14-5]
WGK 1

Type analysis:

Amount-of-substance conc. (20 °C). ..... 0,1 mol/l ±0,2 %

CN67.1	1 piece	plastic ampoule	19,90 €

For further information, please see page 1683

Sodium chloride solution (1 N)

Sodium chloride solution

1 mol/l - 1 N volumetric standard solution

WGK 1

Type analysis:

Amount-of-substance conc. (20 °C). ..... 1 mol/l ±0,2 %
Titer. 0,998-1,002

8115.1	1 l	plastic	27,85 €
Original pack 6 x 1 l			26,46/1 l

Sodium chloride (tablet)

▶ Roti®fair 0.9% NaCl see p. 2275

Sodium chlorite

Sodium chlorite

≥75 %, techn.

$NaClO_2$
M 90,44 g/mol
mp 180-200 °C (dec.)
Solubility: 572 g/l (H_2O, 20 °C)
[7758-19-2] • EC No. 231-836-6
UN No. 1496 • ADR 5.1 II • WGK 2

Danger H271-H301-H310-H314-H373-H410-EUH032-EUH071

Type analysis:

Appearance. ..... white powder
Assay. ..... ≥75 %

4352.1	250 g	plastic	18,85 €
4352.2	1 kg	plastic	40,35 €
Original pack 6 x 1 kg			38,33/1 kg
4352.3	5 kg	plastic	159,65 €

Sodium cholate

▶ Cholic acid sodium salt see p. 1896

Mono sodium citrate

Mono sodium citrate

≥99 %, extra pure, anhydrous

Citric acid monosodium salt
$C_6H_7NaO_7$
M 214,11 g/mol
mp ~210 °C
[18996-35-5] • EC No. 242-734-6 • WGK 1

Type analysis:

Assay (dry substance). ..... ≥99 %
Appearance of solution. ..... complies
pH value (10 % solution). 3,4-3,8
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,015 %
Oxalate (as $C_2H_2O_4$). ..... ≤0,03 %
Heavy metals (as Pb). ..... ≤0,001 %
Reaction with H_2SO_4. ..... complies
Loss on drying (120 °C). ..... ≤0,4 %

HN13.1	100 g	plastic	14,95 €
HN13.2	500 g	plastic	38,60 €
Original pack 6 x 500 g			36,67/500 g
HN13.3	1 kg	plastic	59,05 €
Original pack 6 x 1 kg			56,10/1 kg

For further information, please see page 1309

tri-Sodium citrate dihydrate

Citric acid trisodium salt dihydrate
$C_6H_5Na_3O_7 \cdot 2\ H_2O$
M 294,1 g/mol
D 1,76
Solubility: ~720 g/l (H_2O, 25 °C)
[6132-04-3] • EC No. 200-675-3 • WGK 1

tri-Sodium citrate dihydrate

≥99 %, p.a., ACS

Reagent for buffers; sequestring agent.

Guarantee analysis:

Assay (perchloric acidim). ..... ≥99,0 %
pH value (5 %, water). 7,5-9,0
In H_2O insoluble matter. ..... ≤0,003 %
Chloride (Cl). ..... ≤0,003 %
Phosphate (PO_4). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,005 %
Oxalate (as $C_2H_2O_4$). ..... ≤0,01 %
Ammonium (NH_4). ..... ≤0,001 %
Arsenic (As). ..... ≤0,00004 %
Lead (Pb). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %

3580.4	250 g	plastic	21,00 €
3580.3	500 g	plastic	27,85 €
Original pack 6 x 500 g			26,46/500 g
3580.1	1 kg	plastic	44,65 €
Original pack 6 x 1 kg			42,42/1 kg
3580.2	5 kg	plastic	188,15 €
3580.5	25 kg	plastic	439,70 €

tri-Sodium citrate dihydrate

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6,0 E.U./g
Assay (dry substance). ..... ≥99 %
Appearance of solution. ..... complies
Acidity or alkalinity. ..... complies
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,015 %
Oxalate (as $C_2H_2O_4$). ..... ≤0,03 %
Heavy metals (as Pb). ..... ≤0,001 %
Reaction with H_2SO_4. ..... complies

HN12.1	250 g	plastic	22,50 €
HN12.2	500 g	plastic	40,35 €
Original pack 6 x 500 g			38,33/500 g
HN12.3	1 kg	plastic	64,00 €
Original pack 6 x 1 kg			60,80/1 kg
HN12.4	2,5 kg	plastic	129,55 €

tri-Sodium citrate dihydrate

≥99 %, Ph.Eur.

Guarantee analysis:

Appearance. ..... white cryst. powder
Assay (dry substance). ..... 99,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... clear, colourless
Acidity or alkalinity. ..... complies
Reaction with H_2SO_4 ..... complies
pH value (5 % solution). 7,5-9,0
Water. ..... 11,0-13,0 %
Sulphate (SO_4). ..... ≤0,01 %
Chloride (Cl). ..... ≤0,005 %
Oxalate (as $C_2H_2O_4$). ..... ≤0,01 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,00005 %
Mercury (Hg). ..... <0,00005 %
Heavy metals. ..... ≤0,0005 %

4088.3	500 g	plastic	13,90 €
Original pack 6 x 500 g			13,21/500 g
4088.1	1 kg	plastic	23,15 €
Original pack 6 x 1 kg			21,99/1 kg
4088.2	5 kg	plastic	90,85 €
4088.5	25 kg	plastic	252,65 €

Sodium cobalt nitrite

▶ Sodium hexanitrocobaltate(III) see p. 2338

Sodium cyclamate

▶ Cyclohexane sulphamic acid sodium salt see p. 1917

Sodium-1-decane sulphonate

▶ Decane-1-sulphonic acid sodium salt see p. 1924

Sodium deoxycholate

▶ Deoxycholic acid sodium salt (DOC) see p. 1926

Sodium deuterium oxide 30 % solution in D_2O

Sodium deuterium oxide 30 % solution in D_2O

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.
NaOD
D 1,462
[14014-06-3] • EC No. 237-825-2
UN No. 1824 • ADR 8 II • WGK 1

Danger H290-H314

Guarantee analysis:

Deuterising degree. ..... ≥99,5 %
Assay (mass %). ..... ≥30 %

HN90.1	10 ml	glass	61,85 €

Sodium diacetate

Sodium diacetate

extra pure

Sodium hydrogen diacetate
$C_4H_7NaO_4$
M 142,09 g/mol
D 1,4
Solubility: 1000 g/l (H_2O, 20 °C)
[126-96-5] • EC No. 204-814-9
WGK 1

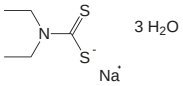
Danger H318

Type analysis:

Assay (CH_3COONa) ..... 58,0-60,0 %
Free acid (as CH_3COOH). ..... 39,0-41,0 %
pH value (10 % in H_2O). 4,5-5,0
Arsenic (As). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Mercury (Hg). ..... ≤0,0001 %
Water. ..... ≤2,0 %

9485.1	500 g	plastic	24,20 €
Original pack 6 x 500 g			22,99/500 g
9485.2	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
9485.3	2,5 kg	plastic	69,80 €

Sodium diethyldithiocarbamate trihydrate



Sodium diethyldithiocarbamate trihydrate

p.a., ACS

Reagent for copper
Diethyldithiocarbamic acid sodium salt, Sodium diethyldithiocarbamate, Cupral, DDTC
$C_5H_{10}NNaS_2 \cdot 3\ H_2O$
M 225,31 g/mol
mp 95-99 °C
Solubility: 600 g/l (H_2O, 20 °C)
[20624-25-3] • EC No. 205-710-6
UN No. 3077 • ADR 9 III • WGK 3

Warning H302-H410

Guarantee analysis:

Melting point. ..... 92-96 °C
Solubility in H_2O. ..... complies
Sodium (as Na_2SO_4). ..... 30,5-32,5 %
Suitability as reagent for copper. ..... complies

2601.1	25 g	plastic	22,50 €
2601.2	100 g	plastic	40,75 €
2601.3	500 g	plastic	137,10 €
Original pack 6 x 500 g			130,25/500 g

Sodium dihydrogen phosphate monohydrate

Sodium phosphate, monobasic; Sodium biphosphate, Monosodium phosphate
$NaH_2PO_4 \cdot H_2O$
M 137,99 g/mol
D 2,04
mp 100 °C
Solubility: 850 g/l (H_2O, 20 °C)
[10049-21-5] • EC No. 231-449-2
WGK 1

Sodium dihydrogen phosphate monohydrate

≥98 %, p.a., ACS

Molecular biology. For softening water. Additive for galvanic baths.

Guarantee analysis:

Assay (acidim.). ..... 98,0-102,0 %
pH value (5 % in water). 4,1-4,5
In H_2O insoluble matter. ..... ≤0,01 %
Total nitrogen (as N). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,0005 %
Sulphate (SO_4). ..... ≤0,003 %
Arsenic (As). ..... ≤0,00005 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,005 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,0005 %
Heavy metals. ..... ≤0,0005 %

K300.1	500 g	plastic	27,85 €
Original pack 6 x 500 g			26,46/500 g
K300.2	1 kg	plastic	40,75 €
Original pack 6 x 1 kg			38,71/1 kg
K300.3	2,5 kg	plastic	82,70 €
K300.5	25 kg	plastic	579,45 €

Sodium dihydrogen phosphate monohydrate

≥98 %, USP, BP

Guarantee analysis:

Assay (acidim., dry substance). ..... 98,0-100,5 %
Identity. ..... complies
pH value (5 % solution). 4,2-4,5
Appearance of solution. ..... clear, colourless
In H_2O insoluble matter. ..... ≤0,01 %
Loss on drying (130 °C). ..... 11,5-14,5 %
Chloride (Cl). ..... ≤0,014 %
Sulphate (SO_4). ..... ≤0,03 %
Al, Ca and related elements. ..... complies
Arsenic (As). ..... ≤0,0002 %
Iron (Fe). ..... ≤0,001 %
Volatile organic impurities. ..... complies
$KMnO_4$ reducing substances (as O). ..... complies

T878.1	500 g	plastic	26,35 €
Original pack 6 x 500 g			25,03/500 g
T878.2	1 kg	plastic	39,70 €
Original pack 6 x 1 kg			37,72/1 kg
T878.3	2,5 kg	plastic	77,95 €
T878.4	5 kg	plastic	126,35 €
T878.7	25 kg	plastic	439,70 €

Sodium dihydrogen phosphate dihydrate

Sodium phosphate, monobasic; Sodium biphosphate, Monosodium phosphate
$NaH_2PO_4 \cdot 2\ H_2O$
M 156,01 g/mol
D 1,91
mp 60 °C
Solubility: 850 g/l (H_2O, 20 °C)
[13472-35-0] • EC No. 231-449-2
WGK 1

Sodium dihydrogen phosphate dihydrate

≥99 %, p.a.
For molecular biology

Guarantee analysis:

Assay (acidim.)	≥99,0 %
pH value (5 % in H_2O)	4,2-4,5
In H_2O insoluble matter	≤0,005 %
Total nitrogen (as N)	≤0,001 %
Chloride (Cl)	≤0,0005 %
Sulphate (SO_4)	≤0,003 %
Arsenic (As)	≤0,00005 %
Lead (Pb)	≤0,0002 %
Calcium (Ca)	≤0,005 %
Iron (Fe)	≤0,0005 %
Copper (Cu)	≤0,0002 %
Magnesium (Mg)	≤0,005 %
Nickel (Ni)	≤0,001 %
Heavy metals (as Pb)	≤0,0005 %

T879.1	500 g	plastic	23,55 €
Original pack 6 x 500 g			22,37/500 g
T879.2	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
T879.3	2,5 kg	plastic	75,15 €
T879.5	25 kg	plastic	622,45 €

For further information, please see page 1309

Sodium dihydrogen phosphate dihydrate

≥98 %, Ph.Eur., USP

Guarantee analysis:

Assay	98,0-100,5 %
Identity	complies
Appearance of solution	complies
In H_2O insoluble matter	≤0,01 %
pH value (5 % in water)	4,2-4,5
Loss on drying (130 °C)	21,5-24,0 %
Chloride (Cl)	≤0,02 %
Sulphate (SO_4)	≤0,03 %
Fluoride (F)	≤0,001 %
Heavy metals (as Pb)	≤0,001 %
Arsenic (As)	≤0,0001 %
Lead (Pb)	≤0,0001 %
Mercury (Hg)	≤0,0001 %
Iron (Fe)	≤0,001 %
Na_2O	19,7-20,0 %
P_2O_5	45,0-45,7 %
Reducing substances	complies
Al, Ca and related elements	complies

2370.3	500 g	plastic	17,10 €
Original pack 6 x 500 g			16,25/500 g
2370.1	1 kg	plastic	27,85 €
Original pack 6 x 1 kg			26,46/1 kg
2370.2	2,5 kg	plastic	53,65 €
2370.5	25 kg	plastic	375,20 €

Sodium diphenylamine-sulfonate

▶ Diphenylamine-4-sulphonic acid sodium salt see p. 1953

tetra-Sodium diphosphate decahydrate

tetra-Sodium pyrophosphate, TSPP
$Na_4P_2O_7 \cdot 10\ H_2O$
M 446,06 g/mol
D 1,82
Solubility: ~60 g/l (H_2O, 20 °C)
[13472-36-1] • EC No. 231-767-1
WGK 1

Warning H319

tetra-Sodium diphosphate decahydrate

≥99 %, p.a.

Guarantee analysis:

Assay (acidim.)	≥99,0 %
pH value (5 % in H_2O)	9,5-10,7
In H_2O insoluble matter	≤0,01 %
Chloride (Cl)	≤0,005 %
Sulphate (SO_4)	≤0,005 %
Nitrate (NO_3)	≤0,003 %
Arsenic (As)	≤0,0003 %
Lead (Pb)	≤0,0005 %
Calcium (Ca)	≤0,01 %
Iron (Fe)	≤0,0005 %
Copper (Cu)	≤0,0005 %
Magnesium (Mg)	≤0,01 %
Nickel (Ni)	≤0,0005 %

T883.1	500 g	plastic	31,10 €
Original pack 6 x 500 g			29,55/500 g
T883.2	1 kg	plastic	44,00 €
Original pack 6 x 1 kg			41,80/1 kg
T883.3	2,5 kg	plastic	80,55 €

tetra-Sodium diphosphate decahydrate

≥98 %, extra pure

Type analysis:

Assay (acidim., dry substance)	≥98,0 %
pH value (5 % in H_2O)	9,5-10,8
In H_2O insoluble matter	≤0,01 %
Chloride (Cl)	≤0,01 %
Sulphate (SO_4)	≤0,05 %
Iron (Fe)	≤0,005 %
Heavy metals (as Pb)	≤0,005 %

0269.1	500 g	plastic	18,85 €
Original pack 6 x 500 g			17,91/500 g
0269.2	1 kg	plastic	28,95 €
Original pack 6 x 1 kg			27,50/1 kg
0269.3	2,5 kg	plastic	64,00 €
0269.5	25 kg	plastic	461,20 €

Sodium-1-dodecane sulphonate

▶ Dodecane-1-sulphonic acid sodium salt see p. 1959

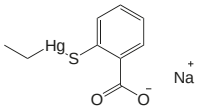
Sodium dodecyl sulphate

▶ SDS see p. 2309
▶ Roti®fair SDS 0.5g see p. 2278
▶ Roti®fair 10% SDS see p. 2278

Sodium EDTA solution

▶ EDTA disodium salt solution (0,1 N) see p. 1965

Sodium ethylmercuri-thiosalicylate



Sodium ethylmercuri-thiosalicylate

≥97 %
Merthiolate, Thiomerosal, Thiomersalate
$C_9H_9HgNaO_2S$
M 404,82 g/mol
mp 232-233 °C (dec.)
[54-64-8] • EC No. 200-210-4
UN No. 2025 • ADR 6.1 II • WGK 3

Danger
H300+H310+H330-H373-H400-H410

Type analysis:

Assay (dry substance)	≥97 %
Loss on drying	≤0,5 %
Mercury ions	≤0,7 %

6389.1	10 g	plastic	70,85 €
6389.2	50 g	plastic	267,70 €

Sodium fluoride

NaF
M 41,99 g/mol
D 2,78 • bp 1704 °C
mp 993 °C
Solubility: 42 g/l (H_2O, 20 °C)
[7681-49-4] • EC No. 231-667-8
UN No. 1690 • ADR 6.1 III • WGK 1

Danger H301-H315-H319-EUH032

Sodium fluoride

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis)	99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range	

4503.1	10 g	plastic	56,90 €
4503.2	50 g	plastic	177,40 €

Sodium fluoride

≥99 %, p.a., ACS, ISO

Guarantee analysis:

Assay (compl.) ≥99,0 %
In H_2O insoluble matter ≤0,005 %
Loss on drying (150 °C) ≤0,2 %
Acidity ≤0,025 meq/g
Alkalinity ≤0,01 meq/g
Sodium hexafluorosilicate (Na_2SiF_6) ≤0,1 %
Chloride (Cl) ≤0,003 %
Sulphate (SO_4) ≤0,01 %
Sulphite (SO_3) ≤0,005 %
Lead (Pb) ≤0,001 %
Iron (Fe) ≤0,002 %
Potassium (K) ≤0,01 %
Copper (Cu) ≤0,0005 %
Nickel (Ni) ≤0,003 %
Heavy metals (as Pb) ≤0,001 %

P756.1	500 g	plastic	52,15 €
Original pack 6 x 500 g			49,54/500 g
P756.2	1 kg	plastic	92,35 €
Original pack 6 x 1 kg			87,73/1 kg
P756.3	2,5 kg	plastic	199,85 €

Sodium fluoride

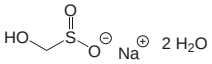
≥99 %, extra pure

Type analysis:

Assay (titr.) ≥99,0 %
Free alkali (as NaOH) ≤0,1 %
Sodium hexafluorosilicate (Na_2SiF_6) ≤0,02 %
Chloride (Cl) ≤0,01 %
Sulphate (SO_4) ≤0,02 %
Heavy metals (as Pb) ≤0,001 %
Arsenic (As) ≤0,00005 %
Lead (Pb) ≤0,0001 %
Iron (Fe) ≤0,005 %
Loss on drying (150 °C) ≤0,1 %

2618.1	500 g	plast.	26,35 €
Original pack 6 x 500 g			25,03/500 g
2618.2	1 kg	plast.	36,45 €
Original pack 6 x 1 kg			34,63/1 kg
2618.3	2,5 kg	plast.	62,25 €

Sodium formaldehyde sulphoxylate dihydrate



Sodium formaldehyde sulphoxylate dihydrate

>98 %, for synthesis

Rongalit®
$CH_3NaO_3S \cdot 2\ H_2O$
M 154,12 g/mol
[6035-47-8] • EC No. 205-739-4
WGK 1

Warning H341-H361d-EUH031

Type analysis:

Assay >98 %

4553.2	500 g	plastic	24,65 €
Original pack 6 x 500 g			23,42/500 g
4553.1	1 kg	plastic	40,75 €
Original pack 6 x 1 kg			38,71/1 kg

Sodium formate

Sodium formate

≥99 %, p.a., ACS

Precipitant for noble metals, extraction reagent for the determination of phosphate in soil samples.
Formic acid sodium salt
HCOONa
M 68,01 g/mol
mp 253 °C
Solubility: 550 g/l (H_2O, 20 °C)
[141-53-7] • EC No. 205-488-0
WGK 1

Guarantee analysis:

Assay (iodom.) ≥99,0 %
pH value (5 % in H_2O) 7,0-8,5
In H_2O insoluble matter ≤0,005 %
Chloride (Cl) ≤0,001 %
Oxalate (C_2O_4) ≤0,05 %
Phosphate (PO_4) ≤0,002 %
Sulphate (SO_4) ≤0,001 %
Calcium (Ca) ≤0,005 %
Iron (Fe) ≤0,0005 %
Copper (Cu) ≤0,0005 %
Heavy metals (as Pb) ≤0,0005 %

4404.1	250 g	plastic	27,45 €
4404.2	500 g	plastic	47,20 €
Original pack 6 x 500 g			44,84/500 g
4404.3	1 kg	plastic	82,25 €
Original pack 6 x 1 kg			78,14/1 kg

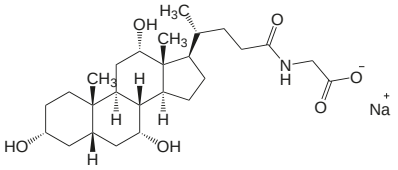
Sodium gluconate

▶ Gluconic acid sodium salt see p. 2019

Sodium glucuronate hydrate

▶ D-Glucuronic acid sodium salt monohydrate see p. 2022

Sodium glycocholate



Sodium glycocholate

≥98 %, for biochemistry

Glycocholic acid sodium salt
$C_{26}H_{42}NO_6Na$
M 487,62 g/mol
[863-57-0] • EC No. 212-730-9
WGK 1

Type analysis:

Assay (titr.) ≥98 %
Solution (5 % in water) colourless to light yellowish, clear
Water (KF) ≤10 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in H_2O, dry substance) +26° to +30°

4181.1	250 mg	glass	38,60 €
4181.2	1 g	glass	117,75 €

Sodium-1-heptane sulphonate

▶ Heptane-1-sulphonic acid sodium salt see p. 2038

Sodium-1-hexane sulphonate

▶ Hexane-1-sulphonic acid sodium salt see p. 2043

Sodium hexanitrocobaltate(III)

Sodium hexanitrocobaltate(III)

p.a., ACS

Determination of potassium
Cobalt(III) sodium nitrite, Sodium cobaltnitrite
$Na_3Co(NO_2)_6$
M 403,94 g/mol
Solubility: 720 g/l (H_2O, 20 °C)
[13600-98-1] • EC No. 237-077-7
UN No. 1479 • ADR 5.1 III • WGK 2

Danger H272-H317-H351

Guarantee analysis:

In diluted acetic acid insoluble matter. ≤0,02 %
Suitability for determination of potassium complies

4409.1	25 g	plastic	19,90 €
4409.2	100 g	plastic	54,75 €
4409.3	250 g	plastic	110,65 €

Sodium hydrogen carbonate

Sodium bicarbonate
$NaHCO_3$
M 84,01 g/mol
D 2,22
mp 50 °C (dec.)
Solubility: 95,5 g/l (H_2O, 20 °C)
[144-55-8] • EC No. 205-633-8 • WGK 1

Sodium hydrogen carbonate

≥99,5 %, p.a., ACS, ISO

Neutralizing agent, buffer substance

Guarantee analysis:

Assay (acidim.) ≥99,5 %
In H_2O insoluble matter ≤0,01 %
Chloride (Cl) ≤0,001 %
Phosphate (PO_4) ≤0,001 %
Silicate (SiO_2) ≤0,005 %
Total nitrogen (as N) ≤0,0005 %
Sulphur containing parts (as SO_4) ≤0,003 %
Iodine reducing substances (as I) ≤0,005 %
Heavy metals ≤0,0005 %
Arsenic (As) ≤0,00004 %
Lead (Pb) ≤0,0005 %
Calcium (Ca) ≤0,01 %
Iron (Fe) ≤0,0005 %
Potassium (K) ≤0,005 %
Copper (Cu) ≤0,0005 %
Magnesium (Mg) ≤0,005 %
Nickel (Ni) ≤0,0005 %

6885.2	500 g	plastic	16,05 €
Original pack 6 x 500 g			15,25/500 g
6885.1	1 kg	plastic	24,20 €
Original pack 6 x 1 kg			22,99/1 kg
6885.3	5 kg	plastic	85,90 €
6885.5	25 kg	plastic	353,70 €

Sodium hydrogen carbonate

CELLPURE® ≥99,5 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins ≤6 I.U./g
Assay ≥99,5 %
Appearance of solution complies
Loss on drying ≤0,25 %
pH value (5 % solution) ≤8,6
Chloride (Cl) ≤0,01 %
Sulphate (SO_4) ≤0,015 %
Ammonium (NH_4) ≤0,0005 %
Heavy metals (as Pb) ≤0,0005 %
Aluminium (Al) ≤0,0001 %
Arsenic (As) ≤0,0002 %
Calcium (Ca) ≤0,01 %
Iron (Fe) ≤0,0005 %

HN01.1	500 g	plastic	15,60 €
Original pack 6 x 500 g			14,82/500 g
HN01.2	1 kg	plastic	23,55 €
Original pack 6 x 1 kg			22,37/1 kg
HN01.3	5 kg	plastic	74,75 €

Sodium hydrogen carbonate

≥99 %, Ph.Eur., extra pure

Guarantee analysis:

Appearance white to off-white, cryst. powder
Assay (titr.) 99,0-100,5 %
Identity complies
pH value (5 %, water) ≤8,6
Appearance of solution complies
Chloride (Cl) ≤0,015 %
Sulphate (SO_4) ≤0,015 %
Ammonium (NH_4) ≤0,002 %
Carbonate (CO_3) complies
Heavy metals (as Pb) ≤0,0005 %
Arsenic (As) ≤0,0002 %
Iron (Fe) ≤0,0005 %
Calcium (Ca) ≤0,01 %

8551.1	1 kg	plastic	18,85 €
Original pack 6 x 1 kg			17,91/1 kg
8551.2	5 kg	plastic	49,35 €
8551.5	25 kg	plastic	142,90 €

Sodium hydrogen carbonate

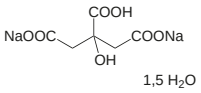
≥99 %

Type analysis:

Assay ≥99 %
Loss on drying ≤0,25 %
Arsenic (As) ≤0,0002 %
Calcium (Ca) ≤0,01 %
Iron (Fe) ≤0,0005 %

0965.1	500 g	plastic	11,75 €
Original pack 6 x 500 g			11,16/500 g
0965.2	1 kg	plastic	16,05 €
Original pack 6 x 1 kg			15,25/1 kg
0965.3	5 kg	plastic	40,75 €

di-Sodium hydrogen citrate 1,5-hydrate



di-Sodium hydrogen citrate 1,5-hydrate

≥99 %, cryst.

$C_6H_6Na_2O_7 \cdot 1,5\ H_2O$
M 263,11 g/mol • mp 149 °C (dec.)
[6132-05-4] • EC No. 205-623-3 • WGK 1

Guarantee analysis:

Assay (dry substance) ≥99,0 %
pH value (1 % in H_2O) 4,9-5,2
Water ≤13 %
Chloride (Cl) ≤0,05 %
Sulphate (SO_4) ≤0,15 %
Oxalate (as $C_2H_2O_4$) ≤0,01 %
Arsenic (As) ≤0,0001 %
Lead (Pb) ≤0,0001 %
Mercury (Hg) ≤0,0001 %
Reaction with H_2SO_4 complies

2611.1	250 g	plastic	21,00 €
2611.2	500 g	plastic	27,45 €
Original pack 6 x 500 g			26,08/500 g
2611.3	1 kg	plastic	43,55 €
Original pack 6 x 1 kg			41,37/1 kg

Sodium hydrogen diacetate

▶ Sodium diacetate see p. 2336

di-Sodium hydrogen phosphate

Sodium phosphate, dibasic; Sodium monohydro-gen phosphate; di-Sodium orthophosphate, Sodium phosphate
Na_2HPO_4
M 141,96 g/mol • mp 250 °C (dec.)
Solubility: 77 g/l (H_2O, 20 °C)
[7558-79-4] • WGK 1

di-Sodium hydrogen phosphate

≥99 %, p.a., ACS, anhydrous

Molecular biology ; Reagent for the detection of Mg, Li, Pb and uric acid.

Guarantee analysis:

Assay (acidim.) ≥99,0 %
pH value (5 % in water) 8,7-9,3
In H_2O insoluble matter ≤0,01 %
Loss on drying (105 °C) ≤0,2 %
Total nitrogen (as N) ≤0,002 %
Chloride (Cl) ≤0,002 %
Pyrophosphate (P_2O_7) ≤0,2 %
Sulphate (SO_4) ≤0,005 %
Arsenic (As) ≤0,00005 %
Lead (Pb) ≤0,001 %
Cadmium (Cd) ≤0,0005 %
Calcium (Ca) ≤0,001 %
Cobalt (Co) ≤0,0005 %
Iron (Fe) ≤0,001 %
Potassium (K) ≤0,01 %
Copper (Cu) ≤0,0005 %
Magnesium (Mg) ≤0,001 %
Manganese (Mn) ≤0,0005 %
Nickel (Ni) ≤0,0005 %
Heavy metals (as Pb) ≤0,001 %
Zinc (Zn) ≤0,0005 %

P030.1	500 g	plastic	32,15 €
Original pack 6 x 500 g			30,54/500 g
P030.2	1 kg	plastic	52,15 €
Original pack 6 x 1 kg			49,54/1 kg
P030.3	2,5 kg	plastic	98,40 €

di-Sodium hydrogen phosphate

≥98 %, Ph.Eur., USP, anhydrous

Guarantee analysis:

Assay (acidim., dry substance) 98,0-100,5 %
Identity complies
pH value (5 % in H_2O) 8,7-9,4
In H_2O insoluble matter ≤0,025 %
Appearance of solution complies
Loss on drying (105 °C) ≤1,0 %
Total nitrogen (as N) ≤0,003 %
Chloride (Cl) ≤0,005 %
Sulphate (SO_4) ≤0,03 %
Arsenic (As) ≤0,0001 %
Iron (Fe) ≤0,002 %
Heavy metals (as Pb) ≤0,001 %
Sodium dihydrogen phosphate complies
$KMnO_4$ reducing substances (as O) complies

T876.1	500 g	plastic	25,30 €
Original pack 6 x 500 g			24,04/500 g
T876.2	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg
T876.3	5 kg	plastic	150,00 €

di-Sodium hydrogen phosphate dihydrate

Sodium phosphate, dibasic; Sodium monohydrogen phosphate; di-Sodium orthophosphate, Sodium phosphate
$Na_2HPO_4 \cdot 2\ H_2O$
M 177,99 g/mol
D 2,1
mp 92,5 °C
Solubility: 93 g/l (H_2O, 20 °C)
[10028-24-7] • EC No. 231-448-7 • WGK 1

di-Sodium hydrogen phosphate dihydrate

≥99,5 %, p.a.

Reagent for the preparation of phosphate buffers.

Guarantee analysis:

Assay (acidim.) ≥99,5 %
pH value (5 % solution) 9,0-9,2
In H_2O insoluble matter ≤0,01 %
Chloride (Cl) ≤0,001 %
Sulphate (SO_4) ≤0,005 %
Total nitrogen (as N) ≤0,001 %
Arsenic (As) ≤0,0001 %
Lead (Pb) ≤0,0001 %
Cadmium (Cd) ≤0,0005 %
Calcium (Ca) ≤0,001 %
Chromium (Cr) ≤0,0005 %
Iron (Fe) ≤0,001 %
Potassium (K) ≤0,006 %
Cobalt (Co) ≤0,0005 %
Copper (Cu) ≤0,0003 %
Magnesium (Mg) ≤0,001 %
Manganese (Mn) ≤0,0005 %
Nickel (Ni) ≤0,0005 %
Heavy metals (as Pb) ≤0,001 %
Zinc (Zn) ≤0,0005 %

4984.2	500 g	plastic	27,45 €
Original pack 6 x 500 g			26,08/500 g
4984.1	1 kg	plastic	45,70 €
Original pack 6 x 1 kg			43,42/1 kg
4984.3	2,5 kg	plastic	98,40 €
4984.4	5 kg	plastic	135,35 €
4984.5	10 kg	plastic	228,90 €
4984.7	25 kg	plastic	396,70 €

di-Sodium hydrogen phosphate dihydrate

≥98 %, Ph.Eur., USP

Guarantee analysis:

Appearance. ..... colourless crystals
Assay (acidim., dry substance). ..... 98,0-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
In H_2O insoluble matter. ..... ≤0,4 %
Loss on drying (130 °C). ..... 19,5-21,0 %
Sulphate (SO_4). ..... ≤0,1 %
Chloride (Cl). ..... ≤0,04 %
Arsenic (As). ..... ≤0,0004 %
Iron (Fe). ..... ≤0,004 %
Heavy metals (as Pb). ..... ≤0,002 %
Sodium dihydrogen phosphate . ..... ≤0,025
$KMnO_4$ reducing substances (as O). ..... complies

T877.2	500 g	plastic	23,55 €
Original pack 6 x 500 g			22,37/500 g
T877.1	1 kg	plastic	37,55 €
Original pack 6 x 1 kg			35,67/1 kg
T877.3	5 kg	plastic	155,35 €

di-Sodium hydrogen phosphate heptahydrate

di-Sodium hydrogen phosphate heptahydrate

≥98 %, p.a., ACS

Sodium phosphate, dibasic; Sodium monohydrogen phosphate; di-Sodium orthophosphate, Sodium phosphate
$Na_2HPO_4 \cdot 7\ H_2O$
M 268,03 g/mol
D ~1,68
mp 48 °C
Solubility: 154 g/l (H_2O, 20 °C)
[7782-85-6] • EC No. 231-448-7 • WGK 1

Guarantee analysis:

Assay (acidim.). ..... 98,0-102,0 %
In H_2O insoluble matter. ..... ≤0,005 %
pH value (5 % in H_2O). 8,7-9,3
Chloride (Cl). ..... ≤0,001 %
Sulphate (SO_4). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

X987.1	500 g	plastic	22,50 €
Original pack 6 x 500 g			21,38/500 g
X987.2	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
X987.3	2,5 kg	plastic	72,60 €

di-Sodium hydrogen phosphate dodecahydrate

Sodium phosphate, dibasic; Sodium monohydrogen phosphate; di-Sodium orthophosphate, Sodium phosphate
$Na_2HPO_4 \cdot 12\ H_2O$
M 358,14 g/mol
D 1,52
mp 35 °C
Solubility: 218 g/l (H_2O, 20 °C)
[10039-32-4] • EC No. 231-448-7 • WGK 1

di-Sodium hydrogen phosphate dodecahydrate

≥99 %, p.a., ISO

Buffer substance

Guarantee analysis:

Assay (acidim.). ..... 99,0-102,0 %
In H_2O insoluble matter. ..... ≤0,005 %
Nitrogen compounds (as N). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,0005 %
Sulphate (SO_4). ..... ≤0,005 %
Arsenic (As). ..... ≤0,00005 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,01 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,001 %
Manganese (Mn). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

T106.1	500 g	plastic	21,00 €
Original pack 6 x 500 g			19,95/500 g
T106.2	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
T106.3	2,5 kg	plastic	75,15 €

di-Sodium hydrogen phosphate dodecahydrate

≥98 %, Ph.Eur., USP

Type analysis:

Appearance. ..... colourless crystals
Assay (acidim.). ..... 98,5-100,5 %
Identity. ..... complies
Appearance of solution. ..... clear, colourless
In H_2O insoluble matter. ..... ≤0,4 %
Loss on drying (130 °C). ..... 57- 61 %
Water. ..... 57-61 %
Sodium dihydrogen phosphate ..... ≤2,5 %
Sulphate (SO_4). ..... ≤0,05 %
Chloride (Cl). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0002 %
Iron (Fe). ..... ≤0,002 %
$KMnO_4$ red. matter ..... complies

N350.1	1 kg	plastic	25,70 €
Original pack 6 x 1 kg			24,42/1 kg
N350.2	5 kg	plastic	85,90 €
N350.5	25 kg	plastic	278,45 €

Sodium hydrogen sulphate

Sodium hydrogen sulphate

≥93 %, pearls

Sodium bisulphate
$NaHSO_4$
mp >315 °C (dec.)
[7681-38-1] • EC No. 231-665-7
WGK 1

Danger H318

Type analysis:

Appearance. ..... white to light yellow pearls
Assay (titr.). ..... ≥93 %
Water ..... ≤0,2 %
Iron (Fe). ..... ≤0,015 %

2373.1	1 kg	plastic	18,85 €
Original pack 6 x 1 kg			17,91/1 kg
2373.2	5 kg	plastic	40,75 €

Sodium hydrogen sulphite solution

▶ Sodium bisulphite solution see p. 2332

Sodium hydroxide

NaOH
M 40,0 g/mol
D 2,13 • bp 1390 °C
mp 323 °C
Solubility: 1090 g/l (H_2O, 20 °C)
[1310-73-2] • EC No. 215-185-5
UN No. 1823 • ADR 8 II • WGK 1

Danger H290-H314

Sodium hydroxide

≥98 %, p.a., ISO, in pellets

Reagent for the preparation of sodium hydroxide solution.

Guarantee analysis:

Assay (acidim.). ..... ≥98 %
Carbonate (as Na_2CO_3). ..... ≤1 %
Total nitrogen (as N). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,005 %
Phosphate (PO_4). ..... ≤0,001 %
Silicon dioxide (SiO_2). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,0005 %
Aluminium (Al). ..... ≤0,002 %
Calcium (Ca). ..... ≤0,002 %
Iron (Fe). ..... ≤0,001 %
Magnesium (Mg). ..... ≤0,0005 %
Potassium (K). ..... ≤0,05 %
Nickel (Ni). ..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Zinc (Zn). ..... ≤0,001 %

6771.3	500 g	plastic	17,75 €
Original pack 6 x 500 g			16,86/500 g
6771.1	1 kg	plastic	26,80 €
Original pack 6 x 1 kg			25,46/1 kg
6771.2	5 kg	plastic	96,65 €
6771.5	25 kg	plastic	364,45 €

Sodium hydroxide

≥98 %, Ph.Eur., USP, BP, in pellets

Guarantee analysis:

Assay (acidim.). ..... 98,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... complies
Carbonate (as Na_2CO_3). ..... ≤1,0 %
Total nitrogen (as N). ..... ≤0,002 %
Chloride (Cl). ..... ≤0,02 %
Phosphate (PO_4). ..... ≤0,002 %
Sulphate (SO_4). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... complies
Heavy metals (as Pb). ..... ≤0,001 %

P031.1	500 g	plastic	18,20 €
Original pack 6 x 500 g			17,29/500 g
P031.2	1 kg	plastic	27,45 €
Original pack 6 x 1 kg			26,08/1 kg
P031.3	5 kg	plastic	97,30 €
P031.7	25 kg	plastic	396,70 €

Sodium hydroxide

≥99 %

Pearls, Reagent for neutralization.

Type analysis:

Assay ≥99,0 %
Aluminium (Al) ≤0,0001 %
Arsenic (As) ≤0,0001 %
Lead (Pb) ≤0,00005 %
Cadmium (Cd) ≤0,00005 %
Calcium (Ca) ≤0,001 %
Chromium (Cr) ≤0,0002 %
Iron (Fe) ≤0,001 %
Copper (Cu) ≤0,00005 %
Nickel (Ni) ≤0,001 %
Mercury (Hg) ≤0,000001 %
Sodium carbonate (Na_2CO_3) ≤0,4 %
Sodium chloride (NaCl) ≤0,02 %
Sodium sulphate (Na_2SO_4) ≤0,02 %

9356.1	1 kg	plastic	14,95 €
Original pack 6 x 1 kg			14,20/1 kg
9356.3	5 kg	plastic	37,55 €
9356.2	10 kg	plastic	66,55 €
9356.5	25 kg	plastic	117,20 €

Sodium hydroxide solution 50 %

Sodium hydroxide solution 50 %

50 %, extra pure

Caustic soda lye
NaOH
M 40,01 g/mol
D 1,52
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Assay (NaOH) 49,0-51,0 %
Density (20 °C) ≥1,5160 g/cm³
Sodium carbonate ≤0,2 %
Sodium chloride ≤0,01 %
Iron (Fe) ≤0,0005 %

8655.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
8655.3	2,5 l	plastic	27,85 €
Original pack 4 x 2,5 l			26,46/2,5 l
8655.4	5 l	plastic	41,40 €
Original pack 2 x 5 l			39,33/5 l
8655.2	10 l	plastic	54,75 €
8655.5	25 l	plastic	107,40 €

Sodium hydroxide solution 45 %

Sodium hydroxide solution 45 %

45 %, extra pure

Neutralization of acids, water treatment.
Caustic soda lye
NaOH
M 40,01 g/mol • D ~1,48
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Assay (NaOH) 44,0-46,0 %
Density (20 °C) 1,468-1,488 g/cm³
Sodium carbonate ≤0,2 %
Sodium chloride ≤0,01 %
Iron (Fe) ≤0,001 %

0993.1	1 l	plastic	17,10 €
Original pack 6 x 1 l			16,25/1 l
0993.2	2,5 l	plastic	24,65 €
Original pack 4 x 2,5 l			23,42/2,5 l
0993.3	10 l	plastic	53,65 €
0993.4	25 l	plastic	107,40 €

Sodium hydroxide solution 40 %

Sodium hydroxide solution 40 %

40 %, extra pure

Caustic soda lye
NaOH
M 40,01 g/mol
D ~1,43
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Assay 39,0-41,0 %
Density (20 °C) 1,4201-1,4397 g/cm³
Sodium carbonate ≤0,5 %
Sodium chloride ≤0,02 %
Iron (Fe) ≤0,001 %

4347.1	1 l	plastic	15,60 €
Original pack 6 x 1 l			14,82/1 l
4347.2	2,5 l	plastic	24,20 €
Original pack 4 x 2,5 l			22,99/2,5 l
4347.3	10 l	plastic	52,60 €
4347.4	25 l	plastic	105,25 €

Sodium hydroxide solution 32 %

Caustic soda lye
NaOH
M 40,0 g/mol
D 1,35
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1

Danger H314-H290

Sodium hydroxide solution 32 %

ROTIPURAN® ≥32 %, p.a.

For determination of nitrogen acc. to Kjeldahl; absorption of CO_2.

Guarantee analysis:

Assay (acidim.) ≥32 %
Heavy metals (as Pb) ≤0,0005 %
Total nitrogen (as N) ≤0,0001 %
Chloride (Cl) ≤0,005 %
Sulphate (SO_4) ≤0,005 %
Phosphate (PO_4) ≤0,0005 %
Silicate (SiO_2) ≤0,001 %
Aluminium (Al) ≤0,0005 %
Carbonate (as Na_2CO_3) ≤0,5 %
Iron (Fe) ≤0,0005 %

T196.1	1 l	plastic	30,00 €
Original pack 6 x 1 l			28,50/1 l
T196.2	2,5 l	plastic	57,95 €
Original pack 4 x 2,5 l			55,05/2,5 l
T196.3	5 l	plastic	91,30 €
Original pack 2 x 5 l			86,74/5 l
T196.7	25 l	plastic	353,70 €

Sodium hydroxide solution 32 %

≥32 %, extra pure

Neutralizing and disintegrating agent

Type analysis:

Assay (NaOH) ≥32 %
Density (20 °C) 1,339-1,366 g/cm³
Sodium carbonate ≤0,5 %
Sodium chloride ≤0,01 %
Iron (Fe) ≤0,0005 %

T197.1	1 l	plastic	15,60 €
Original pack 6 x 1 l			14,82/1 l
T197.2	2,5 l	plastic	24,20 €
Original pack 4 x 2,5 l			22,99/2,5 l
T197.4	5 l	plastic	35,40 €
Original pack 2 x 5 l			33,63/5 l
T197.3	10 l	plastic	51,10 €
T197.5	30 l	plastic	82,70 €

Sodium hydroxide solution 25 %

Sodium hydroxide solution 25 %

25 %, extra pure

Caustic soda lye
NaOH
M 40,01 g/mol • D ~1,27
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Assay 24,0-26,0 %
Density (20 °C) 1,2629-1,2848
Sodium carbonate (Na_2CO_3) ≤0,2 %
Sodium chloride (NaCl) ≤0,01 %
Iron (Fe) ≤0,0005 %

4351.1	1 l	plastic	14,95 €
Original pack 6 x 1 l			14,20/1 l
4351.2	2,5 l	plastic	23,15 €
Original pack 4 x 2,5 l			21,99/2,5 l
4351.3	10 l	plastic	50,45 €
4351.4	25 l	plastic	96,25 €

Sodium hydroxide solution 20 %

Sodium hydroxide solution 20 %

20 %, extra pure

Caustic soda lye
NaOH
M 40,01 g/mol • D ~1,22
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Assay 19,0-21,0 %
Density (20 °C) 1,208-1,231 g/cm³
Sodium carbonate (Na_2CO_3) ≤0,1 %
Sodium chloride (NaCl) ≤0,01 %
Iron (Fe) ≤0,0005 %

4357.1	1 l	plastic	14,55 €
Original pack 6 x 1 l			13,82/1 l
4357.2	2,5 l	plastic	22,50 €
Original pack 4 x 2,5 l			21,38/2,5 l
4357.3	10 l	plastic	47,20 €
4357.4	25 l	plastic	92,35 €

Sodium hydroxide solution 10 %

Sodium hydroxide solution 10 %

10 %, extra pure
Caustic soda lye
NaOH
M 40,01 g/mol
D ~1,11
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1
Danger H314-H290

Type analysis:
Assay.....9,0-11,0 %
Density (20 °C).....1,0979-1,1199 g/cm³
Sodium carbonate.....≤0,1 %
Sodium chloride.....≤0,01 %
Iron (Fe).....≤0,0005 %

4358.1	1 l	plastic	13,90 €
Original pack 6 x 1 l			13,21/1 l
4358.2	2,5 l	plastic	21,00 €
Original pack 4 x 2,5 l			19,95/2,5 l
4358.3	10 l	plastic	41,85 €
4358.4	25 l	plastic	80,10 €

Sodium hydroxide solution 5 %

Sodium hydroxide solution 5 %

5 %, extra pure
Caustic soda lye
NaOH
M 40,01 g/mol
D ~1,05
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1
Danger H290-H314

Type analysis:
Assay.....4,5-5,5 %
Density (20 °C).....1,0483-1,0593
Carbonate (CO_3).....≤0,05 %
Chloride (Cl).....≤0,001 %
Iron (Fe).....≤0,0001 %

4359.1	1 l	plastic	13,45 €
Original pack 6 x 1 l			12,78/1 l
4359.2	2,5 l	plastic	19,90 €
Original pack 4 x 2,5 l			18,91/2,5 l
4359.3	10 l	plastic	37,55 €
4359.4	25 l	plastic	70,85 €

Sodium hydroxide solution (0,01 N)

Sodium hydroxide solution

0,01 mol/l - 0,01 N volumetric standard solution
EC No. 215-185-5
WGK 1

Type analysis:
Amount-of-substance conc. (20 °C).....0,01 mol/l ±0,2 %
Titer.....0,998-1,002

N073.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l

For further information, please see page 1682

Sodium hydroxide solution (0,02 N)

Sodium hydroxide solution

NEW

0,02 mol/l - 0,02 N volumetric standard solution
WGK 1

Type analysis:
Titer.....0,998-1,002
Amount-of-substance conc. (20 °C).....0,02 mol/l ±0,2 %

0763.1	1 l	plastic	20,35 €
Original pack 6 x 1 l			19,33/1 l

Sodium hydroxide solution (0,05 N)

Sodium hydroxide solution

0,05 mol/l - 0,05 N volumetric standard solution
UN No. 1824 • ADR 8 III
Warning H290

Type analysis:
Amount-of-substance conc. (20 °C).....0,05 mol/l ±0,2 %
Titer.....0,998-1,002

0224.1	1 l	plastic	21,00 €
Original pack 6 x 1 l			19,95/1 l

For further information, please see page 1682

Sodium hydroxide solution (0,1 N)

Sodium hydroxide solution

0,1 mol/l - 0,1 N volumetric standard solution
EC No. 215-185-5
UN No. 1824 • ADR 8 III
Warning H290

Type analysis:
Amount-of-substance conc. (20 °C).....0,1 mol/l ±0,2 %
Titer.....0,998-1,002

K020.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
K020.2	5 l	plastic	59,05 €
Original pack 2 x 5 l			56,10/5 l
K020.3	5 l	ROTI®CUBE	61,20 €
Original pack 2 x 5 l			58,14/5 l
K020.4	10 l	ROTI®CUBE	91,95 €

For further information, please see page 1682

Sodium hydroxide solution (0,1 N)

Sodium hydroxide solution

0,1 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.
UN No. 1824 • ADR 8 III
Warning H290

Type analysis:
Amount-of-substance conc. (20 °C).....0,1 mol/l
Measurement uncertainty.....±0,1 %

6783.1	1 l	plastic	22,50 €
Original pack 6 x 1 l			21,38/1 l

Sodium hydroxide solution (0,1 N)

Sodium hydroxide solution

ROTI®VOLUM 0,1 mol/l - 0,1 N
Ampoule for preparation of 1000 ml volumetric solution.
NaOH
M 40,0 g/mol
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1
Danger H314-H290

Type analysis:
Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,2 %

CN56.1	1 piece	plastic ampoule	19,90 €

For further information, please see page 1683

Sodium hydroxide solution (0,2 N)

Sodium hydroxide solution

0,2 mol/l - 0,2 N volumetric standard solution
EC No. 215-185-5
UN No. 1824 • ADR 8 III • WGK 1
Warning H290-H315-H319

Type analysis:
Amount-of-substance conc. (20 °C)... 0,2 mol/l ±0,2 %
Titer.....0,998-1,002

N074.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
N074.2	5 l	ROTI®CUBE	61,20 €
Original pack 2 x 5 l			58,14/5 l
N074.3	10 l	ROTI®CUBE	91,95 €

For further information, please see page 1682

Sodium hydroxide solution (0,25 N)

Sodium hydroxide solution

0,25 mol/l - 0,25 N volumetric standard solution
UN No. 1824 • ADR 8 III • WGK 1
Warning H290-H315-H319

Type analysis:
Amount-of-substance conc. (20 °C).....0,25 mol/l ±0,2 %
Titer.....0,998-1,002

P711.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
P711.2	5 l	ROTI®CUBE	61,20 €
Original pack 2 x 5 l			58,14/5 l
P711.3	10 l	ROTI®CUBE	91,95 €

For further information, please see page 1682

Sodium hydroxide solution (0,33 N)

Sodium hydroxide solution

NEW

0,33 mol/l - 0,33 N volumteric standard solution

UN No. 1824 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

Amount-of-substance conc. (20 °C).....0,33 mol/l ±0,2 %
Titer. 0,998-1,002

0755.1	1 l	plastic	28,50 €
Original pack 6 x 1 l			27,08/1 l

Sodium hydroxide solution (0,5 N)

Sodium hydroxide solution

0,5 mol/l - 0,5 N volumetric standard solution

UN No. 1824 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

Amount-of-substance conc. (20 °C)....0,5 mol/l ±0,2 %
Titer. 0,998-1,002

P710.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
P710.2	5 l	plastic	59,05 €
Original pack 2 x 5 l			56,10/5 l
P710.3	5 l	ROTI®CUBE	61,20 €
Original pack 2 x 5 l			58,14/5 l
P710.4	10 l	ROTI®CUBE	91,95 €

For further information, please see page 1682

Sodium hydroxide solution (0,5 N)

Sodium hydroxide solution

ROTI®VOLUM 0,5 mol/l - 0,5 N

Ampoule for preparation of 1000 ml volumetric solution.
NaOH
M 40,0 g/mol
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Amount-of-substance conc. (20 °C)....0,5 mol/l ±0,2 %

CN57.1	1 piece	plastic ampoule	19,90 €

For further information, please see page 1683

Sodium hydroxide solution (1 N)

Sodium hydroxide solution

1 mol/l - 1 N volumetric standard solution

EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Amount-of-substance conc. (20 °C). .....1 mol/l ±0,2 %
Titer. 0,998-1,002

K021.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
K021.2	5 l	plastic	59,05 €
Original pack 2 x 5 l			56,10/5 l
K021.3	5 l	ROTI®CUBE	61,20 €
Original pack 2 x 5 l			58,14/5 l
K021.4	10 l	ROTI®CUBE	91,95 €

For further information, please see page 1682

Sodium hydroxide solution (1 N)

Sodium hydroxide solution

1 mol/l - 1 N volumetric standard solution, Reag. Ph.Eur.

UN No. 1824 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Amount-of-substance conc. (20 °C). .....1 mol/l
Measurement uncertainty. .....±0,1 %

6785.1	1 l	plastic	22,50 €
Original pack 6 x 1 l			21,38/1 l

Sodium hydroxide solution (1 N)

Sodium hydroxide solution

ROTI®VOLUM 1 mol/l - 1 N

Ampoule for preparation of 1000 ml volumetric solution.
NaOH
M 40,0 g/mol
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Amount-of-substance conc. (20 °C). .....1 mol/l ±0,2 %

CN58.1	1 piece	plastic ampoule	19,90 €

For further information, please see page 1683

Sodium hydroxide solution (2 N)

Sodium hydroxide solution

2 mol/l - 2 N volumetric standard solution

UN No. 1824 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Amount-of-substance conc. (20 °C)..... 2 mol/l ±0,2 %
Titer.....0,998-1,002

T135.1	1 l	plastic	20,35 €
Original pack 6 x 1 l			19,33/1 l
T135.2	5 l	plastic	66,15 €
Original pack 2 x 5 l			62,84/5 l
T135.3	5 l	ROTI®CUBE	71,50 €
Original pack 2 x 5 l			67,93/5 l

For further information, please see page 1682

Sodium hydroxide solution (4 N)

Sodium hydroxide solution

4 mol/l - 4 N, volumetric standard solution

UN No. 1824 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Amount-of-substance conc. (20 °C)..... 4 mol/l ±0,2 %
Titer.....0,998-1,002

T198.1	1 l	plastic	37,55 €
Original pack 6 x 1 l			35,67/1 l

For further information, please see page 1682

Sodium hydroxide solution (5 N)

Sodium hydroxide solution

5 mol/l - 5 N volumetric standard solution

UN No. 1824 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Amount-of-substance conc. (20 °C)..... 5 mol/l ±0,2 %
Titer.....0,998-1,002

KK71.1	1 l	plastic	29,60 €
Original pack 6 x 1 l			28,12/1 l

For further information, please see page 1682

Sodium hydroxide solution (6 N)

Sodium hydroxide solution

6 mol/l - 6 N volumetric standard solution

UN No. 1824 • ADR 8 II • WGK 1

Warning H290-H314

Type analysis:

Amount-of-substance conc. (20 °C)..... 6 mol/l ±0,2 %
Titer.....0,998-1,002

0214.1	1 l	plastic	101,60 €
Original pack 6 x 1 l			96,52/1 l

For further information, please see page 1682

Sodium hypochlorite solution

$NaClO + H_2O$
M 74,45 + aq g/mol
D 1,22
mp ~-25 °C
[7681-52-9] • EC No. 231-668-3
UN No. 1791 • ADR 8 II • WGK 2
Danger H290-H314-H400-EUH031

Sodium hypochlorite solution
12 % Cl, techn.

Type analysis:
Assay (active Cl in g/l). 150-182
Assay (active Cl in %). 12,3-14,9
Free alkali (as NaOH). ..... ≤2,0 %
Daily loss of active chlorine in g/l: 5,6 g at 35 °C; 3,2 g at 30 °C; 2,0 g at 25 °C; 1,1 g at 20 °C

9062.3	1 l	plastic	18,20 €
Original pack 6 x 1 l			17,29/1 l
9062.4	2,5 l	plastic	27,45 €
Original pack 4 x 2,5 l			26,08/2,5 l
9062.1	10 l	plastic	36,45 €
9062.2	33 kg	plastic	89,15 €

Sodium hypochlorite solution
5-10 % Cl, techn.

Type analysis:
Assay (active Cl). ..... 5-10 %

6846.1	1 l	plastic	13,45 €
Original pack 6 x 1 l			12,78/1 l
6846.2	2,5 l	plastic	18,85 €
Original pack 4 x 2,5 l			17,91/2,5 l
6846.3	10 l	plastic	28,50 €
6846.4	33 kg	plastic	54,75 €

Sodium iodate

Sodium iodate
≥99 %, p.a.
Oxidant
$NaIO_3$
M 197,89 g/mol
D ~4,28
Solubility: 81 g/l (H_2O, 20 °C)
[7681-55-2] • EC No. 231-672-5
UN No. 1479 • ADR 5.1 II • WGK 1
Danger H272-H302-H317-H334

Guarantee analysis:
Assay (iodom.). ..... ≥99,0 %
In H_2O insoluble matter. ..... ≤0,005 %
Chloride, chlorate, bromide, bromate (as Cl). ..... ≤0,02 %
Total nitrogen (N). ..... ≤0,003 %
Iodide (I). ..... ≤ 0,002 %
Sulphate (SO_4). ..... ≤0,005 %
Lead (Pb). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,02 %
Nickel (Ni). ..... ≤0,0005 %

HN17.1	50 g	plastic	41,85 €
HN17.2	100 g	plastic	73,65 €

Sodium iodide

NaI
M 149,89 g/mol
D 3,667 • bp 1304 °C
mp 661 °C
Solubility: 1790 g/l (H_2O, 20 °C)
[7681-82-5] • EC No. 231-679-3
UN No. 3077 • ADR 9 III • WGK 1
Warning H400

Sodium iodide
≥99,5 %, p.a., ACS

Guarantee analysis:
Assay (titr.). ..... ≥99,5 %
pH value (5 % in water). 6,0-9,0
Chloride and bromide (as Cl). ..... ≤0,01 %
In H_2O insoluble matter. ..... ≤0,01 %
Phosphate (PO_4). ..... ≤0,001 %
Sulphate (SO_4). ..... ≤0,005 %
Iodate (IO_3). ..... ≤0,0003 %
Barium (Ba). ..... ≤0,002 %
Calcium (Ca). ..... ≤0,002 %
Potassium (K). ..... ≤0,01 %
Iron (Fe). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %

A134.3	100 g	plastic	89,15 €
A134.1	250 g	plastic	198,90 €
A134.2	1 kg	plastic	740,70 €
Original pack 6 x 1 kg			703,67/1 kg

Sodium iodide
≥99 %, Ph.Eur.

Guarantee analysis:
Appearance. ..... colourless crystals
Assay. ..... 99,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... complies
Loss on drying (105 °C). ..... ≤3,0 %
Alkaline reacting substances. ..... complies
Iodate (IO_3). ..... complies
Sulphate (SO_4). ..... ≤0,015 %
Thiosulphate. ..... complies
Iron (Fe). ..... ≤0,002 %
Heavy metals. ..... ≤0,001 %

8783.1	250 g	plastic	69,80 €
8783.2	1 kg	plastic	224,70 €
Original pack 6 x 1 kg			213,47/1 kg
8783.3	2,5 kg	plastic	504,20 €

Sodium lauryl sulphate
▶ SDS see p. 2309
▶ Roti®fair SDS 0.5g see p. 2278
▶ Roti®fair 10% SDS see p. 2278

Sodium lignosulphonate
▶ Lignosulphonic acid sodium salt see p. 2099

Sodium metabisulphite

Sodium pyrosulphite
$Na_2S_2O_5$
M 190,11 g/mol
D 2,36
mp 150 °C (dec.)
Solubility: 650 g/l (H_2O, 20 °C)
[7681-57-4] • EC No. 231-673-0 • WGK 1
Danger H318-H302-EUH031

Sodium metabisulphite
≥97 %, p.a., ACS
Bleaching agent

Guarantee analysis:
Assay (iodom.). ..... ≥97,0 %
In H_2O insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,005 %
Phosphate (PO_4). ..... ≤0,002 %
Thiosulphate. ..... ≤0,05 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Copper (Cu). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %

P755.1	500 g	plastic	20,35 €
Original pack 6 x 500 g			19,33/500 g
P755.2	1 kg	plastic	31,10 €
Original pack 6 x 1 kg			29,55/1 kg
P755.3	2,5 kg	plastic	57,55 €
P755.4	5 kg	plastic	100,95 €
P755.5	25 kg	plastic	332,20 €

Sodium metabisulphite
≥97 %, extra pure

Type analysis:
Assay. ..... ≥97 %
Sulphur dioxide (SO_2). ..... ≥65 %

8554.1	1 kg	plastic	19,90 €
Original pack 6 x 1 kg			18,91/1 kg
8554.2	5 kg	plastic	55,80 €
8554.5	25 kg	plastic	138,70 €

Sodium meta periodate
▶ Sodium periodate see p. 2347

Sodium metaphosphate

Sodium metaphosphate
extra pure, acidic
Sodium polyposphate
$(NaPO_3)_n$
M $(101,97)_n$ g/mol
mp ~550 °C
[68915-31-1] • EC No. 272-808-3 • WGK 1

Type analysis:
P_2O_5 ..... 67,5-69,0 %
Na_2O ..... 29,0-30,5 %
pH value (1 % solution) 5,4-5,9
Water (KF) ..... ≤1,0 %
Fluoride (F) ..... ≤0,001 %
Arsenic (As) ..... ≤0,0001 %
Lead (Pb) ..... ≤0,0001 %
Iron (Fe) ..... ≤0,01 %
Cadmium (Cd) ..... ≤0,0001 %
Insoluble in water ..... ≤0,01 %

4356.1	1 kg	plastic	23,55 €
Original pack 6 x 1 kg			22,37/1 kg
4356.2	5 kg	plastic	84,40 €
4356.5	25 kg	plastic	336,40 €

Sodium metasilicate pentahydrate

Sodium metasilicate pentahydrate
pure
$Na_2SiO_3 \cdot 5\ H_2O$
M 212,16 g/mol • mp 72 °C
[10213-79-3] • EC No. 229-912-9
UN No. 3253 • ADR 8 III • WGK 1
Danger H314-H335

Type analysis:
pH value (1 % solution) ..... 12,5 ±0,5
Na_2O ..... 29,0 ±1,0 %
SiO_2 ..... 28,3 ±0,5 %
Water ..... 43 ±1,0 %

7370.2	1 kg	plastic	26,35 €
Original pack 6 x 1 kg			25,03/1 kg
7370.1	2,5 kg	plastic	36,45 €
7370.3	10 kg	plastic	99,90 €

Sodium metatungstate
▶ Sodium polytungstate hydrate see p. 2348

Sodium molybdate dihydrate
Disodium molybdate, Molybdic acid sodium salt
$Na_2MoO_4 \cdot 2\ H_2O$
M 241,95 g/mol
mp 100 °C (dec.)
Solubility: 650 g/l (H_2O, 25 °C)
[10102-40-6] • EC No. 231-551-7 • WGK 1

Sodium molybdate dihydrate
≥99,5 %, p.a.
Reagent for alkaloids and for biochemical purposes.

Guarantee analysis:
Assay (based on Mo) ..... ≥99,5 %
Assay (Mo) ..... ≥39,5 %
In H_2O insoluble matter ..... ≤0,005 %
Chloride (Cl) ..... ≤0,005 %
Sulphate (SO_4) ..... ≤0,01 %
Ammonium (NH_4) ..... ≤0,005 %
Al (Aluminium) ..... ≤0,001 %
Ca (Calcium) ..... ≤0,001 %
Cu (Copper) ..... ≤0,001 %
Cr (Chrom) ..... ≤0,001 %
Fe (Iron) ..... ≤0,001 %
Mg (Magnesium) ..... ≤0,001 %
Mn (Manganese) ..... ≤0,001 %
Ni (Nickel) ..... ≤0,001 %
Pb (Lead) ..... ≤0,001 %
Phosphorus (P) ..... ≤0,001 %
Silicon (Si) ..... ≤0,001 %
Ti (Titanium) ..... ≤0,001 %
V (Vanadium) ..... ≤0,001 %
Zn (Zinc) ..... ≤0,001 %

0274.1	50 g	plastic	18,85 €
0274.2	100 g	plastic	27,45 €
0274.3	250 g	plastic	49,35 €
0274.4	1 kg	plastic	177,40 €
Original pack 6 x 1 kg			168,53/1 kg

Sodium molybdate dihydrate NEW
≥99 %, pure

Type analysis:
Assay (based on Mo) ..... ≥99,0 %
Assay (Mo) ..... ≥39,3 %
In H_2O insoluble matter ..... ≤0,05 %
Chloride (Cl) ..... ≤0,05 %
Phosphate (PO_4) ..... ≤0,05 %
Sulphate (SO_4) ..... ≤0,1 %
Fe (Iron) ..... ≤0,01 %
Pb (Lead) ..... ≤0,01 %

0845.1	100 g	plastic	20,35 €
0845.2	250 g	plastic	38,60 €
0845.3	500 g	plastic	69,80 €
Original pack 6 x 500 g			66,31/500 g
0845.4	1 kg	plastic	126,75 €
Original pack 6 x 1 kg			120,41/1 kg

Sodium monohydrogen phosphate
▶ di-Sodium hydrogen phosphate see p. 2339
▶ di-Sodium hydrogen phosphate dihydrate see p. 2339
▶ di-Sodium hydrogen phosphate heptahydrate see p. 2340
▶ di-Sodium hydrogen phosphate dodecahydrate see p. 2340

tri-Sodium monovanadate

tri-Sodium monovanadate
≥99 %, pure
Sodium orthovanadate, Sodium vanadium oxide, Sodium vanadate(V)
Na_3VO_4
M 183,91 g/mol • D 2,72
[13721-39-6] • EC No. 237-287-9 • WGK 2
Warning H302+H312+H332-H412

Type analysis:
Appearance ..... off-white to slightly yellow powder
Assay ..... ≥99,0 %
Chloride (Cl) ..... ≤0,01%
Iron (Fe) ..... ≤0,05 %
Silicon (Si) ..... ≤0,05 %
Heavy metals ..... ≤0,5 %

0735.1	10 g	plastic	33,25 €
0735.2	50 g	plastic	89,15 €
0735.3	100 g	plastic	144,60 €

Sodium nitrate
Chile saltpeter
$NaNO_3$
M 84,99 g/mol
D 2,26
mp 308 °C
Solubility: 874 g/l (H_2O, 20 °C)
[7631-99-4] • EC No. 231-554-3
UN No. 1498 • ADR 5.1 III • WGK 1
Warning H272-H319

Sodium nitrate
ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis) ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5742.1	25 g	plastic	177,40 €

Sodium nitrate
≥99 %, p.a., ACS, ISO
Oxidizing dissolving agent

Guarantee analysis:
Assay (acidim.) ..... ≥99,0 %
In H_2O insoluble matter ..... ≤0,005 %
pH value (5 % in water) 5,5-8,0
Iodate (IO_3) ..... ≤0,0005 %
Nitrite (NO_2) ..... ≤0,001 %
Chloride (Cl) ..... ≤0,001 %
Sulphate (SO_4) ..... ≤0,003 %
Phosphate (PO_4) ..... ≤0,0005 %
Calcium (Ca) ..... ≤0,005 %
Potassium (K) ..... ≤0,005 %
Ammonium (NH_4) ..... ≤0,002 %
Heavy metals ..... ≤0,0005 %
Iron (Fe) ..... ≤0,0002 %
Arsenic (As) ..... ≤0,00004 %
Cadmium (Cd) ..... ≤0,0002 %
Cobalt (Co) ..... ≤0,0002 %
Copper (Cu) ..... ≤0,0002 %
Magnesium (Mg) ..... ≤0,001 %
Lead (Pb) ..... ≤0,0005 %
Zinc (Zn) ..... ≤0,0005 %

A136.1	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
A136.2	1 kg	plastic	47,20 €
Original pack 6 x 1 kg			44,84/1 kg
A136.3	2,5 kg	plastic	103,75 €

Sodium nitrate

≥99 % cryst.

Type analysis:

Assay ..... ≥99 %
In H_2O insoluble matter. ..... ≤0,005 %
Water . ..... ≤0,2 %
Sodium nitrite ($NaNO_2$). ..... ≤0,005 %
Sodium carbonate (Na_2CO_3). ..... ≤0,04 %
Sodium chloride (NaCl). ..... ≤0,025 %
Sodium sulphate (Na_2SO_4). ..... ≤0,03 %
Product with anticaking agent.

8601.2	1 kg	plastic	17,75 €
Original pack 6 x 1 kg			16,86/1 kg
8601.1	2,5 kg	plastic	31,75 €
8601.5	25 kg	plastic	170,95 €

Sodium nitrilotriacetate tribasic monohydrate

▶ Nitrilotriacetic acid trisodium salt monohydrate see p. 2162

Sodium nitrite

$NaNO_2$
M 69,00 g/mol
D 2,17 • bp 320°C (dec.)
mp 271 °C
Solubility: 820 g/l (H_2O, 20 °C)
[7632-00-0] • EC No. 231-555-9
UN No. 1500 • ADR 5.1 (6.1) III • WGK 3

Danger H272-H301-H400

Sodium nitrite

≥98 %, p.a., ACS
Reagent for diazotisation

Guarantee analysis:

Assay (perm.). ..... ≥98,0 %
In H_2O insoluble matter. ..... ≤0,003 %
Chloride (Cl). ..... ≤0,002 %
Sulphate (SO_4). ..... ≤0,005 %
Heavy metals (as Pb) ..... ≤0,001 %
Aluminium (Al). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,00004 %
Barium (Ba). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Calcium (Ca) ..... ≤0,0025 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,005 %
Cobalt (Co). ..... ≤0,0005 %
Magnesium (Mg) ..... ≤0,0025 %
Manganese (Mn). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,001 %
Zinc (Zn). ..... ≤0,001 %

4411.1	100 g	plastic	12,40 €
4411.2	500 g	plastic	27,45 €
Original pack 6 x 500 g			26,08/500 g
4411.3	1 kg	plastic	42,90 €
Original pack 6 x 1 kg			40,76/1 kg
4411.4	2,5 kg	plastic	89,15 €

Sodium nitrite

≥99 %, cryst.

Type analysis:

Assay (titr.). ..... ≥99,0 %
Water . ..... ≤0,2 %
Sodium carbonate (Na_2CO_3). ..... ≤0,06 %
Sodium chloride (NaCl). ..... ≤0,03 %
Sodium sulphate (Na_2SO_4). ..... ≤0,03 %
Water insoluble residue . ..... ≤0,005 %
Product with anticaking agent.

8604.1	1 kg	plastic	14,95 €
Original pack 6 x 1 kg			14,20/1 kg
8604.2	5 kg	plastic	47,85 €
8604.5	25 kg	plastic	160,20 €

Sodium nitroprusside dihydrate

Sodium nitroprusside dihydrate

≥99 %, p.a., ACS
Reagent for Zn, SO_2, aldehydes
Disodium pentacyanonitrosylferrate(III) dihydrate, Nitroprusside sodium, Sodiumnitrosopentacyanoferrate(III)
$Na_2[Fe(CN)_5NO] \cdot 2\ H_2O$
M 297,95 g/mol
D 1,71
Solubility: 400 g/l (H_2O, 20 °C)
[13755-38-9] • EC No. 238-373-9
UN No. 1588 • ADR 6.1 III • WGK 1

Danger H301

Guarantee analysis:

Assay (arg.). ..... ≥99,0 %
In H_2O insoluble matter. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,01 %
Hexacyanoferrate(II) ..... ≤0,02 %
Hexacyanoferrate(III) ..... ≤0,02 %

HN34.1	25 g	plastic	28,50 €
HN34.2	100 g	plastic	75,15 €
HN34.3	500 g	plastic	292,95 €
Original pack 6 x 500 g			278,30/500 g

Sodiumnitrosopentacyano-ferrate(III)

▶ Sodium nitroprusside dihydrate see p. 2346

Sodium nucleinate

▶ Ribonucleic acid sodium salt see p. 2260

Sodium-1octane sulphonate

▶ Octane-1-sulphonic acid sodium salt see p. 2171

Sodium oleate

▶ Oleic acid sodium salt see p. 2184

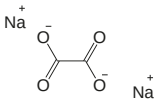
di-Sodium orthophosphate

▶ di-Sodium hydrogen phosphate see p. 2339
▶ di-Sodium hydrogen phosphate dihydrate see p. 2339
▶ di-Sodium hydrogen phosphate heptahydrate see p. 2340
▶ di-Sodium hydrogen phosphate dodecahydrate see p. 2340

Sodium orthovanadate

▶ tri-Sodium monovanadate see p. 2345

di-Sodium oxalate



Oxalic acid di-sodium salt
$C_2Na_2O_4$
M 134,00 g/mol
D 2,27
mp 250-270 °C (dec.)
Solubility: ~37 g/l (H_2O, 20 °C)
[62-76-0] • EC No. 200-550-3 • WGK 1

Warning H302+H312

di-Sodium oxalate

≥99,5 %, p.a., ACS
For manganometric and acidimetric analysis.

Guarantee analysis:

Assay (perm.) ..... ≥99,5 %
In H_2O insoluble matter. ..... ≤0,005 %
Loss on drying (105 °C). ..... ≤0,01 %
Dark coloured substance with H_2SO_4. ..... complies
Neutrality ..... complies
Chloride (Cl) ..... ≤0,002 %
Phosphate (PO_4) ..... ≤0,005 %
Sulphate (SO_4) ..... ≤0,002 %
Ammonium (NH_4) ..... ≤0,002 %
Heavy metals (as Pb). ..... ≤0,002 %
Copper (Cu). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %

HN39.1	100 g	plastic	26,35 €
HN39.2	250 g	plastic	51,50 €
HN39.3	500 g	plastic	89,15 €
Original pack 6 x 500 g			84,69/500 g

di-Sodium oxalate

≥99 %

Type analysis:

Appearance. ..... white powder
Assay. ..... ≥99,0 %
Identity. ..... complies
Chloride (Cl) ..... ≤0,03 %
Sulphate (SO_4) ..... ≤0,01 %
Iron (Fe). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,01 %

4267.3	500 g	plastic	23,15 €
Original pack 6 x 500 g			21,99/500 g
4267.1	1 kg	plastic	34,30 €
Original pack 6 x 1 kg			32,59/1 kg
4267.4	2,5 kg	plastic	69,35 €
4267.2	10 kg	plastic	256,95 €

Sodium-1-pentane sulphonate

▶ Pentane-1-sulphonic acid sodium salt see p. 2196

Sodium periodate

Sodium meta periodate
$NaIO_4$
M 213,89 g/mol
D 3,87 • mp 300 °C (dec.)
Solubility: 144 g/l (H_2O, 25 °C)
[7790-28-5] • EC No. 232-197-6
UN No. 3085 • ADR 5.1 I • WGK 3
Danger
H271-H314-H372-H410

Sodium periodate

≥99,8 %, p.a., ACS

Guarantee analysis:

Assay (dry substance)	99,8-100,3 %
pH value	4,0-5,0
Solubility	complies
Other halogens (as Cl)	≤0,02 %
Manganese (Mn)	≤0,0003 %
Loss on drying	≤0,5 %

2603.1	50 g	plastic	42,90 €
2603.2	250 g	plastic	150,00 €
2603.3	500 g	plastic	267,70 €
Original pack 6 x 500 g			254,32/500 g

Sodium periodate

≥99 %, extra pure

Type analysis:

Assay	≥99 %
Chloride (Cl)	≤0,05 %
Iodide (I)	≤0,005 %
Sulphate (SO_4)	≤0,05 %
Lead (Pb)	≤0,005 %
Iron (Fe)	≤0,005 %
pH value (5 %)	3,0-4,5

0294.1	100 g	plastic	44,65 €
0294.2	500 g	plastic	133,20 €
Original pack 6 x 500 g			126,54/500 g
0294.3	1 kg	plastic	221,35 €
Original pack 6 x 1 kg			210,28/1 kg

Sodium peroxide

Sodium peroxide

≥95 %, p.a., ACS, granulated
Powerful oxidising agent, decomposition reagent for organic and inorganic samples.
Na_2O_2
M 77,98 g/mol
D 2,80 • mp 460 °C
Solubility: 100 g/l (H_2O, 20 °C)
[1313-60-6] • EC No. 215-209-4
UN No. 1504 • ADR 5.1 I • WGK 1
Danger H271-H314

Guarantee analysis:

Assay (perm.)	≥95,0 %
Chloride (Cl)	≤0,002 %
Phosphate (PO_4)	≤0,0005 %
Sulphate (SO_4)	≤0,001 %
Total nitrogen (N)	≤0,003 %
Lead (Pb)	≤0,001 %
Cadmium (Cd)	≤0,001 %
Iron (Fe)	≤0,002 %
Cobalt (Co)	≤0,001 %
Zinc (Zn)	≤0,001 %
Heavy metals (as Pb)	≤0,002 %

4412.1	100 g	plastic	60,10 €
4412.2	250 g	plastic	136,00 €
4412.3	500 g	plastic	244,60 €
Original pack 6 x 500 g			232,37/500 g

Sodium peroxodisulphate

▶ Sodium persulphate see p. 2347

Sodium persulphate

Sodium persulphate

≥99 %
Sodium peroxodisulphate
$Na_2S_2O_8$
M 238,10 g/mol
D 1,2
mp >148 °C
Solubility: 545 g/l (H_2O, 20 °C)
[7775-27-1] • EC No. 231-892-1
UN No. 1505 • ADR 5.1 III • WGK 1
Danger
H272-H334-H302-H335-H315-H319-H317

Type analysis:

Appearance	white cryst. powder
Assay (persulphate)	≥99,0 %
Active oxygen	≥6,5 %

4365.2	500 g	plastic	19,90 €
Original pack 6 x 500 g			18,91/500 g
4365.1	1 kg	plastic	29,60 €
Original pack 6 x 1 kg			28,12/1 kg
4365.3	2,5 kg	plastic	52,60 €

Sodium phenylpyruvate

▶ Phenylpyruvic acid sodium salt see p. 2208

Sodium phosphate, monobasic

▶ Sodium dihydrogen phosphate see p.
▶ Sodium dihydrogen phosphate monohydrate see p. 2336
▶ Sodium dihydrogen phosphate dihydrate see p. 2337

sec. Sodium phosphate

▶ di-Sodium hydrogen phosphate see p. 2339
▶ di-Sodium hydrogen phosphate dihydrate see p. 2339
▶ di-Sodium hydrogen phosphate heptahydrate see p. 2340
▶ di-Sodium hydrogen phosphate dodecahydrate see p. 2340

tert. Sodium phosphate

▶ tri-Sodium phosphate dodecahydrate see p. 2347

Sodium phosphate, dibasic

▶ di-Sodium hydrogen phosphate see p. 2339
▶ di-Sodium hydrogen phosphate dihydrate see p. 2339
▶ di-Sodium hydrogen phosphate heptahydrate see p. 2340
▶ di-Sodium hydrogen phosphate dodecahydrate see p. 2340

tri-Sodium phosphate dodecahydrate

Sodium phosphate, tribasic; Trisodium phosphate
$Na_3PO_4 \cdot 12\ H_2O$
M 380,12 g/mol
D 1,62
mp 60 °C
Solubility: 285 g/l (H_2O, 20 °C)
[10101-89-0] • EC No. 231-509-8 • WGK 1
Warning H315-H319-H335

tri-Sodium phosphate dodecahydrate

≥98 %, p.a., ACS

Guarantee analysis:

Assay (acidim.)	98,0-102,0 %
In H_2O insoluble matter	≤0,01 %
Free alkali (as NaOH)	≤2,5 %
Total nitrogen (as N)	≤0,001 %
Chloride (Cl)	≤0,001 %
Sulphate (SO_4)	≤0,01 %
Heavy metals (as Pb)	≤0,001 %
Arsenic (As)	≤0,0005 %
Lead (Pb)	≤0,0005 %
Cadmium (Cd)	≤0,0005 %
Calcium (Ca)	≤0,005 %
Iron (Fe)	≤0,0005 %
Cobalt (Co)	≤0,0005 %
Copper (Cu)	≤0,0005 %
Magnesium (Mg)	≤0,0005 %
Manganese (Mn)	≤0,0005 %
Nickel (Ni)	≤0,0005 %
Zinc (Zn)	≤0,0005 %

T107.2	500 g	plastic	24,20 €
Original pack 6 x 500 g			22,99/500 g
T107.1	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg
T107.3	2,5 kg	plastic	87,00 €
T107.7	25 kg	plastic	665,45 €

tri-Sodium phosphate dodecahydrate

pure

Type analysis:

P_2O_5	18,5-19,5 %
Na_2O	26-27 %
pH value (1 %)	11,8-12,2
Loss on ignition	<56,5 %

8613.3	1 kg	plastic	21,40 €
Original pack 6 x 1 kg			20,33/1 kg
8613.1	2,5 kg	plastic	45,70 €
8613.2	10 kg	plastic	117,20 €

Sodium phosphate powder (pouch)

▶ Roti®fair 1M Na-Phosphate 6.5 see p. 2276
▶ Roti®fair 1M Na-Phosphate 7.2 see p. 2276
▶ Roti®fair 0.02M Na-Phosphate 7.0 see p. 2276

Sodium phosphate, tribasic

▶ tri-Sodium phosphate dodecahydrate see p. 2347

Sodium polyphosphate

▶ Sodium metaphosphate see p. 2345

Sodium polytungstate hydrate

Sodium polytungstate hydrate

≥99,9 %

For the preparation of heavy liquid.
Sodium metatungstate
$3\ Na_2WO_4 \cdot 9\ WO_3 \cdot H_2O$
M 2986,01 g/mol
D 5,47
Solubility: >1000 g/l (H_2O, 20 °C)
[12141-67-2] • EC No. 412-770-9
WGK 2

Danger H302-H318-H412

Type analysis:

Assay.....≥99,9 %
Assay (WO_3).....≥85 %
Tubidity (density 2,80 g/ml).....<10 NTU
Max. attainable density (25 °C).....<3,1 g/ml

8828.1	50 g	plastic	48,30 €
8828.2	250 g	plastic	177,40 €
8828.3	1 kg	plastic	633,20 €
Original pack 6 x 1 kg			601,54/1 kg

For further information, please see page 1715

Sodium polytungstate solution

Sodium polytungstate solution

3,00 g/cm³

Heavy liquid for separation of minerals.
WGK 2

Danger H302-H318-H412

Type analysis:

Density (20 °C).....3,00 ±0,02 g/cm³
Tubidity (density 3,00 g/ml).....<10 NTU
pH-value (density 3,00 g/ml).....2,5-3,5

0741.1	100 ml	plastic	221,35 €
0741.2	500 ml	plastic	880,45 €

Sodium-1-propane sulphonate

▶ Propane-1-sulphonic acid sodium salt see p. 2239

tetra- Sodium pyrophosphate

▶ tetra-Sodium diphosphate decahydrate see p. 2337

Sodium pyrosulphite

▶ Sodium metabisulphite see p. 2344

Sodium pyruvate

▶ Pyruvic acid sodium salt see p. 2247

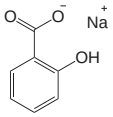
Sodium pyruvate solution

▶ Roti®-CELL Pyruvate solution see p. 2270

Sodium rhodanide

▶ Sodium thiocyanate see p. 2350

Sodium salicylate



Salicylic acid sodium salt
$C_7H_5NaO_3$ • M 160,11 g/mol
D 0,56 • mp 213 °C
Solubility: 1000 g/l (H_2O, 20 °C)
[54-21-7] • EC No. 200-198-0 • WGK 1

Warning H302-H319

Sodium salicylate

≥99 %, p.a.

Preservative; for determination of glucose at urine.

Guarantee analysis:

Assay.....≥99,0 %
Identity.....complies
Appearance of solution (10 %, H_2O).....complies
Loss on drying (105 °C).....≤0,5 %
Heavy metals (as Pb).....≤0,002 %
Chloride (Cl).....≤0,02 %
Sulphate (SO_4).....≤0,06 %
Calcium (Ca).....≤0,005 %
Copper (Cu).....≤0,0005 %
Iron (Fe).....≤0,001 %
Potassium (K).....≤0,005 %
Magnesium (Mg).....≤0,001 %
Manganese (Mn).....≤0,0005 %
Nickel (Ni).....≤0,001 %
Lead (Pb).....≤0,0005 %

CP39.1	250 g	plastic	27,45 €
CP39.2	1 kg	plastic	82,25 €
Original pack 6 x 1 kg			78,14/1 kg

Sodium salicylate

≥98 %, extra pure

Type analysis:

Assay (dry substance).....≥98 %
Chloride (Cl).....≤0,05 %
Sulphate (SO_4).....≤0,1 %
Heavy metals.....≤0,005 %
Loss on drying.....≤0,5 %

0140.1	500 g	plastic	27,85 €
Original pack 6 x 500 g			26,46/500 g
0140.2	1 kg	plastic	44,00 €
Original pack 6 x 1 kg			41,80/1 kg
0140.3	2,5 kg	plastic	89,15 €

Sodium silicate

Sodium silicate

extra pure

Liquid glass, Water glass
D 1,37
[1344-09-8] • EC No. 215-687-4 • WGK 1

Type analysis:

Na_2O.....7,80-8,50 %
SiO_2.....25,80-28,50 %
Density.....1,34-1,38
Viscosity.....50-260 mPa s

7561.1	1 l	plastic	14,95 €
Original pack 6 x 1 l			14,20/1 l
7561.3	2,5 l	plastic	23,15 €
Original pack 4 x 2,5 l			21,99/2,5 l
7561.2	5 l	plastic	35,40 €
Original pack 2 x 5 l			33,63/5 l
7561.4	10 l	plastic	66,55 €
7561.5	25 l	plastic	131,70 €

Sodium stearate

▶ Stearic acid sodium salt see p. 2381

Sodium succinate

▶ Succinic acid disodium salt hexahydrate see p. 2384

Sodium sulphate

Na_2SO_4
M 142,04 g/mol
D 2,7
mp 888 °C
Solubility: 170 g/l (H_2O, 20 °C)
[7757-82-6] • EC No. 231-820-9
WGK 1

Sodium sulphate

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis).....99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5076.1	10 g	plastic	79,05 €
5076.2	25 g	plastic	162,90 €

Sodium sulphate

≥99 %, p.a., ACS, ISO, powdered, anhydrous

Drying agent for solvents.

Guarantee analysis:

Assay.....≥99,0 %
In H_2O insoluble matter.....≤0,01 %
pH value (5 %, water).....5,2-8,0
Chloride (Cl).....≤0,001 %
Phosphate (PO_4).....≤0,001 %
Total nitrogen (as N).....≤0,0005 %
Heavy metals (as Pb).....≤0,0005 %
Arsenic (As).....≤0,0001 %
Iron (Fe).....≤0,0005 %
Potassium (K).....≤0,002 %
Calcium (Ca).....≤0,005 %
Magnesium (Mg).....≤0,001 %
Loss on ignition (800 °C).....≤0,5 %

8560.3	500 g	plastic	25,70 €
Original pack 6 x 500 g			24,42/500 g
8560.1	1 kg	plastic	36,05 €
Original pack 6 x 1 kg			34,25/1 kg
8560.2	5 kg	plastic	147,85 €
8560.5	25 kg	plastic	525,70 €

Sodium sulphate

≥99 %, p.a., ACS, granules, anhydrous

For molecular biology, drying agent.

Guarantee analysis:

Assay ≥99,0 %
In H_2O insoluble matter. ≤0,01 %
pH value (5 % in H_2O) 5,2-8,0
Chloride (Cl) ≤0,001 %
Phosphate (PO_4) ≤0,001 %
Total nitrogen (N) ≤0,0005 %
Heavy metals (as Pb) ≤0,0005 %
Arsenic (As) ≤0,0001 %
Iron (Fe) ≤0,0005 %
Potassium (K) ≤0,01 %
Calcium (Ca) ≤0,002 %
Magnesium (Mg) ≤0,0025 %
Loss on ignition (800 °C) ≤0,5 %
Particle size ~0,1-0,4 mm

0966.1	500 g	plastic	21,40 €
Original pack 6 x 500 g			20,33/500 g
0966.2	1 kg	plastic	31,10 €
Original pack 6 x 1 kg			29,55/1 kg
0966.3	5 kg	plastic	127,95 €

Sodium sulphate

≥98,5 %, Ph.Eur., anhydrous

Guarantee analysis:

Appearance white cryst. powder
Assay (dry substance) 98,5-101,0 %
Identity complies
Appearance of solution complies
Loss on drying (130 °C) ≤0,5 %
Acid or alkaline react. substances complies
Chloride (Cl) ≤0,045 %
Heavy metals (as Pb) ≤0,0045 %

P032.1	500 g	plastic	14,55 €
Original pack 6 x 500 g			13,82/500 g
P032.2	1 kg	plastic	21,00 €
Original pack 6 x 1 kg			19,95/1 kg
P032.3	5 kg	plastic	89,15 €
P032.5	25 kg	plastic	246,20 €

Sodium sulphate

≥99 %, anhydrous

Type analysis:

Assay ≥99 %
pH value (10 % in H_2O) 4,0-6,0
Iron (Fe) ≤0,002 %
Water ≤0,1 %

8631.2	1 kg	plastic	15,60 €
Original pack 6 x 1 kg			14,82/1 kg
8631.1	2,5 kg	plastic	33,25 €
8631.5	25 kg	plastic	106,35 €

Sodium sulphate decahydrate

$Na_2SO_4 \cdot 10\ H_2O$
M 322,19 g/mol • D 1,46 • mp 32,4 °C
Solubility: ~420 g/l (H_2O, 20 °C)
[7727-73-3] • EC No. 231-820-9 • WGK 1

Sodium sulphate decahydrate

≥99 %, p.a., ACS

For freezing mixtures.

Guarantee analysis:

Assay ≥99,0 %
pH value (5 % in H_2O) 5,2-9,2
In H_2O insoluble matter. ≤0,01 %
Chloride (Cl) ≤0,0005 %
Phosphate (PO_4) ≤0,0005 %
Arsenic (As) ≤0,0001 %
Lead (Pb) ≤0,0003 %
Cadmium (Cd) ≤0,0005 %
Calcium (Ca) ≤0,005 %
Chromium (Cr) ≤0,0005 %
Iron (Fe) ≤0,0005 %
Potassium (K) ≤0,005 %
Cobalt (Co) ≤0,0005 %
Copper (Cu) ≤0,0005 %
Lithium (Li) ≤0,002 %
Magnesium (Mg) ≤0,003 %
Manganese (Mn) ≤0,0005 %
Nickel (Ni) ≤0,0005 %
Heavy metals (as Pb) ≤0,0003 %
Zinc (Zn) ≤0,0005 %

T108.2	500 g	plastic	18,85 €
Original pack 6 x 500 g			17,91/500 g
T108.1	1 kg	plastic	28,50 €
Original pack 6 x 1 kg			27,08/1 kg
T108.3	2,5 kg	plastic	57,95 €

Sodium sulphate decahydrate

≥98,5 %, Ph.Eur.

Guarantee analysis:

Appearance colourless crystals
Assay (dry substance) 98,5-101,0 %
Identity complies
Appearance of solution complies
Acidity/alkalinity complies
Chloride (Cl) ≤0,02 %
Heavy metals (as Pb) ≤0,002 %
Loss on drying (130 °C) 52,0-57,0 %

X892.1	500 g	plastic	17,75 €
Original pack 6 x 500 g			16,86/500 g
X892.2	1 kg	plastic	27,85 €
Original pack 6 x 1 kg			26,46/1 kg
X892.3	2,5 kg	plastic	57,55 €

Sodium sulphide hydrate

Sodium sulphide hydrate

60 %, in flakes

$Na_2S \cdot x\ H_2O$
M 78,04 + x H_2O g/mol • mp 90 °C
[27610-45-3] • EC No. 215-211-5
UN No. 1849 • ADR 8 II • WGK 2

Danger H290-H301+H311-H314-H400-EUH031-EUH071

Type analysis:

Assay >60 %

8634.1	1 kg	plastic	20,35 €
Original pack 6 x 1 kg			19,33/1 kg
8634.2	5 kg	plastic	42,90 €

Sodium sulphite

Na_2SO_3
M 126,04 g/mol
D 2,63
mp >500 °C
Solubility: 220 g/l (H_2O, 20 °C)
[7757-83-7] • EC No. 231-821-4
WGK 1

Sodium sulphite

≥98 %, p.a., ACS, anhydrous

For removal of chlorine and dissolution of cellulose, reagent for detection of iodate in the presence of chlorate and bromate, for absorption of NO_x in gas analysis.

Guarantee analysis:

Assay (iodom.) ≥98,0 %
In H_2O insoluble matter. ≤0,005 %
Acidity complies
Alkalinity 0,03 meq/g
Thiosulphate complies
Chloride (Cl) ≤0,01 %
Arsenic (As) ≤0,0001 %
Lead (Pb) ≤0,001 %
Calcium (Ca) ≤0,013 %
Iron (Fe) ≤0,001 %
Potassium (K) ≤0,05 %
Copper (Cu) ≤0,001 %
Magnesium (Mg) ≤0,013 %
Nickel (Ni) ≤0,001 %
Heavy metals (as Pb) ≤0,001 %

P033.1	500 g	plastic	19,25 €
Original pack 6 x 500 g			18,29/500 g
P033.2	1 kg	plastic	28,95 €
Original pack 6 x 1 kg			27,50/1 kg
P033.3	2,5 kg	plastic	51,50 €

Sodium sulphite

≥98 %, anhydrous

Photographic quality

Type analysis:

Assay Na_2SO_3 ≥98 %
pH value (50 g/l) 9,0-10,6
Iron (Fe) ≤0,001 %
Heavy metals (as Pb) ≤0,001 %

8637.1	1 kg	plastic	22,05 €
Original pack 6 x 1 kg			20,95/1 kg
8637.3	5 kg	plastic	56,90 €
8637.2	10 kg	plastic	102,70 €
8637.4	25 kg	plastic	192,45 €

di-Sodium tartrate dihydrate

Tartaric acid disodium salt
$C_4H_4Na_2O_6 \cdot 2\ H_2O$
M 230,08 g/mol
D ~1,81
Solubility: 290 g/l (H_2O, 20 °C)
[6106-24-7] • EC No. 212-773-3 • WGK 1

di-Sodium tartrate dihydrate

≥99 %, p.a.

Guarantee analysis:

Assay (perchloric acidim.) ..... 99,0-101,0 %
pH value (5 % in H_2O) 7,0-9,0
In H_2O insoluble matter ..... ≤0,005 %
Chloride (Cl) ..... ≤0,0005 %
Phosphate (PO_4) ..... ≤0,0005 %
Sulphate (SO_4) ..... ≤0,002 %
Ammonium (NH_4) ..... ≤0,003 %
Heavy metals (as Pb) ..... ≤0,0005 %
Arsenic (As) ..... ≤0,00005 %
Lead (Pb) ..... ≤0,0005 %
Calcium (Ca) ..... ≤0,005 %
Iron (Fe) ..... ≤0,0005 %
Potassium (K) ..... ≤0,002 %
Copper (Cu) ..... ≤0,0005 %
Nickel (Ni) ..... ≤0,0005 %

T110.1	500 g	plastic	54,30 €
Original pack 6 x 500 g			51,59/500 g
T110.2	1 kg	plastic	96,25 €
Original pack 6 x 1 kg			91,44/1 kg
T110.3	2,5 kg	plastic	221,35 €
T110.5	25 kg	plastic	1858,70 €

di-Sodium tartrate dihydrate

≥99 %, extra pure

Type analysis:

Appearance ..... white to off-white crystals
Assay (titr.) ..... ≥98,0 %
Chloride (Cl) ..... ≤0,01 %
Sulphate (SO_4) ..... ≤0,01 %
Heavy metals (as Pb) ..... ≤0,001 %
Iron (Fe) ..... ≤0,01 %
Calcium (Ca) ..... ≤0,1 %
Potassium (K) ..... ≤0,1 %

0254.1	500 g	plastic	33,25 €
Original pack 6 x 500 g			31,59/500 g
0254.2	1 kg	plastic	57,55 €
Original pack 6 x 1 kg			54,67/1 kg
0254.3	5 kg	plastic	244,60 €

di-Sodium tetraborate

di-Sodium tetraborate

≥99 %, extra pure, anhydrous

For qualitative analysis, decomposition reagent in organic and inorganic chemistry.

Borax
$Na_2B_4O_7$
M 201,22 g/mol
D 2,37 • bp 1575 °C (dec.)
mp 741 °C
Solubility: 25 g/l (H_2O, 20 °C)
[1330-43-4] • EC No. 215-540-4 • WGK 1

Danger H360FD

Type analysis:

Assay (acidim.) ..... ≥99,0 %
Water content ..... ≤1,0 %
Sulphate (SO_4) ..... ≤0,015 %
Iron (Fe) ..... ≤0,004 %

4403.1	250 g	plastic	13,45 €
4403.2	500 g	plastic	18,20 €
Original pack 6 x 500 g			17,29/500 g
4403.3	1 kg	plastic	28,95 €
Original pack 6 x 1 kg			27,50/1 kg
4403.4	2,5 kg	plastic	54,75 €

di-Sodium tetraborate decahydrate

Borax
$Na_2B_4O_7 \cdot 10\ H_2O$
M 381,37 g/mol
D 1,72
mp 75 °C
Solubility: 51,5 g/l (H_2O, 20 °C)
[1303-96-4] • EC No. 215-540-4 • WGK 1

Danger H360FD

di-Sodium tetraborate decahydrate

≥99,5 %, p.a., ACS, ISO

For qualitative analysis. Decomposition agent.

Guarantee analysis

Assay (acidim.) ..... ≥99,5 %
pH value (0,01 mol/l sol.) 9,15-9,20
In H_2O insoluble matter ..... ≤0,005 %
Chloride (Cl) ..... ≤0,001 %
Phosphate (PO_4) ..... ≤0,001 %
Sulphate (SO_4) ..... ≤0,005 %
Heavy metals (as Pb) ..... ≤0,001 %
Calcium (Ca) ..... ≤0,005 %
Lead (Pb) ..... ≤0,001 %
Iron (Fe) ..... ≤0,0005 %
Copper (Cu) ..... ≤0,0005 %

T880.1	500 g	plastic	32,15 €
Original pack 6 x 500 g			30,54/500 g
T880.2	1 kg	plastic	48,30 €
Original pack 6 x 1 kg			45,89/1 kg
T880.3	2,5 kg	plastic	94,10 €

di-Sodium tetraborate decahydrate

≥99 %, Ph.Eur., BP, NF

Guarantee analysis:

Assay (acidim.) ..... 99,0-103,0 %
Identity ..... complies
Appearance of solution ..... complies
pH value (4 % in H_2O) 9,0-9,6
Sulphate (SO_4) ..... ≤0,005 %
Ammonium (NH_4) ..... ≤0,001 %
Carbonate, bicarbonate ..... complies
Heavy metals (as Pb) ..... ≤0,002 %
Arsenic (As) ..... ≤0,0005 %
Calcium (Ca) ..... ≤0,01 %
Volatile organic impurities ..... complies

CN07.1	500 g	plastic	18,20 €
Original pack 6 x 500 g			17,29/500 g
CN07.2	1 kg	plastic	26,35 €
Original pack 6 x 1 kg			25,03/1 kg
CN07.3	2,5 kg	plastic	56,90 €

di-Sodium tetraborate decahydrate

≥99 %, powdered

Type analysis:

Assay ..... ≥99 %
Sulphate (SO_4) ..... ≤0,015 %
Chloride (Cl) ..... ≤0,01 %
Iron (Fe) ..... ≤0,0015 %

8643.1	1 kg	plastic	18,20 €
Original pack 6 x 1 kg			17,29/1 kg
8643.2	5 kg	plastic	59,05 €
8643.5	25 kg	plastic	239,20 €

Sodium tetrahydroborate

▶ Sodium borohydride see p. 2332

Sodium tetraphenyl borate

Sodium tetraphenyl borate

≥99,5 %, p.a., ACS

Reagent for K, Pb, Cs, NH_4 and Alkaloids.
Tetraphenylboron sodium
$C_{24}H_{20}BNa$
M 342,23 g/mol
mp >300 °C
[143-66-8] • EC No. 205-605-5
UN No. 2811 • ADR 6.1 III • WGK 2

Danger H301-H412

Guarantee analysis:

Assay (dry substance) ..... ≥99,5 %
Clarity of solution (ACS-test) ..... complies
Test of suitability for potassium assay ..... complies
Loss on drying ..... ≤0,5 %

4385.1	10 g	plastic	42,50 €
4385.2	25 g	plastic	92,35 €
4385.3	100 g	plastic	289,20 €

Sodium thiocyanate

Sodium thiocyanate

≥98 %, p.a., ACS

Analytical reagent
Sodium rhodanide
NaSCN
M 81,07 g/mol
D 1,74
mp 310 °C
Solubility: 1200 g/l (H_2O, 20 °C)
[540-72-7] • EC No. 208-754-4
WGK 1

Warning

H302+H312+H332-H412-EUH032

Guarantee analysis:

Assay ..... ≥98,0 %
Carbonate (as Na_2CO_3) ..... ≤0,2 %
In H_2O insoluble matter ..... ≤0,005 %
Chloride (Cl) ..... ≤0,01 %
Sulphate (SO_4) ..... ≤0,01 %
Sulphide (S) ..... ≤0,001 %
Ammonium (NH_4) ..... ≤0,002 %
Heavy metals (as Pb) ..... ≤0,0005 %
Iron (Fe) ..... ≤0,0002 %

2724.1	100 g	plastic	17,75 €
2724.2	500 g	plastic	41,85 €
Original pack 6 x 500 g			39,76/500 g
2724.3	1 kg	plastic	68,70 €
Original pack 6 x 1 kg			65,27/1 kg

Sodium thiosulphate

Sodium thiosulphate

≥99 %, p.a., anhydrous

Fixing salt

$Na_2O_3S_2$

M 158,11 g/mol • D 1,67

Solubility: ~209 g/l (H_2O, 20 °C)

[7772-98-7] • EC No. 231-867-5 • WGK 1

Guarantee analysis:

Assay (iodom.)	≥99 %
pH value (5 % in H_2O)	6,0-8,4
In H_2O insoluble matter	≤0,01 %
Loss on drying (105 °C)	≤1 %
Chloride (Cl)	≤0,05 %
Sulphate and sulphite (as SO_4)	≤0,5 %
Sulphide (S)	≤0,0005 %
Calcium (Ca)	≤0,004 %
Cadmium (Cd)	≤0,001 %
Cobalt (Co)	≤0,001 %
Copper (Cu)	≤0,001 %
Iron (Fe)	≤0,001 %
Potassium (K)	≤0,01 %
Nickel (Ni)	≤0,001 %
Lead (Pb)	≤0,001 %
Zinc (Zn)	≤0,001 %

HN25.1	250 g	plastic	21,40 €
HN25.2	500 g	plastic	31,75 €
Original pack 6 x 500 g			30,16/500 g
HN25.3	1 kg	plastic	56,45 €
Original pack 6 x 1 kg			53,63/1 kg
HN25.4	2,5 kg	plastic	117,20 €

Sodium thiosulphate pentahydrate

$Na_2S_2O_3 \cdot 5\ H_2O$

M 248,18 g/mol

D 1,74 • mp ~48 °C

Solubility: 701 g/l (H_2O, 20 °C)

[10102-17-7] • EC No. 231-867-5 • WGK 1

Sodium thiosulphate pentahydrate

≥99,5 %, p.a., ACS

Photographic fixer; for volumetric solutions in iodometry; for detection of hydrocyanic acid, quinine, chlorate hydrate and cobalt.

Guarantee analysis:

Assay (iodom.)	99,5-101,0 %
pH value (5 % in water)	6,0-8,4
In H_2O insoluble matter	≤0,005 %
Total nitrogen (as N)	≤0,002 %
Chloride (Cl)	≤0,02 %
Sulphate and sulphite (as SO_4)	≤0,1 %
Sulphide (S)	≤0,0001 %
Heavy metals (as Pb)	≤0,0005 %
Calcium (Ca)	≤0,002 %
Cobalt (Co)	≤0,0005 %
Chromium (Cr)	≤0,0005 %
Magnesium (Mg)	≤0,001 %
Nickel (Ni)	≤0,0005 %
Potassium (K)	≤0,005 %
Cadmium (Cd)	≤0,0005 %
Copper (Cu)	≤0,0005 %
Iron (Fe)	≤0,0005 %
Manganese (Mn)	≤0,0005 %
Lead (Pb)	≤0,0005 %
Zinc (Zn)	≤0,0005 %

P034.1	500 g	plastic	21,00 €
Original pack 6 x 500 g			19,95/500 g
P034.2	1 kg	plastic	32,80 €
Original pack 6 x 1 kg			31,16/1 kg
P034.3	2,5 kg	plastic	65,50 €
P034.5	25 kg	plastic	450,45 €

Sodium thiosulphate pentahydrate

≥99 %, Ph.Eur., USP, BP

Photographic fixer

Guarantee analysis:

Assay (iodom.)	99,0-100,5 %
Identity	complies
pH value (10 % solution)	6,0-8,4
Appearance of solution	complies
Loss on drying	32,0-37,0 %
Total nitrogen (as N)	≤0,01 %
Sulphate and sulphite (as SO_4)	≤0,2 %
Sulphide (S)	complies
Chloride (Cl)	≤0,02 %
Heavy metals (as Pb)	≤0,001 %
Arsenic (As)	≤0,0003 %
Lead (Pb)	≤0,001 %
Copper (Cu)	≤0,001 %
Magnesium (Mg)	≤0,01 %
Calcium (Ca)	complies
Iron (Fe)	≤0,001 %
Nickel (Ni)	≤0,001 %

T109.2	500 g	plastic	15,60 €
Original pack 6 x 500 g			14,82/500 g
T109.1	1 kg	plastic	23,55 €
Original pack 6 x 1 kg			22,37/1 kg
T109.3	5 kg	plastic	77,30 €

Sodium thiosulphate pentahydrate

≥98,5 % cryst.

Photographic fixer

Type analysis:

Appearance	white crystals
Assay	≥98,5 %

8649.1	1 kg	plastic	18,85 €
Original pack 6 x 1 kg			17,91/1 kg
8649.2	10 kg	plastic	80,55 €

Sodium thiosulphate solution (0,01 N)

Sodium thiosulphate solution

0,01 mol/l - 0,01 N volumetric standard solution

Type analysis:

Amount-of-substance conc. (20 °C)	0,01 mol/l ±0,5 %
Titer	0,995-1,005

X869.1	1 l	glass	24,20 €
Original pack 6 x 1 l			22,99/1 l

For further information, please see page 1682

Sodium thiosulphate solution (0,1 N)

Sodium thiosulphate solution

0,1 mol/l - 0,1 N volumetric standard solution

Type analysis:

Amount-of-substance conc. (20 °C)	0,1 mol/l ±0,2 %
Titer	0,998-1,002

K022.1	1 l	glass	18,85 €
Original pack 6 x 1 l			17,91/1 l
K022.2	5 l	plastic	50,45 €
Original pack 2 x 5 l			47,93/5 l
K022.3	5 l	ROTI®CUBE	56,45 €
Original pack 2 x 5 l			53,63/5 l
K022.4	10 l	ROTI®CUBE	87,00 €

For further information, please see page 1682

Sodium thiosulphate solution (0,1 N)

Sodium thiosulphate solution

0,1 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.

Type analysis:

Amount-of-substance conc. (20 °C)	0,1 mol/l
Measurement uncertainty	±0,2 %

6782.1	1 l	plastic	32,15 €
Original pack 6 x 1 l			30,54/1 l

Sodium thiosulphate solution (0,1 N)

Sodium thiosulfate solution

ROTI®VOLUM 0,1 mol/l - 0,1 N

Ampoule for preparation of 1000 ml volumetric solution.

$Na_2O_3S_2$

M 158,11 g/mol

[7772-98-7]

WGK 1

Type analysis:

Amount-of-substance conc. (20 °C)	0,1 mol/l ±0,2 %

CN55.1	1 piece	plastic ampoule	19,90 €

For further information, please see page 1683

Sodium thiosulphate solution (1 N)

Sodium thiosulphate solution

1 mol/l - 1 N volumetric standard solution

D 1,12

WGK 1

Type analysis:

Amount-of-substance conc. (20 °C)	1 mol/l ±0,2 %
Titer	0,9980-1,0020

9900.1	1 l	plastic	34,30 €
Original pack 6 x 1 l			32,59/1 l

Sodium-2,2,3,3-trimethylsilyl-propionate D4

▶ 3-(Trimethylsilyl)propionic-2,2,3,3 acid sodium salt D4 (TSP-D4) see p. 2419

Sodium tungstate dihydrate

Sodium tungstate dihydrate

≥99 %, p.a., ACS

Tungstic acid sodium salt dihydrate
$Na_2WO_4 \cdot 2\ H_2O$
M 329,84 g/mol
D 3,23
mp 100 °C loss of crystallisation water
Solubility: 730 g/l (H_2O, 20 °C)
[10213-10-2] • EC No. 236-743-4 • WGK 1

Warning H302

Guarantee analysis:

Assay (gravim.).....99,0-101,0 %
In H_2O insoluble matter.....≤0,01 %
Free alkali.....≤0,02 meq/g
Chloride (Cl).....≤0,005 %
Sulphate (SO_4).....≤0,01 %
Heavy metals and iron (as Pb).....≤0,001 %
Arsenic (As).....≤0,0005 %
Molybdenum (Mo).....≤0,001 %

2604.1	100 g	plastic	41,40 €
2604.2	250 g	plastic	80,55 €
2604.3	500 g	plastic	145,05 €
Original pack 6 x 500 g			137,80/500 g

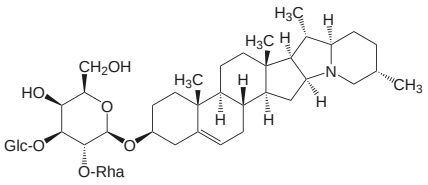
Sodium vanadate(V)

▶ tri-Sodium monovanadate see p. 2345

Sodium vanadium oxide

▶ tri-Sodium monovanadate see p. 2345

α-Solanine



Solatunine
$C_{45}H_{73}NO_{15}$
M 868,04 g/mol
mp ~285 °C
Storage temp.: +4 °C
[20562-02-1] • EC No. 243-879-8 • WGK 1

Warning H302

α-Solanine

ROTICHROM® HPLC

Reference substance for HPLC.
From *Solanum tuberosum*.

Type analysis:

Purity (HPLC).....≥98 %

2826.1	10 mg	glass	263,40 €

α-Solanine

ROTICHROM® TLC

From *Solanum tuberosum*

4180.1	10 mg	glass	228,90 €

Solatunine

▶ α-Solanine see p. 2352

Solidofix®-Cryo spray

Solidofix®-Cryo spray

for histology

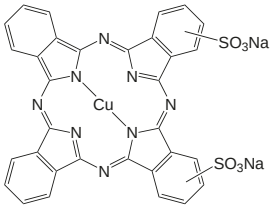
Freezing of histological specimens.
Cooling of paraffin blocks. Cooling to -45 °C.
UN No. 1950 • ADR 2.1

Danger H222-H229

T200.1	300 ml	spray bottle	8,85 €
T200.2	5 x 300 ml	spray bottle	34,30 €

For further information, please see page 1510

Solvent blue 38 (C.I. 74180)



Solvent blue 38 (C.I. 74180)

for microscopy

Luxol® Fast Blue MBSN
$C_{32}H_{12}CuN_8Na_2O_6S_2$
M 778,15 g/mol
[1328-51-4]
WGK 3

Type analysis:

Appearance.....dark blue powder
Appearance of solution (0,1 % in MeOH).....dark blue

7709.1	5 g	glass	12,40 €
7709.2	25 g	glass	25,70 €
7709.3	100 g	glass	60,10 €

Solvent orange 1

▶ Sudan orange G (C.I. 11920) see p. 2385

Solvent orange 7

▶ Sudan II (C.I. 12140) see p. 2385

Solvent red 45

▶ Ethyl eosin (C.I. 45386) see p. 1984

Solvents for Ultra LC-MS

Art. No.	Description	Page
HN40	Acetonitrile	1762
HN41	Methanol	2131
0733	2-Propanol	2239
0739	Tetrahydrofuran	2400
HN43	Water	2439

Solvents for LC-MS

Art. No.	Description	Page
AE69	Acetic acid ethyl ester	1758
AE70	Acetonitrile	1762
AE71	Methanol	2131
AE73	2-Propanol	2239
AE72	Water	2439

Solvents for HPLC

Art. No.	Description	Page
7336	Acetic acid ethyl ester	1758
7328	Acetone	1760
7328	Acetone	1760
T195	Acetonitrile	1762
8825	Acetonitrile	1762
HN44	Acetonitrile	1763
7330	Acetonitrile	1763
CN20	Acetonitrile	1763
6827	Acetonitrile	1763
T178	1-Butanol	1859
T175	tert-Butyl methyl ether	1863
7333	Cyclohexane	1916
7334	Dichloromethane	1935
0702	N,N-Dimethylformamide (DMF)	1948
0728	Dimethyl sulphoxide (DMSO)	1950
X949	1,4-Dioxane	1952
P076	Ethanol	1975
6828	n-Heptane	2037
7337	n-Heptane	2037
7339	n-Hexane	2041
T176	Isohexane	2077
7340	Isooctane	2078
X948	Methanol	2131
7342	Methanol	2131
KK39	Methanol	2131
P717	Methanol	2131
CN99	n-Pentane	2195
0731	Petroleum ether 40-60 °C	2203
T177	1-Propanol	2239
7343	2-Propanol	2239
7344	Tetrahydrofuran	2400
7346	Toluene	2411
7331	Trichloromethane/Chloroform	2415
A511	Water	2439

Solvents for Headspace-GC

Art. No.	Description	Page
HN45	N,N-Dimethylacetamide (DMA)	1945
HN46	N,N-Dimethylformamide (DMF)	1948
HN48	1,3-Dimethyl-2-imidazolidinone (DMI)	1949
HN47	Dimethyl sulphoxide (DMSO)	1950

Solvents for GC

Art. No.	Description	Page
KK42	Acetic acid ethyl ester	1759
KK40	Acetone	1761
KK41	Cyclohexane	1916
KK47	Dichloromethane	1935
KK48	n-Hexane	2041
KK44	Methanol	2131
KK45	n-Pentane	2195
KK46	Toluene	2411

Solvents for residue analysis (Pestilyse® plus)

Art. No.	Description	Page
7565	Acetic acid ethyl ester	1759
7535	Acetone	1761
7542	Cyclohexane	1916
7562	Dichloromethane	1935
7566	n-Heptane	2037
7573	n-Hexane	2041
7567	n-Hexane	2042
7576	Isohexane	2077
7580	Isooctane	2079
7583	Methanol	2132
7587	n-Pentane	2196
7588	Petroleum ether 40-60 °C	2203
7590	2-Propanol	2240
7591	Toluene	2411
7554	Trichloromethane/Chloroform	2415

Solvents for residue analysis (Pestilyse®)

Art. No.	Description	Page
T164	Acetic acid ethyl ester	1759
T161	Acetone	1761
T168	Acetonitrile	1763
T163	Cyclohexane	1916
T162	Dichloromethane	1935
T900	Diethyl ether	1939
X878	n-Heptane	2037
T861	n-Hexane	2042
T165	n-Hexane	2042
T904	Isohexane	2077
T167	Isooctane	2079
T169	Methanol	2132
T903	n-Pentane	2196
T170	Petroleum ether 40-60 °C	2203
T902	2-Propanol	2240
T166	Toluene	2411
T901	Trichloromethane/Chloroform	2415
T905	Water	2439

Solvents for UV/IR spectroscopy

Art. No.	Description	Page
4442	Acetic acid ethyl ester	1759
T906	Acetone	1761
T907	Acetonitrile	1763
CP81	Cyclohexane	1916
4433	Dichloromethane	1935
AE04	Diethyl ether	1939
CP79	N,N-Dimethylformamide (DMF)	1948
AE02	Dimethyl sulphoxide (DMSO)	1950
4429	1,4-Dioxane	1952
CP78	n-Heptane	2038
T908	n-Hexane	2042
CP80	Isooctane	2079
T909	Methanol	2132
4443	n-Pentane	2196
T910	2-Propanol	2240
CP83	Tetrachloroethylene	2399
CP82	Tetrahydrofuran	2400
4445	Toluene	2412
4432	Trichloromethane/Chloroform	2415

Solvents, dried, in a septum bottle

Art. No.	Description	Page
5175	Acetonitrile	1763
5176	Dichloromethane	1935
5177	Diethyl ether	1939
5179	Dimethyl sulphoxide (DMSO)	1950
5180	n-Hexane	2042
5181	Methanol	2132
5182	Tetrahydrofuran	2400
5191	Toluene	2412

Solvents, dried

Art. No.	Description	Page
4424	Acetic acid ethyl ester	1759
AE00	Acetonitrile	1763
AE03	Dichloromethane	1935
AE04	Diethyl ether	1939
AE02	Dimethyl sulphoxide (DMSO)	1950
4429	1,4-Dioxane	1952
AE05	n-Hexane	2042
AE01	Methanol	2132
AE07	Tetrahydrofuran	2401
AE06	Toluene	2412
4423	Trichloromethane/Chloroform	2415

Solvents for analysis

Art. No.	Description	Page
CP28	Acetic acid anhydride	1757
P036	Acetic acid n-butyl ester	1758
6784	Acetic acid ethyl ester	1759
9372	Acetone	1761
4722	Acetonitrile	1763
7173	Benzene	1829
0336	Benzyl alcohol	1833
7171	1-Butanol	1859
AE16	tert-Butanol	1860
T920	2-Butanone	1860
8462	tert-Butyl methyl ether	1863
6886	Cyclohexane	1917
6837	1,2-Dichloroethane	1934
6053	Dichloromethane	1936
0332	Diethanolamine	1937
3495	Diethylamine	1937
3942	Diethyl ether	1939
T919	Diisopropyl ether	1944
T921	N,N-Dimethylformamide (DMF)	1948
4720	Dimethyl sulphoxide (DMSO)	1950
4626	1,4-Dioxane	1952
9065	Ethanol	1976
0911	Ethanol denatured	1976
T868	Ethanol 70 %	1977
0342	Ethanolamine	1977
6881	Ethylene glycol	1984
6749	Formamide	2005
T174	n-Heptane	2038
4723	n-Hexane	2042
T870	Isoamyl alcohol	2076
0338	Isobutyl methylketone	2077
6889	Isooctane	2079
4627	Methanol	2132
CP08	2-Methoxyethanol	2135
3926	2-Methylbutane	2136
6772	2-Methyl-1-propanol	2141
4978	n-Pentane	2196
T173	Petroleum ether 40-60 °C	2203
6776	1-Propanol	2239
6752	2-Propanol	2240
9729	Pyridine	2245
6788	Tetrahydrofuran	2401
7115	Toluene	2412
3313	Trichloromethane/Chloroform	2416
T172	Water	2439
4436	Xylene (isomers)	2444

Solvents in Pharmacopoeia Quality

Art. No.	Description	Page
CP42	Acetic acid ethyl ester	1759
CP40	Acetone	1761
8657	Benzyl alcohol	1833
6724	Bioethanol 96 %	1837
CP45	Dichloromethane	1936
8810	Diethyl ether	1939
5054	Ethanol	1976
P075	Ethanol 96 %	1976
7301	Ethanol 70 %	1977
6967	Glycerol	2024
7530	Glycerol	2024
7533	Glycerol 86 %	2025
CP43	Methanol	2133
CP44	Petroleum ether 40-60 °C	2203
CP41	2-Propanol	2240
6340	Trichloromethane/Chloroform	2416
2652	Water	2439
CN80	Xylene (isomers)	2444

Solvents for synthesis

Art. No.	Description	Page
4483	Acetic acid anhydride	1757
4600	Acetic acid n-butyl ester	1758
7338	Acetic acid ethyl ester	1759
4370	Acetic acid isobutyl ester	1760
5025	Acetone	1762
4380	Acetonitrile	1763
4417	Anisole	1807
4372	Benzaldehyde	1829
5785	Benzene	1829
9498	Benzoic acid benzyl ester	1830
4478	Benzyl alcohol	1833
6726	Bioethanol 96 % denatured	1837
7473	1,3-Butanediol	1859
4211	1,4-Butanediol	1859
7724	1-Butanol	1859
KK02	2-Butanol	1860
4323	tert-Butanol	1860
8403	2-Butanone	1860
0796	Butylal	1862
6746	tert-Butyl methyl ether	1863
KK01	Chlorobenzene	1891
6570	Cyclohexane	1917
CP27	Cyclohexanone	1917
7763	Cyclopentyl methyl ether	1918
3475	n-Decane	1923
4374	1,2-Dichlorobenzene	1934
T869	1,2-Dichloroethane	1934
8424	Dichloromethane	1936
HN99	Diethanolamine	1937
KK00	Diethylamine	1937
0968	Diethylene glycol	1938
5920	Diethyl ether	1939
0262	Diethylketone	1939
0660	1,4-Diisocyanatobutane	1943
4369	Diisopropylamine	1944
T899	Diisopropyl ether	1944
9986	N,N-Dimethylcyclohexylamine	1947
6251	N,N-Dimethylformamide (DMF)	1948
7349	2,2-Dimethyl-1,3-propanediol	1949
0662	N,N'-Dimethylpropylene urea	1950
7029	Dimethyl sulphoxide	1950
4229	1,4-Dioxane	1952
0447	1,3-Dioxolane	1952
8786	n-Dodecane	1959
9853	1-Dodecanol	1959
0974	Dodecylbenzene	1959
K928	Ethanol denatured	1976
T171	Ethanol 96 % denatured	1976
T913	Ethanol 70 % denatured	1977
4376	Ethanolamine	1978
0787	Ethylal	1979
0272	Ethylbenzene	1979
4218	Ethylenediamine	1980
9516	Ethylene glycol	1984
0341	Ethylene glycol monobutyl ether	1984
CN19	N-Ethyl-2-pyrrolidone (NEP)	1986
0798	Glycerol formal	2025
8654	n-Heptane	2038
CP46	n-Heptane	2038
7725	Heptane (isomers)	2038
CP47	n-Hexane	2042
7782	Hexane (isomers)	2043
3907	n-Hexane	2042
8930	Isoamyl alcohol	2076
4371	Isobutyl methylketone	2077
2667	Isohexane	2077
9860	Isooctane	2079
8388	Methanol	2133
9976	Methanol 60 %	2133
0783	Methylal	2135
3927	2-Methylbutane	2136
4379	2-Methyl-1-butanol	2136
0752	Methylcyclohexane	2137
N353	1-Methylimidazole	2139
CN17	2-Methyl-2,4-pentanediol	2140
CP09	2-Methyl-1-propanol	2141
4306	N-Methyl-2-pyrrolidone (NMP)	2142
6845	2-Methyltetrahydrofuran	2143
4310	n-Nonane	2167
8753	n-Octane	2171
4439	1-Octanol	2171
0358	N-Octyl-2-pyrrolidone (NOP)	2172
8720	n-Pentane	2196
3747	n-Pentane	2196
3523	Petroleum benzine 30-50	2201
8961	Petroleum benzine 30-75	2201
9320	Petroleum benzine 40-60	2201
8573	Petroleum benzine 40-65	2201
CP48	Petroleum benzine 40-80	2201
0969	Petroleum benzine 50-70	2201
9735	Petroleum benzine 60-70	2202
8575	Petroleum benzine 60-95	2202
5649	Petroleum benzine 63-80	2202
3259	Petroleum benzine 80-110	2202
9675	Petroleum benzine 100-140	2202
8576	Petroleum benzine 135-180	2202
8577	Petroleum benzine 145-200	2202
8579	Petroleum benzine 180-220	2202
8580	Petroleum benzine 190-245	2203
8590	Petroleum benzine 235-265	2203
4348	2-Phenoxyethanol	2205
4422	2-Phenylethanol	2207
0976	Piperidine	2214
0340	1,2-Propanediol	2238
0958	1,3-Propanediol	2238
9866	2-Propanol	2240
CN09	2-Propanol 70 %	2240
0795	Propylal	2241
CP07	Pyridine	2245
8779	2-Pyrrolidone	2247
2641	Styrene	2383
4737	Tetrachloroethylene	2399
4745	Tetrahydrofuran	2401
0756	Tetramethyl urea	2402
0786	Tetraoxaundecane	2402
9558	Toluene	2412
9579	Trichloroethylene	2415
Y015	Trichloromethane/Chloroform	2416
X875	Triethylamine (TEA)	2417
CP29	2,2,2-Trifluoroethanol	2418
8781	n-Undecane	2429
9713	Xylene (isomers)	2444
2662	Xylene (isomers)	2444
8749	o-Xylene	2445
8817	p-Xylene	2445
3791	m-Xylene	2445

Solvents for peptide synthesis

Art. No.	Description	Page
4380	Acetonitrile	1763
P089	Dichloromethane	1936
2474	N,N-Diisopropylethylamine (DIPEA)	1944
3617	N,N-Dimethylacetamide (DMA)	1946
A529	N,N-Dimethylformamide (DMF)	1948
2473	1,1,1,3,3,3-Hexafluoro-2-propanol	2040
P052	N-Methyl-2-pyrrolidone (NMP)	2142
A122	Piperidine	2213
P088	Trifluoroacetic acid (TFA)	2417
3478	Water	2439

Solvents for DNA-synthesis

Art. No.	Description	Page
AE00	Acetonitrile	1763
8824	Acetonitrile	1764
2216	Acetonitrile	1764
3620	Acetonitrile	1764
A990	Ammonia solution 32 %	1793

Solvents, deuterated

Art. No.	Description	Page
AE51	Acetone D6	1762
7909	Acetone D6	1762
7911	Acetonitrile D3	1764
AE52	Acetonitrile D3	1764
7912	Benzene D6	1830
AE53	Benzene D6	1830
HN93	Bromobenzene D5	1851
9905	Chlorobenzene D5	1892
5200	Cyclohexane D12	1917
HN81	Deuterium oxide	1928
6672	Deuterium oxide	1928
HN82	1,2-Dichlorobenzene D4	1934
7913	Dichloromethane D2	1936
AE55	Dichloromethane D2	1936
9907	Diethyl ether D10	1939
CP92	N,N-Dimethylformamide D7	1948
7915	Dimethyl sulphoxide D6	1950
AE56	Dimethyl sulphoxide D6	1951
7916	Dimethyl sulphoxide D6 with TMS (0,03 vol.%)	1951
AE60	Dimethyl sulphoxide D6 with TMS (0,03 vol.%)	1951
HN84	Ethanol D1	1977
CP93	Ethanol D6	1977
9909	1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2)	2040
HN86	Methanol D1	2133
9910	Methanol D3	2133
7918	Methanol D4	2133
AE57	Methanol D4	2133
7919	Methanol D4 with TMS (0,03 vol.%)	2133
9913	Methylcyclohexane D14	2137
9914	Nitrobenzene D5	2163
HN91	Nitromethane D3	2164
9917	2-Propanol D1	2241
9919	2-Propanol D8	2241
7922	Pyridine D5	2245
CP94	Pyridine D5	2245
9921	Styrene D8	2383
CP96	1,1,2,2-Tetrachloroethane D2	2399
AE58	Tetrahydrofuran D8	2401
7924	Toluene D8	2412
CP95	Toluene D8	2412
CP91	Trichloromethane/Chloroform D1	2416

7903	Trichloromethane/Chloroform D1	2416
AE54	Trichloromethane/Chloroform D1	2416
7905	Trichloromethane/Chloroform D1 with TMS (0,03 vol.%)	2416
AE59	Trichloromethane/Chloroform D1 with TMS (0,03 vol.%)	2416

Solvents with eluent additives

Art. No.	Description	Page
CP00	Acetonitrile with 0,1 % formic acid	1764
CP01	Acetonitrile with 0,1 % acetic acid	1764
CP02	Acetonitrile with 0,1 % trifluoroacetic acid	1764
CP06	Methanol with 0,1 % trifluoroacetic acid	2134
CP03	Water with 0,1 % formic acid	2440
CP05	Water with 0,1 % trifluoroacetic acid	2440

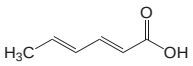
Solvent Yellow 2

▶ Dimethyl yellow (C.I. 11020) see p. 1951

Sophoretin

▶ Quercetin dihydrate see p. 2249
▶ Quercetin see p. 2249

Sorbic acid



2,4-Hexadienoic acid
$C_6H_8O_2$
M 112,13 g/mol
D 1,20 • bp 190 °C (dec.)
mp 132-135 °C • flp 125 °C
Solubility: 1,6 g/l (H_2O, 20 °C)
[110-44-1] • EC No. 203-768-7 • WGK 1

Warning H315-H319-H335

Sorbic acid

≥99 %, Ph.Eur., extra pure
For biochemical applications.

Guarantee analysis:

Assay (acidim., dry substance)	99,0-101,0 %
Identity	complies
Water	≤1,0 %
Appearance of solution	complies
Aldehydes	≤0,15 %
Heavy metals (as Pb)	≤0,001 %
Ash content (as SO_4)	≤0,2 %

7158.1	250 g	plastic	42,90 €
7158.2	500 g	plastic	80,55 €
Original pack 6 x 500 g			76,52/500 g
7158.3	1 kg	plastic	150,40 €
Original pack 6 x 1 kg			142,88/1 kg

Sorbic acid

ROTI®STAR Primary Standard

Type analysis:

Assay (HPLC)	≥95,0 %
Residual solvents (GC)	≤1,0 %
Water (KF)	≤1,0 %
Assay (titr.)	≥95,0 %

Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE15.1	100 mg	Glas	751,45 €

Sorbic acid

ROTICHROM® Working Standard

Type analysis:

Assay (HPLC)	≥95,0 %
Identity	complies

Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC15.1	100 mg	glass	125,70 €

Sorbic acid potassium salt

▶ Potassium sorbate see p. 2234

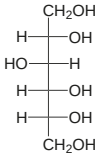
D-Sorbit

▶ D-Sorbitol see p. 2355

Sorbitan monooleate

▶ Span® 80 see p. 2356

D-Sorbitol



D-Sorbitol

≥98 %, for biochemistry
Microbiology
D-Sorbit
$C_6H_{14}O_6$
M 182,18 g/mol
bp 105 °C
mp 94-96 °C • flp >100 °C
Solubility: 2350 g/l (H_2O, 20 °C)
[50-70-4] • EC No. 200-061-5

Type analysis:

Assay (HPLC, dry substance)	≥98 %
Water (KF)	≤0,4 %
Reducing sugar	≤0,2 %
Lead (Pb)	≤0,00005 %
Nickel (Ni)	≤0,0001 %

6213.1	1 kg	plastic	25,70 €
Original pack 6 x 1 kg			24,42/1 kg
6213.2	5 kg	plastic	71,50 €
6213.3	10 kg	plastic	130,00 €
6213.7	25 kg	plastic	256,95 €

Sorbitol MacConkey Agar

Sorbitol MacConkey Agar

for microbiology
Selective and differential medium for detection of sorbitol-fermenting *E. coli* O157:H7.
Application: Use 51,5 g for 1 l agar.
MacConkey Agar with sorbitol, **SMAC Agar**
Storage temp.: +20 °C • WGK 1

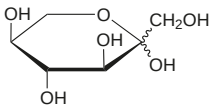
Formulation:

Gelatine peptone	20 g/l
Sorbitol	10 g/l
Sodium chloride	5 g/l
Bile salts No. 3	1,5 g/l
Neutral red	0,03 g/l
Crystal Violet	0,001 g/l
Agar	15 g/l
pH value	7,1 ±0,2

5778.1	500 g	plastic	105,90 €
Original pack 6 x 500 g			100,61/500 g

For further information, please see page 1463

L(-)-Sorbose



L(-)-Sorbose

≥98 %, for biochemistry
$C_6H_{12}O_6$
M 180,16 g/mol
mp ~165 °C
Solubility: 550 g/l (H_2O, 20 °C)
[87-79-6] • EC No. 201-771-8

Type analysis:

Appearance	white to off-white powder
Assay (HPLC)	≥98,0 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in H_2O)	-45° to -41°

4028.2	25 g	plastic	47,20 €
4028.3	50 g	plastic	81,60 €
4028.1	100 g	plastic	117,75 €

Soybean oil

Soybean oil

refined, extra pure
Oleum Sojae
D ~0,92

Type analysis:

Appearance	clear pale yellow liquid
Refractive index n_D^{20}	1,466-1,476
Density (20 °C)	0,91-0,93
Free fatty acid	≤0,1 %
Peroxide value	≤10,0
Water	≤0,05 %
GC-fatty acid constituents:	
C 16:0 Palmitic acid	8,0-13,5 %
C 18:0 Stearic acid	2,0-5,4 %
C 18:1 Oleic acid	17-30 %
C 18:2 Linoleic acid	48-59 %
C 18:3 Linolenic acid	4,5-11 %
Trans-isomer fatty acids	≤2,0 %

3686.1	1 l	glass	23,15 €
Original pack 6 x 1 l			21,99/1 l
3686.3	2,5 l	glass	40,35 €
Original pack 4 x 2,5 l			38,33/2,5 l
3686.4	5 l	plastic	60,10 €
Original pack 2 x 5 l			57,10/5 l
3686.2	10 l	plastic	109,15 €

Soy Peptone Agar

▶ CASO Agar, granulated see p. 1881

Soy peptone
▶ Peptone ex soya see p. 2198

Soy Peptone Broth
▶ CASO Broth see p. 1882

SPADNS
▶ 1,8-Dihydroxy-2-(4-sulfophenylazo)-naphthalene-3,6-disulfonic acid trisodium salt see p. 1943

Span® 80

Span® 80
for synthesis
Sorbitan monooleate
M 460 g/mol
D 1,0 • bp >100 °C
flp >149 °C
[1338-43-8] • EC No. 215-665-4
WGK 1

Type analysis:
Hydroxyl value. ..... 193-210 mg KOH/g
Acid value. ..... ≤8,0 mg KOH/g
Saponification value. ..... 145-160 mg KOH/g
Water . ..... ≤1,5 %

9426.1	250 g	glass	56,90 €
9426.2	1 kg	glass	177,95 €
Original pack 6 x 1 kg			169,05/1 kg

Special Petroleum
▶ Petroleum benzine 50-70 see p. 2201

Spectra/Gel™ Absorbent

Spectra/Gel™ Absorbent
For concentration of dialysed proteins and microparticles.
mp 199 °C
Solubility: water-insoluble
[9033-79-8]
WGK 1
Warning H319

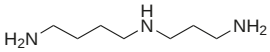
Type analysis:
Appearance. ..... granulated powder
Colour. ..... white
Density (20 °C). ..... 0,68 g/cm³
Steam pressure. ..... <10 mm Hg

0115.1	500 g	plastic	110,75 €
Original pack 6 x 500 g			105,21/500 g

For further information, please see page 1357

Spermaceti
▶ Cetyl palmitate see p. 1888

Spermidine



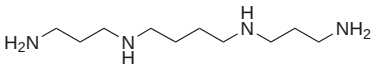
Spermidine
≥98 %, for biochemistry
N-(3-Aminopropyl)-1,4-butanediamine
$C_7H_{19}N_3$
M 145,25 g/mol
bp 128-130 °C
mp 22-25 °C • flp 112 °C
Storage temp.: +4 °C
[124-20-9] • EC No. 204-689-0
UN No. 3259 • ADR 8 II • WGK 1
Danger H314

Type analysis:
Appearance. ..... colourless to yellowish liquid or white solid
Assay (titr.). ..... ≥98,0 %
Water (KF). ..... ≤20 %

7161.2	1 g	glass	42,90 €
7161.1	2,5 g	glass	81,60 €
7161.3	5 g	glass	139,65 €

For further information, please see page 1288

Spermine

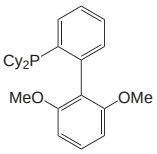


Spermine
≥99 %, for biochemistry
Musculamine, Neuridine
$C_{10}H_{26}N_4$
M 202,35 g/mol
bp ~310 °C (dec.)
mp 55-60 °C • flp 110 °C
Storage temp.: +4 °C
[71-44-3] • EC No. 200-754-2
UN No. 3259 • ADR 8 II • WGK 1
Danger H314

Type analysis:
Assay (GC). ..... ≥99,0 %
Water (KF). ..... ≤3,0 %

7162.2	1 g	glass	37,55 €
7162.1	2,5 g	glass	80,55 €
7162.3	5 g	glass	128,90 €

SPhos



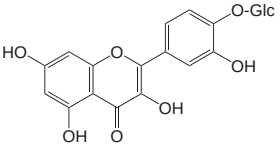
SPhos
≥98 %
Phosphine ligand
2-Dicyclohexylphosphino-2',6'-dimethoxy-biphenyl
$C_{26}H_{35}O_2P$
M 410,53 g/mol
mp 164-166° C
[657408-07-6]
WGK 1

Type analysis:
Appearance. ..... white, cryst. powder
Assay (HPLC). ..... ≥98 %

1911.1	1 g	glass	26,80 €
1911.2	5 g	glass	100,95 €

Spinacene
▶ Squalene see p. 2357

Spiraeoside



Quercetin-4'-glucoside
$C_{21}H_{20}O_{12}$
M 464,4 g/mol
mp 209-211 °C
Storage temp.: +4 °C
[20229-56-5]
Warning H302

Spiraeoside
ROTICHROM® HPLC
Reference substance for HPLC.
From *Filipendula ulmaria*.

Type analysis:
Purity (HPLC). ..... >98 %

1216.1	20 mg	glass	385,95 €

Spiraeoside
ROTICHROM® ~CHR

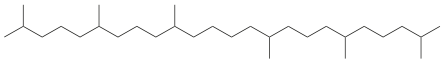
4564.1	10 mg	glass	99,90 €

Spirit
▶ Methylated spirit see p. 2136
▶ Ethanol absolut see p. 1975
▶ Rotisol® see p. 2297

Spirits of wine

▶ Ethanol absolut see p. 1975
▶ Ethanol 96 % see p. 1976
▶ Ethanol 70 % see p. 1977

Squalane



Squalane

≥98 %

Perhydrosqualene, Cosbiol, Alkane C30

$C_{30}H_{62}$

M 422,83 g/mol

D 0,81 • bp 350 °C

mp -38 °C • flp 218 °C

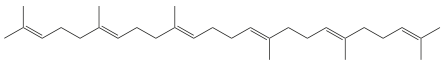
[111-01-3] • EC No. 203-825-6

Type analysis:

Appearance..... clear, colourless, viscous liquid
Assay..... ≥98,0 %

5339.1	100 ml	glass	48,95 €

Squalene



Spinacene

$C_{30}H_{50}$

M 410,73 g/mol

D ~0,86 • bp 275 °C

mp -75 °C • flp ~200 °C

[111-02-4] • EC No. 203-826-1

Squalene

>98 %, for synthesis

Type analysis:

Assay (GC, area %)..... >98 %
Density (20 °C)..... 0,855-0,880
Refractive index (20 °C)..... 1,490-1,498
Peroxide value..... ≤5
Acid value..... ≤0,5 mg KOH/g

5341.1	100 ml	glass	33,25 €
5341.2	250 ml	glass	76,25 €
5341.3	500 ml	glass	125,70 €
5341.4	1 l	glass	209,65 €
Original pack 6 x 1 l			199,17/1 l

Squalene

ROTICHROM® GC

Reference substance for GC.

Storage temp.: +4 °C

Type analysis:

Purity (GC)..... ≥98 %

3185.1	1 g	glass	26,80 €

SSC buffer powder (pouch)

▶ Roti®fair 20x SSC see p. 2278

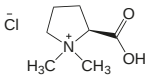
20 x SSC Ready-to-use solution

▶ Roti®-Stock 20x SSC see p. 2298

SSPE buffer (tablets)

▶ Roti®fair SSPE see p. 2278

Stachydrine hydrochloride



Stachydrine hydrochloride

ROTICHROM® ~CHR

$C_7H_{13}NO_2 \cdot HCl$

M 179,65 g/mol

mp ~219 °C

Storage temp.: +4 °C

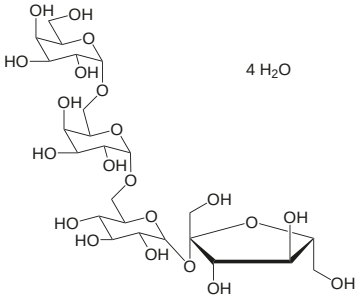
[4136-37-2] • EC No. 223-957-8

WGK 1

Warning H332

9457.2	20 mg	glass	267,70 €

Stachyose Hydrate



Stachyose Hydrate

>98 %

Lupeose

$C_{24}H_{42}O_{21} \cdot x\ H_2O$

M 666,58 + x H_2O g/mol

mp ~170 °C

[54261-98-2] • EC No. 207-427-3

Type analysis:

Appearance..... white, cryst. powder
Assay..... >98,0 %
Water (KF)..... <11 %

9438.1	100 mg	glass	84,85 €

Staining Solutions for Histology / Microscopy

Art. No.	Description	Page
1431	Alcian blue 1 % in acetic acid 3 %	1780
CN00	Carbol gentian violet solution	1877
A130	Carbolic fuchsine solution	1878
8275	Elastica van Gieson staining kit	1968
X883	Eosin Y solution 0,5 % in water	1970
3139	Eosin Y solution 1 % in methanol	1971
3137	Eosin Y solution 1 % in water	1971
HP46	Ethidium bromide solution 0,5 % in dropper bottle	1978
T862	Giemsa stock solution	2015
3469	Goldner's staining I	2028
3470	Goldner's staining II	2028
3473	Goldner's staining III	2028
CN02	Gram's decolourising solution	2029
HP02	Gram staining kit	2029
9194	H&E fast staining kit	2034
T865	Hemalum solution acid acc. to Mayer	2035
CN03	Hematoxylin solution acc. to Delafield	2035
CN04	Hematoxylin solution acid acc. to Ehrlich	2035
T864	Hematoxylin solution acc. to Gill II	2035
X903	Hematoxylin solution acc. to Harris	2035
X906	Hematoxylin solution A acc. to Weigert	2035
X907	Hematoxylin solution B acc. to Weigert	2035
N052	Iodine-potassium iodide solution acc. to Lugol	2070
3097	Lactophenol blue solution	2089
AE64	LOEFFLER's methylene blue solution	2104
3459	Masson-Goldner's trichrome staining kit	2123
T863	May-Gruenwald's solution	
1433	Methylene blue solution 0,1 %, aqueous	2138
3463	Neisser's solution I	2154
3464	Neisser's solution II	2154
3466	Neisser's solution III	2154
N069	Nuclear fast red aluminium sulphate solution	2169
6487	Panoptical fast staining kit	2190
T867	Papanicolaou-orange solution 2a (OG 6)	2190
AE62	Papanicolaou solution 2b Orange II solution	2190
AE63	Papanicolaou polychrome solution 3a (EA31)	2190
T866	Papanicolaou polychrome solution 3b (EA 50)	2190
9195	PAP fast staining kit	2191
HP01	PAS staining kit	2192
HP00	Periodic acid solution 1 %	2200
X877	Resorcinol-Fuchsine-solution acc. to Weigert	2256
CN01	Safranin solution	2303
X900	Schiff's reagent	2308
1680	Trypan blue solution 0,4 %	2424
3925	Van Gieson's Solution	2433
9193	Van Gieson trichrome staining kit	2434
9192	Weigert's iron hematoxylin staining kit	2440
CN05	Wright's eosin methylene blue solution	2442
8276	Ziehl-Neelsen staining kit	2449
6395	Zinc iodine chloride solution	2451

Standard Count Agar

Standard Count Agar

for microbiology

For enumeration of aerobic bacteria in milk, water and wastewaters.

Application: Use 25 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

Formulation:

Meat extract. ... 3 g/l
Casein peptone. ... 5 g/l
Sodium chloride (NaCl). ... 5 g/l
Agar. ... 12 g/l
pH value. ... 7,2 ±0,2

AE91.1	500 g	plastic	102,70 €
Original pack 6 x 500 g			97,57/500 g

For further information, please see page 1463

Standard Nutrient Agar I

Standard Nutrient Agar I

for microbiology

For cultivation and enumeration of fastidious bacteria. Also high-base for preparing special culture agars.

Application: Use 37 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

Formulation:

Peptone. ... 15 g/l
Yeast extract. ... 3 g/l
Sodium chloride (NaCl). ... 6 g/l
Glucose. ... 1 g/l
Agar. ... 12 g/l
pH value. ... 7,5 ±0,2

AE93.1	500 g	plastic	83,75 €
Original pack 6 x 500 g			79,56/500 g
AE93.2	1 kg	plastic	145,15 €
Original pack 6 x 1 kg			137,89/1 kg

For further information, please see page 1465

Standard Nutrient Agar I, granulated

Standard Nutrient Agar I, granulated

granulated, for microbiology

For cultivation and enumeration of fastidious bacteria. Also base for preparing special culture agars.

Application: Use 37 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

Formulation:

Peptone. ... 15 g/l
Yeast extract. ... 3 g/l
Sodium chloride (NaCl). ... 6 g/l
Glucose. ... 1 g/l
Agar. ... 12 g/l
pH value. ... 7,5 ±0,2

1524.1	500 g	plastic	112,90 €
Original pack 6 x 500 g			107,26/500 g

For further information, please see page 1457

Standard Nutrient Broth I

Standard Nutrient Broth I

for microbiology

For cultivation and enumeration of fastidious bacteria. Also high-base for preparing special culture media.

Application: Use 25 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

Formulation:

Peptone. ... 15 g/l
Yeast extract. ... 3 g/l
Sodium chloride (NaCl). ... 6 g/l
Glucose. ... 1 g/l
pH value. ... 7,5 ±0,2

AE92.1	500 g	plastic	80,10 €
Original pack 6 x 500 g			76,10/500 g
AE92.2	1 kg	plastic	143,55 €
Original pack 6 x 1 kg			136,37/1 kg

For further information, please see page 1463

Standard Nutrient Broth I, granulated

Standard Nutrient Broth I, granulated

granulated, for microbiology

For cultivation and enumeration of fastidious bacteria. Also base for preparing special culture media.

Application: Use 25 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

Formulation:

Peptone. ... 15 g/l
Yeast extract. ... 3 g/l
Sodium chloride (NaCl). ... 6 g/l
Glucose. ... 1 g/l
pH value. ... 7,5 ±0,2

1533.1	500 g	plastic	109,55 €
Original pack 6 x 500 g			104,07/500 g

For further information, please see page 1457

Standards for AAS (Atom Absorption Spectroscopy): Element Standards 1000 mg/l, ready to use

Aluminium AAS Standard Solution

1000 mg/l Al

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Al) as $Al(NO_3)_3$ in 2 % HNO_3 ... 1000 mg/l ±0,2 %
Traceable to SRM from NIST.

2212.1	100 ml	HDPE	18,85 €
2212.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Antimony AAS Standard Solution

1000 mg/l Sb

UN No. 1789 • ADR 8 III • WGK 1

Warning H290-H315-H319-H335

Type analysis:

c (Sb) as Sb in 20 % HCl. ... 1000 mg/l
Traceable to SRM from NIST.

2223.1	100 ml	HDPE	18,85 €
2223.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Arsenic AAS Standard Solution

1000 mg/l As

UN No. 3264 • ADR 8 III • WGK 3

Danger H290-H315-H319-H350

Type analysis:

c (As) as As_2O_3 in 2 % HNO_3. ... 1000 mg/l
Traceable to SRM from NIST.

2224.1	100 ml	HDPE	18,85 €
2224.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Barium AAS Standard Solution

1000 mg/l Ba

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Ba) as $Ba(NO_3)_2$ in 1 % HNO_3 ... 1000 mg/l ±0,2 %
Traceable to SRM from NIST.

2225.1	100 ml	HDPE	18,85 €
2225.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Beryllium AAS Standard Solution

1000 mg/l Be

UN No. 2922 • ADR 8 (6.1) III • WGK 2

Danger

H290-H302-H311-H315-H318-H350i-EUH208

Type analysis:

c (Be) as BeO in 2 % HNO_3 / 0,5 % HF. ... 1000 mg/l ±0,2 %
Traceable to SRM from NIST.

2226.1	100 ml	HDPE	89,15 €
2226.2	500 ml	HDPE	176,85 €

For further information, please see page 1722

Bismuth AAS Standard Solution

1000 mg/l Bi

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Bi) as Bi in 3 % HNO_3. ... 1000 mg/l
Traceable to SRM from NIST.

2227.1	100 ml	HDPE	18,85 €
2227.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Boron AAS Standard Solution

1000 mg/l B

Type analysis:
c (B) as H_3BO_3 in H_2O. ..... 1000 mg/l
Traceable to SRM from NIST.

2237.1	100 ml	HDPE	18,85 €
2237.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Cadmium AAS Standard Solution

1000 mg/l Cd

UN No. 3264 • ADR 8 III • WGK 2

Warning H290-H315-H319

Type analysis:
c (Cd) as Cd in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2238.1	100 ml	HDPE	18,85 €
2238.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Caesium AAS Standard Solution

1000 mg/l Cs

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:
c (Cs) as $CsNO_3$ in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2239.1	100 ml	HDPE	31,10 €
2239.2	500 ml	HDPE	50,45 €

For further information, please see page 1722

Calcium AAS Standard Solution

1000 mg/l Ca

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:
c (Ca) as $CaCO_3$ in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2240.1	100 ml	HDPE	18,85 €
2240.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Chromium AAS Standard Solution

1000 mg/l Cr

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:
c (Cr) as $Cr(NO_3)_3$ in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2250.1	100 ml	HDPE	18,85 €
2250.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Cobalt AAS Standard Solution

1000 mg/l Co

UN No. 3264 • ADR 8 III • WGK 2

Danger

H290-H315-H319-H350i-EUH208

Type analysis:
c (Co) as Co in 2 % HNO_3. .....1000 mg/l
Traceable to SRM from NIST.

2251.1	100 ml	HDPE	18,85 €
2251.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Copper AAS Standard Solution

1000 mg/l Cu

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319-H412

Type analysis:
c (Cu) as Cu in 2 % HNO_3. .....1000 mg/l
Traceable to SRM from NIST.

2329.1	100 ml	HDPE	18,85 €
2329.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Gold AAS Standard Solution

1000 mg/l Au

UN No. 1789 • ADR 8 III

Warning H290-EUH208

Type analysis:
c (Au) as Au in 2 % HCl. .....1000 mg/l
Traceable to SRM from NIST.

2258.1	100 ml	glass	78,40 €
2258.2	500 ml	glass	214,50 €

For further information, please see page 1722

Indium AAS Standard Solution

1000 mg/l In

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:
c (In) as In in 2 % HNO_3. .....1000 mg/l
Traceable to SRM from NIST.

2284.1	100 ml	HDPE	37,55 €

For further information, please see page 1722

Iron AAS Standard Solution

1000 mg/l Fe

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:
c (Fe) as Fe in 2 % HNO_3. .....1000 mg/l
Traceable to SRM from NIST.

2252.1	100 ml	HDPE	18,85 €
2252.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Lead AAS Standard Solution

1000 mg/l Pb

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:
c (Pb) as Pb in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2228.1	100 ml	HDPE	18,85 €
2228.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Lithium AAS Standard Solution

1000 mg/l Li

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:
c (Li) as Li_2CO_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2332.1	100 ml	HDPE	18,85 €
2332.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Magnesium AAS Standard Solution

1000 mg/l Mg

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:
c (Mg) as Mg in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2333.1	100 ml	HDPE	18,85 €
2333.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Manganese AAS Standard Solution

1000 mg/l Mn

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:
c (Mn) as Mn in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2334.1	100 ml	HDPE	18,85 €
2334.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Mercury AAS Standard Solution

1000 mg/l Hg

UN No. 2031 • ADR 8 II • WGK 2

Danger H290-H314-H373-EUH071

Type analysis:
c (Hg) as Hg in 10 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2346.1	100 ml	glass	18,85 €
2346.2	500 ml	glass	29,60 €

For further information, please see page 1722

Molybdenum AAS Standard Solution

1000 mg/l Mo

WGK 1

Danger H315-H318

Type analysis:

c (Mo) as $(NH_4)_6Mo_7O_{24}$ in 4 % NH_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2335.1	100 ml	HDPE	18,85 €
2335.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Nickel AAS Standard Solution

1000 mg/l Ni

UN No. 3264 • ADR 8 III • WGK 2

Danger H290-H315-H317-H319-H350i-H360D-H373-H412

Type analysis:

c (Ni) as Ni in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2339.1	100 ml	HDPE	18,85 €
2339.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Palladium AAS Standard Solution

1000 mg/l Pd

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Pd) as Pd in 3 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2340.1	100 ml	glass	123,55 €

For further information, please see page 1722

Phosphor AAS Standard Solution

1000 mg/l P

Type analysis:

c (P) as H_3PO_4 in H_2O..... 1000 mg/l
Traceable to SRM from NIST.

2599.1	100 ml	HDPE	18,85 €
2599.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Platinum AAS Standard Solution

1000 mg/l Pt

UN No. 1789 • ADR 8 III • WGK 1

Warning

H290-H315-H319-H335-EUH208

Type analysis:

c (Pt) as Pt in 10 % HCl..... 1000 mg/l
Traceable to SRM from NIST.

2341.1	100 ml	glass	134,95 €
2341.2	500 ml	glass	482,70 €

For further information, please see page 1722

Potassium AAS Standard Solution

1000 mg/l K

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (K) as KNO_3 in 2 % HNO_3. .....1000 mg/l
Traceable to SRM from NIST.

2327.1	100 ml	HDPE	18,85 €
2327.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Scandium AAS Standard Solution

1000 mg/l Sc

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Sc) as Sc_2O_3 in 2 % HNO_3.....1000 mg/l
Traceable to SRM from NIST.

2347.1	100 ml	HDPE	79,05 €
2347.2	500 ml	HDPE	235,45 €

For further information, please see page 1722

Selenium AAS Standard Solution

1000 mg/l Se

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Se) as Se in 2 % HNO_3.....1000 mg/l
Traceable to SRM from NIST.

2348.1	100 ml	HDPE	18,85 €
2348.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Silicon AAS Standard Solution

1000 mg/l Si

WGK 1

Type analysis:

c (Si) as $(NH_4)_2SiF_6$ in H_2O.....1000 mg/l
Traceable to SRM from NIST.

2350.1	100 ml	HDPE	18,85 €
2350.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Silicon AAS Standard Solution

1000 mg/l Si

UN No. 1824 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Si) as Na_2SiO_3 in 0,5 % NaOH.....1000 mg/l
Traceable to SRM from NIST.

2351.1	100 ml	HDPE	18,85 €

For further information, please see page 1722

Silver AAS Standard Solution

1000 mg/l Ag

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Ag) as $AgNO_3$ in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2349.1	100 ml	HDPE	18,85 €
2349.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Sodium AAS Standard Solution

1000 mg/l Na

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Na) as Na_2CO_3 in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2337.1	100 ml	HDPE	18,85 €
2337.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Strontium AAS Standard Solution

1000 mg/l Sr

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Sr) as $Sr(NO_3)_2$ in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2352.1	100 ml	HDPE	18,85 €
2352.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Tellurium AAS Standard Solution

1000 mg/l Te

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Te) as Te in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2353.1	100 ml	HDPE	27,45 €
2353.2	500 ml	HDPE	48,30 €

For further information, please see page 1722

Thallium AAS Standard Solution

1000 mg/l Tl

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Tl) as $TlNO_3$ in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2354.1	100 ml	HDPE	27,45 €
2354.2	500 ml	HDPE	48,30 €

For further information, please see page 1722

Tin AAS Standard Solution

1000 mg/l Sn

UN No. 1789 • ADR 8 III • WGK 1

Warning H290-H315-H319-H335

Type analysis:

c (Sn) as Sn in 10 % HCl..... 1000 mg/l
Traceable to SRM from NIST.

2384.1	100 ml	HDPE	18,85 €
2384.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Titanium AAS Standard Solution

1000 mg/l Ti

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Ti) as Ti in 2 % HNO_3/0,1 % HF. ..... 1000 mg/l
Traceable to SRM from NIST.

2355.1	100 ml	HDPE	18,85 €
2355.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Tungsten AAS Standard Solution

1000 mg/l W

WGK 1

Danger H315-H318

Type analysis:

c (W) as WO_3 in 4 % NH_3..... 1000 mg/l
Traceable to SRM from NIST.

2361.1	100 ml	HDPE	27,45 €
2361.2	500 ml	HDPE	48,30 €

For further information, please see page 1722

Vanadium AAS Standard Solution

1000 mg/l V

UN No. 3264 • ADR 8 III • WGK 2

Warning H290-H315-H319

Type analysis:

c (V) as NH_4VO_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2360.1	100 ml	HDPE	18,85 €
2360.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Yttrium AAS Standard Solution

1000 mg/l Y

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Y) as Y_2O_3 in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2371.1	100 ml	HDPE	27,45 €
2371.2	500 ml	HDPE	48,30 €

For further information, please see page 1722

Zinc AAS Standard Solution

1000 mg/l Zn

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Zn) as Zn in 2 % HNO_3. .....1000 mg/l
Traceable to SRM from NIST.

2383.1	100 ml	HDPE	18,85 €
2383.2	500 ml	HDPE	29,60 €

For further information, please see page 1722

Zirconium AAS Standard Solution

1000 mg/l Zr

UN No. 2922 • ADR 8 (6.1) III • WGK 1

Danger H290-H302-H311-H315-H319

Type analysis:

c (Zr) as $ZrOCl_2$ in 5 % HCl/0,5 % HF.....1000 mg/l
Traceable to SRM from NIST.

2396.1	100 ml	HDPE	27,45 €
2396.2	500 ml	HDPE	48,30 €

For further information, please see page 1722

Standards for GF-AAS (Graphite Furnace Atom Absorption Spectroscopy): Multi-Element Standards

GF AAS Multi-Element Standard Solution XVIII

16 elements in 5 % nitric acid

UN No. 3264 • ADR 8 II • WGK 1

Danger H290-H314-H317-EUH071

Type analysis:

Ag (Silver).....10 mg/l
Al (Aluminium).....100 mg/l
As (Arsenic).....100 mg/l
Ba (Barium).....50 mg/l
Be (Beryllium).....5 mg/l
Cd (Cadmium).....5 mg/l
Co (Cobalt).....50 mg/l
Cr (Chrom).....20 mg/l
Cu (Copper).....50 mg/l
Fe (Iron).....20 mg/l
Mn (Manganese).....20 mg/l
Ni (Nickel).....50 mg/l
Pb (Lead).....100 mg/l
Sb (Antimony).....100 mg/l
Se (Selenium).....100 mg/l
Tl (Thallium).....100 mg/l
Traceable to SRM from NIST.

9778.1	100 ml	HDPE	184,40 €

For further information, please see page 1723

Standards for ICP-OES (Inductively Coupled Spectroscopy) Element Standards 1000 mg/l, ready to use

Aluminium ICP Standard Solution

1000 mg/l Al

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Al) as $Al(NO_3)_3$ in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2397.1	100 ml	HDPE	51,50 €
2397.2	500 ml	HDPE	111,70 €

For further information, please see page 1724

Antimony ICP Standard Solution

1000 mg/l Sb

UN No. 1789 • ADR 8 III • WGK 1

Warning H290-H315-H319-H335

Type analysis:

c (Sb) as Sb in 20 % HCl..... 1000 mg/l
Traceable to SRM from NIST.

2398.1	100 ml	HDPE	51,50 €

For further information, please see page 1724

Arsenic ICP Standard Solution

1000 mg/l As

UN No. 3264 • ADR 8 III • WGK 3

Danger H290-H315-H319-H350

Type analysis:

c (As) as H_3AsO_4 in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2399.2	30 ml	HDPE	37,55 €
2399.1	100 ml	HDPE	51,50 €

For further information, please see page 1724

Barium ICP Standard Solution

1000 mg/l Ba

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Ba) as $Ba(NO_3)_2$ in 1 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2400.1	100 ml	HDPE	51,50 €
2400.2	500 ml	HDPE	111,70 €

For further information, please see page 1724

Beryllium ICP Standard Solution

1000 mg/l Be

UN No. 2922 • ADR 8 (6.1) III • WGK 2

Danger

H290-H302-H311-H315-H318-H350i-EUH208

Type analysis:

c (Be) as $Be_4O(C_2H_3O_2)_6$ in 2 % HNO_3/0,5 % HF. ..... 1000 mg/l
Traceable to SRM from NIST.

2401.1	100 ml	HDPE	94,10 €

For further information, please see page 1724

Bismuth ICP Standard Solution

1000 mg/l Bi

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Bi) as Bi in 3 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2402.1	100 ml	HDPE	51,50 €

For further information, please see page 1724

Boron ICP Standard Solution

1000 mg/l B

Type analysis:

c (B) as H_3BO_3 in H_2O. ..... 1000 mg/l
Traceable to SRM from NIST.

2404.1	100 ml	HDPE	51,50 €
2404.2	500 ml	HDPE	111,70 €

For further information, please see page 1724

Cadmium ICP Standard Solution

1000 mg/l Cd

UN No. 3264 • ADR 8 III • WGK 2

Warning H290-H315-H319

Type analysis:

c (Cd) as Cd in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2405.1	100 ml	HDPE	51,50 €

For further information, please see page 1724

Caesium ICP Standard Solution

1000 mg/l Cs

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Cs) as $CsNO_3$ in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2406.1	100 ml	HDPE	51,50 €

For further information, please see page 1724

Calcium ICP Standard Solution

1000 mg/l Ca

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Ca) as $CaCO_3$ in 2 % HNO_3.....1000 mg/l
Traceable to SRM from NIST.

2407.1	100 ml	HDPE	51,50 €
2407.2	500 ml	HDPE	111,70 €

For further information, please see page 1724

Cerium ICP Standard Solution

1000 mg/l Ce

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Ce) as $Ce(NO_3)_3$ in 2 % HNO_3.....1000 mg/l
Traceable to SRM from NIST.

2408.1	100 ml	HDPE	51,50 €

For further information, please see page 1724

Chromium ICP Standard Solution

1000 mg/l Cr

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Cr) as $Cr(NO_3)_3$ in 2 % HNO_3. .....1000 mg/l
Traceable to SRM from NIST.

2409.1	100 ml	HDPE	51,50 €
2409.2	500 ml	HDPE	111,70 €

For further information, please see page 1724

Cobalt ICP Standard Solution

1000 mg/l Co

UN No. 3264 • ADR 8 III • WGK 2

Danger

H290-H315-H319-H350i-EUH208

Type analysis:

c (Co) as Co in 2 % HNO_3. .....1000 mg/l
Traceable to SRM from NIST.

2410.1	100 ml	HDPE	51,50 €

For further information, please see page 1724

Copper ICP Standard Solution

1000 mg/l Cu

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319-H412

Type analysis:

c (Cu) as Cu in 2 % HNO_3. .....1000 mg/l
Traceable to SRM from NIST.

2426.1	100 ml	HDPE	51,50 €

For further information, please see page 1724

Dysprosium ICP Standard Solution

1000 mg/l Dy

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Dy) as Dy_2O_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2411.1	100 ml	HDPE	54,75 €

For further information, please see page 1724

Erbium ICP Standard Solution

1000 mg/l Er

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Er) as Er_2O_3 in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2413.1	100 ml	HDPE	54,75 €

For further information, please see page 1724

Europium ICP Standard Solution

1000 mg/l Eu

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Eu) as Eu_2O_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2414.1	100 ml	HDPE	54,75 €

For further information, please see page 1724

Gadolinium ICP Standard Solution

1000 mg/l Gd

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Gd) as Gd_2O_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2416.1	100 ml	HDPE	54,75 €

For further information, please see page 1724

Gallium ICP Standard Solution

1000 mg/l Ga

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Ga) as Ga in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2418.1	100 ml	HDPE	54,75 €

For further information, please see page 1724

Germanium ICP Standard Solution

1000 mg/l Ge

UN No. 2922 • ADR 8 (6.1) III • WGK 1

Danger H290-H302-H311-H315-H319

Type analysis:

c (Ge) as Ge in 2 % HNO_3/0,5 % HF..... 1000 mg/l
Traceable to SRM from NIST.

2419.1	100 ml	HDPE	54,75 €

For further information, please see page 1724

Gold ICP Standard Solution

1000 mg/l Au

UN No. 1789 • ADR 8 III

Warning H290-EUH208

Type analysis:

c (Au) as Au in 2 % HCl..... 1000 mg/l
Traceable to SRM from NIST.

2420.1	100 ml	LDPE	160,75 €

For further information, please see page 1724

Hafnium ICP Standard Solution

1000 mg/l Hf

UN No. 2922 • ADR 8 (6.1) III • WGK 1

Danger H290-H302-H311

Type analysis:

c (Hf) as HfO_2 in 2 % HCl/0,5 % HF. ..... 1000 mg/l
Traceable to SRM from NIST.

2421.1	100 ml	HDPE	170,95 €

For further information, please see page 1724

Holmium ICP Standard Solution

1000 mg/l Ho

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Ho) as Ho_2O_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2422.1	100 ml	HDPE	70,85 €

For further information, please see page 1724

Indium ICP Standard Solution

1000 mg/l In

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (In) as In in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2423.1	100 ml	HDPE	54,75 €

For further information, please see page 1724

Iridium ICP Standard Solution

1000 mg/l Ir

UN No. 1789 • ADR 8 III • WGK 1

Warning H290-H315-H319-H335

Type analysis:

c (Ir) as $IrCl_3$ in 10 % HCl. ..... 1000 mg/l

2424.1	100 ml	LDPE	203,20 €

For further information, please see page 1724

Iron ICP Standard Solution

1000 mg/l Fe

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Fe) as Fe $(NO_3)_3$ in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2412.1	100 ml	HDPE	51,50 €
2412.2	500 ml	HDPE	111,70 €

For further information, please see page 1724

Lanthanum ICP Standard Solution

1000 mg/l La

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (La) as La_2O_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2427.1	100 ml	HDPE	51,50 €

For further information, please see page 1724

Lead ICP Standard Solution

1000 mg/l Pb

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Pb) as $Pb(NO_3)_2$ in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2403.1	100 ml	HDPE	51,50 €

For further information, please see page 1724

Lithium ICP Standard Solution

1000 mg/l Li

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Li) as Li_2CO_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2428.1	100 ml	HDPE	51,50 €

For further information, please see page 1724

Lutetium ICP Standard Solution

1000 mg/l Lu

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Lu) as Lu_2O_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2429.1	100 ml	HDPE	147,20 €

For further information, please see page 1724

Magnesium ICP Standard Solution

1000 mg/l Mg

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Mg) as Mg in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2430.1	100 ml	HDPE	51,50 €
2430.2	500 ml	HDPE	111,70 €

For further information, please see page 1724

Manganese ICP Standard Solution

1000 mg/l Mn

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Mn) as Mn in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2437.1	100 ml	HDPE	51,50 €
2437.2	500 ml	HDPE	111,70 €

For further information, please see page 1724

Mercury ICP Standard Solution

1000 mg/l Hg

UN No. 2031 • ADR 8 II • WGK 2

Danger H290-H314-H373-EUH071

Type analysis:

c (Hg) as HgO in 10 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2453.1	100 ml	LDPE	51,50 €

For further information, please see page 1724

Molybdenum ICP Standard Solution

1000 mg/l Mo

WGK 1

Danger H315-H318

Type analysis:

c (Mo) as MoO_3 in 4 % NH_3..... 1000 mg/l
Traceable to SRM from NIST.

2438.1	100 ml	HDPE	51,50 €

For further information, please see page 1725

Neodymium ICP Standard Solution

1000 mg/l Nd

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Nd) as Nd_2O_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2443.1	100 ml	HDPE	54,75 €

For further information, please see page 1725

Nickel ICP Standard Solution

1000 mg/l Ni

UN No. 3264 • ADR 8 III • WGK 2

Danger H290-H315-H317-H319-H350i-H360D-H373-H412

Type analysis:

c (Ni) as Ni in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2444.1	100 ml	HDPE	51,50 €

For further information, please see page 1725

Niobium ICP Standard Solution

1000 mg/l Nb

UN No. 2922 • ADR 8 (6.1) III • WGK 1

Danger H290-H315-H319-H302-H311

Type analysis:

c (Nb) as Nb in 2 % HNO_3/0,5 % HF. ..... 1000 mg/l
Traceable to SRM from NIST.

2445.1	100 ml	HDPE	51,50 €

For further information, please see page 1725

Osmium ICP Standard Solution

1000 mg/l Os

UN No. 1789 • ADR 8 III

Warning H290

Type analysis:

c (Os) as $OsCl_3$ in 2 % HCl. ..... 1000 mg/l

2446.2	30 ml	HDPE	158,60 €
2446.1	100 ml	HDPE	294,05 €

For further information, please see page 1725

Palladium ICP Standard Solution

1000 mg/l Pd

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Pd) as Pd in 3 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2447.1	100 ml	LDPE	165,05 €

For further information, please see page 1725

Phosphorus ICP Standard Solution

1000 mg/l P

Type analysis:

c (P) as $NH_4H_2PO_4$ in H_2O. ..... 1000 mg/l
Traceable to SRM from NIST.

2451.1	100 ml	HDPE	51,50 €

For further information, please see page 1725

Platinum ICP Standard Solution

1000 mg/l Pt

UN No. 1789 • ADR 8 III • WGK 1

Warning

H290-H315-H319-H335-EUH208

Type analysis:

c (Pt) as Pt in 10 % HCl. ..... 1000 mg/l
Traceable to SRM from NIST.

2448.1	100 ml	LDPE	198,90 €

For further information, please see page 1725

Potassium ICP Standard Solution

1000 mg/l K

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (K) as KNO_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2425.1	100 ml	HDPE	51,50 €
2425.2	500 ml	HDPE	111,70 €

For further information, please see page 1725

Praseodymium ICP Standard Solution

1000 mg/l Pr

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Pr) as Pr_6O_{11} in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2452.1	100 ml	HDPE	54,75 €

For further information, please see page 1725

Rhenium ICP Standard Solution

1000 mg/l Re

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Re) as Re in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2454.1	100 ml	HDPE	124,60 €

For further information, please see page 1725

Rhodium ICP Standard Solution

1000 mg/l Rh

UN No. 1789 • ADR 8 III • WGK 1

Warning H290

Type analysis:

c (Rh) as $RhCl_3$ in 5 % HCl. ..... 1000 mg/l
Traceable to SRM from NIST.

2455.2	30 ml	HDPE	241,90 €
2455.1	100 ml	LDPE	403,15 €

For further information, please see page 1725

Rubidium ICP Standard Solution

1000 mg/l Rb

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Rb) as $RbNO_3$ in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2456.1	100 ml	HDPE	51,50 €

For further information, please see page 1725

Ruthenium ICP Standard Solution

1000 mg/l Ru

UN No. 1789 • ADR 8 III • WGK 1

Warning H290

Type analysis:

c (Ru) as $RuCl_3$ in 5 % HCl. ..... 1000 mg/l

2457.1	100 ml	LDPE	209,65 €

For further information, please see page 1725

Samarium ICP Standard Solution

1000 mg/l Sm

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Sm) as Sm_2O_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2458.1	100 ml	HDPE	54,75 €

For further information, please see page 1725

Scandium ICP Standard Solution

1000 mg/l Sc

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Sc) as Sc_2O_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2459.1	100 ml	HDPE	107,40 €

For further information, please see page 1725

Selenium ICP Standard Solution

1000 mg/l Se

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Se) as Se in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2461.1	100 ml	HDPE	51,50 €

For further information, please see page 1725

Silicon ICP Standard Solution

1000 mg/l Si

WGK 1

Type analysis:

c (Si) as $(NH_4)_2SiF_6$ in H_2O. ..... 1000 mg/l
Traceable to SRM from NIST.

2469.1	100 ml	HDPE	51,50 €

For further information, please see page 1725

Silver ICP Standard Solution

1000 mg/l Ag

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Ag) as $AgNO_3$ in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2468.1	100 ml	HDPE	51,50 €

For further information, please see page 1725

Sodium ICP Standard Solution

1000 mg/l Na

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Na) as $NaNO_3$ in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2439.1	100 ml	HDPE	51,10 €
2439.2	500 ml	HDPE	111,70 €

For further information, please see page 1725

Strontium ICP Standard Solution

1000 mg/l Sr

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Sr) as $Sr(NO_3)_2$ in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2470.1	100 ml	HDPE	51,50 €
2470.2	500 ml	HDPE	111,70 €

For further information, please see page 1725

Sulphur ICP Standard Solution

1000 mg/l S

Type analysis:

c (S) as $(NH_4)_2SO_4$ in H_2O. ..... 1000 mg/l
Traceable to SRM from NIST.

2460.1	100 ml	HDPE	51,50 €

For further information, please see page 1725

Tantalum ICP Standard Solution

1000 mg/l Ta

UN No. 2922 • ADR 8 (6.1) III • WGK 2

Danger H290-H302-H311-H319-H315

Type analysis:

c (Ta) as Ta in 1 % HNO_3/0,5 % HF. ..... 1000 mg/l
Traceable to SRM from NIST.

2471.1	100 ml	HDPE	54,75 €

For further information, please see page 1725

Tellurium ICP Standard Solution

1000 mg/l Te

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Te) as Te in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2472.1	100 ml	HDPE	54,75 €

For further information, please see page 1725

Terbium ICP Standard Solution

1000 mg/l Tb

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Tb) as Tb_4O_7 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2476.1	100 ml	HDPE	107,40 €

For further information, please see page 1725

Thallium ICP Standard Solution

1000 mg/l Tl

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Tl) as $TlNO_3$ in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2477.1	100 ml	HDPE	51,50 €

For further information, please see page 1725

Thulium ICP Standard Solution

1000 mg/l Tm

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Tm) as Tm_2O_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2478.1	100 ml	HDPE	135,35 €

For further information, please see page 1725

Tin ICP Standard Solution

1000 mg/l Sn

UN No. 1789 • ADR 8 III • WGK 1

Warning H290-H335-H315-H319

Type analysis:

c (Sn) as SnO in 10 % HCl. ..... 1000 mg/l
Traceable to SRM from NIST.

2486.1	100 ml	HDPE	51,50 €

For further information, please see page 1725

Titanium ICP Standard Solution

1000 mg/l Ti

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Ti) as $(NH_4)_2TiF_6$ in 2 % HNO_3/0,1 % HF. ..... 1000 mg/l
Traceable to SRM from NIST.

2479.1	100 ml	HDPE	51,50 €

For further information, please see page 1725

Tungsten ICP Standard Solution

1000 mg/l W

WGK 1

Danger H315-H318

Type analysis:

c (W) as WO_3 in 4 % NH_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2482.1	100 ml	HDPE	54,75 €

For further information, please see page 1725

Vanadium ICP Standard Solution

1000 mg/l V

UN No. 3264 • ADR 8 III • WGK 2

Warning H290-H315-H319

Type analysis:

c (V) as NH_4VO_3 in 2 % HNO_3. ..... 1000 mg/l
Traceable to SRM from NIST.

2480.1	100 ml	HDPE	51,50 €

For further information, please see page 1725

Ytterbium ICP Standard Solution

1000 mg/l Yb

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Yb) as Yb_2O_3 in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2483.1	100 ml	HDPE	54,75 €

For further information, please see page 1725

Yttrium ICP Standard Solution

1000 mg/l Y

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Y) as Y_2O_3 in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2484.1	100 ml	HDPE	54,75 €

For further information, please see page 1725

Zinc ICP Standard Solution

1000 mg/l Zn

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Zn) as Zn in 2 % HNO_3..... 1000 mg/l
Traceable to SRM from NIST.

2485.1	100 ml	HDPE	54,75 €
2485.2	500 ml	HDPE	111,70 €

For further information, please see page 1725

Zirconium ICP Standard Solution

1000 mg/l Zr

UN No. 2922 • ADR 8 (6.1) III • WGK 1

Danger H290-H302-H311-H315-H319

Type analysis:

c (Zr) as $ZrOCl_2$ in 5 % HCl/0,5 % HF..... 1000 mg/l
Traceable to SRM from NIST.

2487.1	100 ml	HDPE	54,75 €

For further information, please see page 1725

Standards for ICP-OES: (Inductively Coupled Spectroscopy) Element Standards 10000 mg/l, ready to use

Aluminium ICP Standard Solution

10000 mg/l Al

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Al) as $Al(NO_3)_3$ in 2 % HNO_3.....10000 mg/l
Traceable to SRM from NIST.

2488.1	100 ml	HDPE	91,95 €

For further information, please see page 1724

Antimony ICP Standard Solution

10000 mg/l Sb

UN No. 1789 • ADR 8 III • WGK 1

Warning H290-H315-H319-H335

Type analysis:

c (Sb) as Sb in 20 % HCl. .....10000 mg/l
Traceable to SRM from NIST.

2489.1	100 ml	HDPE	91,95 €

For further information, please see page 1724

Arsenic ICP Standard Solution

10000 mg/l As

UN No. 3264 • ADR 8 III • WGK 3

Danger H290-H315-H319-H350-H412

Type analysis:

c (As) as H_3AsO_4 in 2 % HNO_3. .....10000 mg/l
Traceable to SRM from NIST.

2491.1	100 ml	HDPE	91,95 €

For further information, please see page 1724

Barium ICP Standard Solution

10000 mg/l Ba

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Ba) as $Ba(NO_3)_2$ in 1 % HNO_3. .....10000 mg/l
Traceable to SRM from NIST.

2492.1	100 ml	HDPE	91,95 €
2492.2	500 ml	HDPE	200,95 €

For further information, please see page 1724

Beryllium ICP Standard Solution

10000 mg/l Be

UN No. 2922 • ADR 8 (6.1) II • WGK 1

Danger H290-H302+H332-H311-H314-H317-H350i-H373-EUH071

Type analysis:

c (Be) as BeO in 5 % HNO_3/1 % HF..... 10000 mg/l
Traceable to SRM from NIST.

2496.1	100 ml	HDPE	353,70 €

For further information, please see page 1724

Bismuth ICP Standard Solution

10000 mg/l Bi

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Bi) as Bi in 3 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2497.1	100 ml	HDPE	91,95 €

For further information, please see page 1724

Boron ICP Standard Solution

10000 mg/l B

WGK 1

Danger H360FD

Type analysis:

c (B) as H_3BO_3 in H_2O..... 10000 mg/l
Traceable to SRM from NIST.

2500.1	100 ml	HDPE	91,95 €
2500.2	500 ml	HDPE	200,95 €

For further information, please see page 1724

Cadmium ICP Standard Solution

10000 mg/l Cd

UN No. 3264 • ADR 8 III • WGK 2

Warning H290-H315-H319-H412

Type analysis:

c (Cd) as $Cd(NO_3)_2$ in 2 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2501.1	100 ml	HDPE	91,95 €

For further information, please see page 1724

Caesium ICP Standard Solution

10000 mg/l Cs

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Cs) as $CsNO_3$ in 2 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2502.1	100 ml	HDPE	95,60 €

For further information, please see page 1724

Calcium ICP Standard Solution

10000 mg/l Ca

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Ca) as $CaCO_3$ in 2 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2503.1	100 ml	HDPE	92,35 €
2503.2	500 ml	HDPE	200,95 €

For further information, please see page 1724

Cerium ICP Standard Solution

10000 mg/l Ce

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Ce) as $Ce(NO_3)_3$ in 3 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2504.1	100 ml	HDPE	101,60 €

For further information, please see page 1724

Chromium ICP Standard Solution

10000 mg/l Cr

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Cr) as $Cr(NO_3)_3$ in 3 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2505.1	100 ml	HDPE	91,95 €
2505.2	500 ml	HDPE	200,95 €

For further information, please see page 1724

Cobalt ICP Standard Solution

10000 mg/l Co

UN No. 3264 • ADR 8 III • WGK 3

Danger H290-H315-H318-H350i-H360F-H411-EUH208

Type analysis:

c (Co) as Co in 3 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2506.1	100 ml	HDPE	91,95 €

For further information, please see page 1724

Copper ICP Standard Solution

10000 mg/l Cu

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318-H411

Type analysis:

c (Cu) as Cu in 3 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2520.1	100 ml	HDPE	91,95 €

For further information, please see page 1724

Dysprosium ICP Standard Solution

10000 mg/l Dy

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Dy) as Dy_2O_3 in 3 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2507.1	100 ml	HDPE	106,35 €

For further information, please see page 1724

Erbium ICP Standard Solution

10000 mg/l Er

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Er) as Er_2O_3 in 3 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2509.1	100 ml	HDPE	101,60 €

For further information, please see page 1724

Europium ICP Standard Solution

10000 mg/l Eu

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Eu) as Eu_2O_3 in 2 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2510.1	100 ml	HDPE	120,95 €

For further information, please see page 1724

Gadolinium ICP Standard Solution

10000 mg/l Gd

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Gd) as Gd_2O_3 in 3 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2511.1	100 ml	HDPE	109,55 €

For further information, please see page 1724

Gallium ICP Standard Solution

10000 mg/l Ga

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Ga) as Ga in 3 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2512.1	100 ml	HDPE	109,55 €

For further information, please see page 1724

Germanium ICP Standard Solution

10000 mg/l Ge

UN No. 2922 • ADR 8 (6.1) III • WGK 1

Danger H290-H302-H311-H315-H319

Type analysis:

c (Ge) as Ge in 2 % HNO_3/0,5 % HF. ..... 10000 mg/l
Traceable to SRM from NIST.

2513.1	100 ml	HDPE	120,95 €

For further information, please see page 1724

Gold ICP Standard Solution

10000 mg/l Au

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H317-H315-H319

Type analysis:

c (Au) as Au in 5 % HCl. ..... 10000 mg/l
Traceable to SRM from NIST.

2514.1	100 ml	LDPE	568,70 €

For further information, please see page 1724

Hafnium ICP Standard Solution

10000 mg/l Hf

UN No. 2922 • ADR 8 (6.1) II • WGK 1

Danger
H290-H301+H311-H314-H332-EUH071

Type analysis:

c (Hf) as HfO_2 in 5 % HNO_3/2 % HF. ..... 10000 mg/l
Traceable to SRM from NIST.

2515.1	100 ml	HDPE	622,45 €

For further information, please see page 1724

Holmium ICP Standard Solution

10000 mg/l Ho

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Ho) as Ho_2O_3 in 3 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2516.1	100 ml	HDPE	109,55 €

For further information, please see page 1724

Indium ICP Standard Solution

10000 mg/l In

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (In) as In in 2 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2517.1	100 ml	HDPE	109,55 €

For further information, please see page 1724

Iridium ICP Standard Solution

10000 mg/l Ir

UN No. 1789 • ADR 8 III • WGK 1

Warning H290-H315-H319-H335

Type analysis:

c (Ir) as $IrCl_3$ in 10 % HCl. ..... 10000 mg/l
Traceable to SRM from NIST.

2518.1	100 ml	LDPE	858,95 €

For further information, please see page 1724

Iron ICP Standard Solution

10000 mg/l Fe

UN No. 3264 • ADR 8 III • WGK 3

Danger H290-H315-H318

Type analysis:

c (Fe) as Fe in 4% HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2508.1	100 ml	HDPE	91,95 €
2508.2	500 ml	HDPE	200,95 €

For further information, please see page 1724

Lanthanum ICP Standard Solution

10000 mg/l La

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (La) as La_2O_3 in 3 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2521.1	100 ml	HDPE	91,95 €

For further information, please see page 1724

Lead ICP Standard Solution

10000 mg/l Pb

UN No. 1760 • ADR 8 III • WGK 2

Danger

H290-H315-H318-H360D-H373-H412

Type analysis:

c (Pb) as $Pb(NO_3)_2$ in 3 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2499.1	100 ml	HDPE	91,95 €

For further information, please see page 1724

Lithium ICP Standard Solution

10000 mg/l Li

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Li) as $LiNO_3$ in 2 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2522.1	100 ml	HDPE	93,45 €

For further information, please see page 1724

Lutetium ICP Standard Solution

10000 mg/l Lu

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Lu) as Lu_2O_3 in 3 % HNO_3. .....10000 mg/l
Traceable to SRM from NIST.

2523.1	100 ml	HDPE	514,95 €

For further information, please see page 1724

Magnesium ICP Standard Solution

10000 mg/l Mg

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Mg) as Mg in 2 % HNO_3. .....10000 mg/l
Traceable to SRM from NIST.

2524.1	100 ml	HDPE	91,95 €
2524.2	500 ml	HDPE	200,95 €

For further information, please see page 1724

Manganese ICP Standard Solution

10000 mg/l Mn

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Mn) as Mn in 3 % HNO_3. .....10000 mg/l
Traceable to SRM from NIST.

2525.1	100 ml	HDPE	91,95 €
2525.2	500 ml	HDPE	200,95 €

For further information, please see page 1724

Mercury ICP Standard Solution

10000 mg/l Hg

UN No. 2922 • ADR 8 (6.1) II • WGK 2

Danger H290-H302+H332-H311-H314-H373-H412-EUH071

Type analysis:

c (Hg) as HgO in 10 % HNO_3. .....10000 mg/l
Traceable to SRM from NIST.

2537.1	100 ml	LDPE	91,95 €

For further information, please see page 1724

Molybdenum ICP Standard Solution

10000 mg/l Mo

WGK 1

Danger H315-H318

Type analysis:

c (Mo) as MoO_3 in 4 % NH_3. .....10000 mg/l
Traceable to SRM from NIST.

2526.1	100 ml	HDPE	91,95 €

For further information, please see page 1725

Neodymium ICP Standard Solution

10000 mg/l Nd

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Nd) as Nd_2O_3 in 3 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2528.1	100 ml	HDPE	120,95 €

For further information, please see page 1725

Nickel ICP Standard Solution

10000 mg/l Ni

UN No. 3264 • ADR 8 III • WGK 3

Danger H290-H315-H317-H318-H334-H341-H350i-H360D-H372-H411

Type analysis:

c (Ni) as Ni in 2 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2529.1	100 ml	HDPE	91,95 €

For further information, please see page 1725

Niobium ICP Standard Solution

10000 mg/l Nb

UN No. 2922 • ADR 8 (6.1) I • WGK 2

Danger

H290-H301+H331-H310-H314-EUH071

Type analysis:

c (Nb) as Nb in 5 % HNO_3/5 % HF. ..... 10000 mg/l
Traceable to SRM from NIST.

2531.1	100 ml	HDPE	91,95 €

For further information, please see page 1725

Palladium ICP Standard Solution

10000 mg/l Pd

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Pd) as Pd in 4 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2532.1	100 ml	LDPE	590,20 €

For further information, please see page 1725

Phosphorus ICP Standard Solution

10000 mg/l P

WGK 1

Type analysis:

c (P) as $NH_4H_2PO_4$ in H_2O. ..... 10000 mg/l
Traceable to SRM from NIST.

2534.1	100 ml	HDPE	91,95 €

For further information, please see page 1725

Platinum ICP Standard Solution

10000 mg/l Pt

UN No. 1789 • ADR 8 III • WGK 1

Danger

H334-H290-H318-H335-H315-H317

Type analysis:

c (Pt) as Pt in 10 % HCl..... 10000 mg/l
Traceable to SRM from NIST.

2533.1	100 ml	LDPE	998,70 €

For further information, please see page 1725

Potassium ICP Standard Solution

10000 mg/l K

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (K) as KNO_3 in 2 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2519.1	100 ml	HDPE	91,95 €
2519.2	500 ml	HDPE	200,95 €

For further information, please see page 1725

Praseodymium ICP Standard Solution

10000 mg/l Pr

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Pr) as Pr_6O_{11} in 3 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2536.1	100 ml	HDPE	101,60 €

For further information, please see page 1725

Rhenium ICP Standard Solution

10000 mg/l Re

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

c (Re) as Re in 2 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2538.1	100 ml	HDPE	450,45 €

For further information, please see page 1725

Rubidium ICP Standard Solution

10000 mg/l Rb

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Rb) as $RbNO_3$ in 2 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2539.1	100 ml	HDPE	256,95 €

For further information, please see page 1725

Ruthenium ICP Standard Solution

10000 mg/l Ru

UN No. 1789 • ADR 8 III • WGK 1

Danger H290-H318-H335-H315

Type analysis:

c (Ru) as $RuCl_3$ in 10 % HCl. ..... 10000 mg/l
Traceable to SRM from NIST.

2540.1	100 ml	LDPE	450,45 €

For further information, please see page 1725

Samarium ICP Standard Solution

10000 mg/l Sm

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Sm) as Sm_2O_3 in 2 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2541.1	100 ml	HDPE	115,60 €

For further information, please see page 1725

Selenium ICP Standard Solution

10000 mg/l Se

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Se) as Se in 2 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2543.1	100 ml	HDPE	91,95 €

For further information, please see page 1725

Silicon ICP Standard Solution

10000 mg/l Si

WGK 2

Warning H302

Type analysis:

c (Si) as $(NH_4)_2SiF_6$ in H_2O..... 10000 mg/l
Traceable to SRM from NIST.

2546.1	100 ml	HDPE	91,95 €

For further information, please see page 1725

Silver ICP Standard Solution

10000 mg/l Ag

UN No. 1760 • ADR 8 II • WGK 2

Danger H290-H314-H410

Type analysis:

c (Ag) as $AgNO_3$ in 4 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2544.1	100 ml	HDPE	91,95 €

For further information, please see page 1725

Sodium ICP Standard Solution

10000 mg/l Na

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Na) as $NaNO_3$ in 2 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2527.1	100 ml	HDPE	91,95 €
2527.2	500 ml	HDPE	200,95 €

For further information, please see page 1725

Strontium ICP Standard Solution

10000 mg/l Sr

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Sr) as $Sr(NO_3)_2$ in 2 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2547.1	100 ml	HDPE	91,95 €
2547.2	500 ml	HDPE	200,95 €

For further information, please see page 1725

Sulphur ICP Standard Solution

10000 mg/l S

WGK 1

Type analysis:

c (S) as $(NH_4)_2SO_4$ in H_2O. ..... 10000 mg/l
Traceable to SRM from NIST.

2542.1	100 ml	HDPE	91,95 €

For further information, please see page 1725

Tantalum ICP Standard Solution

10000 mg/l Ta

UN No. 2922 • ADR 8 (6.1) III • WGK 1

Danger H290-H302-H311-H315-H319

Type analysis:

c (Ta) as Ta in 1 % HNO_3/0,5 % HF. ..... 10000 mg/l
Traceable to SRM from NIST.

2548.1	100 ml	HDPE	101,60 €

For further information, please see page 1725

Tellurium ICP Standard Solution

10000 mg/l Te

UN No. 2031 • ADR 8 II • WGK 1

Danger H290-H314-EUH071

Type analysis:

c (Te) as Te in 20 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2549.1	100 ml	HDPE	101,60 €

For further information, please see page 1725

Terbium ICP Standard Solution

10000 mg/l Tb

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Tb) as Tb_4O_7 in 3 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2550.1	100 ml	HDPE	224,70 €

For further information, please see page 1725

Thallium ICP Standard Solution

10000 mg/l Tl

UN No. 1760 • ADR 8 II • WGK 1

Danger

H290-H302+H332-H314-EUH071

Type analysis:

c (Tl) as $TlNO_3$ in 5 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2552.1	100 ml	HDPE	91,95 €

For further information, please see page 1725

Tin ICP Standard Solution

10000 mg/l Sn

UN No. 1789 • ADR 8 II • WGK 1

Danger H290-H314-H335

Type analysis:

c (Sn) as Sn in 20 % HCl..... 10000 mg/l
Traceable to SRM from NIST.

2583.1	100 ml	HDPE	91,95 €

For further information, please see page 1725

Titanium ICP Standard Solution

10000 mg/l Ti

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

c (Ti) as $(NH_4)_2TiF_6$ in 2 % HNO_3/0,1 % HF. .....
..... 10000 mg/l
Traceable to SRM from NIST.

2561.1	100 ml	HDPE	91,95 €

For further information, please see page 1725

Tungsten ICP Standard Solution

10000 mg/l W

WGK 2

Danger H314-H335

Type analysis:

c (W) as WO_3 in 10 % NH_3..... 10000 mg/l
Traceable to SRM from NIST.

2571.1	100 ml	HDPE	91,95 €

For further information, please see page 1725

Vanadium ICP Standard Solution

10000 mg/l V

UN No. 1760 • ADR 8 III • WGK 2

Danger H290-H315-H318-H373-H412

Type analysis:

c (V) as NH_4VO_3 in 3 % HNO_3..... 10000 mg/l
Traceable to SRM from NIST.

2567.1	100 ml	HDPE	91,95 €

For further information, please see page 1725

Ytterbium ICP Standard Solution

10000 mg/l Yb

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Yb) as Yb_2O_3 in 3 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2572.1	100 ml	HDPE	164,40 €

For further information, please see page 1725

Yttrium ICP Standard Solution

10000 mg/l Y

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318

Type analysis:

c (Y) as Y_2O_3 in 3 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2574.1	100 ml	HDPE	101,60 €

For further information, please see page 1725

Zinc ICP Standard Solution

10000 mg/l Zn

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H315-H318-H412

Type analysis:

c (Zn) as ZnO in 3 % HNO_3. ..... 10000 mg/l
Traceable to SRM from NIST.

2576.1	100 ml	HDPE	101,60 €
2576.2	500 ml	HDPE	200,95 €

For further information, please see page 1725

Zircon ICP Standard Solution

10000 mg/l Zr

UN No. 2922 • ADR 8 (6.1) III • WGK 2

Danger H290-H302+H311-H315-H319

Type analysis:

c (Zr) as $ZrOCl_2$ in 5 % HCl/0,5 % HF..... 10000 mg/l
Traceable to SRM from NIST.

2584.1	100 ml	HDPE	110,65 €

For further information, please see page 1725

Standards for ICP-OES (Inductively Coupled Spectroscopy): Multi-Element Standards

ICP Multi-Element Standard Solution I

19 elements in 5 % nitric acid

UN No. 2031 • ADR 8 II • WGK 1

Danger H290-H314-EUH071

Type analysis:

Ag (Silver). ..... 50 mg/l
Al (Aluminium)..... 100 mg/l
B (Boron). ..... 15 mg/l
Ba (Barium)..... 5 mg/l
Be (Beryllium). ..... 1 mg/l
Bi (Bismuth). ..... 200 mg/l
Cd (Cadmium). ..... 20 mg/l
Co (Cobalt). ..... 20 mg/l
Cr (Chromium). ..... 25 mg/l
Cu (Copper). ..... 20 mg/l
Fe (Iron). ..... 15 mg/l
Ga (Gallium)..... 150 mg/l
In (Indium)..... 200 mg/l
Mn (Manganese)..... 5 mg/l
Ni (Nickel). ..... 50 mg/l
Pb (Lead). ..... 200 mg/l
Sr (Strontium)..... 1 mg/l
Tl (Thallium). ..... 400 mg/l
Zn (Zinc). ..... 20 mg/l
Traceable to SRM from NIST.

2636.1	100 ml	HDPE	145,70 €

For further information, please see page 1726

ICP Multi-Element Standard Solution III

4 elements in 2 % nitric acid - 1000 mg/l

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

Ba (Barium)..... 1000 mg/l
Ca (Calcium)..... 1000 mg/l
Mg (Magnesium)..... 1000 mg/l
Sr (Strontium)..... 1000 mg/l
Traceable to SRM from NIST.

2637.1	100 ml	HDPE	113,85 €

For further information, please see page 1726

ICP Multi-Element Standard Solution IV

23 elements in 2 % nitric acid - 1000 mg/l

UN No. 3264 • ADR 8 III • WGK 2

Danger H290-H315-H317-H319-H350i-H360FD-H373-H412

Type analysis:

Ag (Silver). ..... 1000 mg/l
Al (Aluminium)..... 1000 mg/l
B (Boron). ..... 1000 mg/l
Ba (Barium)..... 1000 mg/l
Bi (Bismuth). ..... 1000 mg/l
Ca (Calcium)..... 1000 mg/l
Cd (Cadmium). ..... 1000 mg/l
Co (Cobalt). ..... 1000 mg/l
Cr (Chromium). ..... 1000 mg/l
Cu (Copper). ..... 1000 mg/l

Fe (Iron). ..... 1000 mg/l
Ga (Gallium). ..... 1000 mg/l
In (Indium). ..... 1000 mg/l
K (Potassium). ..... 1000 mg/l
Li (Lithium). ..... 1000 mg/l
Mg (Magnesium). ..... 1000 mg/l
Mn (Manganese). ..... 1000 mg/l
Na (Sodium). ..... 1000 mg/l
Ni (Nickel). ..... 1000 mg/l
Pb (Lead). ..... 1000 mg/l
Sr (Strontium). ..... 1000 mg/l
Tl (Thallium). ..... 1000 mg/l
Zn (Zinc). ..... 1000 mg/l
Traceable to SRM from NIST.

2638.1	100 ml	HDPE	271,45 €

For further information, please see page 1726

ICP Multi-Element Standard Solution VIII

24 elements in 2 % nitric acid – 100 mg/l
UN No. 3264 • ADR 8 III • WGK 1
Warning H290-H315-H317-H319

Type analysis:
Al (Aluminium). ..... 100 mg/l
B (Boron). ..... 100 mg/l
Ba (Barium). ..... 100 mg/l
Be (Beryllium). ..... 100 mg/l
Bi (Bismuth). ..... 100 mg/l
Ca (Calcium). ..... 100 mg/l
Cd (Cadmium). ..... 100 mg/l
Co (Cobalt). ..... 100 mg/l
Cr (Chromium). ..... 100 mg/l
Cu (Copper). ..... 100 mg/l
Fe (Iron). ..... 100 mg/l
Ga (Gallium). ..... 100 mg/l
K (Potassium). ..... 100 mg/l
Li (Lithium). ..... 100 mg/l
Mg (Magnesium). ..... 100 mg/l
Mn (Manganese). ..... 100 mg/l
Na (Sodium). ..... 100 mg/l
Ni (Nickel). ..... 100 mg/l
Pb (Lead). ..... 100 mg/l
Se (Selenium). ..... 100 mg/l
Sr (Strontium). ..... 100 mg/l
Te (Tellur). ..... 100 mg/l
Tl (Thallium). ..... 100 mg/l
Zn (Zinc). ..... 100 mg/l
Traceable to SRM from NIST.

2639.1	100 ml	HDPE	271,45 €

For further information, please see page 1726

ICP Multi-Element Standard Solution IX

9 elements in 2 % nitric acid – 100 mg/l
UN No. 3264 • ADR 8 III • WGK 1
Warning H290-H315-H319-H317

Type analysis:
As (Arsenic). ..... 100 mg/l
Be (Beryllium). ..... 100 mg/l
Cd (Cadmium). ..... 100 mg/l
Cr (Chromium). ..... 100 mg/l
Hg (Mercury). ..... 100 mg/l
Ni (Nickel). ..... 100 mg/l
Pb (Lead). ..... 100 mg/l
Se (Selenium). ..... 100 mg/l
Tl (Thallium). ..... 100 mg/l
Traceable to SRM from NIST.

2640.1	100 ml	HDPE	145,70 €

For further information, please see page 1726

ICP Multi-Element Standard Solution X

23 elements in 2 % nitric acid
For surface water testing.
UN No. 3264 • ADR 8 III
Warning H290-H315-H319

Type analysis:
Ca (Calcium). ..... 35000 µg/l
Mg (Magnesium). ..... 15000 µg/l
Na (Sodium). ..... 8000 µg/l
K (Potassium). ..... 3000 µg/l
B (Boron). ..... 100 µg/l
Fe (Iron). ..... 100 µg/l
Mo (Molybdenum). ..... 100 µg/l
Sr (Strontium). ..... 100 µg/l
As (Arsenic). ..... 50 µg/l
Ba (Barium). ..... 50 µg/l
Ni (Nickel). ..... 50 µg/l
V (Vanadium). ..... 50 µg/l
Zn (Zinc). ..... 50 µg/l
Mn (Manganese). ..... 30 µg/l
Co (Cobalt). ..... 25 µg/l
Pb (Lead). ..... 25 µg/l
Be (Beryllium). ..... 20 µg/l
Cd (Cadmium). ..... 20 µg/l
Cr (Chromium). ..... 20 µg/l
Cu (Copper). ..... 20 µg/l
Bi (Bismuth). ..... 10 µg/l
Se (Selenium). ..... 10 µg/l
Tl (Thallium). ..... 10 µg/l
Traceable to SRM from NIST.

2642.1	100 ml	HDPE	246,20 €

For further information, please see page 1726

ICP Multi-Element Standard Solution XI

7 elements in 2 % nitric acid
For sludge testing.
UN No. 3264 • ADR 8 III • WGK 1
Warning
H290-H315-H319-H317-H412

Type analysis:
Cd (Cadmium). ..... 10 mg/l
Cr (Chromium). ..... 900 mg/l
Cu (Copper). ..... 800 mg/l
Hg (Mercury). ..... 8 mg/l
Ni (Nickel). ..... 200 mg/l
Pb (Lead). ..... 900 mg/l
Zn (Zinc). ..... 2500 mg/l
Traceable to SRM from NIST.

2643.1	100 ml	HDPE	145,70 €

For further information, please see page 1726

ICP Multi-Element Standard Solution XIII

15 elements in 2 % nitric acid
UN No. 3264 • ADR 8 III • WGK 1
Warning H290-H315-H317-H319

Type analysis:
Al (Aluminium). ..... 500 mg/l
As (Arsenic). ..... 100 mg/l
Be (Beryllium). ..... 100 mg/l
Cd (Cadmium). ..... 25,0 mg/l
Co (Cobalt). ..... 100 mg/l
Cr (Chromium). ..... 100 mg/l
Cu (Copper). ..... 100 mg/l
Fe (Iron). ..... 100 mg/l
Hg (Mercury). ..... 5,0 mg/l
Mn (Manganese). ..... 100 mg/l
Ni (Nickel). ..... 100 mg/l
Pb (Lead). ..... 100 mg/l
Se (Selenium). ..... 25,0 mg/l
V (Vanadium). ..... 250 mg/l
Zn (Zinc). ..... 100 mg/l
Traceable to SRM from NIST.

2644.1	100 ml	HDPE	289,20 €

For further information, please see page 1726

ICP Multi-Element Standard Solution XVI

21 elements in 2 % nitric acid – 100 mg/l
UN No. 3264 • ADR 8 III • WGK 3
Warning H290-H315-H317-H319

Type analysis:
As (Arsenic). ..... 100 mg/l
Be (Beryllium). ..... 100 mg/l
Ca (Calcium). ..... 100 mg/l
Cd (Cadmium). ..... 100 mg/l
Co (Cobalt). ..... 100 mg/l
Cr (Chromium). ..... 100 mg/l
Cu (Copper). ..... 100 mg/l
Fe (Iron). ..... 100 mg/l
Li (Lithium). ..... 100 mg/l
Mg (Magnesium). ..... 100 mg/l
Mn (Manganese). ..... 100 mg/l
Mo (Molybdenum). ..... 100 mg/l
Ni (Nickel). ..... 100 mg/l
Pb (Lead). ..... 100 mg/l
Sb (Antimony). ..... 100 mg/l
Se (Selenium). ..... 100 mg/l
Sr (Strontium). ..... 100 mg/l
Ti (Titanium). ..... 100 mg/l
Tl (Thallium). ..... 100 mg/l
V (Vanadium). ..... 100 mg/l
Zn (Zinc). ..... 100 mg/l
Traceable to SRM from NIST.

2645.1	100 ml	HDPE	246,20 €

For further information, please see page 1726

ICP Multi-Element Standard Solution XVII

7 elements in 15 % hydrochloric acid – 100 mg/l
UN No. 1789 • ADR 8 III • WGK 1
Warning H290-H335-H315-H319

Type analysis:
Hf (Hafnium). ..... 100 mg/l
Ir (Iridium). ..... 100 mg/l
Sb (Antimony). ..... 100 mg/l
Sn (Tin). ..... 100 mg/l
Ta (Tantal). ..... 100 mg/l
Ti (Titanium). ..... 100 mg/l
Zr (Zirconium). ..... 100 mg/l
Traceable to SRM from NIST.

2646.1	100 ml	HDPE	169,35 €

For further information, please see page 1726

ICP Multi-Element Standard Solution A

24 elements in 5 % nitric acid

UN No. 3264 • ADR 8 II • WGK 1

Danger

H290-H314-H317-H350i-H373-H412-EUH071

Type analysis:

Al (Aluminium). ..... 1000 mg/l
As (Arsenic). ..... 100 mg/l
B (Boron). ..... 500 mg/l
Ba (Barium). ..... 500 mg/l
Ca (Calcium). ..... 1000 mg/l
Cd (Cadmium). ..... 100 mg/l
Co (Cobalt). ..... 500 mg/l
Cr (Chrom). ..... 500 mg/l
Cu (Copper). ..... 500 mg/l
Fe (Iron). ..... 1000 mg/l
Hg (Mercury). ..... 10 mg/l
K (Potassium). ..... 1000 mg/l
Li (Lithium). ..... 100 mg/l
Mg (Magnesium). ..... 1000 mg/l
Mn (Manganese). ..... 500 mg/l
Na (Sodium). ..... 1000 mg/l
Ni (Nickel). ..... 500 mg/l
Pb (Lead). ..... 500 mg/l
Rb (Rubidium). ..... 500 mg/l
Sr (Strontium). ..... 500 mg/l
Te (Tellur). ..... 500 mg/l
Ti (Titanium). ..... 500 mg/l
V (Vanadium). ..... 500 mg/l
Zn (Zinc). ..... 500 mg/l
Traceable to SRM from NIST.

8248.1	100 ml	HDPE	461,20 €

For further information, please see page 1726

ICP Multi-Element Standard Solution B

25 elements in 5 % nitric acid

UN No. 3264 • ADR 8 II • WGK 1

Danger H290-H314-H317-EUH071

Type analysis:

Al (Aluminium). ..... 200 mg/l
As (Arsenic). ..... 5 mg/l
B (Boron). ..... 20 mg/l
Ba (Barium). ..... 50 mg/l
Ca (Calcium). ..... 500 mg/l
Cd (Cadmium). ..... 5 mg/l
Co (Cobalt). ..... 20 mg/l
Cr (Chrom). ..... 40 mg/l
Cu (Copper). ..... 20 mg/l
Fe (Iron). ..... 100 mg/l
Hg (Mercury). ..... 0,5 mg/l
K (Potassium). ..... 100 mg/l
Li (Lithium). ..... 10 mg/l
Mg (Magnesium). ..... 500 mg/l
Mn (Manganese). ..... 10 mg/l
Na (Sodium). ..... 100 mg/l
Ni (Nickel). ..... 40 mg/l
P (Phosphorus). ..... 40 mg/l
Pb (Lead). ..... 10 mg/l
Rb (Rubidium). ..... 10 mg/l
Sr (Strontium). ..... 100 mg/l
Te (Tellur). ..... 10 mg/l
Ti (Titanium). ..... 10 mg/l
V (Vanadium). ..... 40 mg/l
Zn (Zinc). ..... 50 mg/l
Traceable to SRM from NIST.

8249.1	100 ml	HDPE	342,95 €

For further information, please see page 1726

ICP Multi-Element Standard Solution (9 elements, 1000 mg/l)

9 elements in 5 % nitric acid - 1000 mg/l

UN No. 3264 • ADR 8 II • WGK 3

Danger H290-H314-H317-H340-H350i-H360FD-H373-H412-EUH071

Type analysis:

As (Arsenic). ..... 1000 mg/l
Cd (Cadmium). ..... 1000 mg/l
Cr (Chrom). ..... 1000 mg/l
Cu (Copper). ..... 1000 mg/l
Mo (Molybdenum). ..... 1000 mg/l
Ni (Nickel). ..... 1000 mg/l
Sb (Antimony). ..... 1000 mg/l
Se (Selenium). ..... 1000 mg/l
Zn (Zinc). ..... 1000 mg/l
Traceable to SRM from NIST.

9987.1	100 ml	HDPE	267,70 €

For further information, please see page 1726

ICP Multi-Element Standard Solution (22 elements, 1 mg/l)

22 elements in 5 % nitric acid – 1 mg/l

UN No. 2031 • ADR 8 II • WGK 1

Danger H290-H314-EUH071

Type analysis:

As (Arsenic). ..... 1 mg/l
Be (Beryllium). ..... 1 mg/l
Bi (Bismuth). ..... 1 mg/l
Ca (Calcium). ..... 1 mg/l
Cd (Cadmium). ..... 1 mg/l
Co (Cobalt). ..... 1 mg/l
Cr (Chrom). ..... 1 mg/l
Cu (Copper). ..... 1 mg/l
Fe (Iron). ..... 1 mg/l
Li (Lithium). ..... 1 mg/l
Mg (Magnesium). ..... 1 mg/l
Mn (Manganese). ..... 1 mg/l
Mo (Molybdenum). ..... 1 mg/l
Ni (Nickel). ..... 1 mg/l
Pb (Lead). ..... 1 mg/l
Sb (Antimony). ..... 1 mg/l
Se (Selenium). ..... 1 mg/l
Sr (Strontium). ..... 1 mg/l
Ti (Titanium). ..... 1 mg/l
Tl (Thallium). ..... 1 mg/l
V (Vanadium). ..... 1 mg/l
Zn (Zinc). ..... 1 mg/l
Traceable to SRM from NIST.

2647.1	100 ml	HDPE	65,50 €

For further information, please see page 1726

ICP Multi-Element Standard Solution (22 elements, 100 mg/l)

22 elements in 5 % nitric acid – 100 mg/l

UN No. 2031 • ADR 8 II • WGK 3

Danger H290-H314-H317-EUH071

Type analysis:

As (Arsenic). ..... 100 mg/l
Be (Beryllium). ..... 100 mg/l
Bi (Bismuth). ..... 100 mg/l
Ca (Calcium). ..... 100 mg/l
Cd (Cadmium). ..... 100 mg/l
Co (Cobalt). ..... 100 mg/l
Cr (Chromium). ..... 100 mg/l
Cu (Copper). ..... 100 mg/l
Fe (Iron). ..... 100 mg/l
Li (Lithium). ..... 100 mg/l
Mg (Magnesium). ..... 100 mg/l
Mn (Manganese). ..... 100 mg/l
Mo (Molybdenum). ..... 100 mg/l
Ni (Nickel). ..... 100 mg/l
Pb (Lead). ..... 100 mg/l
Sb (Antimony). ..... 100 mg/l
Se (Selenium). ..... 100 mg/l
Sr (Strontium). ..... 100 mg/l
Ti (Titanium). ..... 100 mg/l
Tl (Thallium). ..... 100 mg/l
V (Vanadium). ..... 100 mg/l
Zn (Zinc). ..... 100 mg/l
Traceable to SRM from NIST.

2648.1	100 ml	HDPE	292,95 €

For further information, please see page 1726

ICP Multi-Element Standard Solution (28 elements, 1 mg/l)

28 elements in 2 % nitric acid – 1 mg/l

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

Al (Aluminium). ..... 1 mg/l
Ag (Silver). ..... 1 mg/l
As (Arsenic). ..... 1 mg/l
B (Boron). ..... 1 mg/l
Ba (Barium). ..... 1 mg/l
Be (Beryllium). ..... 1 mg/l
Bi (Bismuth). ..... 1 mg/l
Ca (Calcium). ..... 1 mg/l
Cd (Cadmium). ..... 1 mg/l
Co (Cobalt). ..... 1 mg/l
Cr (Chrom). ..... 1 mg/l
Cu (Copper). ..... 1 mg/l
Fe (Iron). ..... 1 mg/l
K (Potassium). ..... 1 mg/l
Li (Lithium). ..... 1 mg/l
Mg (Magnesium). ..... 1 mg/l
Mn (Manganese). ..... 1 mg/l
Mo (Molybdenum). ..... 1 mg/l
Na (Sodium). ..... 1 mg/l
Ni (Nickel). ..... 1 mg/l
Pb (Lead). ..... 1 mg/l
Sb (Antimony). ..... 1 mg/l
Se (Selenium). ..... 1 mg/l
Sr (Strontium). ..... 1 mg/l
Ti (Titanium). ..... 1 mg/l
Tl (Thallium). ..... 1 mg/l
V (Vanadium). ..... 1 mg/l
Zn (Zinc). ..... 1 mg/l
Traceable to SRM from NIST.

2649.1	100 ml	HDPE	80,55 €

For further information, please see page 1726

ICP Multi-Element Standard Solution (28 elements, 100 mg/l)

28 elements in 5 % nitric acid – 100 mg/l

UN No. 2031 • ADR 8 II • WGK 3

Danger H290-H314-H317-EUH071

Type analysis:

Al (Aluminium). ..... 100 mg/l
Ag (Silver). ..... 100 mg/l
As (Arsenic). ..... 100 mg/l
B (Boron). ..... 100 mg/l
Ba (Barium). ..... 100 mg/l
Be (Beryllium). ..... 100 mg/l
Bi (Bismuth). ..... 100 mg/l
Ca (Calcium). ..... 100 mg/l
Cd (Cadmium). ..... 100 mg/l
Co (Cobalt). ..... 100 mg/l
Cr (Chromium). ..... 100 mg/l
Cu (Copper). ..... 100 mg/l
Fe (Iron). ..... 100 mg/l
K (Potassium). ..... 100 mg/l

Li (Lithium)..... 100 mg/l
Mg (Magnesium)..... 100 mg/l
Mn (Manganese)..... 100 mg/l
Mo (Molybdenum)..... 100 mg/l
Na (Sodium)..... 100 mg/l
Ni (Nickel)..... 100 mg/l
Pb (Lead)..... 100 mg/l
Sb (Antimony)..... 100 mg/l
Se (Selenium)..... 100 mg/l
Sr (Strontium)..... 100 mg/l
Ti (Titanium)..... 100 mg/l
Tl (Thallium)..... 100 mg/l
V (Vanadium)..... 100 mg/l
Zn (Zinc)..... 100 mg/l
Traceable to SRM from NIST.

2650.1	100 ml	HDPE	292,95 €

For further information, please see page 1726

Standards for ICP-MS Element Standards 10 mg/l, ready to use

Mercury ICP-MS Standard Solution

10 mg/l Hg

UN No. 3264 • ADR 8 II • WGK 1

Danger H290-H314-EUH071

Type analysis:

c (Hg) in 5 % HNO_3..... 10 mg/l
Traceable to SRM from NIST.

5017.1	100 ml	HDPE	48,95 €

For further information, please see page 1727

Standards for ICP-MS Multi Element Standards

ICP-MS Multi-Element Standard Solution (3 elements)

3 elements in 2 % nitric acid

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

Chromium (Cr)..... 4 mg/l
Iron (Fe)..... 20 mg/l
Strontium (Sr)..... 4 mg/l
Traceable to SRM from NIST.

0381.1	100 ml	HDPE	99,90 €
0381.2	500 ml	HDPE	180,50 €

For further information, please see page 1727

ICP-MS Multi-Element Standard Solution (4 elements, 1000 mg/l)

4 elements in 2 % nitric acid - 1000 mg/l

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

Calcium (Ca)..... 1000 mg/l
Magnesium (Mg)..... 1000 mg/l
Potassium (K)..... 1000 mg/l
Sodium (Na)..... 1000 mg/l

6803.1	100 ml	HDPE	87,00 €

ICP-MS Multi-Element Standard Solution (4 elements, 10 mg/l)

4 elements in 2 % nitric acid and 0,1 % hydrofluoric acid - 10 mg/l

UN No. 1760 • ADR 8 III

Warning H290-H315-H319

Type analysis:

Molybdenum (Mo)..... 10 mg/l
Antimony (Sb)..... 10 mg/l
Tin (Sn)..... 10 mg/l
Titanium (Ti)..... 10 mg/l
Traceable to SRM from NIST.

6807.1	100 ml	HDPE	89,80 €
6807.2	500 ml	HDPE	170,95 €

For further information, please see page 1727

ICP-MS Calibration Standard Solution (5 elements, 1000 mg/l)

5 elements in 2 % nitric acid - 1000 mg/l

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319

Type analysis:

Calcium (Ca)..... 1000 mg/l
Iron (Fe)..... 1000 mg/l
Potassium (K)..... 1000 mg/l
Magnesium (Mg)..... 1000 mg/l
Sodium (Na)..... 1000 mg/l
Traceable to SRM from NIST.

0409.1	100 ml	HDPE	107,40 €
0409.2	500 ml	HDPE	210,20 €

For further information, please see page 1727

ICP-MS Tuning Solution (5 elements, 10 mg/l)

5 elements in 2 % nitric acid - 10 mg/l

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

Cerium (Ce)..... 10 mg/l
Cobalt (Co)..... 10 mg/l
Lithium (Li)..... 10 mg/l
Thallium (Tl)..... 10 mg/l
Yttrium (Y)..... 10 mg/l
Traceable to SRM from NIST.

6819.1	100 ml	HDPE	90,20 €

For further information, please see page 1727

ICP-MS Tuning Solution (6 elements, 1 µg/l)

6 elements in 2 % nitric acid - 1 µg/l

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

Cerium (Ce)..... 1 µg/l
Cobalt (Co)..... 1 µg/l
Lithium (Li)..... 1 µg/l
Magnesium (Mg)..... 1 µg/l
Thallium (Tl)..... 1 µg/l
Yttrium (Y)..... 1 µg/l
Traceable to SRM from NIST.

6806.1	100 ml	HDPE	107,40 €
6806.2	500 ml	HDPE	188,05 €

For further information, please see page 1727

ICP-MS Tuning Solution A

6 elements in 1 % nitric acid

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

Beryllium (Be)..... 10 µg/l
Indium (In)..... 2 µg/l
Bismuth (Bi)..... 2 µg/l
Cerium (Ce)..... 2 µg/l
Cobalt (Co)..... 5 µg/l
Manganese (Mn)..... 5 µg/l
Traceable to SRM from NIST.

0900.1	100 ml	HDPE	205,25 €
0900.2	250 ml	HDPE	261,15 €

For further information, please see page 1727

ICP-MS Tuning Solution B

6 elements in 1 % nitric acid

UN No. 3264 • ADR 8 III

Warning H290-H315-H319

Type analysis:

Beryllium (Be)..... 1000 µg/l
Indium (In)..... 200 µg/l
Bismuth (Bi)..... 200 µg/l
Cerium (Ce)..... 200 µg/l
Cobalt (Co)..... 500 µg/l
Manganese (Mn)..... 500 µg/l
Traceable to SRM from NIST.

0902.1	100 ml	HDPE	203,20 €

For further information, please see page 1727

ICP-MS Multi-Element Standard Solution (8 elements)

8 elements in 2 % nitric acid

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319-EUH208

Type analysis:

Arsenic (As)..... 2 mg/l
Cadmium (Cd)..... 2 mg/l
Chromium (Cr)..... 3 mg/l
Copper (Cu)..... 10 mg/l
Iron (Fe)..... 4 mg/l
Nickel (Ni)..... 2 mg/l
Lead (Pb)..... 5 mg/l
Zinc (Zn)..... 10 mg/l
Traceable to SRM from NIST.

6814.1	100 ml	HDPE	123,55 €
6814.2	500 ml	HDPE	231,15 €

For further information, please see page 1727

ICP-MS Calibration Standard Solution (8 elements, 10 mg/l)

8 elements in 2 % nitric acid and 0,1 % hydro fluoric acid - 10 mg/l

UN No. 1760 • ADR 8 III

Warning H290-H315-H319

Type analysis:

Germanium (Ge)	10 mg/l
Hafnium (Hf)	10 mg/l
Molybdenum (Mo)	10 mg/l
Antimony (Sb)	10 mg/l
Tin (Sn)	10 mg/l
Tellur (Te)	10 mg/l
Tungsten (W)	10 mg/l
Zirconium (Zr)	10 mg/l

Traceable to SRM from NIST.

6816.1	100 ml	HDPE	107,40 €
6816.2	500 ml	HDPE	193,40 €

For further information, please see page 1727

ICP-MS Multi-Element Standard Solution (10 elements, 10 mg/l)

10 elements in 10 % hydrochloric acid and 1 % nitric acid - 10 mg/l

UN No. 3264 • ADR 8 III • WGK 1

Warning H290-H315-H319-H335

Type analysis:

Gold (Au)	10 mg/l
Hafnium (Hf)	10 mg/l
Iridium (Ir)	10 mg/l
Palladium (Pd)	10 mg/l
Platinum (Pt)	10 mg/l
Rhodium (Rh)	10 mg/l
Ruthenium (Ru)	10 mg/l
Antimony (Sb)	10 mg/l
Tin (Sn)	10 mg/l
Tellur (Te)	10 mg/l

Traceable to SRM from NIST.

0429.1	100 ml	HDPE	111,70 €

For further information, please see page 1727

ICP-MS Multi-Element Standard Solution (10 elements)

10 elements in 2 % hydrochloric acid

UN No. 3264 • ADR 8 III

Warning H290

Type analysis:

Molybdenum (Mo)	50 mg/l
Palladium (Pd)	40 mg/l
Platinum (Pt)	40 mg/l
Rhodium (Rh)	40 mg/l
Antimony (Sb)	80 mg/l
Silicon (Si)	40 mg/l
Tin (Sn)	80 mg/l
Tellur (Te)	40 mg/l
Tungsten (W)	40 mg/l
Zirconium (Zr)	40 mg/l

Traceable to SRM from NIST.

6815.1	100 ml	HDPE	263,40 €
6815.2	500 ml	HDPE	499,90 €

For further information, please see page 1727

ICP-MS Interference Check Solution A - 6020 (12 elements)

12 elements in 5 % nitric acid

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H314-EUH071

Type analysis:

Chloride (Cl^-)	20000 µg/ml
Calcium (Ca)	3000 µg/ml
Iron (Fe)	2500 µg/ml
Sodium (Na)	2500 µg/ml
Carbon (C)	2000 µg/ml
Aluminium (Al)	1000 µg/ml
Magnesium (Mg)	1000 µg/ml
Phosphorus (P)	1000 µg/ml
Potassium (K)	1000 µg/ml
Sulphur (S)	1000 µg/ml
Molybdenum (Mo)	20 µg/ml
Titanium (Ti)	20 µg/ml

Traceable to SRM from NIST.

6808.1	100 ml	HDPE	258,55 €
6808.2	500 ml	HDPE	499,90 €

For further information, please see page 1727

ICP-MS Multi-Element Standard Solution (12 elements)

12 elements in 2 % nitric acid

UN No. 3264 • ADR 8 III

Warning H290-H315-H319-EUH208

Type analysis:

Arsenic (As)	2,5 mg/l
Barium (Ba)	2,5 mg/l
Cadmium (Cd)	0,5 mg/l
Chromium (Cr)	5 mg/l
Copper (Cu)	5 mg/l
Mercury (Hg)	0,2 mg/l
Molybdenum (Mo)	3 mg/l
Nickel (Ni)	5 mg/l
Lead (Pb)	5 mg/l
Antimony (Sb)	0,5 mg/l
Selenium (Se)	0,7 mg/l
Zinc (Zn)	5 mg/l

Traceable to SRM from NIST.

6810.1	100 ml	HDPE	155,90 €
6810.2	500 ml	HDPE	275,75 €

For further information, please see page 1727

ICP-MS Multi-Element Standard Solution (16 elements, 10 mg/l)

16 elements 5 % nitric acid - 10 mg/l

UN No. 3264 • ADR 8 III • WGK 1

Danger H290-H314-EUH071-EUH208

Type analysis:

Arsenic (As)	10 mg/l
Beryllium (Be)	10 mg/l
Cobalt (Co)	10 mg/l
Chromium (Cr)	10 mg/l
Cesium (Cs)	10 mg/l
Copper (Cu)	10 mg/l
Lithium (Li)	10 mg/l
Manganese (Mn)	10 mg/l
Nickel (Ni)	10 mg/l
Lead (Pb)	10 mg/l
Rubidium (Rb)	10 mg/l
Scandium (Sc)	10 mg/l
Selenium (Se)	10 mg/l
Strontium (Sr)	10 mg/l
Vanadium (V)	10 mg/l
Zinc (Zn)	10 mg/l

Traceable to SRM from NIST.

0416.1	100 ml	HDPE	160,20 €
0416.2	500 ml	HDPE	306,40 €

For further information, please see page 1727

ICP-MS Multi-Element Standard Solution (21 elements, 100 mg/l)

21 elements in 5 % nitric acid - 100 mg/l

UN No. 3264 • ADR 8 III • WGK 2

Danger

H290-H314-H317-H350-EUH071

Type analysis:

Aluminium (Al)	100 mg/l
Silver (Ag)	100 mg/l
Arsenic (As)	100 mg/l
Barium (Ba)	100 mg/l
Beryllium (Be)	100 mg/l
Cadmium (Cd)	100 mg/l
Cobalt (Co)	100 mg/l
Chromium (Cr)	100 mg/l
Copper (Cu)	100 mg/l
Iron (Fe)	100 mg/l
Potassium (K)	100 mg/l
Manganese (Mn)	100 mg/l
Molybdenum (Mo)	100 mg/l
Nickel (Ni)	100 mg/l
Lead (Pb)	100 mg/l
Antimony (Sb)	100 mg/l
Selenium (Se)	100 mg/l
Tin (Sn)	100 mg/l
Thallium (Tl)	100 mg/l
Vanadium (V)	100 mg/l
Zinc (Zn)	100 mg/l

Traceable to SRM from NIST.

6811.1	100 ml	HDPE	236,00 €

For further information, please see page 1727

ICP-MS Multi-Element Standard Solution (22 elements)

22 elements in 2 % nitric acid

UN No. 3264 • ADR 8 III

Warning H290-H315-H319-EUH208

Type analysis:

Silver (Ag)	5 mg/l
Aluminium (Al)	30 mg/l
Arsenic (As)	10 mg/l
Boron (B)	30 mg/l
Barium (Ba)	10 mg/l
Beryllium (Be)	3 mg/l
Cadmium (Cd)	3 mg/l
Cobalt (Co)	5 mg/l
Chromium (Cr)	10 mg/l
Copper (Cu)	10 mg/l
Manganese (Mn)	5 mg/l
Molybdenum (Mo)	3 mg/l
Nickel (Ni)	10 mg/l
Lead (Pb)	5 mg/l
Selenium (Se)	5 mg/l
Tin (Sn)	10 mg/l
Strontium (Sr)	100 mg/l
Tellur (Te)	10 mg/l
Titanium (Ti)	3 mg/l
Thallium (Tl)	2 mg/l
Vanadium (V)	10 mg/l
Zinc (Zn)	100 mg/l

Traceable to SRM from NIST.

0383.1	100 ml	HDPE	310,70 €
0383.2	500 ml	HDPE	568,70 €

For further information, please see page 1727

ICP-MS Multi-Element Standard Solution (27 elements)

27 elements in 2 % nitric acid

UN No. 3264 • ADR 8 III

Warning H290-H315-H317-H319

Type analysis:

Silver (Ag). ... 50 mg/l
Aluminium (Al). ... 80 mg/l
Arsenic (As). ... 80 mg/l
Boron (B). ... 40 mg/l
Barium (Ba). ... 50 mg/l
Beryllium (Be). ... 40 mg/l
Calcium (Ca). ... 80 mg/l
Cadmium (Cd). ... 40 mg/l
Cobalt (Co). ... 50 mg/l
Chromium (Cr). ... 50 mg/l
Copper (Cu). ... 50 mg/l
Iron (Fe). ... 50 mg/l
Indium (In). ... 40 mg/l
Potassium (K). ... 80 mg/l
Lithium (Li). ... 40 mg/l
Magnesium (Mg). ... 80 mg/l
Manganese (Mn). ... 50 mg/l
Sodium (Na). ... 80 mg/l
Nickel (Ni). ... 50 mg/l
Phosphorus (P). ... 200 mg/l
Lead (Pb). ... 80 mg/l
Selenium (Se). ... 40 mg/l
Strontium (Sr). ... 50 mg/l
Titanium (Ti). ... 40 mg/l
Thallium (Tl). ... 40 mg/l
Vanadium (V). ... 50 mg/l
Zinc (Zn). ... 50 mg/l
Traceable to SRM from NIST.

6813.1	100 ml	HDPE	346,70 €
6813.2	500 ml	HDPE	611,70 €

For further information, please see page 1727

ICP-MS Multi-Element Standard Solution (28 elements, 10 mg/l)

28 elements in 5 % nitric acid - 10 mg/l

UN No. 3264 • ADR 8 II • WGK 2

Danger H290-H314-EUH071-EUH208

Type analysis:

Aluminium (Al). ... 10 mg/l
Arsenic (As). ... 10 mg/l
Barium (Ba). ... 10 mg/l
Beryllium (Be). ... 10 mg/l
Bismuth (Bi). ... 10 mg/l
Lead (Pb). ... 10 mg/l
Calcium (Ca). ... 10 mg/l
Cadmium (Cd). ... 10 mg/l
Chromium (Cr). ... 10 mg/l
Cesium (Cs). ... 10 mg/l
Iron (Fe). ... 10 mg/l
Gallium (Ga). ... 10 mg/l
Indium (In). ... 10 mg/l
Potassium (K). ... 10 mg/l
Cobalt (Co). ... 10 mg/l
Copper (Cu). ... 10 mg/l
Lithium (Li). ... 10 mg/l
Magnesium (Mg). ... 10 mg/l
Manganese (Mn). ... 10 mg/l
Sodium (Na). ... 10 mg/l
Nickel (Ni). ... 10 mg/l
Rubidium (Rb). ... 10 mg/l
Selenium (Se). ... 10 mg/l
Silver (Ag). ... 10 mg/l
Strontium (Sr). ... 10 mg/l
Thallium (Tl). ... 10 mg/l
Vanadium (V). ... 10 mg/l
Zinc (Zn). ... 10 mg/l
Traceable to SRM from NIST.

6802.1	100 ml	HDPE	446,15 €

Standards for IC (Ion Chromatography): Anionic Standards 1000 mg/l, ready to use

Acetate IC Standard Solution

1000 mg/l CH_3COO^-

Type analysis:

c (CH_3COO^-) in H_2O. ... 1000 mg/l
Traceable to SRM from BAM.

1989.1	100 ml	glass	41,40 €
1989.2	500 ml	glass	85,50 €

For further information, please see page 1644

Benzoate IC Standard Solution

1000 mg/l $C_6H_5COO^-$

Type analysis:

c ($C_6H_5COO^-$) in H_2O. ... 1000 mg/l
Traceable to SRM from BAM.

8168.1	100 ml	glass	41,40 €
8168.2	500 ml	glass	85,50 €

For further information, please see page 1644

Bromate IC Standard Solution

1000 mg/l BrO_3^-

WGK 3

Danger H350

Type analysis:

c (BrO_3^-) in H_2O. ... 1000 mg/l
Traceable to SRM from BAM.

8170.1	100 ml	HDPE	41,40 €
8170.2	500 ml	HDPE	85,50 €

For further information, please see page 1644

Bromide IC Standard Solution

1000 mg/l Br^-

Type analysis:

c (Br^-) in H_2O. ... 1000 mg/l
Traceable to SRM from NIST.

2655.1	100 ml	HDPE	39,70 €
2655.2	500 ml	HDPE	77,30 €

For further information, please see page 1644

Chlorate IC Standard Solution

1000 mg/l ClO_3^-

Type analysis:

c (ClO_3^-) in H_2O. ... 1000 mg/l
Traceable to SRM from BAM.

8171.1	100 ml	HDPE	40,75 €
8171.2	500 ml	HDPE	85,50 €

For further information, please see page 1644

Chloride IC Standard Solution

1000 mg/l Cl^-

Type analysis:

c (Cl^-) as KCl in H_2O. ... 1000 mg/l
Traceable to SRM from NIST.

2656.1	100 ml	HDPE	39,70 €
2656.2	500 ml	HDPE	77,30 €

For further information, please see page 1644

Chlorite IC Standard Solution

1000 mg/l ClO_2^-

Type analysis:

c (ClO_2^-) in H_2O. ... 1000 mg/l
Traceable to SRM from NIST.

8172.1	100 ml	glass	39,70 €

For further information, please see page 1644

Chromate IC Standard Solution

1000 mg/l Cr^{6+}

WGK 3

Danger H317-H334-H340-H350

Type analysis:

c (Cr^{6+}) in H_2O. ... 1000 mg/l
Traceable to SRM from NIST.

2657.1	100 ml	HDPE	39,70 €
2657.2	500 ml	HDPE	77,30 €

For further information, please see page 1644

Citrate IC Standard Solution

1000 mg/l $C_3H_4(OH)(COO)_3^{3-}$

Type analysis:

c ($C_3H_4(OH)(COO)_3^{3-}$) in H_2O. ... 1000 mg/l
Traceable to SRM from BAM.

8173.1	100 ml	plastic	41,40 €
8173.2	500 ml	plastic	85,50 €

For further information, please see page 1644

Cyanide IC Standard Solution

1000 mg/l CN^-

UN No. 1760 • ADR 8 III • WGK 2

Warning H290-H412-EUH032

Type analysis:

c (CN^-) in 0,1 % KOH. ... 1000 mg/l
Traceable to SRM from NIST.

2658.1	100 ml	glass	39,70 €
2658.2	500 ml	glass	77,30 €

For further information, please see page 1644

Fluoride IC Standard Solution

1000 mg/l F^-

Type analysis:

c (F^-) in H_2O. ... 1000 mg/l
Traceable to SRM from NIST.

2659.1	100 ml	HDPE	39,70 €
2659.2	500 ml	HDPE	77,30 €

For further information, please see page 1644

Formate IC Standard Solution

1000 mg/l $HCOO^-$

Type analysis:

c ($HCOO^-$) in H_2O. ..... 1000 mg/l

Traceable to SRM from BAM.

1999.1	100 ml	HDPE	41,40 €
1999.2	500 ml	HDPE	85,50 €

For further information, please see page 1644

Iodate IC Standard Solution

1000 mg/l IO_3^-

Type analysis:

c (IO_3^-) in H_2O. ..... 1000 mg/l

Traceable to SRM from BAM.

8174.1	100 ml	HDPE	39,70 €
8174.2	500 ml	HDPE	77,30 €

For further information, please see page 1644

Iodide IC Standard Solution

1000 mg/l I^-

Type analysis:

c (I^-) in H_2O. ..... 1000 mg/l

Traceable to SRM from NIST.

2660.1	100 ml	HDPE	39,70 €
2660.2	500 ml	HDPE	77,30 €

For further information, please see page 1644

Lactate IC Standard Solution

1000 mg/l $C_2H_4(OH)COO^-$

Type analysis:

c ($C_2H_4(OH)COO^-$) in H_2O. ..... 1000 mg/l

Traceable to SRM from BAM.

8176.1	100 ml	glass	40,75 €
8176.2	500 ml	glass	85,50 €

For further information, please see page 1644

Maleate IC Standard Solution

1000 mg/l $C_2H_2(COO)_2^{2-}$

Type analysis:

c ($C_2H_2(COO)_2^{2-}$) in H_2O. ..... 1000 mg/l

Traceable to SRM from BAM.

8181.1	100 ml	glass	41,40 €
8181.2	500 ml	glass	85,50 €

For further information, please see page 1644

Nitrate IC Standard Solution

1000 mg/l NO_3^-

Type analysis:

c (NO_3^-) in H_2O. ..... 1000 mg/l

Traceable to SRM from NIST.

2661.1	100 ml	HDPE	39,70 €
2661.2	500 ml	HDPE	77,30 €

For further information, please see page 1644

Nitrite IC Standard Solution

1000 mg/l NO_2^-

Type analysis:

c (NO_2^-) in H_2O. ..... 1000 mg/l

Traceable to SRM from BAM.

2664.1	100 ml	HDPE	41,40 €
2664.2	500 ml	HDPE	77,30 €

For further information, please see page 1644

Oxalate IC Standard Solution

1000 mg/l $C_2O_4^{2-}$

Type analysis:

c ($C_2O_4^{2-}$) in H_2O. ..... 1000 mg/l

Traceable to SRM from BAM.

2008.1	100 ml	HDPE	41,85 €
2008.2	500 ml	HDPE	85,50 €

For further information, please see page 1644

Perchlorate IC Standard Solution

1000 mg/l ClO_4^-

Type analysis:

c (ClO_4^-) in H_2O. ..... 1000 mg/l

Traceable to SRM from NIST.

8186.1	100 ml	HDPE	41,40 €
8186.2	500 ml	HDPE	85,50 €

For further information, please see page 1644

Phosphate IC Standard Solution

1000 mg/l PO_4^{3-}

Type analysis:

c (PO_4^{3-}) as $NH_4H_2PO_4$ in H_2O. ..... 1000 mg/l

Traceable to SRM from NIST.

2665.1	100 ml	HDPE	39,70 €
2665.2	500 ml	HDPE	77,30 €

For further information, please see page 1644

Propionate IC Standard Solution

1000 mg/l $C_2H_5COO^-$

Type analysis:

c ($C_2H_5COO^-$) in H_2O. ..... 1000 mg/l

Traceable to SRM from BAM.

8183.1	100 ml	glass	41,40 €
8183.2	500 ml	glass	85,90 €

For further information, please see page 1644

Succinate IC Standard Solution

1000 mg/l $C_2H_4(COO)_2^{2-}$

Type analysis:

c ($C_2H_4(COO)_2^{2-}$) in H_2O. ..... 1000 mg/l

Traceable to SRM from BAM.

8187.1	100 ml	glass	41,40 €
8187.2	500 ml	glass	85,50 €

For further information, please see page 1644

Sulphate IC Standard Solution

1000 mg/l SO_4^{2-}

Type analysis:

c (SO_4^{2-}) in H_2O. ..... 1000 mg/l

Traceable to SRM from NIST.

2666.1	100 ml	HDPE	39,70 €
2666.2	500 ml	HDPE	77,30 €

For further information, please see page 1644

Sulphite IC Standard Solution

1000 mg/l S^{4+}

Storage temp.: +4 °C

Type analysis:

c (S^{4+}) in H_2O..... 1000 mg/l

Traceable to SRM from BAM.

8192.1	100 ml	glass	41,40 €
8192.2	500 ml	glass	85,50 €

For further information, please see page 1644

Tartrate IC Standard Solution

1000 mg/l $C_2H_4O_2(COO)_2^{2-}$

Type analysis:

c ($C_2H_4O_2(COO)_2^{2-}$) in H_2O. ..... 1000 mg/l

Traceable to SRM from BAM.

8201.1	100 ml	glass	41,40 €
8201.2	500 ml	glass	85,50 €

For further information, please see page 1644

Thiocyanate IC Standard Solution

1000 mg/l SCN^-

Type analysis:

c (SCN^-) in H_2O..... 1000 mg/l

Traceable to SRM from NIST.

8205.1	100 ml	glass	41,40 €
8205.2	500 ml	glass	85,50 €

For further information, please see page 1644

Thiosulphate IC Standard Solution

1000 mg/l $S_2O_3^{2-}$

Type analysis:

c ($S_2O_3^{2-}$) in 0,1 % n-pentanol..... 1000 mg/l

Traceable to SRM from BAM.

8207.1	100 ml	glass	41,40 €
8207.2	500 ml	glass	85,50 €

For further information, please see page 1644

Standards for IC (Ion Chromatography): Cationic Standards 1000 mg/l, ready to use

Ammonium IC Standard Solution

1000 mg/l NH_4^+

Type analysis:
c (NH_4^+) in H_2O ..... 1000 mg/l
Traceable to SRM from NIST.

2654.1	100 ml	HDPE	39,70 €
2654.2	500 ml	HDPE	77,30 €

For further information, please see page 1645

Barium IC Standard Solution

1000 mg/l Ba^{2+}

Type analysis:
c (Ba^{2+}) in H_2O ..... 1000 mg/l
Traceable to SRM from NIST.

8167.1	100 ml	HDPE	39,70 €
8167.2	500 ml	HDPE	77,30 €

For further information, please see page 1645

Caesium IC Standard Solution

1000 mg/l Cs^+

Type analysis:
c (Cs^+) in H_2O ..... 1000 mg/l
Traceable to SRM from NIST.

8166.1	100 ml	HDPE	39,70 €

For further information, please see page 1645

Calcium IC Standard Solution

1000 mg/l Ca^{2+}

Type analysis:
c (Ca^{2+}) in H_2O ..... 1000 mg/l
Traceable to SRM from NIST.

1986.1	100 ml	HDPE	39,70 €
1986.2	500 ml	HDPE	77,30 €

For further information, please see page 1645

Lithium IC Standard Solution

1000 mg/l Li^+

Type analysis:
c (Li^+) in H_2O ..... 1000 mg/l
Traceable to SRM from NIST.

8158.1	100 ml	HDPE	39,70 €
8158.2	500 ml	HDPE	77,30 €

For further information, please see page 1645

Magnesium IC Standard Solution

1000 mg/l Mg^{2+}

Type analysis:
c (Mg^{2+}) in H_2O ..... 1000 mg/l
Traceable to SRM from NIST.

1987.1	100 ml	HDPE	39,70 €
1987.2	500 ml	HDPE	77,30 €

For further information, please see page 1645

Potassium IC Standard Solution

1000 mg/l K^+

Type analysis:
c (K^+) in H_2O ..... 1000 mg/l
Traceable to SRM from NIST.

1985.1	100 ml	HDPE	39,70 €
1985.2	500 ml	HDPE	77,30 €

For further information, please see page 1645

Sodium IC Standard Solution

1000 mg/l Na^+

Type analysis:
c (Na^+) in H_2O ..... 1000 mg/l
Traceable to SRM from NIST.

1984.1	100 ml	HDPE	39,70 €
1984.2	500 ml	HDPE	77,30 €

For further information, please see page 1645

Strontium IC Standard Solution

1000 mg/l Sr^{2+}

Type analysis:
c (Sr^{2+}) in H_2O ..... 1000 mg/l
Traceable to SRM from NIST.

1988.1	100 ml	HDPE	39,70 €
1988.2	500 ml	HDPE	77,30 €

For further information, please see page 1645

Standards for IC (Ion Chromatography): Ion Multi-Element Standards for IC

Anion Multi-Element Standard I (IC)

3 anions (Cl^-, NO_3^-, SO_4^{2-}) in water

Type analysis:
Chloride (Cl^-) ..... 1000 mg/l
Nitrate (NO_3^-) ..... 1000 mg/l
Sulphate (SO_4^{2-}) ..... 1000 mg/l
Traceable to SRM from NIST.

2026.1	100 ml	HDPE	135,35 €
2026.2	500 ml	HDPE	256,95 €

For further information, please see page 1645

Anion Multi-Element Standard II (IC)

3 anions (F^-, Br^-, PO_4^{3-}) in water

Type analysis:
Fluoride (F^-) ..... 1000 mg/l
Bromide (Br^-) ..... 1000 mg/l
Phosphate (PO_4^{3-}) ..... 1000 mg/l
Traceable to SRM from NIST.

2029.1	100 ml	HDPE	142,90 €
2029.2	500 ml	HDPE	276,85 €

For further information, please see page 1645

Anion Multi-Element Standard (IC, 6 anions, 10 mg/l)

6 anions (F^-, Cl^-, Br^-, NO_3^-, PO_4^{3-}, SO_4^{2-}) in water

Type analysis:
Fluoride (F^-) ..... 10 mg/l
Chloride (Cl^-) ..... 10 mg/l
Bromide (Br^-) ..... 10 mg/l
Nitrate (NO_3^-) ..... 10 mg/l
Phosphate (PO_4^{3-}) ..... 10 mg/l
Sulphate (SO_4^{2-}) ..... 10 mg/l
Traceable to SRM from NIST.

2030.1	100 ml	HDPE	102,05 €
2030.2	500 ml	HDPE	196,20 €

For further information, please see page 1645

Anion Multi-Element Standard (IC)

7 Anions (F^-, Cl^-, NO_2^-, Br^-, NO_3^-, PO_4^{3-}, SO_4^{2-}) in water

Type analysis:
Chloride (Cl^-) ..... 10 mg/l
Bromide (Br^-) ..... 25 mg/l
Fluoride (F^-) ..... 5 mg/l
Nitrate (NO_3^-) ..... 25 mg/l
Nitrite (NO_2^-) ..... 15 mg/l
Phosphate (PO_4^{3-}) ..... 40 mg/l
Sulphate (SO_4^{2-}) ..... 30 mg/l
Traceable to SRM from NIST.

2668.1	100 ml	HDPE	78,40 €
2668.2	500 ml	HDPE	160,20 €

For further information, please see page 1645

Cation Multi-Element Standard (IC, 4 cations, 10 mg/l)

4 cations (Na^+, K^+, Mg^{2+}, Ca^{2+}) in water

Type analysis:
Sodium (Na^+) ..... 10 mg/l
Potassium (K^+) ..... 10 mg/l
Magnesium (Mg^{2+}) ..... 10 mg/l
Calcium (Ca^{2+}) ..... 10 mg/l
Traceable to SRM from NIST.

2032.1	100 ml	HDPE	89,80 €
2032.2	500 ml	HDPE	170,95 €

For further information, please see page 1645

Cation Multi-Element Standard (IC)

6 cations (NH_4^+, Ca^{2+}, K^+, Li^+, Mg^{2+}, Na^+) in 0,1 % nitric acid

Type analysis:

Ammonium (NH_4^+)..... 40 mg/l
Calcium (Ca^{2+})..... 40 mg/l
Potassium (K^+)..... 20 mg/l
Lithium (Li^+)..... 10 mg/l
Magnesium (Mg^{2+})..... 20 mg/l
Sodium (Na^+)..... 20 mg/l
Traceable to SRM from NIST.

2669.1	100 ml	HDPE	78,40 €
2669.2	500 ml	HDPE	160,20 €

For further information, please see page 1645

Standards for conductivity measurement

Conductivity Standard 5 µS/cm

ROTI®CALIPURE 5 µS/cm (25 °C)

Type analysis:

Conductivity (25 °C).....5 µS/cm ±2 %
Traceable to SRM from NIST.

2462.1	500 ml	plastic	170,95 €

For further information, please see page 1719

Conductivity Standard 10 µS/cm NEW

ROTI®CALIPURE 10 µS/cm (25 °C)

WGK 1

Type analysis:

Conductivity (25 °C).....10 µS/cm ±1 %
Traceable to SRM from NIST.

0810.1	250 ml	plastic	117,20 €
0810.2	500 ml	plastic	170,95 €

Conductivity Standard 20 µS/cm NEW

ROTI®CALIPURE 20 µS/cm (25 °C)

WGK 1

Type analysis:

Conductivity (25 °C).....20 µS/cm ±1 %
Traceable to SRM from NIST.

0811.1	500 ml	plastic	62,25 €

Conductivity Standard 50 µS/cm NEW

ROTI®CALIPURE 50 µS/cm (25 °C)

WGK 1

Type analysis:

Conductivity (25 °C).....50 µS/cm ±1 %
Traceable to SRM from NIST.

0812.1	500 ml	plastic	62,25 €

Conductivity Standard 84 µS/cm

ROTI®CALIPURE 84 µS/cm (25 °C)

Type analysis:

Conductivity (25 °C). ..... 84 µS/cm ±1 %
Traceable to SRM from NIST.

2432.1	500 ml	plastic	28,95 €
2432.2	1 l	plastic	37,55 €
Original pack 6 x 1 l			35,67/1 l

For further information, please see page 1719

Conductivity Standard 100 µS/cm

ROTI®CALIPURE 100 µS/cm (25 °C)

Type analysis:

Conductivity (25 °C). ..... 100 µS/cm ±1 %
Traceable to SRM from NIST.

2463.1	500 ml	plastic	66,15 €

For further information, please see page 1719

Conductivity Standard 147 µS/cm

ROTI®CALIPURE 147 µS/cm (25 °C)

Type analysis:

Conductivity (25 °C). ..... 147 µS/cm ±1 %
Traceable to SRM from NIST.

2433.1	500 ml	plastic	28,95 €
2433.2	1 l	plastic	37,55 €
Original pack 6 x 1 l			35,67/1 l

For further information, please see page 1719

Conductivity Standard 500 µS/cm

ROTI®CALIPURE 500 µS/cm (25 °C)

Type analysis:

Conductivity (25 °C). ..... 500 µS/cm ±1 %
Traceable to SRM from NIST.

2464.1	500 ml	plastic	66,15 €

For further information, please see page 1719

Conductivity Standard 1000 µS/cm

ROTI®CALIPURE 1000 µS/cm (25 °C)

Type analysis:

Conductivity (25 °C). ..... 1000 µS/cm ±1 %
Traceable to SRM from NIST.

2465.1	500 ml	plastic	66,15 €

For further information, please see page 1719

Conductivity Standard 1413 µS/cm

ROTI®CALIPURE 1413 µS/cm (25 °C)

Type analysis:

Conductivity (25 °C). ..... 1413 µS/cm ±1 %
Traceable to SRM from NIST.

2434.1	500 ml	plastic	28,95 €
2434.2	1 l	plastic	37,55 €
Original pack 6 x 1 l			35,67/1 l

For further information, please see page 1719

Conductivity Standard 5000 µS/cm NEW

ROTI®CALIPURE 5000 µS/cm (25 °C)

WGK 1

Type analysis:

Conductivity (25 °C).....5000 µS/cm ±1 %
Traceable to SRM from NIST.

0814.1	500 ml	plastic	62,25 €

Conductivity Standard 10000 µS/cm

ROTI®CALIPURE 10000 µS/cm (25 °C)

Type analysis:

Conductivity (25 °C).....10000 µS/cm ±1 %
Traceable to SRM from NIST.

2466.1	500 ml	plastic	66,15 €

For further information, please see page 1719

Conductivity Standard 12880 µS/cm

ROTI®CALIPURE 12880 µS/cm (25 °C)

Type analysis:

Conductivity (25 °C).....12880 µS/cm ±1 %
Traceable to SRM from NIST.

2435.1	500 ml	plastic	28,95 €
2435.2	1 l	plastic	37,55 €
Original pack 6 x 1 l			35,67/1 l

For further information, please see page 1719

Conductivity Standard 20000 µS/cm NEW

ROTI®CALIPURE 20000 µS/cm (25 °C)

WGK 1

Type analysis:

Conductivity (25 °C).....20000 µS/cm ±1 %
Traceable to SRM from NIST.

0822.1	500 ml	plastic	62,25 €

Conductivity Standard 50000 µS/cm NEW

ROTI®CALIPURE 50000 µS/cm (25 °C)

WGK 1

Type analysis:

Conductivity (25 °C).....50000 µS/cm ±1 %
Traceable to SRM from NIST.

0831.1	500 ml	plastic	62,25 €

Conductivity Standard 100000 µS/cm NEW

ROTI®CALIPURE 100000 µS/cm (25 °C)

WGK 1

Type analysis:

Conductivity (25 °C).....100000 µS/cm ±1 %
Traceable to SRM from NIST.

0832.1	500 ml	plastic	62,25 €

Conductivity Standard 500000 µS/cm

ROTI®CALIPURE 500000 µS/cm (25 °C)

UN No. 1789 • ADR 8 III

Warning H290-H315-H319-H335

Type analysis:

Conductivity (25 °C).....500000 µS/cm ±1 %
Traceable to SRM from NIST.

2467.1	500 ml	plastic	66,15 €

For further information, please see page 1719

Standards for Determination of the Hydrocarbon Oil Index

n-Alkane standard solution (C10-C40, all even)

16 components (each 50 mg/l) in n-hexane

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

Storage temp.: +4 °C

UN No. 1208 • ADR 3 II • WGK 2

Danger

H225-H304-H315-H336-H361f-H373-H411

Type analysis:

n-Decane..... 50 mg/l
n-Dodecane..... 50 mg/l
n-Tetradecane..... 50 mg/l
n-Hexadecane..... 50 mg/l
n-Octadecane..... 50 mg/l
n-Eicosane..... 50 mg/l
n-Docosane..... 50 mg/l
n-Tetracosane..... 50 mg/l
n-Hexacosane..... 50 mg/l
n-Octacosane..... 50 mg/l
n-Triacontane..... 50 mg/l
n-Dotriacontane..... 50 mg/l
n-Tetratriacontane..... 50 mg/l
n-Hexatriacontane..... 50 mg/l
n-Octatriacontane..... 50 mg/l
n-Tetracontane..... 50 mg/l

1772.1	1 ml	glass ampoule	107,40 €
1772.2	5 ml	glass ampoule	160,20 €

n-Alkane standard solution (C10-C40, all even)

16 components (each 100 mg/l) in n-hexane/petroleum ether (1/1)

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

Storage temp.: +4 °C

UN No. 1208 • ADR 3 II • WGK 3

Danger

H225-H304-H315-H336-H340-H350-H361f-H373-H411

Type analysis:

n-Decane..... 100 mg/l
n-Dodecane..... 100 mg/l
n-Tetradecane..... 100 mg/l
n-Hexadecane..... 100 mg/l
n-Octadecane..... 100 mg/l
n-Eicosane..... 100 mg/l
n-Docosane..... 100 mg/l
n-Tetracosane..... 100 mg/l
n-Hexacosane..... 100 mg/l
n-Octacosane..... 100 mg/l
n-Triacontane..... 100 mg/l
n-Dotriacontane..... 100 mg/l
n-Tetratriacontane..... 100 mg/l
n-Hexatriacontane..... 100 mg/l
n-Octatriacontane..... 100 mg/l
n-Tetracontane..... 100 mg/l

9331.1	5 ml	glass ampoule	206,95 €

n-Alkane standard solution (C7, C8, C9, C10-C40, all even)

19 components (each 50 mg/l) in isooctane

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

Storage temp.: +4 °C

UN No. 1262 • ADR 3 II • WGK 2

Danger

H225-H304-H315-H336-H410

Type analysis:

n-Heptane..... 50 mg/l
n-Octane..... 50 mg/l
n-Nonane..... 50 mg/l
n-Decane..... 50 mg/l
n-Dodecane..... 50 mg/l
n-Tetradecane..... 50 mg/l
n-Hexadecane..... 50 mg/l
n-Octadecane..... 50 mg/l
n-Eicosane..... 50 mg/l
n-Docosane..... 50 mg/l
n-Tetracosane..... 50 mg/l
n-Hexacosane..... 50 mg/l
n-Octacosane..... 50 mg/l
n-Triacontane..... 50 mg/l
n-Dotriacontane..... 50 mg/l
n-Tetratriacontane..... 50 mg/l
n-Hexatriacontane..... 50 mg/l
n-Octatriacontane..... 50 mg/l
n-Tetracontane..... 50 mg/l

9629.1	5 ml	glass ampoule	184,40 €

Extraction solvent stock solution

20 µl/l n-decane and 20 mg/l n-tetracontane in n-hexane

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

UN No. 1208 • ADR 3 II • WGK 2

Danger

H225-H304-H315-H336-H361f-H373-H411

Type analysis:

n-Decane..... 20 µl/l
n-Tetracontane..... 20 mg/l

1750.2	10 ml	glass ampoule	90,20 €

Florisil® quality control standard

1000 mg/l mineral oil and 1000 mg/l diesel in n-hexane

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

UN No. 1208 • ADR 3 II • WGK 3

Danger H225-H304-H315-H336-H350-H361f-H373-H411

Type analysis:

Mineral oil..... 1000 mg/l
Diesel..... 1000 mg/l

9334.1	5 ml	glass ampoule	65,50 €

Standard mixture of mineral oils

5000 mg/l mineral oil and 5000 mg/l diesel in n-hexane

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

Storage temp.: +4 °C

UN No. 1208 • ADR 3 II • WGK 2

Danger H225-H304-H315-H336-H350-H361f-H373-H411

Type analysis:

Mineral oil..... 5000 mg/l
Diesel..... 5000 mg/l

1773.2	5 ml	glass ampoule	90,20 €

Standard mixture of mineral oils

500 mg/l mineral oil and 500 mg/l diesel in acetone

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

UN No. 1090 • ADR 3 II • WGK 1

Danger

H225-H319-H336-EUH066

Type analysis:

Mineral oil..... 500 mg/l
Diesel..... 500 mg/l

1774.2	5 ml	glass ampoule	103,10 €

Stearyl stearate test solution

2000 mg/l in n-hexane

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

Storage temp.: +4 °C

UN No. 1208 • ADR 3 II • WGK 2

Danger

H225-H304-H315-H336-H361f-H373-H411

Type analysis:

Stearyl stearate (in n-hexane)..... 2000 mg/l

1760.2	10 ml	glass ampoule	121,40 €

Stannic oxide

▶ Tin(IV) oxide see p. 2409

Stanniol

▶ Tin foil see p. 2408

Starch from potatoes, soluble

Starch from potatoes, soluble

p.a., ACS

$(C_6H_{10}O_5)_n$

M $(162,14)_n$ g/mol • D 1,04 • mp 257 °C

Solubility: 50 g/l (H_2O, 90 °C)

[9005-84-9] • EC No. 232-686-4 • WGK 1

Guarantee analysis:

Appearance..... white powder
pH (2 % in H_2O, 25 °C)..... 5,0-7,0
Ash content..... ≤0,4 %
Solubility..... complies
Sensitivity..... complies

2045.1	100 g	plastic	22,50 €
2045.2	250 g	plastic	37,55 €
2045.3	1 kg	plastic	124,60 €
Original pack 6 x 1 kg			118,37/1 kg

Starch, soluble

Starch, soluble

soluble

Oxidized corn starch

$(C_6H_{10}O_5)_n$

M $(162,14)_n$ g/mol

[65996-62-5] • EC No. 232-679-6 • WGK 1

Type analysis:

Appearance. ..... white to yellowish powder
pH value 5,5-7,5
Sulphated ash. ..... ≤0,6 %
Moisture. ..... ≤14 %
Sulphur dioxide (SO_2). ..... ≤0,001 %

4701.1	1 kg	plastic	24,65 €
Original pack 6 x 1 kg			23,42/1 kg
4701.2	5 kg	plastic	82,25 €

For further information, please see page 1492

Starch

$(C_6H_{10}O_5)_n$

M $(162,14)_n$ g/mol

[9005-25-8] • EC No. 232-679-6 • WGK 1

Starch from potatoes

extra pure

Type analysis:

Appearance. ..... white powder
pH value 5,0-8,0
Moisture. ..... ≤20 %
Sulphur dioxide (SO_2). ..... ≤0,002 %
Protein. ..... ≤0,1 %
Ash. ..... ≤0,4 %

9441.1	1 kg	plastic	19,25 €
Original pack 6 x 1 kg			18,29/1 kg
9441.2	5 kg	plastic	59,05 €

Starch from corn

extra pure

Type analysis:

Appearance. ..... white, fine powder
pH value 4,0-7,0
Loss on drying. ..... ≤15 %
Sulphur dioxide (SO_2). ..... ≤0,005 %
Sulphated ash. ..... ≤0,6 %
Oxidizing substances ..... ≤0,002 %
Iron (Fe). ..... ≤0,001 %

9444.1	1 kg	plastic	21,40 €
Original pack 6 x 1 kg			20,33/1 kg
9444.2	5 kg	plastic	75,15 €

Starch from rice

extra pure

Type analysis:

Appearance. ..... white powder
pH value. 5,0-8,0
Loss on drying. ..... ≤10,0 %
Sulphur dioxide (SO_2). ..... ≤0,005 %
Sulphated ash. ..... ≤1,0 %
Oxidizing substances ..... ≤0,002 %
Iron (Fe). ..... ≤0,001 %

9368.1	1 kg	plastic	27,45 €
Original pack 6 x 1 kg			26,08/1 kg
9368.2	5 kg	plastic	100,95 €

Starch from wheat

extra pure

Type analysis:

Appearance. ..... white to yellowish powder
pH value 6,0-7,0
Moisture. ..... ≤13 %
Sulphur dioxide (SO_2). ..... ≤0,001 %
Protein. ..... ≤0,35 %
Fat. ..... ≤0,1 %
Ash. ..... ≤0,25 %

9447.1	1 kg	plastic	24,20 €
Original pack 6 x 1 kg			22,99/1 kg
9447.2	5 kg	plastic	74,10 €

Starch gum

▶ Dextrin see p. 1931

Starch 1 % indicator solution

Starch 1 % indicator solution

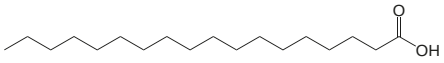
in water, stabilized

Starch solution

$(C_6H_{10}O_5)_n$

T133.1	500 ml	plastic	25,30 €

Stearic acid



Stearic acid

≥98 %

Octadecanoic acid

$C_{18}H_{36}O_2$

M 284,47 g/mol

D 0,94 • bp 383 °C

mp 66-69 °C • flp 196 °C

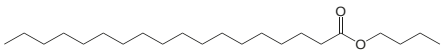
[57-11-4] • EC No. 200-313-4

Type analysis:

Assay (GC). ..... ≥98 %
Acid value. ..... 194-199 mg KOH/g
Melting point. ..... 66-69 °C

9459.1	1 kg	plastic	22,50 €
Original pack 6 x 1 kg			21,38/1 kg
9459.2	5 kg	plastic	88,05 €

Stearic acid butyl ester



Stearic acid butyl ester

for synthesis

Mixture of butyl stearate and butyl palmitate.

Butyl stearate, Butyl octadecanoate

$C_{22}H_{44}O_2$

M 340,60 g/mol

D 0,86 • bp 343 °C

mp 16 °C • flp 160 °C

Solubility: 3 g/l (H_2O, 25 °C)

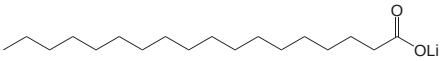
[123-95-5] • EC No. 204-666-5 • WGK 1

Type analysis:

Assay (GC). ..... ≥50 %
Density (d 20 °C/4 °C). 0,850-0,865
Refractive index (20 °C). 1,432-1,442

8150.2	100 ml	glass	13,90 €
8150.1	1 l	glass	40,75 €
Original pack 6 x 1 l			38,71/1 l
8150.3	2,5 l	glass	78,40 €
Original pack 4 x 2,5 l			74,48/2,5 l

Stearic acid lithium salt



Stearic acid lithium salt

pure

Lithium stearate, Lithium octadecanoate

$C_{18}H_{35}LiO_2$

M 290,40 g/mol

mp 190-210 °C

[4485-12-5] • EC No. 266-107-1

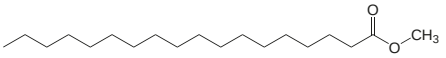
WGK 1

Type analysis:

Appearance. ..... white powder
Melting range. ..... 190-210 °C
Moisture. ..... ≤0,5 %
Metal content. ..... 2,2-2,5 %
Free fatty acid. ..... ≤2,0 %

8238.1	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g

Stearic acid methyl ester



Stearic acid methyl ester

for synthesis

Mixture of methyl stearate, methyl palmitate and methyl myristate.

Methyl stearate, Methyl octadecanoate

$C_{19}H_{38}O_2$

M 298,51 g/mol

D 0,85

[112-61-8] • EC No. 203-990-4

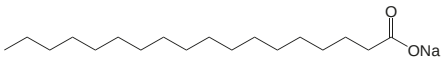
WGK 1

Type analysis:

Saponification value (mg KOH/g). 190-195
Acid value (mg KOH/g). ..... ≤1
Iodine value (g I_2/ 100 g). ..... ≤0,5
Mixture of methyl stearate, methyl palmitate and methyl myristate.

4704.1	5 g	glass	36,45 €
4704.2	25 g	glass	73,00 €
4704.3	50 g	glass	107,40 €

Stearic acid sodium salt



Stearic acid sodium salt

88-92 %
Sodium stearate, Sodium octadecanoate
$C_{18}H_{35}NaO_2$
M 306,45 g/mol
[822-16-2] • EC No. 212-490-5
WGK 1

Type analysis:
Appearance. ..... white to light yellowish powder
Assay (GC). ..... 88-92 %
Humidity. ..... ≤2,5 %
Free NaOH. ..... 0,05-0,2 %

8628.1	1 kg	plastic	38,60 €
Original pack 6 x 1 kg			36,67/1 kg

Stearic acid zinc salt

▶ Zinc stearate see p. 2452

Stearic oil

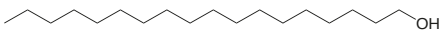
Stearic oil

techn.
D 0,91
flp 200 °C
[112-80-1]
WGK 1

Type analysis:
Appearance. ..... pale yellow oil
Acid value (mg KOH/g). 196-204
Iodine value (g I_2/ 100 g). 110-120
Oleic acid. ..... 56-66 %
Linoleic acid. ..... 18-25 %
Linolenic acid. ..... 6-10 %

9460.1	1 l	glass	30,65 €
Original pack 6 x 1 l			29,12/1 l

Stearyl alcohol



Stearyl alcohol

≥95 %
1-Octadecanol
$C_{18}H_{38}O$
M 270,50 g/mol
D 0,83 • bp 340-355 °C • mp 59 °C
[112-92-5] • EC No. 204-017-6

Type analysis:
Assay. ..... ≥95 %
Acid value. ..... ≤0,1
Saponification value. ..... ≤1
Iodine value. ..... ≤0,7
Hydroxyl value. 200-210
Solidification range. ..... 55-59 °C
Distribution of carbon chains:
C-16. ..... 0-4 %
C-20. ..... 0-3 %

8663.2	500 g	plastic	18,20 €
Original pack 6 x 500 g			17,29/500 g
8663.1	1 kg	plastic	26,80 €
Original pack 6 x 1 kg			25,46/1 kg

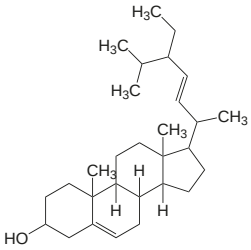
Steel wool

▶ Iron wool see p. 2073

Stibous chloride

▶ Antimony(III) chloride see p. 1811

Stigmasterol



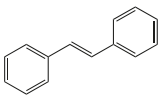
Stigmasterol

≥90 %
$C_{29}H_{48}O$
M 412,70 g/mol
mp ~168 °C
[83-48-7] • EC No. 201-482-7

Type analysis:
Appearance. ..... white powder
Assay. ..... ≥90 %

9468.1	1 g	glass	26,80 €

trans-Stilbene



trans-Stilbene

≥97 %
trans-1,2-Diphenylethylene
$C_{14}H_{12}$
M 180,25 g/mol
D 1,14 • bp 306-307 °C
mp 123-125 °C
[103-30-0] • EC No. 203-098-5
WGK 1

Type analysis:
Assay (HPLC). ..... ≥97,0 %
Solution (1 % in acetone). ..... colourless
Water (KF). ..... ≤0,5 %
Melting point. ..... 123-125 °C

5246.1	50 g	plastic	46,15 €
5246.2	100 g	plastic	80,55 €

Storage solution for pH-electrodes

▶ Potassium chloride solution (3 N) see p. 2224
▶ Potassium chloride solution (3 N) with AgCl see p. 2224

Streptavidin

Streptavidin

≥15 U/mg, lyophilised
Recombinant from *Streptomyces avidinii*, expressed in *E. coli*
M ~55000 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[9013-20-1]
WGK 1

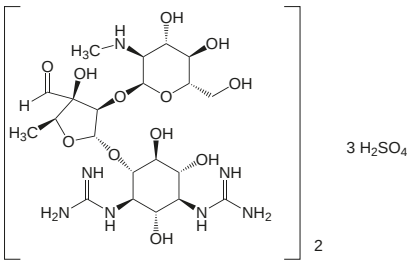
Type analysis:
Activity. ..... ≥15 U/mg
Activity: one unit (U) is defined as the amount of streptavidin that binds one microgram of D-biotin at pH 7,0.

6073.1	1 mg	plastic	81,60 €
6073.2	5 mg	plastic	203,20 €
6073.3	10 mg	plastic	338,65 €

Streptavidin-agarose beads

▶ Roti®garose-Streptavidin Beads see p. 2283

Streptomycin sulphate



$C_{42}H_{84}N_{14}O_{36}S_3$
M 1457,38 g/mol
Storage temp.: +20 °C
[3810-74-0] • EC No. 223-286-0
WGK 1
Warning H302-H361d

Streptomycin sulphate

CELLPURE® ≥720 I.U./mg
Bacteriostatic antibiotic.
For cell culture and biochemistry.

Guarantee analysis:
Assay. ..... ≥720 I.U./mg
pH value (25 % in H_2O). 4,5-7,0
Sulphate (SO_4). ..... 18,0-21,5 %
Sulphated ash. ..... ≤1,0 %
Loss on drying. ..... ≤7,0 %
Streptomycin B. ..... ≤3,0 %
Colorimetric test. ..... ≥90 %
Endotoxins. ..... ≤0,25 I.U./mg

HP66.1	10 g	glass	28,95 €
HP66.2	25 g	glass	42,50 €
HP66.3	50 g	glass	68,30 €

For further information, please see page 1507

Streptomycin sulphate

>720 I.U./mg, for biochemistry

Bacteriostatic antibiotic

Type analysis:

Assay.....>720 I.U./mg
pH value (25 % in H_2O).....4,5-7,0
Sulphate (SO_4).....18,0-21,5 %
Sulphated ash.....<1,0 %
Loss on drying.....<7,0 %

0236.1	10 g	glass	21,00 €
0236.2	25 g	glass	31,75 €
0236.3	50 g	glass	50,45 €

For further information, please see page 1508

Streptothricine

▶ Nourseothricin dihydrogen sulphate see p. 2168

Stripping Buffer

▶ Roti®-Free Stripping Buffer 2.2 plus see p. 2280
▶ Roti®-Free Stripping Buffer 2.0 see p. 2280
▶ Roti®-Free Stripping Buffer see p. 2280

Strontium Standards

▶ Strontium AAS Standard Solution see p. 2360
▶ Strontium ICP Standard Solution see p. 2365
▶ Strontium ICP Standard Solution see p. 2369
▶ Strontium IC Standard Solution see p. 2377

Strontium acetate hemihydrate

Strontium acetate hemihydrate

≥98 %, extra pure

$C_4H_6O_4Sr \cdot ½ H_2O$
M 214,72 g/mol
D 2,1
Solubility: 350 g/l (H_2O, 20 °C)
[543-94-2] • EC No. 208-854-8 • WGK 1

Type analysis:

Assay.....≥98,0 %
pH value (5 % in H_2O).....7,0-9,0
Chloride (Cl).....≤0,05 %
Lead (Pb).....≤0,001 %
Calcium (Ca).....≤0,5 %
Iron (Fe).....≤0,005 %
Loss on drying (105 °C, 2 h).....≤1,0 %

9513.1	100 g	plastic	22,05 €
9513.2	500 g	plastic	59,05 €
Original pack 6 x 500 g			56,10/500 g
9513.3	1 kg	plastic	91,30 €
Original pack 6 x 1 kg			86,74/1 kg

Strontium carbonate

Strontium carbonate

ROTI®METIC 99,998 % (4N8)

$SrCO_3$
M 147,63 g/mol
D 3,50
mp >1200 °C
Solubility: 0,01 g/l (H_2O, 20 °C)
[1633-05-2] • EC No. 216-643-7

Type analysis:

Assay (metals basis).....99,998 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5376.1	5 g	plastic	52,15 €
5376.2	25 g	plastic	138,70 €

Strontium chloride hexahydrate

Strontium chloride hexahydrate

≥99 %, p.a.

For the preparation of further strontium compounds.

$SrCl_2 \cdot 6 H_2O$
M 266,62 g/mol
D 1,95
mp 61 °C
Solubility: 2058 g/l (H_2O, 40 °C)
[10025-70-4] • EC No. 233-971-6 • WGK 1

Danger H318

Guarantee analysis:

Assay.....≥99 %
pH value (5 %, 20 °C).....5-7
Heavy metals (as Pb).....≤0,001 %
Sulphate (SO_4).....≤0,01 %
Barium (Ba).....≤0,02 %
Calcium (Ca).....≤0,05 %
Iron (Fe).....≤0,001 %
Sodium (Na).....≤0,05 %

4473.1	100 g	plastic	22,50 €
4473.2	500 g	plastic	56,90 €
Original pack 6 x 500 g			54,06/500 g
4473.3	1 kg	plastic	95,60 €
Original pack 6 x 1 kg			90,82/1 kg

Strontium nitrate

$Sr(NO_3)_2$
M 211,63 g/mol
D 2,99 • bp 645 °C
mp 570 °C
Solubility: 660 g/l (H_2O, 20 °C)
[10042-76-9] • EC No. 233-131-9
UN No. 1507 • ADR 5.1 III • WGK 1

Danger H271-H318

Strontium nitrate

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis).....99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5078.1	25 g	plastic	155,90 €

Strontium nitrate

≥99 %, p.a., ACS

Pyrotechnics, signal lights, manufacturing of matches

Guarantee analysis:

Assay (compl.).....≥99 %
pH value (5 % in H_2O).....5,0-7,0
In H_2O insoluble matter.....≤0,01 %
Loss on drying (105 °C).....≤0,1 %
Chloride (Cl).....≤0,002 %
Sulphate (SO_4).....≤0,005 %
Barium (Ba).....≤0,05 %
Calcium (Ca).....≤0,05 %
Iron (Fe).....≤0,0005 %
Sodium (Na).....≤0,1 %
Magnesium (Mg).....≤0,1 %
Heavy metals (as Pb).....≤0,0005 %

4413.1	100 g	plastic	25,70 €
4413.2	250 g	plastic	48,30 €
4413.3	500 g	plastic	90,85 €
Original pack 6 x 500 g			86,31/500 g

Strontium nitrate

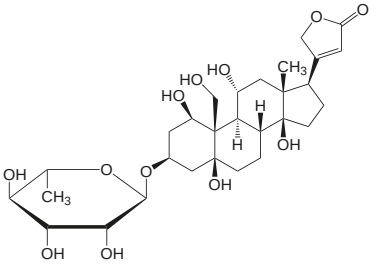
≥98 %, extra pure

Type analysis:

Assay (compl.).....≥98 %
Loss on drying (105 °C).....≤0,5 %
Iron (Fe).....≤0,001 %
Sodium (Na).....≤0,1 %
Heavy metals (as Pb).....≤0,001 %

2732.1	100 g	plastic	25,70 €
2732.2	500 g	plastic	40,35 €
Original pack 6 x 500 g			38,33/500 g
2732.3	1 kg	plastic	57,95 €
Original pack 6 x 1 kg			55,05/1 kg

g-Strophanthin



8 H_2O

g-Strophanthin

≥98 %

Ouabain-octahydrate
$C_{29}H_{44}O_{12} \cdot 8 H_2O$
M 728,78 g/mol
[11018-89-6] • EC No. 211-139-3
UN No. 1544 • ADR 6.1 II • WGK 3

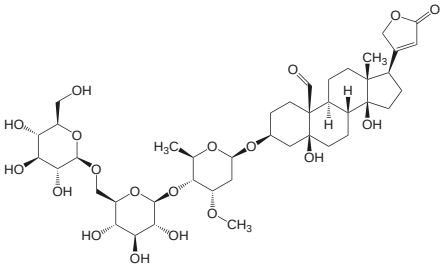
Danger H301+H331-H373

Type analysis:

Assay (dry substance).....≥98,0 %
Loss on drying.....≤22,0 %

8048.1	1 g	glass	341,35 €

K-Strophantoside



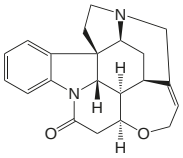
K-Strophantoside

≥85 %
$C_{42}H_{64}O_{19}$
M 872,97 g/mol • mp 199-200 °C
[33279-57-1] • EC No. 251-439-1
UN No. 2811 • ADR 6.1 III • WGK 3
Danger H301+H331-H373

Type analysis:
Appearance. ..... white to yellowish powder
Assay (HPLC). ..... ≥85 %

4078.1	50 mg	glass	82,25 €

Strychnine



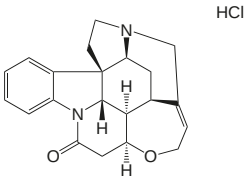
Strychnine

≥95 %, for biochemistry
Strychnidin-10-one
$C_{21}H_{22}N_2O_2$
M 334,42 g/mol
mp 286-288 °C
[57-24-9] • EC No. 200-319-7
UN No. 1692 • ADR 6.1 I • WGK 3
Danger H300+H310-H400-H410

Type analysis:
Assay (HPLC). ..... ≥95 %

4843.1	10 g	plastic	18,20 €

Strychnine hydrochloride



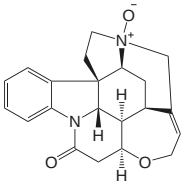
Strychnine hydrochloride

for biochemistry
$C_{21}H_{22}N_2O_2 \cdot HCl$
M 370,87 g/mol
[1421-86-9] • EC No. 215-826-9
UN No. 1692 • ADR 6.1 I • WGK 3
Danger H300+H310+H330-H410

Type analysis:
Appearance. ..... white to off-white powder

4845.1	10 g	plastic	21,40 €

Strychnine N-oxide



Strychnine N-oxide

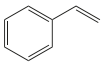
ROTICHROM® ~CHR
Aminoxystrychnine
$C_{21}H_{22}N_2O_3$
M 350,40 g/mol
mp 207-208 °C
[7248-28-4] • EC No. 230-656-5
UN No. 1692 • ADR 6.1 I • WGK 3
Danger H300+H330-H400-H410

4277.1	500 mg	glass	48,95 €

Stylophorin

▶ Chelidonine see p. 1890

Styrene



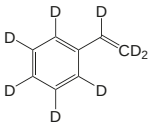
Styrene

≥99,5 %, for synthesis, stab.
Vinyl benzene, Phenylethylene, Styrol
C_8H_8
M 104,15 g/mol
D 0,91 • bp 145 °C
mp -31 °C • flp 31 °C
Solubility: 0,24 g/l (H_2O, 20 °C)
[100-42-5] • EC No. 202-851-5
UN No. 2055 • ADR 3 III • WGK 2
Danger
H226-H315-H319-H332-H361d-H372

Type analysis:
Assay (GC). ..... ≥99,5 %
Density (20 °C). ..... ~0,906 g/cm³
Polymer content. ..... ≤0,001 %
Stabilized with max. 10-15 ppm 4-tert-Butylcatechol (TBC)

2641.7	100 ml	glass	10,65 €
2641.1	500 ml	glass	21,00 €
2641.2	1 l	glass	30,65 €
Original pack 6 x 1 l			29,12/1 l
2641.3	2,5 l	glass	55,80 €
Original pack 4 x 2,5 l			53,01/2,5 l

Styrene D8



Styrene D8

99 Atom%D, stab. with 4-tert-Butylcatechol
For nuclear magnetic resonance spectroscopy.
C_8D_8
M 112,22 g/mol
D 0,98 • bp 50 °C
mp -30 °C • flp 32 °C
Storage temp.: +4 °C
[19361-62-7] • EC No. 242-995-6
UN No. 2055 • ADR 3 III • WGK 2
Danger
H226-H315-H319-H332-H361d-H372

Type analysis:
Deuterising degree. ..... ≥99 %
Water (KF, H_2O+D_2O). ..... ≤0,05 %
4-tert. Butylcatechol (mass %). ..... 0,5 %

9921.1	1 g	glass ampoule	117,75 €

Styrol

▶ Styrene see p. 2383

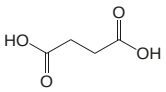
Substrates

Art. No.	Description	Page
4001	Acetylthiocholine iodide	1768
A155	5-Bromo-4-chloro-3-indolyl phosphate disodium salt	1851
6368	5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt	1851
4149	5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide	1852
4152	5-Bromo-4-chloro-3-indoxyl-β-D-cellobioside	1852
8434	5-Bromo-4-chloro-3-indoxyl-α-D-glucopyranoside	1852
8452	2-Butyrylthiocholine iodide	1865
4148	L-Carnosine	1879
4251	6-Chloro-3-indoxyl-β-D-galactopyranoside	1893
4057	6-Chloro-3-indoxyl-β-D-glucuronic acid cyclohexylammonium salt	1893
4247	6-Chloro-3-indoxyl phosphate p-toluidine salt	1893
4104	4-Chloro-1-naphthol	1894
4094	Coelenterazine	1904
8459	Creatine phosphate disodium salt tetrahydrate	1912
CN75	3,3'-Diaminobenzidine tetrahydrochloride	1932
8432	8-Hydroxyquinoline-β-D-glucuronic acid, sodium salt	2059
4243	3-Indoxyl-β-D-glucopyranoside	2067
CN24	D-Luciferin	2105
4096	D-Luciferin sodium salt	2105
4203	Luminol	2105
7708	Luminol sodium salt hemihydrate	2106
4083	4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide	2143
4084	4-Methylumbelliferyl-β-D-galacto-pyranoside	2144
4086	4-Methylumbelliferyl-α-D-gluco-pyranoside	2144
4093	4-Methylumbelliferyl-β-D-gluco-pyranoside	2144
6394	4-Methylumbelliferyl-β-D-glucuronide dihydrate	2144
4103	4-Methylumbelliferyl phosphate	2144
KK26	1-Naphthyl phosphate monosodium salt monohydrate	
4058	4-Nitrophenyl-N-acetyl-β-D-galactosaminide	2165
4062	4-Nitrophenyl-N-acetyl-β-D-glucosaminide	2165
4018	4-Nitrophenyl-α-L-fucopyranoside	2165
CN22	2-Nitrophenyl-β-D-galactopyranoside	2165
4063	4-Nitrophenyl-α-D-galactopyranoside	2165
4081	4-Nitrophenyl-β-D-galactopyranoside	2166
4077	2-Nitrophenyl-β-D-glucopyranoside	2166
4082	4-Nitrophenyl-β-D-glucopyranoside	2166
4165	4-Nitrophenyl phosphate disodium salt hexahydrate	2166
4079	4-Nitrophenyl-β-D-xyloside	2166
4421	p-Nitrotetrazolium blue chloride	2167
8397	Phosphoenolpyruvic acid, trisodium salt heptahydrate	2209
9202	Roti®-DAB Kit	2272
1117	Roti®fair pNPP 5mg	2277
1128	Roti®fair pNPP 20mg	2277
3734	Roti®-Lumin ultra	2287
3692	Roti®-Lumin plus	2287
P078	Roti®-Lumin	2287
6350	3,3',5,5'-Tetramethylbenzidine	2402
4107	3,3',5,5'-Tetramethylbenzidine dihydrochloride	2443
HN36	X-α-Gal	2443
2315	X-β-Gal	2443
4041	X-Glu	2443
0018	X-Gluc	2443

Succinate Standards

▶ Succinate IC Standard Solution see p. 2376

Succinic acid



Butanedioic acid, Amber acid
$C_4H_6O_4$
M 118,09 g/mol
D 1,55 • bp 235 °C
mp 185-191 °C • flp 206 °C
Solubility: 58 g/l (H_2O, 20 °C)
[110-15-6] • EC No. 203-740-4
WGK 1

Warning H319

Succinic acid

≥99 %, p.a., ACS

Guarantee analysis:

Assay. ..... ≥99,0 %
In H_2O insoluble matter. ..... ≤0,01 %
Melting point. ..... 185-191 °C
Ash content. ..... ≤0,02 %
Solubility (10 g in 150 ml H_2O). ..... clear and complete
Chloride (Cl). ..... ≤0,001 %
Phosphate (PO_4). ..... ≤0,001 %
Sulphate (SO_4). ..... ≤0,003 %
Total nitrogen (as N). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %

2725.1	250 g	plastic	26,80 €
2725.2	500 g	plastic	37,10 €
Original pack 6 x 500 g			35,25/500 g
2725.3	1 kg	plastic	59,70 €
Original pack 6 x 1 kg			56,72/1 kg

Succinic acid

≥99 %, extra pure

Type analysis:

Appearance. ..... white to off-white, cryst. powder
Assay. ..... ≥99,0 %
Melting point. ..... 185-191 °C
Sulphate (SO_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,01 %
Iron (Fe). ..... ≤0,01 %

8268.1	250 g	plastic	26,35 €
8268.2	1 kg	plastic	59,05 €
Original pack 6 x 1 kg			56,10/1 kg

Succinic acid disodium salt hexahydrate

Succinic acid disodium salt hexahydrate

≥99 %, for biochemistry
Sodium succinate
$C_4H_4O_4Na_2 \cdot 6\ H_2O$
M 270,15 g/mol
mp 120 °C
Solubility: 349 g/l (H_2O, 25 °C)
[6106-21-4] • EC No. 205-778-7
WGK 1

Type analysis:

Assay (dry substance). ..... ≥99,0 %
Loss on drying (130 °C). ..... 38,0-42,0 %

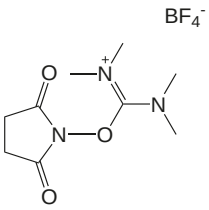
3195.1	100 g	plastic	38,60 €

For further information, please see page 1309

di-(N-Succinimidyl) carbonate

▶ N,N'-Disuccinimidyl carbonate (DSC) see p. 1954

O-(N-Succinimidyl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TSTU)



O-(N-Succinimidyl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TSTU)

PEPTIPURE® ≥99 %
Coupling reagent for peptide synthesis
TSTU
$C_9H_{16}BF_4N_3O_3$
M 301,1 g/mol
mp 196-200 °C
Storage temp.: +4 °C
[105832-38-0]
WGK 1

Warning H315-H319-H335

Type analysis:

Assay (HPLC). ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %

2130.1	5 g	glass	52,15 €
2130.2	25 g	glass	203,20 €

D-Sucrose

▶ D(+)-Saccharose see p. 2303

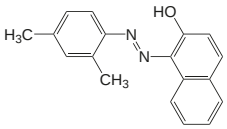
Sucrose epichlorhydrin copolymer

▶ Polysucrose 400 see p. 2219

Sucrose polymer

▶ Polysucrose 400 see p. 2219

Sudan II (C.I. 12140)



Sudan II (C.I. 12140)

for microscopy
Solvent Orange 7
$C_{18}H_{16}N_2O$
M 276,34 g/mol
[3118-97-6]
WGK 3

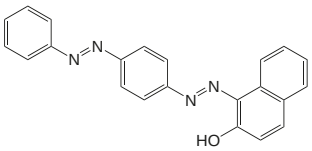
Warning H315-H319-H335

Type analysis:
Appearance. ..... orange red powder
Appearance of solution (1 % in $CHCl_3$). .. orange to red

7732.1	5 g	glass	12,40 €
7732.2	25 g	glass	25,70 €
7732.3	100 g	glass	60,10 €

For further information, please see page 1525

Sudan III (C.I. 26100)



Sudan III (C.I. 26100)

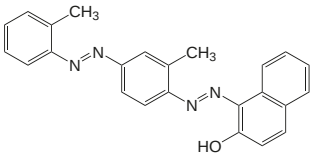
for microscopy
Sudan Red B
$C_{22}H_{16}N_4O$
M 352,39 g/mol
mp 199 °C (dec.)
[85-86-9] • EC No. 201-638-4
WGK 1

Type analysis:
Appearance. .....dark-red, brownish powder
Dye content. ..... ≤75,0 %

4711.2	50 g	glass	24,20 €
4711.1	100 g	plastic	45,70 €

For further information, please see page 1525

Sudan IV (C.I. 26105)



Sudan IV (C.I. 26105)

for microscopy
Scarlet red, Fatty ponceau
$C_{24}H_{20}N_4O$
M 380,45 g/mol
mp 199 °C (dec.)
Solubility: 0,1 g/l (H_2O, 20 °C)
[85-83-6] • EC No. 201-635-8 • WGK 1

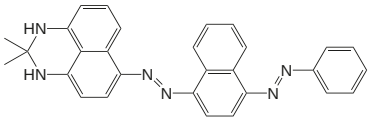
Warning H315-H319-H341

Type analysis:
Appearance.....dark red powder
Maximum absorption..... 520-523 nm

0327.1	25 g	glass	23,55 €
0327.2	50 g	glass	33,25 €

For further information, please see page 1525

Sudan black B (C.I. 26150)



Sudan black B (C.I. 26150)

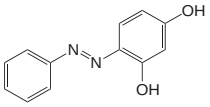
for microscopy
Neptune black, Rich black
$C_{29}H_{24}N_6$
M 456,55 g/mol
[4197-25-5] • EC No. 224-087-1 • WGK 1

Type analysis:
Absorption max. (C_2H_5OH)..... 590-610 nm
Loss on drying (110 °C)..... ≤5 %
Suitability for microscopy..... complies

0292.1	10 g	glass	23,55 €
0292.2	25 g	glass	33,25 €
0292.3	50 g	glass	52,60 €

For further information, please see page 1526

Sudan orange G (C.I. 11920)



Sudan orange G (C.I. 11920)

for microscopy
Solvent Orange 1
$C_{12}H_{10}N_2O_2$
M 214,22 g/mol • mp 143-146 °C
[2051-85-6] • WGK 3

Type analysis:
Appearance. .....orange red powder

7733.1	5 g	glass	12,40 €
7733.2	25 g	glass	25,70 €
7733.3	100 g	glass	60,10 €

For further information, please see page 1526

Sudanred B

▶ Sudan III (C.I. 26100) see p. 2385

Sugar Determination

Art. No.	Description	Page
HN35	Adenosin-5'-triphosphate disodium salt (ATP)	1773
2673	Anthrone	1807
0010	Benedict's reagent	1828
9944	Carrez solution I	1880
9950	Carrez solution II	1880
3958	Citric acid monohydrate	1901
N055	Fehling's solution I	1992
N056	Fehling's solution II	1992
K024	Hydrochloric acid (0,1 N)	2051
2559	Lead(II) acetate, basic	2095
X874	Luff-Schoorl's solution	2105
P027	Magnesium sulphate heptahydrate	2113
AE13	NADP disodium salt	2152
K034	Phenolphthalein indicator solution 1 %	2205
P745	Potassium hexacyanoferrate(II) trihydrate	2227
6750	Potassium iodide	2231
8087	Potassium sodium tartrate tetrahydrate	2234
4088	tri-Sodium citrate dihydrate	2336
6885	Sodium hydrogen carbonate	2338
K020	Sodium hydroxide solution (0,1 N)	2342
T135	Sodium hydroxide solution (2 N)	2343
K022	Sodium thiosulphate solution (0,1 N)	2351
T133	Starch 1 % indicator solution	2380
4804	Triethanolamine hydrochloride	2417
T172	Water	2439
K301	Zinc sulphate heptahydrate	2452

Sugar of lead

▶ Lead(II) acetate trihydrate see p. 2095

Sulfobetaine-8

▶ N-Octyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 2172

Sulfobetaine-10

▶ N-Decyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 1924

Sulfobetaine-12

▶ N-Dodecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 1959

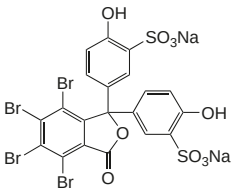
Sulfobetaine-14

▶ N-Tetradecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 2400

Sulfobetaine-16

▶ N-Hexadecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 2040

Sulfobromophthalein disodium salt



Sulfobromophthalein disodium salt

≥95 %, for biochemistry

Organic dye for microscopy.

Bromosulfalein, Phenoltetrabromophthalein disulfonic acid disodium salt

$C_{20}H_8Br_4O_{10}S_2Na_2$

M 838 g/mol

[71-67-0] • EC No. 200-761-0

WGK 2

Danger H334-H317

Type analysis:

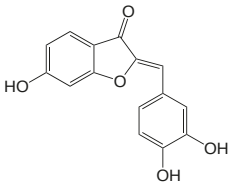
Assay.....≥95 %
Solution (5 % in water).....
..... colourless to yellowish, clear to slightly turbid
Loss on drying (3 h, 105 °C, vacuum).....≤6,0 %
Sulphate (SO_4).....complies
Bromide (Br).....36-39 %
Sulphur (S).....7,4-8,2 %
Calcium (Ca).....≤0,05 %

4033.1	1 g	glass	39,70 €
4033.2	5 g	glass	149,45 €

Sulfur

▶ Sulphur see p. 2387

Sulfuretin



Sulfuretin

ROTICHROM® HPLC

Reference substance for HPLC.

$C_{15}H_{10}O_5$

M 270,24 g/mol

Storage temp.: +4 °C

[120-05-8] • EC No. 204-366-4

Type analysis:

Purity (HPLC).....≥99 %

7569.1	5 mg	glass	295,65 €

Sulfurous acid

▶ Sulphurous acid see p. 2391

Sulphamic acid

Amido sulphuric acid, Amido sulphonic acid

H_3NO_3S

M 97,09 g/mol

D 2,13

mp 205 °C (dec.)

Solubility: ~213 g/l (H_2O, 20 °C)

[5329-14-6] • EC No. 226-218-8

UN No. 2967 • ADR 8 III • WGK 1

Warning H315-H319-H412

Sulphamic acid

≥99,3 %, p.a., ACS

Standard titrimetric substance

Guarantee analysis:

Assay (acidimetric, dry substance).....≥99,3 %
In H_2O insoluble matter.....≤0,01 %
Ash content.....≤0,01 %
Heavy metals (as Pb).....≤0,001 %
Chloride (Cl).....≤0,001 %
Sulphate (SO_4).....≤0,05 %
Lead (Pb).....≤0,001 %
Iron (Fe).....≤0,0005 %
Copper (Cu).....≤0,001 %
Nickel (Ni).....≤0,001 %

P725.1	500 g	plastic	34,30 €
Original pack 6 x 500 g			32,59/500 g
P725.2	1 kg	plastic	54,75 €
Original pack 6 x 1 kg			52,01/1 kg
P725.3	2,5 kg	plastic	97,75 €

Sulphamic acid

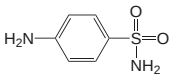
≥99 % cryst.

Type analysis:

Assay.....≥99,8 %
Water.....≤0,1 %
Sulphate (SO_4).....≤0,1 %
Iron (Fe).....≤0,005 %
Heavy metals.....≤0,001 %

4714.3	250 g	plastic	14,95 €
4714.1	1 kg	plastic	21,00 €
Original pack 6 x 1 kg			19,95/1 kg
4714.2	5 kg	plastic	87,00 €
4714.7	25 kg	plastic	289,20 €

Sulphanilamide



4-Aminobenzenesulphonamide

$C_6H_8N_2O_2S$

M 172,21 g/mol

D 1,08

mp 163-167 °C

Solubility: 7,5 g/l (H_2O, 25 °C)

[63-74-1] • EC No. 200-563-4 • WGK 1

Sulphanilamide

≥99 %, for biochemistry

Type analysis:

Assay.....≥99,0 %
Sulphated ash.....≤0,1 %
Heavy metals (as Pb).....≤0,002 %
Loss on drying (105 °C).....≤0,5 %

4716.1	100 g	plastic	31,10 €

Sulphanilamide

ROTI®CALIPURE

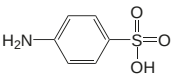
Melting point standard 164-166 °C

Type analysis:

Meniscus formation.....164-166 °C
Complete liquefaction.....164-166 °C

9734.1	1 g	glass	31,10 €

Sulphanilic acid



Sulphanilic acid

≥98 %, p.a., ACS

4-Aminobenzenesulphonic acid, p-Anilinesulphonic acid

$C_6H_7NO_3S$

M 173,19 g/mol

D ~1,48

mp 288 °C (dec.)

Solubility: 10 g/l (H_2O, 20 °C)

[121-57-3] • EC No. 204-482-5

WGK 1

Warning H315-H319-H317

Guarantee analysis:

Assay (acidim.).....98,0-102,0 %
In Na_2CO_3 insoluble matter.....≤0,02 %
Ash content.....≤0,01 %
Chloride (Cl).....≤0,002 %
Nitrite (NO_2).....≤0,00005 %
Sulphate (SO_4).....≤0,01 %
Lead (Pb).....≤0,0005 %
Cadmium (Cd).....≤0,0005 %
Calcium (Ca).....≤0,001 %
Chromium (Cr).....≤0,0005 %
Iron (Fe).....≤0,001 %
Potassium (K).....≤0,005 %
Cobalt (Co).....≤0,0005 %
Copper (Cu).....≤0,0005 %
Magnesium (Mg).....≤0,0005 %
Manganese (Mn).....≤0,0005 %
Nickel (Ni).....≤0,0005 %
Sodium (Na).....≤0,005 %
Zinc (Zn).....≤0,0005 %

4496.1	100 g	plastic	31,75 €
4496.2	500 g	plastic	122,45 €
Original pack 6 x 500 g			116,33/500 g

Sulphanilic acid amide

▶ Sulphanilamide see p. 2386

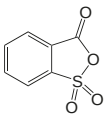
Sulphate Standards

▶ Sulphate IC Standard Solution see p. 2376

Sulphite Standards

▶ Sulphite IC Standard Solution see p. 2376

2-Sulphobenzoic acid anhydride



2-Sulphobenzoic acid anhydride

≥85 %, for biochemistry

$C_7H_4O_4S$
M 184,17 g/mol
bp 184 °C (24 hPa)
mp 114 °C
[81-08-3] • EC No. 201-322-6 • WGK 3

Warning H315-H319-H335

Type analysis:

Appearance. ..... off-white to light brown cryst. powder
Assay (titr.). ..... 85,0-105,0 %
Appearance of solution (1 % in EtOH). ..... colourless to light brown
Water (KF). ..... ≤1,0 %

8399.1	25 g	glass	37,55 €
8399.2	100 g	glass	94,50 €

o-Sulphobenzoic acid imide sodium salt

▶ o-Benzoic sulphimide sodium salt see p. 1831

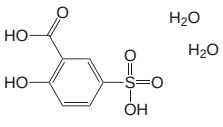
Sulphonic alizarin violet

▶ Pyrogallol red see p. 2246

3,3'-Sulphonyldianiline

▶ 3,3'-Diaminodiphenyl sulphone see p. 1932

5-Sulphosalicylic acid dihydrate



5-Sulphosalicylic acid dihydrate

≥99 %, for biochemistry

5-Salicylsulphonic acid
$C_7H_6O_6S \cdot 2\ H_2O$
M 254,22 g/mol • D 0,8
mp 105-109 °C • flp ~110 °C
[5965-83-3] • EC No. 202-555-6
UN No. 2585 • ADR 8 III • WGK 1

Warning H302-H315-H319-H335

Type analysis:

Assay (acidim.). ..... ≥99,0 %
Loss on drying. ..... ≤22,0 %
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤5,5 %

4119.1	100 g	plastic	18,85 €
4119.2	500 g	plastic	52,60 €
Original pack 6 x 500 g			49,97/500 g
4119.7	1 kg	plastic	89,15 €
Original pack 6 x 1 kg			84,69/1 kg

For further information, please see page 1690

Sulphur

Sulphur

≥99,999%

Type analysis:

Appearance. ..... yellow tablets
Assay. ..... ≥99,999 %

4669.1	10 g	plastic	62,90 €

Sulphur

≥99,5 %, ground

Type analysis:

Assay. ..... ≥99,5 %
CS_2-insoluble. ..... ≤0,03 %
Ash. ..... ≤0,01 %
Water ..... ≤0,01 %
Acid content (as H_2SO_4). ..... ≤0,01 %
Iron (Fe). ..... ≤0,001 %
Melting range. ..... 114,5-119,3 °C

9304.1	1 kg	plastic	18,20 €
Original pack 6 x 1 kg			17,29/1 kg
9304.2	5 kg	cardboard	56,90 €
9304.5	25 kg	plastic	160,20 €

Sulphur Standards

▶ Sulphur ICP Standard Solution see p. 2365
▶ Sulphur ICP Standard Solution see p. 2369

Sulphur flowers

▶ Sulphur see p. 2387

Sulphuric acid Ultra-quality

Sulphuric acid Ultra-quality

ROTIPURAN® Ultra 95 %

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis.
H_2SO_4
M 98,08 g/mol
D ~1,84 • bp 330 °C • mp -15 °C
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

Danger H314-H290

Guarantee analysis:

Assay (w/w). ..... 93-98 %
Aluminium (Al). ..... ≤50 ppt
Antimony (Sb). ..... ≤50 ppt
Arsenic (As). ..... ≤500 ppt
Barium (Ba). ..... ≤10 ppt
Beryllium (Be). ..... ≤10 ppt
Lead (Pb). ..... ≤10 ppt
Cadmium (Cd). ..... ≤10 ppt
Cesium (Cs). ..... ≤10 ppt
Calcium (Ca). ..... ≤50 ppt
Cerium (Ce). ..... ≤10 ppt
Chromium (Cr). ..... ≤10 ppt
Dysprosium (Dy). ..... ≤10 ppt
Iron (Fe). ..... ≤50 ppt
Erbium (Er). ..... ≤10 ppt
Europium (Eu). ..... ≤10 ppt
Gadolinium (Gd). ..... ≤10 ppt
Gallium (Ga). ..... ≤10 ppt
Germanium (Ge). ..... ≤100 ppt
Hafnium (Hf). ..... ≤10 ppt
Holmium (Ho). ..... ≤10 ppt
Indium (In). ..... ≤10 ppt
Potassium (K). ..... ≤50 ppt
Cobalt (Co). ..... ≤10 ppt
Copper (Cu). ..... ≤10 ppt
Lanthanum (La). ..... ≤10 ppt
Lithium (Li). ..... ≤10 ppt
Lutetium (Lu). ..... ≤10 ppt
Magnesium (Mg). ..... ≤50 ppt
Manganese (Mn). ..... ≤10 ppt
Molybdenum (Mo). ..... ≤10 ppt
Sodium (Na). ..... ≤50 ppt
Neodymium (Nd). ..... ≤10 ppt
Nickel (Ni). ..... ≤50 ppt
Niobium (Nb). ..... ≤10 ppt
Praseodymium (Pr). ..... ≤10 ppt
Mercury (Hg). ..... ≤100 ppt
Rhodium (Rh). ..... ≤50 ppt
Rubidium (Rb). ..... ≤10 ppt
Samarium (Sm). ..... ≤10 ppt
Scandium (Sc). ..... ≤10 ppt
Selenium (Se). ..... ≤500 ppt
Silver (Ag). ..... ≤50 ppt
Strontium (Sr). ..... ≤10 ppt
Tellur (Te). ..... ≤50 ppt
Terbium (Tb). ..... ≤10 ppt
Thallium (Tl). ..... ≤10 ppt
Thorium (Th). ..... ≤10 ppt
Thulium (Tm). ..... ≤10 ppt
Titanium (Ti). ..... ≤50 ppt
Uranium (U). ..... ≤10 ppt
Vanadium (V). ..... ≤10 ppt
Bismuth (Bi). ..... ≤10 ppt
Tungsten (W). ..... ≤10 ppt
Ytterbium (Yb). ..... ≤10 ppt
Yttrium (Y). ..... ≤10 ppt
Zinc (Zn). ..... ≤50 ppt
Tin (Sn). ..... ≤50 ppt
Zirconium (Zr). ..... ≤10 ppt

HN62.1	250 ml	plastic (FEP)	407,45 €
HN62.2	500 ml	plastic (FEP)	579,45 €
HN62.3	1 l	plastic (FEP)	966,45 €
Original pack 6 x 1 l			918,13/1 l
HN62.4	2 l	plastic (FEP)	1643,70 €

For further information, please see page 1729

Sulphuric acid Supra-quality

Sulphuric acid Supra-quality

ROTIPURAN® Supra 95 %

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

H_2SO_4
M 98,08 g/mol
D ~ 1,84 • bp 330 °C
mp -15 °C
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

Danger H314-H290

Guarantee analysis:

Assay (w/w)	93-98 %
Colour (APHA)	≤10
Chloride (Cl)	≤0,00007 %
Total Phosphorous (P)	≤0,000005 %
Nitrate (NO_3)	≤0,00002 %
Aluminium (Al)	≤1 ppb
Antimony (Sb)	≤1 ppb
Arsenic (As)	≤0,5 ppb
Barium (Ba)	≤0,1 ppb
Beryllium (Be)	≤0,1 ppb
Lead (Pb)	≤0,1 ppb
Cadmium (Cd)	≤0,5 ppb
Cesium (Cs)	≤0,1 ppb
Calcium (Ca)	≤1 ppb
Cerium (Ce)	≤0,1 ppb
Chromium (Cr)	≤0,5 ppb
Dysprosium (Dy)	≤0,1 ppb
Iron (Fe)	≤1 ppb
Erbium (Er)	≤0,1 ppb
Europium (Eu)	≤0,1 ppb
Gadolinium (Gd)	≤0,1 ppb
Gallium (Ga)	≤0,1 ppb
Germanium (Ge)	≤1 ppb
Gold (Au)	≤0,5 ppb
Hafnium (Hf)	≤0,1 ppb
Holmium (Ho)	≤0,1 ppb
Indium (In)	≤0,1 ppb
Potassium (K)	≤1 ppb
Cobalt (Co)	≤0,5 ppb
Copper (Cu)	≤0,5 ppb
Lanthanum (La)	≤0,1 ppb
Lithium (Li)	≤0,5 ppb
Lutetium (Lu)	≤0,1 ppb
Magnesium (Mg)	≤1 ppb
Manganese (Mn)	≤0,5 ppb
Molybdenum (Mo)	≤0,5 ppb
Sodium (Na)	≤1 ppb
Neodymium (Nd)	≤0,1 ppb
Nickel (Ni)	≤0,5 ppb
Niobium (Nb)	≤0,1 ppb
Praseodymium (Pr)	≤0,1 ppb
Mercury (Hg)	≤0,1 ppb
Rhodium (Rh)	≤0,5 ppb
Rubidium (Rb)	≤0,5 ppb
Samarium (Sm)	≤0,1 ppb
Scandium (Sc)	≤0,1 ppb
Selenium (Se)	≤10 ppb
Silver (Ag)	≤1 ppb
Strontium (Sr)	≤0,5 ppb
Tellur (Te)	≤0,1 ppb
Terbium (Tb)	≤0,1 ppb
Thallium (Tl)	≤0,1 ppb
Thorium (Th)	≤0,1 ppb
Thulium (Tm)	≤0,1 ppb
Titanium (Ti)	≤1 ppb
Uranium (U)	≤0,1 ppb
Vanadium (V)	≤0,5 ppb
Bismuth (Bi)	≤0,1 ppb
Tungsten (W)	≤0,5 ppb
Ytterbium (Yb)	≤0,1 ppb
Yttrium (Y)	≤0,1 ppb
Zinc (Zn)	≤1 ppb
Tin (Sn)	≤1 ppb
Zirconium (Zr)	≤0,5 ppb
$KMnO_4$ reducing substances	≤0,002 %

HN52.1	500 ml	plastic	79,45 €
HN52.2	1 l	plastic	132,15 €
Original pack 6 x 1 l			125,54/1 l
HN52.5	2,5 l	plastic	159,00 €
Original pack 4 x 2,5 l			151,05/2,5 l

For further information, please see page 1729

Sulphuric acid 98 %

Sulphuric acid 98 %

ROTIPURAN® 98 %, for determination of nitrogen

For determination of nitrogen acc. to Kjehldahl.

H_2SO_4
M 98,08 g/mol
D ~1,84
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

Danger H314-H290

Guarantee analysis:

Assay (acidim.)	98 ±1 %
Ash content	≤0,0005 %
Total nitrogen (N)	≤0,0005 %

X945.1	1 l	glass	28,95 €
Original pack 6 x 1 l			27,50/1 l
X945.2	2,5 l	glass	59,05 €
Original pack 4 x 2,5 l			56,10/2,5 l

Sulphuric acid 95-98 %

Sulphuric acid 95-98 %

ROTIPURAN® 95-98 %, p.a., ISO, max. 0,005 ppm Hg

Dissolving agent for organic and anorganic samples. For determination of mercury.

H_2SO_4
M 98,08 g/mol
D ~1,84
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

Danger H314-H290

Guarantee analysis:

Assay (acidim.)	95,0-98,0 %
Colour (Hazen)	≤10
Chloride (Cl)	≤0,00001 %
Nitrate (NO_3)	≤0,00002 %
Phosphate (PO_4)	≤0,00005 %
Ammonium (NH_4)	≤0,0002 %
Mercury (Hg)	≤0,0000005 %
Silver (Ag)	≤0,000002 %
Aluminium (Al)	≤0,000005 %
Arsenic (As)	≤0,000001 %
Calcium (Ca)	≤0,00002 %
Cadmium (Cd)	≤0,000002 %
Cobalt (Co)	≤0,000002 %
Chromium (Cr)	≤0,000005 %
Copper (Cu)	≤0,000001 %
Iron (Fe)	≤0,00001 %
Potassium (K)	≤0,00001 %
Lithium (Li)	≤0,000002 %
Magnesium (Mg)	≤0,000005 %
Manganese (Mn)	≤0,000001 %
Sodium (Na)	≤0,00005 %
Nickel (Ni)	≤0,000002 %
Lead (Pb)	≤0,000002 %
Strontium (Sr)	≤0,000002 %
Zinc (Zn)	≤0,000005 %
Ash content	≤0,0005 %
$KMNO_4$ reducing matter (as SO_2)	≤0,0002 %

X944.1	1 l	glass	35,40 €
Original pack 6 x 1 l			33,63/1 l
X944.2	2,5 l	glass	66,55 €
Original pack 4 x 2,5 l			63,22/2,5 l

Sulphuric acid 96 %

H_2SO_4
M 98,08 g/mol
D ~1,84
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

Danger H290-H314

Sulphuric acid 96 %

96 %, VLSI Grade

Guarantee analysis:

Assay	95-97 %
Particle number (≥0,5 µm)	≤250 p/ml
Colour (APHA)	≤10
Ammonium (NH_4)	≤0,0002 %
Chloride (Cl)	≤0,00001 %
Nitrate (NO_3)	≤0,00002 %
Phosphate (PO_4)	≤0,00005 %
$KMnO_4$ reducing substances	≤0,0001 %
Ash content (as SO_4)	≤0,0003 %
Aluminium (Al)	≤50 ppb
Antimony (Sb)	≤10 ppb
Arsenic (As)	≤10 ppb
Barium (Ba)	≤10 ppb
Beryllium (Be)	≤10 ppb
Bismuth (Bi)	≤20 ppb
Lead (Pb)	≤10 ppb
Boron (B)	≤20 ppb
Cadmium (Cd)	≤10 ppb
Calcium (Ca)	≤50 ppb
Chromium (Cr)	≤10 ppb
Iron (Fe)	≤50 ppb
Gallium (Ga)	≤10 ppb
Gold (Au)	≤10 ppb
Potassium (K)	≤50 ppb
Cobalt (Co)	≤10 ppb
Copper (Cu)	≤10 ppb
Lithium (Li)	≤10 ppb
Magnesium (Mg)	≤20 ppb
Manganese (Mn)	≤10 ppb
Molybdenum (Mo)	≤10 ppb
Sodium (Na)	≤50 ppb
Nickel (Ni)	≤10 ppb
Silver (Ag)	≤10 ppb
Strontium (Sr)	≤20 ppb
Titanium (Ti)	≤20 ppb
Vanadium (V)	≤10 ppb
Zinc (Zn)	≤20 ppb
Tin (Sn)	≤20 ppb
Zirconium (Zr)	≤10 ppb

9789.1	2,5 l	plastic	81,20 €
Original pack 4 x 2,5 l			77,14/2,5 l

For further information, please see page 1718

Sulphuric acid 96 %

ROTIPURAN® 96 %, p.a., ISO

Guarantee analysis:

Assay (acidim.)	≥95 %
Colour (APHA)	≤10
Chloride (Cl)	≤0,00002 %
Nitrate (NO_3)	≤0,00002 %
Phosphate (PO_4)	≤0,00005 %
Ammonium (NH_4)	≤0,0002 %
Silver (Ag)	≤0,000002 %
Aluminium (Al)	≤0,000005 %
Arsenic (As)	≤0,000001 %
Beryllium (Be)	≤0,000002 %
Calcium (Ca)	≤0,00002 %
Cadmium (Cd)	≤0,000002 %

Cobalt (Co). ..... ≤0,000002 %
Chromium (Cr). ..... ≤0,000005 %
Copper (Cu). ..... ≤0,000001 %
Iron (Fe). ..... ≤0,00001 %
Potassium (K). ..... ≤0,00001 %
Lithium (Li). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,000005 %
Manganese (Mn). ..... ≤0,000001 %
Sodium (Na). ..... ≤0,00005 %
Nickel (Ni). ..... ≤0,000002 %
Lead (Pb). ..... ≤0,000002 %
Strontium (Sr). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,000005 %
Ash content. ..... ≤0,0005 %
$KMNO_4$ reducing matter (as SO_2). ..... ≤0,0002 %

4623.3	250 ml	glass	19,25 €
4623.1	1 l	glass	31,75 €
Original pack 6 x 1 l			30,16/1 l
4623.4	1 l	plastic	28,95 €
Original pack 6 x 1 l			27,50/1 l
4623.2	2,5 l	glass	63,35 €
Original pack 4 x 2,5 l			60,18/2,5 l
4623.5	2,5 l	plastic	66,55 €
Original pack 4 x 2,5 l			63,22/2,5 l
4623.6	10 l	plastic	122,05 €

Sulphuric acid 96 %

95-98 %, Ph.Eur.

Guarantee analysis:

Assay (acidim.). ..... 95,0-98,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Chloride (Cl). ..... ≤0,005 %
Nitrate (NO_3). ..... complies
Ammonium (NH_4). ..... ≤0,001 %
Ash content. ..... ≤0,002 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,0025 %

2609.1	1 l	glass	29,60 €
Original pack 6 x 1 l			28,12/1 l
2609.2	2,5 l	glass	48,95 €
Original pack 4 x 2,5 l			46,50/2,5 l
2609.3	10 l	plastic	115,60 €

Sulphuric acid 96 %

96 %, pure

Type analysis:

Assay. ..... 95,0-97,0 %
Density (20 °C). 1,834-1,836
Iron (Fe). ..... ≤0,01 %
Lead (Pb). ..... ≤0,0005 %

9316.1	1 l	glass	26,80 €
Original pack 6 x 1 l			25,46/1 l
9316.2	2,5 l	glass	41,85 €
Original pack 4 x 2,5 l			39,76/2,5 l
9316.3	10 l	plastic	69,35 €

Sulphuric acid 96 %

96 %, techn.

Type analysis:

Assay. ..... 95,0-97,0 %
Density (20 °C). 1,834-1,836

0971.1	1 l	plastic	18,20 €
Original pack 6 x 1 l			17,29/1 l
0971.2	2,5 l	plastic	27,45 €
Original pack 4 x 2,5 l			26,08/2,5 l
0971.3	10 l	plastic	54,75 €
0971.4	25 l	plastic	113,85 €

Sulphuric acid for determination of viscosity

Sulphuric acid 96 %

for determination of viscosity acc. to DIN EN ISO 307

H_2SO_4
M 98,08 g/mol • D ~1,84
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Assay (titr.). ..... 95,85-96,15 %

4363.5	500 ml	glass	27,85 €
4363.1	1 l	glass	38,20 €
Original pack 6 x 1 l			36,29/1 l
4363.2	2,5 l	glass	77,95 €
Original pack 4 x 2,5 l			74,05/2,5 l
4363.3	5 l	plastic	146,10 €
Original pack 2 x 5 l			138,80/5 l
4363.4	10 l	plastic	249,95 €

Sulphuric acid 90-91 %

Sulphuric acid 90-91 %

ROTIPURAN® 90-91 %, for determination of fat

For determination of fat acc. to Gerber and determination of nitrates in milk.

H_2SO_4
M 98,08 g/mol • D ~1,818
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

Danger H314-H290

Guarantee analysis:

Assay (acidim.). ..... 90-91 %
Density (d 20 °C/4 °C). 1,815-1,821
Nitrate (NO_3). ..... ≤0,00005 %

X946.1	1 l	plastic	22,05 €
Original pack 6 x 1 l			20,95/1 l
X946.2	2,5 l	plastic	40,75 €
Original pack 4 x 2,5 l			38,71/2,5 l

Sulphuric acid 75 %

Sulphuric acid 75 %

75 %, pure

H_2SO_4
M 98,08 g/mol • D ~1,68
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Assay. ..... 74,0-76,0 %
Density (20 °C). 1,657-1,681
Iron (Fe). ..... ≤0,01 %
Lead (Pb). ..... ≤0,0005 %

4319.1	1 l	plastic	17,75 €
Original pack 6 x 1 l			16,86/1 l
4319.2	2,5 l	plastic	27,45 €
Original pack 4 x 2,5 l			26,08/2,5 l
4319.3	5 l	plastic	46,80 €
Original pack 2 x 5 l			44,46/5 l
4319.4	10 l	plastic	64,40 €
4319.5	25 l	plastic	122,45 €

Sulphuric acid 62 %

Sulphuric acid 62 %

ROTIPURAN® p.a., for determination of fat in cheese (d 1,52) acc to van Gulik

H_2SO_4
M 98,08 g/mol
D ~1,52
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

Danger H314-H290

Guarantee analysis:

Assay. ..... 61,5-62,5 %

CN89.1	1 l	plastic	25,70 €
Original pack 6 x 1 l			24,42/1 l
CN89.2	2,5 l	plastic	42,50 €
Original pack 4 x 2,5 l			40,38/2,5 l
CN89.3	5 l	plastic	69,35 €
Original pack 2 x 5 l			65,88/5 l
CN89.4	10 l	plastic	114,50 €
CN89.5	25 l	plastic	246,20 €

Sulphuric acid 50 %

Sulphuric acid 50 %

50 %, pure

H_2SO_4
M 98,08 g/mol
D ~1,40
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Assay. ..... 49,0-51,0 %
Density (20 °C). 1,3854-1,4049
Iron (Fe). ..... ≤0,01 %
Lead (Pb). ..... ≤0,0001 %

4318.1	1 l	plastic	17,75 €
Original pack 6 x 1 l			16,86/1 l
4318.2	2,5 l	plastic	26,35 €
Original pack 4 x 2,5 l			25,03/2,5 l
4318.3	5 l	plastic	44,65 €
Original pack 2 x 5 l			42,42/5 l
4318.4	10 l	plastic	61,20 €

Sulphuric acid 40 %

Sulphuric acid 40 %

40 %, pure

H_2SO_4
M 98,08 g/mol • D ~1,30
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Assay.....39,0-41,0 %
Density (20 °C).....1,2941-1,3116
Iron (Fe).....≤0,005 %
Lead (Pb).....≤0,0001 %

4316.1	1 l	plastic	17,10 €
Original pack 6 x 1 l			16,25/1 l
4316.2	2,5 l	plastic	25,70 €
Original pack 4 x 2,5 l			24,42/2,5 l
4316.3	10 l	plastic	57,95 €
4316.4	25 l	plastic	107,00 €

Sulphuric acid 37 %

Sulphuric acid 37 %

37 %, techn. (battery acid, accumulator acid)

H_2SO_4
M 98,08 g/mol
D ~1,28
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Assay.....36,0-39,1 %
Density (20 °C).....1,2650-1,2950

4312.1	1 l	plastic	15,60 €
Original pack 6 x 1 l			14,82/1 l
4312.2	2,5 l	plastic	23,55 €
Original pack 4 x 2,5 l			22,37/2,5 l
4312.3	10 l	plastic	51,10 €
4312.4	25 l	plastic	103,10 €

Sulphuric acid 30 %

Sulphuric acid 30 %

30 %, pure

H_2SO_4
M 98,08 g/mol
D ~1,22
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

Danger H290-H314

Type analysis:

Assay.....29,0-31,0 %
Density (20 °C).....1,210-1,227
Iron (Fe).....≤0,002 %
Lead (Pb).....≤0,0001 %

X876.1	1 l	plastic	16,05 €
Original pack 6 x 1 l			15,25/1 l
X876.2	2,5 l	plastic	23,15 €
Original pack 4 x 2,5 l			21,99/2,5 l
X876.3	10 l	plastic	55,80 €

Sulphuric acid 25 %

Sulphuric acid 25 %

25 %, extra pure

H_2SO_4
M 98,08 g/mol
D ~1,18
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

Danger H290-H314

Type analysis:

Assay (H_2SO_4).....24,0-26,0 %
Density (20 °C).....1,1704-1,1862
Calcium (Ca).....≤0,0001 %
Iron (Fe).....≤0,002 %
Lead (Pb).....≤0,0001 %
Mercury (Hg).....≤0,00001 %

0967.1	1 l	plastic	16,70 €
Original pack 6 x 1 l			15,87/1 l
0967.2	2,5 l	plastic	22,50 €
Original pack 4 x 2,5 l			21,38/2,5 l
0967.3	10 l	plastic	42,90 €
0967.4	25 l	plastic	75,15 €

Sulphuric acid 20 %

Sulphuric acid 20 %

20 %, pure

H_2SO_4
M 98,08 g/mol
D ~1,14
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:

Assay.....19,0-21,0 %
Density (20 °C).....1,1318-1,1471
Iron (Fe).....≤0,002 %
Lead (Pb).....≤0,0001 %

4300.4	1 l	plastic	15,60 €
Original pack 6 x 1 l			14,82/1 l
4300.1	2,5 l	plastic	21,00 €
Original pack 4 x 2,5 l			19,95/2,5 l
4300.5	5 l	plastic	31,10 €
Original pack 2 x 5 l			29,55/5 l
4300.2	10 l	plastic	41,40 €
4300.3	25 l	plastic	74,75 €

Sulphuric acid (0,02 N)

Sulphuric acid

0,01 mol/l - 0,02 N volumetric standard solution

UN No. 3264 • ADR 8 III

Warning H290

Type analysis:

Amount-of-substance conc. (20 °C).....0,01 mol/l ±0,2 %
Titer.....0,998-1,002

X872.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1682

Sulphuric acid (0,1 N)

Sulphuric acid

0,05 mol/l - 0,1 N volumetric standard solution

UN No. 3264 • ADR 8 III

Warning H290

Type analysis:

Amount-of-substance conc. (20 °C).....0,05 mol/l ±0,2 %
Titer.....0,998-1,002

K026.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
K026.2	5 l	plastic	58,60 €
Original pack 2 x 5 l			55,67/5 l
K026.3	5 l	ROTI®CUBE	63,35 €
Original pack 2 x 5 l			60,18/5 l
K026.4	10 l	ROTI®CUBE	93,45 €
K026.7	25 l	plastic	153,65 €

For further information, please see page 1682

Sulphuric acid (0,1 N)

Sulphuric acid

0,05 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.

[7664-93-9] • EC No. 231-639-5
UN No. 3264 • ADR 8 III

Warning H290

Type analysis:

Amount-of-substance conc.....0,05 mol/l
Measurement uncertainty.....±0,1 %

6793.1	1 l	plastic	24,65 €
Original pack 6 x 1 l			23,42/1 l

Sulphuric acid (0,1 N)

Sulphuric acid

ROTI®VOLUM 0,05 mol/l - 0,1 N

Ampoule for preparation of 1000 ml volumetric solution.

H_2SO_4
M 98,08 g/mol
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

Warning H290-H315-H319

Type analysis:

Amount-of-substance conc. (20 °C).....0,05 mol/l ±0,2 %

CN64.1	1 piece	plastic ampoule	19,90 €

For further information, please see page 1683

Sulphuric acid (0,2 N)

Sulphuric acid

0,1 mol/l - 0,2 N volumetric standard solution
[7664-93-9] • EC No. 231-639-5
UN No. 3264 • ADR 8 III

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C)..... 0,1 mol/l ±0,2 %
Titer. 0,998-1,002

N072.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
N072.2	5 l	plastic	58,60 €
Original pack 2 x 5 l			55,67/5 l

For further information, please see page 1682

Sulphuric acid (0,5 N)

Sulphuric acid

0,25 mol/l - 0,5 N volumetric standard solution
[7664-93-9] • EC No. 231-639-5
UN No. 3264 • ADR 8 III

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C)..... 0,25 mol/l ±0,2 %
Titer. 0,9980-1,0020

P709.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
P709.2	5 l	ROTI®CUBE	63,35 €
Original pack 2 x 5 l			60,18/5 l
P709.3	10 l	ROTI®CUBE	93,45 €

For further information, please see page 1682

Sulphuric acid (1 N)

Sulphuric acid

0,5 mol/l - 1 N volumetric standard solution
UN No. 3264 • ADR 8 III • WGK 1

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C)....0,5 mol/l ±0,2 %
Titer. 0,998-1,002

K027.1	1 l	plastic	19,90 €
Original pack 6 x 1 l			18,91/1 l
K027.2	5 l	plastic	58,60 €
Original pack 2 x 5 l			55,67/5 l
K027.3	5 l	ROTI®CUBE	63,35 €
Original pack 2 x 5 l			60,18/5 l
K027.4	10 l	ROTI®CUBE	93,45 €

For further information, please see page 1682

Sulphuric acid (1 N)

Sulphuric acid

0,5 mol/l - 1 N volumetric standard solution, Reag. Ph.Eur.
[7664-93-9] • EC No. 231-639-5
UN No. 3264 • ADR 8 III

Warning H290

Type analysis:
Amount-of-substance conc. (20 °C). ..... 0,5 mol/l
Measurement uncertainty. ..... ±0,1 %

6794.1	1 l	plastic	24,65 €
Original pack 6 x 1 l			23,42/1 l

Sulphuric acid (1 N)

Sulphuric acid

ROTI®VOLUM 0,5 mol/l - 1 N
Ampoule for preparation of 1000 ml volumetric solution.
H_2SO_4
M 98,08 g/mol
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

Danger H314-H290

Type analysis:
Amount-of-substance conc. (20 °C). ..... 0,5 mol/l ±0,2 %

CN65.1	1 piece	plastic ampoule	23,15 €

For further information, please see page 1683

Sulphuric acid (2 N)

Sulphuric acid

1 mol/l - 2 N volumetric standard solution
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

Warning H290-H315-H319

Type analysis:
Amount-of-substance conc. (20 °C). ..... 1 mol/l ±0,2 %
Titer. 0,998-1,002

X873.1	1 l	plastic	25,30 €
Original pack 6 x 1 l			24,04/1 l

For further information, please see page 1682

Sulphuric acid (4 N)

Sulphuric acid

2 mol/l - 4 N volumetric standard solution
D 1,12
UN No. 2796 • ADR 8 II • WGK 1

Danger H290-H314

Type analysis:
Amount-of-substance conc. (20 °C). ..... 2 mol/l ±0,2 %
Titer. 0,9980-1,0020

9896.1	500 ml	plastic	26,80 €
9896.2	1 l	plastic	41,85 €
Original pack 6 x 1 l			39,76/1 l

Sulphuric acid (5 N)

Sulphuric acid

2,5 mol/l - 5 N volumetric standard solution
UN No. 2796 • ADR 8 II • WGK 1

Danger H290-H314

Type analysis:
Amount-of-substance conc. (20 °C)... 2,5 mol/l ±0,2 %
Titer. 0,998-1,002

KK74.1	1 l	plastic	27,85 €
Original pack 6 x 1 l			26,46/1 l

For further information, please see page 1682

Sulphuric acid D2, 98 % solution in D_2O

Sulphuric acid D2, 98 % solution in D_2O

99,5 Atom%D
For nuclear magnetic resonance spectroscopy.
D_2SO_4
M 100,09 g/mol
D ~1,84 • bp 360 °C
[13813-19-9] • EC No. 237-464-0
UN No. 1830 • ADR 8 II • WGK 1

Danger H290-H314

Type analysis:
Deuterising degree..... ≥99,5 %
Assay (mass %). ..... ≥98 %

HN87.1	10 ml	glass	39,25 €
HN87.2	50 ml	glass	156,85 €

Sulphuric ether

▶ Diethyl ether see p. 1939

Sulphurous acid

Sulphurous acid

~6 % SO_2 in H_2O
Sulfurous acid
H_2SO_3
M 82,02 g/mol
D 1,03
[7782-99-2] • EC No. 231-973-1
UN No. 1833 • ADR 8 II • WGK 1

Danger H314-H332

Type analysis:
Assay (SO_2). ..... ~6 %

9328.1	1 l	glass	26,80 €
Original pack 6 x 1 l			25,46/1 l
9328.2	10 l	tinplate	164,40 €

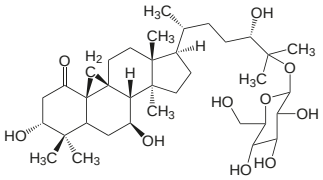
Sulphurous acid dichloride

▶ Thionyl chloride see p. 2404

Surfactants

▶ Detergents see p. 1927

Sutherlandioside B



Sutherlandioside B

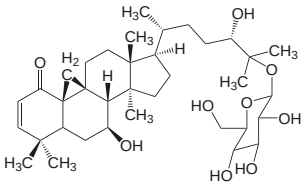
ROTICHROM® HPLC

Reference substance for HPLC.
From *Sutherlandia frutescens.*
$C_{36}H_{60}O_{10}$
M 652,87 g/mol
mp 150-155 °C
Storage temp.: +4 °C
[1055329-47-9] • WGK 3

Type analysis:
Purity (HPLC)..... ≥97 %

6695.1	10 mg	glass	321,45 €

Sutherlandioside D



Sutherlandioside D

ROTICHROM® HPLC

Reference substance for HPLC.
From *Sutherlandia frutescens.*
$C_{36}H_{58}O_9$ • M 634,77 g/mol
Storage temp.: +4 °C
[1055329-49-1] • WGK 3

Type analysis:
Purity (HPLC)..... ≥95 %

6696.1	10 mg	glass	338,65 €

Sylvic acid

▶ Abietic acid see p. 1754

Synergel™

Synergel™

≥99 %, for gel electrophoresis

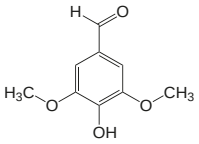
Agarose additive
D 1,7 • mp 260 °C
Solubility: max. 10 %
Storage temp.: +20 °C
[9000-40-2] • EC No. 232-541-5

Type analysis:
Colour..... white to almost white powder
Odour..... slightly salty
pH (1 % solution)..... 9
DNase, RNase..... none detected

0184.2	10 g	plastic	31,10 €
0184.1	100 g	plastic	218,15 €

For further information, please see page 1199

Syringaldehyde



Syringaldehyde

≥98 %

4-Hydroxy-3,5-dimethoxybenzaldehyde
$C_9H_{10}O_4$
M 182,17 g/mol
bp 192-193 °C (19 hPa)
mp 109-112 °C
[134-96-3] • EC No. 205-167-5 • WGK 1

Warning H315-H319-H335

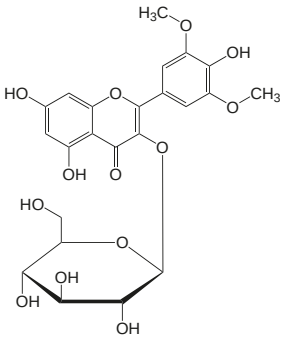
Type analysis:
Assay (HPLC)..... ≥98 %
Melting point..... 110-113 °C

5359.1	5 g	glass	48,30 €

Syringaresinol-4',4''-O-bis-β-D-glucoside

▶ Eleutheroside E see p. 1969

Syringetin-3-glucoside



Syringetin-3-glucoside

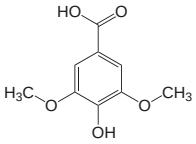
ROTICHROM® HPLC

Reference substance for HPLC.
$C_{23}H_{24}O_{13}$
M 508,44 g/mol
Storage temp.: +4 °C
[40039-49-4]

Type analysis:
Purity (HPLC)..... ≥99 %

9432.1	5 mg	glass	349,40 €

Syringic acid



Syringic acid

≥97 %

$C_9H_{10}O_5$
M 198,18 g/mol
mp 204-207 °C
[530-57-4] • EC No. 208-486-8
WGK 1

Warning H315-H319-H335

Type analysis:
Assay (titr.)..... ≥97 %

5361.1	10 g	glass	67,20 €

Syringin, Syringoside

▶ Eleutheroside B see p. 1969

TAA

▶ Thioacetamide see p. 2404

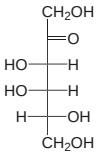
TAE-buffer

▶ Rotiphorese® 10x TAE Buffer see p. 2293
▶ Rotiphorese® 50x TAE Buffer see p. 2293

TAE powder (pouch)

▶ Roti®fair 50x TAE see p. 2278

D-Tagatose



D-Tagatose

≥98,5 %, for biochemistry

$C_6H_{12}O_6$
M 180,16 g/mol
mp 134-135 °C
[87-81-0] • EC No. 201-772-3

Type analysis:
Appearance..... white, cryst. powder
Assay (HPLC)..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$..... -5,5° ±1,0°

6161.1	1 g	glass	181,70 €
6161.2	5 g	glass	783,70 €

Talcum

Talcum

Ph.Eur., USP, powdered

Suitable as adsorbent.

Magnesium silicate

Solubility: insoluble (H_2O, 20 °C)

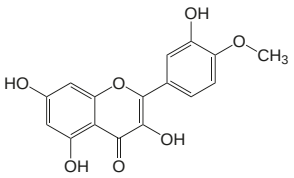
[14807-96-6] • EC No. 238-877-9

Guarantee analysis:

Appearance	white to off-white, fatty
Identity	complies
Substances soluble in H_2O	≤0,2 %
Acid or alkaline react. substances	complies
Aluminium (Al)	≤2,0 %
Calcium (Ca)	≤0,9 %
Lead (Pb)	≤0,001 %
Iron (Fe)	≤0,25 %
Magnesium (Mg)	17,0-19,5 %
Loss on ignition (1100 °C)	≤7,0 %
Absence of Asbestos	complies

9486.2	500 g	plastic	13,90 €
Original pack 6 x 500 g			13,21/500 g
9486.3	1 kg	plastic	18,85 €
Original pack 6 x 1 kg			17,91/1 kg
9486.1	2,5 kg	plastic	33,25 €

Tamarixetin



Tamarixetin

ROTICHROM® HPLC

Reference substance for HPLC.

Quercetin-4'-methylether

$C_{16}H_{12}O_7$

M 316,28 g/mol

Storage temp.: +4 °C

[603-61-2] • EC No. 210-050-7

Type analysis:

Purity (HPLC)	≥99 %

7425.1	10 mg	glass	263,40 €

5-TAMRA-Azide

▶ 5-Carboxytetramethylrhodamine Azide (5-TAMRA-Azide) see p. 1878

5-TAMRA-PEG3-Azide

▶ 5-Carboxytetramethylrhodamine-PEG3-Azide (5-TAMRA-PEG3-Azide) see p. 1879

Tanaceton

▶ α+β-Thujone see p. 2406

Tannic acid

$C_{76}H_{52}O_{46}$

M 1701,20 g/mol

mp 218-219 °C

Solubility: 250 g/l (H_2O, 20 °C)

[1401-55-4] • EC No. 215-753-2 • WGK 2

Warning H319

Tannic acid

≥86 %, p.a., ACS

Guarantee analysis:

Assay	≥86 %
Identity	complies
Loss on drying	≤12,0 %
Sugars, dextrin	complies
Heavy metals (as Pb)	≤0,003 %
Arsenic (As)	≤0,0003 %
Zinc (Zn)	≤0,005 %
Ash content	≤0,5 %

2726.1	100 g	plastic	22,05 €
2726.2	250 g	plastic	38,20 €
2726.3	500 g	plastic	57,95 €
Original pack 6 x 500 g			55,05/500 g

Tannic acid

Ph.Eur., for biochemistry

Guarantee analysis:

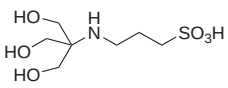
Appearance	yellowish powder
Tannic acid (TA)	≥95 %
Identity	complies
Appearance of solution	complies
Dextrine, rubber, salts, sugar	complies
Resinous substances	complies
Loss on drying	≤7,0 %
Sulphated ash	≤0,1 %

4239.1	250 g	plastic	34,30 €
4239.2	1 kg	plastic	106,35 €
Original pack 6 x 1 kg			101,03/1 kg

Tantalum Standards

▶ Tantalum ICP Standard Solution see p. 2365
▶ Tantalum ICP Standard Solution see p. 2369

TAPS



TAPS

PUFFERAN® ≥99 %

N-Tris(hydroxymethyl)-methyl-3-amino-propane sulphonic acid

$C_7H_{17}NO_6S$

M 243,28 g/mol • mp 230-235 °C

[29915-38-6] • EC No. 249-954-1 • WGK 1

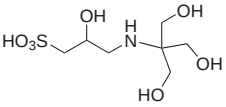
Type analysis:

Assay (titr.)	≥99 %
Water (KF)	≤1,0 %
pH value (5 % in H_2O)	4,5-6,0
Heavy metals	≤0,001 %
UV-absorption (0,1 M in H_2O):	
280 nm	≤0,01
260 nm	≤0,02

6982.1	10 g	plastic	13,90 €
6982.2	100 g	plastic	44,00 €
6982.3	250 g	plastic	88,70 €
6982.4	500 g	plastic	156,45 €
Original pack 6 x 500 g			148,63/500 g

For further information, please see page 1309

TAPSO



TAPSO

PUFFERAN® ≥99 %

3-N-Tris(hydroxymethyl)-methylamino-2-hydroxypropanesulphonic acid

$C_7H_{17}NO_7S$

M 259,28 g/mol • mp 226 °C

[68399-81-5] • EC No. 269-993-8 • WGK 1

Warning H315-H319-H335

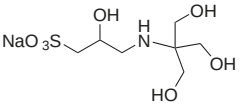
Type analysis:

Assay (titr.)	≥99 %
Loss on drying	≤1,0 %
pH value (1 % solution)	4,2-4,7
UV-absorption (0,1 M in H_2O):	
280 nm	≤0,02
260 nm	≤0,04

6628.1	25 g	plastic	31,10 €
6628.2	100 g	plastic	89,15 €

For further information, please see page 1309

TAPSO sodium salt



TAPSO sodium salt

PUFFERAN® ≥99 %

3-N-Tris(hydroxymethyl)-methylamino-2-hydroxypropanesulphonic acid sodium salt

$C_7H_{16}NaNO_7S$

M 281,3 g/mol

[105140-25-8]

Guarantee analysis:

Appearance	white powder
Assay (titr.)	≥99 %
Water (KF)	≤1 %
pH value (1 % solution)	9,5-10,5

6974.1	25 g	plastic	32,15 €
6974.2	100 g	plastic	96,65 €

For further information, please see page 1309

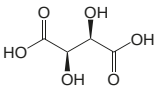
Taq DNA polymerase, recombinant

- Roti®-Pol Hot-TaqUltra see p. 2294
- Roti®-Pol Hot-TaqHY see p. 2294
- Roti®-Pol Hot-TaqS see p. 2294
- Roti®-Pol Hot-TaqS Mix (2x) see p. 2294
- Roti®-Pol Hot-TaqS Red-Mix (2x) see p. 2294
- Roti®-Pol TaqUltra see p. 2295
- Roti®-Pol TaqHY see p. 2295
- Roti®-Pol TaqS see p. 2295
- Roti®-Pol TaqS Mix (2x) see p. 2295
- Roti®-Pol TaqS Red-Mix (2x) see p. 2295

Taq-Polymerasen

Art. No.	Description	Page
9350	Roti®-Pol Hot-TaqUltra	2294
9346	Roti®-Pol Hot-TaqHY	2294
9245	Roti®-Pol Hot-TaqS	2294
9248	Roti®-Pol Hot-TaqS Mix (2x)	2294
9256	Roti®-Pol Hot-TaqS Red-Mix (2x)	2294
9344	Roti®-Pol ProofRead	2294
9345	Roti®-Pol TaqHY	2295
9223	Roti®-Pol TaqS	2295
9239	Roti®-Pol TaqS Mix (2x)	2295
9241	Roti®-Pol TaqS Red-Mix (2x)	2295
9347	Roti®-Pol TaqUltra	2295

D(-)-Tartaric acid



D(-)-Tartaric acid

≥99 %, for biochemistry

$C_4H_6O_6$
M 150,09 g/mol
D 1,8
mp 166-169 °C • flp 210 °C
Solubility: 1394 g/l (H_2O, 20 °C)
[147-71-7] • EC No. 205-695-6 • WGK 1

Warning H319

Type analysis:

Appearance.....white, cryst. powder
Assay.....≥99,0 %

5529.1	25 g	plastic	51,50 €

DL-Tartaric acid

DL-Tartaric acid

≥99,5 %, anhydrous

Grape acid
$C_4H_6O_6$
M 150,09 g/mol
mp 198-204 °C • flp 210 °C
Solubility: 215 g/l (H_2O, 25 °C)
[133-37-9] • EC No. 205-105-7 • WGK 1

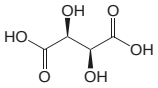
Warning H319

Type analysis:

Appearance.....white powder
Assay.....≥99,5 %
Loss on drying.....≤0,5 %
Ash content.....≤0,1 %

4891.2	25 g	plastic	14,95 €
4891.1	100 g	plastic	26,35 €
4891.3	500 g	plastic	77,95 €
Original pack 6 x 500 g			74,05/500 g

L(+)-Tartaric acid



$C_4H_6O_6$
M 150,09 g/mol
D 1,76
mp 166-169 °C • flp 210 °C
Solubility: 1390 g/l (H_2O, 20 °C)
[87-69-4] • EC No. 201-766-0 • WGK 1

Warning H319

L(+)-Tartaric acid

≥99,5 %, p.a., ACS, ISO

For the preparation of Fehling's solution.

Guarantee analysis:

Assay (acidim.).....≥99,5 %
In H_2O insoluble matter.....≤0,005 %
Loss on drying (105 °C).....≤0,2 %
Sulphated ash.....≤0,01 %
Total sulphur (as SO_4).....≤0,002 %
Chloride (Cl).....≤0,0005 %
Oxalates (C_2O_4).....complies
Oxalic acid ($C_2H_2O_4$).....≤0,04 %
Phosphate (PO_4).....≤0,001 %
Sulphate (SO_4).....≤0,015 %
Heavy metals (as Pb).....≤0,0005 %
Lead (Pb).....≤0,0005 %
Calcium (Ca).....≤0,002 %
Iron (Fe).....≤0,0005 %
Copper (Cu).....≤0,0005 %

K302.1	250 g	plastic	25,70 €
K302.2	1 kg	plastic	75,80 €
Original pack 6 x 1 kg			72,01/1 kg
K302.5	25 kg	plastic	1256,70 €

L(+)-Tartaric acid

≥99,5 %, Ph.Eur.

Guarantee analysis:

Appearance.....white to off-white, cryst. powder
Assay (dry substance).....99,5-101,0 %
Identity.....complies
Appearance of solution.....complies
Specific rotation $[\alpha]_D^{20}$ (dry substance).....+12,0° to +12,8°
Oxalic acid.....≤0,035 %
Chloride (Cl).....≤0,01 %
Sulphate (SO_4).....≤0,015 %
Calcium (Ca).....≤0,02 %
Heavy metals (as Pb).....≤0,001 %
Loss on drying.....≤0,2 %
Sulphated ash.....≤0,1 %

4289.1	500 g	plastic	28,95 €
Original pack 6 x 500 g			27,50/500 g
4289.2	1 kg	plastic	48,30 €
Original pack 6 x 1 kg			45,89/1 kg
4289.3	5 kg	plastic	193,00 €
4289.4	25 kg	plastic	815,95 €

L(+)-Tartaric acid

≥99 %, for biochemistry

Type analysis:

Assay.....≥99,0 %
Specific rotation $[\alpha]_D^{20}$.....+12,0° to +13,0°
Heavy metals (as Pb).....≤0,01 %
Chloride (Cl).....≤0,01 %
Sulphate (SO_4).....≤0,05 %
Calcium (Ca).....≤0,05 %
Sulphated ash.....≤0,1 %
Loss on drying.....≤0,5 %

4890.3	500 g	plastic	23,55 €
Original pack 6 x 500 g			22,37/500 g
4890.1	1 kg	plastic	40,75 €
Original pack 6 x 1 kg			38,71/1 kg
4890.2	5 kg	plastic	149,45 €
4890.5	25 kg	plastic	579,45 €

Tartaric acid diammonium salt

- di-Ammonium tartrate see p. 1803

Tartaric acid disodium salt

- di-Sodium tartrate dihydrate see p. 2350

Tartrate Standards

- Tartrate IC Standard Solution see p. 2376

Tashiro's indicator solution

Tashiro's indicator solution

in ethanol, denatured

pH indicator, mixed indicator
D 0,93
UN No. 1170 • ADR 3, III • WGK 1

Warning H226

Formulation: methyl red, methylene blue, ethanol denatured, water

2624.1	250 ml	plastic	17,75 €

TAT Broth (Base)

TAT Broth (Base)

for microbiology

For proliferation and regeneration of microorganisms from a variety of matters, e.g. from cosmetics, and matters contaminated with antimicrobial reagents.

Application: Use 25 g for 1 l broth. Before autoclaving add 40 ml Tween® 20 (polysorbate).

Casein peptone Lecithin Polysorbate Broth, **CPLP Broth**

Storage temp.: +20 °C

Guarantee analysis:

Casein peptone.....20 g/l
Soya lecithin.....5 g/l
pH value.....7,1 ±0,2

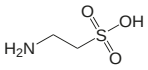
3935.1	500 g	plastic	111,30 €
Original pack 6 x 500 g			105,74/500 g
3935.2	1 kg	plastic	197,30 €
Original pack 6 x 1 kg			187,44/1 kg

For further information, please see page 1465

TATU

▶ O-(7-Azabenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TATU) see p. 1820

Taurine



Taurine

≥99 %, for biochemistry

2-Aminoethanesulphonic acid
$C_2H_7NO_3S$
M 125,2 g/mol
mp 300 °C (dec.)
Solubility: 65 g/l (H_2O, 12 °C)
[107-35-7] • EC No. 203-483-8
WGK 2

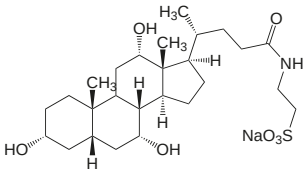
Type analysis:

Appearance. ..... white cryst. powder
Assay (titr.). ..... ≥99,0 %
Heavy metals. ..... ≤0,001 %
Loss on drying. ..... ≤0,2 %

4721.1	100 g	plastic	19,90 €
4721.2	500 g	plastic	54,30 €
Original pack 6 x 500 g			51,59/500 g

For further information, please see page 1309

Taurocholic acid sodium salt



$C_{26}H_{44}NNaO_7S$
M 537,68 g/mol
mp 230 °C
Storage temp.: +4 °C
[145-42-6] • EC No. 205-653-7
WGK 1

Taurocholic acid sodium salt

≥98 %, for biochemistry

Type analysis:

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98,0 %
Water. ..... ≤5,0 %
Solubility (10 % in H_2O). ..... clear
Heavy metals (as Pb). ..... ≤0,002 %

8149.1	500 mg	glass	16,70 €
8149.2	1 g	glass	23,55 €
8149.3	10 g	glass	110,65 €
8149.4	50 g	glass	424,65 €
8149.5	100 g	glass	805,20 €

Taurocholic acid sodium salt

ROTICHROM® TLC

Reference substance for thin layer chromatography

5817.1	100 mg	glass	54,75 €

(+)-Taxifolin

▶ (+)-Dihydroquercetin see p. 1941

TBA

▶ Tryptone Bile Salts Agar see p. 2424

TBAB

▶ Tetrabutylammonium bromide (TBAB) see p. 2398

TBAF

▶ Tetrabutylammonium fluoride (TBAF) see p. 2398

TBAH

▶ Tetrabutylammonium hydroxide (TBAH) see p. 2398

TBAI

▶ Tetrabutylammonium iodide (TBAI) see p. 2398

TBE powder (pouch)

▶ Roti®fair 10x TBE see p. 2278
▶ Roti®fair 5x TBE see p. 2278
▶ Roti®fair 1x TBE see p. 2278

TBE-buffer

▶ Rotiphorese® 10x TBE Buffer see p. 2293

TBME

▶ tert-Butyl methyl ether see p. 1863

TBS powder (pouch)

▶ Roti®fair TBS 8.0 see p. 2279
▶ Roti®fair 10x TBS 8.0 see p. 2279

10x TBS ready-to-use solution

▶ Roti®-Stock 10x TBS see p. 2299

TBS (tablet)

▶ Roti®fair TBS 7.6 see p. 2279

10x TBST ready-to-use solution

▶ Roti®-Stock 10x TBST see p. 2299

TBST (tablet)

▶ Roti®fair TBST 7.6 see p. 2279

TBTA

▶ Tris[(1-benzyl-1*H*-1,2,3-triazol-4-yl)methyl]amine (TBTA) see p. 2421

TBTU

▶ O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TBTU) see p. 1833

TBX chromogenic Agar

TBX chromogenic Agar

ISO 16649-2 and -3, for microbiology

Selective agar for detection of *E.coli* in food samples.
Application: Use 36,6 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

Guarantee analysis:

Casein peptone. ..... 20,0 g/l
Bile salts. ..... 1,5 g/l
x-β-D-Glucuronide. ..... 0,075 g/l
Agar. ..... 15,0 g/l
pH value. ..... 7,2 ±0,2

CL47.2	100 g	plastic	96,65 €
CL47.1	500 g	plastic	349,40 €
Original pack 6 x 500 g			331,93/500 g

For further information, please see page 1466

TCA

▶ Trichloroacetic acid see p. 2414

TCA solution

▶ Trichloroacetic acid solution see p. 2415

TCBS Agar

TCBS Agar

for microbiology

For selective isolation of *Vibrio.*
Application: Use 88 g for 1 l agar.
Thiosulphate Citrate Bile Sucrose Agar, Cholera Medium TCBS, Cholera Agar
Storage temp.: +20 °C
WGK 1

Formulation:

Sucrose. ..... 20 g/l
Sodium chloride (NaCl). ..... 10 g/l
Sodium thiosulphate. ..... 10 g/l
Sodium citrate. ..... 10 g/l
Meat peptone. ..... 5 g/l
Casein peptone. ..... 5 g/l
Yeast extract. ..... 5 g/l
Dehydrated ox bile. ..... 5 g/l
Sodium cholate. ..... 3 g/l
Ammonium iron(III) citrate. ..... 1 g/l
Thymol blue. ..... 0,04 g/l
Bromothymol blue. ..... 0,04 g/l
Agar. ..... 14 g/l
pH value. ..... 8,6 ±0,2

8333.1	500 g	plastic	117,75 €
Original pack 6 x 500 g			111,86/500 g

For further information, please see page 1467

TCC
▶ tri-Calcium dicitrate tetrahydrate see p. 1870

TC100 cell culture medium
▶ Roti®-CELL TC100 see p. 2271

TCE
▶ Trichloroethylene see p. 2415

TCE-D2
▶ 1,1,2,2-Tetrachloroethane D2 see p. 2399

TCTU
▶ O-(6-Chlorobenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TCTU) see p. 1892

TDPA
▶ Tetradecylphosphonic acid see p. 2400

TEA
▶ Triethylamine (TEA) see p. 2417
▶ Triethanolamine see p. 2417

TE buffer powder (pouch)
▶ Roti®fair 10x TE see p. 2279

Tellurium Standards
▶ Tellurium AAS Standard Solution see p. 2360
▶ Tellurium ICP Standard Solution see p. 2365
▶ Tellurium ICP Standard Solution see p. 2369

Tellurium dioxide
▶ Tellurium(IV) oxide see p. 2396

Tellurium(IV) oxide

Tellurium dioxide
TeO_2
M 159,61 g/mol
D 6,02 • bp 1245 °C
mp 733 °C
[7446-07-3] • EC No. 231-193-1
WGK 1

Tellurium(IV) oxide
ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

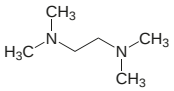
5745.1	5 g	plastic	44,65 €
5745.2	10 g	plastic	80,10 €
5745.3	50 g	plastic	267,70 €

Tellurium(IV) oxide
≥99,9 %, p.a.

Guarantee analysis:
Assay. ..... ≥99,9 %
Arsenic (As)..... ≤0,005 %
Bismuth (Bi)..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %
Cadmium (Cd)..... ≤0,001 %
Iron (Fe)..... ≤0,005 %
Copper (Cu). ..... ≤0,001 %
Nickel (Ni)..... ≤0,001 %
Silver (Ag)..... ≤0,001 %
Zinc (Zn)..... ≤0,001 %
Moisture. ..... ≤0,2 %

0321.1	10 g	plastic	33,25 €
0321.2	25 g	plastic	67,20 €
0321.3	50 g	plastic	122,45 €

TEMED



N,N,N',N'-Tetramethylethylenediamine, 1,2-Bis(dimethylamino)-ethane
$C_6H_{16}N_2$
M 116,21 g/mol
D 0,78 • bp 121 °C
mp -55 °C • flp 19 °C
[110-18-9] • EC No. 203-744-6
UN No. 2372 • ADR 3 II • WGK 1
Danger H225-H314-H302+H332

TEMED
≥99 %, p.a., for electrophoresis

Type analysis:
Appearance..... clear to slightly turbid solution
Assay. ..... ≥99 %

2367.3	25 ml	glass	19,90 €
2367.1	100 ml	glass	39,25 €
2367.2	250 ml	glass	78,40 €

For further information, please see page 1191

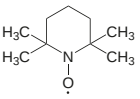
TEMED
≥98,5 %, for synthesis
The solution may contain sediment. It can be filtered before use. Lot-specific colour variation may range from slight to considerable yellow.

Type analysis:
Assay. ..... ≥98,5 %

8142.1	100 ml	glass	27,45 €
8142.2	500 ml	glass	100,55 €
8142.3	1 l	glass	188,15 €
Original pack 6 x 1 l			178,74/1 l

For further information, please see page 1191

TEMPO



TEMPO
≥98 %, for synthesis
2,2,6,6-Tetramethylpiperidinyloxy (free radical), 2,2,6,6-Tetramethylpiperidine 1-oxyl, (2,2,6,6-Tetramethylpiperidin-1-yl)oxidanyl
$C_9H_{18}NO$
M 156,25 g/mol
D 0,91
mp 36-40° C • flp 67 °C
Solubility: 9,7 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[2564-83-2] • EC No. 219-888-8
UN No. 3263 • ADR 8 II • WGK 1
Danger H290-H314

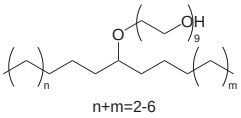
Type analysis:
Assay (GC). ..... ≥98 %
Residual solvents (methanol)..... ≤0,5 %

6801.1	1 g	glass	14,55 €
6801.2	5 g	glass	27,85 €
6801.3	25 g	glass	67,20 €

Terbium Standards
▶ Terbium ICP Standard Solution see p. 2365
▶ Terbium ICP Standard Solution see p. 2370

100x TE ready-to-use solution
▶ Roti®-Stock 100x TE see p. 2299

Tergitol™ 15-S-9

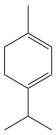


Tergitol™ 15-S-9
extra pure
Alternative to Triton® X-100, non-ionic detergent.
sec. Alcoxy polyethylene glycol, Polyethylene glycol ether, sec. Alcohol ethoxylate
D 1,02 • bp >250 °C
[68131-40-8] • EC No. 614-295-4
UN No. 3082 • ADR 9 III • WGK 2
Warning H302+H332-H411

Type analysis:
Appearance. ..... colourless to yellow liquid
Cloud point (1%, H_2O). ..... 57,5-62,5 °C
pH value (1 % in H_2O). 5,5-7,5
Water. ..... ≤0,50 %

9975.1	100 ml	glass	17,75 €
9975.2	500 ml	glass	38,60 €

α-Terpinene

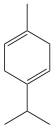


α-Terpinene
ROTICHROM® GC
Reference substance for GC.
$C_{10}H_{16}$
M 136,24 g/mol
D 0,84 • bp ~174 °C • flp 46 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[99-86-5] • EC No. 202-795-1
UN No. 2319 • ADR 3 III • WGK 2
Danger
H304-H226-H302-H411

Type analysis:
Purity (GC). ..... ≥95 %

8038.2	100 mg	glass	99,90 €

γ-Terpinene

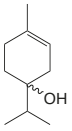


γ-Terpinene
ROTICHROM® GC
Reference substance for GC.
$C_{10}H_{16}$
M 136,24 g/mol
D 0,85 • bp 182 °C • flp 51 °C
Storage temp.: +4 °C
[99-85-4] • EC No. 202-794-6
UN No. 2319 • ADR 3 III • WGK 2
Danger H304-H226

Type analysis:
Purity (GC). ..... ≥97,0 %

8039.2	100 mg	glass	145,15 €

4-Terpinenol



4-Terpinenol
≥95 %
$C_{10}H_{18}O$
M 154,24 g/mol
bp 211-213 °C
flp 79 °C
[562-74-3] • EC No. 209-235-5 • WGK 2
Warning H302-H315-H319-H335

Type analysis:
Purity (GC). ..... ≥95 %

6309.1	1 g	plastic	103,10 €

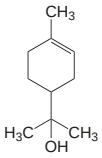
Terpineol

Terpineol
pure
$C_{10}H_{18}O$
M 154,24 g/mol
D ~0,93 • bp 214-217 °C
mp ~32 °C • flp 95 °C
[8000-41-7] • EC No. 232-268-1 • WGK 2
Warning H315

Type analysis:
Appearance. ..... clear, colourless oil
Density (20 °C). ..... 0,925-0,940 g/cm³
Refractive index (20 °C). 1,480-1,490
Optical rotation (20 °C). ..... -20° to +10°
Remark: The product may crystallise.
Can be redissolved by heating (max. 60 °C).

8672.1	250 ml	glass	21,00 €
8672.2	1 l	glass	61,85 €
Original pack 6 x 1 l			58,76/1 l

α-Terpineol



p-Menth-1-en-8-ol
$C_{10}H_{18}O$
M 154,25 g/mol
D 0,932 • bp 216 °C
mp 33 °C • flp 90 °C
Solubility: insoluble in water
Storage temp.: +4 °C
[98-55-5] • EC No. 202-680-6
WGK 1
Warning H315-H319-H412

α-Terpineol
≥60 %, for synthesis

Type analysis:
α-Terpineol. ..... ≥60 %
γ-Terpineol. ..... 5-20 %
Remark: The product may crystallise.
Can be redissolved by heating (max. 60 °C).

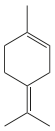
4418.1	5 ml	glass	12,05 €

α-Terpineol
ROTICHROM® GC
Reference substance for GC.

Type analysis:
Purity (GC). ..... ≥96 %

5152.2	100 mg	glass	84,85 €

Terpinolene



Terpinolene
ROTICHROM® GC
Reference substance for GC.
δ-Terpinene
$C_{10}H_{16}$
M 136,24 g/mol
D ~0,862 • bp 184 °C
flp 64 °C
Storage temp.: +4 °C
[586-62-9] • EC No. 209-578-0
UN No. 2541 • ADR 3 III • WGK 3
Warning H410

Type analysis:
Purity (GC). ..... ≥89 %

5166.2	100 mg	glass	87,00 €

Terra infusoria

▶ Infusorial earth see p. 2067

Terrific Broth

Storage temp.: +20 °C
WGK 1

Terrific Broth
for molecular biology
Application: Use 50,8 g for 1 l broth. Before autoclaving add 4 ml glycerol per litre medium.

Formulation:
Casein, enzymatically digested. ..... 12 g/l
Yeast extract. ..... 24 g/l
K_2HPO_4. ..... 12,54 g/l
KH_2PO_4. ..... 2,31 g/l
pH value. ..... 7,2 ±0,2

X972.1	500 g	plastic	67,65 €
Original pack 6 x 500 g			64,27/500 g
X972.2	1 kg	plastic	118,80 €
Original pack 6 x 1 kg			112,86/1 kg
X972.3	2,5 kg	plastic	252,65 €

For further information, please see page 1487

Terrific Broth modified
for molecular biology
Application: Use 47,6 g for 1 l broth. Before autoclaving add 4 ml glycerol per litre medium.

Formulation:
Casein, enzymatically digested. ..... 12 g/l
Yeast extract. ..... 24 g/l
K_2HPO_4. ..... 9,4 g/l
KH_2PO_4. ..... 2,2 g/l
pH value. ..... 7,2 ±0,2

HP61.1	500 g	plastic	63,35 €
Original pack 6 x 500 g			60,18/500 g
HP61.2	1 kg	plastic	113,45 €
Original pack 6 x 1 kg			107,78/1 kg

For further information, please see page 1487

Terrific Broth vegetal

for molecular biology, animal-free

Application: Use 50,8 g for 1 l broth. Before autoclaving add 4 ml glycerol per litre medium.

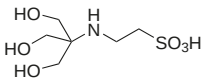
Formulation:

Vegetable peptone ..... 12 g/l
Yeast extract..... 24 g/l
K_2HPO_4. ..... 12,5 g/l
KH_2PO_4. ..... 2,3 g/l
pH value. ..... 7,2 ±0,2

0161.1	500 g	plastic	80,10 €
Original pack 6 x 500 g			76,10/500 g

For further information, please see page 1488

TES



TES

PUFFERAN® ≥99 %

N-[Tris-(hydroxymethyl)-methyl]-2-aminoethane sulphonic acid
$C_6H_{15}NO_6S$
M 229,2 g/mol
mp 229-231 °C
[7365-44-8] • EC No. 230-906-3 • WGK 1

Guarantee analysis:

Assay (titr.). ..... ≥99,0 %
pH value (1 % in H_2O)..... 4,2-4,8
Loss on drying. ..... ≤1,0 %
UV-absorption (0,1 M in H_2O):
260 nm..... ≤0,02
280 nm..... ≤0,02

9137.1	10 g	plastic	27,45 €
9137.2	100 g	plastic	142,90 €
9137.3	500 g	plastic	289,20 €
Original pack 6 x 500 g			274,74/500 g

For further information, please see page 1309

Tetraammineplatinum(II) nitrate

Tetraammineplatinum(II) nitrate

ROTI®METIC 99,995 % (4N5)

$Pt(NH_3)_4(NO_3)_2$
M 387,22 g/mol
[20634-12-2] • EC No. 243-929-9
UN No. 1479 • ADR 5.1 II • WGK 1

Danger H272-H315-H319-H317-H335

Type analysis:

Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5746.1	1 g	plastic	342,95 €

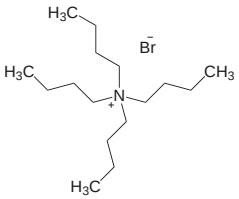
2',4',5',7'-Tetrabromoeosin ethyl ester potassium salt

▶ Ethyl eosin (C.I. 45386) see p. 1984

3,3',5,5'-Tetrabromophenol sulphonphthaleine

▶ Bromophenol blue see p. 1854

Tetrabutylammonium bromide (TBAB)



Tetrabutylammonium bromide (TBAB)

≥99 %, for synthesis

TBAB
$C_{16}H_{36}BrN$
M 322,4 g/mol
mp 102-106 °C
[1643-19-2] • EC No. 216-699-2 • WGK 3

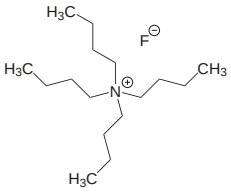
Warning H315-H319-H412

Type analysis:

Appearance..... white to off-white powder
Assay (titr.). ..... ≥99,0 %

6633.1	50 g	plastic	27,85 €
6633.2	250 g	plastic	78,40 €
6633.3	500 g	plastic	133,20 €
Original pack 6 x 500 g			126,54/500 g

Tetrabutylammonium fluoride (TBAF)



Tetrabutylammonium fluoride (TBAF)

1 mol/l in THF, stab.

TBAF, Tetra-n-butylammonium fluoride
$(C_4H_9)_4NF$
M 261,46 g/mol
D 0,91 • flp -17 °C
Storage temp.: +4 °C
[429-41-4] • EC No. 207-057-2
UN No. 2924 • ADR 3 (8) II • WGK 1

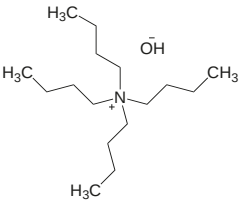
Danger
H225-H314-H351-H335-EUH019

Type analysis:

Appearance..... colourless to yellow liquid
Assay. ..... ≥1,0 mol/l
Water (KF)..... ≤10,0 %
Stabilized with 250 ppm 2,6-di-tert-butyl-4-methylphenol (BHT).
Store under inert gas.

1448.1	25 ml	glass	25,70 €
1448.2	100 ml	glass	76,25 €
1448.3	250 ml	glass	133,20 €

Tetrabutylammonium hydroxide (TBAH)



Tetrabutylammonium hydroxide (TBAH)

40 % in water

TBAH
$C_{16}H_{37}NO$
M 259,48 g/mol
D ~0,98 • flp >230 °C
[2052-49-5] • EC No. 218-147-6
UN No. 3267 • ADR 8 II • WGK 1

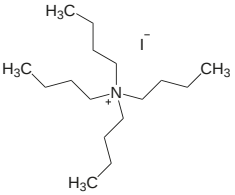
Danger H314-H290

Type analysis:

Appearance. ..... colourless to yellowish liquid
Assay. ..... ~40 % in H_2O
Colour number (APHA). ..... ≤20
Remark: The product may crystallise.
Can be redissolved by heating (max. 40 °C).

5026.1	25 ml	glass	24,65 €
5026.2	100 ml	glass	49,35 €
5026.3	250 ml	glass	90,20 €
5026.4	1 l	glass	310,70 €
Original pack 6 x 1 l			295,17/1 l

Tetrabutylammonium iodide (TBAI)



Tetrabutylammonium iodide (TBAI)

≥99 %, p.a.

TBAI
$C_{16}H_{36}IN$
M 369,38 g/mol
mp 144-146 °C
[311-28-4] • EC No. 206-220-5
WGK 1

Warning H302-H315-H319-H335

Type analysis:

Assay. ..... ≥99,0 %
Melting point. ..... 144-146 °C

4735.1	25 g	plastic	15,60 €
4735.2	100 g	plastic	40,35 €
4735.3	500 g	plastic	166,65 €
Original pack 6 x 500 g			158,32/500 g

Tetrachloroauric(III) acid trihydrate

$HAuCl_4 \cdot 3\ H_2O$
M 393,83 g/mol
D 3,9 • bp 200 °C (dec.)
mp ~30 °C
Solubility: 150 g/l (H_2O, 20 °C)
[16961-25-4] • EC No. 236-623-1
UN No. 3260 • ADR 8 III • WGK 1

Danger H314-H317

Tetrachloroauric(III) acid trihydrate

≥99,9 %, p.a., ultra quality

Gold(III) chloride trihydrate, Gold trichloride trihydrate, Gold trichloride hydrochloride

Guarantee analysis:

Appearance.	orange to yellow-red powder
Assay.	≥99,9 %
Gold (Au).	≥50 %
Aluminium (Al).	≤0,005 %
Calcium (Ca).	≤0,005 %
Chromium (Cr).	≤0,005 %
Iron (Fe).	≤0,005 %
Copper (Cu).	≤0,005 %
Magnesium (Mg).	≤0,005 %
Manganese (Mn).	≤0,005 %
Platinum (Pt).	≤0,005 %
Ruthenium (Ru).	≤0,005 %
Silver (Ag).	≤0,005 %
Silicon (Si).	≤0,005 %
Zinc (Zn).	≤0,005 %

0689.1	500 mg	glass	96,65 €
0689.2	1 g	glass	153,65 €
0689.3	5 g	glass	590,20 €

Tetrachloroauric(III) acid trihydrate

≥99,5 %, p.a.

Gold trichloride trihydrate, Gold trichloride hydrochloride

Guarantee analysis:

Appearance.	yellow to red-yellow crystals
Assay (based on Au).	≥99,5 %

3867.1	1 g	glass	139,25 €
3867.2	5 g	glass	557,95 €

For further information, please see page 1498

2,3,5,6-Tetrachloro-1,4-benzo-quinone

▶ p-Chloranil see p. 1891

1,1,2,2-Tetrachloroethane D2

1,1,2,2-Tetrachloroethane D2

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.
1,2-Dideutero-1,1,2,2-tetrachloroethane, TCE-D2
$C_2Cl_4D_2$
M 169,86 g/mol
D 1,60 • bp 146 °C • mp -43 °C
Solubility: 3 g/l (H_2O, 20 °C)
[33685-54-0] • EC No. 251-634-1
UN No. 1702 • ADR 6.1 II • WGK 3

Danger H310+H330-H411

Guarantee analysis:

Deuterising degree.	≥99,5 %
Water (KF, H_2O+D_2O).	≤0,03 %

CP96.1	10 ml	glass	102,05 €
CP96.2	10 x 0,75 ml	glass ampoule	103,10 €

Tetrachloroethylene

Perchloroethylene, Ethylene tetrachloride
C_2Cl_4
M 165,83 g/mol
D ~1,61 • bp 121,1 °C
mp -22 °C
Solubility: 0,16 g/l (H_2O, 20 °C)
[127-18-4] • EC No. 204-825-9
UN No. 1897 • ADR 6.1 III • WGK 3

Warning H351-H411

Tetrachloroethylene

ROTISOLV® ≥99,9 %, UV/IR-Grade

For chromatography and spectroscopy.

Guarantee analysis:

Assay (GC).	≥99,9 %
Water (KF).	≤0,05 %
Colour (Hazen).	≤10
Acidity.	≤0,0005 meq/g
Evaporation residue.	≤0,0005 %
Fluorescence (as quinine):	
365 nm.	≤2,0 ppb
Transmission:	
305 nm.	≥85 %
302 nm.	≥80 %
297 nm.	≥50 %
290 nm.	≥10 %

CP83.1	2,5 l	glass	84,40 €
Original pack	4 x 2,5 l		80,18/2,5 l

Tetrachloroethylene

≥99,5 %, for synthesis

Type analysis:

Assay (GC).	≥99,5 %
Density (20 °C).	1,615-1,625

4737.1	1 l	glass	27,85 €
Original pack	6 x 1 l		26,46/1 l
4737.3	2,5 l	glass	46,80 €
Original pack	4 x 2,5 l		44,46/2,5 l
4737.2	10 l	tinplate	143,55 €

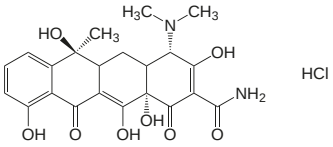
Tetrachlorostannane

▶ Tin(IV) chloride see p. 2408

1-Tetracosanol

▶ Lignoceryl alcohol see p. 2098

Tetracycline hydrochloride



Achromycin hydrochloride
$C_{22}H_{25}Cl\ N_2O_8$
M 480,90 g/mol
mp 215-220 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[64-75-5] • EC No. 200-593-8 • WGK 1

Warning H319-H361d

Tetracycline hydrochloride

CELLPURE® ≥900 µg/mg

Bacteriostatic antibiotic. For cell culture, molecular biology and biochemistry.

Guarantee analysis:

Assay.	≥900 µg/mg
Heavy metals.	≤0,005 %
Loss on drying.	≤2,0 %
pH value (1 % in H_2O).	2,3 ±0,5
4-epi-anhydrotetracycline.	≤2,0 %
Endotoxins (LAL).	≤0,5 I.U./mg

HP63.1	10 g	glass	25,30 €
HP63.2	50 g	glass	89,15 €

For further information, please see page 1508

Tetracycline hydrochloride

≥900 µg/mg, for biochemistry and molecular biology

Bacteriostatic antibiotic

Type analysis:

Assay.	≥900 µg/mg
Assay (dry substance).	≥95,0 %
pH value (1 % in H_2O).	1,8-2,8
Specific rotation $[\alpha]_D^{20}$ (0,5 % in 0,1 N HCl).	-255° to -240°
Heavy metals.	≤0,005 %
Sulphated ash.	≤0,5 %
Loss on drying.	≤2,0 %

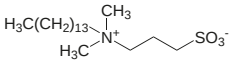
0237.1	25 g	glass	37,55 €
0237.2	50 g	glass	64,40 €
0237.3	100 g	glass	119,25 €

For further information, please see page 1508

Tetradecanoic acid

▶ Myristic acid see p. 2151

N-Tetradecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate



N-Tetradecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate

≥98 %, for biochemistry
Zwitterionic detergent
Sulfobetaine-14, SB-14
$C_{19}H_{41}NO_3S$
M 363,6 g/mol
[14933-09-6]
WGK 1

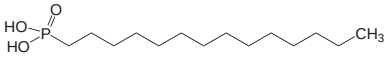
Warning H315-H319-H335

Type analysis:
Assay (HPLC). ≥98,0 %
Loss on drying. ≤2,0 %
Ash. ≤0,1 %

1822.1	5 g	glass	29,60 €
1822.2	25 g	glass	79,05 €
1822.3	100 g	glass	263,40 €

For further information, please see page 1314

Tetradecylphosphonic acid



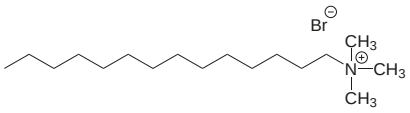
Tetradecylphosphonic acid

Suitable for the production and modification of nanoparticles.
TDPA
$C_{14}H_{31}O_3P$
M 278,37 g/mol
mp 80-85 °C
Storage temp.: +4 °C
[4671-75-4] • EC No. 225-118-1
WGK 3

Type analysis:
Melting point. 80-85 °C

8465.1	1 g	glass	40,35 €
8465.2	5 g	glass	144,60 €

Tetradecyltrimethylammonium bromide (MTAB)



Tetradecyltrimethylammonium bromide (MTAB)

≥96 %, extra pure
Cationic detergent
N,N,N-Trimethyl-1-tetradecanammonium bromide, Myristyltrimethylammonium bromide, MTAB
$C_{17}H_{38}BrN$
M 336,42 g/mol • bp 250 °C (dec.)
Solubility: 500 g/l (H_2O, 20 °C)
[1119-97-7] • EC No. 214-291-9
UN No. 3077 • ADR 9 III • WGK 3

Danger
H315-H318-H335-H373-H410

Type analysis:
Assay (arg., dry substance). ≥96,0 %
Loss on drying. ≤2,0 %
Sulphated ash. ≤0,5 %

7452.1	100 g	plastic	40,35 €
7452.2	500 g	plastic	149,45 €
Original pack 6 x 500 g			141,98/500 g
7452.3	1 kg	plastic	289,20 €
Original pack 6 x 1 kg			274,74/1 kg
7452.4	2,5 kg	plastic	643,95 €

1,2,3,4-Tetrahydrobenzene

▶ Cyclohexene see p. 1917

Tetrahydrofuran

THF, Oxolane
C_4H_8O
M 72,11 g/mol
D ~0,89 • bp 65,5 °C
mp -108,5 °C • flp -21 °C
[109-99-9] • EC No. 203-726-8
UN No. 2056 • ADR 3 II • WGK 1

Danger
H225-H302-H319-H335-H351-EUH019

Tetrahydrofuran

ROTISOLV® ≥99,9 %, Ultra LC-MS, not stabilized

Guarantee analysis:
Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,02 %
Acidity (as CH_3COOH). ≤0,002 %
Alkalinity (as NH_3). ≤0,0005 %
Evaporation residue. ≤0,0001 %
Transmission:
310 nm. ≥99 %
280 nm. ≥95 %
275 nm. ≥90 %
265 nm. ≥80 %
Gradient test:
UV-absorption of the greatest eluated peak.
254 nm. ≤0,01 AU
280 nm. ≤0,003 AU
Fluorescence (as quinine):
254 nm. ≤1 ppb
365 nm. ≤1 ppb
Trace impurities:
Aluminium (Al). ≤20 ppb
Calcium (Ca). ≤50 ppb
Iron (Fe). ≤20 ppb
Potassium (K). ≤50 ppb
Magnesium (Mg). ≤20 ppb
Sodium (Na). ≤50 ppb
Filtered through a 0,2 µm membrane and filled under protective gas.

0739.1	1 l	glass	122,45 €
Original pack 6 x 1 l			116,33/1 l

Tetrahydrofuran

ROTISOLV® HPLC, not stabilized

Guarantee analysis:
Assay (GC). ≥99,9 %
Water (KF). ≤0,01 %
Free acid (as CH_3COOH). ≤0,001 %
Non volatile matter. ≤0,0005 %
Peroxides (as H_2O_2). ≤0,01 %
Transmission:
290-400 nm. ≥99 %
275 nm. ≥90 %
255 nm. ≥70 %
235 nm. ≥50 %
215 nm. ≥10 %
Filtered through 0,2 µm membrane and filled under protective gas.

7344.1	1 l	glass	52,15 €
Original pack 6 x 1 l			49,54/1 l
7344.2	2,5 l	glass	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

For further information, please see page 1650

Tetrahydrofuran

ROTISOLV® ≥99,9 %, UV/IR-Grade
For chromatography and spectroscopy.

Guarantee analysis:
Assay (GC). ≥99,9 %
Water (KF). ≤0,02 %
Colour (Hazen). ≤10
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
Fluorescence (as quinine):
254 nm. ≤1,0 ppb
365 nm. ≤1,0 ppb
Transmission:
310 nm. ≥98 %
275 nm. ≥90 %
265 nm. ≥80 %
245 nm. ≥55 %
215 nm. ≥10 %
Unstabilized.

CP82.1	2,5 l	glass	97,30 €
Original pack 4 x 2,5 l			92,44/2,5 l

Tetrahydrofuran

ROTIDRY®Sept ≥99,8 % (≤10 ppm H_2O)
Dried; in a septum bottle

Guarantee analysis:
Assay (GC). ≥99,8 %
Colour (APHA). ≤10
Water (KF). ≤0,001 %
Acidity (as CH_3COOH). ≤0,003 %
Evaporation residue. ≤0,001 %
Stabilized with approx. 250 ppm BHT

5182.1	250 ml	glass	52,15 €

Tetrahydrofuran

ROTIDRY® ≥99,9 % (≤50 ppm H_2O)

Dried; for analysis and organic synthesis.

Guarantee analysis:

Assay (GC). ..... ≥99,9 %
Colour (Hazen). ..... ≤10
Water (KF). ..... ≤0,005 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,001 %
Stab. with approx. 250 ppm BHT
Filtered through a membrane and filled under protective gas.

AE07.1	1 l	glass	50,00 €
Original pack 6 x 1 l			47,50/1 l

Tetrahydrofuran

ROTIPURAN® ≥99,5 %, p.a., ACS

Guarantee analysis:

Assay (GC). ..... ≥99,5 %
Colour (Hazen). ..... ≤20
Water . ..... ≤0,05 %
Acidity. ..... ≤0,001 %
Peroxides (as H_2O_2). ..... ≤0,015 %
Evaporation residue. ..... ≤0,03 %
Aluminium (Al). ..... ≤0,00005 %
Barium (Ba). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,00001 %
Boron (B). ..... ≤0,000002 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Tin (Sn). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00001 %
Stab. with 2,6-di-tert-butyl-4-methylphenol (BHT)

6788.1	1 l	glass	50,45 €
Original pack 6 x 1 l			47,93/1 l
6788.2	2,5 l	glass	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l
6788.4	5 l	plastic	171,90 €
Original pack 2 x 5 l			163,31/5 l
6788.3	10 l	tinplate	339,60 €
6788.5	25 l	tinplate	665,45 €

Tetrahydrofuran

≥99,5 %, for synthesis

Type analysis:

Appearance. ..... clear, colourless liquid
Assay. ..... ≥99,5 %
Colour (Hazen). ..... ≤10
Water (KF). ..... ≤0,1 %
Refractive index n_D^{20}. 1,406-1,408
Stab. with 2,6-di-tert-butyl-4-methylphenol (BHT)

4745.1	250 ml	glass	22,50 €
4745.2	1 l	glass	35,40 €
Original pack 6 x 1 l			33,63/1 l
4745.3	2,5 l	glass	76,90 €
Original pack 4 x 2,5 l			73,06/2,5 l
4745.4	10 l	tinplate	242,85 €
4745.5	25 l	tinplate	364,45 €

Tetrahydrofuran D8

Tetrahydrofuran D8

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.
Octadeuterotetrahydrofuran, THF D8
C_4D_8O
M 80,17 g/mol
D 0,99 • bp ~65 °C
mp -106 °C • flp -17,5 °C
[1693-74-9] • EC No. 216-898-4
UN No. 2056 • ADR 3 II • WGK 1

Danger
H225-H319-H335-H351-EUH019

Guarantee analysis:

Deuterising degree. ..... ≥99,5 %
Water (KF, H_2O+D_2O). ..... ≤0,05 %

AE58.3	5 ml	glass	103,10 €
AE58.1	10 ml	glass	192,45 €
AE58.2	10 ml	septum bottle	194,50 €
AE58.4	25 ml	glass	418,20 €
AE58.5	10 x 0,75 ml	glass ampoule	195,55 €

Tetrahydro-1,4-oxazine

▶ Morpholine see p. 2148

3',4',5,7-Tetrahydroxyflavanone

▶ Eriodictyol see p. 1973

2',3,5,7-Tetrahydroxyflavone

▶ Datiscetin see p. 1922

3,3',4',7-Tetrahydroxyflavone

▶ Fisetin see p. 1993

3,4',5,7-Tetrahydroxyflavone

▶ Kaempferol see p. 2082

3',4',5,7-Tetrahydroxyflavone

▶ Luteolin see p. 2106

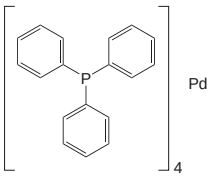
3',4',5,7-Tetrahydroxyflavylium chloride

▶ Luteolinidin chloride see p. 2106

Tetraiodine fluorescein disodium salt

▶ Erythrosine B (C.I. 45430) see p. 1974

Tetrakis(triphenylphosphine) palladium(0)



Tetrakis(triphenylphosphine) palladium(0)

≥98 %

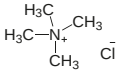
Catalyst for cross-coupling reactions.
Palladium tetrakis(triphenylphosphine), $Pd(PPh_3)_4$
$Pd(P(C_6H_5)_3)_4$
M 1155,58 g/mol
Storage temp.: +4 °C
[14221-01-3] • EC No. 238-086-9
WGK 1

Type analysis:

Appearance. ..... yellow to light-green powder
Assay. ..... ≥98 %
Palladium (Pd). ..... ≥9,0 %
Gold (Au). ..... ≤0,01 %
Rhodium (Rh). ..... ≤0,01 %
Iridium (Ir). ..... ≤0,01 %
Store under inert gas.

0920.1	1 g	glass	27,85 €
0920.2	5 g	glass	99,90 €
0920.3	10 g	glass	166,65 €

Tetramethylammonium chloride (TMACl)



Tetramethylammonium chloride (TMACl)

≥98 %, for synthesis

TMACl
$C_4H_{12}ClN$
M 109,60 g/mol
D 1,17
mp >300 °C (dec.)
Solubility: ~660 g/l (H_2O, 20 °C)
[75-57-0] • EC No. 200-880-8
UN No. 2811 • ADR 6.1 II • WGK 3

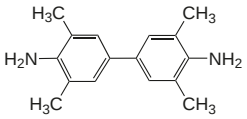
Danger H300-H311

Type analysis:

Appearance. ..... white crystals
Assay (arg.). ..... ≥98 %
Solubility (3 M sol. in H_2O). ..... clear, colourless to light yellow

4747.1	100 g	plastic	16,70 €
4747.2	500 g	plastic	59,05 €
Original pack 6 x 500 g			56,10/500 g

3,3',5,5'-Tetramethylbenzidine



TMB
$C_{16}H_{20}N_2$
M 240,35 g/mol
mp 167-170 °C
Storage temp.: +4 °C
[54827-17-7] • EC No. 259-364-6 • WGK 3

3,3',5,5'-Tetramethylbenzidine

≥98 %, p.a.
Substrate for peroxidase.

Type analysis:
Appearance. ..... beige cryst. powder
Assay (as nitrogen). ..... ≥98,0 %
Sulphated ash (600 °C). ..... ≤0,2 %
Loss on drying (105 °C). ..... ≤0,5 %
Can replace carcinogenic benzidine.

6350.1	1 g	glass	54,75 €
6350.2	5 g	plastic	167,20 €
6350.3	25 g	plastic	768,65 €

For further information, please see page 1332

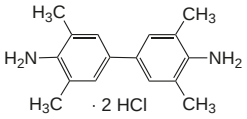
3,3',5,5'-Tetramethylbenzidine

≥98 %, for biochemistry

Type analysis:
Appearance. ..... white to yellow powder
Assay. ..... ≥98 %
Ash content. ..... ≤0,2 %
Loss on drying. ..... ≤0,5 %

6834.1	1 g	glass	26,80 €
6834.2	5 g	glass	77,30 €
6834.3	25 g	glass	332,20 €

3,3',5,5'-Tetramethylbenzidine dihydrochloride



3,3',5,5'-Tetramethylbenzidine dihydrochloride

≥99 %, for biochemistry
Water-soluble peroxidase substrate
TMB dihydrochloride, TMB · 2 HCl
$C_{16}H_{20}N_2 \cdot 2\ HCl$
M 313,27 g/mol
Storage temp.: +4 °C
[207738-08-7] • EC No. 264-769-6 • WGK 1

Guarantee analysis:
Assay (titr.). ..... ≥99 %
Solution (1 % in methanol). .....
..... colourless to green yellow
Water (KF). ..... ≤5 %
Sulphated ash. ..... ≤0,1 %

4107.1	500 mg	glass	39,70 €
4107.2	1 g	glass	64,40 €

For further information, please see page 1332

Tetramethylenediamine

▶ Putrescin see p. 2244
▶ Putrescin dihydrochloride see p. 2244

Tetramethylene diisocyanate

▶ 1,4-Diisocyanatobutane see p. 1943

Tetramethylene glycol

▶ 1,4-Butanediol see p. 1859

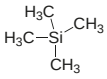
N,N,N',N'-Tetramethylethylene-diamine

▶ TEMED see p. 2396

2,2,6,6-Tetramethyl-piperidinyloxy (free radical)

▶ TEMPO see p. 2396

Tetramethylsilane



Tetramethylsilane

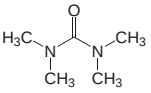
≥99,9 %, for NMR-spectroscopy
For the calibration of NMR spectra; calibration substance.
TMS
$C_4H_{12}Si$
M 88,22 g/mol
D 0,65 • bp 26-27 °C
mp -102 °C • flp -20 °C
Solubility: 0,02 g/l (H_2O, 25 °C)
Storage temp.: +4 °C
[75-76-3] • EC No. 200-899-1
UN No. 2749 • ADR 3 I • WGK 1

Danger H224

Type analysis:
Assay (GC). ..... ≥99,9 %
Aptitude for NMR-spectroscopy. ..... complies

CP18.1	25 ml	glass	31,10 €
CP18.2	100 ml	glass	84,85 €

Tetramethyl urea



NEW

Tetramethyl urea

≥99 %, for synthesis
TMU
$C_5H_{12}N_2O$
M 116,16 g/mol
D 0,97 • bp 177 °C
mp -1 °C • flp 75 °C
[632-22-4] • EC No. 211-173-9
WGK 2

Danger H302-H360D

Guarantee analysis:
Assay. ..... ≥99 %

0756.1	100 ml	glass	37,55 €
0756.2	250 ml	glass	75,15 €
0756.3	500 ml	glass	134,40 €
0756.4	1 l	glass	246,20 €
Original pack 6 x 1 l			233,89/1 l

3,6,9,12-Tetraoxapentadec-14-yn-1-amine

▶ H_2N-PEG4-Alkyne see p. 2193

Tetraoxaundecane

NEW

Tetraoxaundecane

SOLVAGREEN® ≥99 %, for synthesis
Alternative for NMP, NEP, glycols, aromatics
2,5,7,10-Tetraoxaundecane, Bis(2-methoxyethoxy)methane
$C_7H_{16}O_4$
M 164,20 g/mol
D 0,99
[4431-83-8] • EC No. 224-631-8
WGK 1

Type analysis:
Assay. ..... ≥99,0 %
Water. ..... ≤0,5 %

0786.1	100 ml	glass	17,10 €
0786.2	500 ml	glass	37,55 €
0786.3	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l
0786.4	2,5 l	plastic	107,40 €
Original pack 4 x 2,5 l			102,03/2,5 l

For further information, please see page 1593

Tetraphenylboron sodium

▶ Sodium tetraphenyl borate see p. 2350

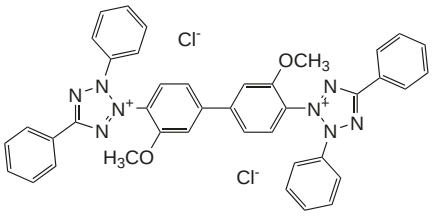
Tetrathionate Broth

▶ Mueller Kauffmann Broth (Base) see p. 2149

Tetrathionate Enrichment Broth

▶ Mueller Kauffmann Broth (Base) see p. 2149

Tetrazolium blue chloride



Tetrazolium blue chloride

≥95 %, for biochemistry

For vital staining of cells.

Blue tetrazolium chloride, BTC, 3,3'-Dianisole-4,4'-bis(3,5-diphenyltetrazolium chloride), 3,3'-(3,3'-Dimethoxy[1,1'biphenyl]-4,4'diyl)-bis(2,5-diphenyl-2H-tetrazolium) dichloride

$C_{40}H_{32}Cl_2N_8O_2$

M 727,64 g/mol

mp 265-270 °C (dec.)

Solubility: 3 g/l (H_2O, 20 °C)

[1871-22-3] • EC No. 217-488-8

WGK 3

Danger H350

Type analysis:

Appearance. ..... yellowish, cryst. powder
Assay (titr.). ..... ≥95,0 %
Solution (0,5 % in methanol). ..... light yellow to greenish yellow
Water (KF). ..... ≤3 %
Sulphated ash. ..... ≤0,1 %

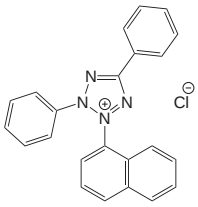
4176.1	1 g	glass	56,90 €
4176.2	5 g	glass	213,95 €

For further information, please see page 1526

Tetrazolium red

▶ 2,3,5-Triphenyltetrazolium chloride see p. 2420

Tetrazolium violet



Tetrazolium violet

for microscopy

$C_{23}H_{17}ClN_4$

M 384,86 g/mol

mp 247-249 °C

[1719-71-7]

WGK 3

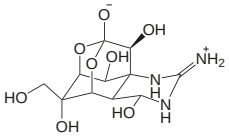
Type analysis:

Appearance. ..... off-white to light beige powder
Appearance of solution (50 mg/ml in MeOH). ..... clear, yellow to yellow green

7736.1	1 g	glass	41,85 €
7736.2	5 g	glass	160,20 €
7736.3	10 g	glass	299,95 €

For further information, please see page 1526

Tetrodotoxin



Tetrodotoxin

≥99 %, free of citrate

TTX

$C_{11}H_{17}N_3O_8$

M 319,3 g/mol

mp 220 °C

Storage temp.: +4 °C

[4368-28-9] • EC No. 224-458-8

UN No. 3462 • ADR 6.1 I • WGK 3

Danger H300+H310+H330

Type analysis:

Appearance. ..... white cryst. powder
Purity (HPLC). ..... ≥99 %

6973.1	1 mg	plastic	353,70 €

TFA

▶ Trifluoroacetic acid (TFA) see p. 2417

TFAA

▶ Trifluoroacetic anhydride (TFAA) see p. 2418

TFA-D

▶ Trifluoroacetic acid D1 see p. 2418

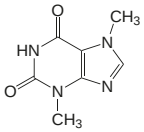
TG buffer powder (pouch)

▶ Roti®fair TG-Western see p. 2279

Thallium Standards

▶ Thallium AAS Standard Solution see p. 2360
▶ Thallium ICP Standard Solution see p. 2365
▶ Thallium ICP Standard Solution see p. 2370

Theobromine



Theobromine

≥99 %, Ph.Eur., for biochemistry

3,7-Dimethylxanthine

$C_7H_8N_4O_2$

M 180,16 g/mol

mp 357 °C

Solubility: 330 mg/l (H_2O, 25 °C)

[83-67-0] • EC No. 201-494-2

WGK 1

Warning H302

Guarantee analysis:

Appearance. ..... white powder
Assay (titr., dry substance). ..... 99,0-101,0 %
Identity. ..... complies
Acid react. substance (0,01 N NaOH, 400 mg). ..... ≤0,2 ml
Heavy metals. ..... ≤0,002 %
Loss on drying (100 °C). ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %
Related substances. ..... complies

8963.1	10 g	plastic	19,90 €
8963.2	100 g	plastic	78,40 €

Thermokitt Roth 1100 °C

Thermokitt Roth 1100 °C

Heat resistant embedding medium, seals and glues metal, glass, ceramic, porcelain. Stands temperatures to +1100 °C

UN No. 1760 • ADR 8 II • WGK 2

Danger H290-H302-H314-H372

3040.1	200 g components 1 and 100 g components 2		40,75 €

For further information, please see page 1176

THF

▶ Tetrahydrofuran see p. 2400

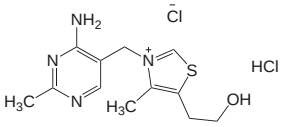
THF D8

▶ Tetrahydrofuran D8 see p. 2401

Thiamine chloride hydrochloride

▶ Thiamine hydrochloride see p. 2404

Thiamine hydrochloride



Thiamine hydrochloride

≥98,5 %, for biochemistry

Thiamine chloride hydrochloride, Vitamin B_1 hydrochloride, Aneurine

$C_{12}H_{17}ClN_4OS \cdot HCl$

M 337,27 g/mol

mp 248 °C (dec.)

Solubility: 1000 g/l (H_2O, 20 °C)

Storage temp.: +4 °C

[67-03-8] • EC No. 200-641-8

WGK 1

Type analysis:

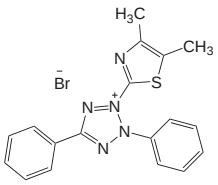
Appearance. ..... white to off-white, cryst. powder
Assay (titr. dry substance). ..... 98,5-101,0 %
pH value (2,5 % in H_2O). 2,7-3,3
Water (KF). ..... ≤5,0 %
Sulphate (SO_4). ..... ≤0,03 %
Sulphated ash. ..... ≤0,1 %

T911.1	25 g	plastic	22,05 €
T911.2	100 g	plastic	55,80 €
T911.3	250 g	plastic	122,45 €

Thiazole yellow

▶ Titan yellow (C.I. 19540) see p. 2410

Thiazolyl blue



Thiazolyl blue

≥98 %, for biochemistry

3-(4,5-Dimethylthiazole-2-yl)-2,5-diphenyl-2H-tetrazolium bromide, MTT

$C_{18}H_{16}BrN_5S$

M 414,33 g/mol

mp 190-210 °C

Solubility: 20 g/l (H_2O, 20 °C)

[298-93-1] • EC No. 206-069-5 • WGK 1

Warning H315-H319-H335-H341

Type analysis:

Appearance. ..... yellow, cryst. powder
Assay (arg. titr.). ..... ≥98,0 %
Absorption max. (in H_2O). ..... 239-247 nm

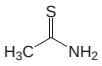
4022.1	1 g	glass	31,10 €
4022.3	5 g	glass	131,70 €
4022.2	10 g	glass	206,95 €
4022.4	25 g	glass	418,20 €

For further information, please see page 1526

Thimerosal

▶ Sodium ethylmercurithiosalicylate see p. 2337

Thioacetamide



Thioacetamide

≥99 %, p.a.

TAA, Thioacetimidic acid

C_2H_5NS

M 75,13 g/mol

D 1,37

mp 111-114 °C

Solubility: 163 g/l (H_2O, 20 °C)

[62-55-5] • EC No. 200-541-4

WGK 3

Danger H302-H315-H319-H350-H412

Type analysis:

Assay. ..... ≥99,0 %
Sulphated ash. ..... ≤0,05 %
Iron (Fe). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,001 %

8646.1	50 g	plastic	36,05 €
8646.2	100 g	plastic	60,75 €
8646.3	250 g	plastic	131,70 €
8646.4	500 g	plastic	231,15 €
Original pack 6 x 500 g			219,59/500 g

Thioacetimidic acid

▶ Thioacetamide see p. 2404

Thiocarbamide

▶ Thiourea see p. 2405

Thiocyanate Standards

▶ Thiocyanate IC Standard Solution see p. 2376

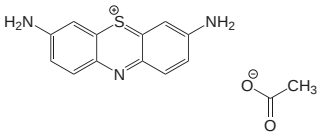
Thioethyleneglycol

▶ 2-Mercaptoethanol see p. 2126

Thiomersalate

▶ Sodium ethylmercurithiosalicylate see p. 2337

Thionine (acetate) (C.I. 52000)



Thionine (acetate) (C.I. 52000)

for microscopy

Nuclear dye

3,7-Diaminophenothiazin-5-ium acetate, Lauth's violet

$C_{14}H_{13}N_3O_2S$

M 287,34 g/mol

D 0,56

Solubility: 2,5 g/l (H_2O, 25 °C)

[78338-22-4]

WGK 1

Type analysis:

Assay (spectrophotometric). ..... ≥85 %
Absorption max. (in H_2O). ..... 598-600 nm
Loss on drying (110 °C). ..... ≤7 %
Suitability for microscopy. ..... complies

9937.1	5 g	plastic	92,35 €
9937.2	10 g	plastic	170,95 €

For further information, please see page 1526

Thionyl chloride

Thionyl chloride

≥98 %, for synthesis

Sulphurous acid chloride, Dichlorosulfoxide

$SOCl_2$

M 118,97 g/mol

D ~1,63 • bp 75-76 °C

mp -104 °C

[7719-09-7] • EC No. 231-748-8

UN No. 1836 • ADR 8 I • WGK 1

Danger

H302-H314-H331-H335-EUH014-EUH029

Type analysis:

Assay. ..... ≥98 %

4024.2	100 ml	glass	33,25 €
4024.1	500 ml	glass	84,85 €

DL-6,8-Thiooctic acid

▶ DL-6,8-Dithiooctanoic acid see p. 1955

Thiosulphate Standards

▶ Thiosulphate IC Standard Solution see p. 2376

Thiosulphate Citrate Bile Sucrose Agar

▶ TCBS Agar see p. 2395

2-Thiouracil

2-Thiouracil

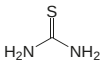
≥98 %, for biochemistry
4-Hydroxy-2-mercaptopyrimidine
$C_4H_4N_2OS$
M 128,15 g/mol
mp >260 °C (dec.)
Solubility: 7,9 g/l (H_2O, 25 °C)
[141-90-2] • EC No. 205-508-8 • WGK 1

Warning H351

Type analysis:
Assay (HPLC). ..... ≥98,0 %
Solution (5 % in 1 N NaOH). ..... colourless to yellowish
Loss on drying. ..... ≤0,5 %
Heavy metals (as Pb). ..... ≤0,002 %

5245.1	50 g	plastic	45,05 €
5245.2	100 g	plastic	76,25 €

Thiourea



Thiocarbamide
CH_4N_2S
M 76,12 g/mol
D 1,41 • mp 170-179 °C
Solubility: 137 g/l (H_2O, 20 °C)
[62-56-6] • EC No. 200-543-5
UN No. 3077 • ADR 9 III • WGK 2

Warning
H351-H361d-H302-H411

Thiourea

≥99 % p.a., ACS

Guarantee analysis:
Assay. ..... ≥99,0 %
Solubility (water). ..... clear, colourless
Loss on drying (105 °C). ..... ≤0,5 %
Melting point. ..... 174-177 °C
Ash content (as SO_4). ..... ≤0,1 %
Aluminium (Al). ..... ≤0,005 %
Barium (Ba). ..... ≤0,005 %
Lead (Pb). ..... ≤0,005 %
Calcium (Ca). ..... ≤0,005 %
Chromium (Cr). ..... ≤0,005 %
Iron (Fe). ..... ≤0,005 %
Potassium (K). ..... ≤0,005 %
Copper (Cu). ..... ≤0,005 %
Magnesium (Mg). ..... ≤0,005 %
Manganese (Mn). ..... ≤0,005 %
Sodium (Na). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,005 %
Strontium (Sr). ..... ≤0,005 %
Zinc (Zn). ..... ≤0,005 %

HN37.1	100 g	plastic	18,85 €
HN37.2	250 g	plastic	33,25 €
HN37.3	1 kg	plastic	105,90 €
Original pack 6 x 1 kg			100,61/1 kg

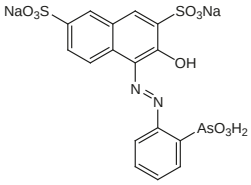
Thiourea

≥99 %, extra pure
For chemical synthesis.

Type analysis:
Assay (iodom.). ..... ≥99 %
Water. ..... ≤0,5 %
Water insoluble residue . ..... ≤0,05 %
Ash content (as SO_4). ..... ≤0,3 %
Melting range. ..... 170-179 °C

9531.3	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
9531.1	1 kg	plastic	47,85 €
Original pack 6 x 1 kg			45,46/1 kg
9531.2	5 kg	plastic	192,45 €

Thorin



Thorin

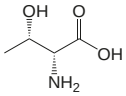
p.a.
Indicator for metal ions.
1-(2-Arsonophenylazo)-2-hydroxy-3,6-naphthalene-disulphonic acid sodium salt, 2-(2-Hydroxy-3,6-disulpho-1-naphthylazo-(1))-benzene-arsonic acid sodium salt
$C_{16}H_{11}AsN_2Na_2O_{10}S_2$
M 576,30 g/mol
[3688-92-4] • EC No. 222-993-1
UN No. 3465 • ADR 6.1 III • WGK 3

Danger H301+H331-H400-H410

Guarantee analysis:
Specific Extinction E (1%/1cm). ..... ≥200
Absorption max. (in H_2O). ..... 481,0-489,0 nm
Suitability for determination of barium. ..... complies

KK34.1	5 g	glass	160,20 €
KK34.2	10 g	glass	299,95 €

D-Threonine



D-Threonine

≥98,5 % for biochemistry
(*2R,3S*)-2-Amino-3-hydroxybutyric acid, H-D-Thr-OH
$C_4H_9NO_3$ • M 119,1 g/mol
Storage temp.: +4 °C
[632-20-2] • EC No. 211-171-8 • WGK 1

Type analysis:
Appearance. ..... white to off-white powder
Assay. ..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$ (c= 6 in H_2O). ..... +27,2° to +29,0°
Loss on drying. ..... ≤0,2 %

7889.1	5 g	plastic	25,70 €
7889.2	25 g	plastic	75,80 €
7889.3	100 g	plastic	241,90 €

DL-Threonine

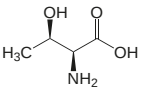
DL-Threonine

≥98 %, for biochemistry
2-Amino-3-hydroxybutyric acid
$C_4H_9NO_3$
M 119,12 g/mol
mp ~245 °C (dec.)
Solubility: 200 g/l (H_2O, 25 °C)
[80-68-2] • EC No. 201-300-6
WGK 1

Type analysis:
Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %
Heavy metals (as Pb). ..... ≤0,001 %
Ash content. ..... ≤0,1 %
Loss on drying. ..... ≤0,2 %

7532.1	10 g	plastic	22,50 €
7532.4	50 g	plastic	50,00 €
7532.2	100 g	plastic	78,40 €
7532.3	500 g	plastic	332,20 €
Original pack 6 x 500 g			315,59/500 g

L-Threonine



(*2S,3R*)-2-Amino-3-hydroxybutyric acid, H-L-Thr-OH
$C_4H_9NO_3$
M 119,12 g/mol
mp 265-270 °C
Solubility: 90 g/l (H_2O, 20 °C)
[72-19-5] • EC No. 200-774-1
WGK 1

L-Threonine

CELLPURE® ≥99 %
For cell culture and biochemistry.

Guarantee analysis:
Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... -29,0° to -27,6°
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,03 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

1738.1	25 g	plastic	19,90 €
1738.2	100 g	plastic	40,35 €
1738.3	500 g	plastic	162,90 €
Original pack 6 x 500 g			154,76/500 g

L-Threonine

≥99 %, Ph.Eur., for biochemistry

Guarantee analysis:

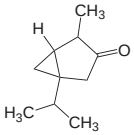
Appearance. ..... white to off-white, cryst. powder
Assay (dry substance). ..... 99,0-101,0 %
Identity. ..... complies
Specific rotation $[\alpha]_D^{20}$. ..... -27,6° to -29,0°
pH value 5,0-6,5
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,03 %
Iron (Fe). ..... ≤0,001 %
Heavy metals. ..... ≤0,001 %
Foreign amino acids. ..... complies
Ammonium (NH_4). ..... ≤0,02 %
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

T206.1	25 g	plastic	16,05 €
T206.2	100 g	plastic	32,15 €
T206.4	250 g	plastic	61,85 €
T206.3	500 g	plastic	115,60 €
Original pack 6 x 500 g			109,82/500 g

THPTA

▶ Tris(3-hydroxypropyltriazolylmethyl)amine (THPTA) see p. 2422

α+β-Thujone



α+β-Thujone (isomers)

pure

Tanaceton, Absinthon
$C_{10}H_{16}O$
M 152,23 g/mol
bp 200-202 °C
flp 67 °C
[76231-76-0]
WGK 2

Warning H302-H317-H412

Type analysis:

Density (d 20 °C/20 °C). 0,9150-0,9300
Refractive index n_D^{20}. 1,4520-1,4540
Formulation: α-Thujone ~65 %, β-Thujone ~10 %

9540.1	5 g	glass	21,00 €
9540.2	50 g	glass	141,40 €

Thulium Standards

▶ Thulium ICP Standard Solution see p. 2365

Thulium(III) nitrate pentahydrate

Thulium(III) nitrate pentahydrate

ROTI®REMETIC 99,9 %

$Tm(NO_3)_3 \cdot 5\ H_2O$
M 445,02 g/mol
Solubility: soluble (H_2O, 20 °C)
[36548-87-5] • EC No. 239-069-9
UN No. 1477 • ADR 5.1 II • WGK 3

Danger H272-H315-H319-H335

Type analysis:

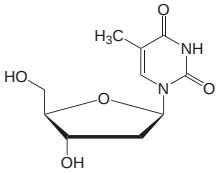
Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7282.2	5 g	plastic	144,60 €

Thyme camphor

▶ Thymol see p. 2406

Thymidine



Thymidine

≥99 %, p.a.

For biochemistry.
Thymine-2-deoxyriboside, 2'-Deoxythymidine
$C_{10}H_{14}N_2O_5$
M 242,23 g/mol • mp ~187 °C
[50-89-5] • EC No. 200-070-4 • WGK 1

Type analysis:

Assay (HPLC). ..... ≥99,0 %
Specific rotation $[\alpha]_D^{20}$. ..... +17,5° to +19,5°
Loss on drying. ..... ≤0,5 %

3005.2	500 mg	glass	19,90 €
3005.1	1 g	glass	23,55 €
3005.3	5 g	glass	50,45 €
3005.4	25 g	glass	150,40 €

Thymidine-BCE-phosphoramidite

Thymidine-BCE-phosphoramidite

for DNA synthesis

For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-T-P(OCH_2CH_2CN)-N($iPr)_2$
$C_{40}H_{49}N_4O_8P$ • M 744,6 g/mol
Storage temp.: +4 °C

K924.1	1 g	glass	35,40 €

For further information, please see page 1550

Thymidine-CPG-Support

Thymidine-CPG-Support

500 Å pore size

Support material for DNA-synthesis.
dT-lcaa-CPG
Storage temp.: +4 °C

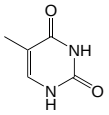
Type analysis:

Purity (HPLC). ..... ≥98,0 %
CPG loading. ..... 30-40 µmol/g
Coupling efficiency. ..... ≥99 %

2321.3	1 g	plastic	58,60 €

For further information, please see page 1550

Thymine



Thymine

≥99 %, for biochemistry

5-Methyluracil
$C_5H_6N_2O_2$
M 126,11 g/mol • mp 320 °C
[65-71-4] • EC No. 200-616-1 • WGK 1

Type analysis:

Appearance. ..... white to off-white, cryst. powder
Assay (HPLC). ..... ≥99 %
Water (KF). ..... ≤0,5 %

7289.1	5 g	glass	25,30 €
7289.2	25 g	plastic	39,70 €
7289.3	100 g	plastic	87,00 €

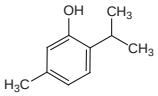
Thymine-2-deoxyriboside

▶ Thymidine see p. 2406

Thyminose

▶ 2-Deoxy-D-ribose see p. 1926

Thymol



Thyme camphor, 3-Hydroxy-p-cymene, 2-Isopropyl-5-methylphenol
$C_{10}H_{14}O$
M 150,22 g/mol
D 0,98 • bp 233,0 °C
mp 49-50 °C • flp 104 °C
Solubility: 0,98 g/l (H_2O, 25 °C)
[89-83-8] • EC No. 201-944-8
UN No. 2430 • ADR 8 III • WGK 2

Danger H314-H302-H411

Thymol

≥99 %

Type analysis:

Appearance. ..... colourless to white crystals
Assay (GLC). ..... ≥99 %

Evaporation residue.....≤0,05 %
Melting point.....≥49,5 °C

5391.1	100 g	glass	18,85 €
5391.2	500 g	glass	62,25 €
Original pack 6 x 500 g			59,14/500 g

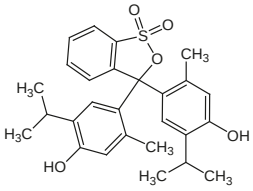
Thymol

ROTICHROM® GC
Reference substance for GC.
Storage temp.: +4 °C

Type analysis:
Purity (GC).....≥96 %

3209.1	1 g	plastic	84,85 €

Thymol blue



Thymol blue

p.a., ACS
Indicator pH 1,2-2,8 and pH 8,0-9,2
Thymolsulphonephthaleine
$C_{27}H_{30}O_5S$
M 466,60 g/mol
mp 223 °C (dec.)
Solubility: 0,11 g/l (H_2O, 25 °C)
[76-61-9] • EC No. 200-973-3
WGK 2

Guarantee analysis:
Appearance of solution (ACS).....complies
pH-transition range.....1,2 (red)-2,8 (yellow)
pH-transition range.....8,0 (yellow)-9,2 (blue)

KK16.1	5 g	glass	17,75 €
KK16.2	10 g	glass	25,70 €
KK16.3	25 g	glass	52,15 €

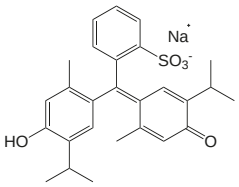
Thymol blue indicator solution

Thymol blue indicator solution

0,1 % in ethanol denatured
UN No. 1170 • ADR 3 II • WGK 1
Danger H225-H319

9954.1	250 ml	plastic	44,65 €

Thymol blue sodium salt



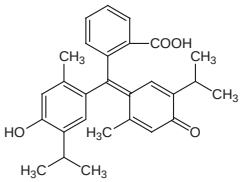
Thymol blue sodium salt

p.a., ACS
Indicator pH 1,2-2,8 and pH 8,0-9,2
Thymolsulphonephthaleine sodium salt
$C_{27}H_{29}NaO_5S$
M 488,58 g/mol
mp 283 °C (dec.)
[62625-21-2] • EC No. 263-650-6
WGK 1

Guarantee analysis:
Appearance.....orange brown to brownish-black powder
Appearance of solution.....complies
Loss on drying.....≤8 %
pH-transition range.....1,2 (red)-2,8 (yellow)
pH-transition range.....8,0 (yellow)-9,2 (blue)

2606.1	5 g	glass	21,00 €
2606.2	25 g	glass	54,30 €

Thymolphthalein



Thymolphthalein

p.a., ACS
Indicator pH 8,8-10,5
$C_{28}H_{30}O_4$
M 430,55 g/mol
mp 253 °C
Solubility: nearly insoluble
[125-20-2] • EC No. 204-729-7
WGK 1

Guarantee analysis:
Appearance of solution.....complies
pH-transition range.....8,8 (clear)-10,5 (blue)

HN97.1	5 g	glass	19,90 €
HN97.2	10 g	glass	33,25 €
HN97.3	50 g	glass	120,95 €

Thymolphthalein indicator solution

Thymolphthalein indicator solution

0,1 % in ethanol denatured
D 0,79 • bp 78 °C
mp -114 °C • flp 12 °C
UN No. 1170 • ADR 3 II • WGK 1
Danger H225-H319

8152.1	500 ml	glass	36,45 €

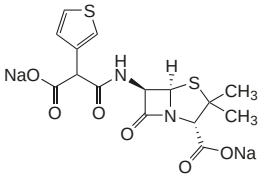
Thymolsulphonephthaleine

▶ Thymol blue see p. 2407

Thymolsulphonephthaleine sodium salt

▶ Thymol blue sodium salt see p. 2407

Ticarcillin disodium salt



Ticarcillin disodium salt

≥90 %, for biochemistry
β-Lactam antibiotic
α-Carboxy-α-3-thienylmethylpenicillin disodium salt, Ticarcillin · 2 Na
$C_{15}H_{14}N_2Na_2O_6S_2$
M 428,4 g/mol
Solubility: >1 g/ml
Storage temp.: +4 °C
[4697-14-7]
WGK 1
Danger H334-H335-H315-H319-H317

Guarantee analysis:
Assay (HPLC).....≥85 %
Solution (5 % in water).....colourless to light yellowish
Water (KF).....≤10 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in H_2O).....+172° to +187°
pH value (c=1 in H_2O).....5,5-7,5

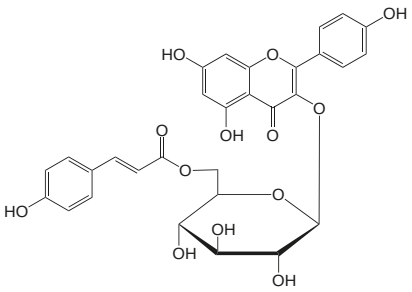
4161.1	500 mg	glass	39,70 €
4161.2	1 g	glass	64,40 €

For further information, please see page 1508

Ticarcillin · 2 Na

▶ Ticarcillin disodium salt see p. 2407

Tiliroside



Tiliroside
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{30}H_{26}O_{13}$
M 594,52 g/mol
Storage temp.: +4 °C
[20316-62-5]

Type analysis:
Purity (HPLC)..... ≥98 %

3268.1	10 mg	glass	364,45 €

Tillman's reagent
▶ 2,6-Dichlorophenol-indophenol sodium salt hydrate see p. 1936

Tin

Sn
M 118,71 g/mol
D 7,29 • bp 2260 °C
mp 231,9 °C
[7440-31-5] • EC No. 231-141-8

Tin shot
ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis)..... 99,999 %
Particle size. ..... 3-6 mm
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5097.1	5 g	plastic	81,20 €
5097.2	10 g	plastic	132,80 €

Tin granules
≥99,8 %, p.a., granulated
particle size ~4 mm

Type analysis:
Assay..... ≥99,8 %
Antimony (Sb)..... ≤0,02 %
Arsenic (As)..... ≤0,001 %
Lead (Pb)..... ≤0,005 %
Iron (Fe)..... ≤0,005 %
Copper (Cu)..... ≤0,001 %
Bismuth (Bi)..... ≤0,004 %

4016.2	50 g	plastic	46,15 €
4016.1	250 g	plastic	171,50 €

Tin beads
≥99,8 %, beads

Type analysis:
Assay. ..... ≥99,8 %
Particle size. ..... 8-20 mesh

2731.1	50 g	plastic	37,55 €
2731.2	100 g	plastic	69,35 €

Tin foil

Tin foil
pure
W: 40 cm, L: 10,7 m, D: 0,008 mm
Stanniol
Sn
[7440-31-5] • EC No. 231-141-8

Type analysis:
Tin (Sn). ..... 97,5-98,5 %
Antimony (Sb). ..... 1,5-2,5 %
Lead (Pb). ..... ≤0,01 %
Other traces ..... ≤0,5 %
W 40 cm; L 10,7 m; th. 0,008 mm

9296.1	1 roll		63,45 €

Tin Standards
▶ Tin AAS Standard Solution see p. 2361
▶ Tin ICP Standard Solution see p. 2365
▶ Tin ICP Standard Solution see p. 2370

Tin(II) chloride dihydrate

Tin dichloride dihydrate, Stannous chloride
$SnCl_2 \cdot 2\,H_2O$
M 225,63 g/mol
D 2,71 • bp 623 °C
mp 38 °C
Solubility: 1780 g/l (H_2O, 10 °C)
[10025-69-1] • EC No. 231-868-0
UN No. 3260 • ADR 8 II • WGK 1
Danger H302-H314-H317-H412

Tin(II) chloride dihydrate
≥98 %, p.a., max. 0,005 ppm Hg
For determination of mercury.

Guarantee analysis:
Assay (iodom.). ..... 98,0-103,0 %
Sulphate (SO_4). ..... ≤0,002 %
Ammonium (NH_4). ..... ≤0,002 %
Mercury (Hg). ..... ≤0,000005 %
Arsenic (As)..... ≤0,0001 %
Lead (Pb). ..... ≤0,01 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe)..... ≤0,003 %
Potassium (K)..... ≤0,005 %
Sodium (Na). ..... ≤0,01 %

KK07.1	100 g	glass	48,30 €
KK07.2	250 g	glass	107,00 €

Tin(II) chloride dihydrate
≥98 %, p.a., ACS
Reagent in analytical chemistry, e.g. on As, Au, Bi, Hg.

Guarantee analysis:
Assay (iodom.). ..... 98,0-103,0 %
In HCl insoluble matter. ..... ≤0,005 %
Sulphate (SO_4)..... ≤0,002 %
Ammonium (NH_4)..... ≤0,002 %
Arsenic (As). ..... ≤0,0001 %
Potassium (K). ..... ≤0,005 %
Sodium (Na)..... ≤0,01 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,003 %
Lead (Pb). ..... ≤0,01 %
Cadmium (Cd). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Cobalt (Co). ..... ≤0,0005 %
Magnesium (Mg)..... ≤0,005 %

4977.3	100 g	glass	31,10 €
4977.1	250 g	glass	68,70 €
4977.2	1 kg	glass	220,40 €
Original pack 6 x 1 kg			209,38/1 kg

Tin(II) chloride dihydrate
≥98 %, extra pure

Type analysis:
Assay. ..... ≥98,0 %
Sulphate (SO_4)..... ≤0,1 %
Arsenic (As). ..... ≤0,005 %
Iron (Fe). ..... ≤0,02 %
Heavy metals (as Pb)..... ≤0,1 %

7350.1	100 g	glass	18,20 €
7350.2	500 g	glass	59,05 €
Original pack 6 x 500 g			56,10/500 g
7350.3	1 kg	glass	107,40 €
Original pack 6 x 1 kg			102,03/1 kg
7350.4	2,5 kg	glass	246,75 €

Tin(IV) chloride

Tin(IV) chloride
≥98 %
Tin tetrachloride, Tetrachlorostannane
$SnCl_4$
M 260,51 g/mol
D 2,23 • bp 114 °C
mp -33 °C
[7646-78-8] • EC No. 231-588-9
UN No. 1827 • ADR 8 II • WGK 1
Danger H314-H335-H412

Type analysis:
Assay. ..... ≥98 %

4305.1	500 g	glass	184,40 €
Original pack 6 x 500 g			175,18/500 g

Tin dioxide
▶ Tin(IV) oxide see p. 2409

Tin(IV) oxide

Tin(IV) oxide

≥99,5 %, p.a.
Stannic oxide, Flowers of tin, Tin dioxide
SnO_2
M 150,71 g/mol
D 6,95 • bp 1800-1900 °C (subl.)
mp 1630 °C
Solubility: insoluble
[18282-10-5] • EC No. 242-159-0

Guarantee analysis:
Assay.....≥99,5 %
Tin oxide (SnO).....≤0,1 %
Lead (Pb).....≤0,1 %
Iron (Fe).....≤0,1 %
Nickel (Ni).....≤0,01 %
Tin (Sn).....≤0,05 %
Particle size.....≤2,5 µm

9929.1	100 g	plastic	22,05 €
9929.2	500 g	plastic	63,35 €
Original pack 6 x 500 g			60,18/500 g
9929.3	1 kg	plastic	107,40 €
Original pack 6 x 1 kg			102,03/1 kg

Tin(II) sulphate

Tin(II) sulphate

≥99 %, p.a.
$SnSO_4$
M 214,77 g/mol
[7488-55-3] • EC No. 231-302-2 • WGK 1

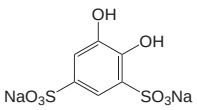
Guarantee analysis:
Assay.....≥99,0 %
Arsenic (As).....≤0,01 %
Iron (Fe).....≤0,01 %
Heavy metals (as Pb).....≤0,02 %
Alkali and alkaline earth metals.....≤0,15 %
In HCl insoluble matter.....≤0,01 %

4382.1	100 g	plastic	34,30 €
4382.2	250 g	plastic	63,35 €
4382.3	1 kg	plastic	196,20 €
Original pack 6 x 1 kg			186,39/1 kg

Tin tetrachloride

▶ Tin(IV) chloride see p. 2408

Tiron



Tiron

≥99 %, p.a.
Indicator for complexometry
Pyrocatechol-3,5-disulfonic acid disodium salt
$C_6H_4Na_2O_8S_2$ • M 314,21 g/mol
mp >360 °C
Solubility: 340 g/l (H_2O, 20 °C)
[149-45-1] • EC No. 205-741-5 • WGK 1
Warning H315-H319-H335

Type analysis:
Appearance.....off-white cryst. powder
Assay (HPLC).....≥99 %
Solution (5 % in water).....slightly brownish, clear
Water (KF).....4,5-6,0 %

7302.1	10 g	glass	19,90 €
7302.2	25 g	glass	27,45 €
7302.3	100 g	glass	67,20 €

TISAB solution I

TISAB solution I

for determination of fluoride
Total ionic strength adjustment buffer.
WGK 1
Formulation: Acetic acid, Sodium chloride, tri-Sodium citrate dihydrate, Water

0252.1	500 ml	plastic	45,70 €

TISAB solution II

TISAB solution II

for determination of fluoride
Total ionic strength adjustment buffer
D 1,08
WGK 1

Type analysis:
pH value.....5,0-5,5
Formulation: Sodium chloride, tri-Sodium citrate dihydrate, Acetic acid, Water

9945.1	1 l	plastic	57,95 €
Original pack 6 x 1 l			55,05/1 l

TISAB solution III

TISAB solution III

for determination of fluoride
Total ionic strength adjustment buffer
WGK 1
Warning H319

Type analysis:
pH value (20 °C).....5,0-5,5
Formulation: Ammonium chloride, CDTA, Water, Cresol red sodium salt

0259.1	500 ml	plastic	103,10 €

TISAB solution IV

TISAB solution IV

for determination of fluoride
Total ionic strength adjustment buffer
D 1,18
WGK 1
Warning H315-H319

Formulation: Hydrochloric acid, Tris-(hydroxymethyl)-aminomethane, Tartaric acid, Sodium hydroxide, Water

9951.1	1 l	plastic	150,00 €
Original pack 6 x 1 l			142,50/1 l

Titanium Standards

▶ Titanium AAS Standard Solution see p. 2361
▶ Titanium ICP Standard Solution see p. 2365
▶ Titanium ICP Standard Solution see p. 2370

Titanium dioxide

▶ Titanium(IV) oxide see p. 2409
▶ Titanium(IV) oxide, nano see p. 2409

Titanium(IV) oxide

Titanium dioxide
TiO_2
M 79,90 g/mol • D 4,23 • mp 1855 °C
[13463-67-7] • EC No. 236-675-5

Titanium(IV) oxide

ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis).....99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5747.1	5 g	plastic	54,30 €
5747.2	25 g	plastic	162,25 €

Titanium(IV) oxide

≥98 %, extra pure

Type analysis:
Assay.....≥98,0 %
Arsenic (As).....≤0,0001 %
Lead (Pb).....≤0,001 %
Mercury (Hg).....≤0,0001 %
Loss on drying (105 °C).....≤0,5 %
Water-soluble content.....≤0,5 %

9985.1	100 g	plastic	17,10 €
9985.2	500 g	plastic	28,95 €
Original pack 6 x 500 g			27,50/500 g
9985.3	1 kg	plastic	45,70 €
Original pack 6 x 1 kg			43,42/1 kg
9985.4	2,5 kg	plastic	93,00 €
9985.7	25 kg	plastic	697,70 €

Titanium(IV) oxide, nano

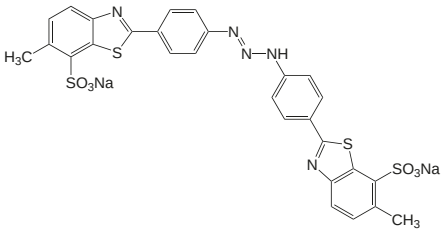
Titanium(IV) oxide, nano

ROTI®nanoMETIC ≥99,9 %, 4-8 nm
Titanium dioxide
TiO_2
M 79,90 g/mol
D 3,9 • mp 1843 °C
[1317-70-0] • EC No. 215-280-1

Type analysis:
Assay (metals basis).....≥99,9 %
Particle size.....4-8 nm
Specific surface (BET).....~140 m^2/g
Pore volume (N_2).....~0,035 cm^3/g
Loss on drying (2h, 120 °C).....≤1 %
Phase.....Anatas
Stabilized with HNO_3

8254.1	10 g	glass	57,95 €
8254.2	50 g	glass	235,45 €

Titan yellow (C.I. 19540)



Titan yellow (C.I. 19540)

extra pure

Indicator pH 11,0-13,0
Thiazole yellow
$C_{28}H_{19}Na_2N_5O_6S_4$
M 695,73 g/mol
mp >250 °C
[1829-00-1] • EC No. 217-377-4
WGK 3

Type analysis:

Appearance. ..... rust colored powder
Solubility. ..... clear, complete
pH-transition range. ..... 11,0 (yellow)-13,0 (red)
Loss on drying. ..... ≤10 %

7739.1	5 g	glass	12,40 €
7739.2	25 g	glass	25,70 €
7739.3	100 g	glass	62,25 €

Titration complex I

▶ Nitrilotriacetic acid see p. 2161

Titration complex II

▶ Ethylenediamine tetraacetic acid see p. 1980

Titration complex III

▶ Ethylenediamine tetraacetic acid disodium salt dihydrate see p. 1982

Titration complex III-solution

▶ EDTA disodium salt solution (0,05 N) see p. 1965
▶ EDTA disodium salt solution (0,01 N) see p. 1965
▶ EDTA disodium salt solution (0,01 N) see p. 1965
▶ EDTA disodium salt solution (0,1 N) see p. 1965
▶ EDTA disodium salt solution (0,1 N) see p. 1965
▶ EDTA disodium salt solution (0,1 N) see p. 1965
▶ EDTA disodium salt solution (0,2 N) see p. 1965

Titration complex IV

▶ trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate see p. 1932

Titration complex V

▶ Diethylene triamine pentaacetic acid see p. 1938

Titration complex VI

▶ EGTA see p. 1968

TLC-plates

▶ Chapter chromatography see p. 1633

TLC-spray solutions

▶ Chapter chromatography see p. 1639

TLC Spray Solutions

Art. No.	Description	Page
CP35	Aniline phthalate spray solution	1806
CP36	2',7'-Dichlorofluorescein spray solution	1935
CP38	4-(Dimethylamino) benzaldehyde spray solution	1946
CP33	Dragendorff-Munier spray solution	1962
CP34	Iron(III) chloride spray solution	2074
CP31	Molybdatophosphoric acid spray solution	2146
CP30	Ninhydrin spray solution	2159
CP37	Rhodamine B-spray solution	2258
CP32	Rubeanic acid spray solution	2301

H-L-Tle-OMe · HCl

▶ L-tert-Leucine methylester hydrochloride see p. 2098

TMACl

▶ Tetramethylammonium chloride (TMACl) see p. 2401

TMB

▶ 3,3',5,5'-Tetramethylbenzidine see p. 2402
▶ 3,3',5,5'-Tetramethylbenzidine dihydrochloride see p. 2402

TMB · 2 HCl

▶ 3,3',5,5'-Tetramethylbenzidine dihydrochloride see p. 2402

TMCS

▶ Trimethylchlorosilane (TMCS) see p. 2419

TMS

▶ Tetramethylsilane see p. 2402

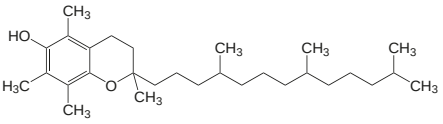
TMSDEA

▶ N-(Trimethylsilyl)-diethylamine (TMSDEA) see p. 2419

TMSH in methanol

▶ Trimethylsulfonium hydroxide in methanol see p. 2420

DL-α-Tocopherol



Vitamin E
$C_{29}H_{50}O_2$
M 430,72 g/mol
[10191-41-0] • EC No. 233-466-0
WGK 1

DL-α-Tocopherol

≥96 %, Ph.Eur., oily

Storage temp.: +4 °C
Transport temp.: room temp.

Guarantee analysis:

Appearance. ..... yellow-brown, oily liquid
Assay (GC). ..... 96,0-102,0 %
Identity (IR). ..... complies
Optical rotation (10 % in abs. EtOH). ..-0,01° to +0,01°
Related substances (GC)..... complies
Related substances:
Impurity A. ..... ≤0,5 %
Impurity B. ..... ≤1,5 %
Sum of impurities C and D. ..... ≤1,0 %
Any other impurities. ..... ≤0,25 %
Total impurities. ..... ≤2,5 %
Residual solvents. ..... complies
Elemental impurities. ..... complies

3806.2	25 g	glass	32,15 €
3806.1	100 g	glass	83,75 €
3806.3	250 g	glass	170,95 €

DL-α-Tocopherol

ROTI®STAR Primary Standard

Storage temp.: -20 °C
Transport temp.: cooled

Type analysis:

Assay (HPLC). ..... ≥92,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤1,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE16.1	250 mg	glass	751,45 €

DL-α-Tocopherol

ROTICHROM® Working Standard

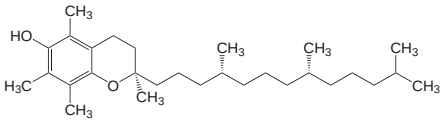
Storage temp.: -20 °C
Transport temp.: room temp.

Type analysis:

Assay (GC). ..... ≥90,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC16.1	250 µl	glass	125,70 €

RRR-α-Tocopherol



Vitamin E
$C_{29}H_{50}O_2$
M 430,7 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[59-02-9] • EC No. 200-412-2
WGK 1

RRR-α-Tocopherol
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC).....≥92,0 %
Residual solvents (GC).....≤1,0 %
Water (KF).....≤1,0 %
Assay (qNMR).....≥85,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

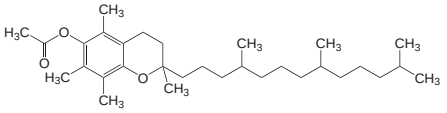
NE18.1	250 mg	glass	805,20 €

RRR-α-Tocopherol
ROTICHROM® Working Standard

Type analysis:
Assay (GC).....≥85,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC18.1	250 µl	glass	125,70 €

DL-α-Tocopherol acetate



Vitamin E acetate
$C_{31}H_{52}O_3$
M 472,76 g/mol
D 0,959
[7695-91-2] • EC No. 231-710-0
WGK 1

DL-α-Tocopherol acetate
≥96,5 %, Ph.Eur., oily
Storage temp.: +4 °C

Guarantee analysis:
Appearance.....greenish-yellow, oily liquid
Assay (GC).....96,5-102,0 %
Identity.....complies
Impurities (A, B, C).....complies

3805.2	25 g	glass	28,95 €
3805.1	100 g	glass	75,15 €
3805.3	250 g	glass	177,40 €

DL-α-Tocopherol acetate
ROTI®STAR Primary Standard

Type analysis:
Assay (GC).....≥95,0 %
Residual solvents (GC).....≤1,0 %
Water (KF).....≤1,0 %
Assay (qNMR).....≥93,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE17.1	250 mg	glass	805,20 €

DL-α-Tocopherol acetate
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC).....≥90,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC17.1	250 µl	glass	125,70 €

Todd-Hewitt-Broth

Todd-Hewitt-Broth
for microbiology
For cultivation of β-hemolytic streptococci for serological typing.
Application: Use 30 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

Formulation:
Heart infusion.....3,1 g/l
Peptone.....20 g/l
Glucose.....2 g/l
Sodium carbonate.....2,5 g/l
Sodium chloride (NaCl).....2 g/l
Disodium phosphate.....0,4 g/l
pH value.....7,8 ±0,2

X936.1	500 g	plastic	90,85 €
Original pack 6 x 500 g			86,31/500 g

For further information, please see page 1467

Toluene

Methylbenzene
C_7H_8
M 92,14 g/mol
D ~0,87 • bp 110-111 °C
mp -95 °C • flp 6 °C
Solubility: 520 mg/l (H_2O, 20 °C)
[108-88-3] • EC No. 203-625-9
UN No. 1294 • ADR 3 II • WGK 2
Danger
H225-H304-H361d-H373-H315-H336

Toluene
ROTISOLV® HPLC

Guarantee analysis:
Assay (GC).....≥99,9 %
Water (KF).....≤0,01 %
Free acid.....0,001 %
Non volatile matter.....≤0,0005 %
Layer thickness d = 1 cm water in comparison
Transmission:
350 nm.....≥99 %
300 nm.....≥80 %
290 nm.....≥50 %
Filtered through 0,2 µm membrane and filled under protective gas.

7346.2	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
7346.1	2,5 l	glass	77,95 €
Original pack 4 x 2,5 l			74,05/2,5 l

For further information, please see page 1650

Toluene
ROTISOLV® ≥99,8 %, GC Ultra Grade
For gaschromatographic residue analysis.

Guarantee analysis:
Assay (GC).....≥99,8 %
Colour (APHA).....≤10
Water (KF).....≤0,01 %
Free acid (as CH_3COOH).....≤0,003 %
Evaporation residue.....≤0,0003 %
GC/ECD dioxins, furans and PCBs (as lindane).....≤5 ng/l
GC/ECD pesticides (as lindane).....≤5 ng/l
GC/NPD pesticides (as parathion).....≤5 ng/l
PAH-test (less than 2 ppb, HPLC).....complies
Filtered through 0,2 µm membrane and filled under protective gas.

KK46.1	2,5 l	glass	75,80 €
Original pack 4 x 2,5 l			72,01/2,5 l

Toluene
ROTISOLV® ≥99,8 %, Pestilyse® plus
For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:
Assay (GC).....≥99,8 %
Colour (APHA).....≤10
Water (KF).....≤0,01 %
Free acid (as CH_3COOH).....≤0,003 %
Evaporation residue.....≤0,0003 %
GC/FID suitability (as 2-octanol).....≤25 ng/ml
GC/ECD suitability (as heptachloro epoxide).....≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane).....≤5 ng/l
GC/ECD pesticides (as lindane).....≤5 ng/l
GC/NPD pesticides (as parathion).....≤10 ng/l
Oil index (any hydrocarbon C_{10}-C_{40}).....≤0,1 mg/l
PAH-test (less than 2 ppb, HPLC).....complies
Fluorescence (as quinine):
254 nm.....≤1 ppb
365 nm.....≤1 ppb

7591.1	2,5 l	glass	64,00 €
Original pack 4 x 2,5 l			60,80/2,5 l

Toluene
ROTISOLV® ≥99,8 %, Pestilyse®
For residue and environmental analysis.

Guarantee analysis:
Assay (GC).....≥99,8 %
Water (KF).....≤0,02 %
Acidity.....≤0,0005 meq/g
Evaporation residue.....≤0,0005 %
GC/ECD (individual signal as lindane).....≤5 ng/l
GC/PND (individual signal as ethylparathion).....≤10 ng/l

T166.2	1 l	glass	34,30 €
Original pack 6 x 1 l			32,59/1 l
T166.1	2,5 l	glass	62,25 €
Original pack 4 x 2,5 l			59,14/2,5 l
T166.3	4 l	glass	96,65 €

Toluene

ROTISOLV® ≥99,8 %, UV/IR-Grade

For chromatography and spectroscopy

Guarantee analysis:

Assay (GC) ≥99,8 %
Water (KF) ≤0,01 %
Acidity ≤0,0005 meq/g
Evaporation residue ≤0,0005 %
Transmission:
350 nm ≥98 %
340 nm ≥96 %
330 nm ≥95 %
320 nm ≥90 %

4445.1	2,5 l	glass	60,10 €
Original pack 4 x 2,5 l			57,10/2,5 l

Toluene

ROTIDRY®Sept ≥99,5 % (≤30 ppm H_2O)

Dried; in a septum bottle

Guarantee analysis:

Assay (GC) ≥99,5 %
Colour (APHA) ≤10
Water (KF) ≤0,003 %
Acidity (as CH_3COOH) ≤0,002 %
Evaporation residue ≤0,001 %

5191.1	250 ml	glass	38,60 €

Toluene

ROTIDRY® ≥99,5 % (≤50 ppm H_2O)

Dried; for analysis and organic synthesis.

Guarantee analysis:

Assay (GC) ≥99,5 %
Colour (Hazen) ≤10
Water (KF) ≤0,005 %
Acidity ≤0,0005 meq/g
Evaporation residue ≤0,0005 %
Filtered through a membrane and filled under protective gas.

AE06.1	1 l	glass	40,75 €
Original pack 6 x 1 l			38,71/1 l

Toluene

ROTIPURAN® ≥99,5 %, p.a., ACS, ISO

Guarantee analysis:

Assay (GC) ≥99,5 %
Acidity ≤0,001 %
Alkalinity ≤0,001 %
Colour (Hazen) ≤10
Water ≤0,03 %
Benzene ≤0,05 %
Thiophene ≤0,0002 %
Sulphur compounds (as S) ≤0,003 %
Matter discoloured by H_2SO_4 complies
Evaporation residue ≤0,001%
Lead (Pb) ≤0,00001 %
Cadmium (Cd) ≤0,000005 %
Calcium (Ca) ≤0,00005 %
Chromium (Cr) ≤0,000002 %
Iron (Fe) ≤0,00001 %
Cobalt (Co) ≤0,000002 %
Copper (Cu) ≤0,000002 %
Magnesium (Mg) ≤0,00001 %
Manganese (Mn) ≤0,000002 %
Nickel (Ni) ≤0,000002 %
Zinc (Zn) ≤0,00001 %

7115.1	1 l	glass	38,20 €
Original pack 6 x 1 l			36,29/1 l
7115.2	2,5 l	glass	75,15 €
Original pack 4 x 2,5 l			71,39/2,5 l
7115.3	5 l	aluminium	105,90 €
Original pack 2 x 5 l			100,61/5 l
7115.4	25 l	tinplate	299,95 €

Toluene

≥99,5 %, for synthesis

Type analysis:

Appearance clear, colourless
Assay (GC) ≥99,5 %
Density (15 °C) 0,865-0,873
Colour (Hazen) ≤20
Water (KF) ≤0,02 %

9558.1	1 l	glass	26,35 €
Original pack 6 x 1 l			25,03/1 l
9558.3	2,5 l	glass	42,50 €
Original pack 4 x 2,5 l			40,38/2,5 l
9558.2	10 l	tinplate	94,50 €
9558.4	25 l	tinplate	177,40 €

Toluene

ROTISOLV® LSC

For liquid scintillation.

Type analysis:

Assay (GC) ≥99,5 %

3107.1	1 l	glass	46,15 €
Original pack 6 x 1 l			43,84/1 l
3107.2	2,5 l	glass	75,80 €
Original pack 4 x 2,5 l			72,01/2,5 l

Toluene D8

Methylbenzene deuterated
C_7D_8
M 100,19 g/mol
D 0,94 • bp 109 °C
mp -85 °C • flp 4 °C
[2037-26-5] • EC No. 218-009-5
UN No. 1294 • ADR 3 II • WGK 2

Danger

H225-H304-H361d-H373-H315-H336

Toluene D8

99,8 Atom%D

For nuclear magnetic resonance spectroscopy.

Type analysis:

Deuterising degree ≥99,8 %
Water (KF, H_2O+D_2O) ≤0,02 %

7924.1	10 ml	glass	121,40 €
7924.2	10 x 0,75 ml	glass ampoule	122,45 €

Toluene D8

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.

Type analysis:

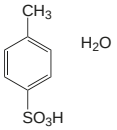
Deuterising degree ≥99,5 %
Water (KF, H_2O+D_2O) ≤0,03 %

CP95.1	10 ml	glass	89,15 €
CP95.2	10 x 0,75 ml	glass ampoule	92,35 €

Toluene-4-sulphone chloramide sodium

▶ Chloramine T trihydrate see p. 1891

p-Toluenesulphonic acid monohydrate



p-Toluenesulphonic acid monohydrate

≥98 %, for synthesis

$C_7H_8O_3S \cdot H_2O$
M 190,22 g/mol
mp 56 °C • flp 180 °C
Solubility: 670 g/l (H_2O, 20 °C)
[6192-52-5] • EC No. 203-180-0
UN No. 2585 • ADR 8 III • WGK 1

Warning H315-H319-H335

Type analysis:

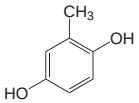
Appearance colourless to pink crystals
Assay ≥98 %
Iron (Fe) ≤0,001 %
Free sulphuric acid ≤0,3 %

4796.3	500 g	plastic	17,75 €
Original pack 6 x 500 g			16,86/500 g
4796.1	1 kg	plastic	27,45 €
Original pack 6 x 1 kg			26,08/1 kg
4796.2	10 kg	plastic	155,90 €

α-Toluene sulphonyl fluoride

▶ Phenylmethyl sulphonyl fluoride (PMSF) see p. 2208

Toluhydroquinone



Toluhydroquinone

≥99 %, for synthesis

2-Methyl hydroquinone, 2,5-Dihydroxytoluene
$C_7H_8O_2$
M 124,14 g/mol
bp 285 °C
mp 125-128 °C • flp 172 °C
Solubility: 77 g/l (H_2O, 25 °C)
[95-71-6] • EC No. 202-443-7
UN No. 3077 • ADR 9 III • WGK 2

Warning

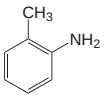
H302+H312-H315-H319-H410

Type analysis:

Assay ≥99,0 %
Melting point 125-128 °C
Ash content ≤0,1 %

4787.1	100 g	plastic	34,30 €
4787.2	500 g	plastic	105,25 €
Original pack 6 x 500 g			99,99/500 g

o-Toluidine



o-Toluidine

≥99,5 %, p.a.
For blood sugar analysis.
2-Methylaniline
C_7H_9N
M 107,16 g/mol
D ~0,998 • bp 200 °C
mp -27 °C • flp 85 °C
Solubility: 15 g/l (H_2O, 20 °C)
[95-53-4] • EC No. 202-429-0
UN No. 1708 • ADR 6.1 II • WGK 3

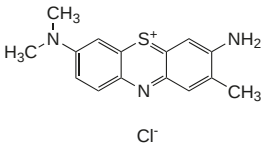
Danger
H301+H331-H350-H400-H319

Guarantee analysis:

Assay (GC)	≥99,5 %
Water	≤0,1 %
Ash content (as SO_4)	≤0,005 %
p-Toluidine and m-Toluidine	≤0,4 %
Chloride (Cl)	≤0,001 %
Iron (Fe)	≤0,0001 %
Heavy metals (as Pb)	≤0,0001 %

4788.1	100 ml	glass	21,00 €
4788.2	500 ml	glass	74,10 €

Toluidine blue O (C.I. 52040)



Toluidine blue O (C.I. 52040)

for microscopy
Basic blue 17
$C_{15}H_{16}Cl\,N_3S$
M 305,83 g/mol
Solubility: 30 g/l (H_2O, 25 °C)
[92-31-9] • EC No. 202-146-2
WGK 2

Type analysis:

Appearance	dark green to black powder
Dye content	≥65 %
Absorption max. (in H_2O)	615-635 nm
Suitability for microscopy	complies

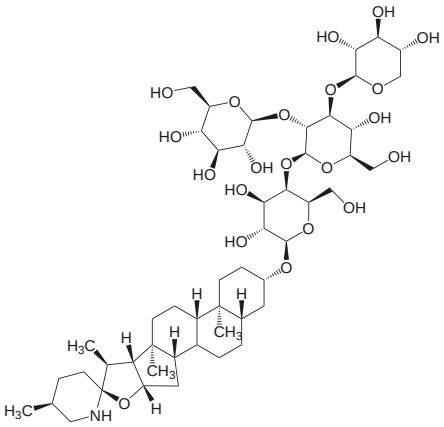
0300.1	5 g	glass	18,85 €
0300.2	10 g	glass	28,95 €
0300.3	25 g	glass	54,75 €
0300.4	100 g	glass	155,90 €

For further information, please see page 1526

Toluylene red

▶ Neutral red (C.I. 50040) see p. 2156

Tomatin



Tomatin

ROTICHROM® TLC
Reference substance for thin layer chromatography
$C_{50}H_{83}NO_{21}$
M 1034,22 g/mol
Storage temp.: +4 °C
[17406-45-0] • EC No. 241-429-5
WGK 1

Warning H302

5676.1	25 mg	glass	52,70 €

Total ionic strength adjustment buffer

▶ TISAB solution I see p. 2409
▶ TISAB solution II see p. 2409
▶ TISAB solution III see p. 2409
▶ TISAB solution IV see p. 2409

TOTU

▶ O-[(Ethoxycarbonyl)cyanomethylenamino]-N,N,N',N'-tetramethyluronium tetrafluoroborate (TOTU) see p. 1978

Toxilic acid

▶ Maleic acid see p. 2116

TPTZ

▶ 2,3,5-Triphenyltetrazolium chloride see p. 2420

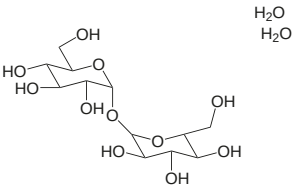
Transfection reagents

▶ DEAE Dextran see p. 1923
▶ DOTAP see p. 1960
▶ Roti®-Fect see p. 2280
▶ Roti®-Fect Plus see p. 2280
▶ Roti®-Insectofect see p. 2285

Transformation kit

▶ Roti®-Transform see p. 2300

D(+)-Trehalose dihydrate



Mycose
$C_{12}H_{22}O_{11} \cdot 2\,H_2O$
M 378,24 g/mol
mp 97 °C
[6138-23-4] • EC No. 202-739-6
WGK 1

D(+)-Trehalose dihydrate

CELLPURE® ≥98 %
For cell culture and biochemistry.

Guarantee analysis:

Endotoxins	≤2,4 E.U./g
Appearance	white to off-white, cryst. powder
Assay	98,0-101,0 %
pH value (10 % in H_2O)	4,5-6,5
Water (KF)	9,0-11,0 %
Specific rotation $[\alpha]_D^{20}$ (c=10 in H_2O)	+197° to 201°
Residue on ignition	≤0,1 %
Chloride (Cl)	≤0,05 %
Sulphate (SO_4)	≤0,05 %
Heavy metals	≤0,0005 %
Total nitrogen (as N)	≤0,005 %
Ethanol	≤0,5 %
Methanol	≤0,5 %

8897.1	10 g	plastic	30,00 €
8897.2	25 g	plastic	51,10 €
8897.3	50 g	plastic	81,60 €
8897.4	100 g	plastic	145,05 €

D(+)-Trehalose dihydrate

≥99 %, for biochemistry

Type analysis:

Appearance	white powder
Assay (dry substance)	≥99,0 %
Water	≤11,0 %
Ash content	≤0,05 %

5151.1	5 g	plastic	13,90 €
5151.2	25 g	plastic	38,60 €
5151.4	50 g	plastic	65,05 €
5151.3	250 g	plastic	300,50 €

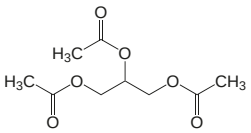
Trethylene

▶ Trichloroethylene see p. 2415

Tri

▶ Trichloroethylene see p. 2415

Triacetin



Triacetin
≥99 %
Glyceryl triacetate, 1,2,3-Triacetoxypropane
$C_9H_{14}O_6$
M 218,21 g/mol
D ~1,16 • bp 258-260 °C
mp -78 °C • flp 138 °C
Solubility: 64 g/l (H_2O, 20 °C)
[102-76-1] • EC No. 203-051-9 • WGK 1

Type analysis:
Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99,0 %
Density (d 20 °C/4 °C). 1,156-1,160
Refractive index n_D^{20}. 1,430-1,432

6317.1	100 ml	glass	27,45 €

1,2,3-Triacetoxy-propane
▶ Triacetin see p. 2414

sym-Triaminotriazine
▶ Melamine see p. 2125

2,4,6-Triamino-1,3,5-triazine
▶ Melamine see p. 2125

1,2,4-Triazine-3,5-(2H,4H)-dione
▶ 6-Azauracil see p. 1820

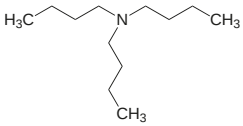
1,2,4-Triazole

1,2,4-Triazole
≥99 %
Pyrrodiazole
$C_2H_3N_3$
M 69,07 g/mol
D 1,15 • bp 259-261 °C
mp 119-121 °C • flp 170 °C
Solubility: 547 g/l (H_2O, 22 °C)
Storage temp.: +4 °C
[288-88-0] • EC No. 206-022-9 • WGK 2
Warning H302-H319-H361d

Type analysis:
Assay (titr.). ..... ≥99,0 %
Solution (10 % in ethanol). ..... colourless, clear
Water (KF). ..... ≤0,5 %
Melting point. ..... 119-121 °C

5242.1	25 g	plastic	22,05 €
5242.2	100 g	plastic	62,25 €

Tributylamine

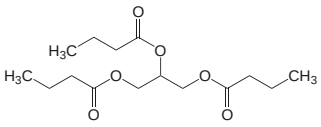


Tributylamine
≥99 %, for synthesis
N,N-Dibutyl-1-butanamine
$C_{12}H_{27}N$
M 185,35 g/mol
bp 215 °C
mp <-70 °C • flp 70 °C
[102-82-9] • EC No. 203-058-7
UN No. 2542 • ADR 6.1 II • WGK 2
Danger H302-H310+H330-H315

Type analysis:
Assay. ..... ≥99,0 %
Water ..... ≤0,2 %
Colour (APHA) ..... ≤20

4089.1	100 ml	glass	16,05 €
4089.2	500 ml	glass	28,50 €
4089.3	1 l	glass	38,20 €
Original pack 6 x 1 l			36,29/1 l
4089.4	2,5 l	glass	67,20 €
Original pack 4 x 2,5 l			63,84/2,5 l

Tributyrin



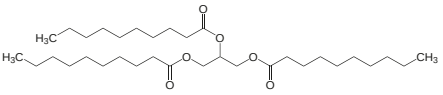
Tributyrin
≥97 %, for biochemistry
Glyceryl tributyrate
$C_{15}H_{26}O_6$
M 302,36 g/mol
D ~1,03 • bp 287-288 °C
mp -75 °C • flp 174 °C
Storage temp.: +4 °C
[60-01-5] • EC No. 200-451-5
WGK 1

Guarantee analysis:
Appearance. ..... clear, colourless to yellow liquid
Assay (GC). ..... ≥97 %

4813.1	100 ml	glass	82,70 €

Tricalcium citrate
▶ tri-Calcium dicitrate tetrahydrate see p. 1870

Tricaprin



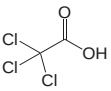
Tricaprin
≥98 %
Glyceryl tricaproate
$C_{33}H_{62}O_6$
M 554,86 g/mol
mp ~31 °C
Storage temp.: +4 °C
[621-71-6] • EC No. 210-702-0

Type analysis:
Assay (GC). ..... ≥98 %
Melting point. ..... 31-35 °C

7252.1	10 g	glass	128,50 €

Trichloroacetaldehyde hydrate
▶ Chloral hydrate see p. 1890

Trichloroacetic acid



TCA
CCl_3COOH
M 163,40 g/mol
D 1,61 • bp 197 °C
mp 59 °C • flp >110 °C
Solubility: 1300 g/l (H_2O, 20 °C)
[76-03-9] • EC No. 200-927-2
UN No. 1839 • ADR 8 II • WGK 2
Danger H314-H400-H410-H335

Trichloroacetic acid
≥99 %, p.a.
Protein precipitant, fixative for microscopy.

Guarantee analysis:
Appearance. ..... scales, almost colourless
Assay. ..... ≥99,0 %
Nitrate (NO_3). ..... ≤0,002 %
Phosphate (PO_4). ..... ≤0,0005 %
Sulphate (SO_4). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,002 %
Loss on drying. ..... ≤1,0 %
Sulphated ash. ..... ≤0,03 %

8789.2	500 g	glass	55,80 €
Original pack 6 x 500 g			53,01/500 g
8789.1	1 kg	glass	95,60 €
Original pack 6 x 1 kg			90,82/1 kg

Trichloroacetic acid

≥99 %, Ph.Eur, extra pure

For biochemistry.

Guarantee analysis:

Assay ≥99,0 %
Appearance of solution. complies
Identity. complies
Chloride (Cl). ≤0,01 %
Sulphate (SO_4). ≤0,02 %
Heavy metals (as Pb) ≤0,002 %
Sulphated ash ≤0,1 %

3744.2	500 g	glass	54,30 €
Original pack 6 x 500 g			51,59/500 g
3744.1	1 kg	glass	92,35 €
Original pack 6 x 1 kg			87,73/1 kg

Trichloroacetic acid solution

TCA solution
CCl_3COOH
M 163,40 g/mol
[76-03-9] • EC No. 200-927-2
UN No. 2564 • ADR 8 II • WGK 2

Danger H314-H335-H411

Trichloroacetic acid solution 20 %

p.a., 20 % aqueous solution

For removing protein from biological preparations.

7437.1	1 l	glass	32,80 €
Original pack 6 x 1 l			31,16/1 l

Trichloroacetic acid solution 10 %

p.a., 10 % aqueous solution

For removing protein from biological preparations.

9383.2	1 l	glass	26,80 €
Original pack 6 x 1 l			25,46/1 l
9383.1	10 l	plastic	150,00 €

Trichlorobismuthine

▶ Bismuth(III) chloride see p. 1840

Trichloroethene

▶ Trichloroethylene see p. 2415

Trichloroethylene

Trichloroethylene

≥98 %, for synthesis, stab.

Trichloroethene, Acetylene trichloride, Trethylene, TCE
C_2HCl_3
M 131,39 g/mol
D ~1,46 • bp 87 °C
mp -86,4 °C
Solubility: 1 g/l (H_2O, 20 °C)
[79-01-6] • EC No. 201-167-4
UN No. 1710 • ADR 6.1 III • WGK 3

Danger
H350-H341-H315-H319-H336-H412

Type analysis:

Assay (GC) ≥98 %
Ethanol (GC). ≤1,0 %
Density (20 °C). 1,440-1,472
Water ≤0,02 %

9579.1	1 l	glass	53,65 €
Original pack 6 x 1 l			50,97/1 l
9579.3	2,5 l	glass	105,25 €
Original pack 4 x 2,5 l			99,99/2,5 l
9579.2	10 l	tinplate	342,95 €

Trichloromethane/Chloroform

Chloroform

$CHCl_3$
M 119,38 g/mol
D ~1,48 • bp 62 °C
mp -63 °C
Solubility: 8,2 g/l (H_2O, 20 °C)
[67-66-3] • EC No. 200-663-8
UN No. 1888 • ADR 6.1 III • WGK 3

Danger
H331-H372-H351-H361d-H302-H315-H319

Trichloromethane/Chloroform

ROTISOLV® HPLC

Guarantee analysis:

Assay (GC) ≥99,9 %
Water ≤0,005 %
Free acid. ≤0,0001 %
Non volatile matter. ≤0,0001 %
Transmission:
275 nm. ≥99 %
255 nm. ≥80 %
250 nm. ≥50 %
Filtered through 0,2 µm membrane and filled under protective gas.
Stabilized with 1 % ethanol.

7331.2	1 l	glass	39,70 €
Original pack 6 x 1 l			37,72/1 l
7331.1	2,5 l	glass	83,35 €
Original pack 4 x 2,5 l			79,18/2,5 l

For further information, please see page 1650

Trichloromethane/Chloroform

ROTISOLV® ≥99,9 %, Pestilyse® plus

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

Guarantee analysis:

Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,01 %
Free acid (as HCl). ≤0,0005 %
Evaporation residue. ≤0,0003 %
GC/ECD suitability (as heptachloro epoxide). ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤10 ng/l
Oil index (any hydrocarbon C_{10}-C_{40}). ≤0,1 mg/l
PAH-test (less than 2 ppb, HPLC) complies
Fluorescence (as quinine):
254 nm. ≤1 ppb
365 nm. ≤1 ppb
Stabilized with 30-60 ppm Amylene

7554.1	2,5 l	glass	75,15 €
Original pack 4 x 2,5 l			71,39/2,5 l

Trichloromethane/Chloroform

ROTISOLV® ≥99,8 %, Pestilyse®

For residue and environmental analysis.

Guarantee analysis:

Assay (GC). ≥99,8 %
Water (KF). ≤0,01 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
GC/ECD (individual signal as lindane). ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l
Stabilized with 1 % ethanol.

T901.1	2,5 l	glass	74,10 €
Original pack 4 x 2,5 l			70,40/2,5 l

Trichloromethane/Chloroform

ROTISOLV® ≥99,8 %, UV/IR-Grade

For chromatography and spectroscopy.

Guarantee analysis:

Assay (GC). ≥99,8 %
Water (KF). ≤0,01 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
Transmission:
280 nm. ≥98 %
260 nm. ≥90 %
250 nm. ≥50 %
Stabilized with approx. 1 % ethanol

4432.1	2,5 l	glass	64,40 €
Original pack 4 x 2,5 l			61,18/2,5 l

Trichloromethane/Chloroform

ROTIDRY® ≥99,8 % (≤50 ppm H_2O)

Dried, for analysis and organic synthesis.

Guarantee analysis:

Assay (GC). ≥99,8 %
Water (KF). ≤0,005 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
Stabilized with approx. 50 ppm amylene

4423.1	1 l	glass	27,85 €
Original pack 6 x 1 l			26,46/1 l

Trichloromethane/Chloroform

ROTIPURAN® ≥99 %, p.a.

Guarantee analysis:

Assay (GC). ≥99 %
Other chlorinated compounds. complies
Water (KF). ≤0,02 %
Chloride (Cl). complies
Acids (HCl). ≤0,001 %
Aluminium (Al). ≤0,00005 %
Barium (Ba). ≤0,00001 %
Lead (Pb). ≤0,000005 %
Cadmium (Cd). ≤0,000005 %
Calcium (Ca). ≤0,00005 %
Chromium (Cr). ≤0,000002 %
Cobalt (Co). ≤0,000002 %
Iron (Fe). ≤0,00005 %
Copper (Cu). ≤0,00001 %
Manganese (Mn). ≤0,000002 %
Nickel (Ni). ≤0,00001 %
Zinc (Zn). ≤0,000005 %
Tin (Sn). ≤0,00001 %
Evaporation residue. ≤0,0015 %
Stabilized with 0,6-1% Ethanol

3313.4	100 ml	glass	16,70 €
3313.1	1 l	glass	42,50 €
Original pack 6 x 1 l			40,38/1 l
3313.2	2,5 l	glass	88,70 €
Original pack 4 x 2,5 l			84,27/2,5 l
3313.5	25 l	tinplate	461,20 €

Trichloromethane/Chloroform

≥99 %, DAB, BP, extra pure

Guarantee analysis:

Assay (GC). ≥99,0 %
Identity. complies
Density (d 20 °C/20 °C). 1,479-1,484
Boiling range. 59-62 °C
Appearance of the substance. complies
Acidity/alkalinity. complies
Free chlorine (Cl). complies
Non volatile matter. ≤0,002 %
Chloride (Cl). ≤0,0005 %
Water. ≤0,05 %
Aldehydes. complies
Other chlorinated compounds. complies
Reaction with H_2SO_4. complies
Foreign odour. complies
Stabilized with 0,6-1% Ethanol

6340.4	100 ml	glass	16,70 €
6340.1	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
6340.2	2,5 l	glass	68,70 €
Original pack 4 x 2,5 l			65,27/2,5 l
6340.5	25 l	tinplate	332,20 €

Trichloromethane/Chloroform

≥99 %, for synthesis

Type analysis:

Appearance. clear, colourless liquid
Assay (GC). ≥99,0 %
Density (20 °C). 1,478-1,492
Water. ≤0,01 %
Stabilized with 20-55 ppm amylene.

Y015.1	1 l	glass	27,45 €
Original pack 6 x 1 l			26,08/1 l
Y015.2	2,5 l	glass	50,45 €
Original pack 4 x 2,5 l			47,93/2,5 l
Y015.3	10 l	tinplate	170,95 €
Y015.4	25 l	tinplate	321,45 €

Trichloromethane/Chloroform D1

Chloroform D1, Deuterochloroform
CCl_3D
M 120,39 g/mol
D 1,50 • bp 60 °C
mp -64 °C
[865-49-6] • EC No. 212-742-4
UN No. 1888 • ADR 6.1 III • WGK 2

Danger

H331-H372-H351-H361d-H302-H315-H319

Trichloromethane/Chloroform D1

100 Atom%D

For nuclear magnetic resonance spectroscopy.

Guarantee analysis:

Deuterising degree. ≥99,95 %
Water (KF, H_2O+D_2O). ≤0,01 %

CP91.1	10 x 0,75 ml	glass ampoule	30,00 €

Trichloromethane/Chloroform D1

99,8 Atom%D

For nuclear magnetic resonance spectroscopy.

Guarantee analysis:

Deuterising degree. ≥99,8 %
Water (KF, H_2O+D_2O). ≤0,02 %

7903.1	10 x 0,75 ml	glass ampoule	20,35 €

Trichloromethane/ Chloroform D1

99,8 Atom%D, stab. with Ag

For nuclear magnetic resonance spectroscopy.

Guarantee analysis:

Deuterising degree. ≥99,8 %
Water (KF, H_2O+D_2O). ≤0,02 %

AE54.4	25 ml	glass	24,20 €
AE54.1	100 ml	glass	53,65 €
AE54.3	100 ml	septum bottle	54,75 €
AE54.2	500 ml	glass	224,70 €

Trichloromethane/Chloroform D1 with TMS (0,03 vol.%)

Chloroform D1 with TMS
CCl_3D
M 120,39 g/mol
D 1,50 • bp 60 °C
mp -64 °C
[865-49-6] • EC No. 212-742-4
UN No. 1888 • ADR 6.1 III • WGK 3

Danger

H302-H331-H315-H319-H351-H361d-H372

Trichloromethane/Chloroform D1 with TMS (0,03 vol.%)

99,8 Atom%D

For nuclear magnetic resonance spectroscopy.

Guarantee analysis:

Deuterising degree. ≥99,8 %
Water (KF, H_2O+D_2O). ≤0,02 %
Trimethylsilane (TMS). 0,03 %

7905.1	10 x 0,75 ml	glass ampoule	22,50 €

Trichloromethane/Chloroform D1 with TMS (0,03 vol.%)

99,8 Atom%D, stab. with Ag

For nuclear magnetic resonance spectroscopy.

Guarantee analysis:

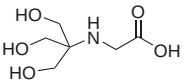
Deuterising degree. ≥99,8 %
Water (KF, H_2O+D_2O). ≤0,02 %
Tetramethylsilane (TMS). 0,02-0,04 %

AE59.1	100 ml	glass	54,75 €

Trichlorostibane

▶ Antimony(III) chloride see p. 1811

TRICINE



TRICINE

PUFFERAN® ≥99 %

N-Tris-(hydroxymethyl)-methyl-glycine
$C_6H_{13}NO_5$
M 179,2 g/mol
mp 187 °C
Solubility: 100 g/l (H_2O, 20 °C)
[5704-04-1] • EC No. 227-193-6
WGK 1

Guarantee analysis:

Assay. ≥99 %
Loss on drying. ≤1,0 %
pH value (1 % in H_2O, 25 °C). 4,0-6,0
Solubility (0,1 M in H_2O). clear, soluble
UV-absorption (0,1 M in H_2O):
280 nm. ≤0,02
260 nm. ≤0,04

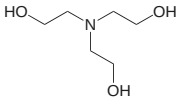
6977.1	50 g	plastic	27,85 €
6977.4	250 g	plastic	109,55 €
6977.2	500 g	plastic	209,65 €
Original pack 6 x 500 g			199,17/500 g
6977.3	1 kg	plastic	317,15 €
Original pack 6 x 1 kg			301,29/1 kg
6977.5	2,5 kg	plastic	639,65 €

For further information, please see page 1309

Tricyclo[3.3.1.1^{3,7}]decane

▶ Adamantane see p. 1772

Triethanolamine



Triethanolamine

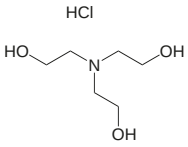
≥99 %, for synthesis
Tris(2-hydroxyethyl)-amine, TEA
$C_6H_{15}NO_3$
M 149,19 g/mol
D ~1,12 • bp 360 °C
mp 21 °C • flp 190 °C
[102-71-6] • EC No. 203-049-8
WGK 1

Type analysis:

Assay (GC)	≥99 %
Water	≤0,1 %
Colour number (APHA)	≤30
Diethanolamine (GC)	≤0,4 %
2-Aminoethanol (GC)	≤0,1 %
Highly boiling matter (GC)	≤0,5 %

6300.1	1 l	plastic	26,35 €
Original pack 6 x 1 l			25,03/1 l
6300.3	2,5 l	plastic	43,55 €
Original pack 4 x 2,5 l			41,37/2,5 l
6300.2	10 l	plastic	138,70 €

Triethanolamine hydrochloride



Triethanolamine hydrochloride

≥99 %, for biochemistry
Tris-(2-hydroxyethyl)-ammoniumchloride
$C_6H_{15}NO_3 \cdot HCl$
M 185,65 g/mol
D ~1,12
mp 174-182 °C
[637-39-8] • EC No. 211-284-2
WGK 1

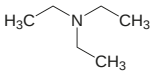
Type analysis:

Appearance	white cryst. powder
Assay (titr. dry substance)	≥99,0 %
Water (KF)	≤0,5 %
Melting point	174-182 °C

4804.1	100 g	plastic	60,10 €

For further information, please see page 1309

Triethylamine (TEA)



Triethylamine (TEA)

≥99,5 %, for synthesis
N,N-Diethylethane amine, TEA
$C_6H_{15}N$
M 101,19 g/mol
D 0,73 • bp 90 °C
mp -115 °C • flp -11 °C
[121-44-8] • EC No. 204-469-4
UN No. 1296 • ADR 3 (8) II • WGK 1
Danger
H225-H314-H302-H311+H331-H335

Type analysis:

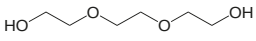
Assay (GC)	≥99,5 %
Colour (APHA)	≤15
Water	≤0,1 %

X875.1	100 ml	glass	12,40 €
X875.2	500 ml	glass	17,10 €
X875.3	1 l	glass	25,70 €
Original pack 6 x 1 l			24,42/1 l
X875.4	2,5 l	glass	44,65 €
Original pack 4 x 2,5 l			42,42/2,5 l

Triethylendiamine

▶ DABCO® see p. 1921

Triethylene glycol



Triethylene glycol

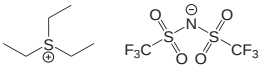
≥98 %, for synthesis
Triglycol
$C_6H_{14}O_4$
M 150,18 g/mol
D 1,12 • bp 285-295 °C
mp -7 °C • flp 117 °C
[112-27-6] • EC No. 203-953-2
WGK 1

Type analysis:

Assay (GC)	≥98 %
Colour (APHA)	≤50
Density (20 °C)	1,122-1,127
Refractive index n_D^{20}	1,453-1,459

4520.1	1 l	glass	23,55 €
Original pack 6 x 1 l			22,37/1 l
4520.3	2,5 l	glass	45,05 €
Original pack 4 x 2,5 l			42,80/2,5 l
4520.2	10 l	plastic	128,50 €

Triethylsulfonium-bis-(trifluoromethylsulphonyl)-imide (S222 BTA)



Triethylsulfonium-bis-(trifluoromethylsulphonyl)-imide (S222 BTA)

≥99 %
Ionic liquid
S222 BTA
$C_8H_{15}F_6NO_4S_3$
M 399,38 g/mol
D 1,462
[321746-49-0]
WGK 3
Warning H315-H319-H335

Type analysis:

Appearance	clear, colourless
Assay	≥99 %
Water (KF)	≤0,01 %
Halogens	≤0,01 %

2096.1	25 g	glass	428,95 €
2096.2	100 g	glass	772,95 €

For further information, please see page 1590

2,2,2-Trifluor-N,O-bis(trimethylsilyl)-acetamide

▶ N,O-Bis(trimethylsilyl)-trifluoroacetamide see p. 1842

Trifluoroacetic acid (TFA)

TFA
$C_2HF_3O_2$
M 114,02 g/mol
D 1,48 • bp 72 °C
mp -15 °C
[76-05-1] • EC No. 200-929-3
UN No. 2699 • ADR 8 I • WGK 2
Danger H290-H314-H332-H412

Trifluoroacetic acid (TFA)

PEPTIPURE® ≥99,9 %, for (peptide) synthesis

Guarantee analysis:

Assay	≥99,9 %
Water	≤0,02 %
Non volatile matter	≤0,002 %

P088.1	100 ml	glass	64,00 €
P088.2	500 ml	glass	184,40 €
P088.3	1 l	glass	321,45 €
Original pack 6 x 1 l			305,38/1 l

Trifluoroacetic acid (TFA)

≥99,9 %

Acid for biochemistry and synthesis.

Type analysis:

Appearance. ..... clear, colourless liquid
Assay ..... ≥99,9 %
Water (KF) ..... ≤0,1 %
Chloride (Cl) ..... ≤0,001 %
Fluoride (F) ..... ≤0,005 %
Sulphate (SO_4) ..... ≤0,001 %

6957.1	500 ml	glass	113,45 €
6957.2	1 l	glass	198,90 €
Original pack 6 x 1 l			188,96/1 l
6957.3	2,5 l	glass	428,95 €
Original pack 4 x 2,5 l			407,50/2,5 l

Trifluoroacetic acid D1

Trifluoroacetic acid D1

99,5 Atom%D

For nuclear magnetic resonance spectroscopy.
Deuterotrifluoroacetic acid, TFA-D
$C_2DF_3O_2$
M 115,03 g/mol
D 1,50 • bp 71 °C
mp -15 °C
[599-00-8] • EC No. 209-961-2
UN No. 2699 • ADR 8 I • WGK 2

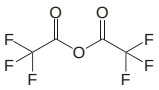
Danger H314-H290-H412-H332

Guarantee analysis:

Deuterising degree. ..... ≥99,5 %
Water (KF, H_2O+D_2O) ..... ≤0,05 %

CP97.1	10 ml	glass ampoule	57,95 €

Trifluoroacetic anhydride (TFAA)



Trifluoroacetic anhydride (TFAA)

≥99 %, for GC

Acylation reagent
TFAA
$C_4F_6O_3$
M 210,03 g/mol
D 1,51 • bp ~40 °C
mp -65 °C
[407-25-0] • EC No. 206-982-9
UN No. 3265 • ADR 8 I • WGK 2

Danger H314-H332-H412-EUH014

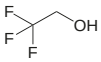
Type analysis:

Appearance. ..... colourless liquid
Assay (titr.) ..... ≥99 %
Sulphate (SO_4) ..... ≤0,05 %
Chloride (Cl) ..... ≤0,005 %
Fluoride (F) ..... ≤0,005 %

0027.1	100 g	glass	96,65 €

For further information, please see page 1628

2,2,2-Trifluoroethanol



2,2,2-Trifluoroethanol

>99,8 %, for synthesis

β,β,β-Trifluoroethylalcohol
CF_3CH_2OH
M 100,04 g/mol
bp ~75 °C
mp -43,5 °C • flp 33 °C
[75-89-8] • EC No. 268-546-4
UN No. 1992 • ADR 3 (6.1) III • WGK 1

Danger H226-H301+H331-H361f-H373-H318-H312-H315

Type analysis:

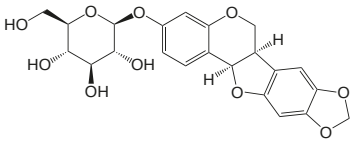
Appearance. ..... clear liquid
Assay (GC) ..... >99,8 %
Water (KF) ..... <0,1 %
Chloride (Cl) ..... <0,001 %

CP29.1	100 ml	glass	36,45 €
CP29.2	250 ml	glass	67,20 €
CP29.3	1 l	glass	206,95 €
Original pack 6 x 1 l			196,60/1 l

Trifoliin

▶ Isoquercitrin see p. 2080

Trifolirhizin



Trifolirhizin

ROTICHROM® ~CHR

$C_{22}H_{22}O_{10}$
M 446 g/mol
mp 142-144 °C
[6807-83-6]

4738.1	25 mg	glass	177,40 €

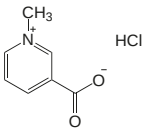
Trifolitin

▶ Kaempferol see p. 2082

Triglycol

▶ Triethylene glycol see p. 2417

Trigonelline hydrochloride



Trigonelline hydrochloride

≥97,5 %, for biochemistry

$C_7H_7NO_2 \cdot HCl$
M 173,61 g/mol
mp ~260 °C
[6138-41-6] • EC No. 228-119-5
WGK 1

Type analysis:

Appearance. ..... white crystals
Assay (arg. titr.) ..... ≥97,5 %

5413.1	1 g	glass	74,10 €

1,2,3-Trihydroxybenzene

▶ Pyrogallol see p. 2246

1,3,5-Trihydroxybenzene

▶ Phloroglucinol dihydrate see p. 2209

3,4,5-Trihydroxy benzoic acid

▶ Gallic acid see p. 2010
▶ Gallic acid monohydrate see p. 2010

4',5,7-Trihydroxyflavanone

▶ Naringenin see p. 2153

3,5,7-Trihydroxyflavone

▶ Galangin see p. 2010

4',5,7-Trihydroxyflavone

▶ Apigenin see p. 1811

5,6,7-Trihydroxyflavone

▶ Baicalein see p. 1824

4',5,7-Trihydroxyisoflavone

▶ Genistein see p. 2013

3,5,7-Trihydroxy-4'-methoxy-flavonone

▶ Hesperetin see p. 2039

2,6,8-Trihydroxypurine

▶ Uric acid see p. 2431

2,4,6-Trihydroxypyrimidine

▶ Barbituric acid see p. 1825

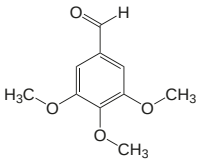
trans-3,4',5-Trihydroxystilbene

▶ Resveratrol see p. 2256

Triiodmethane

▶ Iodoform see p. 2070

3,4,5-Trimethoxybenzaldehyde



3,4,5-Trimethoxybenzaldehyde

≥98 %
$C_{10}H_{12}O_4$
M 196,21 g/mol
bp 163-165 °C
mp 73-76 °C
[86-81-7] • EC No. 201-701-6
WGK 1

Type analysis:
Assay (HPLC). ..... ≥98 %

4831.1	25 g	glass	61,20 €

(1R)-7,7,7-Trimethylbicyclo-[2.2.1]heptan-2-one

▶ (+)-Camphor see p. 1873

Trimethyl carbinol

▶ tert-Butanol see p. 1860

Trimethylchlorosilane (TMCS)

Trimethylchlorosilane (TMCS)

≥99 %, for gas chromatography
Silylation agent
TMCS, Trimethylsilyl chloride, Chlorotrimethylsilane, TMS-Cl
C_3H_9ClSi
M 108,64 g/mol
D 0,86 • bp +57 °C
mp -58 °C • flp -20 °C
[75-77-4] • EC No. 200-900-5
UN No. 1298 • ADR 3 (8) II • WGK 1

Danger H225-H301+H331-H312-H314-EUH014-EUH071

Type analysis:
Appearance. ..... clear liquid
Assay (GC). ..... ≥99,0 %

2338.1	25 g	glass	49,35 €

For further information, please see page 1628

(-)-1,3,3-Trimethyl-2-norbornanone

▶ (-)-Fenchone see p. 1992

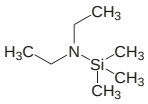
2,2,4-Trimethylpentane

▶ Isooctane see p. 2078

Trimethylsilylchloride

▶ Trimethylchlorosilane (TMCS) see p. 2419

N-(Trimethylsilyl)-diethylamine (TMSDEA)



N-(Trimethylsilyl)-diethylamine (TMSDEA)

≥98 %, for GC
Silylation agent
TMSDEA
$C_7H_{19}NSi$
M 145,32 g/mol
D 0,76 • bp ~126 °C
mp -10 °C • flp 15 °C
[996-50-9] • EC No. 213-637-6
UN No. 2733 • ADR 3 (8) II • WGK 1

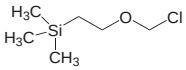
Danger H225-H314

Type analysis:
Assay. ..... ≥98 %

0013.1	25 g	glass	137,10 €

For further information, please see page 1628

2-(Trimethylsilyl)ethoxymethyl chloride



2-(Trimethylsilyl)ethoxymethyl chloride

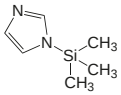
≥95 %, for synthesis
Protective group reagent
SEM-chloride, 2-(Chloromethoxy)ethyltrimethyl silane, Chloromethyl 2-trimethylsilylethyl ether, SEM-Cl
$SiC_6H_{15}OCl$
M 166,72 g/mol
D 0,94 • bp 171 °C
Storage temp.: +4 °C
[76513-69-4] • EC No. 278-483-4
UN No. 2920 • ADR 8 (3) II • WGK 1

Danger H226-H314

Type analysis:

1444.1	1 ml	glass	38,60 €
1444.2	5 ml	glass	99,45 €

N-(Trimethylsilyl)-imidazole (TSIM)



N-(Trimethylsilyl)-imidazole (TSIM)

≥97 %, for GC
Silylation agent
TSIM
$C_6H_{12}N_2Si$
M 140,26 g/mol
D 0,95 • bp 212 °C (dec.)
mp -42 °C
[18156-74-6] • EC No. 242-040-3
UN No. 1993 • ADR 3 II • WGK 1

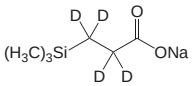
Danger
H225-H315-H319-H335-EUH014

Type analysis:
Assay (GC). ..... ≥97 %

0012.1	10 g	glass	43,55 €

For further information, please see page 1628

3-(Trimethylsilyl)propionic-2,2,3,3 acid sodium salt D4 (TSP-D4)



3-(Trimethylsilyl)propionic-2,2,3,3 acid sodium salt D4 (TSP-D4)

99 Atom%D
For nuclear magnetic resonance spectroscopy.
TSP-D4, Sodium-2,2,3,3-trimethylsilylpropionate D4
$(CH_3)_3SiCD_2CD_2CO_2Na$
M 172,27 g/mol
[24493-21-8] • EC No. 246-286-2
WGK 1

Warning H315-H319-H335

Type analysis:
Deuterising degree. ..... ≥99 %
Appearance. ..... white powder

9922.1	1 g	plastic	132,15 €

Trimethylsulfonium hydroxide in methanol

Trimethylsulfonium hydroxide in methanol

~0,2 M, for GC

Methylation reagent
TMSH in methanol
$C_3H_{10}SO$
M 94,18 g/mol
D 0,79 • bp 65 °C • flp 11 °C
Storage temp.: +4 °C
UN No. 1230 • ADR 3 (6.1) II • WGK 1

Danger
H225-H301+H311+H331-H370

Type analysis:

Appearance. ..... clear, colourless liquid
Methylation of Octanoic acid..... complies

9934.1	10 ml	septum bottle	124,90 €

N,N,N-Trimethyl-1-tetradecan-ammonium bromide

▶ Tetradecyltrimethylammonium bromide (MTAB) see p. 2400

N,N,N'-Trimethylthionin

▶ Azure B (C.I. 52010) see p. 1824

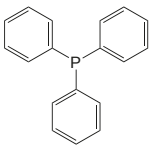
1,3,7-Trimethylxanthine

▶ Caffeine see p. 1867

Triphenylphosphane

▶ Triphenylphosphine see p. 2420

Triphenylphosphine



Triphenylphosphine

≥99,5 %, for synthesis

Triphenylphosphane, PPh_3
$P(C_6H_5)_3$
M 262,29 g/mol
D 1,19 • bp 360 °C
mp ~81 °C • flp 18 °C
[603-35-0] • EC No. 210-036-0 • WGK 2

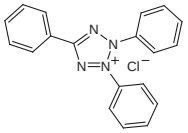
Warning H302-H317-H373-H413

Type analysis:

Appearance. ..... pastilles
Assay..... ≥99,5 %

4110.1	10 g	plastic	12,80 €
4110.2	100 g	plastic	19,90 €
4110.3	250 g	plastic	35,40 €
4110.4	1 kg	plastic	106,45 €
Original pack 6 x 1 kg			101,13/1 kg

2,3,5-Triphenyltetrazolium chloride



2,3,5-Triphenyltetrazolium chloride

≥98 %, p.a.

For microbiology and histochemistry.
For vital staining of cells.
Tetrazolium red, TTC, TTZ, TPTZ
$C_{19}H_{15}ClN_4$
M 334,79 g/mol
mp 243 °C (dec.)
Solubility: ~150 g/l (H_2O, 25 °C)
Storage temp.: +4 °C
[298-96-4] • EC No. 206-071-6
WGK 3

Warning H315-H319-H335

Guarantee analysis:

Assay (arg., dry substance). ..... ≥98,0 %
Loss on drying (120 °C)..... ≤2,0 %
Sulphated ash. ..... ≤0,2 %

KK13.1	10 g	glass	53,25 €
KK13.2	50 g	glass	220,30 €

For further information, please see page 1526

Triple Sugar Iron Agar

Triple Sugar Iron Agar

Ph.Eur., for microbiology

For identification and differentiation of enterobacteria and for determination of *Salmonellae*.
Application: Use 64.6 g for 1 l agar.
Agar medium M (Ph.Eur. 6.0), **TSI agar**
Storage temp.: +20 °C
WGK 1

Guarantee analysis:

Beef extract. ..... 3 g/l
Yeast extract. ..... 3 g/l
Beef- and casein peptone. ..... 20 g/l
Sodium chloride (NaCl). ..... 5 g/l
Lactose monohydrate..... 10 g/l
Saccharose. ..... 10 g/l
Glucose monohydrate. ..... 1 g/l
Ammonium iron(III) citrate. ..... 0,3 g/l
Sodium thiosulphate..... 0,3 g/l
Phenol red. ..... 0,025 g/l
Agar..... 12 g/l
pH value. ..... 7,4 ±0,2

AE49.1	500 g	plastic	81,20 €
Original pack 6 x 500 g			77,14/500 g

For further information, please see page 1467

Tripropylene glycol

Tripropylene glycol

≥98 %, pure

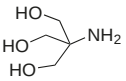
$C_9H_{20}O_4$
M 192,25 g/mol
D 1,02 • bp 268 °C
mp -30 °C • flp 140 °C
[24800-44-0] • EC No. 246-466-0
WGK 1

Type analysis:

Assay (GC). ..... ≥98,0 %
Colour (Hazen)..... ≤20

8698.1	1 l	glass	42,90 €
Original pack 6 x 1 l			40,76/1 l
8698.2	2,5 l	glass	83,35 €
Original pack 4 x 2,5 l			79,18/2,5 l

TRIS



Tris(hydroxymethyl)-aminomethane
$C_4H_{11}NO_3$
M 121,14 g/mol
mp 168-172 °C
Solubility: 800 g/l (H_2O, 20 °C)
[77-86-1] • EC No. 201-064-4
WGK 2

Warning H315-H319-H335

TRIS

PUFFERAN® ≥99,9 %, p.a.

For sensitive assays in molecular biology and cytology.

Guarantee analysis:

Assay (dry substance). ..... ≥99,9 %
In H_2O insoluble matter. ..... ≤0,005 %
pH value (5 % solution). 10,0-11,5
Melting point. ..... 168-172 °C
Water . ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %
Sulphate (SO_4)..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,00005 %
Cadmium (Cd). ..... ≤0,00005 %
Iron (Fe). ..... ≤0,00005 %
Copper (Cu). ..... ≤0,00005 %
Zinc (Zn). ..... ≤0,00005 %
UV-absorption:
260 nm. ..... ≤0,03
280 nm. ..... ≤0,02
430 nm. ..... ≤0,004

4855.1	500 g	plastic	51,50 €
Original pack 6 x 500 g			48,93/500 g
4855.2	1 kg	plastic	92,35 €
Original pack 6 x 1 kg			87,73/1 kg
4855.5	2,5 kg	plastic	190,85 €
4855.3	5 kg	plastic	381,65 €
4855.4	10 kg	plastic	725,65 €
4855.7	25 kg	plastic	1494,25 €

For further information, please see page 1309

TRIS

≥99,9 %, Blotting-Grade

For Western blotting and immunodetection.

Type analysis:

Appearance. ..... white cryst. powder
Assay (titr.). ..... ≥99,9 %
Loss on drying. ..... ≤0,5 %
pH value (5 % solution). ..... 10,8 ±0,8
Solubility (40 % w/w in H_2O). ..... complies
In H_2O insoluble matter. ..... ≤0,005 %
Sulphated ash. ..... ≤0,1 %
Lead (Pb). ..... ≤0,0001 %
Chloride (Cl). ..... ≤0,001 %
Protease. ..... none detected

0188.1	250 g	plastic	36,45 €
0188.2	500 g	plastic	62,90 €
Original pack 6 x 500 g			59,76/500 g
0188.3	1 kg	plastic	101,60 €
Original pack 6 x 1 kg			96,52/1 kg
0188.4	2,5 kg	plastic	194,05 €

For further information, please see page 1309

TRIS

CELLPURE® ≥99,9 %

For cell culture, tissue culture and biotechnology.

Guarantee analysis:

Endotoxins. ..... ≤0,03 EU/mg
Assay (dry substance). ..... ≥99,9 %
Water. ..... ≤0,5 %
Chloride (Cl). ..... ≤0,01%
Arsenic (As). ..... ≤0,0002 %
Iron (Fe). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0001 %
Solubility (40 % w/w in H_2O). ..... clear and colourless
Absorption UV (10 % w/w in H_2O):
260 nm. ..... ≤0,03
280 nm. ..... ≤0,02
DNases, RNases, Protease. ..... none detected

3170.1	100 g	plastic	25,70 €
3170.2	500 g	plastic	79,45 €
Original pack 6 x 500 g			75,48/500 g

For further information, please see page 1309

TRIS

PUFFERAN® ≥99,9 %, ultra quality

For all standard applications.
Suitable for pharmaceutical research.

Guarantee analysis:

Assay (dry substance). ..... ≥99,9 %
In H_2O insoluble matter. ..... ≤0,005 %
pH value (5 % solution). 10,0-11,5
Melting point. ..... 168-172 °C
Water . ..... ≤0,5 %
Heavy metals (as Pb). ..... ≤0,0001 %

5429.1	500 g	plastic	45,05 €
Original pack 6 x 500 g			42,80/500 g
5429.3	1 kg	plastic	83,75 €
Original pack 6 x 1 kg			79,56/1 kg
5429.5	2,5 kg	plastic	181,70 €
5429.2	5 kg	plastic	342,95 €
5429.4	10 kg	plastic	654,70 €

For further information, please see page 1309

TRIS

≥99 %, Ph.Eur., USP

Pharmaceutical quality (Tromethamine)

Guarantee analysis:

Appearance. ..... white crystals or white crystal powder
Assay (titr.). ..... 99,0-100,5 %
Identity. ..... complies
pH value (5 %, hydrous sol.). 10,0-11,5
Appearance of solution. ..... clear and colourless
Melting point. ..... 168-172 °C
Loss on drying (105 °C). ..... ≤0,5 %
Related substances. ..... ≤1,0 %
Sulphated ash. ..... ≤0,1 %
Chloride (Cl). ..... ≤0,01 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Endotoxins. ..... ≤0,03 E.U./mg

A411.1	500 g	plastic	41,85 €
Original pack 6 x 500 g			39,76/500 g
A411.2	1 kg	plastic	74,10 €
Original pack 6 x 1 kg			70,40/1 kg
A411.3	5 kg	plastic	332,20 €

For further information, please see page 1309

TRIS

PUFFERAN® ≥99,3 %, Buffer Grade

For electrophoresis buffer and wash solutions.

Guarantee analysis:

Assay (dry substance). ..... ≥99,3 %
Water. ..... ≤0,5 %
pH value (5 % in H_2O). 10,0-11,5
Melting point (dry substance). ..... 168-172 °C

AE15.1	500 g	plastic	31,75 €
Original pack 6 x 500 g			30,16/500 g
AE15.2	1 kg	plastic	56,90 €
Original pack 6 x 1 kg			54,06/1 kg
AE15.3	5 kg	plastic	244,60 €
AE15.4	10 kg	plastic	424,65 €
AE15.5	25 kg	plastic	966,45 €

For further information, please see page 1309

TRIS

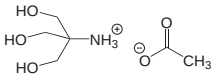
≥99 %, cryst.

Type analysis:

Appearance. ..... white cryst. powder
Assay (titr., dry substance). ..... ≥99,0 %
Water (KF). ..... ≤1,0 %
pH value (5 % in H_2O). 10,0-11,5

2449.1	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
2449.2	1 kg	plastic	51,10 €
Original pack 6 x 1 kg			48,55/1 kg
2449.3	5 kg	plastic	224,70 €
2449.4	10 kg	plastic	418,20 €
2449.5	25 kg	plastic	934,20 €

TRIS acetate



TRIS acetate

PUFFERAN® ≥98 %

Tris(hydroxymethyl)-aminomethane acetate
$C_6H_{15}NO_5$
M 181,19 g/mol
mp ~120 °C
[6850-28-8] • EC No. 229-939-6
WGK 1

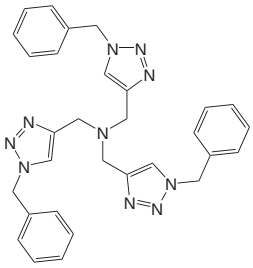
Type analysis:

Assay. ..... ≥98,0 %
pH value (1 % solution). 6,0-7,0
Chloride (Cl). ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Absorption:
260 nm. ..... ≤0,1 %
280 nm. ..... ≤0,05 %

7125.1	25 g	plastic	31,10 €
7125.2	100 g	plastic	107,40 €

For further information, please see page 1309

Tris[(1-benzyl-1*H*-1,2,3-triazol-4-yl)methyl]amine (TBTA)



TBTA
$C_{30}H_{30}N_{10}$
M 530,63 g/mol
mp 132-144 °C
Storage temp.: -20 °C
[510758-28-8]
WGK 3

Tris[(1-benzyl-1*H*-1,2,3-triazol-4-yl)methyl]amine (TBTA)

≥95 %, ROTI®click Grade

Ligand for Click Chemistry
Transport temp.: cooled

Type analysis:

Appearance. ..... white to tan powder
Assay (HPLC). ..... ≥95 %
Alkyne- and Azide-free. ..... complies

7814.1	5 mg	plastic	34,95 €
7814.2	10 mg	plastic	50,00 €
7814.3	50 mg	plastic	85,90 €
7814.4	100 mg	plastic	143,95 €

Tris[(1-benzyl-1*H*-1,2,3-triazol-4-yl)methyl]amine (TBTA)

≥97 %

Ligand for Click Chemistry
Transport temp.: room temp.

Type analysis:

Appearance. ..... off-white powder
Assay (HPLC). ..... ≥97 %
Identity. ..... complies

7380.3	100 mg	glass	133,85 €
7380.2	500 mg	glass	590,20 €

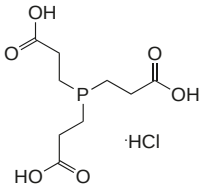
Tris buffered saline

▶ Roti®fair TBS 7.6 see p. 2279
▶ Roti®fair TBS 8.0 see p. 2279

Tris buffered saline with Tween

▶ Roti®fair TBST 7.6 see p. 2279

Tris-(2-carboxyethyl)-phosphine hydrochloride



Tris-(2-carboxyethyl)-phosphine hydrochloride

≥98 %, for biochemistry

Reducing reagent
TCEP · HCl
$C_9H_{15}O_6P$ · HCl • M 286,65 g/mol
Storage temp.: +4 °C
[51805-45-9]
UN No. 3261 • ADR 8 II • WGK 2

Danger H314

Guarantee analysis:

Assay (titr.). ..... ≥98,0 %
Solution (1 % in H_2O). ..... colourless, clear
Loss on drying (80 °C, Vakuum). ..... ≤ 1,0 %

HN95.1	1 g	glass	53,25 €
HN95.2	5 g	glass	171,90 €

For further information, please see page 1353

Tris(carboxymethyl)-amine

▶ Nitrilotriacetic acid see p. 2161

2,4,6-Tris(dimethylamino-methyl)-phenol

▶ Glycidether Accelerator DMP-30 see p. 2025

TRIS-EDTA-BUFFER

▶ Roti®-Stock 100x TE see p. 2299

Tris-glycine buffer

▶ Roti®fair TG-Western see p. 2279

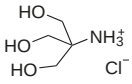
Tris-glycine-SDS buffer

▶ Roti®fair SDS-PAGE see p. 2278
▶ Rotiphorese® 10x SDS-PAGE see p. 2292

Tris-HCl

▶ TRIS hydrochloride see p. 2422

TRIS hydrochloride



TRIS hydrochloride

PUFFERAN® ≥99 %, p.a.

Ideal for all molecular biological applications.
Tris(hydroxymethyl)aminomethane hydrochloride, Tris-HCl
$C_4H_{11}NO_3$ · HCl
M 157,60 g/mol
mp 150-153 °C
[1185-53-1] • EC No. 214-684-5
WGK 1

Guarantee analysis:

Appearance. ..... white powder
Assay (titr., dry substance). ..... ≥99,0 %
pH value 3,5-5,0
Solubility (1 M in H_2O). ..... clear, colourless
Loss on drying. ..... ≤1,0 %
Iron (Fe). ..... ≤0,0001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Melting point. ..... 150-153 °C
UV-Absorption (0,5 M in H_2O):
260 nm. ..... ≤0,02
280 nm. ..... ≤0,02

9090.1	50 g	plastic	14,55 €
9090.2	500 g	plastic	90,85 €
Original pack 6 x 500 g			86,31/500 g
9090.3	1 kg	plastic	134,40 €
Original pack 6 x 1 kg			127,68/1 kg
9090.5	2,5 kg	plastic	282,20 €
9090.4	5 kg	plastic	536,45 €

For further information, please see page 1309

Tris-(2-hydroxyethyl)-amine

▶ Triethanolamine see p. 2417

Tris-(2-hydroxyethyl)-ammonium chloride

▶ Triethanolamine hydrochloride see p. 2417

Tris-(hydroxymethyl)-amino methane

▶ TRIS see p. 2420

Tris-(hydroxymethyl)-aminomethane acetate

▶ TRIS acetate see p. 2421

Tris-(hydroxymethyl)-aminomethane hydrochloride

▶ TRIS hydrochloride see p. 2422

Tris-(hydroxymethyl)-aminomethane maleate

▶ TRIS maleate see p. 2423

N-Tris(hydroxymethyl)methyl-2-aminoethanesulphonic acid

▶ TES see p. 2398

3-N-Tris-(hydroxymethyl)-methylamino-2-hydroxy-propanesulphonic acid sodium salt

▶ TAPSO see p. 2393
▶ TAPSO sodium salt see p. 2393

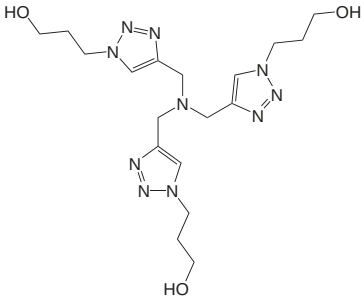
N-Tris(hydroxymethyl)-methyl-3-amino-propane sulphonic acid

▶ TAPS see p. 2393

N-Tris(hydroxymethyl)-methyl-glycine

▶ TRICINE see p. 2416

Tris(3-hydroxypropyltriazolyl-methyl)amine (THPTA)



Tris(3-hydroxypropyltriazolyl-methyl)amine (THPTA)

≥95 %, ROTI®click Grade

Ligand for Click Chemistry
THPTA
$C_{18}H_{30}N_{10}O_3$ • M 434,50 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[760952-88-3] • WGK 3

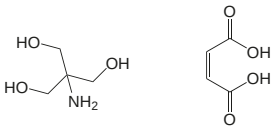
Warning H315-H319-H335

Type analysis:

Appearance. ..... white powder
Assay (HPLC). ..... ≥95 %
Solubility. ..... H_2O, DMSO/t-Butanol Solvent
For a 0,1 M solution: add 230 µl to 10 mg.

7822.1	5 mg	plastic	34,95 €
7822.2	10 mg	plastic	50,00 €
7822.3	50 mg	plastic	85,90 €
7822.4	100 mg	plastic	143,95 €

TRIS maleate



TRIS maleate
PUFFERAN® ≥98 %
Tris(hydroxymethyl)-aminomethane maleate
$C_8H_{15}NO_7$ • M 237,21 g/mol
[72200-76-1] • EC No. 276-455-6

Type analysis:
Appearance. ..... white solid
Assay..... ≥98,0 %

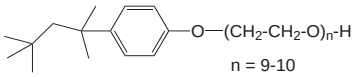
6991.1	100 g	plastic	100,55 €

For further information, please see page 1309

Trisodium phosphate
▶ tri-Sodium phosphate dodecahydrate see p. 2347

Tris powder (pouch)
▶ Roti®fair 1M Tris 7.4 see p. 2279
▶ Roti®fair 1M Tris 8.0 see p. 2279
▶ Roti®fair 1M Tris 8.3 see p. 2279

Triton® X 100



Polyethylene glycol alkylphenyl ether
$C_{33}H_{60}O_{10}$
M 624 g/mol • bp 270 °C
flp 251 °C • WGK 1

Danger H302-H318

Triton® X 100
extra pure
Non-ionic detergent.
For biochemistry and molecular biology.

Type analysis:
Appearance. .....
.....clear, colourless to ight yellow viscous liquid
Cloud point (1%, H_2O). ..... 63-69 °C

3051.3	250 ml	plastic	17,75 €
3051.4	500 ml	plastic	23,15 €
3051.2	1 l	plastic	32,15 €
Original pack 6 x 1 l			30,54/1 l
3051.1	10 l	plastic	200,50 €

Triton® X 100
for scintillation
Non-ionic detergent.

6683.1	1 l	plastic	36,05 €
Original pack 6 x 1 l			34,25/1 l
6683.2	10 l	plastic	256,95 €

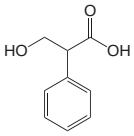
Trochol
▶ Betulin(ol) see p. 1835

Tropaeolin OO
▶ Orange IV sodium salt (C.I. 13080) see p. 2185

Tropaeolin O sodium salt
▶ Resorcinol yellow (C.I. 14270) see p. 2256

3-α-Tropanol
▶ Tropine see p. 2423

DL-Tropic acid

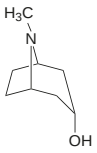


DL-Tropic acid
≥97 %, for biochemistry
2-Phenylhydracrylic acid
$C_9H_{10}O_3$
M 166,17 g/mol
mp 116-118 °C
Solubility: 20 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[529-64-6] • EC No. 208-465-3
WGK 2

Type analysis:
Appearance..... white powder
Assay (acidim.)..... ≥97 %

4052.1	25 g	plastic	138,70 €

Tropine



Tropine
≥99 %, pure
3α-Tropanol
$C_8H_{15}NO$
M 141,21 g/mol
D 1,04 • bp 232-234 °C
mp 49-52 °C
Solubility: 100 g/l (H_2O, 20 °C)
[120-29-6] • EC No. 204-384-2
WGK 3

Warning H302+H332

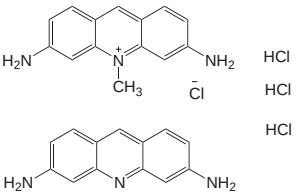
Type analysis:
Appearance.....white to off-white, cryst. powder
Assay (GC)..... ≥99,0 %
Identity..... complies

4049.1	10 g	glass	44,65 €

Tropine mandelate hydrobromide
▶ DL-Homatropine hydrobromide see p. 2045

H-DL-Trp-OH
▶ DL-Tryptophan see p. 2425

Trypaflavine



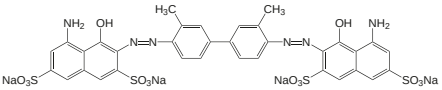
Trypaflavine
>99 %, for biochemistry
Acriflavinium chloride, Acriflavinium hydrochloride, Neutral acriflavine
[8063-24-9]
UN No. 3077 • ADR 9 III • WGK 2

Danger H302-H318-H410

Type analysis:
Appearance. ..... red-brown, cryst. powder
Assay (dry substance). ..... ≥99,0 %
Sulphated ash. ..... ≤1,0 %
Loss on drying..... ≤6,5 %

9621.1	10 g	glass	25,30 €
9621.2	50 g	glass	74,75 €

Trypan blue (C.I. 23850)



Trypan blue (C.I. 23850)
for microscopy and cell staining
For vital and histological staining.
Benzamine blue, Tolidin-diazo-bis-8-amino-1-naphthol-3,6-disulphonic acid tetrasodium salt
$C_{34}H_{24}N_6Na_4O_{14}S_4$
M 960,82 g/mol
mp >300 °C (dec.)
Solubility: 10 g/l (H_2O, 25 °C)
[72-57-1] • EC No. 200-786-7
WGK 3

Danger H350

Type analysis:
Dye content..... ≥80 %
Loss on drying..... ≤10 %
Absorption max. (50:50 H_2O:ethanol). ..... 590-610 nm

CN76.1	10 g	glass	24,20 €
CN76.2	25 g	glass	43,55 €
CN76.3	50 g	glass	78,40 €

For further information, please see page 1527

Trypan blue solution 0,4 %

Trypan blue solution 0,4 %

NEW

for cell culture and microscopy

For detection of dead cells during vital staining.
Storage temp.: +20 °C
WGK 3

Danger H350

Type analysis:

Assay..... 0,4 %
Colour..... dark blue

1680.1	100 ml	plastic	32,15 €

For further information, please see page 1527

Trypsin

M ~24,000 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[9002-07-7] • EC No. 232-650-8
WGK 1

Danger H334-H335-H315-H319

Trypsin

5000 USP-U/mg, free from salt

Isolated from porcine pancreas, lyophilised.

Type analysis:

Activity..... ~5000 USP-U/mg

2193.1	100 mg	glass	30,00 €
2193.2	500 mg	glass	93,00 €

For further information, please see page 1387

Trypsin

≥2500 USP-U/mg, cryst.

Isolated from porcine pancreas, lyophilised.

Type analysis:

Appearance..... beige to light brown hygroscopic powder
Activity..... ≥2500 USP-U/mg
Ash content..... ≤3,0 %
Loss on drying (60 °C)..... <5 %

5455.1	100 mg	glass	25,70 €
5455.2	1 g	glass	107,40 €

For further information, please see page 1387

Trypsin inhibitor

[9035-81-8] • EC No. 232-906-9

Trypsin inhibitor

≥10000 BAEE U/mg

Made from soybeans. High-activity inhibitor of trypsin, chymotrypsin, and other proteolytic enzymes.
Storage temp.: +4 °C

Type analysis:

Colour..... beige to light yellow
Dry extract..... >930 mg/g
Proteins..... >740 mg/g
pH value (1 % solution)..... 7,0 ±0,8
Activity..... ≥10000 BAEE U/mg

2949.1	25 mg	plastic	31,75 €
2949.2	100 mg	plastic	81,20 €
2949.3	250 mg	plastic	166,65 €
2949.4	500 mg	plastic	284,90 €
2949.5	1 g	plastic	478,40 €

For further information, please see page 1387

Trypsin inhibitor

≥7000 BAEE U/mg, salt free

Made from soybeans. Inhibition of trypsin, chymotrypsin, plasmin, kallikrein, thrombin and other proteolytic enzymes; free from salt.
Storage temp.: -20 °C
Transport temp.: room temp.

Type analysis:

Appearance..... white to beige powder
Activity..... ≥7000 BAEE U/mg

5279.1	100 mg	glass	19,25 €
5279.4	250 mg	glass	37,55 €
5279.5	500 mg	glass	66,15 €
5279.2	1 g	glass	115,60 €
5279.3	5 g	glass	482,70 €

For further information, please see page 1387

Trypticase Soy Agar

▶ CASO Agar, granulated see p. 1881

Tryptic Soy Broth

▶ CASO Broth see p. 1882

Tryptone Bile Salts Agar

Tryptone Bile Salts Agar

DEV, EN ISO 9308-1:2000, for microbiology

For detection and enumeration of *E. coli* in foods and water samples.
Application: Use 36,5 g for 1 l agar.
TBA
Storage temp.: +20 °C • WGK 1

Guarantee analysis:

Tryptone..... 20 g/l
Bile salts..... 1,5 g/l
Agar..... 15 g/l
pH value..... 7,2 ±0,1

CP69.1	500 g	plastic	124,20 €
Original pack 6 x 500 g			117,99/500 g

For further information, please see page 1467

Tryptone/Peptone ex casein

Solubility: 200 g/l
Storage temp.: +20 °C
[91079-40-2] • EC No. 293-428-4 • WGK 1

Tryptone/Peptone ex casein

pancreatic digest, for microbiology

Similar to NZamine

Type analysis:

Total nitrogen..... ≥10 %
Amino nitrogen..... ≥3,9 %
Loss on drying..... ≤6 %
Ash..... ≤15 %
pH (2 % solution)..... 6,5-7,5

8952.1	250 g	plastic	52,60 €
8952.3	500 g	plastic	92,35 €
Original pack 6 x 500 g			87,73/500 g
8952.2	1 kg	plastic	160,20 €
Original pack 6 x 1 kg			152,19/1 kg
8952.4	2,5 kg	plastic	349,40 €
8952.5	5 kg	plastic	607,40 €

For further information, please see page 1495

Tryptone/Peptone ex casein, granulated

granulated, pancreatic digest, for microbiology

Similar to NZamine

Type analysis:

Total nitrogen..... ≥10 %
Amino nitrogen..... ≥3,9 %
Loss on drying..... ≤6 %
Ash..... ≤15 %
pH (2 % solution)..... 6,5-7,5
Granulation..... complies

6681.1	250 g	plastic	66,55 €
6681.2	500 g	plastic	114,50 €
Original pack 6 x 500 g			108,78/500 g
6681.3	1 kg	plastic	198,90 €
Original pack 6 x 1 kg			188,96/1 kg
6681.4	2,5 kg	plastic	403,15 €
6681.5	5 kg	plastic	762,20 €

For further information, please see page 1495

Tryptone Soy Agar

Tryptone Soy Agar

DEV, EN ISO 9308-1:2000, for microbiology

For the detection and enumeration of *E. coli* and other coliform bacteria in foods and water samples.
Application: Use 40 g for 1 l agar.
TSA, Trypticase-Soya-Agar
Storage temp.: +20 °C
WGK 1

Guarantee analysis:

Casein, tryptic digest..... 15 g/l
Soy peptone..... 5 g/l
Sodium chloride (NaCl)..... 5 g/l
Agar..... 15 g/l
pH value..... 7,2 ±0,1

CP70.1	500 g	plastic	83,35 €
Original pack 6 x 500 g			79,18/500 g

For further information, please see page 1467

Tryptone Soy Agar Letheen

▶ CASO Agar with Lecithin/Polysorbate 80 see p. 1882

D-Tryptophan

D-Tryptophan

≥98,5 %, for biochemistry

2-Amino-3-(3-indolyl)propionic acid,
H-D-Trp-OH

$C_{11}H_{12}N_2O_2$

M 204,23 g/mol

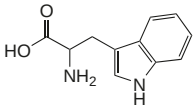
[153-94-6] • EC No. 205-819-9 • WGK 1

Type analysis:

Appearance. ..... white to whitish powder
Assay. ..... 98,5-102,0 %
Ash. ..... ≤0,1 %
Specific rotation $[\alpha]_D^{20}$ (1 % in H_2O). ..... +30° to +33°
Loss on drying. ..... ≤0,2 %
Enantiomeric purity. ..... ≤0,3 % L-enantiomer

7700.1	5 g	plastic	50,00 €
7700.2	25 g	plastic	145,05 €

DL-Tryptophan



DL-Tryptophan

≥98 %, for biochemistry

DL-2-Amino-3-(3-indolyl)propionic acid,
3-β-Indolylalanine, H-DL-Trp-OH

$C_{11}H_{12}N_2O_2$

M 204,23 g/mol

mp 289-290 °C

Storage temp.: +4 °C

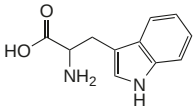
[54-12-6] • EC No. 200-194-9 • WGK 1

Type analysis:

Assay (titr.). ..... ≥98,0 %
Appearance of solution (1 % in 1 M HCl). ..... colourless to yellow
Loss on drying (3 h, 105 °C, vacuum). ..... ≤1,0 %

5236.1	10 g	plastic	15,60 €
5236.2	25 g	plastic	30,00 €
5236.3	100 g	plastic	96,65 €

L-Tryptophan



L-2-Amino-3-(3-indolyl)propionic acid,
H-L-Trp-OH

$C_{11}H_{12}N_2O_2$

M 204,23 g/mol • mp ~290 °C

Solubility: ~10 g/l (H_2O, 20 °C)

[73-22-3] • EC No. 200-795-6 • WGK 1

L-Tryptophan

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... -33,0° to -30,0°
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,03 %
Iron (Fe). ..... ≤0,002 %

1739.1	25 g	plastic	30,00 €
1739.2	100 g	plastic	89,15 €
1739.3	500 g	plastic	364,45 €
Original pack 6 x 500 g			346,23/500 g

L-Tryptophan

≥98,5 %, Ph.Eur., for biochemistry

Guarantee analysis:

Appearance. ..... white to yellowish, cryst. powder
Assay (titr. dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Specific rotation $[\alpha]_D^{20}$ (dry substance). ..... -33,0° to -30,0°
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,03 %
Ammonium (NH_4). ..... ≤0,02 %
Iron (Fe). ..... ≤0,002 %
Impurity A, related substances. ..... complies

4858.1	10 g	glass	14,95 €
4858.2	100 g	plastic	75,15 €
4858.4	250 g	plastic	170,95 €
4858.3	1 kg	plastic	611,70 €
Original pack 6 x 1 kg			581,12/1 kg

Tryptophane Culture Broth

Tryptophane Culture Broth

DEV, EN ISO 9308-1:2000, for microbiology

For the detection of *E. coli* in foods and water samples by indole production.

Application: Use 16 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

Casein, tryptic digest. ..... 10 g/l
L-Tryptophan. ..... 1 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,5 ±0,1

CP71.1	500 g	plastic	169,35 €
Original pack 6 x 500 g			160,88/500 g

For further information, please see page 1452

Tryptose Soy Citrate Agar

▶ TSC Agar (Base) see p. 2425

TSA

▶ Tryptone Soy Agar see p. 2424

TSA Letheen

▶ CASO Agar with Lecithin/Polysorbate 80 see p. 1882

TSB Agar

▶ CASO Agar, granulated see p. 1881

TSB Broth

▶ CASO Broth see p. 1882

TSC Agar (Base)

TSC Agar (Base)

DEV, EN ISO 7937:2004, for microbiology

For detection and enumeration of *Clostridium perfringens* in foods and animal feed.

Application: Use 42 g for 1 l agar. After autoclaving add 2 vials (4 ml) reconstituted Clostridium perfringens Supplement (Art. No. CL52.1). Add 50 ml egg yolk emulsion (Art. No. 0402.1).

Tryptose Soy Citrate Agar, Perfringens Agar, Clostridium perfringens Agar, **SFP Agar**

Storage temp.: +20 °C

WGK 1

Warning H319

Guarantee analysis:

Tryptose. ..... 15 g/l
Soy peptone. ..... 5 g/l
Yeast extract. ..... 5 g/l
Sodium bisulfite. ..... 1 g/l
Ammonium iron(III) citrate. ..... 1 g/l
Agar. ..... 15,0 g/l
pH value. ..... 7,6 ±0,2

CL51.1	500 g	plastic	117,75 €
Original pack 6 x 500 g			111,86/500 g

For further information, please see page 1453

TSIM

▶ N-(Trimethylsilyl)-imidazole (TSIM) see p. 2419

TSP-D4

▶ 3-(Trimethylsilyl)propionic-2,2,3,3 acid sodium salt D4 (TSP-D4) see p. 2419

TSPP

▶ tetra-Sodium diphosphate decahydrate see p. 2337

TSTU

▶ O-(N-Succinimidyl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TSTU) see p. 2384

TTC

▶ 2,3,5-Triphenyltetrazolium chloride see p. 2420

TTC Chapman Agar (with sodium heptadecyl-sulphate) (Base)

TTC Chapman Agar (with sodium heptadecyl-sulphate) (Base)

DEV, EN ISO 9308-1:2000, for microbiology

For isolation and enumeration of coliform bacteria from water samples.

Application: Use 56,2 g for 1 l agar. Contains Tergitol. After autoclaving add TTC solution (Art. No. CP72.1) to 0,0025 %.

Chapman TTC Agar, Chapman Lactose Agar, TTC Tergitol 7 Agar

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

Lactose. ..... 20 g/l
Peptone. ..... 10 g/l
Yeast extract. ..... 6 g/l
Meat extract. ..... 5 g/l
Bromothymol blue. ..... 0,05 g/l
Sodium heptadecyl sulphate (Tergitol 7). ..... 0,1 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,1

CP65.1	500 g	plastic	84,40 €
Original pack 6 x 500 g			80,18/500 g

For further information, please see page 1453

TTC-Supplement

TTC-Supplement

lyophilised

Media supplement for identification of coliform enterobacteria.

One box of 10 x 50 mg TTC-Supplement is sufficient for 20 l TTC Chapman Agar.

2,3,5-Triphenyl-tetrazolium chloride, Red tetrazolium

mp 243-245 °C (dec.)

Storage temp.: +4 °C

[298-96-4] • EC No. 206-071-6

WGK 3

Warning H315-H319-H335

Guarantee analysis:

Triphenyltetrazolium chloride (per vial). ..... 50 mg

CP72.1	10 vials	glass	76,90 €

For further information, please see page 1461

TTX

▶ Tetrodotoxin see p. 2403

TTZ

▶ 2,3,5-Triphenyltetrazolium chloride see p. 2420

Tulipanin

▶ Delphinidin 3-rutinoside chloride see p. 1925

Tungsten

Tungsten

≥99 %, powder

W

M 183,84 g/mol

D 19,25 • bp 5930 °C • mp 3422 °C

[7440-33-7] • EC No. 231-143-9

UN No. 3089 • ADR 4.1 II

Danger H228-H315-H319

Type analysis:

Assay. ..... ≥99,0 %
Particle size:
325 mesh. ..... ≥90 %

9835.1	50 g	plastic	23,15 €
9835.2	100 g	plastic	42,50 €
9835.3	500 g	plastic	177,40 €
Original pack 6 x 500 g			168,53/500 g

Tungsten Standards

▶ Tungsten AAS Standard Solution see p. 2361
▶ Tungsten ICP Standard Solution see p. 2365
▶ Tungsten ICP Standard Solution see p. 2370

Tungsten(VI) oxide

Tungsten trioxide, Tungstic anhydride, Tungstic oxide

WO_3

M 231,84 g/mol

D 7,27 • bp ~1700 °C • mp 1473 °C

Solubility: <0,02 g/l (H_2O, 20 °C)

[1314-35-8] • EC No. 215-231-4

Tungsten(VI) oxide

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5399.1	50 g	plastic	284,90 €
5399.2	100 g	plastic	482,70 €

Tungsten(VI) oxide

≥99,5 %, p.a.

Type analysis:

Assay. ..... ≥99,5 %
Loss on ignition (1,5 h, 750 °C). ..... ≤0,5
Chloride (Cl). ..... ≤0,001 %
Fluoride (F). ..... ≤0,001 %
Aluminium (Al). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,0005 %
Boron (B). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Carbon (C). ..... ≤0,005 %
Molybdenum (Mo). ..... ≤0,001 %
Sodium (Na). ..... ≤0,0005 %
Phosphorus (P). ..... ≤0,001 %
Sulphur (S). ..... ≤0,001 %
Silicon (Si). ..... ≤0,005 %
Vanadium (V). ..... ≤0,0005 %

0760.1	50 g	plastic	31,10 €
0760.2	100 g	plastic	44,65 €
0760.3	500 g	plastic	177,40 €
Original pack 6 x 500 g			168,53/500 g

Tungsten trioxide

▶ Tungsten(VI) oxide see p. 2426

Tungstic acid

Tungstic acid

≥99 %, p.a.

Orthotungstic acid

H_2WO_4

M 249,85 g/mol

D 5,5

mp 100 °C (dec.)

Solubility: insoluble

[7783-03-1] • EC No. 231-975-2

WGK 1

Type analysis:

Assay (based on WO_3). ..... ≥99,0 %
Assay (WO_3). ..... ≥92,0 %
Loss on ignition (2 h, 750 °C). ..... ≤8,0 %
Aluminium (Al). ..... ≤0,001 %
Arsenic (As). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Copper (Cu). ..... ≤0,0005 %
Molybdenum (Mo). ..... ≤0,005 %
Sodium (Na). ..... ≤0,005 %
Silicon (Si). ..... ≤0,005 %
Titanium (Ti). ..... ≤0,001 %

0747.1	25 g	plastic	27,85 €
0747.2	100 g	plastic	44,65 €
0747.3	500 g	plastic	155,90 €
Original pack 6 x 500 g			148,11/500 g

Tungstic acid sodium salt dihydrate

▶ Sodium tungstate dihydrate see p. 2352

Tungstic anhydride

▶ Tungsten(VI) oxide see p. 2426

Tungstic oxide

▶ Tungsten(VI) oxide see p. 2426

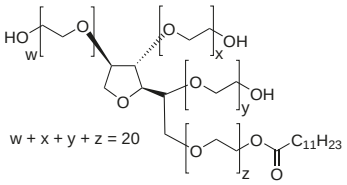
Tungstophosphoric acid

▶ Phosphotungstic acid hydrate see p. 2211

Turbidity Standard

▶ McFarland BSS 0,5 see p. 2124
▶ McFarland PMS 0,5 see p. 2124

Tween® 20



Tween® 20

Ph.Eur.

Non-ionic detergent.

Polyoxyethylene-20-sorbitan monolaurate, Polysorbate 20

D ~1,1 • bp >100 °C • flp >149 °C

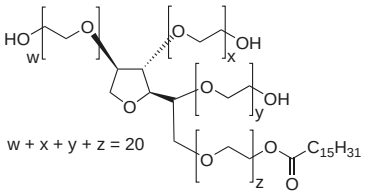
[9005-64-5] • WGK 1

Guarantee analysis:

Appearance. ..... yellow clear to light turbid liquid
Identity. ..... complies
Hydroxyl number (mg KOH/g). 96-108
Acid value (mg KOH/g). ..... ≤2
Peroxide value. ..... ≤5
Saponification value (mg KOH/g). 40-50
Water . ..... ≤3 %
Sulphated ash. ..... ≤0,2 %
Heavy metals. ..... ≤0,001 %
Volatile organic impurities. ..... complies
1,4-Dioxane. ..... ≤0,001 %
Free ethylene oxide. ..... ≤0,0001 %
Fatty acid compound. ..... complies

9127.1	250 g	plastic	21,00 €
9127.2	1 kg	plastic	53,65 €
Original pack 6 x 1 kg			50,97/1 kg
9127.3	2,5 kg	plastic	93,00 €
9127.4	5 kg	plastic	149,45 €
9127.8	10 kg	plastic	278,45 €

Tween® 40



Tween® 40

Ph.Eur.

Non-ionic detergent.

Polyoxyethylene-40-sorbitan monopalmitate, Polysorbate 40

D 1,08 • bp >100 °C

[9005-66-7]

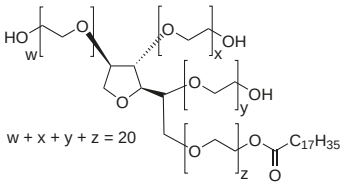
WGK 1

Guarantee analysis:

Appearance. ..... yellowish to brownish-yellow, oily, viscous liquid
Identity. ..... complies
Hydroxyl number (mg KOH/g). 89-105
Acid value (mg KOH/g). ..... ≤2,0
Peroxide value. ..... ≤10
Saponification value (mg KOH/g). 41-52
Water . ..... ≤3,0 %
Sulphated ash. ..... ≤0,25 %
Heavy metals. ..... ≤0,001 %
Volatile organic impurities. ..... complies
1,4-Dioxane. ..... ≤0,001 %
Free ethylene oxide. ..... ≤0,0001 %
Fatty acid compound. ..... complies

8240.1	250 g	plastic	22,50 €
8240.2	500 g	plastic	38,60 €
Original pack 6 x 500 g			36,67/500 g
8240.3	1 kg	plastic	62,25 €
Original pack 6 x 1 kg			59,14/1 kg

Tween® 60



Tween® 60

Ph.Eur.

Non-ionic detergent.

Polyoxyethylene-60-sorbitan monostearate, Polysorbate 60

D 1,1 • bp >100 °C • flp >149 °C

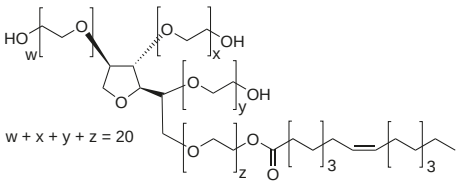
[9005-67-8] • WGK 1

Guarantee analysis:

Appearance..... yellowish-brown gelatinous substance
Identity..... complies
Hydroxyl number (mg KOH/g). 81-96
Acid value (mg KOH/g)..... ≤2,0
Peroxide value..... ≤10
Saponification value (mg KOH/g). 45-55
Water ..... ≤3,0 %
Sulphated ash. ..... ≤0,25 %
Heavy metals..... ≤0,001 %
Volatile organic impurities..... complies
1,4-Dioxane..... ≤0,001 %
Free ethylene oxide..... ≤0,0001 %
Fatty acid compound..... complies

9694.1	250 g	plastic	22,50 €
9694.2	500 g	plastic	38,60 €
Original pack 6 x 500 g			36,67/500 g
9694.3	1 kg	plastic	62,25 €
Original pack 6 x 1 kg			59,14/1 kg

Tween® 80



Polyoxyethylene-80-sorbitan monooleate, Polysorbate 80

D ~1,08 • bp >100 °C • flp >149 °C

[9005-65-6] • WGK 1

Tween® 80

Ph.Eur.

Non-ionic detergent.

Guarantee analysis:

Appearance..... yellow, viscous liquid
Identity..... complies
Hydroxyl number (mg KOH/g). 65-80
Acid value (mg KOH/g)..... ≤2
Peroxide value..... ≤5
Saponification value (mg KOH/g). 45-55
Water ..... ≤3,0 %
Total ash..... ≤0,25 %
Heavy metals. ..... ≤0,001 %
Volatile organic impurities. ..... complies
1,4-Dioxane. ..... ≤0,001 %
Free ethylene oxide..... ≤0,0001 %
Fatty acid compound..... complies

9139.1	250 g	plastic	22,50 €
9139.3	500 g	plastic	39,25 €
Original pack 6 x 500 g			37,29/500 g
9139.2	1 kg	plastic	64,40 €
Original pack 6 x 1 kg			61,18/1 kg
9139.4	2,5 kg	plastic	117,20 €
9139.5	5 kg	plastic	181,70 €
9139.6	10 kg	plastic	321,45 €

Tween® 80

extra pure

For bacteriology.

Type analysis:

Appearance. ..... yellow, viscous liquid
Water. ..... ≤3,0 %
Heavy metals. ..... ≤0,001 %

4859.1	25 g	glass	19,25 €

Tylose®

▶ Methylcellulose see p. 2137

Tyramine

Tyramine

≥98 %, for biochemistry

2-(4-Hydroxyphenyl)-ethylamine

$C_8H_{11}NO$

M 137,18 g/mol

mp 159-163 °C

[51-67-2] • EC No. 200-115-8

WGK 1

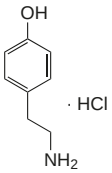
Warning H315-H319-H335

Type analysis:

Appearance. ..... beige powder
Assay (titr.). ..... ≥98,0 %
Melting point. ..... 159-163 °C
Water (KF). ..... ≤1,0 %

4862.2	1 g	glass	15,60 €
4862.1	5 g	glass	23,55 €
4862.3	25 g	glass	60,10 €

Tyramine hydrochloride



Tyramine hydrochloride

≥98 %, for biochemistry

4-(2-Aminoethyl)phenol hydrochloride, 4-Hydroxyphenylethylamine hydrochloride, Tyrosamine hydrochloride

$C_8H_{12}ClNO$

M 173,64 g/mol

mp 274-280 °C

[60-19-5] • EC No. 200-462-5

WGK 1

Warning H315-H319-H335

Type analysis:

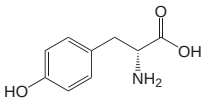
Assay (titr.). ..... ≥98,0 %
Solution (5 % in H_2O). ..... colourless
Water (KF). ..... ≤1,0 %
Melting point. ..... 274-280 °C

5234.1	5 g	plastic	17,75 €
5234.2	25 g	plastic	53,65 €
5234.3	50 g	plastic	92,35 €

Tyrosamine hydrochloride

▶ Tyramine hydrochloride see p. 2428

D-Tyrosine



D-Tyrosine

≥98 %, for biochemistry

(R)-2-Amino-3-(4-hydroxyphenyl)-propionic acid, H-D-Tyr-OH

$C_9H_{11}NO_3$

M 181,2 g/mol

Storage temp.: +4 °C

[556-02-5] • EC No. 209-112-6

WGK 1

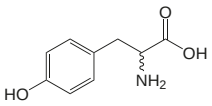
Warning H315-H319-H335

Type analysis:

Assay. ..... 98,0-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in 1 N HCl). ..... +10,5° to +12,3°
Loss on drying. ..... ≤0,2 %

7890.1	1 g	glass	22,05 €
7890.2	5 g	plastic	67,20 €
7890.3	25 g	plastic	198,90 €

DL-Tyrosine



DL-Tyrosine

≥98,5 %, for biochemistry

4-Hydroxyphenylalanine

$C_9H_{11}NO_3$

M 181,19 g/mol

mp >300 °C

Storage temp.: +4 °C

[556-03-6] • EC No. 209-113-1

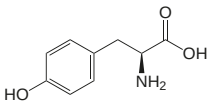
WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... ≥98,5 %
Loss on drying. ..... ≤0,5 %

8608.1	10 g	plastic	25,30 €
8608.2	50 g	plastic	73,00 €
8608.3	250 g	plastic	278,45 €

L-Tyrosine



(S)-2-Amino-3-(4-hydroxyphenyl)-propionic acid, H-L-Tyr-OH

$C_9H_{11}NO_3$

M 181,19 g/mol

D 1,46

mp 297-298 °C (dec.)

Solubility: ~0,4 g/l (H_2O, 20 °C)

[60-18-4] • EC No. 200-460-4

L-Tyrosine

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... -12,3° to -11,0°
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,03 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

1741.1	25 g	plastic	24,20 €
1741.2	100 g	plastic	63,35 €
1741.3	500 g	plastic	252,65 €
Original pack 6 x 500 g			240,02/500 g

L-Tyrosine

≥99 %, Ph.Eur., for biochemistry

Guarantee analysis:

Appearance. ..... white to off-white, cryst. powder
Assay (dry substance). ..... 99,0-101,0 %
Identity. ..... complies
Specific rotation $[\alpha]_D^{20}$. ..... -12,3° to -11,0°
Ammonium (NH_4). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate (SO_4). ..... ≤0,03 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

T207.1	25 g	plastic	16,05 €
T207.2	100 g	plastic	40,35 €
T207.3	500 g	plastic	160,10 €
Original pack 6 x 500 g			152,10/500 g

UBA

▶ Universal Beer Agar (Base) see p. 2429

Ubiquinone 50

▶ Coenzyme Q 10 see p. 1904

Ultrasonic cleaner EC 10

Ultrasonic cleaner EC 10

pH ~12,3

Alkalic cleaning concentrate.

D 1,045 • bp >100 °C • flp 52 °C

UN No. 1824 • ADR 8 III • WGK 1

Danger H290-H315-H318

CC48.1	1 l	plastic	17,20 €

For further information, please see page 1134

Ultrasonic cleaner EC 60

Ultrasonic cleaner EC 60

pH <1

Acidic instruments cleaner for the laboratory and workshop.

D 1,45 • bp >100 °C

UN No. 1805 • ADR 8 III • WGK 1

Danger H290-H314

CC44.1	1 l	plastic	24,75 €

For further information, please see page 1134

Ultrasonic cleaner Elma clean 65

Ultrasonic cleaner Elma clean 65

pH ~7

Gentle neutral cleansers with corrosion inhibitor.

D 1,04 • bp >100 °C

flp 59 °C • WGK 2

Danger H318

CC45.1	1 l	plastic	15,05 €

For further information, please see page 1134

Ultrasonic cleaner Elma clean 70

Ultrasonic cleaner Elma clean 70

pH ~13

Alkalic, universal cleaning concentrate.

D 1,132 • bp >100 °C • WGK 1

Danger H315-H318

CC46.1	1 l	plastic	15,05 €

For further information, please see page 1134

Ultrasonic cleaner Elma clean 75

Ultrasonic cleaner Elma clean 75

pH ~10,5

Ammoniacal cleaning concentrate for use in the laboratory, in workshops and for cleaning jewellery.

D 0,99 • flp 36 °C • WGK 2

Danger H315-H318-H336-H412

CC47.1	1 l	plastic	16,70 €

For further information, please see page 1134

Ultrasonol® 11 alkaline

Ultrasonol® 11 alkaline

Liquide concentrate, pH 12,9

For cleaning non-corroding objects.

D 1,09

UN No. 1824 • ADR 8 III • WGK 1

Danger H290-H314-EUH031

Type analysis:

pH value. 12,90-13,40
pH (2 % solution). 11,30-12,00
Density (20 °C). 1,068-1,074
Dry residue. ..... 8,8-10,8 %

5354.1	1 l	plastic	14,75 €
5354.2	5 l	plastic	56,80 €

For further information, please see page 1134

Ultrasonol® 7 - neutral

Ultrasonol® 7 - neutral

Liquide concentrate, pH 7

For cleaning sensitive objects in Ultrasonic baths.

D 1,07 • WGK 1

Warning H319

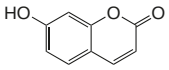
Type analysis:

Dry residue. ..... 12,5-13,5 %

5356.1	1 l	plastic	15,80 €
5356.2	5 l	plastic	57,80 €
5356.4	20 kg	plastic	179,55 €

For further information, please see page 1134

Umbelliferone



Umbelliferone

≥96 %, for biochemistry

7-Hydroxycoumarin, Fluorescence indicator

$C_9H_6O_3$

M 162,14 g/mol

mp ~229 °C (dec.)

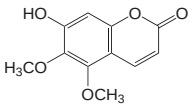
[93-35-6] • EC No. 202-240-3

Type analysis:

Appearance. ..... off-white powder
Assay (HPLC). ..... ≥96 %
Sulphated ash. ..... <0,1 %
Loss on drying (3 h, 105 °C). ..... <0,3 %

5437.1	10 g	plastic	37,55 €
5437.2	100 g	plastic	218,15 €

Umckalin



Umckalin

ROTICHROM® HPLC

Reference substance for HPLC.
From *Pelargonium sidoides*.

7-Hydroxy-5,6-dimethoxycoumarin

$C_{11}H_{10}O_5$

M 222,19 g/mol

Storage temp.: +4 °C

[43053-62-9]

WGK 1

Type analysis:

Purity (HPLC). ..... ≥99 %

2827.1	5 mg	glass	267,70 €

n-Undecane

n-Undecane

≥95 %, for synthesis

$C_{11}H_{24}$

M 156,31 g/mol • bp 195 °C

mp -26 °C • flp 67 °C

[1120-21-4] • EC No. 214-300-6

UN No. 2330 • ADR 3 III • WGK 1

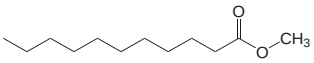
Danger H304-EUH066

Type analysis:

Appearance. ..... clear colourless liquid
Assay. ..... ≥95,0 %
Density (15 °C). 0,741-0,747
Aromatic compounds. ..... ≤0,1 %
Refractive index n_D^{20}. 1,414-1,420

8781.1	100 ml	glass	18,85 €
8781.2	500 ml	glass	80,55 €
8781.3	1 l	glass	143,55 €
Original pack 6 x 1 l			136,37/1 l

Undecanoic acid methyl ester



Undecanoic acid methyl ester

≥98 %

$C_{12}H_{24}O_2$

M 200,32 g/mol

D 0,87 • bp 247-249 °C

mp -10 °C • flp 115 °C

Storage temp.: +4 °C

[1731-86-8] • EC No. 217-053-2

Type analysis:

Purity (GC). ..... ≥98 %

4866.1	10 ml	glass	66,55 €

Universal absorber Rotisorb®

Universal absorber Rotisorb®

Ideal for absorption of inflammable, oily, and agressive liquids.

1710.1	800 g (in square HDPE container)		24,55 €
1710.2	25 kg (in PE flat bag)		89,15 €

For further information, please see page 719

Universal Beer Agar (Base)

Universal Beer Agar (Base)

for microbiology

For cultivation of beer spoiling microorganisms.

Application: Use 55 g for 1 l agar.
Add 250 ml beer.

UBA

Storage temp.: +20 °C

WGK 1

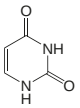
Formulation:

Peptonised milk. ..... 15 g/l
Yeast extract. ..... 10 g/l
Dextrose. ..... 10 g/l
Tomato juice. ..... 7 g/l
Potassium phosphate. ..... 0,5 g/l
Dipotassium phosphate. ..... 0,5 g/l
Sodium chloride (NaCl). ..... 0,01 g/l
Magnesium sulphate ($MgSO_4$). ..... 0,01 g/l
Manganese sulphate. ..... 0,01 g/l
Iron sulphate. ..... 0,01 g/l
Agar. ..... 12 g/l
pH value. ..... 6,3 ±0,2

8337.1	500 g	plastic	111,30 €
Original pack 6 x 500 g			105,74/500 g

For further information, please see page 1469

Uracil



Uracil

≥99 %, for biochemistry

$C_4H_4N_2O_2$
M 112,09 g/mol
mp >300 °C
[66-22-8] • EC No. 200-621-9 • WGK 1

Type analysis:

Appearance. ..... white to off-white powder
Assay. ..... ≥99,0 %
Chloride (Cl). ..... ≤0,01 %
Sulphate (SO_4). ..... ≤0,5 %
Heavy metals (as Pb). ..... ≤0,002 %
Loss on drying. ..... ≤0,3 %

7288.1	5 g	glass	15,60 €
7288.2	25 g	plastic	27,45 €
7288.3	100 g	plastic	67,20 €

Uracil-6-carboxylic acid

▶ Orotic acid see p. 2186
▶ Orotic acid Monohydrate see p. 2186

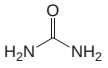
Uracil-1-β-D-ribofuranoside

▶ Uridine see p. 2431

Uranin

▶ Fluorescein disodium salt see p. 1996

Urea



Carbamide
CH_4N_2O • M 60,06 g/mol
D 1,32 • mp 132-135 °C
Solubility: 1080 g/l (H_2O, 20 °C)
[57-13-6] • EC No. 200-315-5 • WGK 1

Urea

≥99,5 %, p.a., BioScience-Grade
For molecular biology and biochemistry.

Guarantee analysis:

Appearance. ..... white, small crystals
Assay (TLC). ..... ≥99,5 %
Chloride (Cl). ..... ≤0,001 %
Sulphate (SO_4). ..... ≤0,001 %
Melting point (TLC). ..... 132-135 °C
Heavy metals (as Pb). ..... ≤0,001 %
UV-absorption (8 M solution):
260 nm. ..... ≤0,1
280 nm. ..... ≤0,1
DNases (exo-and endonucleases). ..... not detected
Ribonucleases activity. ..... not detected

2317.3	500 g	plastic	31,10 €
Original pack 6 x 500 g			29,55/500 g
2317.1	1 kg	plastic	54,30 €
Original pack 6 x 1 kg			51,59/1 kg
2317.4	2,5 kg	plastic	119,90 €
2317.2	5 kg	plastic	209,65 €

Urea

≥99,5 %, p.a.
For molecular biology and biochemistry.

Guarantee analysis:

Assay (ex N_2). ..... ≥99,5 %
In C_2H_5OH insoluble matter. ..... ≤0,01 %
Melting range. ..... 132-135 °C
Sulphated ash. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,007 %
Sulphate (SO_4). ..... ≤0,001 %
Ammonium (NH_4). ..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,0003 %
Arsenic (As). ..... ≤0,00005 %
Iron (Fe). ..... ≤0,0001 %
Copper (Cu). ..... ≤0,0001 %
Biuret. ..... ≤0,1 %

3941.3	500 g	plastic	14,95 €
Original pack 6 x 500 g			14,20/500 g
3941.1	1 kg	plastic	26,35 €
Original pack 6 x 1 kg			25,03/1 kg
3941.2	5 kg	plastic	107,00 €

Urea

≥99,5 %, Ph.Eur., cryst.
For molecular biology and biochemistry.

Guarantee analysis:

Appearance. ..... fine, white crystals
Assay (dry substance). ..... ≥99,5 %
Identity. ..... complies
Appearance of solution. ..... complies
Melting range. ..... 132-135 °C
Alkaline reacting substances. ..... complies
Loss on drying. ..... ≤1,0 %
Sulphated ash. ..... ≤0,1 %
Ammonium (NH_4). ..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,0003 %
Biuret. ..... ≤0,1 %

X999.1	500 g	plastic	14,55 €
Original pack 6 x 500 g			13,82/500 g
X999.2	1 kg	plastic	21,00 €
Original pack 6 x 1 kg			19,95/1 kg
X999.3	5 kg	plastic	89,15 €
X999.9	25 kg	plastic	342,95 €

Urea

≥99,5 %, cryst.

Type analysis:

Appearance. ..... white crystals
Assay. ..... ≥99,5 %
In H_2O insoluble matter. ..... ≤0,001 %
Water (KF). ..... ≤0,2 %
Heavy metals. ..... ≤0,0003 %
Iron (Fe). ..... ≤0,0001 %
Biuret. ..... ≤0,1 %

7638.1	1 kg	plastic	19,90 €
Original pack 6 x 1 kg			18,91/1 kg
7638.2	5 kg	plastic	76,25 €
7638.5	25 kg	cardboard	241,90 €

Urea Agar acc. to Christensen (Base)

Urea Agar acc. to Christensen (Base)

ISO 6579, ISO 19250, for microbiology
For differentiation of enterobacteria on the basis of urease production.
Application: Use 29 g for 1 l medium. Add 15 g Agar.
Christensen Agar
Storage temp.: +4 °C
WGK 1

Guarantee analysis:

Urea. ..... 20 g/l
Sodium chloride (NaCl). ..... 5 g/l
Potassium phosphate. ..... 2 g/l
Gelatine peptone. ..... 1 g/l
Dextrose. ..... 1 g/l
Phenol red. ..... 0,012 g/l
pH value. ..... 6,8 ±0,2

8320.1	500 g	plastic	125,25 €
Original pack 6 x 500 g			118,99/500 g

For further information, please see page 1469

Urea for electrophoresis

▶ Rotiphorese® NF-Urea see p. 2292

Urea-hydrogen peroxide

Urea-hydrogen peroxide

in tablet form
Oxidation, bleach and fixing agent
$CH_4N_2O \cdot H_2O_2$
M 94,07 g/mol
mp 75-85 °C
[124-43-6] • EC No. 204-701-4
UN No. 1511 • ADR 5.1 (8) III • WGK 2
Danger H272-H315-H318-H335

Type analysis:

Appearance. ..... white tablets
Assay (H_2O_2). ..... ≥35 %

7641.1	500 tablets (= 500 g)	plastic	38,60 €

Urease

Urease

M ~480000 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[9002-13-5] • EC No. 232-656-0
WGK 1

≥220 Nessler U/mg material
From jack beans, freeze-dried

Type analysis:

Appearance. ..... white solid
Activity. ..... ≥220 Nessler U/mg material

6065.1	0,25 MU	plastic	166,65 €

For further information, please see page 1320

Urease

~1 U/mg, for biochemistry
From jack beans *Canavalia ensiformis*.

Type analysis:
Appearance. .....slightly cream-coloured powder
Activity. ..... 0,8-1,2 U/mg

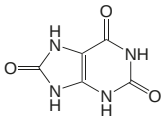
7537.1	5 g	plastic	134,40 €

For further information, please see page 1320

5-Ureidohydantoin

▶ Allantoin see p. 1782

Uric acid



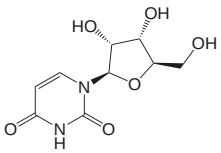
Uric acid

≥99 %, for biochemistry
2,6,8-Trihydroxypurine
$C_5H_4N_4O_3$
M 168,11 g/mol
mp >300 °C
[69-93-2] • EC No. 200-720-7
WGK 2

Type analysis:
Assay (HPLC). .....≥99,0 %
Loss on drying (105 °C). .....≤0,5 %
Heavy metals (as Pb). .....≤0,001 %

4999.1	25 g	glass	35,40 €
4999.2	50 g	glass	56,90 €
4999.3	100 g	glass	87,00 €
4999.4	250 g	glass	163,30 €

Uridine



Uridine

≥99 %, for biochemistry
Uracil-1-β-D-ribofuranoside
$C_9H_{12}N_2O_6$
M 244,20 g/mol
mp 165-168 °C
[58-96-8] • EC No. 200-407-5
WGK 1

Type analysis:
Assay. .....≥99,0 %
Heavy metals. .....≤0,001 %

0714.1	5 g	plastic	21,00 €
0714.2	10 g	plastic	30,00 €
0714.3	25 g	plastic	56,90 €

Uridine-5'-triphosphate

▶ UTP see p. 2431

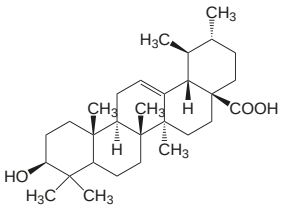
Urinary Tract Infection chromogenic Agar

▶ UTI chromogenic Agar see p. 2431

Urotropin

▶ Hexamethylene tetramine see p. 2041

Ursolic acid



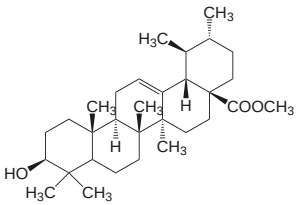
Ursolic acid

ROTICHROM® HPLC
Reference substance for HPLC.
From *Arctostaphylos uva ursi*
$C_{30}H_{48}O_3$
M 456,68 g/mol
mp 291 °C (dec.)
Storage temp.: +4 °C
[77-52-1] • EC No. 201-034-0

Type analysis:
Purity (HPLC). ..... ≥99 %

7429.1	10 mg	glass	166,65 €

Ursolic acid methyl ester



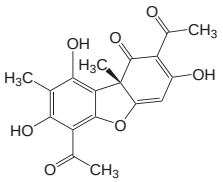
Ursolic acid methyl ester

ROTICHROM® HPLC
Reference substance for HPLC.
$C_{31}H_{50}O_3$
M 470,74 g/mol
mp ~286 °C
Storage temp.: +4 °C
[32208-45-0] • EC No. 250-953-3

Type analysis:
Purity (HPLC). ..... ≥99 %

7430.2	10 mg	glass	198,90 €

(+)-Usnic acid



(+)-Usnic acid

ROTICHROM® ~CHR
$C_{18}H_{16}O_7$
M 344,31 g/mol
[7562-61-0] • EC No. 231-456-0
WGK 1

Warning H302

4565.1	10 g	plastic	103,10 €

UTI chromogenic Agar

UTI chromogenic Agar

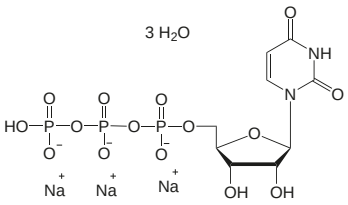
for microbiology
For detection and differentiation of microorganisms causing urinary tract infections.
Application: Use 47,5 g for 1 l agar.
Urinary Tract Infection chromogenic Agar
Storage temp.: +4 °C

Formulation:
Nutrients. ..... 13 g/l
Peptone. ..... 16 g/l
Tryptophane. ..... 2 g/l
Chromogene Mixture. ..... 0,5 g/l
Agar. ..... 16 g/l
pH value. ..... 7,2 ±0,2

3089.1	100 g	plastic	149,45 €

For further information, please see page 1469

UTP



UTP

≥90 %, lyophilised
Uridine-5'-triphosphate tri-sodium salt
$C_9H_{12}N_2O_{15}P_3Na_3 \cdot 3\ H_2O$
M 604,12 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[19817-92-6] • EC No. 243-347-5
WGK 1

K055.1	100 mg	plastic	59,70 €
K055.3	1 g	plastic	239,20 €

For further information, please see page 1305

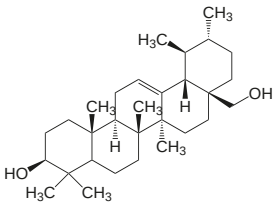
UTP solution

UTP solution
≥99 %, 100 mM solution
Uridine-5'-triphosphate
$C_9H_{12}N_2O_{15}P_3$
M 481,11 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[19817-92-6] • EC No. 243-347-5
WGK 1

K046.1	25 µmol (250 µl)	plastic	42,50 €

For further information, please see page 1305

Uvaol



Uvaol
ROTICHROM® HPLC
Reference substance for HPLC.
$C_{30}H_{50}O_2$
M 442,73 g/mol
Storage temp.: +4 °C
[545-46-0] • EC No. 208-888-3

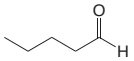
Type analysis:
Purity (HPLC)..... ≥98 %

7433.2	10 mg	glass	267,70 €

Valeral

▶ n-Valeraldehyde see p. 2432

n-Valeraldehyde

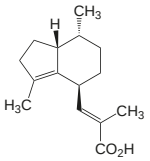


n-Valeraldehyde
≥96,5 %
1-Pentanal, Valeral
$C_5H_{10}O_2$
M 86,13 g/mol
D ~0,81 • bp 102-104 °C
mp -91,5 °C • flp 7 °C
Solubility: 14 g/l (H_2O, 20 °C)
Storage temp.: +4 °C
[110-62-3] • EC No. 203-784-4
UN No. 2058 • ADR 3 II • WGK 1
Danger H225-H317-H319-H332-H335

Type analysis:
Appearance. ..... colourless to pale yellow liquid
Assay (GC). ..... ≥96,5 %

4873.1	100 ml	glass	28,50 €

Valerenic acid



$C_{15}H_{22}O_2$
M 234,34 g/mol
mp ~140 °C
[3569-10-6]
WGK 3

Valerenic acid
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF)..... ≤3,0 %
Assay (qNMR)..... ≥90,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE32.1	25 mg	glass	901,95 €

Valerenic acid
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC)..... ≥90,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC32.1	50 mg	glass	299,95 €

Valerenic acid
with analytical records
From *Valeriana officinalis*.
Storage temp.: +4 °C

Type analysis:
Purity (HPLC). ..... ≥99,0 %
Analytical records: HPLC, TLC, ^{1}H- NMR, ^{13}C- NMR, UV, IR, MS, elementary analysis, melting point.

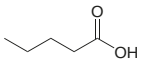
4712.2	50 mg	glass	568,70 €
4712.1	100 mg	glass	1069,65 €

Valerenic acid
ROTICHROM® HPLC
Reference substance for HPLC.
From *Valeriana officinalis*.
Storage temp.: +4 °C

Type analysis:
Purity (HPLC). ..... >99 %

4488.1	25 mg	glass	385,95 €
4488.2	50 mg	glass	639,65 €

n-Valeric acid

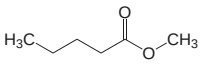


n-Valeric acid
≥98 %
Pentanoic acid
$C_5H_{10}O_2$
M 102,14 g/mol
D ~0,94 • bp ~186 °C
mp -32 °C • flp 86 °C
[109-52-4] • EC No. 203-677-2
UN No. 3265 • ADR 8 III • WGK 1
Danger H314-H412

Type analysis:
Appearance. ..... colourless liquid
Assay (GC, area %). ..... ≥98 %
Density (d 20 °C/4 °C)..... 0,938-0,940

4874.1	250 ml	glass	31,75 €

n-Valeric acid methyl ester

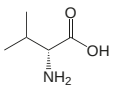


n-Valeric acid methyl ester
≥98 %
Methyl-valerate
$C_6H_{12}O_2$
M 116,16 g/mol
D ~0,89 • bp 126-128 °C
mp -91 °C • flp 27 °C
Solubility: 5 g/l (H_2O, 25 °C)
[624-24-8] • EC No. 210-838-0
UN No. 3272 • ADR 3 II • WGK 2
Danger H225-H332

Type analysis:
Assay (GC). ..... ≥98,0 %
Density (20 °C)..... 0,8880-0,8920
Refractive index n_D^{20}..... 1,3960-1,3990

4876.1	100 ml	glass	55,80 €

D-Valine



D-Valine
≥98,5 %, for biochemistry
D-α-Aminoisovaleric acid, H-D-Val-OH
$C_5H_{11}NO_2$
M 117,2 g/mol
Storage temp.: +4 °C
[640-68-6] • EC No. 211-368-9
WGK 1

Type analysis:
Appearance. ..... white to off-white powder
Assay. ..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$ (c= 2 in 6 N HCl)..... -29,0° to -26,0°
Loss on drying..... ≤0,5 %

7891.1	5 g	plastic	25,70 €
7891.2	25 g	plastic	76,25 €
7891.3	100 g	plastic	235,45 €

DL-Valine

DL-Valine

≥99 %, for biochemistry

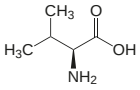
DL-α-Aminoisovaleric acid
$C_5H_{11}NO_2$
M 117,15 g/mol
mp 295-300 °C
[516-06-3] • EC No. 208-220-0
WGK 1

Type analysis:

Assay.....≥99,0 %
Heavy metals.....≤0,002 %

7540.1	50 g	plastic	29,60 €
7540.2	100 g	plastic	51,50 €
7540.3	250 g	plastic	100,55 €

L-Valine



L-α-Aminoisovaleric acid, H-L-Val-OH
$C_5H_{11}NO_2$
M 117,15 g/mol
D 1,23
mp ~315 °C
Solubility: 85 g/l (H_2O, 20 °C)
[72-18-4] • EC No. 200-773-6
WGK 1

L-Valine

CELLPURE® ≥99 %

For cell culture and biochemistry.

Guarantee analysis:

Endotoxins.....≤6,0 E.U./g
Assay.....≥99 %
Loss on drying.....≤0,2 %
Specific rotation $[\alpha]_D^{20}$.....+27,6° to +28,7°
Ammonium (NH_4).....≤0,02 %
Chloride (Cl).....≤0,02 %
Sulphate (SO_4).....≤0,02 %
Heavy metals (as Pb).....≤0,001 %
Iron (Fe).....≤0,001 %

1742.1	25 g	plastic	21,00 €
1742.2	100 g	plastic	41,85 €
1742.3	500 g	plastic	155,90 €
Original pack 6 x 500 g			148,11/500 g

L-Valine

≥98,5 %, USP, for biochemistry

Guarantee analysis:

Appearance.....white cryst. powder
Assay (dry substance).....98,5-101,5 %
Identity.....complies
pH value (5 % in water).....5,5-7,0
Specific rotation $[\alpha]_D^{25}$ (8 % in HCl 6 N).....+26,6° to +28,8°
Ash content.....≤0,1 %
Loss on drying (105 °C, 3 h).....≤0,3 %
Foreign amino acids.....complies
Heavy metals (as Pb).....≤0,001 %
Chloride (Cl).....≤0,05 %
Sulphate (SO_4).....≤0,03 %
Ammonium (NH_4).....≤0,02 %
Iron (Fe).....≤0,003 %

4879.1	25 g	plastic	17,10 €
4879.3	100 g	plastic	38,60 €
4879.4	250 g	plastic	76,25 €
4879.5	500 g	plastic	122,45 €
Original pack 6 x 500 g			116,33/500 g
4879.2	1 kg	plastic	221,35 €
Original pack 6 x 1 kg			210,28/1 kg

Vanadium Standards

- Vanadium AAS Standard Solution see p. 2361
- Vanadium ICP Standard Solution see p. 2365
- Vanadium ICP Standard Solution see p. 2370

Vanadium(V) oxide

Vanadium pentoxide
V_2O_5
M 181,88 g/mol
D 3,35 • bp 1750 °C (dec.)
mp 690 °C
Solubility: 0,7 g/l (H_2O, 20 °C)
[1314-62-1] • EC No. 215-239-8
UN No. 2862 • ADR 6.1 III • WGK 3

Danger

H302+H332-H335-H341-H361d-H372-H411

Vanadium(V) oxide

ROTI®METIC 99,995 % (4N5)

Type analysis:

Assay (metals basis).....99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5370.1	5 g	plastic	78,40 €
5370.2	25 g	plastic	310,70 €

Vanadium(V) oxide

≥99,5 %, pure

Type analysis:

Assay.....≥99,5 %
Iron (Fe).....≤0,05 %
Potassium (K).....≤0,05 %
Sodium (Na).....≤0,05 %

0308.1	10 g	plastic	16,70 €
0308.2	100 g	plastic	33,25 €
0308.3	250 g	plastic	55,80 €
0308.4	500 g	plastic	100,95 €
Original pack 6 x 500 g			95,90/500 g

Vanadium pentoxide

▶ Vanadium(V) oxide see p. 2433

Vancomycin hydrochloride

Vancomycin hydrochloride

CELLPURE® ≥900 U/mg

Bacteriostatic antibiotic.
For cell culture and biochemistry.
Glycopeptide antibiotic
$C_{66}H_{75}Cl_2N_9O_{24} \cdot HCl$
M 1485,73 g/mol
Storage temp.: +4 °C
[1404-93-9]
WGK 1

Warning H317

Type analysis:

Assay.....≥93,0 %
Activity.....≥900 U/mg
pH value.....2,5-4,5
Water.....≤5,0 %
Endotoxins.....≤0,33 E.U./mg

0242.1	250 mg	glass	34,30 €
0242.2	500 mg	glass	55,80 €
0242.3	1 g	glass	100,95 €
0242.7	5 g	plastic	332,20 €

For further information, please see page 1508

Van Gieson's picrofuchsin

▶ Van Gieson's Solution see p. 2433

Van Gieson's Solution

Van Gieson's Solution

for microscopy

For visualising connective tissue during van Gieson trichrome staining and Elastica van Gieson staining.
Van Gieson's picrofuchsin
WGK 1
EUH001

3925.1	500 ml	glass	25,70 €
3925.2	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l

For further information, please see page 1515

Van Gieson trichrome staining kit

Van Gieson trichrome staining kit

for microscopy

Staining kit for visualising connective tissue, incl. instructions for use.

Storage temp.: +20 °C

UN No. 1219 • ADR 3 II

Danger

H225-H318-H336-EUH001

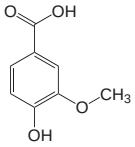
Formulation:

Hematoxylin solution A acc. to Weigert (Art. No. X906)..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907)..... 500 ml
Van Gieson's Solution (Art.-No. 3925)..... 500 ml

9193.1	1 kit	glass	99,90 €

For further information, please see page 1515

Vanillic acid



Vanillic acid

≥98 %

4-Hydroxy-3-methoxybenzoic acid

$C_8H_8O_4$

M 168,14 g/mol

mp 208-212 °C

[121-34-6] • EC No. 204-466-8 • WGK 1

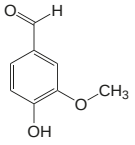
Warning H319

Type analysis:

Assay (acidim.)..... ≥98 %
Melting range..... 208-212 °C

3685.1	10 g	plastic	38,60 €

Vanillin



4-Hydroxy-3-methoxybenzaldehyde

$C_8H_8O_3$

M 152,15 g/mol

D 1,06 • bp 285 °C

mp 81-83 °C • flp 153 °C

Solubility: 10 g/l (H_2O, 20 °C)

[121-33-5] • EC No. 204-465-2 • WGK 1

Warning H302-H319

Vanillin

≥99 %, for biochemistry

Type analysis:

Appearance..... cryst. powder
Assay (HPLC)..... ≥99 %
Arsenic (As)..... ≤0,0003 %
Heavy metals (as Pb)..... ≤0,001 %
Sulphated ash..... ≤0,05 %
Loss on drying..... ≤0,06 %

7887.1	100 g	plastic	17,75 €
7887.2	1 kg	plastic	89,80 €
Original pack 6 x 1 kg			85,31/1 kg

Vanillin

ROTI®CALIPURE Melting point standard 81-83 °C

Type analysis:

Meniscus formation..... 81-83 °C
Complete liquefaction..... 81-83 °C

9714.1	1 g	glass	31,10 €

Vanillin

ROTICHROM® GC

Reference substance for GC.

Storage temp.: +4 °C

Type analysis:

Purity (GC)..... ≥96 %

5108.1	1 g	plastic	84,95 €

6-Vanilloylcatalpol

▶ Picrosid II see p. 2212

Vaseline

Vaseline

Ph.Eur.

flp >150 °C

[8009-03-8] • EC No. 232-384-2 • WGK 1

Guarantee analysis:

Appearance..... white to off-white
Identity..... complies
Solidification point..... 50-55 °C
Viscosity (100 °C)..... 7,5-10 mm^2/s
Aromatic polycyclic hydrocarbons..... complies
Sulphated ash..... ≤0,05 %
Consistency..... 165-185 1/10 mm
Acid or alkaline react. substances..... complies

5775.2	500 g	plastic	18,20 €
Original pack 6 x 500 g			17,29/500 g
5775.1	1 kg	plastic	25,70 €
Original pack 6 x 1 kg			24,42/1 kg
5775.4	10 kg	plastic	127,40 €

Vaseline oil

Vaseline oil

techn., white

D 0,86

mp -15 °C • flp >190 °C • WGK 1

H413

Type analysis:

Viscosity (40 °C)..... 18-25 mm^2/s

9336.1	1 l	plastic	24,20 €
Original pack 6 x 1 l			22,99/1 l
9336.2	2,5 l	plastic	41,85 €
Original pack 4 x 2,5 l			39,76/2,5 l
9336.3	5 l	plastic	67,65 €
Original pack 2 x 5 l			64,27/5 l

Venice turpentine

Venice turpentine

natural

From *Larix decidua*

Terebinthina veneta

D 1,0

flp 42 °C

[90046-19-8] • EC No. 304-455-9

UN No. 1272 • ADR 3 III • WGK 2

Warning

H226-H315-H317-H319-H335-H410

Type analysis:

Appearance..... dark viscous, light brownish oil

4485.1	250 g	glass	73,00 €

Veratric acid

▶ 3,4-Dimethoxybenzoic acid see p. 1945

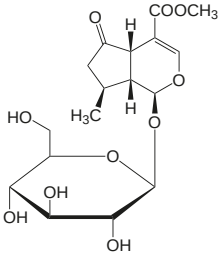
Veratric aldehyde

▶ 3,4-Dimethoxybenzaldehyde see p. 1945

Verbascoside

▶ Acteoside see p. 1771

Verbenalin



Verbenalin

ROTICHROM® ~CHR

Verbenaloside, Cornin

$C_{17}H_{24}O_{10}$

M 388,37 g/mol

[548-37-8]

9450.2	10 mg	glass	278,45 €

Verbenaloside

▶ Verbenalin see p. 2434

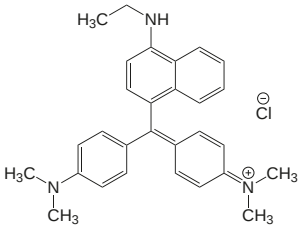
Versene®/DPBS

▶ Roti®-CELL DPBS/EDTA see p. 2268

Vesuvin R

▶ Bismarck brown R (C.I. 21010) see p. 1839

Victoria blue R (C.I. 44040)



Victoria blue R (C.I. 44040)

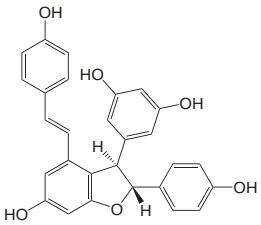
extra pure
Basic blue 11
$C_{29}H_{32}N_3Cl$
M 458,04 g/mol
[2185-86-6] • EC No. 218-572-7
WGK 1

Warning H302

Type analysis:
Appearance. ..... dark blue powder

7742.1	5 g	glass	13,90 €
7742.2	25 g	glass	24,20 €
7742.3	100 g	glass	59,05 €

ε-Viniferin



ε-Viniferin

ROTICHROM® HPLC
Reference substance for HPLC.
From *Vitis vinifera.*
trans-ε-Viniferin
$C_{28}H_{22}O_6$
M 454,48 g/mol
Storage temp.: +4 °C
[62218-08-0]
WGK 3

Type analysis:
Purity (HPLC) ..... ≥98 %

6697.1	20 mg	glass	514,95 €

Vinyl benzene

▶ Styrene see p. 2383

Violet Red Bile Agar with Dextrose and Lactose

Violet Red Bile Agar with Dextrose and Lactose

Ph.Eur., for microbiology
For detection and enumeration of enterobacteria.
Application: Use 51,5 g for 1 l agar.
Agar Medium F (Ph.Eur. 6.0)
Storage temp.: +20 °C
WGK 1

Guarantee analysis:
Yeast extract. ..... 3 g/l
Pancreas hydrolysate made from gelatin. ..... 7 g/l
Cholate. ..... 1,5 g/l
Lactose monohydrate. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Glucose monohydrate. ..... 10 g/l
Neutral red. ..... 0,03 g/l
Crystal Violet. ..... 0,002 g/l
Agar. ..... 15 g/l
pH value. ..... 7,4 ±0,2

AE45.1	500 g	plastic	82,70 €
Original pack 6 x 500 g			78,57/500 g

For further information, please see page 1454

Violet Red Bile Agar with Glucose

Violet Red Bile Agar with Glucose

ISO 21528, Ph.Eur., for microbiology
For cultivation and enumeration of enterobacteria in water, foods and other materials.
Application: Use 41,5 g for 1 l agar.
Violet Red Bile Glucose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), VRBD Agar
Storage temp.: +20 °C
WGK 1

Guarantee analysis:
Yeast extract. ..... 3 g/l
Pancreas hydrolysate made from gelatin. ..... 7 g/l
Sodium chloride (NaCl). ..... 5 g/l
Bile salts. ..... 1,5 g/l
Glucose monohydrate. ..... 10 g/l
Neutral red. ..... 0,03 g/l
Crystal Violet. ..... 0,002 g/l
Agar. ..... 15 g/l
pH value. ..... 7,4 ±0,2

X939.1	500 g	plastic	78,40 €
Original pack 6 x 500 g			74,48/500 g
X939.2	1 kg	plastic	137,50 €
Original pack 6 x 1 kg			130,63/1 kg
X939.3	2,5 kg	plastic	274,15 €

For further information, please see page 1454

Violet Red Bile Agar with Glucose, granulated

Violet Red Bile Agar with Glucose, granulated

granulated, Ph.Eur., for microbiology
For cultivation and enumeration of enterobacteria in water, foods and other materials.
Application: Use 38,53 g for 1 l agar.
Violet Red Bile Glucose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), VRBD Agar
Storage temp.: +20 °C
WGK 3

Guarantee analysis:
Yeast extract. ..... 3 g/l
Peptone. ..... 7 g/l
Sodium chloride (NaCl). ..... 5 g/l
Bile salts. ..... 1,5 g/l
Glucose monohydrate. ..... 10 g/l
Neutral red. ..... 0,03 g/l
Crystal Violet. ..... 0,002 g/l
Agar. ..... 12 g/l
pH value. ..... 7,4 ±0,2

1525.1	500 g	plastic	110,65 €
Original pack 6 x 500 g			105,12/500 g

For further information, please see page 1457

Violet Red Bile Agar with Lactose

Violet Red Bile Agar with Lactose

ISO 4832, for microbiology
For detection and enumeration of coliforms in milk, foods and other materials.
Application: Use 41,5 g for 1 l agar.
VRB Agar
Storage temp.: +20 °C
WGK 1

Guarantee analysis:
Yeast extract. ..... 3 g/l
Gelatine peptone ..... 7 g/l
Sodium chloride (NaCl). ..... 5 g/l
Bile salts. ..... 1,5 g/l
Lactose. ..... 10 g/l
Neutral red. ..... 0,03 g/l
Crystal Violet. ..... 0,002 g/l
Agar. ..... 15 g/l
pH value. ..... 7,4 ±0,2

X940.1	500 g	plastic	76,25 €
Original pack 6 x 500 g			72,44/500 g

For further information, please see page 1454

β-Viscol

▶ Lupeol see p. 2106

Vitamins

Art. No.	Description	Page
0979	4-Aminobenzoic acid	1788
3525	L(+)-Ascorbic acid	1817
6288	L(+)-Ascorbic acid	1817
NE00	L(+)-Ascorbic acid	1817
NC00	L(+)-Ascorbic acid	1817
3149	L(+)-Ascorbic acid sodium salt	1817
7819	L(+)-Ascorbic acid sodium salt	1817
3822	D(+)-Biotin	1838
3812	Calcium D(+)-pantothenate	1872
T912	Folic acid	2004
3815	Nicotinic acid	2158
T914	Pyridoxine hydrochloride	2245
9607	Riboflavine	2259
T911	Thiamine hydrochloride	2404
3806	DL-α-Tocopherol	2410
NE16	DL-α-Tocopherol	2410
NC16	DL-α-Tocopherol	2410
NE18	RRR-α-Tocopherol	2411
NC18	RRR-α-Tocopherol	2411
3805	DL-α-Tocopherol acetate	2411
NE17	DL-α-Tocopherol acetate	2411
NC17	DL-α-Tocopherol acetate	2411
T915	Vitamin B_{12}	2436
3804	Vitamin K_1	2436

Vitamin B_1 hydrochloride
▶ Thiamine hydrochloride see p. 2404

Vitamin B_2
▶ Riboflavine see p. 2259

Vitamin B_3
▶ Nicotinic acid see p. 2158

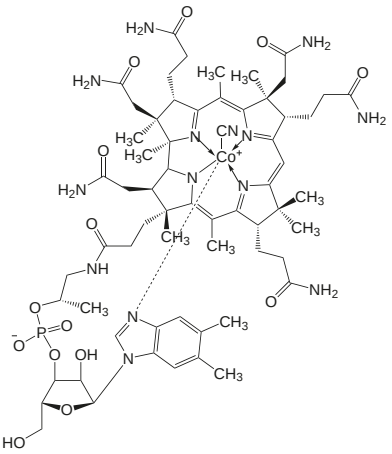
Vitamin B_5
▶ Calcium D(+)-pantothenate see p. 1872

Vitamin B_5 calcium salt
▶ Calcium D(+)-pantothenate see p. 1872

Vitamin B_6 hydrochloride
▶ Pyridoxine hydrochloride see p. 2245

Vitamin B_{10}
▶ 4-Aminobenzoic acid see p. 1788

Vitamin B_{12}



Vitamin B_{12}
≥96 %, for biochemistry
Cyanocobalamin
$C_{63}H_{88}CoN_{14}O_{14}P$
M 1355,4 g/mol
Solubility: 12 g/l (H_2O, 25 °C)
Storage temp.: +4 °C
[68-19-9] • EC No. 200-680-0
WGK 1

Type analysis:
Appearance..... dark-red cryst. powder
Assay (dry substance)..... 96,0-102,0 %
Related substances..... ≤5 %
Loss on drying..... ≤12,0 %

T915.1	500 mg	glass	44,00 €
T915.2	1 g	glass	74,75 €
T915.3	2,5 g	glass	160,20 €

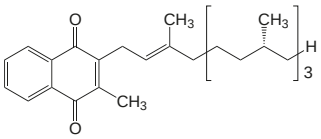
Vitamin C
▶ L(+)-Ascorbic acid see p. 1817

Vitamin E
▶ DL-α-Tocopherol see p. 2410
▶ RRR-α-Tocopherol see p. 2411

Vitamin E acetate
▶ DL-α-Tocopherol acetate see p. 2411

Vitamin H
▶ D(+)-Biotin see p. 1838

Vitamin K_1



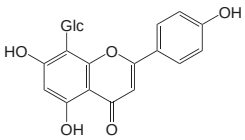
Vitamin K_1
≥97 %, for biochemistry
Phytomenadione, Phylloquinone
$C_{31}H_{46}O_2$
M 450,68 g/mol
D 0,97
mp -20 °C • flp 110 °C
Storage temp.: +4 °C
[84-80-0] • EC No. 201-564-2 • WGK 1
H413

Type analysis:
Appearance..... gold-yellow, viscous oil
Assay (HPLC)..... 97,0-103,0 %
Refractive index (20 °C)..... 1,523-1,526
Sulphated ash..... ≤0,1 %

3804.1	1 g	glass	30,00 €
3804.3	5 g	glass	97,30 €
3804.2	10 g	glass	169,35 €

Vitexicarpin
▶ Casticin see p. 1882

Vitexin



Orientoside, Apigenin-8-glucoside
$C_{21}H_{20}O_{10}$
M 432,36 g/mol
[3681-93-4] • EC No. 222-963-8 • WGK 3

Vitexin
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤3,0 %
Water (KF)..... ≤5,0 %
Assay (qNMR)..... ≥85,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE56.1	10 mg	glass	719,20 €

Vitexin
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC56.1	25 mg	glass	611,70 €

Vitexin
ROTICHROM® HPLC
Reference substance for HPLC.
Storage temp.: +4 °C

Type analysis:
Purity (HPLC)..... ≥99 %

6418.1	5 mg	glass	213,95 €

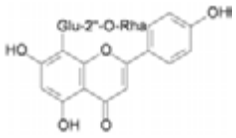
Vitexin
ROTICHROM® TLC
Reference substance for thin layer chromatography
Storage temp.: +4 °C

5579.1	10 mg	glass	41,40 €

Vitexin
ROTICHROM® ~CHR
Storage temp.: +4 °C

4173.1	10 mg	glass	39,25 €

Vitexin-2''-O-rhamnoside



$C_{27}H_{30}O_{14}$
M 578,53 g/mol
[64820-99-1]
WGK 3

Vitexin-2''-O-rhamnoside
ROTI®STAR Primary Standard

Type analysis:
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤5,0 %
Water (KF)..... ≤8,0 %
Assay (qNMR)..... ≥85,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE34.1	10 mg	glass	751,45 €

Vitexin-2''-O-rhamnoside
ROTICHROM® Working Standard

Type analysis:
Assay (HPLC)..... ≥80,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC34.1	25 mg	glass	435,40 €

Vitexin-2''-O-rhamnoside
ROTICHROM® TLC
Reference substance for thin layer chromatography
Storage temp.: +4 °C

5819.1	10 mg	glass	88,05 €

VLSI products

Art. No.	Description	Page
9780	Acetone	1761
0051	2-Butanone	1860
9787	Hydrochloric acid 37 %	2048
9790	Hydrogen peroxide 30 %	2054
0061	Isobutyl methylketone	2077
0036	L(-)-Lactic acid ethyl ester	2089
9785	Methanol	2132
9786	N-Methyl-2-pyrrolidone (NMP)	2141
9788	ortho-Phosphoric acid 85 %	2210
9781	2-Propanol	2240
9789	Sulphuric acid 96 %	2388

Volumetric Karl Fischer solutions

- Karl Fischer methanol see p. 2084
- Karl Fischer Roti®hydroquant C2 see p. 2083
- Karl Fischer Roti®hydroquant C5 K see p. 2083
- Karl Fischer Roti®hydroquant S see p. 2084
- Karl Fischer Roti®hydroquant T see p. 2084

Volumetric solutions in ampoules

- Chapter Anorganic and Analytical Reagents see p. 1683

Volumetric solutions, ready to use

- Chapter Anorganic and Analytical Reagents see p. 1681

Volumetric Solutions in Ampoules

Art. No.	Description	Page
CN51	EDTA disodium salt solution (0,1 N)	1965
CN61	Hydrochloric acid (0,1 N)	2051
CN62	Hydrochloric acid (0,5 N)	2051
CN63	Hydrochloric acid (1 N)	2052
CN59	Oxalic acid solution (0,1 N)	2188
CN53	Potassium hydroxide solution (0,1 N)	2230
CN66	Silver nitrate solution (0,1 N)	2327
CN67	Sodium chloride solution (0,1 N)	2335
CN56	Sodium hydroxide solution (0,1 N)	2342
CN57	Sodium hydroxide solution (0,5 N)	2343
CN58	Sodium hydroxide solution (1 N)	2343
CN55	Sodium thiosulphate solution (0,1 N)	2351
CN64	Sulphuric acid (0,1 N)	2390
CN65	Sulphuric acid (1 N)	2391

Volumetric Solutions ready to use

Art. No.	Description	Page
KK62	Acetic acid (1N)	1757
9883	Acetic acid (2 N)	1757
9897	Ammonia solution (4 N)	1794
KK60	Ammonium iron(II) sulphate solution (0,12 N)	1801
P718	Ammonium thiocyanate solution (0,1 N)	1804
0468	Barium chloride solution (0,1 N)	1826
N054	Barium hydroxyde solution (0,1 N)	1827
KK61	Bariumperchlorate solution (0,005 N)	1827
9217	Benzethonium chloride solution	1830
8131	Bromide bromate solution (0,1 N)	1851
0243	CDTA disodium salt solution (0,1 N)	1884
P719	Cerium(IV) sulphate solution (0,1 N)	1887
9948	Copper(II) sulphate solution (0,1 N)	1911
CN34	EDTA disodium salt solution (0,01 N)	1965
KK75	EDTA disodium salt solution (0,05 N)	1965
K714	EDTA disodium salt solution (0,1 N)	1965
8084	EDTA disodium salt solution (0,2 N)	1965
T136	EDTA disodium salt solution A (0,1 N)	1965
T137	EDTA disodium salt solution B (0,01783 N)	1966
KK63	Hanus solution (0,2 N)	2032
N075	Hydrochloric acid (0,01 N)	2051
8085	Hydrochloric acid (0,05 N)	2051
K024	Hydrochloric acid (0,1 N)	2051
4120	Hydrochloric acid (0,2 N)	2051
P708	Hydrochloric acid (0,5 N)	2051
K025	Hydrochloric acid (1 N)	2051
T134	Hydrochloric acid (2 N)	2052
N076	Hydrochloric acid (4 N)	2052
0281	Hydrochloric acid (6 N)	2052
0226	Hydrochloric acid (10 N)	2052
KK65	Iodid-iodate solution (1/64 N)	2069
0228	Iodid-iodate solution (0,1 N)	2069
K016	Iodine solution (0,1 N)	2070
X868	Iodine solution (1 N)	2070
KK72	Mercury(II) nitrate solution (0,1 N)	2128
X871	Mercury(II) sulphate solution 80 g/l	2128
KK73	Nitric acid (0,1 N)	2161
N070	Nitric acid (1 N)	2161
9887	Nitric acid (2 N)	2161
CN35	Oxalic acid solution (0,1 N)	2187
0764	Oxalic acid solution (0,2 N)	2188
K023	Perchloric acid (0,1 N)	2199
8089	ortho-Phosphoric acid (0,3 N)	2211
8091	ortho-Phosphoric acid (0,5 N)	2211
8141	ortho-Phosphoric acid (3 N)	2211
8130	Potassium bromide solution (0,1 N)	2223
4117	Potassium chloride solution (0,2 N)	2224
T138	Potassium chloride solution (3 N)	2224
9880	Potassium chloride solution (3 N) with AgCl	2224
P722	Potassium dichromate solution (0,1 N)	2225
P720	Potassium dichromate solution (0,12 N)	2225
P721	Potassium dichromate solution (0,25 N)	2225
K018	Potassium hydroxide solution (0,1 N)	2230
N071	Potassium hydroxide solution (0,5 N)	2230
K017	Potassium hydroxide solution (1 N)	2230
0765	Potassium hydroxide solution (0,05 N)	2230
P706	Potassium hydroxide solution in ethanol (0,1 N)	2230
P707	Potassium hydroxide solution in ethanol (0,5 N)	2230
KK68	Potassium hydroxide solution in isopropanol (0,1 N)	2231
KK66	Potassium hydroxide solution in methanol (0,1 N)	2231
KK67	Potassium hydroxide solution in methanol (0,5 N)	2231
9898	Potassium nitrate solution (1 N)	2232
K019	Potassium permanganate solution (0,1 N)	2233
KK69	Potassium permanganate solution (0,5 N)	2233
9899	Potassium thiocyanate solution (1 N)	2236
6838	Silver nitrate solution (0,2 N)	2327
K713	Silver nitrate solution (0,1 N)	2327
6835	Silver nitrate solution (0,05 N)	2327
6839	Silver nitrate solution (0,5 N)	2327
6841	Silver nitrate solution (1 N)	2328

X870	Silver sulphate solution (10 g/l)	2328
0151	Sodium acetate solution (0,1 N)	2330
0187	Sodium carbonate solution (0,1 N)	2334
0211	Sodium carbonate solution (1 N)	2334
8115	Sodium chloride solution (1 N)	2335
N073	Sodium hydroxide solution (0,01 N)	2342
0763	Sodium hydroxide solution (0,02 N)	2342
0224	Sodium hydroxide solution (0,05 N)	2342
K020	Sodium hydroxide solution (0,1 N)	2342
N074	Sodium hydroxide solution (0,2 N)	2342
P711	Sodium hydroxide solution (0,25 N)	2342
0755	Sodium hydroxide solution (0,33 N)	2343
P710	Sodium hydroxide solution (0,5 N)	2343
K021	Sodium hydroxide solution (1 N)	2343
T135	Sodium hydroxide solution (2 N)	2343
T198	Sodium hydroxide solution (4 N)	2343
KK71	Sodium hydroxide solution (5 N)	2343
0214	Sodium hydroxide solution (6 N)	2343
X869	Sodium thiosulphate solution (0,01 N)	2351
K022	Sodium thiosulphate solution (0,1 N)	2351
9900	Sodium thiosulphate solution (1 N)	2351
X872	Sulphuric acid (0,02 N)	2390
K026	Sulphuric acid (0,1 N)	2390
N072	Sulphuric acid (0,2 N)	2391
P709	Sulphuric acid (0,5 N)	2391
K027	Sulphuric acid (1 N)	2391
X873	Sulphuric acid (2 N)	2391
9896	Sulphuric acid (4 N)	2391
KK74	Sulphuric acid (5 N)	2391
CN36	Wijs-solution (0,2 N)	2441
9901	Zinc chloride solution (0,1 N)	2450
P723	Zinc sulphate solution (0,1 N)	2452

Volumetric Solutions Reag. Ph.Eur.

Art. No.	Description	Page
6764	EDTA disodium salt solution (0,1 N)	1965
6789	Hydrochloric acid (0,1 N)	2051
6792	Hydrochloric acid (1 N)	2052
6765	Iodine solution (0,1 N)	2070
9525	Perchloric acid 0,1 N	2199
9522	Potassium hydroxide solution (1 N)	2230
9523	Potassium permanganate solution (0,1 N)	2233
9526	Silver nitrate solution (0,1 N)	2327
6783	Sodium hydroxide solution (0,1 N)	2342
6785	Sodium hydroxide solution (1 N)	2343
6782	Sodium thiosulphate solution (0,1 N)	2351
6793	Sulphuric acid (0,1 N)	2390
6794	Sulphuric acid (1 N)	2391

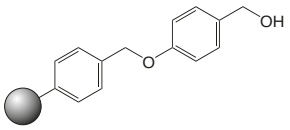
VRB Agar

▶ Violet Red Bile Agar with Lactose see p. 2435

VRBD Agar

▶ Violet Red Bile Agar with Glucose see p. 2435
▶ Violet Red Bile Agar with Glucose, granulated see p. 2435

Wang resin



Wang resin

PEPTIPURE® 100-200 mesh, 1 % DVB

For peptide synthesis
4-Benzyloxybenzyl alcohol resin
Storage temp.: +4 °C
WGK 3

Type analysis:

Appearance.....colourless to yellow beads
Loading.....1,0-1,4 mmol/g
Identity (IR).....complies
Swelling.....4,0-7,0 ml/g (DMF, 24 h)
Swelling.....4,0-8,0 ml/g (CH_2Cl_2, 24 h)
Kaiser test.....negative
Loss on drying.....≤2 %

7506.1	1 g	glass	17,75 €
7506.2	5 g	plastic	40,75 €
7506.3	25 g	plastic	170,95 €

Water Ultra-quality

Water Ultra-quality

ROTIPURAN® Ultra

Extra highpure water (ppt quality) for sample preparation in ultra trace analysis.
H_2O
M 18,02 g/mol
D 1,0 • bp 100 °C
mp 0 °C
[7732-18-5] • EC No. 231-791-2

Guarantee analysis:

Colour (APHA).....≤10
Chloride (Cl).....≤1 ppb
Phosphate (PO_4).....≤1 ppb
Sulphate (SO_4).....≤1 ppb
Aluminium (Al).....≤20 ppt
Antimony (Sb).....≤10 ppt
Arsenic (As).....≤10 ppt
Barium (Ba).....≤10 ppt
Beryllium (Be).....≤10 ppt
Lead (Pb).....≤10 ppt
Boron (B).....≤20 ppt
Cadmium (Cd).....≤10 ppt
Cesium (Cs).....≤10 ppt
Calcium (Ca).....≤10 ppt
Cerium (Ce).....≤10 ppt
Chromium (Cr).....≤10 ppt
Dysprosium (Dy).....≤1 ppt
Iron (Fe).....≤10 ppt
Erbium (Er).....≤1 ppt
Europium (Eu).....≤1 ppt
Gadolinium (Gd).....≤1 ppt
Gallium (Ga).....≤10 ppt
Germanium (Ge).....≤10 ppt
Gold (Au).....≤10 ppt
Hafnium (Hf).....≤1 ppt
Holmium (Ho).....≤1 ppt
Indium (In).....≤1 ppt
Potassium (K).....≤10 ppt
Cobalt (Co).....≤10 ppt
Copper (Cu).....≤10 ppt
Lanthanum (La).....≤1 ppt
Lithium (Li).....≤10 ppt
Lutetium (Lu).....≤1 ppt
Magnesium (Mg).....≤10 ppt
Manganese (Mn).....≤10 ppt
Molybdenum (Mo).....≤10 ppt
Sodium (Na).....≤10 ppt
Neodymium (Nd).....≤1 ppt
Nickel (Ni).....≤10 ppt
Niobium (Nb).....≤10 ppt
Palladium (Pd).....≤10 ppt
Platinum (Pt).....≤10 ppt
Praseodymium (Pr).....≤10 ppt
Mercury (Hg).....≤20 ppt
Rhenium (Re).....≤10 ppt
Rhodium (Rh).....≤10 ppt
Rubidium (Rb).....≤10 ppt
Ruthenium (Ru).....≤10 ppt
Samarium (Sm).....≤10 ppt
Scandium (Sc).....≤10 ppt
Selenium (Se).....≤50 ppt
Silver (Ag).....≤10 ppt
Strontium (Sr).....≤10 ppt
Tantal (Ta).....≤10 ppt
Tellur (Te).....≤1 ppt
Terbium (Tb).....≤10 ppt
Thallium (Tl).....≤10 ppt
Thorium (Th).....≤1 ppt
Thulium (Tm).....≤10 ppt
Titanium (Ti).....≤10 ppt
Uranium (U).....≤1 ppt
Vanadium (V).....≤10 ppt
Bismuth (Bi).....≤10 ppt
Tungsten (W).....≤10 ppt
Ytterbium (Yb).....≤10 ppt
Yttrium (Y).....≤1 ppt
Zinc (Zn).....≤10 ppt
Tin (Sn).....≤10 ppt
Zirconium (Zr).....≤10 ppt

HN68.1	500 ml	LDPE	54,30 €
HN68.2	1 l	LDPE	80,55 €
Original pack 6 x 1 l			76,52/1 l
HN68.3	2 l	LDPE	152,15 €

For further information, please see page 1729

Water

H_2O
M 18,02 g/mol
D 1,0 • bp 100 °C • mp 0 °C
[7732-18-5] • EC No. 231-791-2

Water

ROTIPURAN® Low organic

High-purity water for sample preparation in organic trace analysis and for molecular biology.

Guarantee analysis:

TOC (Total Organic Carbon).....≤20 ppb
Spec. electric resistance (at time of preparation).....≥18 MΩ·cm
Colour (APHA).....≤5
Evaporation residue.....≤0,0001 %
Fluorescence (as quinine).....≤100 ppt
Optical absorbance:
200 nm.....≤0,01
254 nm.....≤0,005
300 nm.....≤0,005
400 nm.....≤0,005
LC-gradient suitability test.....complies

HN57.1	1 l	glass	69,35 €
Original pack 6 x 1 l			65,88/1 l
HN57.2	4 l	glass	113,85 €

For further information, please see page 1729

Water
ROTISOLV® Ultra LC-MS
Guarantee analysis:
Spec. electric resistance
(at time of preparation)..... ≥18,2 MΩ·cm
Free acid (as CH_3COOH). ..... ≤0,0002 %
Free alkali (as NH_3)..... ≤0,00005 %
Non volatile matter..... ≤0,0001 %
TOC (Total Organic Carbon)..... ≤10 ppb
Gradient test:
UV-absorption of the greatest eluated peak.
210 nm..... ≤0,003 AU
254 nm..... ≤0,0005 AU
Fluorescence (as quinine):
254 nm..... ≤0,5 ppb
365 nm..... ≤0,5 ppb
Trace impurities:
Aluminium (Al). ..... ≤20 ppb
Calcium (Ca)..... ≤100 ppb
Iron (Fe). ..... ≤30 ppb
Potassium (K). ..... ≤50 ppb
Magnesium (Mg)..... ≤20 ppb
Sodium (Na). ..... ≤100 ppb
Filtered through 0,1 µm membrane and filled under protective gas.

HN43.1	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
HN43.2	2,5 l	glass	80,10 €
Original pack 4 x 2,5 l			76,10/2,5 l

Water
ROTISOLV® LC-MS Grade
Guarantee analysis:
Spec. electric resistance (at time of preparation).
..... ≥18,2 MΩ·cm
Free acid (as CH_3COOH). ..... ≤0,001 %
Free alkali (as NH_3)..... ≤0,0005 %
Non volatile matter..... ≤0,0001 %
Transmission:
230 nm..... ≥99 %
200 nm..... ≥95 %
Gradient test:
UV-absorption of the greatest eluated peak.
210 nm..... ≤3,0 mAU
365 nm..... ≤1,0 mAU
Fluorescence (as quinine):
254 nm..... ≤0,5 ppb
365 nm..... ≤0,5 ppb
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca)..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg)..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

AE72.1	1 l	plastic	30,00 €
Original pack 6 x 1 l			28,50/1 l
AE72.3	2,5 l	glass	73,65 €
Original pack 4 x 2,5 l			69,97/2,5 l
AE72.2	5 l	plastic	135,35 €
Original pack 2 x 5 l			128,58/5 l

Water
ROTISOLV® HPLC, Gradient Grade
Guarantee analysis:
Spec. electric resistance
(at time of preparation)..... ≥18,2 MΩ·cm
Evaporation residue..... ≤0,0003 %
Free acid (as CH_3COOH). ..... ≤0,0002 %
Free alkali (as NH_3)..... ≤0,0002 %
Gradient test (Gradient water / acetonitrile):
UV absorption of the greatest eluated peak
210 nm..... ≤5,0 mAU
254 nm..... ≤0,5 mAU
Fluorescence (as quinine):
254 nm. ..... ≤1,0 ppb
365 nm. ..... ≤0,5 ppb
Filtered through 0,2 µm membrane and filled under protective gas.

A511.1	1 l	glass	18,20 €
Original pack 6 x 1 l			17,29/1 l
A511.2	2,5 l	glass	32,80 €
Original pack 4 x 2,5 l			31,16/2,5 l
A511.3	5 l	plastic	61,20 €
Original pack 2 x 5 l			58,14/5 l
A511.7	20 l	plastic	209,65 €

For further information, please see page 1650

Water
ROTISOLV® Pestilyse®
For residue and environmental analysis.
Guarantee analysis:
Spec. electric resistance
(at time of preparation). .....≥18,2 MΩ·cm
Acidity. ..... ≤0,0003 meq/g
Evaporation residue. ..... ≤0,0002 %
Heavy metals (as Pb). ..... ≤0,000001 %
TOC (Total Organic Carbon). ..... ≤0,000005 %
GC/ECD (individual signal as lindane).....≤5 ng/l
GC/PND (individual signal as ethylparathion).....
.....≤10 ng/l

T905.1	2,5 l	glass	48,30 €
Original pack 4 x 2,5 l			45,89/2,5 l

Water
ROTIPURAN® p.a., ACS
Water for varied applications in analytical chemistry (e.g. as solvent and diluent).
Guarantee analysis:
pH value 5,0-8,0
Specific conductivity
(25 °C, at the time of preparation)..... ≤1 µS/cm
$KMnO_4$ reducing substances (as O). ..... complies
Evaporation residue. ..... ≤0,0001 %
Ash content. ..... ≤0,0002 %
Chloride (Cl). ..... ≤0,00001 %
Nitrate (NO_3). ..... ≤0,00002 %
Phosphate (PO_4). ..... ≤0,000005 %
Sulphate (SO_4). ..... ≤0,0001 %
Aluminium (Al). ..... ≤0,000002 %
Ammonium (NH_4). ..... ≤0,000001 %
Barium (Ba). ..... ≤0,000001 %
Beryllium (Be)..... ≤0,000002 %
Lead (Pb). ..... ≤0,000001 %
Cadmium (Cd)..... ≤0,000001 %
Calcium (Ca). ..... ≤0,00001 %
Chromium (Cr)..... ≤0,000001 %
Iron (Fe)..... ≤0,000001 %
Potassium (K)..... ≤0,000005 %
Cobalt (Co)..... ≤0,000001 %
Copper (Cu). ..... ≤0,000001 %
Lithium (Li)..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,000005 %
Manganese (Mn). ..... ≤0,000001 %
Sodium (Na). ..... ≤0,00001 %
Nickel (Ni)..... ≤0,000001 %
Heavy metals (as Pb). ..... ≤0,000001 %
Silver (Ag)..... ≤0,000001 %
Strontium (Sr). ..... ≤0,000005 %
Zinc (Zn)..... ≤0,000005 %
A 254 nm (in H_2O). ..... ≤0,01
Silicates (SiO_2). ..... ≤0,000001 %
ISO 3696: 1987 (Type 2). ..... complies
The water complies to ISO: 3696:1987

T172.1	1 l	plastic	11,30 €
Original pack 6 x 1 l			10,74/1 l
T172.2	2,5 l	plastic	22,50 €
Original pack 4 x 2,5 l			21,38/2,5 l
T172.3	5 l	plastic	32,15 €
Original pack 2 x 5 l			30,54/5 l
T172.5	30 l	plastic	121,40 €

Water
purified, Ph.Eur., USP
Guarantee analysis:
Properties. .....complies
pH value.....5,0-7,0
Chloride (Cl).....complies
Sulphate (SO_4).....complies
Nitrate (NO_3). .....≤0,00002 %
Ammonium (NH_4).....≤0,00002 %
Calcium and Magnesium (as Ca). .....complies
Total organic carbon. ..... ≤0,50 mg/l
Acid or alkaline react. substances.....complies
Oxidizable matter. .....complies
Evaporation residue. .....≤0,001 %
Conductivity. .....complies
Microbiological impurities.....complies
Meets in all aspects the demands of Ph.Eur. for Aqua purificata (purified water).

2652.1	1 l	plastic	10,25 €
Original pack 6 x 1 l			9,74/1 l
2652.2	10 l	plastic	57,95 €
2652.3	20 l	plastic	103,75 €

Water
hypotonic, sterile, free from pyrogen
Guarantee analysis:
Pyrogenity (LAL-Test). .....complies
pH value.....4,0-7,0
Heavy metals. .....≤0,1 ppm
Evaporation residue. .....≤0,001 %

3255.1	1 l	plastic	9,60 €
Original pack 6 x 1 l			9,12/1 l

For further information, please see page 1379

Water
redistilled
Bidest
Type analysis:
Appearance. ..... clear, colourless
pH value 5,0-7,0
Conductivity. .....<2,0 µS/cm
After demineralisation in a borosilicate apparatus, the water is distilled twice.

3478.1	1 l	plastic	7,00 €
Original pack 6 x 1 l			6,65/1 l
3478.4	5 l	plastic	20,35 €
Original pack 2 x 5 l			19,33/5 l
3478.2	10 l	plastic	32,15 €
3478.3	30 l	plastic	83,35 €

Water
demineralised, not sterile
Type analysis:
Appearance. ..... clear, colourless
pH value 6,2-7,5
Conductivity. .....<5,0 µS/cm

3175.1	10 l	plastic	19,25 €
3175.2	30 l	plastic	44,00 €

Water

BioScience Grade, nuclease-free, steam sterilised, DEPC treated water

For molecular biology.

T143.1	250 ml	glass	26,80 €
T143.2	500 ml	glass	31,10 €
T143.3	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l
T143.4	50 x 1 ml	plastic	94,50 €
T143.6	50 x 1 ml	glass ampoule	107,40 €
T143.5	5 x 20 ml	glass	21,40 €

For further information, please see page 1291

Water D2

▶ Deuterium oxide see p. 1928

Water with 0,1 % formic acid

Water with 0,1 % formic acid

ROTISOLV® LC-MS Grade

Eluent mixture for high performance liquid chromatography.

Water mixture

H_2O • M 18,01 g/mol

Guarantee analysis:

Formic acid (v/v). ..... 0,095-0,105 %
pH value. 2,6-2,8
Transmission:
254 nm. ..... ≥99 %
230 nm. ..... ≥45 %
210 nm. ..... ≥5 %
Gradient test:
210 nm. ..... ≤0,05 AU
254 nm. ..... ≤0,01 AU
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

CP03.1	1 l	glass	44,65 €
Original pack 6 x 1 l			42,42/1 l
CP03.2	2,5 l	glass	81,20 €
Original pack 4 x 2,5 l			77,14/2,5 l

Water with 0,1 % acetic acid

Water with 0,1 % acetic acid

ROTISOLV® LC-MS-Grade

Eluent mixture for high performance liquid chromatography.

Water mixture

H_2O • M 18,01 g/mol

Guarantee analysis:

Acetic acid (v/v). ..... 0,095-0,105 %
pH value. 3,2-3,4
Transmission:
254 nm. ..... ≥99 %
230 nm. ..... ≥75 %
210 nm. ..... ≥20 %
Gradient test:
210 nm. ..... ≤0,05 AU
254 nm. ..... ≤0,01 AU
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

CP04.2	2,5 l	glass	91,30 €
Original pack 4 x 2,5 l			86,74/2,5 l

Water with 0,1 % trifluoroacetic acid

Water with 0,1 % trifluoroacetic acid

ROTISOLV® LC-MS-Grade

Eluent mixture for high performance liquid chromatography.

Water mixture

H_2O • M 18,01 g/mol

Guarantee analysis:

Trifluoroacetic acid (v/v). ..... 0,095-0,105 %
pH value. 1,8-2,0
Transmission:
254 nm. ..... ≥98 %
230 nm. ..... ≥85 %
210 nm. ..... ≥25 %
Gradient test:
210 nm. ..... ≤0,05 AU
254 nm. ..... ≤0,01 AU
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

CP05.2	2,5 l	glass	88,05 €
Original pack 4 x 2,5 l			83,65/2,5 l

Water determination acc. to Karl Fischer

- ▶ Karl Fischer Roti®hydroquant Working Medium K see p. 2084
- ▶ Karl Fischer Roti®hydroquant C2 see p. 2083
- ▶ Karl Fischer Roti®hydroquant C5 see p. 2083
- ▶ Karl Fischer Roti®hydroquant C5 K see p. 2083
- ▶ Karl Fischer Roti®hydroquant coulo A see p. 2084
- ▶ Karl Fischer Roti®hydroquant coulo AG see p. 2084
- ▶ Karl Fischer Roti®hydroquant coulo CG see p. 2084
- ▶ Karl Fischer Roti®hydroquant coulo Oil see p. 2084
- ▶ Karl Fischer methanol see p. 2084
- ▶ Karl Fischer Roti®hydroquant S see p. 2084
- ▶ Karl Fischer Roti®hydroquant S CM see p. 2084
- ▶ Karl Fischer Roti®hydroquant T see p. 2084
- ▶ Karl Fischer Roti®hydroquant standard sodium tartrate dihydrate see p. 2085
- ▶ Karl Fischer Roti®hydroquant water standard 1.0 see p. 2085
- ▶ Karl Fischer Roti®hydroquant water standard 10.0 see p. 2085

Water for cell culture

▶ Roti®-CELL Water see p. 2271

Water glass

- ▶ Sodium silicate see p. 2348
- ▶ Potassium silicate see p. 2234

Water hardness kit

Water hardness kit

Test reagent in dropping bottle.

bp 82 °C

UN No. 1993 • ADR 3 III • WGK 1

Warning H226-H319-H336

0519.1	2 x 15 ml		19,90 €

For further information, please see page 1697

Weigert's Hematoxylin solution

▶ Hematoxylin solution A acc. to Weigert see p. 2035

Weigert's iron hematoxylin staining kit

Weigert's iron hematoxylin staining kit

for microscopy

Staining kit for acid resistant staining of nuclei, incl. instructions for use.

Storage temp.: +20 °C

UN No. 1219 • ADR 3 II

Danger H225-H318-H336

Formulation:

Hematoxylin solution A acc. to Weigert (Art. No. X906). ..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907). ..... 500 ml

9192.1	1 kit	glass	76,25 €

For further information, please see page 1514

Weigert's Resorcinol-Fuchsine solution

▶ Resorcinol-Fuchsine-solution acc. to Weigert see p. 2256

Weise buffer concentrate 100x, pH 6,4

Weise buffer concentrate 100x, pH 6,4

NEW

for histology

For preparation of buffer solution acc. to Weise.
Working solution: 10 ml concentrate / 1 l dist. water
Storage temp.: +20 °C
WGK 1

Type analysis:

Appearance. ..... clear solution
Colour. ..... colourless
pH. 6,4

1665.1	5 x 10 ml	pouches	21,40 €
1665.2	10 x 10 ml	pouches	34,30 €
1665.3	100 x 10 ml	pouches	274,15 €
1711.1	5 x 20 ml	plastic	34,30 €
1711.2	10 x 20 ml	plastic	62,25 €
1711.3	100 x 20 ml	plastic	521,40 €
1504.1	250 ml	plastic	39,70 €

For further information, please see page 1501

Weise buffer concentrate 100x, pH 6,8

Weise buffer concentrate 100x, pH 6,8

NEW

for histology

For preparation of buffer solution acc. to Weise.
Working solution: 10 ml concentrate / 1 l dist. water
Storage temp.: 15-25 °C
WGK 1

Type analysis:

Appearance. ..... clear solution
Colour. ..... colourless
pH. 6,8

1673.1	5 x 10 ml	pouches	21,40 €
1673.2	10 x 10 ml	pouches	34,30 €
1673.3	100 x 10 ml	pouches	274,15 €
1727.1	5 x 20 ml	plastic	34,30 €
1727.2	10 x 20 ml	plastic	62,25 €
1727.3	100 x 20 ml	plastic	521,40 €
1569.1	250 ml	plastic	39,70 €

For further information, please see page 1501

Weise buffer concentrate 100x, pH 7,2

Weise buffer concentrate 100x, pH 7,2

NEW

for histology

For preparation of buffer solution acc. to Weise.
Working solution: 10 ml concentrate / 1 l dist. water
Storage temp.: 15-25 °C
WGK 1

Type analysis:

Appearance. ..... clear solution
Colour. ..... colourless
pH. 7,2

1674.1	5 x 10 ml	pouches	21,40 €
1674.2	10 x 10 ml	pouches	34,30 €
1674.3	100 x 10 ml	pouches	274,15 €
1740.1	5 x 20 ml	plastic	34,30 €
1740.2	10 x 20 ml	plastic	62,25 €
1740.3	100 x 20 ml	plastic	521,40 €
1675.1	250 ml	plastic	39,70 €

For further information, please see page 1501

White spirit

- Petroleum benzine 135-180 see p. 2202
- Petroleum benzine 145-200 see p. 2202
- Petroleum benzine 180-220 see p. 2202
- Petroleum benzine 190-245 see p. 2203
- Petroleum benzine 235-265 see p. 2203

White spirit

- Petroleum benzine 80-110 see p. 2202

Wijs-solution (0.2 N)

Wijs-solution

0,1 mol ICl/l - 0,2 N

For determination of the iodine number [DIN 53241-1]
Iodine solution according to Wijs.
EC No. 200-580-7
UN No. 2789 • ADR 8 (3) II • WGK 2

Danger H314-H226-H290

Type analysis:

Amount-of-substance conc. (20 °C). ..... 0,1 mol/l ±2 %
Titer. 0,98-1,02

CN36.1	1 l	glass	78,40 €
Original pack 6 x 1 l			74,48/1 l

For further information, please see page 1682

William's E cell culture medium

- Roti®-CELL William's E see p. 2271

Woods metal

- Alloy acc. to Wood see p. 1782

Wood sugar

- D(+)-Xylose see p. 2446

Wool fat

- Lanolin see p. 2090

Woolgreen S

- Lissamine green B (C.I. 44090) see p. 2100

Working Standards

Art. No.	Description	Page
NC36	Acetoxyvalerenic acid	1765
NC37	Apigenin	1812
NC19	Apigenin-7-glucoside	1812
NC00	L(+)-Ascorbic acid	1817
NC01	Benzaldehyde	1829
NC03	Benzoic acid	1830
NC11	Benzoic acid sodium salt	1831
NC02	Benzyl alcohol	1834
NC20	Bilobalid	1836
NC04	Butylated hydroxyanisole	1862
NC05	Butylated hydroxytoluene	1862
NC08	Caffeic acid	1867
NC39	Casticin	1882
NC06	Chlorogenic acid	1893
NC55	(+)-Dihydroquercetin	1941
NC52	3,4-Dihydroxybenzoic acid	1942
NC40	Echinacoside	1964
NC41	(-)-Epicatechin	1971
NC42	Eriocitrin	1973
NC43	Ginkgolide A	2015
NC44	Ginsenoside Rb1	2016
NC45	Ginsenoside Re	2017
NC62	Ginsenoside Rg1	2017
NC21	Harpagoside	2033
NC46	Hederacoside C	2034
NC47	Herniarin	2039
NC07	4-Hydroxybenzoic acid ethyl ester	2056
NC10	4-Hydroxybenzoic acid methyl ester	2056
NC13	4-Hydroxybenzoic acid propyl ester	2057
NC48	Hydroxyvalerenic acid	2060
NC22	Hypericin	2061
NC23	Hyperoside	2062
NC24	Isoquercitrin	2080
NC25	Isovitexin	2081
NC26	Kaempferol	2082
NC50	Oleanolic acid	2183
NC51	Osthol	2187
NC12	2-Phenoxyethanol	2205
NC09	Potassium sorbate	2234
NC27	Quercetin dihydrate	2249
NC28	Quercetin-3-O-ß-Glucuronide	2249
NC30	Rosmarinic acid	2262
NC14	Rutin trihydrate	2302
NC53	Sennoside A	2312
NC54	Sennoside B	2312
NC31	Silybin	2328
NC15	Sorbic acid	2355
NC16	DL-α-Tocopherol	2410
NC18	RRR-α-Tocopherol	2411
NC17	DL-α-Tocopherol acetate	2411
NC32	Valerenic acid	2432
NC56	Vitexin	2436
NC34	Vitexin-2''-O-rhamnoside	2437
NC35	Xanthohumol	2442

Wort Agar (Base)

Wort Agar (Base)
for microbiology

For cultivation and enumeration of yeasts.

Application: Use 48,25 g for 1 l agar.
Add 2,35 g (1,9 ml) glycerol.

Storage temp.: +20 °C

WGK 1

Formulation:

Malt extract. ..... 15 g/l
Maltose. ..... 12,75 g/l
Dextrine. ..... 2,75 g/l
di-Potassium hydrogen phosphate. ..... 1 g/l
Ammonium chloride. ..... 1 g/l
Peptone. ..... 0,75 g/l
Agar. ..... 15 g/l
pH value. ..... 4,8 ±0,2

CL04.1	500 g	plastic	160,20 €
Original pack 6 x 500 g			152,19/500 g

For further information, please see page 1470

Wort Broth

Wort Broth
for microbiology

For cultivation and enumeration of fungi, particularly of yeast.

Application: Use 33 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

Formulation:

Malt extract. ..... 15 g/l
D-Maltose. ..... 12,5 g/l
Dextrine. ..... 2,5 g/l
Casein peptone. ..... 1 g/l
Dipotassium hydrogen phosphate. ..... 1 g/l
Ammonium chloride. ..... 1 g/l
pH value. ..... 4,8 ±0,2

5779.1	500 g	plastic	138,70 €
Original pack 6 x 500 g			131,77/500 g

For further information, please see page 1470

Wright's eosin methylene blue solution

Wright's eosin methylene blue solution
for microscopy

For differental staining of blood and bone marrow smears.

Wrights staining solution, eosin methylene blue solution acc. to Wright.

UN No. 1230 • ADR 3 (6.1) II • WGK 1

Danger H225-H370-H301+H311+H331

Type analysis:

Suitability for microscopy. ..... complies

CN05.1	500 ml	glass	26,35 €
CN05.2	1 l	glass	37,55 €
Original pack 6 x 1 l			35,67/1 l

For further information, please see page 1512

Wright's stain

Wright's stain
for microscopy

Eosin methylene blue

[68988-92-1]

WGK 3

Type analysis:

Appearance. ..... green cryst. powder
Appearance of solution (0,1 % in MeOH). ... clear, blue

7744.1	5 g	glass	14,55 €
7744.2	25 g	glass	25,70 €
7744.3	100 g	glass	62,25 €

For further information, please see page 1527

Xanthan

Xanthan
extra pure

Xanthan gum

[11138-66-2] • EC No. 234-394-2

WGK 1

Type analysis:

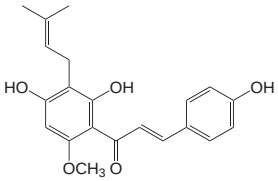
Appearance. ..... cream-coloured, yellowish/white powder
Moisture. ..... <15 %
pH value (1 % solution). 6,0-8,0
Viscosity (1 % KCl solution). ..... 1200-1800 mPas
Lead (Pb). ..... ≤0,0002 %
Particle size. ..... ~80 mesh

3557.2	100 g	plastic	22,05 €
3557.1	500 g	plastic	66,55 €
Original pack 6 x 500 g			63,22/500 g

Xanthan gum

▶ Xanthan see p. 2442

Xanthohumol



$C_{21}H_{22}O_5$
M 354,40 g/mol
[6754-58-1]
WGK 3

Xanthohumol
ROTI®STAR Primary Standard

Type analysis:

Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF). ..... ≤2,0 %
Assay (qNMR). ..... ≥95,0 %
Proof of identity by ^{1}H-NMR, ^{13}C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

NE35.1	10 mg	glass	805,20 €

Xanthohumol
ROTICHROM® Working Standard

Type analysis:

Assay (HPLC). ..... ≥95,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

NC35.1	25 mg	glass	267,70 €

Xanthohumol
ROTICHROM® HPLC

Reference substance for HPLC.
From *Humulus lupulus*.

Storage temp.: +4 °C

Type analysis:

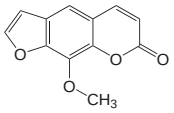
Purity (HPLC). ..... ≥99 %

2828.1	10 mg	glass	209,65 €

Xanthophyll

▶ Lutein see p. 2106

Xanthotoxin



Xanthotoxin
≥98 %

Ammoidin, Methoxsalen, 8-Methoxypsoralen

$C_{12}H_8O_4$
M 216,19 g/mol
mp 142-148 °C
[298-81-7] • EC No. 206-066-9
WGK 2

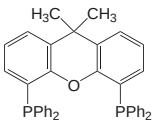
Warning H302-H317

Type analysis:

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98,0 %
Water (KF). ..... ≥0,5 %

5497.1	250 mg	glass	21,00 €
5497.2	1 g	glass	35,40 €
5497.3	5 g	glass	126,75 €

Xantphos



Xantphos
≥98 %

Phosphine ligand

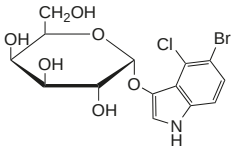
4,5-Bis(diphenylphosphino)-9,9-dimethylxanthene

$C_{39}H_{32}OP_2$
M 578,62 g/mol
mp 226-229 °C
[161265-03-8] • WGK 1

Type analysis:
Appearance. ..... white to light yellow solid
Assay (HPLC). ..... ≥98 %
Melting point. ..... 226-229 °C

2058.1	1 g	glass	33,25 €
2058.2	5 g	glass	110,65 €

X-α-Gal



X-α-Gal

≥98 %, for biochemistry

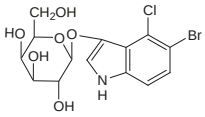
Colorimetric substrate of α-galactosidase.
5-Bromo-4-chloro-3-indolyl-α-D-galacto-pyranoside
$C_{14}H_{15}BrClNO_6$ • M 405,63 g/mol
mp ~223 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[107021-38-5]

Type analysis:
Assay ..... ≥98 %
Water (KF). ..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$
(c=1 in DMF/water 1:1). ..... +140° to +150°

HN36.1	25 mg	glass	74,75 €
HN36.2	100 mg	glass	224,70 €
HN36.3	250 mg	glass	525,70 €

For further information, please see page 1334

X-β-Gal



X-β-Gal

≥99 %, BioScience-Grade

Colorimetric substrate of β-galactosidase.
For biochemistry and molecular biology.
5-Bromo-4-chloro-3-indoxyl-β-D-galactoside
$C_{14}H_{15}BrClNO_6$
M 408,6 g/mol • mp 225-230 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[7240-90-6] • EC No. 230-640-8 • WGK 1

Guarantee analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥99 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF/H_2O 1:1). .. -62° ±2°
Water (KF). ..... ≤0,2 %
DNases, RNases, Protease. ..... none detected

2315.1	100 mg	glass	21,40 €
2315.2	500 mg	glass	61,20 €
2315.3	1 g	glass	114,50 €
2315.4	5 g	glass	385,95 €

For further information, please see page 1285 1334

X-Glc

▶ X-Glu see p. 2443

X-GlcA

▶ X-Gluc see p. 2443

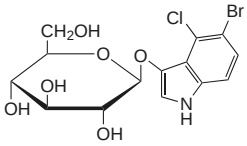
X-β-D-Glc

▶ X-Glu see p. 2443

X-β-D-GlcNAc

▶ 5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide see p. 1852

X-Glu



X-Glu

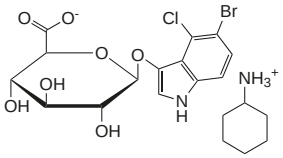
≥98 %, for biochemistry

Glycosidase substrate
5-Bromo-4-chloro-3-indoxyl-β-D-gluco-pyranoside, X-Glu, X-β-D-glucoside, X-β-D-Glu
$C_{14}H_{15}BrClNO_6$ • M 408,64 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[15548-60-4] • EC No. 239-603-0 • WGK 1

Type analysis:
Assay (HPLC). ..... ≥98,0 %
Solution (5 % in DMF). ..... colourless
Water (KF). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF). ..... -81,0° ±2°

4041.1	50 mg	glass	39,70 €
4041.2	100 mg	glass	66,55 €

X-Gluc



X-Gluc

≥99 %, for microbiology

Glucuronidase substrate
5-Bromo-4-chloro-3-indolyl-β-D-glucuronide cyclohexyl ammonium salt monohydrate, X-GlcA
$C_{20}H_{26}N_2O_7ClBr \cdot H_2O$
M 539,81 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[114162-64-0] • WGK 1

Guarantee analysis:
Appearance. ..... white to off-white powder
Purity (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤5,0 %
Specific rotation $[\alpha]_D^{20}$
(c=1 in DMF/water 1:1). ..... -91,0° to -87,0°
Solution (1% in DMF/Wasser 1:1). .....colourless, clear

0018.1	100 mg	glass	103,10 €
0018.2	500 mg	glass	385,95 €
0018.3	1 g	glass	643,95 €

For further information, please see page 1334

XLD-Agar

XLD-Agar

Ph.Eur., for microbiology

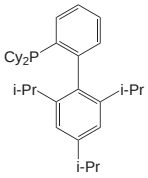
For isolation of enteropathogenic bacteria, especially from the genera *Shigella* and *Salmonella*.
Application: Use 55,2 g for 1 l agar.
Agar medium K (Ph.Eur. 6.0), Xylose Lysine Desoxycholate Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
Storage temp.: +20 °C
WGK 1

Guarantee analysis:
Xylose. ..... 3,5 g/l
Lactose monohydrate. ..... 7,5 g/l
L-Lysin. ..... 5 g/l
Saccharose. ..... 7,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Yeast extract. ..... 3 g/l
Phenol red. ..... 0,08 g/l
Ammonium iron(III) citrate. ..... 0,8 g/l
Sodium deoxycholate. ..... 2,5 g/l
Sodium thiosulphate. ..... 6,8 g/l
Agar. ..... 13,5 g/l
pH value. ..... 7,4 ±0,2

X941.1	500 g	plastic	116,00 €
Original pack 6 x 500 g			110,20/500 g
X941.2	1 kg	plastic	204,15 €
Original pack 6 x 1 kg			193,94/1 kg

For further information, please see page 1471

XPhos



XPhos

≥97 %

Phosphine ligand
2-Dicyclohexylphosphino-2',4',6'-triisopropyl-biphenyl
$C_{33}H_{49}P$
M 476,72 g/mol
mp 187-190 °C
[564483-18-7]
WGK 1

Type analysis:
Appearance. ..... white powder
Assay (HPLC). ..... ≥97 %

1445.1	1 g	glass	27,85 €
1445.2	5 g	glass	99,90 €
1445.3	10 g	glass	166,65 €

X-Phos

▶ 5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt see p. 1851

X-Phos disodium salt

▶ 5-Bromo-4-chloro-3-indolyl phosphate disodium salt see p. 1851

X-Phosphate disodium salt

▶ 5-Bromo-4-chloro-3-indolyl phosphate disodium salt see p. 1851

Xylan

$(C_5H_8O_4)_n$
M $(132)_n$ g/mol
mp >300 °C
[9014-63-5] • EC No. 232-760-6 • WGK 1

Xylan

from beechwood

Type analysis:

Appearance. ..... cream-coloured powder
Specific rotation $[\alpha]_D^{20}$ (c=1, NaOH 5 %). .... -60° to -79°
Sulphated ash. ..... ≤10 %
Loss on drying (3 h, 110 °C). ..... ≤10,0 %

4414.2	10 g	plastic	27,85 €
4414.1	50 g	plastic	59,05 €
4414.3	100 g	plastic	100,95 €
4414.4	250 g	plastic	209,65 €

Xylan

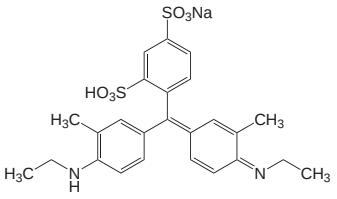
≥95 % xylooligosaccharides, from corncob

Type analysis:

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥95 %
pH value (50 % in water). 3,5-6,5
Water. ..... ≤5,0 %
Loss on ignition. ..... ≤0,5 %

8659.2	10 g	plastic	15,60 €
8659.1	50 g	plastic	36,45 €
8659.3	250 g	plastic	144,60 €

Xylene cyanole



Xylene cyanole (C.I. 42135)

for histology and electrophoresis

Staining agent for visualisation of running distance in gel electrophoresis.
$C_{25}H_{27}N_2NaO_6S_2$ • M 538,6 g/mol
Solubility: 1 g/l (H_2O, 20 °C)
[2650-17-1] • EC No. 220-167-5 • WGK 2

Warning H319

Type analysis:

Maximum absorption. ..... 600-620 nm
Loss on drying (110 °C). ..... ≤5,0 %

A513.2	5 g	glass	25,70 €
A513.1	10 g	glass	41,40 €
A513.3	25 g	glass	75,80 €
A513.4	50 g	glass	121,40 €

For further information, please see page 1689

Xylene (isomers)

Dimethylbenzene
C_8H_{10}
M 106,17 g/mol
D ~0,87 • bp 137-140 °C
mp -5-13 °C • flp 25 °C
Solubility: 200 mg/l (H_2O, 20 °C)
[1330-20-7] • EC No. 215-535-7
UN No. 1307 • ADR 3 III • WGK 2

Danger H226-H312+H332-H304-H315-H319-H335-H373

Xylene (isomers)

ROTIPURAN® ≥99 %, p.a., ACS, ISO

Guarantee analysis:

Total content of C_8H_{10}-isomeres (GC). ..... ≥99,0 %
Colour (Hazen). ..... ≤10
Water ..... ≤0,03 %
Acidity. ..... ≤0,00025 meq/g
Alkalinity. ..... ≤0,00025 meq/g
Density (d 20 °C/4 °C). 0,862-0,869
Evaporation residue. ..... ≤0,001 %
Benzene (GC). ..... ≤0,1 %
Toluene (GC). ..... ≤0,1 %
Ethylbenzene (GC). ..... ≤25 %
Aluminium (Al). ..... ≤0,00005 %
Barium (Ba). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,00001 %
Boron (B). ..... ≤0,000002 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Tin (Sn). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00001 %
Thiophene. ..... complies
Sulphur compounds (as S). ..... ≤0,003 %
Matter discoloured by H_2SO_4 (Hazen). ..... complies

4436.1	1 l	glass	38,60 €
Original pack 6 x 1 l			36,67/1 l
4436.2	2,5 l	glass	85,90 €
Original pack 4 x 2,5 l			81,61/2,5 l
4436.3	5 l	aluminium	121,40 €
Original pack 2 x 5 l			115,33/5 l
4436.7	25 l	tinplate	342,95 €

Xylene (isomers)

≥98,5 %, Ph.Helv., extra pure

Guarantee analysis:

Assay (GC, isomers). ..... ≥98,5 %
Identity (IR). ..... complies
Boiling range. ..... 137-143 °C
Density (d 20 °C/4 °C). 0,85-0,87
Water. ..... ≤0,05 %
Evaporation residue. ..... ≤0,01 %
Acid or alkaline react. substances. ..... complies
Sulphuric acid assay. ..... complies
Foreign odour. ..... complies

CN80.1	1 l	glass	27,85 €
Original pack 6 x 1 l			26,46/1 l
CN80.2	2,5 l	glass	50,00 €
Original pack 4 x 2,5 l			47,50/2,5 l
CN80.5	5 l	aluminium	77,30 €
Original pack 2 x 5 l			73,44/5 l
CN80.3	10 l	tinplate	134,40 €
CN80.4	25 l	tinplate	263,40 €

Xylene (isomers)

>98 %, pure, for histology

Ideal for dewaxing of microtome sections.

Type analysis:

Appearance. ..... clear, colourless, liquid
Assay (GC). ..... >98,0 %
Colour (Hazen). ..... ≤20
Water . ..... ≤0,5 %
Benzene. ..... ≤0,05 %
Refractive index n_D^{20}. 1,493-1,500
Mixture of isomers o-Xylene, m-Xylene, p-Xylene and benzene. ..... complies

9713.1	1 l	glass	26,35 €
Original pack 6 x 1 l			25,03/1 l
9713.3	2,5 l	glass	48,95 €
Original pack 4 x 2,5 l			46,50/2,5 l
9713.5	5 l	aluminium	73,00 €
Original pack 2 x 5 l			69,35/5 l
9713.2	10 l	tinplate	124,60 €
9713.4	25 l	tinplate	231,15 €

For further information, please see page 1497

Xylene (isomers)

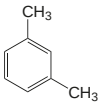
≥97 %, for synthesis

Type analysis:

Assay. ..... ≥97,0 %
Water. ..... ≤0,02 %

2662.1	1 l	glass	21,00 €
Original pack 6 x 1 l			19,95/1 l
2662.2	2,5 l	glass	32,15 €
Original pack 4 x 2,5 l			30,54/2,5 l
2662.5	5 l	aluminium	56,45 €
Original pack 2 x 5 l			53,63/5 l
2662.3	10 l	tinplate	89,15 €
2662.4	25 l	tinplate	185,45 €

m-Xylene



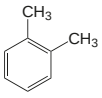
m-Xylene

≥99 %, for synthesis
1,3-Dimethylbenzene
C_8H_{10}
M 106,17 g/mol
D ~0,86 • bp ~139 °C
mp -47,9 °C • flp 25 °C
[108-38-3] • EC No. 203-576-3
UN No. 1307 • ADR 3 III • WGK 2
Danger H226-H304-H312+H332-H315-H319-H335-H373

Type analysis:
Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99,0 %
Ethylbenzene (GC). ..... ≤0,1 %
Free acid (as HCl). ..... ≤0,002 %
Refractive index n_D^{20}. 1,496-1,498

3791.3	100 ml	glass	16,70 €
3791.4	500 ml	glass	32,15 €
3791.1	1 l	glass	50,00 €
Original pack 6 x 1 l			47,50/1 l
3791.2	2,5 l	glass	100,55 €
Original pack 4 x 2,5 l			95,52/2,5 l

o-Xylene



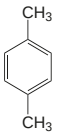
o-Xylene

≥98 %, for synthesis
1,2-Dimethyl benzene
C_8H_{10}
M 106,17 g/mol
bp 143-145 °C
mp 25 °C • flp 31 °C
[95-47-6] • EC No. 202-422-2
UN No. 1307 • ADR 3 III • WGK 2
Danger H226-H304-H312+H332-H315-H319-H335-H373

Type analysis:
Appearance. ..... clear colourless liquid
Assay. ..... ≥98,0 %
Density (d 20 °C/4 °C). 0,878-0,881
Refractive index n_D^{20}. ..... ~1,505

8749.1	100 ml	glass	13,45 €
8749.2	500 ml	glass	25,30 €
8749.3	1 l	glass	36,45 €
Original pack 6 x 1 l			34,63/1 l
8749.4	2,5 l	glass	60,10 €
Original pack 4 x 2,5 l			57,10/2,5 l

p-Xylene



p-Xylene

≥99 %, for synthesis
1,4-Dimethylbenzene
C_8H_{10}
M 106,17 g/mol
bp 138 °C
mp 12-15 °C • flp 30 °C
[106-42-3] • EC No. 203-396-5
UN No. 1307 • ADR 3 III • WGK 2
Danger H226-H304-H312+H332-H315-H319-H335-H373

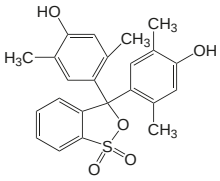
Type analysis:
Appearance. ..... clear,colourless to pale yellow liquid
Assay. ..... ≥99,0 %
Density (d 20 °C/4 °C). 0,860-0,862
Refractive index n_D^{20}. ..... ~1,495

8817.1	100 ml	glass	14,55 €
8817.2	500 ml	glass	27,85 €
8817.3	1 l	glass	42,50 €
Original pack 6 x 1 l			40,38/1 l
8817.4	2,5 l	glass	84,85 €
Original pack 4 x 2,5 l			80,61/2,5 l

Xylene substitutes

▶ Roti®-Histol see p. 2285
▶ Roticlear® see p. 2271

Xylenolblue



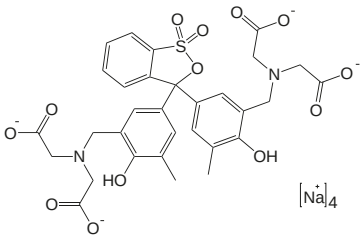
Xylenolblue

p.a.
Indicator pH 1,2-2,8 and pH 8,0-9,8
$C_{23}H_{22}O_5S$
M 410,49 g/mol
mp 212 °C (dec.)
[125-31-5] • EC No. 204-736-5
WGK 3
Warning H315-H319-H335

Type analysis:
Appearance. ..... dark brown to purple powder
pH-transition range. ..... 1,2 (red)-2,8 (yellow)
pH-transition range. ..... 8,0 (yellow)-9,8 (violet)

7746.1	1 g	glass	14,95 €
7746.2	5 g	glass	36,45 €
7746.3	10 g	glass	62,25 €

Xylenol orange tetrasodium salt



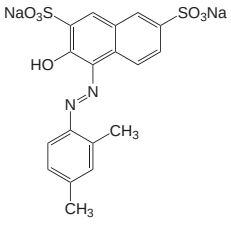
Xylenol orange tetrasodium salt

p.a., ACS
Indicator for metal titration.
3,3'-Bis[N,N-bis(carboxymethyl)aminomethyl]-o-cresolsulfonephthalein tetrasodium salt
$C_{31}H_{28}N_2Na_4O_{13}S$
M 760,59 g/mol
mp 210 °C (dec.)
Solubility: 510 g/l (H_2O, 20 °C)
[3618-43-7] • EC No. 222-805-8
WGK 1

Guarantee analysis:
Appearance of solution. ..... complies
Loss on drying (110 °C). ..... ≤10 %
Suitability for zinc titration. ..... complies

2727.1	1 g	glass	28,95 €
2727.2	5 g	glass	66,15 €
2727.3	10 g	glass	106,35 €
2727.4	50 g	glass	375,20 €

Xylidine Ponceau 2R (C.I. 16150)



Xylidine Ponceau 2R (C.I. 16150)

for microscopy
Xylidine red, Ponceau de Xylidine
$C_{18}H_{14}N_2Na_2O_7S_2$
M 480,40 g/mol
[3761-53-3]
WGK 3
Warning H351

Type analysis:
Appearance. ..... red powder
Appearance of solution (0,1 % in H_2O). ..... clear, red
Loss on drying (1 h, 110 °C). ..... ≤5 %

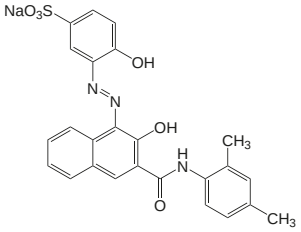
7747.1	5 g	glass	14,95 €
7747.2	25 g	glass	25,30 €
7747.3	100 g	glass	62,25 €

For further information, please see page 1527

Xylidine red

▶ Xylidine Ponceau 2R (C.I. 16150)
see p. 2445

Xylidyl blue sodium salt



Xylidyl blue sodium salt

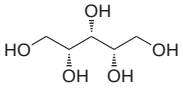
≥88 %, p.a.
Indicator for metal ions.
Magnesium reagent acc. to Mann and Yoe
$C_{25}H_{20}N_3NaO_6S$
M 513,51 g/mol
Solubility: slightly soluble (H_2O, 20 °C)
[14936-97-1] • EC No. 239-012-8
WGK 2

Type analysis:

Appearance. ..... violet to brown cryst. powder
Assay ..... ≥88,0 %
Absorption max. (in H_2O) ..... 520,0-530,0 nm

KK35.1	1 g	glass	40,75 €
KK35.2	5 g	glass	171,50 €

Xylitol



Xylitol

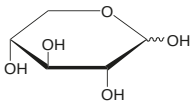
≥98,5 %, Ph.Eur., for biochemistry
$C_5H_{12}O_5$
M 152,15 g/mol
mp 92-96 °C
[87-99-0] • EC No. 201-788-0

Guarantee analysis:

Appearance. ..... white to off-white, cryst. powder
Assay (dry substance) ..... 98,5-101,0 %
Identity ..... complies
Appearance of solution ..... complies
Water ..... ≤1,0 %
Related substances ..... complies
Melting temperature ..... 92-96 °C
Conductivity ..... ≤20 µS/cm
Lead (Pb) ..... ≤0,00005 %
Nickel (Ni) ..... ≤0,0001 %
Reducing sugar ..... ≤0,2 %

9711.1	250 g	plastic	23,15 €
9711.3	500 g	plastic	43,55 €
Original pack 6 x 500 g			41,37/500 g
9711.2	1 kg	plastic	84,85 €
Original pack 6 x 1 kg			80,61/1 kg
9711.4	2,5 kg	plastic	161,25 €

D(+)-Xylose



D(+)-Xylose

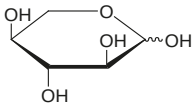
≥99 %, for biochemistry
Wood sugar
$C_5H_{10}O_5$
M 150,13 g/mol
D 1,53
mp 146-152 °C
Solubility: 550 g/l (H_2O, 20 °C)
[58-86-6] • EC No. 200-400-7
WGK 1

Type analysis:

Appearance ..... white to off-white, cryst. powder
Assay (HPLC) ..... ≥99,0 %
Solubility (10 % in H_2O) ..... colourless
Specific rotation $[\alpha]_D^{20}$ (10 % in H_2O, 24 h) ..... +18,0° to +20,0°
Loss on drying (60 °C, vacuum) ..... ≤0,5 %
Sulphated ash ..... ≤0,5 %
Heavy metals (as Pb) ..... ≤0,0005 %

5537.1	100 g	plastic	23,15 €
5537.2	500 g	plastic	74,75 €
Original pack 6 x 500 g			71,01/500 g
5537.3	1 kg	plastic	113,85 €
Original pack 6 x 1 kg			108,16/1 kg

L-Xylose



L-Xylose

≥99 %, for biochemistry
Microbiology
$C_5H_{10}O_5$
M 150,13 g/mol
mp ~150 °C
[609-06-3] • EC No. 210-174-1
WGK 1

Guarantee analysis:

Assay (HPLC) ..... ≥99 %
Solution (10 % in H_2O) ..... colourless to light coloured, clear to light turbid
Loss on drying (3 h, 60 °C, vacuum) ..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (c=10 in H_2O, after 24 h) ..... -20° ±1,0°
Ash content ..... ≤0,2 %
Heavy metals (as Pb) ..... ≤0,0005 %
Sulphate (SO_4) ..... ≤0,02 %
Chloride (Cl) ..... ≤0,02 %

4061.3	1 g	glass	29,60 €
4061.1	5 g	glass	110,65 €
4061.2	10 g	glass	170,95 €

Xylose Lysine Desoxycholate Agar

▶ XLD-Agar see p. 2443

Yeast Extract

Storage temp.: +20 °C
[8013-01-2] • EC No. 232-387-9
WGK 1

Yeast Extract

powdered, for bacteriology

Guarantee analysis:

Total nitrogen ..... ≥8 %
Amino nitrogen ..... 4,8-6,3 %
Ratio AN/TN 41-60
Loss on drying ..... ≤6 %
Ash ..... ≤18 %
pH (5 % in H_2O) 6,4-7,4
Solubility (5 % in H_2O) ..... clear

2363.1	250 g	plastic	44,00 €
2363.3	500 g	plastic	80,55 €
Original pack 6 x 500 g			76,52/500 g
2363.2	1 kg	plastic	155,80 €
Original pack 6 x 1 kg			148,01/1 kg
2363.4	2,5 kg	plastic	285,85 €
2363.5	5 kg	plastic	514,95 €
2363.7	10 kg	plastic	826,70 €

For further information, please see page 1491

Yeast Extract, micro-granulated

micro-granulated, for bacteriology

Type analysis:

Total nitrogen ..... ≥10 %
Amino nitrogen ..... ≥4,5 %
Dry substance ..... ≥94 %
Ash ..... ≤16 %
pH (2 % solution) 6,8-7,2

2904.1	250 g	plastic	50,00 €
2904.2	500 g	plastic	90,20 €
Original pack 6 x 500 g			85,69/500 g
2904.3	1 kg	plastic	171,50 €
Original pack 6 x 1 kg			162,93/1 kg
2904.4	2,5 kg	plastic	327,90 €
2904.5	5 kg	plastic	575,15 €

For further information, please see page 1492

Yeast Extract Agar

Yeast Extract Agar

DEV, EN ISO 6222, for microbiology

For the isolation and enumeration of microorganisms in general, e.g. bacteria, moulds, or yeast. Particularly for count of microorganisms isolated from water samples.

Application: Use 24 g for 1 l agar.
Water Plate Count Agar, **WPCA**
Storage temp.: +20 °C

Guarantee analysis:

Tryptone ..... 6 g/l
Yeast extract ..... 3 g/l
Agar ..... 15 g/l
pH value ..... 7,2 ±0,2

CP63.1	500 g	plastic	91,30 €
Original pack 6 x 500 g			86,74/500 g

For further information, please see page 1471

Yeast Glucose Agar (with chloroamphenicol), granulated

Yeast Glucose Agar (with chloroamphenicol), granulated

granulated, for microbiology

Selective medium for enumeration of yeasts and mould in milk and dairy products.

Application: Use 40,1 g for 1 l agar.

YGC Agar

Storage temp.: +20 °C

WGK 1

Formulation:

Yeast extract. ..... 5 g/l
Glucose. ..... 20 g/l
Chloroamphenicol. ..... 0,1 g/l
Agar. ..... 15 g/l
pH value. ..... 6,6 ±0,2

1526.1	500 g	plastic	131,05 €
Original pack 6 x 500 g			124,50/500 g

Yeast Glucose Agar (with chloroamphenicol)

Yeast Glucose Agar (with chloroamphenicol)

for microbiology

Selective medium for enumeration of yeasts and mould in milk and dairy products.

Application: Use 40,2 g for 1 l agar.

YGC Agar

Storage temp.: +20 °C

WGK 2

Formulation:

Yeast extract. ..... 5 g/l
Glucose. ..... 20 g/l
Chloroamphenicol. ..... 0,2 g/l
Agar. ..... 15 g/l
pH value. ..... 6,6 ±0,2

CL00.1	500 g	plastic	91,95 €
Original pack 6 x 500 g			87,35/500 g
CL00.2	1 kg	plastic	156,85 €
Original pack 6 x 1 kg			149,01/1 kg

For further information, please see page 1471

Yeast-Nitrogen-Base (without Amino Acids)

Yeast-Nitrogen-Base (without Amino Acids)

for molecular biology

For yeast classification based on amino acid and carbohydrate requirements.

Application: Add 6,7 g for 100 ml broth for 10x stock solution. Use selected sugar/amino acid. Do not boil, do not autoclave! Sterilise by sterile filtration!

YNB Medium

Storage temp.: +20 °C

WGK 2

Formulation:

Ammonium sulphate. ..... 5,0 g/l
Potassium phosphate. ..... 1,0 g/l
Magnesium sulphate. ..... 0,5 g/l
Calcium chloride. ..... 0,1 g/l
Sodium chloride (NaCl). ..... 0,1 g/l
Inositol. ..... 2,0 mg/l
Boric acid. ..... 0,5 mg/l
Niacin. ..... 0,4 mg/l
Thiamine hydrochloride. ..... 0,4 mg/l
Pyridoxin hydrochloride. ..... 0,4 mg/l
Calcium pantothenate. ..... 0,4 mg/l
Manganese sulphate. ..... 0,4 mg/l
Zinc sulphate. ..... 0,4 mg/l
P-Aminobenzoic acid. ..... 0,2 mg/l
Iron chloride. ..... 0,2 mg/l
Riboflavine. ..... 0,2 mg/l
Sodium molybdate. ..... 0,2 mg/l
Potassium iodide. ..... 0,1 mg/l
Copper sulphate. ..... 0,04 mg/l
Biotin. ..... 0,002 mg/l
Folic acid. ..... 0,002 mg/l
pH value. ..... 5,4 ±0,2

HP26.1	500 g	plastic	145,70 €
Original pack 6 x 500 g			138,42/500 g

For further information, please see page 1485

Yellow prussiate of potash

▶ Potassium hexacyanoferrate(II) trihydrate see p. 2227

Yersinia Agar acc. to Schiemann

▶ Yersinia Selective Agar (Base) see p. 2447

Yersinia Selective Agar (Base)

Yersinia Selective Agar (Base)

ISO 10273, for microbiology

Selective medium for isolation of *Yersinia*, particularly *Y. enterocolitica.*

Application: Use 58 g for 1 l agar. After cooling add 2 vials (2x5 ml) reconstituted Yersinia Supplement (Art. No. 4880.1).

CIN Agar, Yersinia Agar acc. to Schiemann

Storage temp.: +20 °C

WGK 1

Guarantee analysis:

D-Mannitol. ..... 20 g/l
Gelatine peptone. ..... 17 g/l
Peptone mixture. ..... 3 g/l
Yeast extract. ..... 2 g/l
Sodium pyruvate. ..... 2 g/l
Sodium chloride. ..... 1 g/l
Sodium deoxycholate. ..... 0,5 g/l
Neutral red. ..... 0,03 g/l
Magnesium sulphate anhydrous. ..... 0,01 g/l
Crystal Violet. ..... 0,001 g/l
Agar. ..... 12,5 g/l
pH value. ..... 7,4 ±0,2

5780.1	500 g	plastic	113,85 €
Original pack 6 x 500 g			108,16/500 g

For further information, please see page 1455

Yersinia Supplement

Yersinia Supplement

lyophilised

Media supplement for selective isolation of *Yersinia enterocolitica*

One box of 10 vials Yersinia Supplement is sufficient for 10 x 500 ml Yersinia Selective Agar.

CIN Supplement

Storage temp.: +4 °C

UN No. 3077 • ADR 9 III • WGK 2

Danger

H315-H317-H319-H334-H400-H410

Formulation:

Cefsulodin. ..... 7,5 mg
Novobiocin. ..... 1,25 mg
Irgasan. ..... 2 mg
per vial

4880.1	10 vials	glass	111,30 €

For further information, please see page 1461

YGC Agar

▶ Yeast Glucose Agar (with chloroamphenicol) see p. 2447
▶ Yeast Glucose Agar (with chloroamphenicol), granulated see p. 2447

δ-Yohimbine

▶ Ajmalicine see p. 1777

α-Yohimbine hydrochloride

▶ Rauwolscine hydrochloride see p. 2252

YPD Agar

YPD Agar

for molecular biology

Application: Use 65 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

Formulation:

Peptone. ..... 20 g/l
Yeast extract. ..... 10 g/l
Glucose. ..... 20 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 6,5 ±0,2

X971.1	500 g	plastic	79,45 €
Original pack 6 x 500 g			75,48/500 g
X971.2	1 kg	plastic	137,10 €
Original pack 6 x 1 kg			130,25/1 kg
X971.3	2,5 kg	plastic	314,45 €

For further information, please see page 1487

YPD Broth

YPD Broth

for molecular biology

Application: Use 50 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

Formulation:

Peptone. ..... 20 g/l
Yeast extract. ..... 10 g/l
Glucose. ..... 20 g/l
pH value. ..... 6,5 ±0,2

X970.1	500 g	plastic	62,25 €
Original pack 6 x 500 g			59,14/500 g
X970.2	1 kg	plastic	107,40 €
Original pack 6 x 1 kg			102,03/1 kg
X970.3	2,5 kg	plastic	241,90 €

For further information, please see page 1487

2xYT Agar

2xYT Agar
for molecular biology
Application: Use 46 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

Formulation:
Tryptone. ..... 16 g/l
Yeast extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

X967.1	500 g	plastic	81,20 €
Original pack 6 x 500 g			77,14/500 g

For further information, please see page 1487

2xYT Broth

WGK 1

2xYT Broth
for molecular biology
Application: Use 31 g for 1 l broth.
Storage temp.: +20 °C

Formulation:
Tryptone. ..... 16 g/l
Yeast extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,0 ±0,2

X966.1	500 g	plastic	67,20 €
Original pack 6 x 500 g			63,84/500 g
X966.2	1 kg	plastic	117,20 €
Original pack 6 x 1 kg			111,34/1 kg
X966.3	2,5 kg	plastic	273,60 €

For further information, please see page 1487

2x YT Broth, granulated
granulated, for molecular biology
Application: Use 31 g for 1 l broth.

Formulation:
Tryptone. ..... 16 g/l
Yeast extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,0 ±0,2
Granulation. ..... complies

6676.1	500 g	plastic	102,05 €
Original pack 6 x 500 g			96,95/500 g
6676.2	1 kg	plastic	171,50 €
Original pack 6 x 1 kg			162,93/1 kg
6676.3	2,5 kg	plastic	396,70 €

For further information, please see page 1484

Ytterbium Standards

▶ Ytterbium ICP Standard Solution see p. 2366
▶ Ytterbium ICP Standard Solution see p. 2370

Ytterbium(III) chloride hexahydrate

Ytterbium(III) chloride hexahydrate
ROTI®METIC 99,999 % (5N)
Ytterbium trichloride
$YbCl_3 \cdot 6\ H_2O$
M 387,49 g/mol
D 2,57
mp 160 °C (dec.)
[10035-01-5] • EC No. 237-632-3
WGK 1

Type analysis:
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5749.1	10 g	plastic	181,70 €

Ytterbium(III) oxide

Diytterbium trioxide
Yb_2O_3
M 394,08 g/mol
D 9,2 • bp 4070 °C
mp 2355 °C
[1314-37-0] • EC No. 215-234-0
WGK 2

Warning H315-H319-H335

Ytterbium(III) oxide
ROTI®METIC 99,999 % (5N)

Type analysis:
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5303.1	5 g	plastic	84,95 €
5303.2	25 g	plastic	289,20 €

Ytterbium(III) oxide
ROTI®REMETIC 99,99 %

Type analysis:
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7353.1	10 g	plastic	91,95 €
7353.2	25 g	plastic	160,20 €
7353.3	50 g	plastic	284,90 €

Yttrium Standards

▶ Yttrium AAS Standard Solution see p. 2361
▶ Yttrium ICP Standard Solution see p. 2366
▶ Yttrium ICP Standard Solution see p. 2370

Yttrium(III) carbonate hydrate

Yttrium(III) carbonate hydrate
ROTI®REMETIC 99,99 %
$Y_2(CO_3)_3 \cdot x\ H_2O$
M 357,84 + x H_2O g/mol
[38245-39-5] • EC No. 227-585-7
WGK 3

Type analysis:
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7284.1	25 g	plastic	112,35 €
7284.2	50 g	plastic	203,20 €

Yttrium(III) oxide

Diyttrium trioxide
Y_2O_3
M 225,81 g/mol
D 5,01 • bp 4300 °C
mp 2438 °C
[1314-36-9] • EC No. 215-233-5

Yttrium(III) oxide
ROTI®METIC 99,999% (5N)

Type analysis:
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5751.1	10 g	plastic	68,70 €
5751.2	50 g	plastic	203,20 €

Yttrium(III) oxide
ROTI®REMETIC 99,99 %

Type analysis:
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

7352.1	25 g	plastic	61,20 €
7352.2	100 g	plastic	155,90 €

Zaponlack varnish

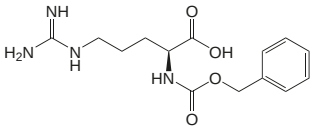
Zaponlack varnish
liquid
Clear varnish on a nitrocellulose base for sealing.
bp 78 °C
flp 13 °C
UN No. 1263 • ADR 3 II • WGK 1

Danger
H225-H315-H318-H336-H412-EUH066

6804.1	500 ml	glass	36,45 €

For further information, please see page 1175

Z-L-Arginine



Z-L-Arginine

PEPTIPURE® ≥98,5 %, for biochemistry

Z-L-Arg-OH, $N_α$-Benzyloxycarbonyl-L-arginine, $N_α$-Carbobenzyloxy-L-arginine, Cbz-L-Arginine

$C_{14}H_{20}N_4O_4$
M 308,34 g/mol
mp 167-177 °C
[1234-35-1] • EC No. 214-973-6
WGK 1

Type analysis:

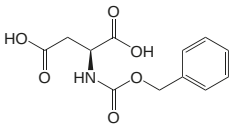
Appearance.....white to off-white powder
Purity (HPLC).....≥98,5 %
Specific rotation $[α]_D^{20}$ (4 % in 1 N HCl).....-11,0° to -7,0°
Water (KF).....≤2,0 %
Enantiomeric purity.....≤0,5 % D-enantiomer

1914.1	5 g	plastic	17,10 €
1914.2	25 g	plastic	40,35 €
1914.3	100 g	plastic	111,70 €

Z-L-Asp-OH

▶ Z-L-Aspartic acid see p. 2449

Z-L-Aspartic acid



Z-L-Aspartic acid

PEPTIPURE® ≥98,5 %, for biochemistry

Z-L-Asp-OH, $N_α$-Benzyloxycarbonyl-L-aspartic acid, $N_α$-Carbobenzyloxy-L-aspartic acid, Cbz-L-Aspartic acid

$C_{12}H_{13}NO_6$
M 267,23 g/mol
mp 115-120 °C
[1152-61-0] • EC No. 214-568-4
WGK 1

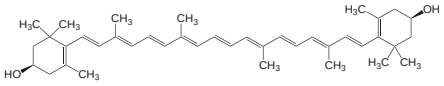
Warning H315-H319-H335

Type analysis:

Appearance.....white to off-white powder
Purity (HPLC).....≥98,5 %
Specific rotation $[α]_D^{20}$ (2 % in AcOH).....+8,0° to +10,0°
Water (KF).....≤2,0 %
Enantiomeric purity.....≤0,5 % D-Enantiomer

1894.1	5 g	plastic	18,85 €
1894.2	25 g	plastic	54,75 €
1894.3	100 g	plastic	145,05 €

Zeaxanthin



Zeaxanthin

ROTICHROM® TLC

Reference substance for thin layer chromatography

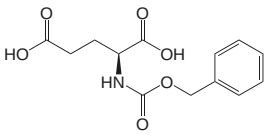
$C_{40}H_{56}O_2$
M 568,85 g/mol
mp ~215 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[144-68-3] • EC No. 205-636-4 • WGK 1

5672.2	5 mg	glass	407,45 €

Zephiran chloride

▶ Benzalkonium chloride see p. 1829

Z-L-Glutamic acid



Z-L-Glutamic acid

PEPTIPURE® ≥98,5 %, for biochemistry

Z-L-Glu-OH, $N_α$-Benzyloxycarbonyl-L-glutamic acid, $N_α$-Carbobenzyloxy-L-glutamic acid, Cbz-L-Glutamic acid

$C_{13}H_{15}NO_6$
M 281,26 g/mol
mp 116-122 °C
[1155-62-0] • EC No. 214-584-1 • WGK 1

Type analysis:

Appearance.....white to off-white powder
Purity (HPLC).....≥98,5 %
Specific rotation $[α]_D^{20}$ (4 % in AcOH).....-8,5° to -6,5°
Water (KF).....≤2,0 %
Enantiomeric purity.....≤0,5 % D-enantiomer

1885.1	5 g	plastic	17,75 €
1885.2	25 g	plastic	44,00 €
1885.3	100 g	plastic	133,85 €

Ziehl-Neelsen staining kit

Ziehl-Neelsen staining kit

for microscopy

Staining kit for visualising acid-fast bacteria (e.g. pathogen of TB *Mycobacterium tuberculosis*), incl. instructions for use.

Storage temp.: +20 °C
UN No. 1760 • ADR 8 II • WGK 2

Danger H314-H341-H371

Formulation:

Löffler's methylene blue solution (Art. No. AE64).....500 ml
Carbol fuchsine solution (Art. No. A130).....500 ml

8276.1	1 kit	glass	46,15 €

For further information, please see page 1518

Zinc

Zn
M 65,37 g/mol
D 7,14 • bp 906 °C
mp 419 °C
[7440-66-6] • EC No. 231-175-3

Zinc granule

≥99,99 %, p.a., particle size: 5-15 mm

Reducing agent, Arsenic detection

Type analysis:

Assay (Zinc).....≥99,99 %
Aluminium (Al).....≤0,001 %
Lead (Pb).....≤0,003 %
Cadmium (Cd).....≤0,003 %
Iron (Fe).....≤0,002 %
Copper (Cu).....≤0,001 %
Tin (Sn).....≤0,001 %

AE99.1	250 g	plastic	32,15 €
AE99.2	500 g	plastic	52,60 €
Original pack 6 x 500 g			49,97/500 g
AE99.3	1 kg	plastic	87,00 €
Original pack 6 x 1 kg			82,65/1 kg

Zinc shot

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis).....99,999 %
Particle size.....~3-6 mm
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5345.1	25 g	plastic	46,15 €
5345.2	100 g	plastic	145,15 €

Zinc dust

Zinc dust

≥98 %, particle size <63 µm, stab.

Zn
D 7,14 • bp 908 °C
mp 419 °C
[7440-66-6] • EC No. 231-175-3
UN No. 3077 • ADR 9 III • WGK 2

Warning H410

Type analysis:

Assay (metals basis).....≥98 %
Lead (Pb).....≤0,003 %
Iron (Fe).....≤0,002 %
Cadmium (Cd).....<0,003 %

9524.2	500 g	glass	30,00 €
Original pack 6 x 500 g			28,50/500 g
9524.3	1 kg	glass	42,50 €
Original pack 6 x 1 kg			40,38/1 kg
9524.1	2,5 kg	glass	75,15 €

Zinc Standards

▶ Zinc AAS Standard Solution see p. 2361
▶ Zinc ICP Standard Solution see p. 2366
▶ Zinc ICP Standard Solution see p. 2370

Zinc acetate

Zinc acetate
≥95 %, pure, anhydrous
$C_4H_6O_4Zn$
M 183,48 g/mol
D 1,84
Solubility: 430 g/l (H_2O, 20 °C)
[557-34-6] • EC No. 209-170-2
UN No. 3077 • ADR 9 III • WGK 3
Warning H319-H400-H410

Type analysis:
Assay.....≥95,0 %
pH value (5 % in H_2O).....~7
Lead (Pb).....≤0,01 %

9625.1	100 g	plastic	17,75 €
9625.2	500 g	plastic	35,40 €
Original pack 6 x 500 g			33,63/500 g
9625.3	1 kg	plastic	47,85 €
Original pack 6 x 1 kg			45,46/1 kg

Zinc acetate and acetic acid solution
▶ Carrez solution I see p. 1880

Zinc acetate dihydrate

$Zn(CH_3COO)_2 \cdot 2\ H_2O$
M 219,49 g/mol
D 1,74
mp 237 °C
Solubility: 430 g/l (H_2O, 20 °C)
[5970-45-6] • EC No. 209-170-2
UN No. 3077 • ADR 9 III • WGK 3
Warning H302-H410

Zinc acetate dihydrate
≥99,5 %, p.a., ACS

Guarantee analysis:
Assay (compl.).....≥99,5 %
pH value (5 %, water).....6,0-7,0
In H_2O insoluble matter.....≤0,005 %
Chloride (Cl).....≤0,0005 %
Total nitrogen (as N).....≤0,005 %
Sulphate (SO_4).....≤0,002 %
Nitrate (NO_3).....≤0,005 %
Arsenic (As).....≤0,00005 %
Calcium (Ca).....≤0,005 %
Cadmium (Cd).....≤0,001 %
Iron (Fe).....≤0,0005 %
Magnesium (Mg).....≤0,005 %
Sodium (Na).....≤0,01 %
Copper (Cu).....≤0,001 %
Potassium (K).....≤0,01 %
Manganese (Mn).....≤0,001 %
Lead (Pb).....≤0,001 %

P035.1	500 g	plastic	45,70 €
Original pack 6 x 500 g			43,42/500 g
P035.2	1 kg	plastic	75,15 €
Original pack 6 x 1 kg			71,39/1 kg

Zinc acetate dihydrate
≥99 %, Ph.Eur.

Guarantee analysis:
Appearance.....white cryst. powder
Assay (compl.).....99,0-101,0 %
Identity.....complies
pH value (5 % in H_2O).....5,8-7,0
Appearance of solution.....complies
Chloride (Cl).....≤0,005 %
Sulphate (SO_4).....≤0,01 %
Aluminium (Al).....≤0,0005 %
Arsenic (As).....≤0,0002 %
Lead (Pb).....≤0,001 %
Iron (Fe).....≤0,005 %
Copper (Cu).....≤0,005 %
Cadmium (Cd).....≤0,0002 %
Reducing substances.....complies

X893.1	500 g	plastic	21,40 €
Original pack 6 x 500 g			20,33/500 g
X893.2	1 kg	plastic	35,40 €
Original pack 6 x 1 kg			33,63/1 kg
X893.3	5 kg	plastic	130,00 €

Zinc bromide

Zinc bromide
≥98 %
$ZnBr_2$
M 225,21 g/mol
D 4,20 • bp 697 °C
mp 394 °C
Solubility: 4470 g/l (H_2O, 20 °C)
[7699-45-8] • EC No. 231-718-4
UN No. 3260 • ADR 8 III • WGK 3
Danger
H314-H302-H317-H400-H410

Type analysis:
Assay.....≥98 %
Sulphate (SO_4).....≤0,01 %
Barium (Ba).....≤0,001 %
Lead (Pb).....≤0,005 %
Calcium (Ca).....≤0,01 %
Iron (Fe).....≤0,001 %
Potassium (K).....≤0,01 %
Magnesium (Mg).....≤0,01 %
Sodium (Na).....≤0,01 %

9743.1	250 g	glass	110,65 €

Zinc chloride

$ZnCl_2$
M 136,28 g/mol
D 2,91 • bp 732 °C
mp 283 °C
Solubility: 3680 g/l (H_2O, 20 °C)
[7646-85-7] • EC No. 231-592-0
UN No. 2331 • ADR 8 III • WGK 3
Danger H314-H400-H410-H302

Zinc chloride
≥97 %, p.a.
Analytical reagent; starting material for the preparation of zinc iodine chloride solution.

Guarantee analysis:
Assay (arg.).....≥97,0 %
In HCl insoluble matter.....≤0,005 %
Ammonium (NH_4).....≤0,01 %
Nitrate (NO_3).....≤0,003 %
Sulphate (SO_4).....≤0,01 %
Lead (Pb).....≤0,005 %
Calcium (Ca).....≤0,06 %
Iron (Fe).....≤0,001 %
Magnesium (Mg).....≤0,01 %
Sodium (Na).....≤0,05 %

T887.1	500 g	plastic	54,75 €
Original pack 6 x 500 g			52,01/500 g
T887.2	1 kg	plastic	82,70 €
Original pack 6 x 1 kg			78,57/1 kg

Zinc chloride
≥97 % cryst.

Type analysis:
Assay.....≥97 %
Lead (Pb).....≤0,002 %
Cadmium (Cd).....≤0,002 %
Iron (Fe).....≤0,002 %
Copper (Cu).....≤0,001 %

3533.1	1 kg	plastic	21,40 €
Original pack 6 x 1 kg			20,33/1 kg
3533.3	2,5 kg	plastic	42,50 €
3533.2	10 kg	plastic	144,60 €

Zinc chloride solution (0,1 N)

Zinc chloride solution
0,1 mol/l - 0,1 N volumetric standard solution
D 1,01
WGK 2
Warning H315-H319-H412

Type analysis:
Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,4 %
Titer.....0,9960-1,0040

9901.1	500 ml	plastic	92,35 €

Zinc EDTA disodium salt dihydrate
▶ Ethylenediamine tetraacetic acid zinc disodium salt dihydrate see p. 1983

Zinc iodide

ZnI_2
M 319,18 g/mol
D 4,74 • bp 624 °C
mp 445 °C
Solubility: 4500 g/l (H_2O, 20 °C)
[10139-47-6] • EC No. 233-396-0
UN No. 3077 • ADR 9 III • WGK 2
Warning H315-H319-H335-H410

Zinc iodide
≥99 %, p.a.

Guarantee analysis:
Assay.....≥99,0 %
Iodate (IO_3).....≤0,1 %
Sulphate (SO_4).....≤0,01 %
Lead (Pb).....≤0,005 %
Cadmium (Cd).....≤0,005 %
Calcium (Ca).....≤0,01 %
Iron (Fe).....≤0,005 %

Potassium (K). ..... ≤0,01 %
Cobalt (Co). ..... ≤0,005 %
Copper (Cu). ..... ≤0,005 %
Sodium (Na). ..... ≤0,01 %
Nickel (Ni). ..... ≤0,005 %

9839.1	50 g	glass	35,40 €
9839.2	100 g	glass	67,20 €
9839.3	250 g	glass	127,95 €

Zinc iodide

≥98 %, powder

Type analysis:

Appearance. ..... white powder
Assay. ..... ≥98,0 %
Lead (Pb). ..... ≤0,01 %
Iron (Fe). ..... ≤0,01 %
Copper (Cu). ..... ≤0,01 %
Sodium (Na). ..... ≤0,05 %

2730.1	25 g	glass	24,20 €
2730.2	100 g	glass	52,60 €
2730.3	250 g	glass	110,65 €

Zinc iodine chloride solution

Zinc iodine chloride solution

acc. to Behrens, for microscopy

Reagent for cellulose.
D ~1,3
UN No. 1840 • ADR 8 III • WGK 3

Danger

H302-H314-H373-H410

Type analysis:

Appearance. ..... yellowish-brown solution

6395.1	100 ml	glass	26,35 €

For further information, please see page 1519

Zinc molybdate

Zinc molybdate

NEW

≥99 %, pure

Zinc molybdenum oxide
$ZnMoO_4$
M 225,33 g/mol
D 4,30
[13767-32-3] • EC No. 237-377-8
WGK 1

Type analysis:

Assay (based on Mo). ..... ≥99,0 %
Assay (Mo). ..... ≥43,0 %
Oxides. ..... ≤1,0 %
Water-soluble content. ..... ≤2,0 %
Water. ..... ≤1,0 %

0874.1	25 g	plastic	32,15 €
0874.2	50 g	plastic	53,65 €
0874.3	100 g	plastic	96,65 €
0874.4	250 g	plastic	192,45 €

Zinc molybdenum oxide

▶ Zinc molybdate see p. 2451

Zinc nitrate hexahydrate

Zinc nitrate hexahydrate

≥99 %, p.a.

$Zn(NO_3)_2 \cdot 6\ H_2O$
M 297,47 g/mol
mp 36,4 °C
Solubility: 1800 g/l (H_2O, 20 °C)
[10196-18-6] • EC No. 231-943-8
UN No. 1514 • ADR 5.1 II • WGK 3

Danger

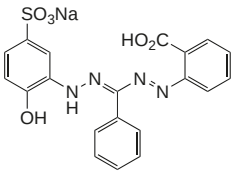
H272-H302-H315-H319-H335-H410

Guarantee analysis:

Appearance. ..... white cryst. powder
Assay. ..... 99,0-101,0 %
Insoluble matter. ..... ≤0,005 %
Sulphate (SO_4). ..... ≤0,005 %
Lead (Pb). ..... ≤0,005 %
Iron (Fe). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
pH (5 % H_2O, 25 °C). 3,5-6,0

6634.1	100 g	plastic	20,35 €
6634.2	500 g	plastic	42,50 €
Original pack 6 x 500 g			40,38/500 g
6634.3	1 kg	plastic	64,40 €
Original pack 6 x 1 kg			61,18/1 kg

Zincon



Zincon

≥95 %, p.a.

For determination of Cu and Zn.
2-Carboxy-2'-hydroxy-5'-sulphoformazyl-benzene-monosodium salt, 2-[5-(2-Hydroxy-5-sulphophenyl)-3-phenyl-1-formazyl]-benzoic acid-monosodium salt
$C_{20}H_{15}N_4NaO_6S$
M 462,41 g/mol
Storage temp.: +4 °C
[62625-22-3] • EC No. 263-651-1
WGK 3

Guarantee analysis:

Appearance. ..... brown to brownish red cryst. powder
Assay (titr.). ..... ≥95,0 %
Solution (1 % in 0,1 N NaOH) ... brown to brownish red
Loss on drying. ..... ≤10,0 %

5563.1	1 g	glass	38,60 €
5563.2	5 g	plastic	130,00 €

Zinc oxide

ZnO
M 81,37 g/mol
D ~5,61
mp 1975 °C
Solubility: 0,0016 g/l (H_2O, 20 °C)
[1314-13-2] • EC No. 215-222-5
UN No. 3077 • ADR 9 III • WGK 2

Warning H400-H410

Zinc oxide

ROTI®METIC 99,999 % (5N)

Type analysis:

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5421.1	25 g	plastic	121,40 €
5421.2	100 g	plastic	403,15 €

Zinc oxide

≥99 %, p.a., ACS

Guarantee analysis:

Assay (compl.). ..... ≥99,0 %
In H_2SO_4 insoluble matter. ..... ≤0,01 %
Alkalinity. ..... complies
Sulphur compounds (as SO_4). ..... ≤0,01 %
Chloride (Cl). ..... ≤0,001 %
Nitrate (NO_3). ..... ≤0,002 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,005 %
Cadmium (Cd). ..... ≤0,002 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,005 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,005 %
Manganese (Mn). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,0005 %

T114.1	500 g	plastic	67,20 €
Original pack 6 x 500 g			63,84/500 g
T114.2	1 kg	plastic	96,65 €
Original pack 6 x 1 kg			91,82/1 kg

Zinc oxide

≥99 %, extra pure

Type analysis:

Assay. ..... ≥99 %
Lead (Pb). ..... ≤0,002 %
Cadmium (Cd). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

9348.2	500 g	plastic	19,90 €
Original pack 6 x 500 g			18,91/500 g
9348.1	1 kg	plastic	34,30 €
Original pack 6 x 1 kg			32,59/1 kg
9348.3	2,5 kg	plastic	67,20 €

Zinc oxide

≥99 %, Ph.Eur., USP

Type analysis:

Appearance. ..... white to slightly yellowish powder
Assay. ..... 99-100,5 %
Identity. ..... complies
Solubility. ..... complies
Alkaline reacting substances. ..... complies
Carbonate and acid insoluble matters. ..... complies
Loss on ignition. ..... ≤1,0 %
Arsenic (As). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,005 %
Cadmium (Cd). ..... ≤0,001 %
Iron (Fe). ..... ≤0,02 %

5297.1	250 g	plastic	21,00 €
5297.2	500 g	plastic	31,75 €
Original pack 6 x 500 g			30,16/500 g
5297.3	1 kg	plastic	48,95 €
Original pack 6 x 1 kg			46,50/1 kg
5297.4	2,5 kg	plastic	99,90 €

Zinc oxide, nano

Zinc oxide, nano

ROTI®nanoMETIC ≥99,5 %, 25 nm

ZnO
M 81,37 g/mol
D ~5,61
mp 1975 °C
Solubility: 0,0016 g/l (H_2O, 20 °C)
[1314-13-2] • EC No. 215-222-5
UN No. 3077 • ADR 9 III • WGK 2

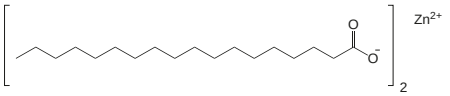
Warning H400-H410

Type analysis:

Assay (dry substance). ..... ≥99,5 %
Particle size. ..... ~25 nm

8278.1	10 g	glass	30,00 €
8278.2	50 g	glass	115,60 €
8278.3	100 g	glass	209,65 €

Zinc stearate



Zinc stearate

powder

Stearic acid zinc salt
$C_{36}H_{70}O_4Zn$
M 632,29 g/mol
D 1,10
mp 120-122 °C • flp 277 °C
[557-05-1] • EC No. 209-151-9

Type analysis:

Appearance. ..... powder
Ash. ..... 13,2-14,0 %
Free fatty acid. ..... ≤1,0 %
Melting point. ..... 120-122 °C
Particle size. ..... ≥99 % <71 µm

9295.1	1 kg	plastic	41,85 €
Original pack 6 x 1 kg			39,76/1 kg
9295.5	25 kg	plastic	396,70 €

Zinc sulphate monohydrate

Zinc sulphate monohydrate

≥97 %, pure

$ZnSO_4 \cdot H_2O$
M 179,49 g/mol
D 3,2
mp 740 °C
Solubility: 350 g/l (H_2O, 20 °C)
[7446-19-7] • EC No. 231-793-3
UN No. 3077 • ADR 9 III • WGK 3

Danger H302-H318-H410

Type analysis:

Assay. ..... ≥97,0 %
pH value (5 % in H_2O). 3,0-6,5
Chloride (Cl). ..... ≤0,05 %
Iron (Fe). ..... ≤0,01 %

9466.1	250 g	plastic	20,35 €
9466.2	500 g	plastic	30,00 €
Original pack 6 x 500 g			28,50/500 g
9466.3	1 kg	plastic	48,95 €
Original pack 6 x 1 kg			46,50/1 kg

Zinc sulphate heptahydrate

White vitriol
$ZnSO_4 \cdot 7\ H_2O$
M 287,54 g/mol
D 1,97
mp 40 °C
Solubility: 965 g/l (H_2O, 20 °C)
[7446-20-0] • EC No. 231-793-3
UN No. 3077 • ADR 9 III • WGK 3

Danger H302-H318-H400-H410

Zinc sulphate heptahydrate

≥99,5 %, p.a., ACS

For removing protein from blood and urine.

Guarantee analysis:

Assay (compl.). ..... ≥99,5 %
pH value (5 % in H_2O). 4,4-6,0
In H_2O insoluble matter. ..... ≤0,005 %
Total nitrogen (as N). ..... ≤0,0005 %
Chloride (Cl). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,00005 %
Lead (Pb). ..... ≤0,002 %
Cadmium (Cd). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,001 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,005 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,001 %
Manganese (Mn). ..... ≤0,0003 %
Sodium (Na). ..... ≤0,005 %

K301.1	500 g	plastic	25,30 €
Original pack 6 x 500 g			24,04/500 g
K301.2	1 kg	plastic	44,00 €
Original pack 6 x 1 kg			41,80/1 kg
K301.3	2,5 kg	plastic	80,55 €
K301.5	25 kg	plastic	665,45 €

Zinc sulphate heptahydrate

≥99 %, Ph.Eur., USP, BP

Guarantee analysis:

Assay (compl.). ..... 99,0-104,0 %
Identity. ..... complies
pH value (5 % solution). 4,4-5,6
Appearance of solution. ..... complies
Free acid. ..... complies
Chloride (Cl). ..... ≤0,03 %
Alkali and alkaline earth metals. ..... ≤0,5 %
Arsenic (As). ..... ≤0,0002 %
Lead (Pb). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,02 %
Iron (Fe). ..... ≤0,005 %
Residual solvents. ..... complies

T884.1	500 g	plastic	33,25 €
Original pack 6 x 500 g			31,59/500 g
T884.2	1 kg	plastic	56,90 €
Original pack 6 x 1 kg			54,06/1 kg
T884.3	5 kg	plastic	253,60 €

Zinc sulphate heptahydrate

≥97 %, extra pure

Type analysis:

Assay. ..... ≥97,0 %
Chloride (Cl). ..... ≤0,5 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,001 %

7316.1	500 g	plastic	18,20 €
Original pack 6 x 500 g			17,29/500 g
7316.2	1 kg	plastic	28,50 €
Original pack 6 x 1 kg			27,08/1 kg
7316.3	2,5 kg	plastic	59,05 €

Zinc sulphate solution (0,1 N)

Zinc sulphate solution

0,1 mol/l - 0,1 M volumetric standard solution

UN No. 3082 • ADR 9 III • WGK 2

Warning H319-H411

Type analysis:

Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,4 %
Titer. 0,996-1,004

P723.1	1 l	plastic	27,45 €
Original pack 6 x 1 l			26,08/1 l

For further information, please see page 1682

Zirconium Standards

- Zirconium AAS Standard Solution see p. 2361
- Zirconium ICP Standard Solution see p. 2366
- Zircon ICP Standard Solution see p. 2370

Zirconium(IV) oxide

Zirconium(IV) oxide

≥99 %
ZrO_2
M 123,22 g/mol
D 5,70 • bp ~5000 °C
mp ~2680 °C
[1314-23-4] • EC No. 215-227-2

Type analysis:
Appearance. ..... white powder
Assay. ..... ≥99 %
Iron (Fe). ..... ≤0,1 %
Titanium (Ti). ..... ≤0,1 %

9303.2	100 g	plastic	43,55 €
9303.1	500 g	plastic	171,50 €
Original pack 6 x 500 g			162,93/500 g

Zirconium(IV) oxide, nano, hydrophilic

Zirconium(IV) oxide, nano, hydrophilic

NEW

ROTI®nanoMETIC 3 nm, hydrophilic
ZrO_2
[1314-23-4] • EC No. 215-227-2
UN No. 1759 • ADR 8 I

Danger H314

Type analysis:
Purity (Zr). ..... ≥99,0 %
Particle size. ..... ~3 nm
Refractive index (585 nm). ..... ~2,03
Forms colloidal solution in. ..... H_2O (<500 mg/ml)
Phase. ..... monoclinic
Stabilized with. ..... HNO_3

2097.1	1 g	glass	40,75 €
2097.2	5 g	glass	170,95 €

Zirconium(IV) oxide, nano, hydrophobic

Zirconium(IV) oxide, nano, hydrophobic

NEW

ROTI®nanoMETIC 3 nm, hydrophobic
ZrO_2
[1314-23-4] • EC No. 215-227-2

Danger H315-H318-H372

Type analysis:
Purity (Zr). ..... ≥99,0 %
Particle size. ..... ~3 nm
Refractive index (585 nm). ..... ~1,8
Forms colloidal solution in. ..... 2-butanol, epoxide
Phase. ..... monoclinic
Stabilized with. ..... Benzoic acid

1776.1	1 g	glass	48,30 €
1776.2	5 g	glass	203,20 €

Zirconium oxynitrate

▶ Zirconyl nitrate hydrate see p. 2453

Zirconyl chloride octahydrate

Zirconyl chloride octahydrate

ROTI®METIC 99,995 % (4N5)
$ZrOCl_2 \cdot 8\ H_2O$
M 322,25 g/mol
D 1,91
mp 400 °C (dec.)
[13520-92-8]
UN No. 3260 • ADR 8 II • WGK 1

Danger H314

Type analysis:
Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

4502.1	10 g	plastic	62,25 €

Zirconyl nitrate hydrate

Zirconyl nitrate hydrate

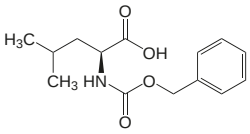
ROTI®METIC 99,99 % (4N)
Zirkonium oxynitrate
$ZrO(NO_3)_2 \cdot x\ H_2O$
M 231,23 + x H_2O g/mol
[14985-18-3] • EC No. 237-529-3
UN No. 3085 • ADR 5.1 (8) II • WGK 1

Danger H272-H314

Type analysis:
Assay (metals basis). ..... 99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

5415.1	25 g	plastic	246,20 €
5415.2	100 g	plastic	772,95 €

Z-L-Leucine



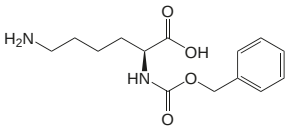
Z-L-Leucine

PEPTIPURE® ≥94 %, for biochemistry
Z-L-Leu-OH, N_α-Benzyloxycarbonyl-L-leucine, N_α-Carbobenzyloxy-L-leucine, Cbz-L-Leucine
$C_{14}H_{19}NO_4$
M 265,30 g/mol
[2018-66-8] • EC No. 217-960-3
WGK 1

Type analysis:
Appearance. ..... colourless-yellowish liquid
Assay (acidim.). ..... ≥94,0 %
Purity (HPLC). ..... ≥97,5 %
Spec. rotation $[\alpha]_D^{20}$ (2 % in Ethanol). ..... -18,5° to -16,5°
Free amino acids. ..... ≤0,2 %
Water (KF). ..... ≤1,0 %
Enantiomeric purity. ..... ≤0,5 % D-Enantiomer

1859.1	5 g	glass	16,70 €
1859.2	25 g	glass	40,35 €
1859.3	100 g	glass	111,70 €

Z-L-Lysine



Z-L-Lysine

PEPTIPURE® ≥98 %, for biochemistry
Z-L-Lys-OH, N_α-Benzyloxycarbonyl-L-lysine, N_α-Carbobenzyloxy-L-lysine, Cbz-L-Lysine
$C_{14}H_{20}N_2O_4$
M 280,32 g/mol
mp 210-230 °C
[2212-75-1] • EC No. 218-662-6
WGK 1

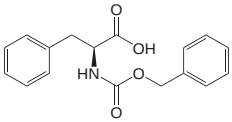
Type analysis:
Appearance. ..... white to off-white powder
Purity (HPLC). ..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$ (2 % in 0,2 N HCl). ..... -15,0° to -11,0°
Water (KF). ..... ≤2,0 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

1907.1	1 g	glass	22,05 €
1907.2	5 g	plastic	67,20 €
1907.3	10 g	plastic	111,70 €

Z-L-Phe-OH

▶ Z-L-Phenylalanine see p. 2453

Z-L-Phenylalanine



Z-L-Phenylalanine

PEPTIPURE® ≥98 %, for biochemistry
Z-L-Phe-OH, N_α-Benzyloxycarbonyl-L-phenylalanine, N_α-Carbobenzyloxy-L-phenylalanine, Cbz-L-Phenylalanine
$C_{17}H_{17}NO_4$
M 299,32 g/mol
mp 80-90 °C
[1161-13-3] • EC No. 214-599-3
WGK 1

Type analysis:
Appearance. ..... white to off-white powder
Purity (HPLC). ..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$ (2 % in AcOH). ..... +3,5° to +6,5°
Water (KF). ..... ≤2,0 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

1865.1	5 g	plastic	22,05 €
1865.2	25 g	plastic	55,80 €
1865.3	100 g	plastic	144,60 €

Zymolyase® 20T

Zymolyase® 20T

≥20 U/mg, for biochemistry and molecular biology

For lysis of yeast cells.
Isolated from *Arthrobacter luteus*.
Lyticase, β-1,3-glucan laminaripentaohydrolase
Storage temp.: +4 °C
Transport temp.: cooled
[37340-57-1]
WGK 1

Type analysis:

Appearance. .....lyophilised powder
Activity. .....≥20 000 U/g

9324.1	100 mg	glass	79,45 €
9324.2	500 mg	glass	225,25 €
9324.3	1 g	glass	396,70 €

For further information, please see page 1281

Zymolyase® 100T

Zymolyase® 100T

≥100 U/mg, for biochemistry and molecular biology

For lysis of yeast cells.
Isolated from *Arthrobacter luteus*.
Lyticase, β-1,3-glucan laminaripentaohydrolase
Storage temp.: +4 °C
Transport temp.: cooled
[37340-57-1]
WGK 1

Type analysis:

Appearance. .....lyophilised powder
Activity. .....≥100 000 U/g

9329.1	100 mg	glass	289,20 €
9329.2	500 mg	glass	901,95 €

For further information, please see page 1281

Abbreviations and Symbols

Information on purity and application

▷	see
[ ]	Chemical Abstracts Registry Number (CAS)
>	more than
<	less than
min	minimum
max	maximum
µm	0,001 mm
~	approximate
$[\alpha]_D^{20}$	specific rotation
+4°C	storage in refrigerating room
-20°C	storage in deep-freeze room
®	registered symbol, registered trade mark
	corrosive
	explosive
/	highly flammable / extremely flammable
	fire-activating, oxidizing
/	toxic / very toxic
n	harmful
i	irritant
	dangerous for the environment
	GHS01 exploding bomb
	GHS02 flame
	GHS03 flame over circle
	GHS04 gas cylinder
	GHS05 corrosion
	GHS06 skull and crossbones
	GHS07 exclamation mark
	GHS08 health hazard
	GHS09 environment
Å	Ångström = 10^{-10} m
ACS	American Chemical Society
ADR	European agreement on international road transport of hazardous goods
AW	atomic weight
Amp.	ampoule
aq	water
art.	artificial
asym.	asymmetrical
AT	argentometric titration
BP	British Pharmacopoeia
bp	boiling point, boiling range
bp_{12}	boiling point at 12 torr
c	amount-of-substance concentration
CAS	Chemical Abstract Service
CELLPURE®	suitable for cell culture
CHR	A compound in this catalogue is designated as being thin-layer chromatographically pure (CHR) if no impurities can be detected during test conditions with 20 µg sample.
~CHR	For products with impurities which under our conditions, (see CHR), allow the main compound to be designated; such products can be identified as being "almost thin-layer chromatographically pure" (~CHR).
C.I. No	colour index number
conc.	concentrated
cP	centipoise
cryst.	crystallized
cSt	centistoke
D	density
DAB	Deutsches Arzneibuch (German Pharmacopoeia)
DAC	Deutscher Arzneimittel-Codex (German Drugs Codex)
DC	thin-layer chromatography
dec.	decomposition
depur.	depuratum, purified quality
dest.	distilled
DIN	German Industrial Standards
E No	number codes for food additives that have been assessed for use within the EC
EC No	the official number of a chemical substance that is commercially available within the EC
extra pure	suitable for laboratory use
F	melting point, melting range
FCC	Food chemical codex
FIP	Fédération Internationale Pharmaceutique
Flp	flash point
g	gramme
GC	gas chromatography
(GC)	content defined by gas chromatography
H	Hazard statement acc. to regulation (EC) No 1272/2008 (CLP, GHS)
HPLC	high performance liquid chromatography
IE	international unit (Internationale Einheit)
ISO	International Organization for Standardization
IU	international unit
JP	Japanese Pharmacopoeia
kg	kilogramme
l, ltr	litre
Lit.	literature
LSC	liquid scintillation counting
lyophil.	lyophilized (readily soluble form)
M or mol/l	molarity, amount-of-substance concentration

Abbreviations and Symbols

M	molecular weight or molar mass
mg	milligramm
ml	mililitre
Mol.%	molar percent
nat.	natural
n_D	refractive index
o.r.	on request
P	Precautionary statement acc. to regulation (EC) No 1272/2008 (CLP, GHS)
Pa s	Pascal second
p.a.	pro analysi = for analytical purposes
Pestilyse®	solvent, suitable for residue analysis (environmental, water and food analysis)
pH	pH value
pKa	pKa value
pharm.	pharmaceutical quality, for pharmaceutical purposes
Ph.Eur.	European Pharmacopoeia
ppb	parts per billion = 1 µg per kg
ppm	parts per million = 0,0001 %, 1 mg per kg
ppt	parts per trillion = 1 ng per kg
prim.	primary
PUFFERAN®	can be used as buffer
pulv.	pulverised
pure	suitable for synthesis and laboratory use
puriss.	purissimum, especially pure quality. Products with such designation have a content of at least 99%, unless a different content is stated in %. Their appearance and characteristic data correspond to the appertaining literature or deviate only slightly from it. They are suitable for purposes requiring a high degree of purity. With a number of products having this degree of purity, analysis certificates plus guarantee will be supplied or attached to the container. Delicate products are packaged under protective gas.
purum	chemically pure quality. Products having the purity designation "purum" have a content of at least 97%, unless a different content is stated, and their colour and characteristic data, apart from minor deviations, correspond to the literature. This degree of purity is recommended for laboratory work such as syntheses, which are subject to purity requirements. Delicate products are packaged under protective gas.
R	Risk statement acc. to regulation 67/548/EEC
rect.	rectification
redest.	redistilled
resubl.	resublimated
ROTICHROM®	suitable as standard in chromatography
ROTICHROM®GC	reference substance for gas chromatography, delivered with GC chromatogram
ROTICHROM®HPLC	reference substance for HPLC, delivered with HPLC chromatogram
ROTICHROM®TLC	reference substance for thin-layer chromatography, delivered with thin-layer chromatogram
ROTICUBE®	Combi-box of 5 litre or 10 litre, consisting of a stable outer card box with inner bag made of PE; comes with stopcock.
ROTIDRY®	dried solvents, filled under protective gas
ROTIDRY®SEPT	dried solvents, in a septum bottle
ROTIGEN®	product is suitable for DNA-synthesis
ROTIPHORESE®	product is suitable for electrophoresis
ROTIPURAN®	highly pure product
ROTISOLV®	solvent for specific use - brand name Roth
ROTITAINER®	Stackable containers which can also be handled easily by female workers. Matching safety pumps are available. Solid substances are delivered in plastic buckets.
S	Safety statement acc. to regulation 67/548/EEC
sec.	secondary
sicc.	dry, anhydrous (siccus)
sine H_2O	water free
stab.	stabilized
subl.	sublimated
sym.	symmetrical
synth.	synthetic
techn.	technical quality. Products with the purity designation "technicum" feature a different content. They are generally mass produced and may have a slightly foreign odour and colour. They are used for general technical purposes.
tert.	tertiary; standard for thin-layer chromatograhy (TLC)
TLC	thin layer chromatography
U	unit
USP	United States Pharmacopoeia
WGK	water hazard class
WGK 1	generally not water hazardous
WGK 2	water hazardous
WGK 3	extremely water hazardous

Hazard Pictograms

The hazard pictogram on the designation label indicates the main hazard arising from a substance. If there are several hazardous qualitiies, several symbols are necessary.

Each pictogram is allocated a hazard designation and coding that do **not** appear on the designation label.

GHS01
exploding bomb

GHS02
flame

GHS03
flame over circle

GHS04
gas cylinder

GHS05
corrosion

GHS06
skull and crossbones

GHS07
exclamation mark

GHS08
health hazard

GHS09
environment

Hazard Statements H Codes

Hazard statements for physical hazards

H200	Unstable explosives.
H201	Explosive; mass explosion hazard.
H202	Explosive, severe projection hazard.
H203	Explosive; fire, blast or projection hazard.
H204	Fire or projection hazard.
H205	May mass explode in fire.
H220	Extremely flammable gas.
H221	Flammable gas.
H222	Extremely flammable aerosol.
H223	Flammable aerosol.
H224	Extremely flammable liquid and vapour.j
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H228	Flammable solid.
H229	Pressurised container: May burst if heated.
H230	May react explosively even in the absence of air.
H231	May react explosively even in the absence of air at elevated pressure and/or temperature.
H240	Heating may cause an explosion.
H241	Heating may cause a fire or explosion.
H242	Heating may cause a fire.
H250	Catches fire spontaneously if exposed to air.
H251	Self-heating; may catch fire.
H252	Self-heating in large quantities; may catch fire.
H260	In contact with water releases flammable gases which may ignite spontaneously.
H261	In contact with water releases flammable gases.
H270	May cause or intensify fire; oxidiser.
H271	May cause fire or explosion; strong oxidiser.
H272	May intensify fire; oxidiser.
H280	Contains gas under pressure; may explode if heated.
H281	Contains refrigerated gas; may cause cryogenic burns or injury.
H290	May be corrosive to metals.

Hazard statements for health hazards

H300	Fatal if swallowed.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H310	Fatal in contact with skin.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.

H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H350i	May cause cancer by inhalation.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H360F	May damage fertility.
H360D	May damage the unborn child.
H360FD	May damage fertility. May damage the unborn child.
H360Fd	May damage fertility. Suspected of damaging the unborn child.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H361	Suspected of damaging fertility or the unborn child.
H361f	Suspected of damaging fertility .
H361d	Suspected of damaging the unborn child.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H362	May cause harm to breast-fed children.
H370	Causes damage to organs.
H371	May cause damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H300+H310	Fatal if swallowed or in contact with skin.
H300+H330	Fatal if swallowed or if inhaled.
H310+H330	Fatal in contact with skin or if inhaled.
H300+H310+H330	Fatal if swallowed, in contact with skin or if inhaled.
H301+H311	Toxic if swallowed or in contact with skin.
H301+H331	Toxic if swallowed or if inhaled.
H311+H331	Toxic in contact with skin or if inhaled.
H301+H311+H331	Toxic if swallowed, in contact with skin or if inhaled.
H302+H312	Harmful if swallowed or in contact with skin.
H302+H332	Harmful if swallowed or if inhaled.
H312+H332	Harmful in contact with skin or if inhaled.
H302+H312+H332	Harmful if swallowed, in contact with skin or if inhaled.

Hazard statements for environmental hazards

H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.
H420	Harms public health and the environment by destroying ozone in the upper atmosphere.

Supplemental Hazard Information H Codes

EUH001	Explosive when dry.
EUH006	Explosive with or without contact with air.
EUH014	Reacts violently with water.
EUH018	In use may form flammable/explosive vapour-air mixture.
EUH019	May form explosive peroxides.
EUH029	Contact with water liberates toxic gas.
EUH031	Contact with acids liberates toxic gas.
EUH032	Contact with acids liberates very toxic gas.
EUH044	Risk of explosion if heated under confinement.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH070	Toxic by eye contact.
EUH071	Corrosive to the respiratory tract.
EUH201 EUH201A	Contains lead. Should not be used on surfaces liable to be chewed or sucked by children. Warning! Contains lead.
EUH202	Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children.
EUH203	Contains chromium (VI). May produce an allergic reaction.
EUH204	Contains isocyanates. May produce an allergic reaction.
EUH205	Contains epoxy constituents. May produce an allergic reaction.
EUH206	Warning! Do not use together with other products. May release dangerous gases (chlorine).
EUH207	Warning! Contains cadmium. Dangerous fumes are formed during use. See information supplied by the manufacturer. Comply with the safety instructions.
EUH208	Contains (name of sensitising substance). May produce an allergic reaction.
EUH209 EUH209A	Can become highly flammable in use. Can become flammable in use.
EUH210	Safety data sheet available on request.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Classification			Labelling			
Hazard class	**Category codes**		**Pictogram, code**	**Signal word**	**Hazard statements**	
Explosive	Unstable explosives	Unst. Expl.	GHS01	Danger	H200	Unstable explosives.
	Divisions 1.1	Expl. 1.1			H201	Explosive; mass explosion hazard.
	Divisions 1.2	Expl. 1.2			H202	Explosive, severe projection hazard.
	Divisions 1.3	Expl. 1.3			H203	Explosive; fire, blast or projection hazard.
	Divisions 1.4	Expl. 1.4		Warning	H204	Fire or projection hazard.
	Divisions 1.5	Expl. 1.5	No pictogram	Danger	H205	May mass explode in fire.
	Divisions 1.6	Expl. 1.6	No pictogram, no signal word, no hazard statement			
Flammable gas	Category 1	Flam. gas 1	GHS02	Danger	H220	Extremely flammable gas.
	Category 2	Flam. gas 2	No pictogram	Warning	H221	Flammable gas.
Flammable aerosol	Category 1	Flam. aerosol 1	GHS02	Danger	H222	Extremely flammable aerosol.
	Category 2	Flam. aerosol 2		Warning	H223	Flammable aerosol.
Oxidising gas	Category 1	Ox. gas 1	GHS03	Danger	H270	May cause or intensify fire; oxidiser.
Gas under pressure	Compressed gas	Press. gas	GHS04	Warning	H280	Contains gas under pressure; may explode if heated.
	Dissolved gas					
	Liquefied gas					
	Refrigerated liquefied gas				H281	Contains refrigerated gas; may cause cryogenic burns or injury.
Flammable liquid	Category 1	Flam. Liq. 1	GHS02	Danger	H224	Extremely flammable liquid and vapour.
	Category 2	Flam. Liq. 2			H225	Highly flammable liquid and vapour.
	Category 3	Flam. Liq. 3		Warning	H226	Flammable liquid and vapour.
Flammable solid	Category 1	Flam. Sol. 1		Danger	H228	Flammable solid.
	Category 2	Flam. Sol. 2		Warning		

Classification			Labelling			
Hazard class	**Category codes**		**Pictogram, code**	**Signal word**	**Hazard statements**	
Self-reactive substance or mixture	Type A	Self-react. A	GHS01	Danger	H240	Heating may cause an explosion.
		Org. Perox. A				
	Type B	Self-react. B	GHS01 + GHS02		H241	Heating may cause a fire or explosion.
		Org. Perox. B				
Organic peroxide	Type C and D	Self-react. CD	GHS02	Danger	H242	Heating may cause a fire.
		Org. Perox. CD				
	Type E and F	Self-react. EF		Warning		
		Org. Perox. EF				
	Type G	Self-react. G	No pictogram, no signal word, no hazard statement			
		Org. Perox. G				
Pyrophoric liquid	Category 1	Pyr. Liq. 1	GHS02	Danger	H250	Catches fire spontaneously if exposed to air.
Pyrophoric solid	Category 1	Pyr. Sol. 1				
Self-heating substance or mixture	Category 1	Self-heat. 1		Danger	H251	Self-heating; may catch fire.
	Category 2	Self-heat. 2		Warning	H252	Self-heating in large quantities; may catch fire.
Substance or mixture which in contact with water emits flammable gas	Category 1	Water-react. 1		Danger	H260	In contact with water releases flammable gases which may ignite spontaneously.
	Category 2	Water-react. 2		Danger	H261	In contact with water releases flammable gases.
	Category 3	Water-react. 3		Warning		
Oxidising liquid **Oxidising solid**	Category 1	Ox. Liq. 1	GHS03	Danger	H271	May cause fire or explosion; strong oxidiser.
		Ox. Sol. 1				
	Category 2	Ox. Liq. 2		Danger	H272	May intensify fire; oxidiser.
		Ox. Sol. 2				
	Category 3	Ox. Liq. 3		Warning		
		Ox. Sol. 3				
Substance or mixture corrosive to metals	Category 1	Met. Corr. 1	GHS05	Warning	H290	May be corrosive to metals.
Acute toxicity	Category 1	Acute Tox. 1	GHS06	Danger	H300 H310 H330	Fatal if swallowed. Fatal in contact with skin. Fatal if inhaled.
	Category 2	Acute Tox. 2				
	Category 3	Acute Tox. 3			H301 H311 H331	Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled.
	Category 4	Acute Tox. 4	GHS07	Warning	H302 H312 H332	Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled.

Classification			Labelling			
Hazard class	Category codes		Pictogram, code	Signal word	Hazard statements	
Skin corrosion/ irritation	Category 1A	Skin Corr. 1A	GHS05	Danger	H314	Causes severe skin burns and eye damage.
	Category 1B	Skin Corr. 1B				
	Category 1C	Skin Corr. 1C				
	Category 2	Skin Irrit. 2	GHS07	Warning	H315	Causes skin irritation.
Serious eye damage/ eye irritation	Category 1	Eye Dam. 1	GHS05	Danger	H318	Causes serious eye damage.
	Category 2	Eye Irrit. 2	GHS07	Warning	H319	Causes serious eye irritation.
Respiratory sensitization	Category 1 Category 1A Category 1B	Resp. Sens. 1 Resp. Sens. 1A Resp. Sens. 1B	GHS05	Danger	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization	Category 1 Category 1A Category 1B	Skin Sens. 1 Skin Sens. 1A Skin Sens. 1B	GHS07	Warning	H317	May cause an allergic skin reaction.
Germ cell mutagenicity	Category 1A	Muta. 1A	GHS08	Danger	H340	May cause genetic defects. (*)
	Category 1B	Muta. 1B				
	Category 2	Muta. 2		Warning	H341	Suspected of causing genetic defects. (*)
Carcinogenicity	Category 1A	Carc. 1A		Danger	H350 H350i	May cause cancer. (*) May cause cancer by inhalation.
	Category 1B	Carc. 1B				
	Category 2	Carc. 2		Warning	H351	Suspected of causing cancer. (*)
	(*) state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard					
Reproductive toxicity	Category 1A	Repr. 1A	GHS08	Danger	H360 H360F H360D H360FD	May damage fertility or the unborn child. (*) May damage fertility. (*) May damage the unborn child. (*) May damage fertility. May damage the unborn child. (*)
	Category 1B	Repr. 1B				
	Category 2	Repr. 2		Warning	H361 H361f H361d H361fd	Suspected of damaging fertility or the unborn child. Suspected of damaging fertility. Suspected of damaging the unborn child. Suspected of damaging fertility. Suspected of damaging the unborn child.
	Additional category for effects on or via lactation	Lact.	No pictogram	No signal word	H362	May cause harm to breast-fed children.
	(*) state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard					

Classification & Labelling acc. to (EC) 1272/2008

Classification			Labelling			
Hazard class	**Category codes**		**Pictogram, code**	**Signal word**	**Hazard statements**	
Specific target organ toxicity – single exposure	Category 1	STOT SE 1	GHS08	Danger	H370	Causes damage to organs. (*)
	Category 2	STOT SE 2		Warning	H371	May cause damage to organs. (*)
	Category 3	STOT SE 3	GHS07	Warning	H335	May cause respiratory irritation.
					H336	May cause drowsiness or dizziness.
Specific target organ toxicity – repeated exposure	Category 1	STOT RE 1	GHS08	Danger	H372	Causes damage to organs through prolonged or repeated exposure. (*)
	Category 2	STOT RE 2		Warning	H373	May cause damage to organs through prolonged or repeated exposure. (*)
	(*) state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard					
Aspiration hazard	Category 1	Asp. Tox. 1	GHS08	Danger	H304	May be fatal if swallowed and enters airways.
Acute aquatic hazard	Acute 1	Aquatic Acute 1	GHS09	Warning	H400	Very toxic to aquatic life.
Long-term aquatic hazard	Chronic 1	Aquatic Chronic 1		Warning	H410	Very toxic to aquatic life with long lasting effects.
	Chronic 2	Aquatic Chronic 2		No signal word	H411	Toxic to aquatic life with long lasting effects.
	Chronic 3	Aquatic Chronic 3	No pictogram	No signal word	H412	Harmful to aquatic life with long lasting effects.
	Chronic 4	Aquatic Chronic 3			H413	May cause long lasting harmful effects to aquatic life.
Hazardous for the ozone layer	Category 1	Ozone 1	GHS07	Warning	H420	Harms public health and the environment by destroying ozone in the upper atmosphere.

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Zitex®	Saint-Gabain Performance Plastics Corporation
Zymolyase®	Kirin Holdings

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Terms of Sale and Delivery

- These sales and delivery terms and conditions also apply for all future deliveries -

1 Validity for future business transactions - Validity of contrary general terms and conditions - Validity for companies only

1. Validity for future business transactions - Validity of contrary general terms and conditions - Validity for companies only

1.1. Our sales and delivery terms and conditions apply exclusively. They shall also apply to all in future deliveries, even when no special reference is made thereto. We do not accept contrary terms and conditions or client terms and conditions which differ from our delivery terms and conditions unless we have expressly agreed to the validity thereof in writing. Our delivery terms and conditions shall also apply when we unconditionally make the delivery to the client, but are aware of conflicting terms and conditions or those which differ from our delivery terms and conditions.

1.2. Our conditions of sale shall only apply to companies (pursuant to Section 14 of the German Civil Code), legal persons governed by public law or a separate legal entity under public law.

2. Quotes, conclusion of contract

2.1. Our quotes are subject to change and are non-binding unless they have been explicitly declared binding or include a specific period of acceptance.

2.2. The ordering of goods by the client shall be deemed to be a binding contractual offer. Orders are only binding upon us if we confirm them in writing or in text form within two weeks, or if we fulfil them within two weeks through shipment of the ordered goods

2.3. The legal relationship between the client and us shall be governed exclusively by the written contract, including these Terms of Sale and Delivery. Verbal agreements made by us before the contract is formed are not legally binding and verbal understandings between the contracting parties are superseded by the contract that is formed in writing or in text form, unless it is expressly stated therein that such agreements will continue to apply.

2.4. Amendments and modifications to the agreements made, including these general Terms of Sale and Delivery, must be made in writing or in text form in order to be valid. With the exception of managing directors and holders of commercial powers of attorney, our employees are not authorised to make oral agreements which are contrary to the cited provisions.

2.5. The information we provide on the item to be supplied (e.g. weights, dimensions, quantities and functional values), as well as our descriptions of the item to be supplied, are only approximations, unless use for the purpose intended by the contract requires full conformity. These are not guaranteed physical characteristics, rather descriptions or characterisations of the product. Deviations that are customary in the trade and deviations that are the result of legal provisions are permissible provided that they do not impair usability for the contractually agreed purpose. Refer below to Article 10 of these terms and conditions.

3. Prices, price adjustments, electronic invoicing

3.1. Our prices are quoted "ex works" Karlsruhe, in accordance with INCOTERMS, plus packaging, tariffs where export shipments are concerned, statutory VAT, fees and other public duties.

3.2. We reserve the right to amend the listed prices upon which the contract is based accordingly if cost reductions or increases arise as a result of tariff agreements, or if the price of materials increases after the contract is concluded. These shall be verified to the client upon request. A price adjustment shall not be effected in cases where delivery is made as contractually stipulated within four months of conclusion of the contract.

3.3. We provide an electronic invoice in compliance with data protection legislation. This presumes the formation of a separate agreement.

4. Payment terms and conditions, payment arrears

4.1. To avoid accounting errors and the resulting erroneous issue of dunning notices, we rely on receiving the correct invoice number, invoice date and individual invoiced amounts with incoming payments. This data can be found on all of our invoices. If the payer is not the same as the invoice recipient, the name stated on the relevant invoice must also be given. If we receive payments without this information, we cannot guarantee that payments will be assigned correctly.

4.2. The invoiced amount becomes payable upon receipt of the goods. Unless otherwise specified in writing or in text form, it is payable within thirty days without any deduction. In the event that the date on which the invoice or an equivalent payment schedule was received is disputed, the client is considered to be in default 30 days after receipt of the goods at the latest, in accordance with Section 286(4) of the German Civil Code. The payment is considered settled on the date on which we receive it. Otherwise, the statutory regulations on defaults of payment apply.

4.3. For payment within eight days from date of invoice, a 2% discount shall be granted. The precondition for any discount shall be the settlement of all other client payables arising from the business relationship with us that are older than 30 days.

4.4. For new clients, we reserve the right to require that payment be made prior to delivery or by cash on delivery.

5. Off-setting, retention

The off-setting of counter-demands by the client or the retention of payment due to such demands shall only be permissible if such demands are indisputable, or if their validity has been legally established.

6. Shipping, packaging, transfer of risk

6.1. The shipping method and the packaging shall be subject to our due discretion.

6.2. The risk of accidental loss or accidental deterioration of the delivered goods is, at the latest, transferred to the client upon hand-over of the goods to the forwarding agent, the carrier, or any other third party charged with the task of performing shipment (applicable from commencement of loading). This also applies in the case of partial deliveries, and with respect to each partial delivery.

6.3. The shipment is only insured against theft, breakage, transport, fire and water damage or other insurable risks at the express request of the client and at the client's expense.

7. Delivery time

7.1. The promised delivery periods and dates are only binding upon us if we have confirmed them in writing or in text form. The delivery dates indicated on our website during the ordering process or in our catalogue do not constitute such confirmation. Compliance with our delivery obligation requires the timely and proper fulfilment of the client's obligations. If shipping has been agreed, delivery dates and deadlines refer to the time of transfer to the forwarder, carrier, or other third party assigned to transport the goods.

7.2. We cannot be held liable should a delivery prove impossible or in the case of delays in delivery due to force majeure or other events that were unforeseeable on conclusion of the contract (e.g. fire, explosion, strikes, lawful lockout, complications in procuring materials or energy, war, unrest, government rejection or renunciation of import and export licences, shortage of raw materials and/or other products and/or constituent parts), and for which we are not accountable. We reserve the right to withdraw from the contract if such occurrences substantially complicate delivery or make delivery impossible, and if the disruption is not merely of a temporary nature. If the disruption is of a temporary nature, delivery times shall be extended to take account of the period of disruption and a reasonable start-up period. We shall notify the client of the start and end of such circumstances as promptly as possible. If such a delay makes acceptance of delivery unreasonable for the client, the client shall be entitled to withdraw from the contract by issuing immediate notice in writing or in text form.

7.3. If we are in default of delivery or performance, or are unable to carry out delivery or performance, for any reason whatsoever, our liability is limited to the extent set out in Article 13 of these Terms of Sale and Delivery.

7.4. We cannot be held liable for the impossibility of, or delay in, performance of delivery obligations if, and to the extent that, such an impossibility or delay arises from circumstances caused by the client, in particular if the client fails to comply with public law obligations in connection with the European Regulations on Chemical Substances (REACH).

8. Partial deliveries

8.1. In the absence of any special agreement, we may provide partial deliveries if

- the partial delivery can be used by the client in the context of the contractually agreed intended use,
- delivery of the remaining goods is ensured and
- this causes no extensive additional effort or additional costs to the client.

8.2. A partial delivery made under these conditions is considered a complete delivery with regard to the agreed delivery date.

9. Default of acceptance

Should the client be in default of acceptance or culpably in breach of other duties to cooperate, we shall be entitled to charge for the resulting damages, including any additional costs incurred. In this case, the risk of accidental loss or incidental deterioration of the purchased goods also passes over to the client at such time as the client falls into default of acceptance, provided that our delivery obligation has already been met with regard to the goods to be delivered.

10. Intended use of the goods, obligations of the client, liability

10.1. If we have made a pledge for certain products to effect delivery contingent upon their intended use, the customer shall be liable for any and all disadvantages which we may suffer as a result of incorrect statements made. In the case of toxins and other substances which may only be used within the scope of legal or official provisions, the client's order shall also serve as a statement that these substances shall be used for a purpose permissible under the foregoing terms and conditions. They shall observe the legal regulations when handling or using the substances, mixtures and products supplied by us. Private persons cannot be supplied with chemicals..

10.2. Information given concerning the usability of goods does not constitute any assurance or guarantee of suitability for such use. Relevant identified uses according to Regulation (EC) No. 1907/2006 (REACH regulation) in the applicable version do not represent a contractual guarantee of any characteristic nor a use stipulated in the contract.

10.3. Our products must be checked by the user with respect to their specific suitability, particularly prior to use for medical purposes, for food and beverage processing, plant cultivation and similar applications. This applies in particular to natural substances, which are always subject to slight variation in content. We therefore cannot assume any liability for any such use.

10.4. Insofar as we provide the client with advice - whether verbally, in writing or as a result of tests - such advice is provided to the best of our knowledge but without liability on our part, and does not release the client from their obligation to check the delivered goods with respect to their suitability for the intended processes and purposes. Application, use and processing of goods are carried out beyond the scope of our control and are therefore the sole responsibility of the client.

11. REACH clause

If the customer notifies us of a use in accordance with Article 37.2 of the Regulation (EC) No.1907/2006 of the European Parliament and the Council for the Registration, Evaluation, Approval and Control of chemical substances (REACH Regulation) which requires updating of the registration or the chemical safety report or results in another obligation according to the REACH Regulation, the customer shall reimburse us all expenses for which evidence is provided. This does not affect Article 53 of the REACH regulation. We shall not be liable for delays in delivery caused by the notification of this form of use and performance of the applicable obligations as stipulated by the REACH regulation. If, for reasons of health and safety or environmental protection, we are unable to consider this use an identified use and should the client, against our advice, intend to use the goods in the manner which have advised against, we shall be entitled to withdraw from the contract.

12. Warranty for defects, obligation to give notice of defect, material defects

12.1. Claims relating to material defects will be barred one year after delivery to the client. In the event that approval is required, they will be barred from the point of approval. This period shall not apply to damage claims by the client in the case of fatalities, physical injuries, or damage to health or deliberate or grossly negligent breach of duties on our part or on the part of our agents; such claims expire in accordance with statutory provisions.

12.2. The statute of limitations in case of delivery regress according to Sections 478, 479 of the German Civil Code remains unaffected.

12.3. The delivered goods must be carefully inspected immediately upon delivery to the client or to a third party designated by the client. Approval shall be deemed given if we do not receive a written notice of defect with regard to visible defects or other defects detectable during an immediate and careful inspection within seven working days after delivery of the goods. With regard to other defects, the delivered goods shall be deemed approved by the client if we do not receive notice of a defect within seven working days after the discovery of the defect. If the defect was noticeable by the client during normal use at an earlier point in time, however, this earlier point in time shall define the commencement of the defect notification period.

12.4. Rejected goods must no longer be used without our explicit consent. Upon request, the defective delivery item shall be returned to us freight paid. If the notice of defect is justified, we shall reimburse the cost of the cheapest shipping method. This shall not apply if the cost increases because the delivery item is transferred to a place other than the designated place of delivery.

12.5. Insofar as we are liable for a defect in goods purchased from us, we are entitled to correct the fault or replace the relevant product at our option and within a reasonable period of time. If the correction/repair or replacement delivery fails, i.e. if it is not possible, unreasonable, rejected or unreasonably delayed, the client shall be entitled to withdraw from the contract or to reduce the purchase price by a reasonable amount.

12.6. In cases where faults are attributable to us, the client shall be entitled to claim for damages subject to the provisions defined in Article 13.

13. Liability, special provisions for compensation for damages, exclusions, limitations

13.1. Our liability for damages, regardless of the legal basis, in particular for impossible, late, defective or incorrect delivery, breach of contract, violation of obligations during contractual negotiations and unlawful actions, provided that fault is established, shall be governed by the provisions of this Article 13, notwithstanding Article 12 above.

13.2. We cannot be held liable in the event of simple negligence by our executive bodies, legal representatives, employees or other vicarious agents, unless essential contractual obligations are breached. Obligations essential to the contract are those that give the contract its specific character and upon which the contracting partner can rely. They are therefore essential rights and obligations, which create the preconditions for execution of the contract and are indispensable for fulfilment of the contractual purpose.

13.3. Insofar as we are liable to pay compensation for damages under the terms of Article 13(2), this liability shall be limited to such damage that was foreseeable as a possible consequence of breach of an obligation at the time of execution of contract, or which we should have been able to foresee had we applied due diligence. Indirect damage and consequential damage arising from defects in the delivered goods shall only be eligible for compensation to the extent that such damage can be typically expected when using the delivered goods as intended.

13.4. Insofar as we issue technical information or provide consulting services, and such information or consulting services are not part of our contractual duties, this assistance will be rendered free of charge and shall be exempt from any liability.

13.5. The above exemptions and limitations of liability apply analogously to our institutions, legal representatives, employees and other vicarious agents.

13.6. The foregoing restrictions as stipulated under Article 13 do not apply to our liability with regard to wilful conduct, guaranteed features, culpable injury to life, limb or health and under the German Product Liability Act. Mandatory statutory liability provisions shall remain unaffected.

13.7. The bases of claims relating to data protection law are not covered by this limitations of liability clause.

14. Withdrawal by client

If the purchased item is defective, the legal right of the purchaser to withdraw from the contract shall not be subject to our culpability. In all other cases, the client shall only be entitled to withdraw in the event that we are in breach of obligations for which we are accountable.

15. Consequences of deterioration in the financial circumstances of the client

15.1. In the case of default and justified doubt regarding the solvency or credit-worthiness of the client, we shall - notwithstanding our other rights - be entitled to request guarantees or advance payments for outstanding deliveries and demand immediate payment of all claims resulting from the business relationship.

15.2. We may withdraw from the contract in the event that we become aware of suspension of payments, the opening of insolvency or judicial settlement proceedings, the refusal of insolvency due to lack of assets, bill protests or cheque protests or any other tangible indications that the financial circumstances of the client have deteriorated.

15.3. We are also entitled, at any time, to obtain information relevant to the financial circumstances of the client in order to establish whether a business relationship is justified or whether it should be continued.

16. Retention of title

16.1. The retention of title agreed to hereinafter serves to safeguard all existing and future claims that we may have against the client as a result of the business relationship between both parties.

16.2. We, the seller, will retain the right to ownership of the goods delivered to the client until full payment has been made for all secured receivables. The goods and any goods taking their place and subject to reservation of title under the following provisions shall hereinafter be referred to as "Reserved Goods".

16.3. The client shall ensure the safekeeping of the Reserved Goods on our behalf at no charge.

16.4. The client is entitled to process and resell the Reserved Goods in normal business transactions until such time as a claim is brought against it. It is not permitted to pledge Reserved Goods or to use Reserved Goods as collateral.

16.5. If the Reserved Goods are processed by the client, it is agreed that they will be processed in our name and for our account and that we will acquire direct title to them or ? if they are processed together with items from more than one owner or the value of the processed item is greater than the value of the Reserved Goods - we will acquire (partial) joint ownership of the newly-created item. In the event that we do not acquire such title to goods, the client shall herewith transfer future ownership or, to the extent specified above, joint ownership of the newly-created item to us as a security. If the Reserved Goods are compounded or inseparably combined with other items and if one of the other items is considered the main item, then, insofar as the main item belongs to us, we shall transfer the co-ownership in the combined item proportionally to the client in the ratio stated in sentence 1.

16.6. In the event of the resale of Reserved Goods, the client shall, by way of a security, herewith transfer the resulting accounts receivable from the buyer or our pro-rata share - in the case of joint ownership - to us. The same shall apply to any other claims that take the place of Reserved Goods or otherwise accrue with respect to reserved goods, such as insurance claims or claims arising from unauthorised actions in case of loss or irreparable damage. We hereby revocably authorise the client to collect receivables assigned to us on its own behalf. We shall only be entitled to revoke this authorisation for collection in the event that a claim is made.

16.7. Where third parties lay claim to the Reserved Goods, particularly through garnishment, the client shall notify us in writing without delay, so that we can take action to enable the assertion of our ownership rights. Unless the third party is in a position to reimburse us for legal expenses and out-of-court settlement costs, the client shall be liable for our loss.

16.8. We shall undertake to release the Reserved Goods, as well as any goods or claims superseding the Reserved Goods, should their value exceed the amount of the secured receivables by more than 50 %. The selection of the securities subsequently to be released shall be incumbent upon us.

16.9. Should we withdraw from a contract due to a breach of contract on the part of the client, particularly with regard to delayed payment, then we shall be entitled to demand the return of the Reserved Goods.

17. Use of client data

We refer on this subject to our Privacy Policy Statement, which you can access on our website at www.carlroth.com/en/en/Data-protection.

18. Place of fulfilment, place of jurisdiction, choice of law

18.1. Unless otherwise specified in the order confirmation, the place of performance for all obligations arising from the contractual relationship shall be Karlsruhe.

18.2. If the client is a merchant, a legal person under public law or a special fund under public law, the exclusive place of jurisdiction for all disputes arising from the contract shall be the court of our registered office. However, we are also entitled to bring action against the client in their domicile court. Peremptory legal provisions concerning the exclusive place of jurisdiction for disputes shall not be affected by this provision.

18.3. The laws of the Federal Republic of Germany exclusively govern the relationship between us and our client. The United Nations Convention of 11th April 1980 on the International Sale of Goods (KEGS) does not apply.

Carl Roth GmbH + Co. KG

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